

MILITARY DICTIONARY:

COMPRISING

TECHNICAL DEFINITIONS;

INFORMATION

ON RAISING AND KEEPING TROOPS;

ACTUAL SERVICE,

INCLUDING

MAKESHIFTS AND IMPROVED MATÉRIEL;

AND

LAW, GOVERNMENT, REGULATION, AND ADMINISTRATION
RELATING TO LAND FORCES.

BY

COLONEL H. L. SCOTT,

INSPECTOR-GENERAL, U. S. A.

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P R E F A C E .

A MILITARY dictionary which, with technical definitions, comprises information on actual service ; on law, government, regulation, and administration ; on raising and keeping troops, and on makeshifts and improved *matériel*, is much needed ; and the design of the present work is in some measure to occupy that gap in military literature.

In legal articles, plain decisions from constitutional exponents of law have been accepted as conclusive ; but when without such a guide, an endeavor has been made to set forth the true intent and meaning of laws in dispute, by simple, clear, and logical annotations. Much interesting law matter has been abridged from Prendergast's *Law* relating to officers of the army ; and in respect to courts-martial, actual service, improved *matériel*, &c., &c., the author is indebted to many standard authorities, sometimes only designated by name in different articles ; but, in such cases, referred to fully by the titles of their works in the list of abbreviations which follows this preface.

It is only deemed necessary to add, that the work was not prepared in view of existing disturbances, but was begun some years ago, and that the few additions made since it was put in the hands of the publisher in January last, refer only to improvements in *matériel*.

TITLES OF WORKS

REFERRED TO BY ABBREVIATIONS IN THE TEXT, AND EXPLANATIONS
OF OTHER ABBREVIATIONS USED.

- Act.*—Act of Congress of the United States. Reference embraces date of act.
- Aide Memoire*—to the military sciences framed from contributions of officers of different services, and edited by a Committee of the Corps of Royal Engineers in Dublin.
- Aide Memoire d'Artillerie*—à l'usage des Officiers d'Artillerie. Paris, 1855.
- Art.*—(Articles of War,) included in an act of Congress for establishing rules and articles for the government of the armies of the United States, approved April 10, 1806. Reference embraces the number of the article.
- BARDIN.**—Dictionnaire de l'Armée de Terre, ou Recherches Historiques sur l'Art et les Usages Militaires des Anciens et des Modernes. Par le Général Bardin, &c. Ouvrage terminé sous la direction du Général Oudinot de Reggio. 5,387 pp. Paris, 1851.
- BAUCHER.**—Method of Horsemanship. Philadelphia, 1851.
- BENTON.**—Ordnance and Gunnery. By Capt. J. G. Benton, U. S. Ordnance.
- BLACKSTONE.**—Commentaries, with Notes. 4 vols. London, 1844.
- BOUVIER.**—Law Dictionary adapted to the Constitution and Laws of the United States. By John Bouvier. Philadelphia, 1839.
- BRANDE.**—Encyclopedia of Science, Literature, and Art.
- BUGEAUD.**—Aperçus sur quelques Détails de la Guerre. Par le Maréchal Bugeaud.
Ibid.—Instructions Pratiques. Bugeaud.
- BURNS.**—Naval and Military English-and-French Technical Dictionary. By Lieut.-Colonel Burns, Royal Artillery. London, 1852.
- CAVALLI.**—Mémoire sur divers Perfectionnements Militaires. Par J. Cavalli, Colonel d'Artillerie, &c., &c. Traduit de l'Italien. Paris, 1856.
- COUTURIER.**—Dictionnaire Portatif et Raisonné. Par le Général Le Couturier. Paris, 1825.
- DE HART.**—Courts-martial. By Captain W. C. De Hart, 2d U. S. Artillery.

- DECKER.—De la Tactique des Trois Armes: Infanterie, Cavalerie, Artillerie. Par C. Decker, Lieut.-Colonel, &c., &c.
- DOUGLAS.—Naval Gunnery. By Gen. Sir Howard Douglas.
- DUFOUR.—Cours de Tactique. Par le Général Dufour.
- DUNLOP.—Digest of Laws of the United States.
- Experiments, &c.*—By officers of the Ordnance in Small-Arms. 1856, (official.)
- FAVÉ.—Histoire et Tactique des Trois Armes, et plus Particulièrement de l'Artillerie de Campagne. Par H. Favé, Capitaine d'Artillerie.
- FONBLANQUE.—The Administration and Organization of the British Army, with especial reference to Supply and Finance. By Edward Barrington de Fonblanque, Asst. Commissary-General. London, 1858.
- GALTON.—The Art of Travel. By Francis Galton. London, 1860.
- GIBBON.—The Artillerist's Manual. By Capt. John Gibbon, 4th U. S. Artillery.
- GORDON.—Digest of Laws of the United States.
- GUILLOT.—Législation et Administration Militaire, ou Programme Détaillé des Matières Enseignées à l'Ecole Impériale de l'Etat Major. Par M. Léon Guillot, &c.
- HAILLOT.—Statistique Militaire, et Recherches sur l'Organization des Armées Étrangères. Par C. T. Haillot, Chef-d'Escadron d'Artillerie.
- HETZEL.—Cross' and Hetzel's Military Laws of the United States.
- HOUGH.—Military Law Authorities. By Lieut.-Colonel Hough, Deputy Judge-advocate General, &c.
- HYDE.—Elementary Principles of Fortification. By John Hyde, Professor Military College, Addiscombe.
- JEBB.—Practical Treatise on Attack and Defence. By Colonel Jebb, Royal Engineers.
- JOMINI.—Tableau Analytique.
- KINGSBURY.—Artillery and Infantry. By Captain Kingsbury, Ordnance Department.
- LE GRAND.—Dictionnaire Militaire Portatif. Par Le Grand.
- MACOMB.—Courts-martial. By Major-General Macomb. New York, 1841.
- MCCLELLAN.—Military Commission in Europe. Report by Captain McClellan, U. S. Army.
- MAHAN.—Field Fortifications. By Professor Mahan, U. S. Military Academy.
- MAYO and MOULTON.—Army and Navy Pension Laws. Washington, 1852.
- Mémoire*—des Officiers d'Infanterie et de Cavalerie. Paris, 1846.
- MORDECAI.—Digest of Military Laws. By Major Mordecai, U. S. Army.
- NAPOLEON.—Maxims of War.
- PETERS.—Digest of Decisions of Federal Courts.
- PRENDERGAST.—The Law relating to Officers in the Army. By Harris Prendergast of Lincoln's Inn, Esq., Barrister-at-Law.
- ROUVRE.—Aide Memoire de l'Officier d'Etat Major en Campagne. Par M. De Rouvre, Chef-d'Escadron d'Etat Major, Aide-de-camp de son Ex. le Maréchal Magnan.

RUFFIN.—Manuel d'Administration et de Comptabilité à l'usage des Officiers des Compagnies ou Escadron des Corps d'Infanterie et de Cavalerie. Par M. Ruffin.

SCOTT.—Orders and Correspondence of Gen. Winfield Scott, Congressional Documents, &c.

SKINNER.—Youatt on the Horse. By Skinner.

VATTEL.—Law of Nations. Philadelphia, 1817.

WHEATON.—Elements of International Law. Philadelphia, 1846.

YOUATT.—Youatt on the Horse. By Skinner.

MILITARY DICTIONARY.

ABANDONING A POST, OR MISBEHAVIOR BEFORE AN ENEMY. Punishable with death, or otherwise, as a court-martial shall direct; (*Art. 52.*)

ABATIS (*French*)—are rows of felled trees deprived of their smaller branches, the remainder sharpened to a point, and employed for defence. Abatis should be placed so as not to be exposed to the fire of artillery. In redoubts or intrenchments, they are usually fixed

FIG. 1.



in an upright position against the counterscarp, or at the foot of the glacis, the plane of which is broken so as to conceal the abatis from the view of the enemy, and to guard against obstructing the musketry fire from the parapet in their rear.

FIG. 2.



Abatis are also an excellent means of blocking up a road, when

trees grow on either side. If branches are properly placed, and intertwined one within another, their disengagement is extremely difficult. An abatis will always be found a very useful and effective auxiliary to the defence of houses or isolated posts, if judiciously placed within range of musketry. When close in front of the windows on the ground floor, or used as a cover to the entrance door, it will be extremely difficult for the enemy to force his way into the building.

ABSENCE, WITH LEAVE. Every colonel or other officer commanding a regiment, troop, or company, and actually quartered with it, may give furloughs to non-commissioned officers or soldiers in such numbers, and for so long a time, as he shall judge to be most consistent with the good of the service; and a captain or other inferior officer, commanding a troop or company, or in any garrison, fort, or barrack of the United States, (his field-officer being absent,) may give furloughs to non-commissioned officers or soldiers for a time not exceeding twenty days in six months, but not more than two persons to be absent at the same time, excepting some extraordinary occasion should require it; (*Art. 12.*)

The law does not specify by whom leaves of absence may be given to commissioned officers, and the omission has been supplied by orders of the President.

ABSENCE, WITHOUT LEAVE, FROM CAMP, PARADE, OR RENDEZVOUS. Punished, by sentence of a court-martial, according to the nature of the offence; (*Articles 41, 42, 43, and 44.*)

ABUSES AND DISORDERS. Every commanding officer shall keep good order, and, to the utmost of his power, redress all abuses and disorders which may be committed by any officer or soldier of his command. If, upon complaint made to him of officers or soldiers beating, or otherwise ill-treating, any person, of disturbing fairs or markets, or of committing any kinds of riots, to the disquieting of the citizens of the United States, &c., the said commander shall refuse or omit to see justice done to the offender or offenders, and reparation made to the party or parties injured, as far as part of the offender's pay shall enable him or them, he shall, upon proof thereof, be cashiered, or otherwise punished, as a general court-martial shall direct; (*Art. 32.*)

ACADEMY. The Military Academy of the United States is located at West Point, N. Y. The students, called cadets, are subject to the rules and articles of war. They are appointed from each congressional district, upon the nomination of the representative of the district in Congress. Each district is allowed but one representative at the Military Academy; but besides the number so appointed, the

President of the United States annually appoints ten cadets from at large. The Academy furnishes about forty graduates a year, who receive commissions of the lowest grade in some one of the different corps of the army, provided vacancies exist. If there be no vacancies, the graduates are attached to different corps as supernumerary officers of the lowest grade, not exceeding one to each company. The Military Academy was founded by act of Congress in 1802. Its present high reputation is mainly due to Colonel Sylvanus Thayer, who did not become Superintendent until 1817.

At the breaking out of the war of 1812, there were about seventy graduates of the Academy holding commissions, and but little knowledge of the military art and of the science of war prevailed. At the breaking out of the Mexican war, the officers of our army were mostly graduates of the Academy. Every branch of the service was filled with men of talent and military information; volunteer corps raised during the war sought and obtained as their commanders graduates of the Military Academy. General officers from political life appointed staff officers from the same class. In all positions which the graduates held during that brilliant war, the honor and glory of the United States were sustained, and the great usefulness of an institution, which annually costs little, if any more than the maintenance of one frigate afloat, was satisfactorily demonstrated to the people of the United States. (*See SUPERINTENDENT.*) Military Academies, modelled upon that at West Point, have also been established within their respective limits by the States of Virginia, Kentucky, North Carolina, South Carolina, and Alabama, and perhaps others.

ACCOUNTS. Officers accountable for public money or property render quarterly accounts to the Treasury Department, if resident in the United States; and every six months, if resident in a foreign country. Additional returns may be required by the Secretary of War, if the public interest requires it; (*Act Jan. 31, 1823.*) Every officer or agent offending against the foregoing provisions may be dismissed by the President of the United States; (*Act Jan. 31, 1823.*) The method of rendering accounts by Administrative Agents of the application of all public money and material passing through their hands, has been prescribed by regulations made pursuant to law. The object of a system of accountability should be, in respect to the army, to obtain plain statements of the operations and results of Military Administration. The system should be neither complex nor cumbrous, but should be adapted to a state of war; and while carefully guarding against losses to the Government, should, at the same time, by prompt

settlements, through government agents, present with armies in the field, dispense with accumulations of papers, which manifestly subject administrative officers to great losses, even if they were not frequently obliged to wait years before obtaining a settlement of their accounts.

By the present system of accountability it is prescribed: 1. That all accounts whatever in which the United States are concerned shall be settled and adjusted in the Treasury Department; (*Act* March 3, 1817.) 2. It is made the duty of the second and third auditors of the Treasury, to receive and examine all military accounts; to receive from the second comptroller the accounts which shall have been finally adjusted; to preserve such accounts; to record all warrants drawn by the Secretary of War; and make such reports on the business assigned to them as the Secretary of War may deem necessary, and require for the service of his Department; (*Act* March 3, 1817.) 3. It is the duty of the second comptroller to examine all accounts settled by the second and third auditors, and certify the balances arising thereon to the Secretary of War; to countersign all legal warrants drawn by the Secretary of War; *to report to the Secretary of War the official forms to be issued in the different offices for disbursing the public money, and the manner and form of keeping and stating the accounts of the persons employed therein*; and it shall also be the Comptroller's duty to superintend the preservation of the public accounts subject to his revision; (*Act* March 3, 1817.)

The great obstacles to the simplification and prompt settlement of army accounts interposed by law consist: 1. In the requirement that military accounts shall be adjusted and settled at the Treasury Department, instead of being settled by the War Department, and reported to the Treasury; 2. In making the second and third auditors and second comptroller officers of the Treasury instead of officers of the War Department; 3. In authorizing the second comptroller to establish forms for keeping and stating military accounts, instead of requiring him in those matters to conform to the directions of the Secretary of War; and, 4. In withholding from the War Department the power of appointing agents to accompany armies in the field for the prompt settlement of accounts. With the changes of law here suggested, it would be easy for the War Department, through the various grades in the several administrative staff departments, to establish a simple system of accountability with requisite means of control and supervision, which would operate advantageously to the government, and to individual agents. Under the present system there is, and must be, a remarkable similarity in the duties of all grades of the staff administrative departments. (Consult

Cours d'Administration, par VAUCHELLE, Intendant Militaire; Cours d'Etudes sur l'Administration Militaire, par ODIER: Memorial des Officiers d'Infanterie et de Cavalerie, 1846.)

ACCOUTREMENTS. Black leather belts, &c., furnished by the ordnance department.

| PARTS. | Infantry. | Artillery. | Cavalry. | Rifle. |
|--|-----------|------------|----------|--------|
| | § cts. | § cts. | § cts. | § cts. |
| Cartridge box..... | 1 10 | ..... | ..... | 95 |
| Cartridge box plate..... | 10 | ..... | 10 | 10 |
| Cartridge box belt..... | 69 | ..... | ..... | ..... |
| Cartridge box belt plate..... | 10 | ..... | ..... | ..... |
| Bayonet scabbard and frog..... | 56 | ..... | ..... | ..... |
| Waist belt, private's..... | 25 | ..... | ..... | 37 |
| Waist belt plate..... | 10 | ..... | ..... | 10 |
| Cap pouch and pick..... | 40 | ..... | 40 | 40 |
| Gun sling..... | 16 | ..... | ..... | 16 |
| Sabre belt..... | ..... | 1 03 | 1 35 | ..... |
| Sabre belt plate..... | ..... | 60 | 60 | ..... |
| Sword belt..... | ..... | 1 00 | ..... | ..... |
| Sword belt plate..... | ..... | 10 | ..... | ..... |
| Sword belt, non-commissioned officer's and musician's..... | 62 | ..... | ..... | 62 |
| Sword belt plate do. do. | 10 | ..... | ..... | 10 |
| Waist belt do. do. | 37 | ..... | ..... | 37 |
| Waist belt plate do. do. | 60 | ..... | ..... | 60 |
| Carbine cartridge box..... | ..... | ..... | 87 | ..... |
| Pistol do. .... | ..... | ..... | 75 | ..... |
| Holsters, with soft leather caps..... | ..... | ..... | 2 63 | ..... |
| Carbine sling..... | ..... | ..... | 95 | ..... |
| Carbine swivels..... | ..... | ..... | 88 | ..... |
| Sabre knot..... | ..... | ..... | 30 | ..... |
| Bullet pouch..... | ..... | ..... | ..... | 53 |
| Flask and pouch belt..... | ..... | ..... | ..... | 40 |
| Powder flask..... | ..... | ..... | ..... | 1 20 |
| Waist belt, sapper's, with frog for sword bayonet, §1. | ..... | ..... | ..... | ..... |

Infantry accoutrements for 100 men, including non-commissioned officers' shoulder-belts and plates, weigh 330 lbs.; rifle accoutrements for 100 men, including non-commissioned officers' shoulder-belts and plates, weigh 329 lbs.; 100 carbine slings and swivels, 110 lbs. (*See ARMS.*)

Mr. Dingee's directions for reblacking Belts.—Brush them with a hard brush, to clean the surface; if they are very greasy, use a wire scratch-brush. Then, with a soft brush or sponge, apply the following mixture, viz.: one gallon soft water, two pounds extract of logwood, half a pound of broken nutgalls, boiled until the logwood is dissolved. When cold, add half a pint of the pyrolignite of iron—made by dissolving iron filings in pyroligneous acid, as much as the acid will take up. The dye thus made should be well stirred, and then left to settle. When clear, bottle it free from sediment, and keep it well corked for use. Dye the belts in the shade; then apply a little sperm or olive oil, and rub well with a hard brush. Should any bad spots appear, scratch

up the surface with the wire brush, and wet two or three times with a simple decoction of gallnuts or sumach, and again apply the dye. Log-wood is not essential, and a solution of copperas may be used instead of the acetate of iron.

ADDRESS. An address to a court-martial, by either party, must be in writing. (Consult *Hough's Law Authorities*.)

ADJUTANT, (Latin *adjutor*, aid.) An officer selected by the colonel of the regiment from the subalterns. He communicates the orders of the colonel, and has duties in respect to his regiment assimilated to those of an adjutant-general with an army.

ADJUTANT-GENERAL. The principal organ of the commander of an army in publishing orders. The same organ of the commander of a division, brigade, geographical division, or department, is styled Assistant Adjutant-general. The laws of the United States, however, provide for but one Adjutant-general with the rank of colonel, (made by regulations chief of a bureau of the War Department, and charged with the recruiting service, records, returns, &c.,) one Assistant Adjutant-general with the rank of lieutenant-colonel, and twelve other assistants with the rank of major and captain. (See *ARMY ORGANIZATION*.)

The bureau duties of Adjutants-general and assistants are: publishing orders in writing; making up written instructions, and transmitting them; reception of reports and returns; disposing of them; forming tables, showing the state and position of corps; regulating details of service; corresponding with the administrative departments relative to the wants of troops; corresponding with the corps, detachments, or individual officers serving under the orders of the same commander; and the methodical arrangement and care of the records and papers of his office. The active duties of Adjutants-general consist in establishing camps; visiting guards and outposts; mustering and inspecting troops; inspecting guards and detachments; forming parades and lines of battle; the conduct and control of deserters and prisoners; making *reconnaissances*; and in general discharging such other active duties as may be assigned them.

ADJUTANT-GENERAL OF A STATE. (See *MILITIA*.)

ADJUTANT-GENERAL, DEPUTY, &c. An act making further provision for the army, and for other purposes: Approved July 6, 1812, provides: Sec. 2, That to any army of the United States, other than that in which the adjutant-general, inspector-general, quartermaster-general, and paymaster of the army, shall serve, it shall be lawful for the President to appoint one deputy adjutant-general,

one deputy inspector-general, one deputy quartermaster-general, and one deputy paymaster-general, who shall be taken from the line of the army, and who shall, each, in addition to his pay and other emoluments, be entitled to fifty dollars per month, which shall be in full compensation for his extra services. And that there shall be, to each of the foregoing deputies, such number of assistant deputies (not exceeding three to each department) as the public service may require, who shall in like manner be taken from the line, and who shall each be entitled to thirty dollars per month, in addition to his pay and other emoluments, which shall be in full compensation for his extra services, &c.

ADMINISTRATION, ADMINISTRATIVE. These words are derived from *ministrare, administrare, to serve*. Administration is a branch of political economy; it is the action of administrative agents in executing laws or regulations conformable to law. The aim of a system of administration is to secure the performance of public duties, either directly, ministerially, or through the intervention of sub-agents. It is exercised over individuals or things, in civil matters, in courts of law, in political bodies, in the army and in the navy, and in general in all *financial* matters of government. Administration consists in establishing the ways and means of public receipts and expenditures; in watching over such employments; in the collection, care, and distribution of material and money; and in rendering and auditing accounts of such employments. Army Administration also embraces in war the means by which an army is supported in foreign countries by a general in campaign, when without regular supplies, without resorting to pillage. The wars of the French revolution brought into use REQUISITIONS, a moderate kind of marauding, weighing more heavily upon countries than upon individuals. Requisitions are, however, an uncertain and unequal means of supply, and only enable an army to live from hand to mouth, and although practicable in offensive wars, are only justifiable in rapid movements, where time does not admit the employment of more certain means of supply. The system is less odious than pillage.

Bonaparte skilfully adopted another method, in harmony with the spirit of wars of invasion, and also more reliable as a means of support. He substituted himself in place of the supreme authorities of the invaded country, and exacted *pecuniary contributions*, paying, or promising to pay, for all provisions and other supplies needed for his army. Some writers think that even this modified system can only succeed in gigantic operations, where an army upon a new soil successively gives repose to that previously occupied. Such a system was,

however, well executed by Marshal Suchet in Spain, and a similar system was also matured and published in orders by General Scott while in Mexico. A treaty of peace, however, soon after was made, which put an end to military operations, and the system was therefore only partially executed. But with a sufficient army in a fertile country, the experience of the world has shown that if the inhabitants are protected from injuries, they will very generally sell to the best paymasters. It is therefore the interest of an invading army not to interfere with the ordinary avocations of citizens, and such is the modern usage.

Bonaparte (according to Las Casas) thought that an entire revolution in the habits and education of the soldier, and perhaps also in those of the officers, was essential to the formation of a veritable self-subsisting army. Such an army (he said) cannot exist with present ovens, magazines, administration, wagons, &c., &c. Such an army will exist when, in imitation of the Romans, the soldier shall receive his corn, shall personally carry his mill and cooking utensils, cook his own bread, &c., &c., and when the present frightful paper administration has been dispensed with. He added that he had meditated upon all those changes, but a period of profound peace was necessary to put them in practice. If he had been constrained to keep a large army in peace, he would have employed it upon the public works, and given it an organization, a dress, and a mode of subsistence altogether special. If such a scheme be practicable, no approach to it yet exists.

The French have made some progress in developing a system of administration suited to a large army, but hardly a step in the direction pointed out by Napoleon. The French administrative service is a powerful means of moving armies in unforeseen emergencies. Its foresight provides resources, and the adversary soonest ready has the greatest chance of success. Not a century since, the French government required six months' preparation before an army could move; now, in the language of Gen. Lamarque, "The cannon is loaded, and the blow may be given at the same moment as the manifesto, and, if necessary, the blow may precede it." Ordinary army administration consists in the organization and other means by which various administrative duties are performed, necessary to provide for the wants of troops, and for all the foreseen demands of a state of war, including labor and the supplies for garrisons, sieges, &c. Such duties embrace subsistence magazines, daily rations, forage, dress, encampments, barracks, hospitals, transportation, &c., &c., the administrative duties of engineers, and of the ordnance department, estimates, accountability, payments, recruiting, and in general the receipt and proper application

of money. The Secretary of War, under the orders of the President, is the head of military administration in the United States. The object of such administration is to provide, through the resources placed by law at his disposition, for the constant wants, regular or accidental, of all who compose the army. Good administration embraces a foreknowledge of wants, as well as the creation, operation, and watchfulness of the ways and means necessary to satisfy them; the payment of expenses, and the settlement of accounts.

Army administration is divided into several branches determined by law. These different branches constitute the administrative service of an army, the operations of which should be so regulated that the Secretary of War will be always informed of the condition of each, and be able to exercise, subordinate to law, a complete financial control over each. These different branches of administration are: 1. The recruiting service, and the custody of records and returns of personnel; 2. The administrative service of engineers and topographical engineers; 3. The ordnance department; 4. The quartermaster's department; 5. The subsistence department; 6. The pay department; 7. The administrative service of the medical department; and, 8. The settlement of army accounts. Bureaux of the War Department charged with these different matters have been organized by the President and Secretary of War, under the joint authority given these functionaries by the act of Congress of 1813 (*See REGULATION*) to make regulations better defining the powers and duties of certain staff officers. The adjutant-general of the army and the heads of administrative corps have each been assigned a bureau in the War Department, under the direction of the Secretary of War, for the management of the administrative duties with which they have been respectively charged. Administration and Command are distinct. Administration is controlled by the head of an executive department of the government, under the orders of the President, by means of legally appointed administrative agents, with or without rank, while Command, or the discipline, military control, and direction of military service of officers and soldiers, can be legally exercised only by the military hierarchy, at the head of which is the constitutional commander-in-chief of the army, navy, and militia, followed by the commander of the army, and other military grades created by Congress. (*See ACCOUNTS; ACCOUNTABILITY; ADJUTANT-GENERAL; ALLOWANCES; AMBULANCES; APPROPRIATIONS; ARREARS OF PAY; ARMY OF THE UNITED STATES; ARMY REGULATIONS; AUDITORS; BAGGAGE; BAKING; BARRACKS; BED; BOOKS; BONDS; BOUNTY; BRIDGE; CALLING FORTH MILITIA; CARPENTRY; CASEMATE; CLERKS; CLOTHING; COMMISSARY; COMMISSION;*

COMPROLLER; CONGRESS; CONSCRIPTION; CONTRACTS; COUNCILS OF ADMINISTRATION; DAMAGE; DECEASED; DEFAULTERS; DELINQUENTS; DEPARTMENT OF WAR; DEPÔT; DISBURSING OFFICERS; DISCHARGE; EMBEZZLEMENT; ENGINEER CORPS; ENGINEERS, (TOPOGRAPHICAL;) ENLISTMENTS; EXCHANGE OF PRISONERS; EXECUTION OF LAWS; EXEMPTS; EXTRA EXPENSES; EXTRA ALLOWANCES; GRATUITY; INDIAN; INSURRECTION; LAWS (MILITARY) AND REFERENCES; LOSSES; LOGISTICS; MARSHALS; MEASURES; MEDICAL DEPARTMENT; MILEAGE; MILITIA; MUSTER; NITRE; OBSTRUCTION OF LAWS; ORDNANCE DEPARTMENT; ORDNANCE SERGEANTS; ORGANIZING; OVEN; PASSPORTS; PAY; PAY DEPARTMENT; PAYMASTER-GENERAL; PENSION; PONTON; POSSE COMITATUS; PRESIDENT; PURCHASING; QUARTERS; QUARTERMASTER'S DEPARTMENT; QUARTERMASTER-GENERAL; RAISE AND REFERENCES; RATION; RECRUITING; REENLISTING; REGULATION; REMEDY; RETURNS; ROADS; SALE; SANITARY PRECAUTIONS; SAPPERS; SAW-MILL; SECRETARY OF WAR; SERVICE; STAFF; STATE TROOPS; STANDARDS; STOREKEEPERS; STOPPAGE OF PAY; SUBSISTENCE DEPARTMENT; SUIT; SUPERINTENDENT; TELEGRAPH; TENT; TOOLS; TRADE; TRANSFERS; TRAVELLING ALLOWANCES; TREATY; UNIFORM; UTENSILS; VALUE; VETERAN; VETERINARY; VOLUNTEERS; WAGON; WAR; WEIGHTS; WILLS, (NUNCUPATIVE); WOUNDS. (Consult BARDIN, *Dictionnaire de l'Armée de Terre; Legislation et Administration Militaire, par M. LEON GUILLOT; Military Laws of the United States; Gen. SCOTT'S orders in Mexico; SUCHET'S Memoirs.*)

ADMISSIONS. The judge advocate is authorized, when he sees proper, to admit what a prisoner expects to prove by absent witnesses.

ADOBES—are unburnt brick made from earth of a loamy character containing about two-thirds fine sand mixed intimately with one-third or less of clayey dust or sand. Stiff clay will not answer, as the rays of the sun would crack it in pieces. The adobe, under the action of the sun, becomes a compact mass. Upon our Indian frontiers in New Mexico, in Mexico, and in Central America, adobe houses and adobe defences against the Indians are common structures. Four men usually work together in making adobe brick. One mixes the mass in a hole, and loads the barrow, two carry it on a common hand-barrow, and the fourth moulds the brick. The moulder has a double mould, or one which forms two adobes, each eighteen inches long, nine inches wide, and four inches thick. The partition between the two compartments should be of one and a half inch stuff, the other parts of inch board; a cleat on either outer side, extending the length of the mould, permits the mould to be easily handled. It must be well morticed together

so as not to wabble. The moulder has no bottom, the adobe being deposited on the surface of the ground, made tolerably level, and without reversing, as in brick making. The mould is raised gradually and slowly away from the moulded masses. Before placing it on the ground to mould another couple, the inner sides of the mould are washed with water, kept at hand; this is all that is required to preserve the mud from sticking and thus breaking the adobe. The mould is emptied a second time on the ground at about three inches from the first couple, and in refilling, the balance of the mud left over from the first moulding is cast in the compartments, and the two men with the barrow of mud throw their load directly upon the mould, and all that is over and above what is necessary to fill it is scraped off by the moulder's hands toward where his next couple is to be. The dumping of the mud from the barrow is facilitated by casting into the barrow a little finely powdered dry manure or dust.

An adobe eighteen inches long, nine inches wide, and four inches thick, is the best average size for moulding and for building. They are sometimes made sixteen inches long and twelve inches wide; in such cases they are all laid as *headers*; but with the eighteen inch adobe they afford the means of binding the wall strongly by alternating headers and stretchers, as in brick-laying. In the hot spring and summer suns two or three days uninterrupted drying is sufficient at the first; the adobes are then carefully turned up on edge, so as to expose the under or still wet face to the southern and western sunshine. They should be left in this position from a week to fifteen days to dry thoroughly, when, if not wanted for immediate use, they may be stacked on edge and covered from the weather. Houses in New Mexico are seldom built over one story high. This enables the builder to place on the roof-covering at once, if necessary. But in all cases, intervals in the work must be allowed, or the house will not only be unsafe, but, if immediately occupied, damp and disagreeable. The inside plastering with mud is most frequently done before the roof is covered in, so as to dry with the wall. If the wall must be left unfinished through the fall rains or the winter, the top of it is covered with a bushy weed called *cachanilla*, and this is covered with earth, to exclude water and protect it till the ensuing year. If door and window frames are at hand, the Mexicans prefer to put them in as they build; but oftener they leave gaps for doors and windows, unfilled with the frames, till the whole is finished. The adobes are laid with mud mortar made from the earth at the base of the wall; the holes thus formed are readily filled again with the rubbish from the house when completed. When the wall is

ready to receive the roof-covering, heavy joists are laid, about two feet apart, on the top of the walls, strong enough to bear near a foot of earth all over the roof; the joists, as they rest upon the wall, are supported upon boards, or plates, as they are called, to distribute the weight of the roof, and prevent the joists from crushing into the walls. Across the joists, and over the whole roof, averaging about two inches in diameter, poles are now placed, the largest on the highest side of the roof to begin the slope, and on this is placed a close covering of the *cachanilla*, which is aromatic and keeps out bugs; it is evergreen, and a plant of the most suitable length to fill the interstices in the poles. Small willow brush is often used in the absence of *cachanilla*. The earth-covering of the roof is now put on, extending all round the roof to the parapet above the joists, which is only one-half the width of the wall below; this brings the dirt roof to cover over one-half the width or thickness of the wall, by which leaks in the room below are prevented. An adobe house, if well secured, is warmer in winter, and cooler in summer, than one of wood or brick. The brick is cold and damp, the adobe is dry and a much worse conductor of heat—no furring nor lathing is necessary—and the rough inside can be white-washed or slapped with plaster. The durability of adobe walls is extraordinary. The Pecos Church, not far from Santa Fé, is doubtless one hundred years old; its mud walls (adobe) are as firm to this day as a rock, and they cannot be less than fifty feet high.

ADVANCED. Any portion of an army which is in front of the rest. It is figuratively applied to the promotion of officers and soldiers.

ADVANCED COVERED WAY—is a *terre plein*, on the exterior of the advanced ditch, similar to the first covered way.

ADVANCED DITCH—is an excavation beyond the glacis of the *enceinte*, having its surface on the prolongation of that slope, that an enemy may find no shelter when in the ditch.

ADVANCED GUARD. A detachment of troops which precedes the march of the main body.

ADVANCED LUNETTES—are works resembling bastions or ravelins, having faces and flanks. They are formed upon or beyond the glacis.

ADVANCED WORKS—are such as are constructed beyond the covered way and glacis, but within the range of the musketry of the main works.

ADVANCES of public money may be authorized by the President of the United States to persons in the military or naval service employed on distant stations. Prohibited otherwise; (*Act Jan. 31, 1823.*)

ADVISING TO DESERT. Punishable with death or otherwise, as a court-martial may direct; (*Art. 23, Articles of War.*)

AFFAIR. Any slight action or engagement. Affair of outpost; affair of rear-guard, &c.

AFFIDAVITS, being admissions upon oath, are evidence as such against the parties who made them, (*Hough.*) In the trial of cases not capital, the deposition of witnesses not of the staff or line of the army, taken before a Justice of the Peace in presence of the prosecutor and person accused, may be read in evidence; (*Art 10.*)

AIDES-DE-CAMP—are *ex-officio* assistants adjutant-general; (*Act March 2, 1821.*) They are confidential officers selected by general officers to assist them in their military duties. A lieutenant-general appoints not exceeding four in time of war, and two in peace, with the rank of lieutenant-colonel; a major-general two, and a brigadier-general one. Attached to the person of the general, they receive orders only from him. Their functions are difficult and delicate. Often enjoying the full confidence of the general, they are employed in representing him, in writing orders, in carrying them in person if necessary, in communicating them verbally upon battle-fields and other fields of manœuvre. It is important that Aides-de-Camp should know well the positions of troops, routes, posts, quarters of generals, composition of columns, and orders of corps: facility in the use of the pen should be joined with *exactness* of expression; upon fields of battle they watch the movements of the enemy; not only grand manœuvres but special tactics should be familiar to them. It is necessary that their knowledge should be sufficiently comprehensive to understand the object and purpose of all orders, and also to judge in the varying circumstances of a battle-field, whether it is not necessary to modify an order when carried in person, or if there be time to return for new instructions.

AIM. (*See FIRING; TARGET.*)

ALARM-POST—is the place appointed for every regiment or detachment to assemble, in case of a sudden alarm.

ALARMS, FALSE. Any officer who shall occasion false alarms in camp, garrison, or quarters, shall suffer death or other punishment as a court-martial may direct; (*Art. 49.*)

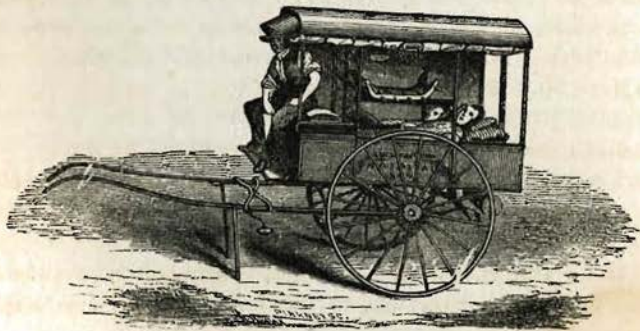
ALIBI. Elsewhere. An Alibi is the best of all defence if a man is innocent; but if it turns out to be untrue, it is conclusive against those who resort to it; (*Hough.*)

ALLOWANCES. The receipts of an officer consist of pay and allowances, sometimes called pay and emoluments. Allowances are regular and occasional; they consist of money for servants, forage,

rations, and travelling expenses; and of fuel and quarters, stationery, straw for bedding, transportation of baggage, and forage in kind under certain circumstances. An allowance for servants and forage is only given where the servants and horses allowed are actually kept in service by the officer. Double rations are given to the commander of the army, the commander of an army in the field, a geographical division, department, military post and arsenal; and ten dollars per month is allowed to the actual commander of a company. Armies have always been paid by means of pay and allowances. It is the least expensive mode of supporting an army, and it is at the same time the most just method of graduating the pay according to circumstances. In the United States army, however, the allowances made are not sufficient, and not properly graduated. Several of the allowances given in European armies, are withheld from our own; and of those withheld, some are charges which press very heavily upon officers in campaign, when all their energies are needed for the service of the country. Of the allowances given in European armies, but withheld from the United States army, the following are the most important: Allowance, as equipment money at the beginning of a campaign, marching allowance, indemnity for losses in the field, prize money, and barrack furniture allowance. (*See INDEMNIFICATION.*)

AMBULANCES (*French*)—are flying hospitals so organized that they can follow an army in all its movements, and are intended to succor the wounded as soon as possible. Other sick are also placed in Ambulance, but the Ambulances are emptied as soon as fixed hos-

FIG. 3.



AMBULANCE CART PROPOSED FOR THE U. S. SERVICE.

pitals are at hand. In the French army, an Ambulance of infantry is composed of five wagons containing cases of instruments for amputating

and trepanning, bandages for divers fractures, utensils of all kinds, medicines, and 8,900 dressings. The Ambulance of cavalry is composed of three wagons, containing the articles above enumerated, with 4,900 dressings. The Ambulances are distributed as follows: Each division of infantry has one Ambulance of infantry, and each division of cavalry an Ambulance of cavalry. The headquarters of an army corps is allowed two Ambulances; the grand park of artillery one Ambulance of cavalry; the reserve of the army at general headquarters

FIG. 4.



AMBULANCE CART PROPOSED FOR THE U. S. SERVICE.

six Ambulances; four of infantry, and two of cavalry. The number of Ambulance carts and wagons recently ordered for the United States service, in case of war, greatly exceeds the foregoing allowance, and would be doubtless required in operations of small detachments, or wherever, from any cause, it is impracticable to establish fixed hospitals, or leave wounded to the care of inhabitants. (*See SURGERY; WAGON.*)

AMBUSCADE. A body of men lying in wait to surprise an enemy.

AMICUS CURIÆ. Counsel, or at least *Amici Curiae*, (friends of the court,) are allowed to prisoners in all cases, but no person is permitted to address the court, or interfere in any manner with its proceedings, except the parties themselves. (*Hough's Law Authorities.*)

AMMUNITION—is a term which comprehends gunpowder, and all the various projectiles and pyrotechnical compositions and stores used in the service.

Any commissioned officer convicted at a general court-martial of having sold without a proper order, embezzled, misapplied or, through neglect, suffered provisions, forage, army clothing, am-

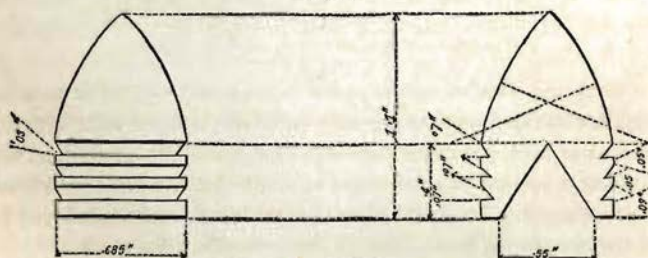
munition, or other military stores belonging to the United States to be spoiled or damaged, shall at his own expense make good the loss or damage, and shall forfeit his pay and be dismissed from the service; (*Art. 36.*) Any non-commissioned officer or soldier who shall be convicted at a regimental court-martial of having sold, or designedly, or through neglect, wasted ammunition delivered to him, shall be punished at the discretion of such court; (*Art 37.*)

The quantity of ammunition with troops is usually fixed at two hundred rounds for each piece of ordnance. These supplies are transported in caissons, and an army should be followed, in all cases, by a second supply at least equal to the first. The ammunition which cannot be carried in the caissons attached to pieces will be kept in boxes in reserve.

Additional supplies of ordnance stores are placed in convenient depots, according to circumstances.

Ammunition for Small Arms.—This supply consists of one hundred rounds to each man: forty rounds in cartridge box, and sixty in reserve. Percussion caps should exceed by one-half the number of cartridges. Cuts 5 and 6 represent the bullets of new arms.

FIG. 5.

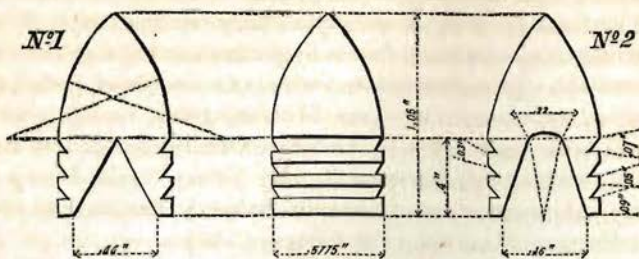


BULLET FOR ALTERED MUSKET.

Weight of ball, 730 grains; weight of powder, 70 grains.

To use the new cartridge carrying the powder and elongated ball attached to each other, tear the fold and pour out the powder; then seize the ball end firmly between the thumb and forefinger of the right hand, and strike the cylinder of the cartridge a smart blow across the muzzle of the piece; this breaks the cartridge and exposes the bottom of the ball; a slight pressure of the thumb and forefinger forces the ball into the bore clear of all cartridge paper. In striking the cartridge, the cylinder should be held square across, or at right angles to the muzzle; otherwise, a blow given in an oblique direction would only bend the cartridge without rupturing it.

FIG. 6.



BULLETS FOR NEW RIFLE-MUSKET AND PISTOL-CARBINE.

Weight of No. 1, 500 grains. Weight of No. 2, 450 grains.
 Weight of powder, 60 grains. Weight of powder, 40 grains.
 No. 1, section of musket bullet. No. 2, section of pistol-carbine bullet.
 Both bullets have the same exterior.

Ammunition for a siege train of one hundred pieces, consisting of the following :

| | | | | | |
|--|---|---|----|---|----|
| Guns..... | { | 24-pounder about one-third the whole number..... | 82 | | |
| | | 18-pounder, one-tenth the whole number..... | 10 | | |
| | | 12-pounder, “ “ “ | 10 | | |
| Howitzers.—8-inch siege, one-eighth | “ | “ | 13 | | |
| Mortars... { | { | 10-inch siege, one-seventh | “ | “ | 14 |
| | | 8-inch siege, one-fourteenth | “ | “ | 7 |
| Stone Mortars, one-seventh | “ | “ | 14 | | |
| Cochorn Mortars (in addition to the 100 pieces)..... | | | 6 | | |
| Wall Pieces, for the attack of one front..... | | | 40 | | |

The 18 and 24-pounders should be furnished with one thousand rounds each, the 12-pounders with twelve hundred rounds, the 8-inch howitzers and mortars with six hundred rounds. In addition to the above, fifty rounds of spherical-case shot should be furnished to each gun. Powder magazines, containing from fifty to one hundred thousand pounds of powder, must be accessible.

Cartridges for siege and garrison service are usually one-fourth the weight of the shot; but the charge varies according to circumstances from one-third the weight of the shot (for a breaching battery) to one-sixth of that weight for firing double shot, or hot shot, and still less for ricochet firing. The charges for mortars and howitzers vary according to the required range. For columbiads and sea-coast howitzers, the cartridge should always occupy the whole length of the chamber; for this purpose, in firing with reduced charges a cartridge *block* is placed in the bag over the powder. For mortars, cartridge bags may be made in the same manner as for guns, but the charge is usually poured loose into the chamber. Charges vary for mortar shells from 11 lbs. to 4

oz. according to the size of the mortar, and whether the intention be to fill the shell, to burst it, or simply to blow out the fuse. For *hot shot*, cartridge bags are made double by putting one bag free from holes within another. (*For full details concerning ammunition, including its preparation, &c.*, consult *ORDNANCE MANUAL*, 1850; consult also *Experiments with small arms by Ordnance Officers*, 1856. See *ARMS*; *CANISTER*; *CARTRIDGE*; *FRICTION TUBES*; *FUZE*; *GRAPE SHOT*; *GUN POWDER*; *ORDNANCE AND ORDNANCE STORES*; *RIFLED ORDNANCE*; *SABOT*; *SHELLS*; *SOLID SHOT*; *SPHERICAL-CASE*.)

AMNESTY. An act of oblivion, or forgiveness of past offences.

ANGLE OF DEFENCE—is that formed by the meeting of the flank and line of defence, or the face of the bastion produced.

ANGLE OF THE POLYGON—is that formed by the meeting of two of the sides of the polygon; it is likewise called the polygon angle.

APOLOGY—when made and accepted, debars the officer who accepts from bringing forward the matter as a substantive accusation, (*Hough.*)

APPEAL. Any officer or soldier who may think himself wronged by his colonel or the commanding officer of his regiment, and after due application to him, is refused redress, may appeal to the next higher commander, who is to examine into said complaint, and take proper measures for redressing the wrong complained of, and transmit, as soon as possible, to the Department of War, a true statement of such complaint, with the proceedings had thereon; (*Art. 34.*) If any inferior officer or soldier shall think himself wronged by his captain, or other officer, he is to complain thereof to the commanding officer of the regiment, who is required to summon a regimental court-martial for doing justice to the complainant; from which regimental court-martial, either party may, if he thinks himself still aggrieved, appeal to a general court-martial. But if, upon a second hearing, the appeal shall appear vexatious and groundless, the person so appealing shall be punished at the discretion of the said court-martial; (*Art. 35.*) (*See REMEDY.*)

The wrongs here alluded to, have reference chiefly to matters of accounts between the captain, or commander of the company, and the soldier, relating to clothing and other supplies, as well as to pay; and the regimental court, in examining into such transactions, may be considered more as a court of inquiry than a court-martial; or, it may be viewed as an arbitration board, called on to adjust and settle differences arising in the settlements of accounts between the captain and his men. One reason why a power of appeal is declared to be a

matter of absolute right to inferior officers, or soldiers, complaining of being wronged by their officers, doubtless is, that a regimental or garrison court-martial has not the power of inflicting any punishment on commissioned officers. It can do no more than express its opinion that the complaint is just, or the contrary, and where it is practicable and proper, relieve the sufferer as to any existing grievance; but, the injury complained of, however flagrant, must still have remained unredressed, as far as punishment is concerned, if an appeal to a general court-martial had not been declared to be a matter of right to the party aggrieved.

APPOINTING POWER, &c. It has been contended by advocates of executive discretion, that army appointments are embraced in the power granted to the President in the 2d section of the Constitution, to nominate, and, by and with the advice and consent of the Senate, appoint "all other officers of the United States, whose appointments are not herein otherwise provided for, and which may be established by law. But the Congress may, by law, vest the appointment of such inferior officers as they think proper in the President alone, in the courts of law, or in the heads of departments." If due regard, however, be paid to the words, "*whose appointments are not herein otherwise provided for,*" the pretension set up in favor of Executive power, will receive no support from the terms of the Constitution. The powers granted to Congress to *raise* and support armies, and to make all *rules* for the *government* and *regulation* of the land and naval forces, are necessarily so comprehensive in character, as to embrace all means which Congress, according to circumstances, may deem proper and necessary in order to raise armies, or to govern them when raised. Rules of appointment to office, rules of promotion—another form of appointment—and all rules whatever in relation to the land and naval forces, save the appointment of the commander-in-chief of those united forces, who is designated by the Constitution, are hence within the competency of Congress.

It is true that this great power vested in Congress has been exercised by them, in most cases, by giving to the President a large discretion in appointments and other matters connected with the army. But the principle itself—that supreme command is vested in Congress—has been often asserted in our military legislation. Contemporaneously with the foundation of the government laws have been passed, giving to general and other officers the right of appointment to certain offices; in other cases, the President has been confined in his selection to classes designated by law; again, rules have been made by Congress for the promotion of officers, and in 1846 an army of volunteers was raised

by Congress, the officers of which Congress directed should be appointed, according to the laws of the States in which the troops were raised, excepting the general officers, who were to be appointed by the President and Senate—a clear recognition that the troops thus raised were United States troops, and not militia. (*See CONGRESS; PROMOTION; VOLUNTEERS.*)

APPOINTMENT—is Office, Rank, Employment, Equipment.

APPROACHES—are the first, second, and third parallels, trenches, saps, mines, &c., by which the besiegers approach a fortified place.

APPROPRIATIONS—for the support of armies, are limited by the Constitution to a term not to exceed two years. The President is authorized to transfer appropriations for subsistence, forage, the medical and quartermaster's department, from one branch of military expenditure to any other of the above-mentioned branches; (*Act May 1, 1820.*) (*See TRANSFERS.*)

APRON. A piece of sheet lead used to cover the vent of a cannon.

APPUI, POINT D'. A term applied to any given point upon which a line of troops is formed.

ARDENT SPIRITS. The introduction of ardent spirits into Indian Territory, under any pretence, prohibited; (*Act July 9, 1832.*) The President of the United States may take such measures as he may deem expedient to prevent or restrain the vending or distributing of spirituous liquors among Indians. Goods of traders introducing it forfeited; (*Acts March 30, 1802, and May 6, 1832.*)

ARM. Infantry, artillery, and cavalry, are arms of the service.

ARMISTICE, *Armistitium*, i. e. *sistere ab armis*. A temporary truce, or suspension of hostilities.

ARMORER. The person who makes, cleans, or repairs arms.

ARMORY. A manufactory or place of deposit for arms. (*See ARSENAL; ORDNANCE DEPARTMENT.*)

ARMS, SMALL. Casting away arms and ammunition punishable with death or otherwise according to the sentence of a general court-martial; (*Art. 52.*) Officers, non-commissioned officers, and soldiers should be instructed and practised in the nomenclature of the arms, the manner of dismounting and mounting them, and the precautions and care required for their preservation. Each soldier should have a screw-driver and a wiper, and each squad of ten a wire and a tumbler punch, and a spring vice. No other implements should be used in taking arms apart or in setting them up. In the inspection of arms, officers

should attend to the qualities essential to service, rather than a bright polish on the exterior of the arms. The arms should be inspected in the quarters at least once a month, with the barrel and lock separated from the stock.

PRINCIPAL DIMENSIONS, WEIGHTS, ETC., OF SMALL ARMS.

| Dimensions. | | Rifle muskets. | | | Rifles. | | Pistol carbine. |
|-----------------------------------|---------------------------------|----------------|---------|---------|---------|---------|-----------------|
| | | 1822. | 1840. | 1855. | 1841. | 1855. | 1855. |
| | | Inches. | Inches. | Inches. | Inches. | Inches. | Inches. |
| Barrel. | Diameter of bore..... | .69 | .69 | .58 | .58 | .58 | .58 |
| | Variation allowed, more..... | .015 | .015 | .0025 | .0025 | .0025 | .0025 |
| | Diameter at muzzle..... | .82 | 8.85 | .78 | .90 | .90 | .82 |
| | Diam'r at breech between flats. | 1.25 | 1.25 | 1.14 | 1.15 | 1.14 | 1. |
| | Length without breech screw. | 42. | 42. | 40. | 33. | 33. | 12. |
| Bayonet. | Length of blade..... | 16. | 18. | 18. | 21.7 | 21.7 | ..... |
| Ramrod. | Length..... | 41.96 | 41.70 | 39.60 | 33. | 33. | 12. |
| Arm complete. | Length without bayonet..... | 57.64 | 57.80 | 55.85 | 48.8 | 49.3 | 17.6 |
| | With bayonet fixed..... | 73.64 | 75.80 | 73.85 | 71.3 | 71.8 | ..... |
| | With butt-piece..... | | | | | | 28.2 |
| Grooves. | Number..... | 3 | 3 | 3 | 3 | 3 | 3 |
| | Twist..... | 6. | 6. | 6. | 6. | 6. | 4. |
| | Width..... | .36 | .36 | .30 | .30 | .30 | .30 |
| | Depth at muzzle..... | .005 | .005 | .005 | .005 | .005 | .005 |
| | Depth at breech..... | .015 | .015 | .015 | .013 | .013 | .008 |
| WEIGHTS. | | Lbs. | Lbs. | Lbs. | Lbs. | Lbs. | Lbs. |
| Barrel, without breech screw..... | | 4. | 4.19 | 4.28 | 4.8 | 4.8 | 1.4 |
| Lock, with side screws..... | | * 95 | .95 | .81 | .55 | .81 | .6 |
| Bayonet..... | | .73 | .64 | .72 | 3.05 | 3.05 | ..... |
| Arm complete. | Without bayonet..... | 9.06 | 9.51 | 9.18 | 9.68 | 9.93 | 3.56 |
| | With bayonet..... | 9.82 | 10.15 | 9.90 | 12.72 | 12.98 | ..... |
| | With butt-piece..... | | | | | | 5.09 |

HEIGHTS OF HAUSSE, ETC.

Table of approximate heights for rear sights of new arms, measured from the line of metal of the barrel. Pieces fired from the shoulder and rest.

| Distance. | New Rifle musket. | Rifle musket (altered). | Remarks. |
|-----------|---|---|--|
| | Weight of ball, 500 grains. Weight of powder, 60 grains. | Weight of ball, 780 grains. Weight of powder, 70 grains. | |
| Yards. | Inches. | Inches. | |
| 100 | .40 | .42 | The top of the front sight is seen "fine" through the notch of the rear sight. |
| 200 | .54 | .62 | |
| 300 | .70 | .82 | |
| 400 | .88 | 1.08 | |
| 500 | 1.10 | 1.34 | |
| 600 | 1.35 | 1.65 | |
| 700 | 1.63 | 1.96 | |
| 800 | 1.94 | 2.28 | |
| 900 | 2.28 | 2.61 | |
| 1000 | 2.63 | 2.94 | |

* Maynard primer.

PENETRATIONS.

Table of penetrations in a target made of seasoned white pine plank one inch thick, and placed one and a half inches apart.

| Arm. | Weight of ball. | Weight of powder. | Diameter of bullet. | Planks penetrated. | Distance. |
|-----------------------|-----------------|-------------------|---------------------|--------------------|-----------|
| | Grains. | Grains. | Inch. | Number. | Yards. |
| Altered rifle..... | 500 | 60 | .5775 | 9½ | 200 |
| Altered musket..... | 730 | 70 | .685 | 10½ | 200 |
| New rifle-musket..... | 500 | 60 | .5775 | 11 | 200 |
| Pistol-carbine..... | 450 | 40* | .5775 | 5½ | 200 |
| Altered rifle..... | 500 | 60 | .5775 | 5½ | 600 |
| Altered musket..... | 730 | 70 | .685 | 6½ | 600 |
| New rifle-musket..... | 500 | 60 | .5775 | 6½ | 600 |
| Pistol-carbine..... | 450 | 40 | .5775 | 3 | 500 |
| Altered musket..... | 730 | 70 | .685 | 3½ | 1000 |
| Altered rifle..... | 500 | 60 | .5775 | 3 | 1000 |
| New rifle-musket..... | 500 | 60 | .5775 | 3½ | 1000 |

At 1,000 yards, a bullet from the new rifle-musket passed completely through the frame of the target, which was made of solid white pine, three inches thick.

The elongated musket bullets do not cease to ricochet on level ground, at the distance of 1,000 yards. A strong wind blowing perpendicularly to the direction of the rifle-musket bullet, will deflect it from its course 12 feet in 1,000 yards, about 3 feet in 500 yards, and about ½ foot in 200 yards. The effect of wind on the pistol-carbine bullets is somewhat greater, for the same distance. When two oblong bullets are fired from the new rifle-musket, or altered rifle, with the ordinary service charge of 60 grains, they separate from each other and from the plane of fire about 4 feet in a distance of 200 yards. If the piece be held firmly against the shoulder, no serious inconvenience will be felt in firing this increased charge; the only precaution necessary to be observed in aiming, is to give the barrel greater elevation than for the single bullet, in the proportion of 6 feet for 200 yards. In cases of emergency, firing with two bullets might be effectively employed against masses of infantry and cavalry, if the distance does not exceed 300 yards. Muzzle-loading small arms can be discharged two or three times in a minute, and breech-loading arms about ten times. Rapidity of loading and discharging fire-arms is however of doubtful advantage in actual service, as soldiers are apt to discharge their pieces without proper aim, and thus waste ammunition.

Nomenclature descriptive of the Rifle Musket.

MODEL OF 1855.

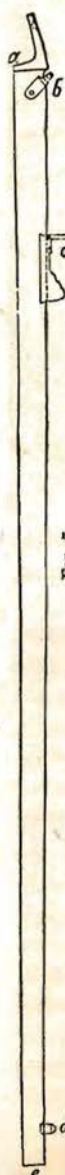


FIG. 7.

Fig. 7. Barrel, one-seventh size. a, breech; b, cone-seat; c, rear-sight; d, front-sight and bayonet stud; e, muzzle.

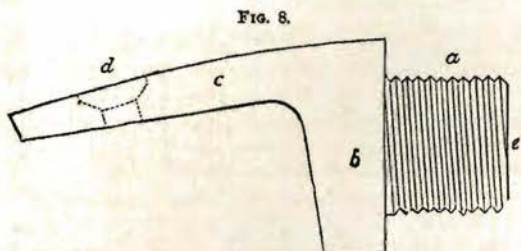


FIG. 8.

Fig. 8. Breech-screw, full size. a, plug with threads; b, tenon; c, tang; d, tang-screw hole; e, face.



FIG. 9.



FIG. 9'.

Fig. 9. Cone, full size. a, nipple; b, square; c, shoulder; d, screw-thread; e, vent.

Fig. 9'. Cone-seat screw, full size. a, stem; b, head; c, slit; d, thread.

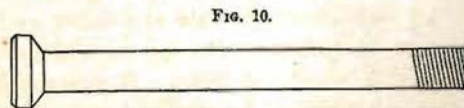


FIG. 10.

Fig. 10. Tang-screw, full size.

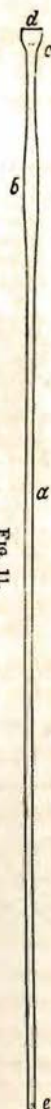


FIG. 11.

Fig. 11. Ramrod, one-seventh size. a, stem; b, swell; c, head; d, cup; e, screw.

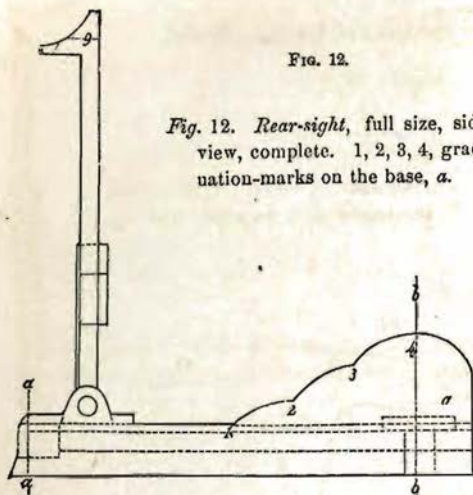


FIG. 12.

Fig. 12. Rear-sight, full size, side view, complete. 1, 2, 3, 4, graduation-marks on the base, a.

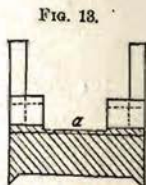


FIG. 13.

Fig. 13. Section through a, a, full size.



FIG. 14.

Fig. 14. Section through b, b, full size.

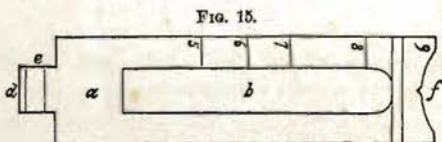


FIG. 15.

Fig. 15. Leaf, full size. a, frame; b, slot; d, tongue; e, joint-pin hole; f, sight-notch; 5, 6, 7, 8, 9, graduation-marks.

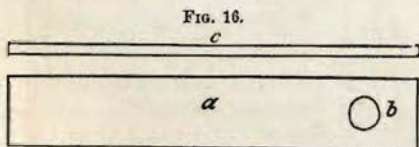


FIG. 16.

Fig. 16. Leaf-spring, full size. a, blade; b, screw-hole; c, thickness.

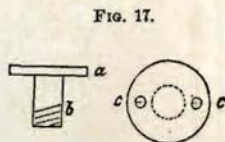


FIG. 17.

Fig. 17. Leaf-spring screw, full size. a, head; b, stem; c, c, holes for screw-driver.

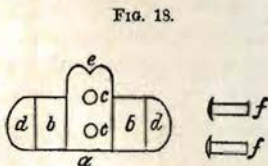


FIG. 18.

Fig. 18. Slide, full size. a, back-piece; b, b, grooves; c, c, rivet-holes; d, d, handles; e, sight-notch; f, f, rivets.

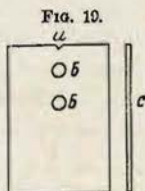


FIG. 19.

Fig. 19. Slide-spring, full size. a, sight-notch; b, b, rivet-holes; c, thickness.



FIG. 20.

Fig. 20. Joint-pin, full size.

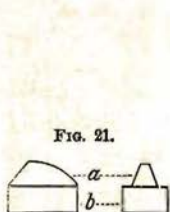


FIG. 21.

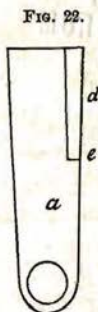


FIG. 22.

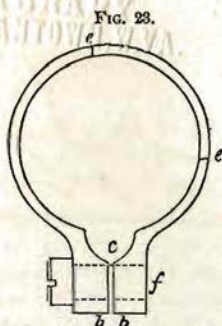


FIG. 23.

FIG. 24.

Fig. 21. Front-sight and bayonet-stud, full size. *a*, sight; *b*, stud.
 Figs. 22, 23. Bayonet-clasp, full size. *a*, body; *b*, *b*, stud; *c*, bridge;
d, groove; *e*, *e*, stops; *f*, screw.

Fig. 24. Bayonet, quarter size. *a*, blade; *b*, neck; *c*, socket; *d*,
 bridge; *e*, stud mortise; *f*, clasp.

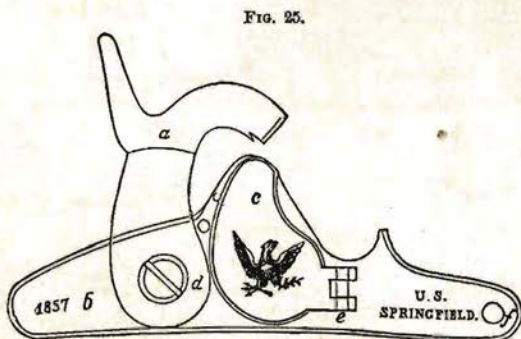


FIG. 25.

Fig. 25. Lock, outside view, half size. *a*, hammer; *b*, lock-plate;
c, magazine-cover; *d*, tumbler-screw; *e*, joint-pin; *f*, side-
 screw hole.

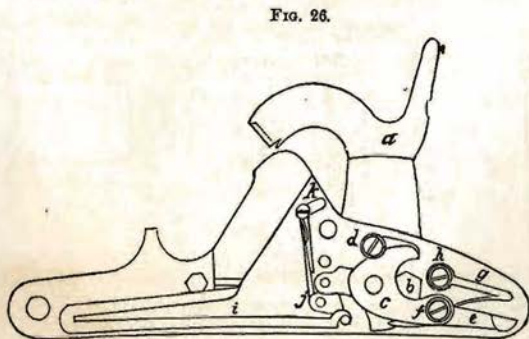


FIG. 26.

Fig. 26. Lock, inside
 view, half size, show-
 ing the parts with the
 hammer at half cock.
a, hammer; *b*, tum-
 bler; *c*, bridle; *d*, bri-
 dle-screw; *e*, sear; *f*,
 sear-screw; *g*, sear-
 spring; *h*, sear-spring
 screw; *i*, mainspring;
j, swivel; *k*, cover-
 catch.

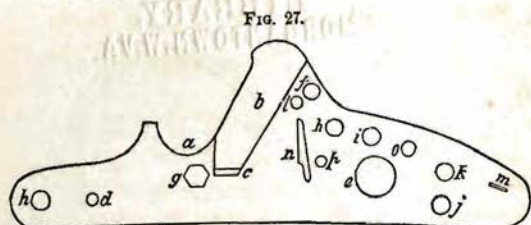


Fig. 27. Lock-plate, half size, showing the position of the holes, &c. *a*, cone-seat notch; *b*, bolster; *c*, mainspring notch; *d*, hole for mainspring pivot; *e*, hole for arbor of tumbler; *f*, hole for cover-catch; *g*, hole for cover hinge stud; *h*, *h*, side-screw holes; *i*, hole for bridle-screw; *j*, hole for sear-screw; *k*, hole for sear-spring; *l*, hole for catch-spring screw; *m*, sear-spring stud-mortise; *n*, feed-finger slot; *o*, bridle pivot hole; *p*, feed-finger-spring-screw hole.

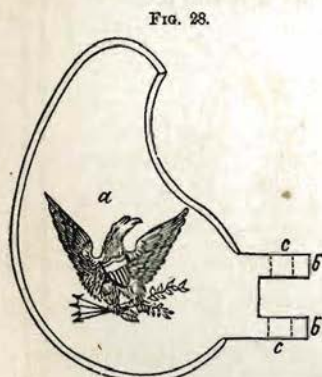


Fig. 28. Magazine-cover, full size. *a*, body; *b*, *b*, jaws; *c*, *c*, holes for joint-pin.

Fig. 29. Cover-hinge stud, full size, two views. *a*, head; *b*, joint-pin hole; *c*, stem.

Fig. 30. Cover-catch and screw, full size, two views. *a*, head; *b*, notch; *c*, *c*, foot; *d*, screw-hole; *e*, catch-screw.

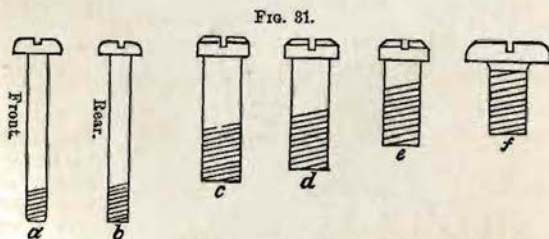


Fig. 31. Lock-screws, full size, and side-screws, half size. *a*, *b*, side-screws; *c*, sear-screw; *d*, bridle-screw; *e*, sear-spring screw; *f*, tumbler-screw.

NOTE.—In all the screws, the parts are the stem, the head, the slit, the thread.

FIG. 32.

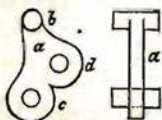


Fig. 32. *Mainspring-swivel*, full size. *a*, *a*, body; *b*, axis; *c*, tumbler-pin hole; *d*, finger-pivot hole.

FIG. 33.

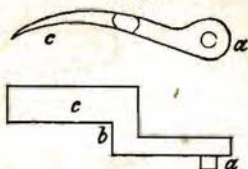


Fig. 33. *Feed-finger*, full size, two views. *a*, *a*, eye-pivot; *b*, crook; *c*, *c*, finger.

FIG. 34.



Fig. 34. *Feed-finger spring*, full size. *a*, eye; *b*, long branch; *c*, short branch; *d*, screw.

FIG. 35.

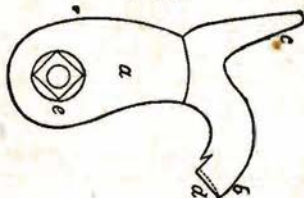


Fig. 35. *Hammer*, half size. *a*, body; *b*, head; *c*, comb; *d*, countersink, slit, and knife-edge; *e*, tumbler-hole.

FIG. 36.

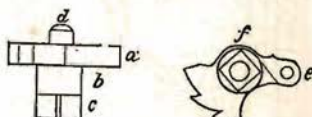


Fig. 36. *Tumbler*, half size, two views. *a*, body; *b*, arbor; *c*, squares; *d*, pivot; *e*, swivel-arm and pin-hole; *f*, tumbler-screw hole.

FIG. 37.

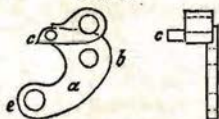


Fig. 37. *Bridle*, half size, two views. *a*, body; *b*, eye for tumbler-pivot; *c*, pivot; *d*, hole for bridle-screw; *e*, hole for sear-screw.

FIG. 38.

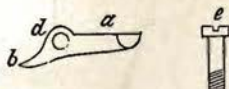


Fig. 38. *Sear*, half size, two views. *a*, body; *b*, nose; *c*, arm; *d*, screw-hole; *e*, screw.

FIG. 39.

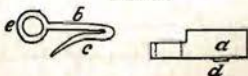


Fig. 39. *Sear-spring*, half size, two views. *a*, blade; *b*, upper branch; *c*, lower branch; *d*, stud; *e*, screw-hole.



FIG. 41.

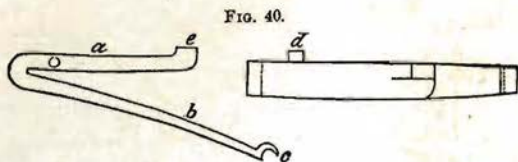


FIG. 40.

Fig. 40. Mainspring, half size, two views. *a*, upper branch; *b*, lower branch; *c*, hook; *d*, pivot; *e*, tang.

Fig. 41. Stock, one-ninth size. *a*, butt; *b*, handle; *c*, head; *d*, bed for lock; *e*, shoulder for lower band; *f*, bed for band-spring; *g*, shoulder for middle band; *h*, bed for band-spring; *i*, shoulder for upper band; *j*, bed for band-spring; *k*, shoulder and tenon for tip.

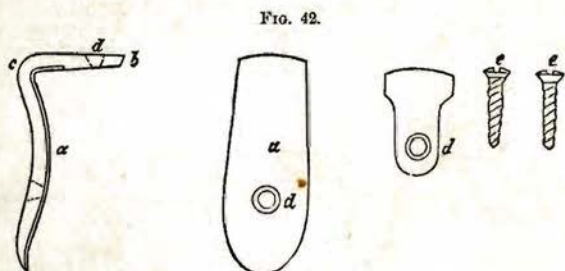


FIG. 42.

Fig. 42. Butt-plate and screws, quarter size, three views. *a*, body; *b*, toe; *c*, heel; *d*, *d*, screw-holes; *e*, *e*, screws.



FIG. 43.

Fig. 43. Tip, full size, two views. *a*, recess for stock; *b*, groove for ramrod; *c*, rivet-hole; *d*, rivet.

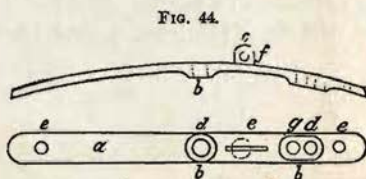


FIG. 44.

Fig. 44. Guard-plate, quarter size. *a*, body; *b*, *b*, bolsters; *c*, *c*, trigger-stud and mortise; *d*, *d*, holes for guard-bow; *e*, *e*, for wood screws; *f*, for trigger-screw; *g*, for tang-screw.

FIG. 45.

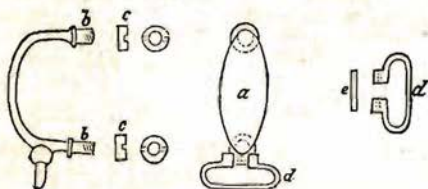


FIG. 46.

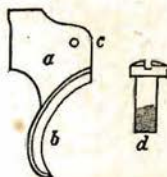


FIG. 48.



Fig. 45. *Guard-bow*, quarter size, two views. *a*, body; *b, b*, stems; *c, c*, nuts; *d, d*, swivel; *e*, rivet.

Fig. 46. *Trigger*, half size. *a*, blade; *b*, finger-piece; *c*, hole for screw; *d*, screw, full size.

Fig. 48. *Guard-screws*, half size.

FIG. 49.

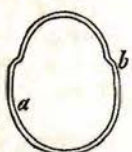


FIG. 50.

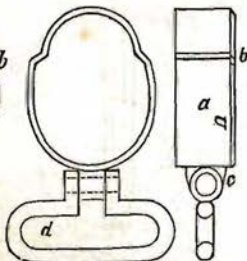


FIG. 51.

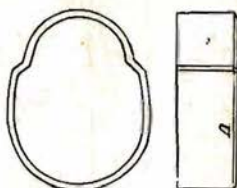


Fig. 49. *Upper band*, half size.

Fig. 50. *Middle band*, half size.

Fig. 51. *Lower band*, half size. *a*, body; *b, b*, creases; *U* denotes the upper edge; *c*, swivel-stud (on middle band only); *d*, swivel.

FIG. 52.

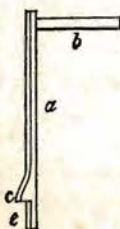
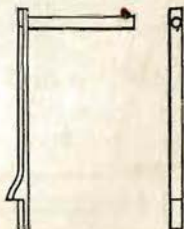


FIG. 53.



FIG. 54.



Figs. 52, 53, 54. *Upper, middle, and lower band-springs*, half size. *a*, stem; *b*, wire; *c*, shoulder; *e*, tang.

FIG. 55.



FIG. 56.

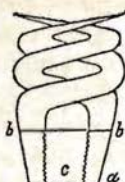


FIG. 57.

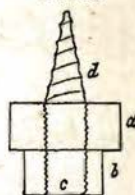


Fig. 55. Side-screw washer, full size. *a*, countersink; *b*, hole for screw.

Fig. 56. Wiper, full size. *a*, body; *b*, *b*, prongs; *c*, screw-hole for rod.

Fig. 57. Ball-screw, full size. *a*, body; *b*, tang; *c*, screw-hole for rod; *d*, screw to draw the ball.

FIG. 58.

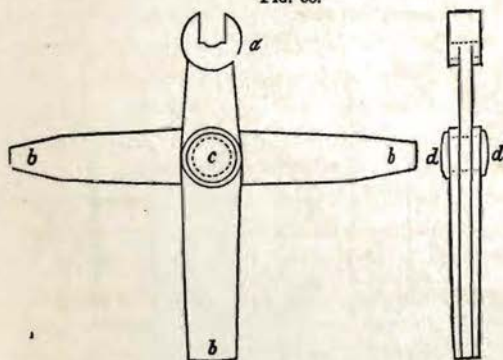


Fig. 58. Screw-driver, half size, two views. *a*, cone-wrench; *b*, *b*, blades; *c*, rivet; *d*, *d*, collets for rivet.

FIG. 59.

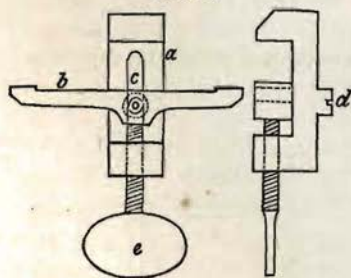


FIG. 60.

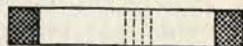


Fig. 59. Spring-vice, half size, two views. *a*, bolster; *b*, slide; *c*, slide-mortise; *d*, slide screw; *e*, thumb-screw.

Fig. 60. Upper side of slide.

Fig. 61. Tompion, half size. *a*, head; *b*, body; *c*, rivet; *d*, leather washer; *e*, slot.

Fig. 62. Cone, (spare,) see Fig. 9.

FIG. 61.

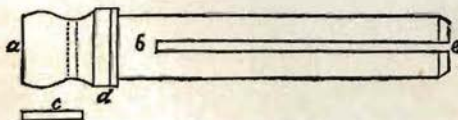


FIG. 62.

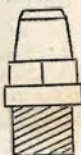
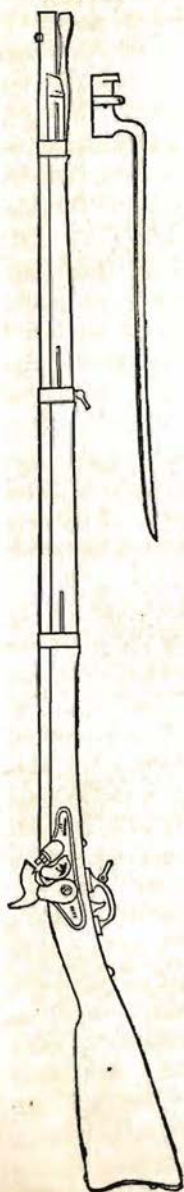


FIG. 63.

Rifle Musket and Appendages, Model 1855.



Wiper.



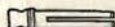
Ball-screw.



Screw-driver.



Spring-vice.



Tompion.



Spare cone.



Tumbler and Wire Punch.

MATERIALS OF WHICH THE PARTS ARE MADE.

Steel.

Tumbler; Lock-swivel, Feed-finger; Finger-spring; Cover-catch; Sear; Sear-spring; Main-spring; Band-springs; Ramrod; Rear-sight (except the screw); Screw-driver; Wiper; Ball-screw; Cone; Tumbler, and Wire Punch.

Brass.

Tip for Stock; head of Tompion.

Wood.

Stock; Tompion.

Iron.

Socket of the Bayonet, and all other parts not enumerated.

RULES FOR DISMOUNTING THE RIFLE MUSKET, MODEL OF 1855.—1st. Unfix the bayonet (24). 2d. Put the tompon (60) into the muzzle of the barrel. 3d. Draw the ramrod (11). 4th. Turn out the tang-screw (10). 5th. Take off the lock (25): to do this, first put the hammer at half-cock, then unscrew partially the side-screws (31, *a*, *b*), and, with a slight tap on the head of each screw with a wooden instrument, loosen the lock from its bed in the stock; then turn out the side-screws, and remove the lock with the left hand. 6th. Remove the side-screws (31, *a*, *b*), taking care not to disturb the washers (55). 7th. Take off the upper band (49). 8th. Take off the middle band (50). 9th. Take off the lower band (51). (*Note*.—The letter U, on bands, is to indicate the upper side in assembling.) 10th. Take out the barrel (7): in doing this, turn the musket horizontally, with the barrel downward, holding the barrel loosely with the left hand below the rear sight (12), the right hand grasping the stock by the handle; and if it does not leave the stock, tap the tompon in the muzzle gently against the ground or floor, which will loosen the breech end from the stock. This is preferable to lifting the barrel out by the muzzle, because if the tang of the breech-screw (8) should bind in the wood, the head of the stock (41 *c*) would be liable to be split by raising the muzzle first.

The foregoing parts of the rifle musket are all that should usually be taken off or dismantled. The soldier should never dismantle the *band-springs, guard, side-screw washers, butt-plate, rear-sight, cone, and cone-seat screw*, except when an officer considers it necessary. The breech-screw should be taken out only by an armorer, and *never* in ordinary cleaning. The lock should not be taken apart, nor the bayonet-clasp taken off, except when absolutely necessary in the opinion of an officer. *If proper and regular care be taken of the arm, this will be very seldom necessary.* The musket being thus taken to pieces, the soldier, under ordinary circumstances, will—

To clean the barrel—1st. Stop the hole in the cone (9, *e*) with a peg of soft wood; pour a gill of water (warm, if it can be had) into the muzzle; let it stand a short time, to soften the deposit of the powder; put a plug of soft wood into the muzzle, and shake the water up and down the barrel well; pour this out and repeat the washing until the water runs clear; take out the peg from the cone, and stand the barrel, muzzle downwards, to drain, for a few moments. 2d. Screw the wiper (56, *c*) on to the end of the ramrod (11, *e*) and put a piece of *dry cloth*, or *tow*, round it, sufficient to prevent it from chafing the grooves of the barrel; wipe the barrel quite dry, changing or drying the cloth two or three times. 3d. Put no oil into the vent (9, *e*),

as it will clog the passage, and cause the first primer to miss fire; but, with a slightly oiled rag on the wiper, rub the bore of the barrel, and the face of the breech-screw (8, e), and immediately insert the tompon (61) into the muzzle. 4th. To clean the exterior of the barrel, lay it flat on a bench, or board, to avoid bending it. The practice of supporting the barrel at each end and rubbing it with a strap or buff-stick, or with the ramrod, or any other instrument, *to burnish it*, is pernicious, and should be strictly forbidden. 5th. After firing, the barrel should always be washed as soon as practicable; when the water comes off clear, wipe the barrel dry, and pass into it a rag moistened with oil. Fine *flour of emery*-cloth is the best article to clean the exterior of the barrel.

To clean the lock.—Wipe every part with a moist rag, and then a dry one; if any part of the interior shows rust, put a drop of oil on the point or end of a piece of soft wood dipped into flour of emery; rub out the rust clean and wipe the surface dry; then rub every part with a slightly oiled rag.

To clean the mountings.—For the mountings, and all iron and steel parts, use fine flour of emery moistened with oil, or flour of emery-cloth. For brass, use rotten-stone moistened with vinegar, or water, and avoid oil or grease. Use a hard brush, or a piece of soft pine, cedar, or crocus-cloth. Remove dirt from the screw-holes by screwing a piece of soft wood into them. Wipe clean with a linen rag, and leave the parts slightly oiled. In cleaning the arms, the aim should be to *preserve the qualities essential to service*, rather than to obtain a bright polish. *Burnishing* the barrel (or other parts) should be strictly avoided, as it tends to crook the barrel, and also to destroy the uniformity of the exterior finish of the arm.

It is not essential for the musket to be dismounted every time that it is cleaned; for, after firing in fine weather, or when dampness could not get between the barrel and the stock, it can be perfectly cleaned as follows: Put a piece of rag or soft leather on the top of the cone, and let the hammer down upon it; pour a gill of water into the muzzle carefully, so that it cannot run down the outside; put a plug of wood into the muzzle, and shake the gun up and down, changing the water repeatedly until it runs clear. Then withdraw the leather, and stand the musket on the muzzle a few moments; then wipe out the barrel (as told in the second rule for cleaning), and also wipe the exterior of the lock and the outside of the barrel around the cone and cone-seat, first with a damp rag, and then with a dry one, and lastly with a rag that has been slightly oiled. In this way, all dirt from

firing may be removed without taking out a screw. If, however, the hammer works stiffly, or grates upon the tumbler, the lock must immediately be taken off, and the parts cleaned and touched with oil.

To re-assemble the musket.—The parts of the musket are put together in the inverse order of taking them apart, viz. : 1st. The barrel. Drop the barrel into its place in the stock, and squeeze it down with the hand ; give the butt of the stock a gentle tap against the floor to settle the breech end of the barrel against the head of the stock (41, c). 2d. Put on the lower band with the letter U upward, being careful not to mar the stock, or barrel, in sliding it into its place ; apply the thumb to the band-spring to see that it plays freely. 3d. Put on the middle, and, 4th. The upper band, in the same manner. 5th. The lock. Half-cock the hammer ; take the lock in the right hand, with the main spring and sear toward you, holding the stock with the left hand by the swell, with the butt between the knees. Enter the lock fairly into the lock-bed, taking care to keep the arm of the sear clear of the trigger ; press the plate well down into the wood, and then turn the musket over, holding the lock and stock together with the left hand. 6th. With the right hand, turn in the side-screws, after having touched their screw-threads with oil. Observe that the point of the rear-screw is *flat*, and should not project beyond the plate, to interfere with the hammer. The front screw has a round point. 7th. Turn in the tang-screw, after having oiled the screw-thread. Be careful to see that each of these screws are turned firmly home, *but not forced*. Observe that the lock plays freely, without friction, and that no limb is bound by the wood. 8th. Return the ramrod. 9th. Refix the bayonet, after having oiled the clasp and socket to prevent chafing. 10th. Replace the tompon. *Oil the stock* well with sperm or linseed oil ; let it stand a few hours, and then rub it with a woollen rag until the wood is perfectly dry. Repeat this from time to time, and it will produce a polish which moisture will not affect. Linseed oil is the best for this purpose, and it should be used while the arm is dismounted.

Rules for the more complete dismounting of the rifle-musket, when cleaned by an armorer.—1st. The parts which should be dismounted by an experienced armorer will be given in their regular order following No. 10, viz. : 11th. Unscrew the cone, keeping the wrench well down on the square of the cone, to prevent the corners from being injured. 12th. Take out the cone-seat screw (9'). 13th. Take out the upper, middle, and lower band-springs (52, 53, 54), using a wire punch of proper size. 14th. Take out the guard-screws (48). *Note.*—The guard, butt-plate, and side-screw heads have concave slits, for

which the screw-driver is adapted: this lessens the danger of the stock being marred by accident or carelessness in letting the screw-driver slip out, while in the act of turning the screw: great care should be used to prevent such injuries. 15th. Take out the guard, and be careful not to injure the wood at each end of the guard-plate (44). 16th. Take out the side-screw washers (55) with a drift-punch. 17th. Take out the butt-plate screws (42) with the largest blade of the screw-driver, and remove the butt-plate (42). 18th. Remove the rear sight (12), by turning out the leaf-spring screw (17), which will release the sight from the barrel. 19th. Turn out the breech-screw (7), by means of a "breech-screw wrench" suited to the tenon (*b*) of the breech-screw (8). No other wrench should ever be used for this purpose, and the barrel should be held in clamps fitting neatly the breech (7, *a*).

In re-assembling the parts, the armorer is to observe the inverse order of taking them apart, viz.: 1st. Breech-screw to be screwed into the barrel after being oiled; 2d. Rear-sight to be affixed; 3d. Butt-plate and screws; 4th. Side-screw washers; 5th. Guard; 6th. Guard-screws; 7th. Lower, middle, and upper-band springs; 8th. Cone-seat screw; 9th. Cone. The remaining parts follow as given for the soldier, commencing with the barrel (see page 42).

Order in which the Lock is taken apart.—1st. Cock the piece, and put the spring-vice (59) on the mainspring; give the thumb-screw a turn sufficient to liberate the spring from the swivel (32) and mainspring notch (27, *c*). Remove the spring; 2d. The sear-spring screw: Before turning this screw entirely out, strike the elbow of the spring with the screw-driver, so as to disengage the pivot from its mortise: then remove the screw and spring; 3d. The sear-screw and sear; 4th. The bridle-screw and bridle; 5th. The tumbler-screw; 6th. The tumbler. This is driven out with a punch inserted in the screw-hole, which at the same time liberates the hammer. 7th. Detach the mainspring swivel from the tumbler with a drift punch. 8th. Take out the feed-finger and spring. The magazine-cover should never be taken off except when absolutely necessary; 9th. The catch-spring and screw. The lock is re-assembled in the inverse order of taking apart, viz.: 1st. The catch-spring; 2d. The feed-finger and spring; 3d. Mainspring swivel; 4th. Tumbler and hammer; 5th. Tumbler-screw; 6th. Bridle and screw; 7th. Sear and screw; 8th. Sear-spring and screw; 9th. Mainspring.

Before replacing the screws, oil them slightly with good sperm-oil, putting a drop on the point of the screw; also on the arbor and pivot of the tumbler; between the movable branches of the springs, and the

lock-plate; on the hook and notches of the tumbler. After the lock is put together, avoid turning the screws in so hard as to make the limbs bind: to insure this, try the motion of each limb before and after its spring is mounted, and see that it moves without friction. When a lock has, from any cause, become gummed with oil and dirt, it may be cleaned by being boiled in soapsuds, or in pearlash or soda water, to loosen the thick oil; but heat should never be applied to any part of it in any other way. As rust and dirt are produced by exploding caps or primers, although no charge be fired, the parts of the barrel and cone exposed should be carefully wiped and oiled after such exercise. Besides the precautions in dismounting, remounting, and cleaning, which have been pointed out in the foregoing pages, habitual care in handling arms is necessary to keep them in good and serviceable condition. In *ordering arms* on parade, let the butt be brought gently to the ground, especially on pavements or hard roads. This will save the mechanism of the lock from shocks, highly injurious to it, from the loosening of screws and splitting the wood-work.

Rifled arms should not have the *ramrod sprung* in the bore with unnecessary force. It batters the head of the rod and wears injuriously the grooves. The soldier should let the rod slide down gently, supported by the thumb and finger; and the inspecting officer can satisfy himself of the condition of the bottom of the bore by gently tapping with the rod. The face of the breech can be polished, after washing, by means of a cork fixed on the wiper or ball-screw; the polished surface can be seen if the muzzle is turned to the light.

In *stacking arms*, care should be taken not to injure the bayonets by forcibly straining the edges against each other. The stack can be as well secured without such force being used. No cutting, marking, or scraping, in any way, the wood or iron should be allowed; and no part of the gun should be touched with a file. Take every possible care to prevent water from getting in between the lock, or barrel, and stock. If any should get there, dismount the gun as soon as possible, clean and oil the parts as directed, and see that they are perfectly dry before re-assembling them.

To place a coil of primers in the magazine.—Let down the hammer; open the magazine, by pulling back the head of the cover-catch with the thumb-nail of the left hand, while the thumb-nail of the right hand is pushed under the cover at the bottom. Remove the covering paper from the coil of primers; separate any parts that may happen to stick together; unwind about one inch; place the coil in the magazine, and the free end of it in the groove, flat-side towards the cone,

and one primer beyond the end of the feed-finger; close the magazine. Should an exploded primer fail to ignite the charge, there must be moisture, or some obstruction, in the vent; or the gun may be improperly loaded. After a night in a damp place, a drop of moisture sometimes collects in the vent, and, unless removed, prevents the first primer, or cap, from igniting the charge. If, by accident, a coil of primers becomes softened by dampness, it can be made good again by a short exposure to a dry warm atmosphere. Should the cocking of the hammer fail to feed out properly the primer, open the magazine and notice, while working the hammer, the cause of the difficulty. It can generally be readily corrected.

RIFLE-MUSKET (1842).—This arm differs from the original model in the following particulars: 1st. The bore is grooved. 2d. It has a *rear sight* similar to that for the new musket, and a *front sight* of iron attached to the upper strap of the upper band. To prevent the band from moving sideways, a short stud is attached to the under side of the strap, which fits into a groove in the barrel. 3d. The head of the ramrod is reamed out to fit the pointed end of the ball. 4th. The lock is altered to the Maynard principle, differing from the one described for the new rifle-musket of 1855, by its size, the absence of the swivel, and the facts, that the mainspring is fastened by a screw, and the finger spring by a pin. 5th. To adapt the cone seat to this modified lock, a portion of the breech of the barrel is cut off, and a new breech piece with cone seat attached, is screwed on in its place. *Breech piece*: body, shoulder, screw thread, chamber (conical), tang, tenon, tang screw hole, chamfer, notch for side screw, cone seat, vent, vent screw, vent screw thread, cone thread.

RIFLE-MUSKET (1822).—The bayonet of this arm has no clasp, or ramrod spring; in all other respects the nomenclature is the same as that of the rifle-musket (1842).

PERCUSSION-RIFLE (1841).—The bore of this arm is reamed up and re-rifled; it also has a rear sight similar to the rifle-musket of 1855, and a stud and guide attached for a sword bayonet.

RIFLE (1855).—The exterior size of the barrel is nearly the same as that of the model of 1841. The barrel has a stud and guide for attaching a sword bayonet. The breech and cone seat are finished like the same parts of the new rifle-musket. *Lock*: Identical with that of the new rifle-musket. *Rear sight*: Similar to that of the new rifle-musket. *Mountings*: Similar to those of the new rifle-musket, with the addition of a catch box, smaller than the one on the rifle of 1841. *Ramrod*: Similar to the new rifle-musket. *Sword bayonet*: Blade—

shoulder, back, edge, bevel, point, curvature, groove, *tang* riveting, rivet hole, rivet. *Hill*: *Gripe*—ridges, back, beak, slot for stud, slot for guide, hole for finger piece, hole for spring screw, hole for rivet (*tang*), mortice for *tang*: *Finger piece*—head, notch. *Finger piece spring*—blade, screw hole, boss: *Guard*—long and short branch, knobs, muzzle socket. *Scabbard*: Black leather, with brass band and tip.

Materials. *Steel*.—Tumbler, lock swivel, feeding finger, cover catch, sear, all the springs, ramrod, blade of sword bayonet, finger piece, rear sight, except screw, cone, screw driver, ball screw and wiper. *Brass*.—Sword bayonet handle, front sight, and all the mountings. *Wood*.—Stock (black walnut). *Iron*.—All the remaining parts.

PISTOL-CARBINE (1855).—*Barrel*: Muzzle, front sight, breech, breech pin threads, flats, bevels and oval, cone seat, vent, vent screw, bore, grooves, lands. This barrel tapers with a straight line from breech to muzzle. The portion of the flat in rear of the cone seat is parallel to the axis of the bore. *Breech screw*: Plug, with threads (16 to the inch), tenon, shoulders, *tang*, *tang* screw hole, bevel sight mortice. *Cone*: Same as for musket. *Rear sight*: Base, ears, joint screw, screw hole, 1st, 2d, and 3d leaves, 4 sight notches, eye joint, screw holes. *Tang screw*: Shoulder. *Lock*: Same as for rifle-musket, 1855, except in size, which is reduced to conform to a magazine capable of holding one-half a strip of primers. *Mountings*: *Band*, *swivel*, and *spring*, correspond to the middle band, swivel, and spring of the new musket. *Guard plate*: *Butt cup*—screw hole, *tang*. *Butt strap*—holes for catch spring and hook, *tang*, strap, and guard plate screws, shoulders for breech screw *tang*, and butt cup *tang*, reinforces for hook, and catch spring. *Cup screw*—head, eye. *Swivel ring*. The remaining mountings are similar to the corresponding parts of the new rifle-musket. *Ramrod*: Head (riveted on), cup, foot with a female screw. *Ramrod swivel*: Two side bars, screw, cross bar, riveted into the side bars. *Stock*: Butt, handle, curve, facings, reinforce, chase; *shoulders* for band and tip, *grooves* for barrel and ramrod; *beds* for *tang* and tenon, lock, washers, guard plate, nuts for guard bow and trigger stud, butt plate, band spring, tip, butt cup and strap, butt piece cap, and catch spring, hook nut; *mortices* for trigger, hook, and catch spring; *holes* for rod, tip rivet, band spring, side screws, *tang* screw, cup screw, strap screw, butt plate screws, and cap screws. *Butt piece*: *Plate*—two wood screws; *cap*, hollow, upper and lower *tang*, screw holes, two wood screws, cavity for pistol handle, hook, stem, nut; *spring catch*, screw, head, blade; *finger piece*, loop for spring, screw thread, rivet and nut.

Materials. *Steel.*—Cone, tumbler, lock swivel, finger, sear, lock springs, band springs, ramrod, except the head, rear sight except screw, spring catch, screw driver, wiper and ball screw. *Brass.*—Butt plate, butt cup, cup, guard plate and bow, band, and tip. *Wood.*—Stock and butt piece. *Iron.*—Head of ramrod, and remaining parts (Consult *ORDNANCE MANUAL*; *ALLIN'S MANAGEMENT OF RIFLE-MUSKET, &c.*; *SMALL ARMS, 1856.*)

ARMY. In its widest signification, Army is the military force of the state. It is the active and paid portion of the militia. It is an assemblage of agents and instruments proper and necessary to carry on war abroad, or suppress insurrection and repel invasion at home. The **MILITARY ART** organizes and combines its elements, and gives force and activity to armies.

In the United States, Congress raises, supports, governs, and regulates armies. **RAISING** is the prescribed means of organizing and collecting; **SUPPORTING** is the system of administration; **GOVERNMENT** consists in the creation of a hierarchy, with rules for rewarding and punishing; and **REGULATION** embraces the precise determination of methodical rights and duties, including the systems of tactics to be practised. Different armies are designated as follows: Standing or Regular Army; Army in the field; Army of Observation; Army of Invasion; Army of Occupation; Besieging Army; Covering Army; Offensive Army; Defensive Army; Army of the East; Army of Mexico; Army of Reserve, &c. The military art divides Armies into different **ARMS**; upon the theatre of war, it assembles an army in one or in many camps or cantonments; it links the army to a **BASE** by means of a **LINE OF OPERATIONS**; during the course of its movements, the army rests upon fortresses or entrenched camps; marches in combined columns, or columns in mass; for battle, it is distributed into Army Corps, Divisions, Brigades, and Battalions, and upon the day of action it is assembled between an advanced and rearguard, and flanking parties. The advance guard clears away the front, and secures all defiles; the rearguard watches over the safety of communications, and the flanking parties secure the flanks. The military art ranges an army according to circumstances; it determines the calibre of the ordnance, and the manner of using it. Laws and lawful orders are the basis of the daily duties of troops. Orders of the day direct movements; breaking up camps; maintain discipline; and provide for, and watch over, the distribution of supplies.

ARMY OF THE UNITED STATES—(ORGANIZATION OF THE).

| | Major-general. | Brigadier-generals. | Adjutant-general. | Assistant Adj. Gen. (Lieut. Col.) | Asst. Adjts. Gen., (Majors bvt.) | Asst. Adjts. Gen., (Captains bvt.) | Judge-advocate. | Inspector-general. | Quartermaster-general. | Assist. Quartermasters-general. | Dep. Quartermasters-general. | Quartermasters. | Assistant Quartermasters. | Com. General of Subsistence. | Asst. Com. Gen. of Subsistence. | Commissaries of Sub., (Majors.) | Commissaries of Sub., (Captains.) | Surgeon-general. | Surgeons. | Assistant Surgeons. | Paymaster-general. | Deputy Paymasters-general. | Paymasters. | Colonels. |
|---|----------------|---------------------|-------------------|-----------------------------------|----------------------------------|------------------------------------|-----------------|--------------------|------------------------|---------------------------------|------------------------------|-----------------|---------------------------|------------------------------|---------------------------------|---------------------------------|-----------------------------------|------------------|-----------|---------------------|--------------------|----------------------------|-------------|-----------|
| General Officers..... | 1 | 3 | | | | | | | | | | | | | | | | | | | | | | |
| Aids-de-camp to General Officers..... | | | | | | | | | | | | | | | | | | | | | | | | |
| Adjutant-general's Department..... | | | 1 | 1 | 4 | 8 | | | | | | | | | | | | | | | | | | |
| Judge-advocate's Department..... | | | | | | 1 | | | | | | | | | | | | | | | | | | |
| Inspector-general's Department..... | | | | | | | 2 | | | | | | | | | | | | | | | | | |
| Quartermaster's Department..... | | | | | | | | 1 | 2 | 2 | 4 | 28 | | | | | | | | | | | | |
| Subsistence Department..... | | | | | | | | | | | | | 1 | 1 | 2 | 8 | | | | | | | | |
| Medical Department..... | | | | | | | | | | | | | | | | | 1 | 26 | 50 | | | | | |
| Pay Department..... | | | | | | | | | | | | | | | | | | | | 1 | 2 | 25 | | |
| Corps of Engineers..... | | | | | | | | | | | | | | | | | | | | | | | | 1 |
| Corps of Topographical Engineers..... | | | | | | | | | | | | | | | | | | | | | | | | 1 |
| Ordnance Department..... | | | | | | | | | | | | | | | | | | | | | | | | 1 |
| Two Regiments of Dragoons..... | | | | | | | | | | | | | | | | | | | | | | | | 2 |
| Two Regiments of Cavalry..... | | | | | | | | | | | | | | | | | | | | | | | | 2 |
| Regiment of Mounted Riflemen..... | | | | | | | | | | | | | | | | | | | | | | | | 1 |
| Four Regiments of Artillery..... | | | | | | | | | | | | | | | | | | | | | | | | 4 |
| Ten Regiments of Infantry..... | | | | | | | | | | | | | | | | | | | | | | | | 10 |
| Non-commissioned Staff unattached to Regiments..... | | | | | | | | | | | | | | | | | | | | | | | | |
| Grand aggregate..... | 1 | 8 | 1 | 1 | 4 | 8 | 1 | 2 | 1 | 2 | 2 | 4 | 28 | 1 | 1 | 2 | 8 | 1 | 26 | 50 | 1 | 2 | 25 | 22 |

(a) One of the eight Assistant Adjutants-general (captains by brevet), four of the twenty-eight Assistant Quartermasters, and one of the eight Commissaries of Subsistence (captains), belonging also to regiments, and being included in their strength, are, to avoid counting them twice, excluded, as *Staff* officers, from the columns, "total commissioned," and "aggregate," of their respective Departments. The Regimental and Staff commissions, held by these officers, are of *unequal* grades; and hence they are not affected by the provisions of the 7th section of the act of June 18, 1846. The like remark is applicable to the *Judge-advocate* of the army, who is, at the same time, a Captain in the Ordnance Department.

| | Major-general. | Brigadier-generals. | Adjutant-general. | Assistant Adj. Gen. (Lieut. Col.) | Asst. Adjts. Gen. (Majors bvt.) | Asst. Adjts. Gen. (Captains bvt.) | Judge-advocate. | Inspector-general. | Quartermaster-general. | Assist. Quartermasters-general. | Dep. Quartermasters-general. | Quartermasters. | Assistant Quartermasters. | Com. General of Subsistence. | Asst. Com. Gen. of Subsistence. | Commissaries of Sub. (Majors.) | Commissaries of Sub. (Captains.) | Surgeon-general. | Surgeons. | Assistant Surgeons. | Paymaster-general. | Deputy Paymasters-general. | Paymasters. | Colonels. |
|---|----------------|---------------------|-------------------|-----------------------------------|---------------------------------|-----------------------------------|-----------------|--------------------|------------------------|---------------------------------|------------------------------|-----------------|---------------------------|------------------------------|---------------------------------|--------------------------------|----------------------------------|------------------|-----------|---------------------|--------------------|----------------------------|-------------|-----------|
| General Officers..... | 1 | 3 | | | | | | | | | | | | | | | | | | | | | | |
| Aids-de-camp to General Officers..... | | | | | | | | | | | | | | | | | | | | | | | | |
| Adjutant-general's Department..... | | 1 | 1 | 4 | | | | | | | | | | | | | | | | | | | | |
| Judge-advocate's Department..... | | | | | | 1 | | | | | | | | | | | | | | | | | | |
| Inspector-general's Department..... | | | | | | | 2 | | | | | | | | | | | | | | | | | |
| Quartermaster's Department..... | | | 1 | 2 | 2 | 4 | 23 | | | | | | | | | | | | | | | | | |
| Subsistence Department..... | | | | | 1 | 1 | 2 | 8 | | | | | | | | | | | | | | | | |
| Medical Department..... | | | | | | | | | | | | | 1 | 26 | 50 | | | | | | | 1 | 2 | 25 |
| Pay Department..... | | | | | | | | | | | | | | | | | | | | | | 1 | 2 | 25 |
| Corps of Engineers..... | | | | | | | | | | | | | | | | | | | | | | | | 1 |
| Corps of Topographical Engineers..... | | | | | | | | | | | | | | | | | | | | | | | | 1 |
| Ordnance Department..... | | | | | | | | | | | | | | | | | | | | | | | | 1 |
| Two Regiments of Dragoons..... | | | | | | | | | | | | | | | | | | | | | | | | 2 |
| Two Regiments of Cavalry..... | | | | | | | | | | | | | | | | | | | | | | | | 2 |
| Regiment of Mounted Riflemen..... | | | | | | | | | | | | | | | | | | | | | | | | 1 |
| Four Regiments of Artillery..... | | | | | | | | | | | | | | | | | | | | | | | | 4 |
| Ten Regiments of Infantry..... | | | | | | | | | | | | | | | | | | | | | | | | 10 |
| Non-commissioned Staff unattached to Regiments..... | | | | | | | | | | | | | | | | | | | | | | | | |
| Grand aggregate..... | 1 | 3 | 1 | 1 | 4 | 1 | 2 | 1 | 2 | 2 | 4 | 23 | 1 | 1 | 2 | 8 | 1 | 26 | 50 | 1 | 2 | 25 | 22 | |

(a) One of the eight Assistant Adjutants-general (captains by brevet), four of the twenty-eight Assistant Quartermasters, and one of the eight Commissaries of Subsistence (captains), belonging also to regiments, and being included in their strength, are to avoid counting them twice, excluded, as Staff officers, from the columns, "total commissioned," and "aggregate," of their respective Departments. The Regimental and Staff commissions, held by these officers, are of unequal grades; and hence they are not affected by the provisions of the 7th section of the act of June 18, 1846. The like remark is applicable to the Judge-advocate of the army, who is, at the same time, a Captain in the Ordnance Department.

| Lieutenant Colonels. | Majors. | Captains. | Aids-de-camp. | Adjutants. | Regimental Quartermasters. | First Lieutenants. | Second Lieutenants. | Brevet Second Lieutenants. | Military Storekeepers. | Sergeant Majors. | Quartermaster Sergeants. | Principal or Chief Musicians. | Chief Buglers. | Ordnance Sergeants. | Hospital Stewards. | Sergeants. | Corporals. | Buglers. | Musicians. | Farrriers and Blacksmiths. | Artificers. | Privates. | Enlisted men of Ordnance. | Total commissioned. | Total enlisted. | Aggregate. |
|----------------------|---------|-----------|---------------|------------|----------------------------|--------------------|---------------------|----------------------------|------------------------|------------------|--------------------------|-------------------------------|----------------|---------------------|--------------------|------------|------------|----------|------------|----------------------------|-------------|-----------|---------------------------|---------------------|-----------------|------------|
| | | | | | | | | | | | | | | | | | | | | | | | 4 | | | 4 |
| | | | 5 | | | | | | | | | | | | | | | | | | | | 13 | | | 13 |
| | | | | | | | | | | | | | | | | | | | | | | | 2 | | | 2 |
| | | | | | | | | | | | | | | | | | | | | | | | 40 | | | 40 |
| | | | | | | | | | | | | | | | | | | | | | | | 11 | | | 11 |
| | | | | | | | | | | | | | | | | | | | | | | | 107 | 65 | | 175 |
| | | | | | | | | | | | | | | | | | | | | | | | 28 | | | 28 |
| | 2 | 4 | 13 | | | 12 | 11 | 3 | | | | | | | | | 10 | 10 | | 2 | | 78 | 46 | 100 | 146 | |
| | 1 | 4 | 17 | | | 10 | 8 | 3 | | | | | | | | | | | | | | | 89 | | | 89 |
| | 1 | 4 | 17 | | | 12 | 1 | 8 | 15 | | | | | | | | | | | | | 400 | 54 | 400 | 454 | |
| | 2 | 4 | 20 | | 2 | 2 | 20 | 20 | 4 | | 2 | 2 | 2 | 4 | | | 80 | 80 | 40 | | 20 | 1,600 | 74 | 1,230 | 1,304 | |
| | 2 | 4 | 20 | | 2 | 2 | 20 | 20 | 4 | | 2 | 2 | 2 | 4 | | | 80 | 80 | 40 | | 20 | 1,000 | 74 | 1,230 | 1,304 | |
| | 1 | 2 | 10 | | 1 | 1 | 10 | 10 | 1 | | 1 | 1 | 1 | 2 | | | 40 | 40 | 20 | | 20 | 640 | 36 | 765 | 801 | |
| | 4 | 8 | 48 | | 4 | 4 | 96 | 48 | 5 | | 4 | 4 | | | | | 192 | 192 | | 96 | 96 | 2,148 | 213 | 2,732 | 2,945 | |
| | 10 | 20 | 100 | | 10 | 10 | 100 | 100 | 4 | | 10 | 10 | 20 | | | | 400 | 400 | | 200 | | 4,200 | 844 | 5,240 | 5,584 | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 23 | 50 | 245 | 5 | 19 | 280 | 213 | 27 | 22 | 19 | 19 | 25 | 10 | 73 | 68 | 802 | 802 | 100 | 298 | 60 | 96 | 9,066 | 400 | 1,085 | 11,888 | 12,923 |

(b) By the act of March 3, 1853, section 9, a Lieutenant of Engineers, Topographical Engineers, and Ordnance, having served "fourteen years' continuous service as Lieutenant," is entitled to promotion to the rank of Captain; but such promotion is not to increase the whole number of Officers, in either of said corps, beyond the number previously fixed by law.

(c) The five Aids-de-camp, being taken from regiments, in the strength of which they are included, are, to avoid counting them twice, excluded, as Staff officers, from the columns, "total commissioned," and "aggregate."

(d) The Adjutants of Artillery and Infantry (14), and all the Regimental Quartermasters (19),

| ORGANIZATION OF REGIMENTS AND COMPANIES. | Colonel. | Lieutenant-colonel. | Majors. | Adjutant. | Regimental Quartermaster. | Captains. | First Lieutenants. | Second Lieutenants. | Serjeant-major. | Quartermaster Serjeant. | Principal or Chief Musician. | Chief Buglers. | Sergeants. | Corporals. | Buglers. | Musicians. | Farriers and Blacksmiths. | Artificers. | Privates. | Total commissioned. | Total enlisted. | Aggregate. | | |
|--|----------|---------------------|---------|-----------|---------------------------|-----------|--------------------|---------------------|-----------------|-------------------------|------------------------------|----------------|------------|------------|----------|------------|---------------------------|-------------|-----------|---------------------|-------------------|-------------------|-------------------|-------------------|
| | | | | | | | | | | | | | | | | | | | | | Minimum strength. | Maximum strength. | Minimum strength. | Maximum strength. |
| Regiment of Dragoons and Cavalry..... | 1 | 1 | 2 | 1 | 1 | 10 | 10 | 10 | 1 | 1 | 1 | 2 | 40 | 40 | 20 | .. | 10 | .. | 500 | 35 | 615 | 855 | 650 | 890 |
| Company of Dragoons and Cavalry..... | .. | .. | .. | .. | .. | 1 | 1 | 1 | .. | .. | .. | .. | 4 | 4 | 2 | .. | 1 | .. | 50 | 8 | 61 | 85 | 64 | 88 |
| Regiment of Mounted Riflemen..... | 1 | 1 | 2 | 1 | 1 | 10 | 10 | 10 | 1 | 1 | 1 | 2 | 40 | 40 | 20 | .. | 20 | .. | 640 | 35 | 765 | 865 | 800 | 900 |
| Company of Mounted Riflemen..... | .. | .. | .. | .. | .. | 1 | 1 | 1 | .. | .. | .. | .. | 4 | 4 | 2 | .. | 2 | .. | 64 | 8 | 76 | 86 | 79 | 89 |
| Regiment of Artillery. | 1 | 1 | 2 | 1 | 1 | 12 | 24 | 12 | 1 | 1 | 1 | .. | 48 | 48 | .. | 24 | .. | 24 | 526* | 52 | 672* | 1,034 | 724 | 1,056 |
| Company of Light Artillery..... | .. | .. | .. | .. | .. | 1 | 2 | 1 | .. | .. | .. | .. | 4 | 4 | .. | 2 | .. | 2 | 64 | 4 | 76 | 86 | 80 | 90 |
| Company of Artillery..... | .. | .. | .. | .. | .. | 1 | 2 | 1 | .. | .. | .. | .. | 4 | 4 | .. | 2 | .. | 2 | 42 | 4 | 54 | 86 | 88 | 90 |
| Regiment of Infantry. | 1 | 1 | 2 | 1 | 1 | 10 | 10 | 10 | 1 | 1 | 2 | .. | 40 | 40 | .. | 20 | .. | .. | 420 | 34 | 524 | 844 | 558 | 878 |
| Company of Infantry..... | .. | .. | .. | .. | .. | 1 | 1 | 1 | .. | .. | .. | .. | 4 | 4 | .. | 2 | .. | .. | 42 | 8 | 52 | 84 | 55 | 87 |

* The regiment being understood to consist of *one* Light and *eleven* Heavy companies.

being taken from the Subalterns, and accounted for in their several regiments as belonging to Companies, are excluded, as regimental *Staff* officers, from the columns "total commissioned," and "aggregate."

(e) Under the 4th section of the act of April 29, 1812, "making further provision for the Corps of Engineers," one Brevet Second Lieutenant is allowed to every "company." The number authorized is, consequently, *one hundred and ninety-nine*. The number, now attached to the Army, is *twenty-seven*.

(f) By the act of April 5, 1832, section 2d, "providing for the organization of the Ordnance Department," the number of Ordnance Sergeants cannot exceed "*one* for each military post." The number, actually in service, is *seventy-three*.

(g) By the act of August 16, 1856, section 2d, "providing for a necessary increase and better organization of the Medical and Hospital Department of the Army," the number of Hospital Stewards cannot exceed "*one* for each military post." The number, actually in service, is *sixty-eight*.

(h) *Two* companies in the 1st and 2d, and *one* in each of the other regiments of artillery, being equipped as Light Artillery, are allowed, in consequence, "*sixty-four*," instead of "*forty-two*" privates per company. See act "to increase the rank and file of the Army," &c., approved June 17, 1850, section 1st.

(i) By the act of June 17, 1850, "to increase the rank and file of the Army," &c., section 2d, the President is authorized, whenever the exigencies of the service require it, to increase to *seventy-four*, the number of privates in any company, "serving at the several military posts on the Western frontier, and at remote and distant stations." In the table, the minimum, or fixed, organization is given, viz.: *fifty* privates to a company of Dragoons, *sixty-four* to a company of Light Artillery and Riflemen, and *forty-two* to the Artillery and Infantry. If *all* the companies belonging to "regiments" (198) were serving at distant stations, the "total enlisted" would be 17,502, and the "aggregate" 18,587.

The organization by corps limits the number of officers in the army, but not their rank; the President, by and with the advice and consent of the Senate, being authorized by law to confer rank by brevet for gallant and meritorious services (*see Brevet*). Four Surgeons and four Assistants have been added to the Medical Department, and one Signal Officer created, with the rank of Major, since the preparation of these tables.

The most glaring deficiency in the military legislation of the United States, is the want of a GENERAL LAW, regulating the organization of all troops that Congress may see fit to raise, so that, upon adding to, or diminishing, the public force in any emergency, it will be only necessary to prescribe what number of men are to be added or taken away. This general law should embrace general officers, staff corps, and departments, engineers, and regiments of cavalry, artillery, and infantry; it should establish rules of promotion and appointment; it should regulate the recruiting service; it should provide for the repression of military crimes and disorders; it should not fail to stimulate the appetite for rewards; it should make just rules concerning captures, which would recognize the rights of captors; it should regulate the indemnification for losses; and it should provide for the organization of a suitable board, which would take advantage of all improvements in the military art and suggest, from time to time, such modifications of the general law as might appear just and proper. In respect to Army Organization, there are two acts of Congress of the general character here suggested. One, an act to regulate the medical establishment, approved March 2, 1799; and the second, an act for the better organizing of the troops of the United States, and for other purposes, approved March 3, 1799. Both of these acts were drawn by Alexander Hamilton, as he explained in a letter to the Secretary of War, "as permanent rules to attach to all provisions of law for the increase or diminution of the public force." Subsequent legislation has, however, without providing any other permanent rule regulating the organization in respect to general officers, staff corps, and departments, &c., according to the increase or diminution of force, almost entirely superseded the provisions of the remarkable acts here referred to. (*See ARTICLES OF WAR.*)

ARMY REGULATIONS—a book so called, published in the name of the President of the United States "for the government of all concerned." The Constitution provides that "Congress shall have power to make rules for the government and *regulation* of the Land and Naval forces." The only acts of Congress in force, authorizing the President to make regulations, better defining the powers and duties of officers, are contained in the 5th section of the act of March 3, 1813, and the 9th section of the act approved April 26, 1816. The first of these acts is an act for the better organization of the general staff of the army, and the second relates (with the exception of the last section, concerning forage and private servants) to the same subject. By the 5th section of the act of 1813, it is provided, "That it shall be the

duty of the Secretary of the War Department, and he is hereby authorized, to prepare general regulations, better defining and prescribing the respective duties and powers of the several officers in the adjutant-general, inspector-general, quartermaster-general, and commissary of ordnance departments, of the topographical engineers, of the aides of generals, and generally of the general and regimental staff; which regulations, when approved by the President of the United States, shall be respected and obeyed, until altered or revoked by the same authority. And the said general regulations, thus prepared and approved, shall be laid before Congress at their next session."

Remarking here, that the regulations to be prepared and approved refer *only* to the powers and duties of the officers of the several staff departments, enumerated in the act, it follows that no other regulations made by the President can derive any force whatever from this act. The 9th section of the act of 1816 therefore only continued this then existing power of the President in providing "That the several officers of the staff shall respectively receive the pay and emoluments, and retain all the privileges, secured to the staff of the Army, by the act of March 3, 1813, and not incompatible with the provisions of this act: and that the regulations in force before the reduction of the Army be recognized, as far as the same shall be found applicable to the service; subject, however, to such alterations as the Secretary of War may adopt, with the approbation of the President." It would seem, therefore, that whatever may be contained in the President's Army regulations of a legislative character concerning officers of the Army, not belonging to staff departments, must, if valid, be a legitimate deduction from some positive law, or depend for its legality upon the exercise of authority delegated to the constitutional commander-in-chief or other military commander, in the rules made by Congress for the government of the Army. Congress has delegated to the President, authority to prescribe the uniform of the Army; authority to establish the ration; and besides the authority given by law to other military commanders, he also has been authorized to relieve, in special cases, an inefficient military commander from duty with any command; to assign any senior to duty with mixed corps, so that the command may fall by law on such senior in rank; to limit the discretion of commanding officers in special cases, in regard to what is needful for the service; and hence also he has been given authority to carve out special commands from general commands, in particular cases; (62d Article of War.) These are all-important functions, but they do not authorize *special cases* to be made general rules, and it is much to be regretted

that the lines of separation between regulations and the orders of the commander-in-chief have not been kept distinct. (*See* COMMAND; CONGRESS; OBEDIENCE; ORDERS. Consult opinions of Attorneys-general, particularly the opinion of Mr. Berrien, July 18, 1839.)

ARREARS OF PAY. The troops shall be paid in such manner that the arrears shall, at no time, exceed two months, unless the circumstances of the case shall render it unavoidable; (*Act* March 16, 1802; *Act* March 3, 1813.) This provision of law has been strangely executed by never paying troops oftener than once in two months, and not unfrequently neglecting to pay them for a much longer time.

ARREST IN ORDER TO TRIAL. Before an officer or soldier, or other person subject to military law, can be brought to trial, he must be charged with some crime or offence against the rules and articles of war, and placed in arrest. The articles of war direct that whenever any officer shall be charged with a crime, he shall be arrested and confined in his barracks, quarters, or tent, and deprived of his sword by the commanding officer. And that "non-commissioned officers and soldiers, charged with crimes, shall be confined until tried by a court-martial, or released by proper authority;" (ARTS. 77, 78.) The arrest of an officer is generally executed through a staff-officer; by an adjutant, if ordered by the commanding officer of a regiment; or by an officer of the general staff, if ordered by a superior officer; and sometimes by the officer with whom the arrest originates. On being placed in arrest, an officer resigns his sword. If this form be sometimes omitted, the custom is invariably observed, of an officer in arrest not wearing a sword. By the custom of the army, it is usual, except in capital cases, to allow an officer in arrest the limits of the garrison or even greater limits, at the discretion of the commanding officer, who regulates his conduct by the dictates of propriety and humanity. A non-commissioned officer or soldier is confined in charge of a guard; but, by the custom of the service, the non-commissioned staff and sergeants may be simply arrested. The articles of war declare, "that no officer or soldier, who shall be put in arrest or imprisonment, shall continue in his confinement more than eight days, or until such time as a court-martial can be conveniently assembled;" (ART. 79.) The latter part of this clause evidently allows a latitude, which is capable of being abused; but, as in a free country there is no wrong without a remedy, an action might be brought against the offender in a civil court, (*See* INJURIES,) if the mode of redress for all officers and soldiers, who conceive themselves injured by their commanding officer, be not sufficient. (ARTS. 34, 35.)

It is declared by the articles of war, that "no officer commanding a guard, or provost-marshal, shall refuse to receive or keep any prisoner committed to his charge, by any officer belonging to the forces of the United States; provided, the officer committing shall, at the same time, deliver an account in writing, signed by himself, of the crime with which the said prisoner is charged;" and it is also declared, that "no officer commanding a guard, or provost-marshal, shall presume to release any prisoner committed to his charge, without proper authority for so doing, nor shall he suffer any person to escape, on the penalty of being punished for it by the sentence of a court-martial. Every officer or provost-marshal, to whose charge prisoners shall be committed, shall, within twenty-four hours after such commitment, or as soon as he shall be relieved from his guard, make report in writing, to the commanding officer, of their names, their crimes, and the names of the officers who committed them, on the penalty of being punished for disobedience, or neglect, at the discretion of a court-martial; (ARTS. 80, 81, 82.) Thus the liberty of the citizen, under military law, so far as is consistent with the ends of justice, seems to be guarded with precautions little inferior to those which secure personal liberty under the civil laws of the state. The penalty of an officer's breaking his arrest, or leaving his confinement before he is set at liberty by his commanding officer, or by a superior officer, is declared to be cashiering by sentence of a general court-martial; (ART. 77.) A court-martial has no control over the nature of the arrest of a prisoner, except as to his personal freedom in court; the court cannot, even to facilitate his defence, interfere to cause a close arrest to be enlarged. The officer in command is alone responsible for the prisoners under his charge. Individuals placed in arrest, may be released, without being brought before a court-martial; by the authority ordering the arrest, or by superior authority. It is not obligatory on the commander to place an officer in arrest, on application to that effect from an officer under his command. He will exercise a sound discretion on the subject. But in all applications for redress of supposed grievances inflicted by a superior, it will be his duty, in case he shall not deem it proper to order an investigation, to give his reasons in writing, for declining to act; these reasons, if not satisfactory, the complaining party may, should he think fit so to do, forward to the next common superior, together with a copy of his application for redress. An officer has no right to demand a court-martial, either on himself, or on others; the general-in-chief or officer competent to order a court, being the judge of its necessity or propriety. Nor has any officer, who may have been placed in arrest, any

right to demand a trial, or to persist in considering himself under arrest, after he shall have been released by proper authority. An officer under arrest will not make a visit of etiquette to the commanding officer, or other superior officer, or call on him, unless sent for; and in case of business, he will make known his object in writing. It is considered indecorous in an officer in arrest to appear at public places.

ARREST BY CIVIL AUTHORITY. By section 21, Act January 11, 1812, no non-commissioned officer, musician, or private, can be arrested on *mesne process*, or taken or charged in execution for any debt contracted before enlistment under twenty dollars, nor for any debt whatever, contracted after enlistment. (*See MESNE PROCESS.*)

ARSENAL. A place of deposit for ordnance and ordnance stores. There are also arsenals of construction and repairs. (*See ORDNANCE.*)

ARTICLES OF WAR. There can be no doubt that the prerogative to command and regulate the whole military force of the kingdom, whether consisting of the feudal tenants, or of the militia, or of paid troops, resided in the Crown of England. Nevertheless the power of the sovereign was restricted by a provision, that he should exercise his military jurisdiction only "according to the laws and usages of the realm." In the reign of Edward VI., however, parliament asserted authority over military matters by passing an act for the government of the army; various offences, as losing, selling, or fraudulently exchanging horses or armor; desertion; detaining the pay of soldiers; and taking rewards for granting them discharges, were put under the jurisdiction of the civil magistrate. It was also provided that the act should be read once a month by every field officer to the soldiers under his command, and once a quarter by the governor or captain of every garrison or fortress. At this period, however, there was no standing army, the feudal system was still in force, every man in the realm was more or less a soldier; military law was accordingly restricted to such persons as were actually serving in the field, the process of civil judicature being obviously inapplicable to their case—but directly the soldier ceased to belong to the force in actual campaign, the civil power stepped in and claimed cognizance of his offences.

Until the Civil War in the reign of Charles I., it is probable that no regular permanent code of rules or articles for enforcing military discipline was in existence; the ruling authority had promulgated its orders for the government and regulation of the army as occasion required. Each war, each expedition, had its own edict, which fell into disuse again upon the disbanding of the army, which inevitably followed the cessa-

tion of hostilities. Several instances, indeed, of rules and ordinances for military government by the ancient kings are still extant; one of Richard I., for the government of those going by sea to the Holy Land, is to be found in Rymer's *Fœdera*. An elaborate code of "statutes, ordonnances, and customs to be observed in the army," made in the 9th year of Richard II., is to be found among the Cottonian MS. in the British Museum—and those of Henry V., Henry VII., and Henry VIII., have not been lost.

The experience of ages and the precedents of former wars, therefore, enabled the authorities to frame a sufficiently comprehensive code in case of need; accordingly, soon after the outbreak of the civil war, the necessities of the case compelled the parliament to enact ordinances or articles of war. The first complete "*Laws and Ordinances of Warre*" (as he called them) were issued by Essex, the commander-in-chief of the parliamentary army in 1642. These articles are remarkable and interesting, as undoubtedly forming the groundwork of those now in use. Two years after the publication of Essex's ordinances, on the marching of the Scottish army into England, soon after the ratification of the solemn league and covenant, "Articles of War" were issued for its government. These articles, although very dissimilar to those of Essex, considering that both were in force in the same kingdom at the same time, and were applicable to armies fighting on the same side, nevertheless treat mainly of the same offences. The form of judicature established, consisted of two courts of justice, called "Councils of War," the one superior, and the other inferior. The superior court, also called the "Court of War," took cognizance of the more serious offences, and likewise heard appeals from the decision of the lower court, called the "Marshal Court." No trace of the constitution of these courts is now to be found except that "the judges were sworn to do justice." Within a few months of the promulgation of the latter, (August, 1644,) the same parliament that was the author of the petition of right, passed an ordinance, establishing a system of martial law, applicable not only to soldiers, but to all persons alike. By this ordinance, the Earl of Essex, captain-general of the parliamentary forces, together with fifty-six others named therein, (among whom were peers, members of the House of Commons, gentry, and officers of the army,) were constituted "commissioners," and any twelve of them authorized to hear and determine all such causes as "belong to military cognizance," according to the articles mentioned in the ordinance, and to proceed to the trial, condemnation, and execution, of all offenders against the said articles, and to inflict upon

them such punishment, either by death or otherwise, *corporally*, as the said commissioners, or the major part of them then present, should judge to appertain to justice, according to the measure of the offence. Under cover of this ordinance, which, after one refusal by the peers, was subsequently renewed, parliament proceeded to issue a variety of orders for the conduct of the war, and the regulation of the army; and many persons were tried by court-martial and executed. After the expiration of this last ordinance, the absolute executive power, in all matters of military law, fell into the hands of Cromwell, who claimed it as his right, in virtue of his office of general-in-chief. "The general," says Whitlocke, "sent his order to several garrisons, to hold courts-martial, for the punishment of soldiers offending against the articles of war; provided that if any be sentenced to lose life or limb, that then they transmit to the judge-advocate the examinations and proceedings of the court-martial, that the *General's* pleasure may be known thereon." On one occasion, deeming it necessary for the sake of discipline, to make an immediate example, Cromwell seized several officers with his own hand, called a court-martial on the field, condemned them to death, and shot one forthwith at the head of his regiment. It will thus be seen, that the administration of martial law was almost invariably in the hands of the most considerable power in the state—it alternated between king and parliament, and between parliament and dictator, as each became uppermost in the realm. On the restoration of Charles II., the army, with the exception of about five thousand men, consisting of General Monk's regiment called "the Coldstream," the first regiment of foot, the royal regiment of Horse Guards, called "the Oxford Blues," and a few other regiments, was disbanded. The force kept on foot was the first permanent military force, or "standing army," known in England; and from it the present army dates its origin.

A statute passed in the reign of Charles II., intituled, "An act for ordering the forces in the several counties of this kingdom," recites that, "within all his majesty's realms and dominions, the sole and supreme power, government, command, and disposition of the militia, and of all forces by sea and land, and of all forts and places of strength is, and by the laws of England ever was, the undoubted right of his majesty, and his royal predecessors, kings and queens of England." With the exception of some slight encroachment on the part of the Crown, and protests on the part of the parliament, matters remained in very much the same state till the revolution, at which period military law assumed a permanent and definite form, as it now exists. The only allusions to the military power of the Crown, in the Bill of

Rights, are, "that the raising and keeping of a standing army in time of peace, *without consent of parliament*, is contrary to law ;" and that "subjects, if Protestants, may have arms for their defence, suitable to their condition, and as allowed by law." In the first year, however, of the reign of William and Mary, British regiments, jealous of the supposed preference shown by William for his Dutch troops, mutinied at Ipswich. The king suppressed the mutiny with a strong hand, at the same time communicating the event to parliament. Parliament, anxious to devise means for the convenient application of a code of laws for the regulation and management of the army, and at the same time determined to place a check upon the exercise of the military power of the king, passed, on the 3d April, 1689, for a period of six months only, the first mutiny act, the preamble of which is as follows :

"Whereas, the raising or keeping a standing army within this kingdom, in time of peace, unless it be with the consent of Parlyament, is against law ; and whereas it is judged necessary, by their majestyes and this present parlyament that, during this time of warr, severall of the forces which are now on foote should be continued and others raised, for the safety of the kingdom, for the common defence of the Protestant religion, and for the reducing of Ireland. And whereas no man can be prejudged of life or limb, or subjected to any kinde of punishment by martiall law, or in any other manner than by the judgment of his peeres, and according to the knowne and established lawes of this realme ; yet, nevertheless, it being requisite for retaining such forces as are or shall be raised during this exigence of affaires in their duty, that an exact discipline be observed ; and that soldiers who shall mutiny or stirr up sedition, or who shall desert their majesty's service, be brought to more exemplary and speedy punishment than the usual formes of law will allow."

The act provides for the assembling and constitution of courts-martial, for the oath of members, for the punishment of desertion, mutiny, sedition, false musters, &c. ; for the regulation of billets ; and is ordered to be read at the head of every regiment, troop, or company, at every muster, "that noe soldier may pretend ignorance." No power is, however, reserved to the sovereign to make articles of war. This act was renewed soon after its expiration ; and with the exception of about three years only, viz., from 10th April, 1698, to 20th February, 1701, has been annually re-enacted (with many alterations and amendments) ever since. The first statutory recognition of articles of war, occurs in the 1st Anne, statute 2, c. 20, in a clause, which saves to her majesty the right of making articles of war, for the regulation of her

forces "beyond the seas in time of war." It is not until the 3d Geo. I, c. 2, that we find the sovereign distinctly empowered by the mutiny act to make articles of war for the government of the troops at home. A clause in that act, after reciting that no effectual provision has been made for the government of his majesty's land forces, empowers the king to make and constitute, under his sign manual, articles for the better government of his majesty's forces, "as well within the kingdoms of Great Britain and Ireland as beyond the seas." This privilege has been annually re-enacted, and annually exercised by the Crown to the present day.

Under the Constitution of the United States, Congress only can make rules of government and regulation for the land forces, and those rules, commonly called *Articles of War*, were originally borrowed jointly from the English mutiny act annually passed by parliament, and their articles of war established by the king. The existing articles for the government of the army of the United States, enacted April 10, 1806, are substantially the same as those originally borrowed July 30, 1775, and enlarged by the old Congress from the same sources, Sept. 20, 1776. The act consists of but three sections. The first declares: "The following shall be the rules and articles by which the *armies* of the United States shall be governed;" and gives one hundred and one articles, all noticed in these pages. Each article is confined, in express terms, to the persons composing the army. The *second* SECTION contains the only exception in the cases as follows: "In time of war, all persons, *not* citizens of, or owing allegiance to, the United States of America, who shall be found lurking, as *spies*, in or about the fortifications or encampments of the armies of the United States, or any of them, shall suffer death, according to the *law and usage of nations*, by sentence of a general court-martial." The third section merely repeals the previous act for governing the army.

The *Articles of War*, therefore, are, and under the Constitution of the United States can be, nothing more than a code for the government and regulation of the army. Or, in other words, within the United States, these articles are "a system of rule superadded to the common law, for regulating the citizen in his character of a soldier;" and applicable to no other citizens. Beyond the United States another code is essential; for, although armies take with them the Rules and Articles of War, and the custom of war in like cases—in a foreign country, the soldier must be tried by some tribunal for offences which at home would be punishable by the ordinary courts of law. It is impossible to subject him to any foreign dominion, and hence, in the absence of

rules made by Congress for the government of the army under such circumstances, the will of the commander of the troops, *ex necessitate rei*, takes the place of law, and the declaration of his will is called **MARTIAL LAW.** (*See* **MARTIAL LAW.**)

The most casual reader of our Articles of War will be struck by the fact, that whereas the mutiny act of Great Britain is annually subjected to the supervision of parliament, and altered or modified according to circumstances, yet the Rules and Articles of War, passed in 1806, have remained upon our statute book from that day to the present without any general revision. Another fact equally important is, that while the king of Great Britain not only *commands*, but *governs* the British army, and therefore modifies the government of the army at his pleasure, the President of the United States is simply the commander of our army, under such rules for raising, supporting, governing, and regulating it, as Congress may appoint. The necessity of attention to the military establishment on the part of Congress is therefore manifest, and it is most earnestly to be hoped that, in their wisdom they will, at some early day, fulfil their constitutional obligations of raising, governing, and regulating armies: 1. By establishing a system of recruiting which will bring into the ranks, soldiers who will make good officers; 2. By providing that all commissioned officers shall be appointed from enlisted soldiers, or from military academies, and making rules precisely regulating the manner in which such appointments shall be made; 3. In making rules for a system of promotion partly by seniority, and partly by merit; 4. In passing other remunerative laws, such as prize money, field allowances, indemnification for losses, &c.; 5. In accurately defining the powers, rights, and duties of all officers and soldiers; 6. In providing remedies for wrongs, including appeals to federal civil courts, to determine the true exposition of military laws in dispute; and 7. In revising the penal code, and better adapting it to a system of government which will provide rewards for good conduct, and not simply punishments for bad.

See **ABANDONING A POST; ABSENCE WITHOUT LEAVE; ABSENCE WITH LEAVE; ABUSES AND DISORDERS; ALARMS; AMMUNITION; APPEAL; ARMS, (CASTING AWAY;) ARREST; BREACH OF ARREST; BREVET; BRIBE AT MUSTER; BOOTY; CASTING AWAY; CERTIFICATES OF MUSTER; CERTIFICATES, (FALSE;) CHALLENGES, (DIFFERENT KINDS;) CHAPLAIN; COMMAND; CONDUCT UNBECOMING AN OFFICER AND A GENTLEMAN; CONFINEMENT; CONNIVING; CONTEMPT; CORPORAL; CORRESPONDENCE, (WITH AN ENEMY;) COURTS-MARTIAL, AND REFERENCES UNDER THAT HEAD; COURTS OF INQUIRY; COWARDICE; CRIMES; CUSTOM OF WAR; DEATH;**

DECEASED; DEPARTMENT; DEPOSITION OF WITNESSES; DETACHMENT; DESERTION; DISCHARGE; DISMISSION; DISOBEDIENCE; DISORDERS; DISRESPECT; DRUNKENNESS; DUELS; EMBEZZLEMENT; ENGINEERS; ENLISTMENTS; ENTICING; EXACTIONS; FALSE; FRAUDS; FRAYS; FURLONGS; GENERAL OFFICERS; GRIEVANCES; HARBORING AN ENEMY; HIRING OF DUTY; INJURING PRIVATE PROPERTY; JUDGE-ADVOCATE; JURISDICTION; LEAVE; LINE; LYING OUT OF CAMP OR QUARTER; MENACING; MILITIA; MISBEHAVIOR; MITIGATION; MONEY; MONTHLY RETURNS; MUSTERS; MUTINY; OATH; OBEDIENCE; OFFENCES NOT SPECIFIED; OFFICERS; ORDERS; PARDON; PAROLE; PILLAGE; POST; PRESIDENT; PRISONER; PROCEEDINGS; PROMULGATION; PROVOST-MARSHAL; QUARRELS; RANK; REDRESSING WRONGS; REENLISTING; REFUSAL TO RECEIVE PRISONERS; RELEASING PRISONERS; RELIEVING AN ENEMY; REPROACHFUL SPEECHES; RETAINERS; RETURNS; SAFEGUARD; SECRETARY OF WAR; SELLING; SENTENCE; SENTINEL; SPIES; STAFF; STATE TROOPS; STORES; STRIPES; STANDING ARMY; SUBSCRIBING; SUSPENSION; SUTLERS; TRIALS; UPBRAIDING; VIOLENCE; WASTE OR SPOIL; WATCHWORD; WITNESS; WORSHIP; WRONGS; and references under the heading of Law, all military laws being rules for the government and regulation of the army, although they may also include other matters. (Consult PIPON'S MANUAL OF MILITARY LAW.)

ARTIFICER. Military workman; two allowed to each company of artillery.

ARTILLERY. The word is more ancient than the use of powder, and was applied to machines of war, and all projectiles that the masters of artillery had under their direction. In foreign armies the word Artillery is still indifferently applied to an arm of the service, the material used, and branch of science. By Artillery in the U. S. army is usually, but not always, meant an arm of the service, designed to use mountain, field, and heavy ordnance, and the knowledge requisite for such use. There are four regiments of Artillery in our army, in each of which the law authorizes two companies to be equipped as harnessed batteries; (See ARMY, for their organization.) The remaining companies are, from supposed necessities of service, usually employed as infantry, but their name, and liability at any time to become artillerists, must cause officers not to neglect such knowledge of their arm as may be derived from books, and the establishment of the school of practice at Fort Monroe cannot fail to have the happiest effects in making skilful artillerists. The instructions for field artillery, and heavy and mountain artillery, are contained in books published by the War Department, one called

"Instruction for Field Artillery, Horse and Foot," and another "Heavy Artillery" being "a complete system of instruction for Siege, Garrison, Sea coast and Mountain Artillery," and a third "Evolutions of Field Artillery," by Major Robert Anderson.

Composition of a field battery on the war establishment.—Four 12-pounders or four six-pounder guns, and two 24-pounders or 12-pounder howitzers. Six pieces mounted to each battery. Carriages including caissons, spare gun-carriages, forges, and battery wagons, accompany each battery, together with implements and equipments specified in the ordnance manual. Draught horses, six to each battery wagon, and 12-pounder gun-carriage, four to other carriages, and one twelfth spare. Harness corresponding to the number of horses to the carriage.

Tactics.—A battery going into line with other troops, is usually formed in column of sections, and deployed into line as the enemy is approached. Under ordinary circumstances the best formation is the column doubled on the centre section, as the deploy is then toward both wings at the same time, and more promptly performed. Unless in extreme cases, the cannoneers should never be mounted on the boxes when the battery is within range of the enemy, as the explosion of a caisson might destroy nearly every cannoneer belonging to a piece. When several batteries are united, they are formed by sections in one or several parallel columns, or in double columns on the centre, or still better, in two columns joined, and presenting a front of four pieces with the same intervals as in line. Sometimes they are formed in close column with a front of four or six pieces, and the batteries being spaced a distance apart equal to the interval between two pieces. When deployed, the distance between the batteries is double this. When horse-artillery and mounted batteries are placed together, the former are placed on the wings, and the distances and intervals of the whole conform to those of horse-artillery; as in manœuvring no regard is paid to inversions, it frequently happens that the batteries change their relative positions, and it is then necessary that each space should be large enough to contain a horse-artillery battery. A close column of several batteries is deployed in the same manner as a column of cavalry; the leading battery moving off at an increased gait, and the others, obliquing to the right or left, gain their intervals and form in line or battery to the front as usual. The changes of front to fire to the right and left are made on the wings in the same manner as with a single battery; but it is better to make these changes on the centre battery. But four of these changes are practicable, viz., two to fire to

the right by throwing the left wing to the front or rear, and two to fire to the left by throwing the right wing to the front or rear. In the other four changes of front, the pivot pieces would be masked by the rest of the carriages, and could not commence their fire soon enough. On this account the pivot carriages, in these changes, should be on the side towards which the fire is to be delivered. In defensive battles, the contour of the ground is of the first importance, and if properly taken advantage of, may be made to double the force and importance of artillery.

Artillery, held in reserve, arriving in mass or deployed upon the field of battle, occupies positions determined by circumstances and localities. Heights and commanding positions should be secured, and those positions, also, from which an oblique fire may be obtained upon the enemy. In a *defensive* position, those points are sought from whence the enemy may be discovered at the greatest distance. Advantage should be taken of all local circumstances to render the artillery fire most effective, and at the same time shelter it from the fire of the enemy. The guns should be placed, if possible, under cover. This is easily effected upon heights, by keeping them so far back that the muzzles only are to be seen over them. Ravines, banks, ditches, &c., also offer facilities for the purpose. The perfection to which the *matériel* of field artillery has been brought, gives it comparatively great mobility of action; but large quantities of ammunition must be consumed to attain any positive result from its employment in battle. The transportation of this ammunition with an army involves serious economical considerations, constituting no small impediment to armies, from the number of horses, wagons, caissons, &c., required for each battery. The improvements made in the *matériel* of artillery will not, therefore, in all probability, cause a more frequent employment of light batteries; but on the contrary, the long range which has been given to the rifle and musket, and the facility with which the horses and gunners of field batteries may be picked off at 1,000 yards, will probably cause even the rifled field gun to become an arm of RESERVE, which brought up at a decisive moment may influence the result of a battle, defend entrenchments against attack, and be usefully employed against isolated field works.

Smooth-bore field pieces, fired at a distance of five or six hundred yards, will penetrate from one yard and a half to two yards in parapets recently constructed, and will traverse walls of ordinary construction; but a 12-pounder is necessary to make a breach in walls of good masonry four feet in thickness, and in this case the position of the battery must be favorable, and the operation is even then a slow one.

Moderate charges are employed in firing upon gates, block-houses, palisades, and in general upon all wooden structures. The heaviest siege pieces, by their great force of penetration, are best adapted for forming a breach in the walls of permanent fortifications. Their superior accuracy, and the mass of their projectiles, render them also very effective in ricochet firing. Balls of smaller calibre have not sufficient mass to destroy carriages offering such resistance as those employed in the defence of places. The force of penetration of balls in different substances increases with their calibre and velocity: at one hundred yards, a 24-pound ball fired with a cartridge of 12 pounds will be one yard in brick masonry, nearly two feet in rubble work, one yard and a half in oak wood, two yards in pine, two yards and a half in well rammed earth, and nearly five yards in a recent embankment. The ball of an 18-pounder, fired with a charge of nine pounds under the same circumstances, will give penetrations nearly six-sevenths of those indicated above.

Field guns, in general, may be employed to cannonade with force and perseverance; to reinforce the weakest points of positions, whether offensive or defensive; to secure a retreat by the occupation of points established as the base of defence of particular ground, or of any important object, as the defence of a village or defile, or the passage of a river, and to overthrow such obstacles as palisades, rampart walls, doors, &c., interposed by art; to prepare the way for an assault, and aid, at a decisive moment, to secure the victory by a united fire. A field cannon ball has sufficient force to disable seven or eight men at a distance of 900 yards. It is stated that a single cannon ball, at the battle of Zorndorf, disabled 42 men. Rifle projectiles, having more momentum, are effective at greater distances.

The following tables of Charges and Ranges for United States Field Guns, Howitzers, and Heavy Ordnance, are taken from Roberts' Handbook of Artillery.

CHARGES FOR A FLATTENED RICOCHET FOR SIEGE-GUNS.

CHARGES FOR A FLATTENED RICOCHET FOR SIEGE-HOWITZERS.

| DISTANCE. | ELEVATION. | CHARGE. | DISTANCE. | ELEVATION. | CHARGE. |
|------------|------------|-----------------------------|------------|------------|--------------|
| 660 yards. | 2° 45' | $\frac{1}{12}$ wt. of ball. | 550 yards. | 1° 45' | 3 lbs. |
| 550 " | 3° | $\frac{1}{16}$ " " | 440 " | 2° 15' | 2 lbs 3 oz. |
| 440 " | 3° 15' | $\frac{1}{20}$ " " | 330 " | 2° 15' | 1 lb. 12 oz. |
| 330 " | 3° 35' | $\frac{1}{30}$ " " | 220 " | 2° 45' | 1 lb. 2 oz. |

CHARGES FOR A CURVATED RICOCHET FOR SIEGE-HOWITZERS.

| DISTANCE. | ELEVATION. | CHARGE | REMARKS. |
|------------|------------|-------------|---|
| 550 yards. | 7° 30' | 1 lb. 4 oz. | The height of the object above the level of the battery being supposed to be 20 feet. |
| 440 " | " | 1 lb. 1 oz. | |
| 330 " | " | 14 oz. | |
| 220 " | " | 10 oz. | |

The charges vary with the elevation; or, if the elevation be fixed at any particular angle, they must be determined by the range.

CHARGES FOR FIELD-GUNS AND FIELD-HOWITZERS.

| KIND. | FOR GUNS. | | FOR HOWITZERS. | | | |
|-------------------------------------|-------------------|-----------|----------------|---------|---------|-----------|
| | 12-pdr. | 6-pdr. | 32-pdr. | 24-pdr. | 12-pdr. | Mountain. |
| For shot..... | lbs. 2.5 | lbs. 1.25 | lbs. | lbs. | lbs. | lbs. |
| For spherical case or canister..... | 1.5 | 1. | 2.5 | 1.75 | 0.75 | 0.5 |
| For shells, { | small charge..... | | 2.5 | 2. | 1. | 0.5 |
| | large charge..... | | 3.25 | 2.50 | 1. | 0.5 |

CHARGES FOR HEAVY GUNS, COLUMBIADS, AND HOWITZERS.

| GUNS. | | | | | COLUMBIADS. | | HOWITZERS. | | | |
|-----------|---------|---------|---------|---------|-------------|---------|-------------|-------------------|------------|---------|
| 42-pdr. | 32-pdr. | 24-pdr. | 18-pdr. | 12-pdr. | 10-inch. | 8-inch. | Siege 8-in. | 24-pdr. Garrison. | SEA-COAST. | |
| | | | | | | | | | 10-in. | 8-in. |
| lbs. 10.5 | lbs. 8. | lbs. 8. | lbs. 6. | lbs. 4. | lbs. 14. | lbs. 8. | lbs. 4. | lbs. 2. | lbs. 12. | lbs. 8. |

GREATEST CHARGES OF SEA-COAST, SIEGE, AND COEHORN MORTARS.

| SEA-COAST. | | SIEGE. | | COEHORN. | STONE MORTAR. | |
|------------|----------|----------|---------|----------|-----------------------|-------------------|
| 13-inch. | 10-inch. | 10-inch. | 8-inch. | | 120 pounds of stones. | 16 6-pdr. shells. |
| lbs. 20. | lbs. 10. | lbs. 4. | lbs. 2. | lbs. 0.5 | lbs. 1.5 | lb. 1 |

RANGES OF FIELD GUNS AND HOWITZERS.

| KIND OF PIECE. | Powder. | Ball. | Elevation. | Range. | Remarks. | |
|----------------------------|----------------------------|------------|------------|------------------|-------------------|--------------|
| 6-Pounder Field Gun. | 1.25 | Shot. | 0 | yards. 318 | P. B. Range. | |
| | | " | 1 | 647 | | |
| | | " | 2 | 867 | | |
| | | " | 3 | 1138 | | |
| | | " | 4 | 1256 | | |
| | 1. | Sph. case. | 2 | 650 | Time of flight 2" | |
| | | " | 2 30 | 840 | do. 3" | |
| | | " | 3 | 1050 | do. 4" | |
| | 12-Pounder Field Gun. | 2.5 | Shot. | 0 | 347 | P. B. Range. |
| | | | " | 1 | 662 | |
| " | | | 1 30 | 785 | | |
| " | | | 2 | 909 | | |
| " | | | 3 | 1269 | | |
| 1.5 | | Sph. case. | 1 | 670 | Time 2 seconds. | |
| | | " | 1 45 | 950 | " 3 " | |
| | | " | 2 30 | 1250 | " 4 " | |
| 12-Pounder Field Howitzer. | | 1. | Shell. | 0 | 195 | |
| | | | " | 1 | 539 | |
| | " | | 2 | 640 | | |
| | " | | 3 | 847 | | |
| | " | | 4 | 975 | | |
| | 0.75 | Sph. case. | 2 15 | 485 | Time 2 seconds. | |
| | | " | 3 15 | 715 | " 3 " | |
| | | " | 3 45 | 1050 | " 4 " | |
| | 24-Pounder Field Howitzer. | 2. | Shell. | 0 | 295 | |
| | | | " | 1 | 516 | |
| " | | | 2 | 793 | | |
| " | | | 3 | 976 | | |
| " | | | 4 | 1272 | | |
| 1.75 | | Sph. case. | 2 | 600 | Time 2 seconds. | |
| | | " | 3 | 800 | " 3 " | |
| | | " | 5 30 | 1050 | " 4 " | |
| 2. | | " | 3 30 | 880 | " 3 " | |
| | | 2.5 | Shell. | 0 | 290 | |
| | " | | 1 | 531 | | |
| " | 2 | | 779 | | | |
| " | 3 | | 1029 | | | |
| " | 4 | | 1203 | | | |
| 2.5 | Sph. case. | 3 | 800 | Time 2½ seconds. | | |
| | 0.5 | Shell. | 0 | 170 | | |
| " | | 1 | 300 | | | |
| " | | 2 | 392 | | | |
| " | | 2 30 | 500 | Time 2 seconds. | | |
| " | | 3 | 637 | | | |
| 4 | " | 4 | 785 | Time 3 seconds. | | |
| | " | 5 | 1005 | | | |

RANGES OF FIELD GUNS AND HOWITZERS—(Continued.)

| KIND OF PIECE. | Powder. | Ball. | Elevation. | Range. | Remarks. |
|---|-------------|------------|------------|---------------|------------------|
| Mountain Howitzer— <i>Continued.</i> | lbs. 0.5 | Sph. case. | 0 | yards. 150 | Time 2 seconds. |
| | | " | 2 30 | 450 | |
| | | " | 3 | 500 | |
| | | " | 4 | 700 | Time 2½ seconds. |
| | | " | 4 30 | 800 | Time 3 seconds. |
| | 0.5 | Canister. | 4 to 5 | 250 | |

RANGES OF HEAVY ARTILLERY.

| KIND OF PIECE. | Powder. | Ball. | Elevation. | Range. | Remarks. | |
|--|-------------|-------|------------|---------------|--------------|------|
| 18-Pdr. Siege and Garrison Gun on Barbette Carriage. | lbs. 4.5 | Shot. | 0 | yards. 641 | Point Blank. | |
| | | " | 1 30 | 800 | | |
| | | " | 2 | 950 | | |
| | | " | 3 | 1256 | | |
| | | " | 4 | 1450 | | |
| | | " | 5 | 1592 | | |
| 24-Pdr. Siege and Garrison Gun on Siege Carriage. | 6. | Shot. | 0 | 412 | Point Blank. | |
| | | " | 1 | 842 | | |
| | | " | 1 30 | 953 | | |
| | | " | 2 | 1147 | | |
| | | " | 3 | 1417 | | |
| | 8. | " | 4 | 1666 | | |
| | | " | 5 | 1901 | | |
| | | " | 1 | 883 | | |
| | | " | 2 | 1170 | | |
| | | " | 3 | 1454 | | |
| 32-Pdr. Sea-Coast Gun on Barbette Carriage. | 6. | Shot. | 1 45 | 900 | | |
| | | " | 1 | 713 | | |
| | | " | 1 30 | 800 | | |
| | | " | 1 35 | 900 | | |
| | | " | 2 | 1100 | | |
| | 8. | " | 3 | 1493 | | |
| | | " | 4 | 1684 | | |
| | | " | 5 | 1922 | | |
| | | 10.67 | " | 1 | | 780 |
| | | | " | 2 | | 1155 |
| " | 3 | | 1517 | | | |
| 42-Pdr. Sea-Coast Gun on Barbette Carriage. | 10.5 | | Shot. | 1 | 775 | |
| | | | " | 1 30 | 860 | |
| | | " | 2 | 1010 | | |
| | | " | 3 | 1300 | | |
| | | " | 4 | 1600 | | |
| | 14. | " | 5 | 1955 | | |
| | | " | 1 | 770 | | |
| | | " | 2 | 1128 | | |
| | | " | 3 | 1380 | | |
| | | " | 4 | 1687 | | |
| | | " | 4 | 1687 | | |
| | | " | 5 | 1915 | | |

RANGES OF HEAVY ARTILLERY—(Continued.)

| KIND OF PIECE. | Powder. | Ball. | Elevation. | Range. | Remarks. | |
|---|----------------|---------------|---------------|---------------|---------------------------------------|------|
| 8-inch Siege Howitzer on Siege Carriage. | 4. | 45-lb. Shell. | 0 | yards. 251 | Time $\frac{2}{3}$ seconds. | |
| | | " | 1 | 485 | " $1\frac{1}{2}$ " | |
| | | " | 2 | 618 | " 2 " | |
| | | " | 3 | 720 | " 3 " | |
| | | " | 4 | 992 | " 4 " | |
| | | " | 5 | 1241 | " 5 " | |
| 24-Pdr. Iron Howitzer on a Flank Casemate Carriage. | 2. | 17-lb. Shell. | 0 | 295 | Time 2 seconds. | |
| | | " | 1 | 516 | | |
| | | " | 5 | 1322 | | |
| | $1\frac{3}{4}$ | Sph. cases. | 2 | 600 | | |
| | | " | 5 30 | 1050 | | |
| | | " | 3 30 | 880 | | |
| 8-inch Sea-Coast Howitzer on a Barbette Carriage. | 4. | 45-lb. Shell. | 1 | 405 | | |
| | | " | 2 | 652 | | |
| | | " | 3 | 875 | | |
| | | " | 4 | 1110 | | |
| | | " | 5 | 1300 | | |
| | 6. | " | 1 | 572 | | |
| | | " | 2 | 828 | | |
| | | " | 3 | 947 | | |
| | | " | 4 | 1168 | | |
| | | " | 5 | 1463 | | |
| | 8. | " | 1 | 646 | | |
| | | " | 2 | 909 | | |
| | | " | 3 | 1190 | | |
| | | " | 4 | 1532 | | |
| | | " | 5 | 1800 | | |
| 10-inch Sea-Coast Howitzer on Barbette Carriage. | 12. | 90-lb. Shell. | 1 | 580 | Time 3 seconds. | |
| | | " | 2 | 891 | | |
| | | " | 3 | 1185 | | |
| | | " | 3 30 | 1300 | | |
| | | " | 4 | 1426 | | |
| 8-in. Columbiad on Barbette Carriage. | 10. | 65-lb. Shot. | 1 | 932 | Axis of gun 16 feet above the water. | |
| | | " | 2 | 1116 | | |
| | | " | 3 | 1402 | | |
| | | " | 4 | 1608 | | |
| | | " | 5 | 1847 | | |
| | | " | 6 | 2010 | | |
| | | " | 8 | 2397 | | |
| | | " | 10 | 2834 | | |
| | | " | 15 | 3583 | | |
| | | " | 20 | 4322 | | |
| | 15. | " | 25 | 4875 | Shot ceased to ricochet on the water. | |
| | | 10. | " | 27 | | 4481 |
| | | | " | 27 30 | | 4812 |
| | | | 50-lb. Shell. | 1 | | 919 |
| | | | " | 2 | | 1209 |
| " | 3 | | 1409 | | | |
| | | " | 4 | 1697 | | |
| | | " | 5 | 1813 | | |
| | | " | 6 | 1985 | | |
| | | " | 8 | 2203 | | |

RANGES OF HEAVY ARTILLERY—(Continued.)

| KIND OF PIECE. | Powder. | Ball. | Elevation. | Range. | Remarks. | |
|---|-------------|----------------|---------------|------------------|---|--|
| 8-in. Columbiad on Barbette Carriage— <i>Continued.</i> | lbs. 10. | 50-lb. Shell. | 10 | yards. 2657 | | |
| | | | 15 | 3556 | | |
| | | | 20 | 3716 | | |
| | | | 25 | 4387 | | |
| | | | 27 | 4171 | | |
| | | | 27 30 | 4468 | | |
| 10-inch Columbiad on Barbette Carriage. | 18. | 128-lb. Shot. | 0 | 394 | Axis of gun 16 feet above the water. Shot ceased to ricochet on the water. | |
| | | | 1 | 752 | | |
| | | | 2 | 1002 | | |
| | | | 3 | 1230 | | |
| | | | 4 | 1570 | | |
| | | | 5 | 1814 | | |
| | | | 6 | 2087 | | |
| | | | 8 | 2519 | | |
| | | | 10 | 2777 | | |
| | | | 15 | 3525 | | |
| | | | 20 | 4020 | | |
| | | | 25 | 4304 | | |
| | 30 | 4761 | | | | |
| | 35 | 5433 | | | | |
| | 20. | “ | 39 15 | 5654 | | |
| | 18. | 12. | 100-lb Shell. | 1 | 800 | |
| | | | | 2 | 1012 | |
| | | | | 3 | 1184 | |
| | | | | 4 | 1443 | |
| | | | | 5 | 1604 | |
| | | | | 0 | 448 | |
| | | | | 1 | 747 | |
| | | | | 2 | 1100 | |
| | | | | 3 | 1239 | |
| | | | | 4 | 1611 | |
| | | | | 5 | 1865 | |
| | | | | 6 | 2209 | |
| 8 | | | | 2489 | | |
| 10 | | | | 2848 | | |
| 15 | | | | 3200 | | |
| 20 | 3885 | | | | | |
| 25 | 4150 | | | | | |
| 30 | 4651 | | | | | |
| 35 | 4828 | | | | | |
| | | | | Time 35 seconds. | | |
| 13-in. Sea-Coast Mortar. | 20. | 200-lb. Shell. | 45 | 4325 | Time 40 seconds. | |
| 10-in. Sea-Coast Mortar. | 10. | 98-lb. Shell. | 45 | 4250 | Time 36 seconds. | |
| 10-inch Siege Mortar. | lbs. oz. | 90-lb. Shell. | 45 | 300 | Time 6.5 seconds. | |
| | | | “ | 700 | “ 12. “ | |
| | | | “ | 1000 | “ 14. “ | |
| | | | “ | 1300 | “ 16. “ | |
| | | | “ | 1600 | “ 18. “ | |
| | | | “ | 1800 | “ 19. “ | |
| 4. | “ | “ | 2100 | “ 21. “ | | |
| 8-inch Siege Mortar. | lbs. oz. | 45-lb. Shell. | 45 | 209 | Time 6.75 sec'ds. | |
| | | | “ | 376 | “ 9. “ | |
| | | | “ | 650 | “ 11.5 “ | |
| | | | “ | 943 | “ 14. “ | |
| | | | “ | 1318 | “ 16.5 “ | |
| | | | “ | 1522 | “ 18.5 “ | |
| | | | “ | 1837 | “ 20.5 “ | |

RANGES OF HEAVY ARTILLERY—(Continued.)

| KIND OF PIECE. | Powder. | Ball. | Elevation. | Range. | Remarks. |
|----------------------------|---------|------------------------|------------|------------------------------------|------------------|
| 24-Pounder Coehorn Mortar. | oz. | 17-lb. Shell. | ° | yards. | |
| | 0.5 | | 45 | 25 | |
| | 1. | " | " | 68 | |
| | 1.5 | " | " | 104 | |
| | 1.75 | " | " | 143 | |
| | 2. | " | " | 165 | |
| | 2.75 | " | " | 260 | |
| | 4. | " | " | 422 | |
| | 6. | " | " | 900 | |
| 8. | " | " | 1200 | | |
| Stone Mortar. | lbs. | Stones. | | | |
| | 1.5 | 120 lbs. | 60 | { 150 to 250 50 to 150 | |
| | 1 | { 15 6-pdr. shells. | 33 | | Fuze 15 seconds. |

NOTE.—Fire-balls, according to their size, are fired from mortars of corresponding calibres. With a charge of ONE TWENTY-FIFTH its weight, the ball is thrown 600 to 700 yards.

Howitzers are used to drive the enemy from positions when he can only be reached by shells; against covered ground, and particularly forests and defiles; against strong cavalry attacks; to prepare the way for an attack of fortifications and posts, and to burn combustible objects of great extent. (Consult *Aide Memoire, par GASSENDI*; GIBBON; ROBERTS; BENTON; KINGSBURY; *Histoire et Tactique des Trois Armes, par ILL. FAVÉ*. See AMMUNITION; RIFLED ORDNANCE.)

ASSAULT. In any assault, it is necessary that the officer, commanding and responsible for the whole operation, should be in immediate communication with the troops during the assault, and be present with the reserve or supporting party; 2. The troops destined for this duty should be divided into two portions, each equal in strength to three-fourths of the garrison attacked: one portion being the attacking party, and the other half, the reserve or supporting party; 3. Each column of the attacking party will also be subdivided into advance, main body, and support, whatever may be the number of these columns; 4. The disposition of the attacking party, as it reaches the point of attack, will be regulated by the engineer officer, under the orders of the officer commanding—they having made the necessary reconnoissances; the party must be furnished with tools, ladders, and proper implements, adapted to the circumstances of the moment, and accompanied by a detachment of sappers; 5. The disposition of the reserve, equal, as before observed, to the whole attacking force, should be regulated by the officer intrusted with the execution of the assault; and this reserve should be accompanied or not, according to circumstances, by cavalry and field artillery. When these descriptions of force are

present, the former should be placed under cover or out of gun shot, about 1,500 yards distant; the artillery should be kept in hand until the attacking party is engaged, when the guns should be spread out on the flanks, and open a vigorous fire upon the works; the infantry, brought immediately in rear of the leading attack, should be placed under cover, if possible, from fire of grape and musketry, and halted until the issue of the first assault is seen; 6. It is impossible to regulate an assault by any minute suggestions for the advance, except to observe that it is usual for each column to attack the salient points of the works, and least defended portions; to throw out skirmishers and firing parties under any cover available, and keep up a rapid and compact fire upon the defenders; to follow with the sappers and grenadiers to force all obstructions; and then to advance the main body, the supports of each column being judiciously planted in the rear. Eventually, as success occurs and the whole move on, points of security should be taken up, such as the reverse, or the exterior slope of the works; buildings, walls, as well as gorges and flanks, which frequently give cover. Men should be planted under an officer, with instructions to take no notice of the pell-mell, but to keep up a heavy firing in front; employing the sappers in entrenching the position taken up by the supporting party, or in collecting wagons, carts, carriages, &c., capable of being made into a barricade; 7. Either on the supposition that the success of the assault is doubtful, or that there is a check or repulse, the reserve, in case of doubtful success, to render the attack doubly sure, should move forward under the officer commanding the whole assaulting force, and relieve the assailants, who take their places as the reserve as soon as order can be restored; the artillery brought into position in the openings, between the advancing columns, would be directed upon the retreating or resisting forces; and if success is finally complete, the cavalry, in the event of their being employed, will move forward, either through the openings cleared, or by a detour, if a fortified town, in pursuit.

In the second case—that of a check—the reserve, on the reconnoissance of the officer commanding, will either march forward in support of the attack, or to cover the retreat, if further perseverance in the assault is deemed impracticable—the artillery and cavalry being warned as to the intention. In the event of the assault being repulsed, the reserve, which should be in echelon, having advanced guards in front, will allow the retreating party to move through the intervals, and the advanced guard will endeavor to check the pursuit; if overpowered, they will fall back on the reserve, and the whole may in that

manner retreat until beyond gun shot, endeavoring to make a stand, repulse the garrison, and if possible convert failure into success, if the pursuit has been badly conducted and without due caution. As an important rule in all assaults, except in partial attacks, as an outwork, or any particular work in which a lodgement is to be made, the composition of the forces should be by regiments and corps, and not by detachments; and each non-commissioned officer should be provided with the means of spiking a gun, for which purpose even an old nail is sufficient. *Assaults, if feasible, would seldom fail with these precautions, and there are few posts not open to assault, by taking the proper opportunity, an officer intrusted with the defence of a place should therefore exercise the most unremitting vigilance. (Consult DUFOUR, Tactique des Trois Armes; Aide Memoire by British Officers.)*

ASSEMBLY. Drum beat to order troops to assemble; *assembly* for skirmishers, a bugle sound.

ASSIGNMENT. If, upon marches, guards, or in quarters, different corps of the army shall happen to join, or do duty together, the officer highest in rank of the line of the army, marine corps, or militia, by commission, there on duty or in quarters, shall command the whole, and give orders for what is needful to the service, unless otherwise specially directed by the President of the United States, according to the nature of the case; (ART. 62, *Rules and Articles of War.*)

It has been contended that the last clause of this article enables the President to make rank in the army vary at his pleasure, by an order of *assignment*. But inasmuch as the authority given to the President by the last clause of Article 62 is equally applicable to all commissions in the line of the army, marine corps, or militia, it would follow, under such a construction, that the laws creating rank did not fix a range of subordination; or, in other words, that Congress, after creating rank, or a range of subordination, and establishing rules of appointment and promotion, which require seniority or gallant and meritorious services, and the sanction of the Senate for the attainment of such promotion, have undone their whole work by giving to the President the power to deprive rank of the only quality which gives it consideration. The bare statement of this proposition is sufficient to show that such could never have been the meaning of the last clause of Article 62 of the Rules and Articles of War, and an attentive and candid examination of the article will, it is believed, convince all that its purpose was to declare that the officer highest in rank should command whenever different corps came together, "*unless otherwise specially directed by the President of the United States, according to the nature of the case.*" That is to

say, unless the President, in any special case, should deem the highest officer inefficient or incompetent; then he might supersede him, by withdrawing him from the command. Or, in other cases, the President might desire to carve out of the general command particular trusts, or limit the discretion of the commanding officer in regard to what is needful for the service. This plain interpretation of the disputed passage in no case permits the violation of the rights of any officer, by placing a junior over a senior; but the authority which it gives the President is indispensable to a proper administration of his great office of commander-in-chief. And it may be here stated that, during the Mexican war, Mr. Polk's administration after much deliberation emphatically disavowed the possession of any legal authority to assign a junior major-general to command a senior. (See article RANK, for a statement of the case of Major-general Benton. See also BREVET; DETACHMENT; LINE; PRESIDENT.)

ASSIGNMENT OF PAY. No assignment of pay made by a non-commissioned officer or soldier, is valid; (*Act of May 8, 1792.*)

ASTRAGAL—Small convex moulding used in the ornamental work of ordnance, and usually connected with a *fillet* or flat moulding.

ASYLUM, (MILITARY.) The persons entitled to the benefits of the Asylum, or Soldier's Home, as it is now called, located in the District of Columbia, are: 1. All soldiers, and discharged soldiers of the army of the United States, who may have served honestly and faithfully for twenty years. 2. All soldiers, and discharged soldiers of the regular army, and of the volunteers, who served in the war with Mexico, and were disabled by disease or wounds contracted in that service and in the line of their duty, and who are, by their disability, incapable of further military service. This class includes the portion of the marine corps that served with the army in Mexico. 3. Every soldier, and discharged soldier, who may have contributed to the funds of the Soldier's Home since the passage of the act to found the same, March 3, 1851, according to the restrictions and provisions thereof, and who may have been disabled by disease or wounds incurred in the service and in the line of his duty, rendering him incapable of military service. 4. Every pensioner on account of wounds or disability incurred in the military service—though not a contributor to the funds of the Institution—who shall transfer his pension to the Soldier's Home during the period he voluntarily continues to receive its benefits. No provision is made for the wives and children of those admitted.

No mutineer, deserter, or habitual drunkard, or person convicted of felony or other disgraceful crime of a civil nature, while in the army

or after his discharge, is admitted into the asylum without satisfactory evidence being shown to the Commissioners of the Soldier's Home of subsequent service, good conduct, and reformation of character. The Commissioners are: the adjutant-general, the commissary-general of subsistence, and the surgeon-general. The Soldier's Home has its governor, secretary, and treasurer, appointed from the army; (*Act* March 3, 1851.)

ATTACK AND DEFENCE. (*See* REDOUBT.) A redoubt may be either armed with cannon, or only defended by infantry. In the former case, it may be necessary to silence cannon by cannon; in the latter, we may march at once to the attack. Light infantry, principally riflemen, envelop the work, and even, at a distance of 1,000 yards, direct their fire upon the interior of the work and crest of the parapet, so as to prevent the defenders from showing themselves, or at least to cause them to fire hurriedly. Gradually approaching and converging their fire, the riflemen groove the parapet, and assert the superiority of their arm. Arrived at a short distance from the ditch, they run and leap into it, unless prevented by obstacles such as palisades, abatis, and trous-de-loup. In that event, they get rid of the obstacles by means of their axes, or fill the trous-de-loup with fascines, with which they have previously provided themselves. The whole number, however, do not throw themselves into the ditch, a portion remain upon the counterscarp, to fire upon any one daring to show himself behind the parapet. When the troops have taken breath at the bottom of the ditch, they *assault*, and to do this the soldiers aid each other in mounting upon the *berme*. From thence they mount together upon the parapet, leap into the redoubt, and force the defenders to ground their arms. If the redoubt is armed with cannon, and is of greater strength than has been supposed, it might be necessary at first to cannonade in such a manner as to break the palisades, dismount the pieces, and plough up the parapet. Favorable positions for the cannon used in the attack will be sought: these positions should command the work, or be on the prolongation of its faces, so as to give an enfilading fire. If the redoubt is pierced with embrasures, it is necessary to direct one or two pieces upon each embrasure so as to dismount the pieces, and to penetrate into the interior of the work, in order to demoralize the defenders. Some good riflemen will also approach towards the embrasures, shunning their direct range, and fire upon the artillerymen, who may attempt to reload their pieces.

It is only after the attacking artillery has produced its desired effect, that the light infantry envelop the work, and do what has been already indicated. When infantry of the line take part in the attack, it is

formed in as many columns as there are salients of attack. Each of these columns is preceded by men armed with axes and carrying ladders. It is a wise precaution to give to front rank men, fascines, which not only serve as bucklers, but are also useful in filling up part of the ditch. The light infantry open to allow the passage of the columns, but redouble their fire to sustain the attack at the moment that the assailants begin to climb the parapet. *The essential thing in this decisive moment for the assailants is unity of effort, and to leap into the work from all sides at once.* It is necessary, then, that the troops stop a moment upon the berme, and await the concerted signal to clamber up the exterior slope, in order to mount upon the parapet. If the redoubt be not aided by other troops, or strengthened by works upon its flanks, it will be difficult to resist an attack thus directed when valiantly executed. Whatever may be the result, it is the first duty of the commandant of a post to sustain and invigorate the *morale* of his soldiers, by his own confident air, his valiant resolutions, and his activity in putting every thing in the best order. If the attack is not immediate, the commandant will surround the redoubt with abatis; he will provide heavy stones for the defence of the ditches; he will endeavor to procure bags of earth, to make embrasures upon the parapet. Wanting these he will supply himself with sods, making loopholes, through which the best marksmen will fire upon the enemy. A beam placed across these sods may, at the same time, serve as a protection to the marksmen, and a means of rolling down the assailants. Cannon begins the defence. As soon as the batteries of the enemy are discovered, the fire is opened. But when once the batteries have taken their positions, when their pieces are partly covered by the ground, and their fire begins to produce an effect, the struggle is no longer equal. It is then necessary to withdraw the cannon of the work into its interior, or to leave those pieces only which are covered by good traverses, throwing, however, from time to time, some canister among the light infantry, who may press too nearly. The artillery is at first only aided by a few good marksmen placed in the angles, behind traverses, or wherever the fire of the enemy is least felt. But when the work is so closely pressed that the artillery of the assailants cannot continue its fire without danger to their own men, the defenders mount upon the banquettes, the guns are brought back, and the warmest fire is directed upon the columns of attack, and upon the squads of light infantry, who seek to make a passage through the abatis to the counterscarp. This is the moment to explode such small mines as have been previously prepared under the glacis, or in the interior of the work.

If, notwithstanding such efforts, the enemy reaches the ditch, and collects his force for the assault, all is not yet lost. The defenders roll upon him shells, trunks of trees, and heavy stones, and then mounting upon the parapet, stand ready to receive him at the point of the bayonet, or to use the butt of the musket. History records the failure of more than one attack from such conduct on the part of the defenders; and if we reflect upon the disorder of the assailants, and the physical advantage which those standing upon the parapet must possess, it is necessary, for the success of the attacking force, that they should have a great moral superiority. This does often exist, but the commander of a work may infuse his own indomitable spirit into his men.

Temporary works may be attacked by **SURPRISE** or by **OPEN FORCE**. In all cases, the first thing to be done is for the commander of the attack to obtain the fullest possible information that circumstances will admit, of the character of the work, garrison, ground around it, defences, and probable aid at hand, &c. If an intrenched village is to be attacked, it should be ascertained by what means the streets and roads leading into it have been closed, whether by stockades or breastworks; how these obstacles are flanked; what obstructions are placed in front of them, &c., &c. If the post is an isolated building, such as a country house or church, attention should be directed to the mode in which the doors have been barricaded, or the windows blocked up; how the loopholes are arranged; what sort of flank defence has been provided; how it can best be approached; what internal preparations have been made for prolonging the defence, &c. Part of this knowledge may be obtained from spies, and reconnoissance must do the rest. In the attack of military posts, infantry are frequently thrown upon their own resources. They have no guns or howitzers for tearing up and destroying stockades, abatis, palisading, chevaux-de-frize, &c. Their reliance must therefore be their own activity and fertility of invention. Abatis may sometimes be fired by lighted fagots, or else passed by cutting away a few of the smaller branches. Small ditches may be filled up with fagots or bundles of hay; chevaux-de-frize may be displaced by main force with a rope, and a good pull together, or they may be cut up or blown to pieces by a box of powder. Stockade work or palisading may be escaladed with ladders brought up in a line under the protection of a firing party, and carried by two or four men according to their length; or a stockade, barricaded doors, gates, and windows may be breached by a bag of powder, &c. By such measures, decisively and boldly used, troops would be a match for any of the ordinary obstructions which might oppose their advance, whether the attack were

made by night or day, by surprise or by open force. (Consult DUFOUR; *Aide Memoire, &c.*)

ATTACK AND DEFENCE OF PERMANENT FORTIFICATIONS. (See SIEGE.)

ATTENTION—Cautionary command addressed to troops, preparatory to a particular exercise or manœuvre.

ATTESTATION. A certificate, signed by the magistrate before whom a recruit is sworn in as a soldier.

AUDITORS. (See ACCOUNTABILITY for their duties.) They may administer oaths; (*Act March 3, 1817.*)

AUTHORITY, (CIVIL.) Any commissioned officer or soldier accused of a capital crime, or of having used violence, or committed any offence, against the person or property of any citizen of any of the United States, such as is punishable by the known laws of the land, must be delivered over upon application of the civil authority; and all officers and soldiers are required to use their utmost endeavors to deliver over such accused persons, and likewise to be aiding and assisting the officers of justice in apprehending and securing the persons so accused in order to bring them to trial. Any commanding officer or officers, wilfully neglecting or refusing upon application to deliver over such accused persons, or to be aiding and assisting the officers of justice in apprehending such persons, shall be cashiered; ART. 33. (See COMMAND; EXECUTION OF LAWS.)

AUXILIARY. Forces to aid.

AWARD. The decision or sentence of a court-martial.

B

BAGGAGE OF AN ARMY—Called by the Romans *impedimenta*, and by Bonaparte *embarras*. No question is more important in giving efficiency to an army, than the regulation of its baggage. Nothing so seriously impairs the mobility of an army in the field as its baggage-train, but this baggage is necessary to its existence; and the important question therefore arises, How shall the army be sustained with least baggage? Sufficient attention is not paid by Government to this subject in time of peace, and in war the commander of the troops finds himself therefore obliged to use the *unstudied* means which his Government hastily furnishes. In respect to artillery and artillery equipments, the minutest details are regulated. It should be the same with other supplies. In the United States Army, the quartermaster's department has charge of transports, and some steps have been taken to

regulate the subject; but legislation is required for the necessary military organization of conductors and drivers of wagons, and perhaps, also, unless our arsenals may be so used, for the establishment of depots, where a studied examination of field transportation may be made, which will recommend rules, regulating the kinds of wagons or carts to be used in different circumstances; prescribing the construction of the wagon and its various parts in a uniform manner, so that the corresponding part of one wagon will answer for another, giving the greatest possible mobility to these wagons consistent with strength; prescribing the harness, equipment, valises of officers, blacksmith forges, tool chests, chests for uniforms, bales of clothing, packing of provisions, and, generally, the proportion, form, substance, and dimensions of articles of supply; what should be the maximum weight of packages; the means to be taken for preventing damage to the articles; the grade, duties and pay of the quartermasters, wagon masters, and drivers should be properly regulated; rules for loading should be given; and, finally, a complete system of marks, or modes of recognition should be systematized. With such rules, and the adoption of a *kitchen cart*, (*See WAGON*.) together with small cooking utensils for field service which may be carried by the men, an army would no longer always be tied to a baggage train, and great results might be accomplished by the disconnection. (*See CONVOY; WAGON*.)

BAKING. Troops bake their own bread, and the saving of 33½ per cent. thus made in flour is carried to the credit of the Post Fund. (*See OVENS*.)

BALKS—are joist-shaped spars, which rest between the cleats upon the saddles of two pontoons, to support the chess or flooring.

BALL. (*See CHAIN BALL; NAIL BALL; SOLID SHOT*.)

BALLISTICS—is that branch of gunnery which treats of the Motion of Projectiles. The instruments used to determine the initial velocity of projectiles are the gun-pendulum, the ballistic pendulum, and the electro-ballistic machine. By the latter machine, the velocity of the projectile at any point of its trajectory is also determined. The initial velocity is determined by the gun pendulum, by suspending the piece itself as a pendulum, and measuring the recoil impressed on it by the discharge; the expression for the velocity is deduced from the fact, that the quantity of motion communicated to the pendulum is equal to that given to the projectile, charge of powder, and the air. The second apparatus is a pendulum, the bob of which is made strong and heavy to receive the impact of the projectile; and the expression for the velocity of the projectile is deduced from the fact, that the quantity of

motion of the projectile before impact, is equal to that of the pendulum and projectile after impact. These machines have been brought to great perfection in France and in the United States. By the electro-ballistic machines wires are supported on target frames, placed in the path of the trajectory, which communicate with a delicate time-keeper. The successive ruptures of the wires mark on the time-keeper the instant that the projectile passes each wire, and knowing the distances of the wires apart, the mean velocities, or velocities of the middle points can be obtained by the relation $velocity = \frac{\text{space.}}{\text{time.}}$

The electro-ballistic machine of Capt. Navaez of the Belgian service, has been found too delicate and complicated for general service; that devised by Capt. J. G. Benton, Ordnance Department, is used at the United States Military Academy. (For description, &c., consult BENTON'S *Ordnance and Gunnery*.)

BAND. Musicians, as Regimental Band, Post Band, &c. They are enlisted soldiers, and form a band of musicians under the direction of the adjutant, but are not permanently detached from their companies, and are instructed in all the duties of a soldier.

BANQUETTE—is the step of earth within the parapet, sufficiently high to enable the defenders, when standing upon it, to fire over the crest of the parapet with ease.

BARBETTE. Guns are said to be in barbette when they are elevated, by raising the earth behind the parapet, or by placing them on a high carriage, so that, instead of firing through embrasures, they can be fired over the crest of the parapet. In this position, the guns have a wide range, instead of being limited, as in firing through embrasures.

BARRACKS—from the Spanish *barraca*, are buildings erected by Government for lodging troops. Where the ground is sufficiently spacious, they are made to enclose a large area, for the purpose of exercising and drilling. Barracks should be very commodious, comprising mess-rooms, cooking-houses, guard-houses, magazines, &c. United States troops are generally badly quartered, sometimes in casemates of fortifications, and often in cantonments constructed by themselves. Officers and soldiers' quarters should be properly furnished by the Government; but in the United States, officers' quarters are bare of all conveniences when assigned to them for occupancy. The quarters of soldiers are provided with bunks, tables, &c. (Consult, for detailed information upon the proper construction of Barracks,

and their necessary furniture, &c., BARDIN'S *Dictionnaire de l'Armée de Terre*; *Spectateur Militaire*, &c.; *British Regulations*.)

BARRICADES. The following series of Barricades afford means of closing openings in various ways, most of them practicable under all circumstances :

- | | |
|--|---|
| 1. Palisading ; movable or fixed. | } Loopholed ; the bottom of the } loophole not less than 8 feet } above ground outside. |
| 2. Stockade of trees. | |
| 3. Stockade of squared baulk. | |
| 4. Abatis ; with or without parapet of earth and ditch behind. | |
- (See PALISADES ; STOCKADE ; AND ABATIS.)

FIG. 64.

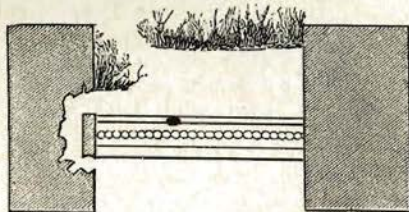


Fig. 64 represents a barricade in a street, with its means of communication.

FIG. 65.

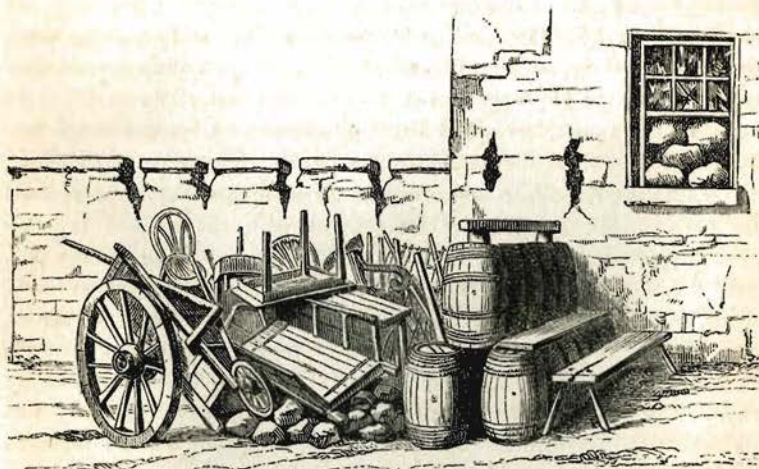
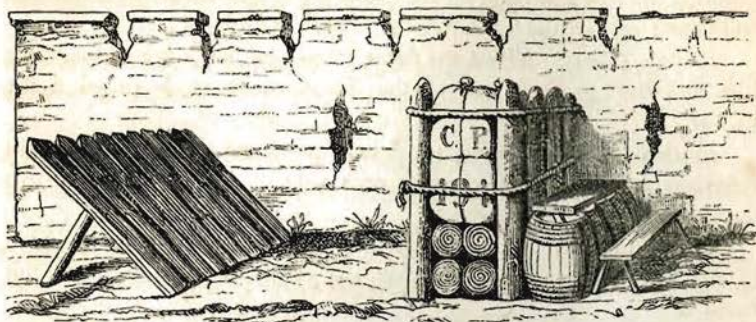


Fig. 65. Barricade made in haste with tierces, boxes, wagon bodies, &c., and filled with earth or dung, avoiding parapets of paving stones.

Fig. 66. Barricades made with bales of merchandise, barrels of

sugar, with the approaches also obstructed. Sand-bag parapets may also be used as barricades. (See REVETMENT.)

FIG. 66.



BARRIER. Carpentry obstructions in fortifications. The purpose regulates the construction. If the barrier is to be permanently defensible, it should be musket-proof, and then becomes a *Stockade*. If occasionally defensible, palisading will suffice, with a sand-bag or other temporary parapet when required, behind and near enough to fire between the palisades. The gates in both the above should, if possible, be of palisading, as the heavy stockade gate is unwieldy. Barrier gates should never be left unprotected.

BASE OF OPERATIONS. That secure line of frontier or fortresses occupied by troops, from which forward movements are made, supplies furnished, and upon which troops may retreat, if necessary.

BASTION. A work consisting of two faces and two flanks, all the angles being salient. Two bastions are connected by means of a *CURTAIN*, which is screened by the angle made by the prolongation of the corresponding faces of two bastions, and flanked by the line of defence. Bastions contain, sheltered by their parapets, marksmen, artillery, platforms, guards. They are protected by galleries of mines, and by demi-lunes and lunettes outside the ditch, and by palisades, if the ditch is inundated. Bastions should be large, and contain five or six hundred infantry, with the necessary artillery. The *boyaux* of the besiegers are directed towards the *CAPITAL* of the Bastion. The *FACES* of the *BASTION* are the parts exposed to being enfiladed by ricochet batteries, and also to being battered in breach. (See *FORTIFICATION*; *SIEGES*.)

Bastion (Demi)—is that which has only one face and one flank, cut off by the capital—like the extremities of horn and crown works.

Bastion (Empty). When the mass of rampart and parapet follows

the windings of the faces and flanks, leaving an interior space in the centre of the bastion, on the level of the ground, it is called a hollow or empty bastion. In standing in a bastion, and looking towards the country, the face and flank on the right hand are called the right face and flank; and on the left hand, the left face and flank.

Bastion (Flat). When the demi-gorges and gorge are in the same line, and the former is half of the latter, the work is called a flat bastion.

Bastion (Forts)—are the most perfect of closed field works, with reference to flanking defences, as each side or front consists of two faces, two flanks, and a curtain.

Bastion (Full). When the interior space is filled up to the level of the terre plein of the rampart, the construction is called a full bastion.

BAT, BAT MEN, BAT HORSE, BAT AND FORAGE ALLOWANCE. Men who take charge of the baggage of officers and companies. Allowance given at the beginning of a campaign in the English army is called Bat and Forage allowance.

BATARDEAU—is a strong wall of masonry built across a ditch, to sustain the pressure of the water, when one part is dry and the other wet. To prevent this wall being used as a passage across the ditch, it is built up to an angle at top, and armed with iron spikes; and to render the attempt to cross still more difficult, a tower of masonry is built on it. In the batardeau is the sluice-gate, by the opening or closing of which the manœuvres of the water can be regulated. (*See* DRICH.)

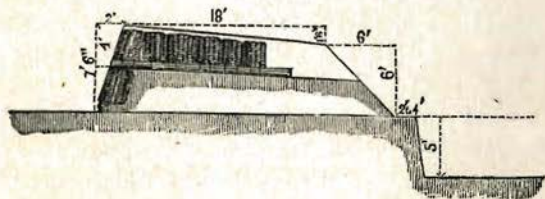
BATTALION. An aggregation of from two to ten companies in the United States Service. Their instruction is regulated by Infantry and Light Infantry tactics.

BATTERY. A battery consists of two or more pieces of artillery in the field. The term Battery also implies the emplacement of ordnance destined to act offensively or defensively. It also refers to the company charged with a certain number of pieces of ordnance. The ordnance constitutes the Battery. Men serve the Battery. Horses drag it, and epaulments may shelter it. A battery may be with or without embrasures. In the latter case it is *en barbette*, and the height of the *genouillere* varies according to the description of the gun carriage used. The ordnance constituting the battery requires substantial bearings either of solid ground for field-pieces, or of timber, plank, or masonry platforms, for heavy artillery. Batteries are sometimes designated as follows: *Barbette battery*, one without embrasures, in which the guns

are raised to fire over the parapet; *Ambulant battery*, heavy guns mounted on travelling carriages, and moved as occasion may require, either to positions on a coast, or in besieged places; *Covered battery*, intended for a vertical fire, and concealed from the enemy; *Breaching battery*; *Joint batteries*, uniting their fire against any object; *Counter battery*, one battery opposed against another; *Coast battery*; *Direct battery*; *Cross batteries*, forming a cross fire on an object; *Oblique battery* forms an angle of 20° or more, with the object against which it is directed, contradistinguished from direct battery; *Raised battery*, one whose terre plein is elevated considerably above the ground; *Sunken battery*, where the sole of the embrasures is on a level with the ground, and the platforms are consequently sunk below it; *Enfilading battery*, when the shot or shell sweeps the whole length of a line of troops or part of a work; *Horizontal battery*, when the terre plein is that of the natural level of the ground, consequently the parapet alone is raised and the ditch sunk; *Open battery*, without epaulment, or other covering wholly exposed; *Indented battery*, or battery à crémaillère, battery constructed with salient and re-entering angles for obtaining an oblique, as well as a direct fire, and to afford shelter from the enfilade fire of the enemy; *Reverse battery*, that which fires upon the rear of a work or line of troops; *Ricochet battery*, whose projectiles, being fired at low angles, graze and bound without being buried; *Masked battery*, artificially concealed until required to open upon the enemy.

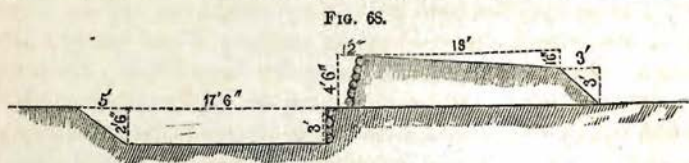
Field Batteries, in sieges, are usually of two kinds, viz., Elevated Batteries and Sunken Batteries, and they are placed either in front of the parallel, in the parallel itself, or in rear of it. In an elevated battery, the platforms for the guns or mortars to stand upon, are laid on the natural level of the ground, and the whole of the covering mass, or parapet, is raised above that level, the earth for forming it being ob-

FIG. 67.



tained from a ditch in front; (FIG. 67.) In a sunken battery, the whole interior of the battery is excavated about three feet deep, and the platforms laid on the bottom, the earth is thrown to the front, and the parapet is

formed out of it; (FIG. 68.) An inspection of these figures will show the difference; and it will be obvious that the whole of the parapet in the elevated battery has to be raised, and that in a sunken battery part of the cover is obtained by taking advantages of the excavation



made for forming the mass. This construction is frequently used in turning the portion of a parallel into a battery, by increasing the width of the interior excavation of the trench so as to make room for the platforms of the guns. Great care must be taken that no rise in the ground before the battery obscures the view from the soles of the embrasures; for this purpose, the officer laying out the battery should lie down and look along the ground, in order to be sure that his guns can range freely from their embrasures, before he fixes his details for construction. When guns are fired with an elevation—when the soil is sandy or gravelly—when the weather is dry—or the ground elevated, this construction is approved. The depth of the excavation for the interior must depend on the height of the carriages upon which the guns are mounted: it should be deeper in rear than in front, that it may be drained. The interior slopes of these batteries, and the checks of the embrasures, must be supported by field revetments of gabions, fascines, sand-bags, casks, or sods. In batteries exposed to a heavy fire, especially of shells, it is necessary to provide as much cover as possible for the men serving in them; for this purpose, traverses are usually placed between every two guns; and as these masses serve to protect the men from the splinters of the bursting shells, they are generally called splinter-proof traverse. There is nearly twice as much work in the elevated as in the sunken battery. (JEBB'S *Attack and Defence*; see EMBRASURE.)

BATTERY WAGON. A battery wagon accompanies each field-battery. (See FORGE.)

BATTLE. Battles are either *parallel* or *oblique*, and they are *strategic* when, in consequence of a plan of campaign, they are fought upon a given and objective point, as the battles of Marengo or Austerlitz.

The following preparations for battle are usually made by great commanders: All disposable troops are held in hand; the readiness of the troops is ascertained by inspection of arms; proper nourishment is given to them before going into battle; the projects of the day are

communicated from grade to grade; the points for the ambulances and caissons are indicated; the rendezvous for rallying or retreating are made known; measures are taken to secure the rear and communications, in order to retain the mastery of the base of operations; the army is ranged ordinarily in two lines, and the position of reserves given in the order of battle; the three arms are disposed according to the nature of the ground; decisive points are occupied; open or flanking batteries are established on proper elevations; the front and flanks of the army are furnished with artillery, in number, kind, and calibre according to circumstances. These are preparations for battle; the action commences ordinarily as follows: Marksmen are thrown forward, sometimes acting in conjunction with artillery. Either the enemy shows an equal disposition to attack, or else one party insults the other to bring on a combat. When the advanced guards have *felt* each other, the army disposed to make battle begins or increases its cannonade, to constrain the adversary to deploy his **MASSSES**, show his different arms, and thus make known the composition, number, importance, and the direction to be given to the adverse forces. The reserves remain stationary, while the cavalry, properly sheltered from fire, watch their opponents, and throw themselves upon weakened or staggered lines of infantry. When the affair has begun, and the position and dispositions of the enemy are known, and the proper effect has been produced by firing, the infantry may march to the charge, with the arms at a carry or on the right shoulder, leaving to the instinct of the soldier the determination of the proper moment of bringing the musket to the position of charge bayonet.

These details, however, constitute the mechanical parts of a battle. The art and science of battles consist, according to Professors of **STRATEGY**, in the subordination of tactical movements to the rule of attacking only with such **FORCES**, as can overthrow those of the enemy, either by numbers, position, or vigor; in creating alarm upon many points to induce your adversary to take false steps; in surprising him in the midst of his bold movements, and punishing him in his irresolute ones; in penetrating his designs to neutralize their effects, or taking advantage of his faults; in occupying commanding positions; in avoiding masks or curtains, and in acting always, if possible, on the **OFFENSIVE**. When the action has seriously begun, the important business of the general is to follow it up to advantage. If he is skilful and valiant, he will preserve the **ALIGNMENT** and intervals of his battalions, by standing firm, or by marching; he will strengthen his flanks by enterprises against those of the enemy; by employing his fire so as not

to stop the fire, at the same time, of all arms; by filling up, at the expense of the cavalry or second line, the holes made in the first line; by reinforcing or reanimating all corps which give way or falter; by leaving none in unfavorable positions; by sheltering the reserves from cannon shot; by bringing up, at opportune moments, fresh troops; by preserving the rear lines from being broken, while opening a free passage to repulsed troops; by exposing, when needed, his own person, securing united efforts in attacks, vigor in charges, and promptitude in rallying. Such is the theory of battles; but GENIUS and experience are necessary to apply the theory, and victory will be in vain sought from the mechanical application of any dogma whatever. Battles upon the same ground rarely occur, and never with soldiers of the same *morale*, the same arms, the same numbers, and the same relative proportions. It is by study of the campaigns of great commanders, by his own experience, and his own genius, that battles are properly initiated and won by a skilful general. (*See MANŒUVRES IN COMBAT.*)

BAYONET. At the battle of Spire, in 1703, charges of infantry were first made with fixed bayonet. From that time, however, until the wars of the French Revolution, the bayonet was more threatening than murderous. Since then it has changed, throughout, the whole system of the military art; cavalry has ceased to be the terror of foot; and the fire of lines of battle, even with new arms effective in range at 1,000 yards, does not impair the usefulness of the bayonet; and although Suwarof's maxim that "La balle est folle" cannot be admitted, yet it is true that "la bayonnette est sage." (*Consult Manual of Bayonet Exercise*, by CAPT. G. B. McCLELLAN.)

BED. Straw and bedsacks are allowed to soldiers for bedding. The introduction of single iron bedsteads will make it necessary to increase the allowance of bed furniture. In Prussia and other countries, hammocks are used in place of bedsteads. *Bed* has also other applications, as mortar bed; camp bed; bed of a gun lock; bed of sand; bed of a river; to separate the beds of stone in a quarry, &c.

BELT. (*See ACCOUTREMENTS.*)

BERME. Narrow path round fortifications, between the parapet and the ditch, to prevent the earth from falling in.

BESIEGE. (*See SIEGE.*)

BILLET. No soldier shall, in time of peace be quartered in any house without the consent of the owner; nor in time of war, but in the manner to be prescribed by law; (*ART. 3, Amendments to the Constitution.*) The manner of quartering soldiers in time of war is usually by *Billets*, but no manner has been prescribed by law in the United States.

The constables and other persons duly authorized in England are required to billet the officers and soldiers of the army, and also the horses belonging to the cavalry, staff, and field-officers, in victualling and other houses specified in the mutiny act; and they must be received by the occupiers of these houses, and provided with proper accommodations. They are to be supplied with diet and small beer, and with stables, hay, and straw, for the horses; paying for the same the several rates prescribed by law. Troops, whether cavalry or infantry, are in no case to be billeted above one mile from the place mentioned in the route. Where cavalry are billeted, the men and their horses must be billeted in the same house, except in case of necessity. One man must always be billeted where there are one or two horses; and less than two men cannot be billeted where there are four horses; and so in proportion for a greater number. No more billets are at any time to be ordered than there are effective soldiers and horses present; and all billets are to be delivered into the hands of the commanding officer. Commanding officers may, for the benefit of the service, exchange any men or horses billeted in the same town, provided the number of men and horses so exchanged does not exceed the number at the time billeted on each house; and the constables are obliged to billet those men and horses accordingly. Any justice may, at the request of the officer or non-commissioned officer commanding any soldiers requiring billets, extend the routes or enlarge the district within which billets shall be required, in such manner as may be most convenient to the troops. In Scotland, officers and soldiers are billeted according to the provisions of the laws in force in that country at the time of its union with England; and no officer is obliged to pay for his lodging, where he shall be regularly billeted, except in the suburbs of Edinburgh.

BILL HOOK. An instrument for cutting twigs.

BIVOUC. (*See* CAMP.)

BLACKING. (*For* SHOES.) Take three ounces of molasses, three ounces of ivory black, one ounce muriatic acid, one ounce sulphuric acid, and a spoonful of olive oil. Mix the ivory black and molasses, then add the muriatic acid, and subsequently the oil; when the paste is well formed, incorporate with it the sulphuric acid.

BLACKING, LIQUID. (*For* SHOES, &c.) Three parts of white wax, seven and a half parts essence of turpentine; one and a half parts of ivory black. The wax is cut into small pieces and put into a glazed vessel. Spread the turpentine over it, and leave it for 24 hours. Then mix it by degrees with ivory black. To use it, spread it with a rag in a thin layer on the leather, and afterwards rub with a soft brush.

BLACKING. (For HARNESS.) Yellow wax, four parts in weight, six parts essence of turpentine, one part of mutton suet, and one part of ivory black. Cut the wax into small pieces, and leave it to soak twenty-four hours in the essence of turpentine; grind in separately the ivory black and suet until there is a perfect mixture of the whole mass. When the leather has lost its color, it may be restored by the mud of ink, or by sulphate of iron in a thick solution, spread upon the edges.

BLACKSMITH AND FARRIER—Allowed to cavalry regiments. (See FORGE; ARMY ORGANIZATION.)

BLINDAGE. A siege work contrived, when defilement is impossible, as a shelter against a cross or ricochet fire of artillery. It is also used to guard against the effects of shells. The powder magazines, the hospitals, the cisterns, certain doors and windows are thus *blinded* by means of carpentry work, or shelters loaded with earth, dung, &c. Blindage of the trenches is also necessary, particularly when the besiegers begin the crowning of the covered way by means of the sap. Blindages are thus used to guard against stones or hand grenades thrown by the besieged. This blindage is entirely exposed to sorties, and also to the danger of being burned by the besieged.

BLOCK AND TACKLE. The power is equal to the weight divided by the number of ropes attached to the lower block, or by twice the number of raising pulleys.

BLOCK-HOUSE (Redoubt of wood.) A common defence against Indians—at two diagonal angles of a picket work. Figs. 69 and 70,

FIG. 69.



PLAN OF UPPER FLOOR

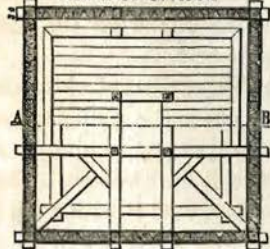
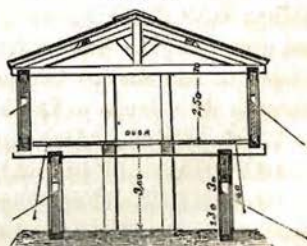


FIG. 70.



PLAN OF GROUND FLOOR



with dimensions in metres, show the construction used by the French in Algiers; or it may be built of logs 18 inches square on the ground floor, and 12 inches square in the upper story. Height of each story ten feet; loopholed; the upper story projecting all round, beyond the ground story, as machicoulis. Hatches should be made in the roof for the escape of smoke, and be grated.

BOARDS. A board composed of ordnance officers, designated by the Secretary of War, as the Ordnance Board, decides, with the approval of the secretary, on the models and patterns of all ordnance and ordnance stores for the land service of the United States.

Boards of Examination—are instituted to determine upon appointments in regiments, composed of army officers, and for appointments and promotion in the medical staff.

Boards of Survey—are to examine injured stores, &c., and to take an inventory of the public property in charge of a deceased officer.

Boards of Inspectors—determine upon the fitness of recruits for service.

BOAT. A boat has been invented by Colonel R. C. Buchanan, of the army, which has been used in several expeditions in Oregon and in Washington Territory, and has been highly commended by several experienced officers, who have had the opportunity of giving its merits a practical service test. It consists of an exceedingly light framework of thin and narrow boards, in lengths suitable for packing, connected by hinges, the different sections folding into so small a compass as to be conveniently carried upon mules. The frame is covered with a sheet of stout cotton canvas, or duck, secured to the gunwales with a cord running diagonally back and forth through eyelet-holes in the upper edge. When first placed in the water the boat leaks a little, but the canvas soon swells so as to make it sufficiently tight for all practical purposes. The great advantage to be derived from the use of this boat is, that it is so compact and portable as to be admirably adapted to the requirements of campaigning in a country where the streams are liable to rise above a fording stage, and where the allowance of transportation is small. It may be put together or taken apart and packed in a very few minutes, and one mule suffices to transport a boat with all its appurtenances, capable of sustaining ten men. Should the canvas become torn, it is easily repaired by putting on a patch, and it does not rot or crack like india-rubber or gutta-percha; moreover, it is not affected by changes of climate or temperature.—*Marcy's Prairie Traveller.* (See **BRIDGE**; **PONTON**.)

BOMB. The shell thrown by a mortar is called a bomb-shell; and the shelters made for magazines, &c., should be bomb-proof.

BOMBARDMENT. A shower of shells and other incendiary projectiles. Properly employed against fortifications, but not against open commercial cities.

BOOKS. *Regimental* books to be kept, are: 1. General order book; 2. Regimental order book; 3. Letter book; 4. Index of Letters; 5. Size or descriptive book; 6. Monthly returns. *Company* books required are: 1. Descriptive book; 2. Clothing book; and 3. Order book.

The following rules for keeping books at the head-quarters of the army and in the adjutant-general's office may, with modifications that will readily occur, be used with armies in the field, at the head-quarters of divisions, departments, regiments, &c.:

1. **LETTERS RECEIVED.**—(7 *quires, demy-Russia, with spring back.*)

1. All official communications received will be entered in this book, excepting only such letters of mere transmittal of orders, returns, certificates of disability, requisitions, &c., as need not be preserved. The orders, returns, certificates, requisitions, &c., themselves, will be appropriately entered in other books specially provided for the purpose.

2. Preliminary to being entered every letter will be folded and endorsed. Letter paper will be folded in three equal folds—*Cap* paper in four. The endorsement will give the place and date of letter, name, and rank of writer, and a summary of its contents, and if other papers accompany the letter, the number transmitted will also be noted on the back, in red ink. Each enclosure will be numbered and bear the same *office marks* as the letter transmitting it. Figures A, b, c, exemplify the manner of endorsing.

3. Every letter required to be preserved will be entered *alphabetically* and numbered—the series of numbers beginning and terminating with the year, and including all letters *dated* (whether received or not) within the year. Only one number will be given to each letter received with its enclosures, so that the sum of the numbers under each alphabetical entry in the book of "Letters Received," during any year, will show the number of letters received in that year.

4. As a general rule, every letter will be entered in the name of its writer; but there are cases where it is preferable, for convenience of reference, to enter it in the name of the person who forms the subject of the letter and not in that of the writer. Applications from citizens for the discharge of soldiers, &c., are of this nature. Usually, a single entry of each letter and its enclosures will suffice, but it may sometimes be necessary, in addition, to make entries in the names of one or more of the individuals to whom it relates. Such entries, however, will not be *numbered*, but merely contain the date of receipt, name of individual,

| <i>Fig. A.</i> | <i>fig. b.</i> | <i>fig. c.</i> |
|--|--|--|
| <p style="text-align: center;"><i>G. 1</i></p> <p style="text-align: center;">FORT ADAMS, R. I., } <i>May 8, 1849.</i> }</p> <p style="text-align: center;">Col. ———, 3d Artillery, Com'd'g.</p> <p style="text-align: center;">=</p> <p>Relative to unhealthiness of quarters at the Post, and enclosing Surgeon ———'s report on the subject, dated Apr. 30, 1849; forwards also a copy of a report, dated Aug. 16, 1840, of a Board of Officers assembled to examine into the condition of the quarters.</p> <hr/> <p>[Two enclosures.]</p> <hr/> <p>Rec'd (Hd. Qrs.) May 11, 1849.</p> | <p style="text-align: center;">1.</p> <p style="text-align: center;">G. 1. (Hd. Qrs.) May 11, 1849.</p> | <p style="text-align: center;">2.</p> <p style="text-align: center;">G. 1. (Hd. Qrs.) May 11, 1849.</p> |

place and date of the letter concerning him, with a reference, in red ink, to the number of that letter. Fig. E is an illustration of an entry of this kind.

5. The book of "Letters Received" will contain a *side* index extending throughout, and will be divided among the several letters of the alphabet according to the probable space required for entries under each letter. The book will be paged, and each page divided into three columns, headed "When received," "Name," "Date and purport of letter," respectively, as shown by figure *D*, which also exhibits the entry in the book of the letter represented by figure *A*.

Fig. E.

S.

LETTERS RECEIVED.

1849.

| When received. | Name. | Date and purport of letter. |
|----------------|---------------|---|
| May 11th. | [Surgeon ——.] | Fort Adams, R. I., May 8, 1849. See No. 1, Letter G. |

Fig. D.

LETTERS RECEIVED.

G.

1849.

| When received. | Name. | Date and purport of letter. |
|----------------|--------------------------------------|---|
| May 11th. 1 | Col. ——, 3d Artillery, command'g. | FORT ADAMS, R. I., May 8, 1849. Relative to unhealthiness of quarters at the Post, and enclosing Surgeon ——'s report on the subject, dated April 30, 1849; forwards also copy of a report, dated Aug. 16, 1840, of a Board of Officers assembled to examine into the condition of the quarters. |

6. Each entry will be separated from the one preceding it by a red ink line; and where two or more letters relate to the same subject they will be either filed together, or made to refer to each other by their *numbers*, and the filing or reference be noted in the book as well as on the letters themselves.

7. Letters from the Executive and Staff Departments and other public offices in Washington, will be entered alphabetically in the names of the *departments* or *offices* themselves, but the entry will always exhibit the writers' names likewise;—thus, communications from the War Department would be entered in the letter *W*, as follows: “*War*, Secretary of, (Hon. ———,) &c.”

8. Communications from the President will be entered in the letter *P*—from State Department, in *S*—Treasury, *T*—War, *W*—Navy, and its bureaux, *N*—Post Office and its bureaux, *P*—Interior, *I*—Attorney-general, *A*—Adjutant-general's office, *A*—Quartermaster-general, *Q*—Subsistence, *S*—Surgeon-general, *S*—Paymaster-general, *P*—Engineer Department, *E*—Topographical Engineers, *E*—Ordnance, *O*—Recruiting service, Superintendent of, *R*—Pension Office, *P*—Comptrollers, (1st and 2d,) *C*—The several Auditors, *A*—Treasurer U. S., *T*—Commissioner Indian Affairs, *I*—General Land Office, *L*—Solicitor's Office, *S*—and Patent Office, *P*.

9. Communications from Governors of States will be entered in the names of the *States*, the entry showing likewise the Governors' names;—thus a letter from the Governor of New York would be entered in the letter *N*, as follows: “*New York*, Governor of, (His Excellency ———,)” &c.

10. Letters from *Staff Officers*, written by direction of their generals, will be entered in the names of the *Generals* themselves;—thus a communication from General K———'s Staff Officer would be entered in the letter *K*, as follows:

“*Bvt. Major Gen'l* ———, comd'g *West'n Div'n*,”
 “(by *Assist. Adjt. Gen'l* ———.)”

11. Communications addressed to the War Department or Adjutant-general's office, and thence referred, without an accompanying letter, to head-quarters for report, or to be disposed of, will be entered, in the ordinary way, in the names of their writers, a note (in red ink) being simply made in the second column of the book, to show the fact of reference, thus—“(from *A. G. O.*)”

12. Where letters are referred from the office for report, &c., a note of the fact must be made (in red ink) in this book with a citation of the page, (or number of the letter,) in the “*Endorsement*” or “*Letter*”

Book" where the reference is recorded, thus—Ref'd for report to Comd'g Off'r Fort T., May 11—see Book of "Endorsements," p. 3, —(or, "see Letter No. 7, vol. 1st.") When the communication is returned, a memorandum to this effect will be made in the book—"Returned with report, May 25th."

13. Should the portion of this book appropriated to any particular letter of the alphabet prove insufficient for entries under that letter, they will be transferred to a few of the *last* leaves allotted to some other letter of the alphabet, where there is more space than will probably be required. The fact of transfer will be noted in large characters, (in red ink,) at the bottom of the page from which transferred, and at the top of the page to which carried, as follows :

"TRANSFERRED TO PAGE 250," and "BROUGHT FROM PAGE 60."

II. LETTER BOOK.—(7 *quires, demy-Russia, with spring back.*) 1. Every letter recorded in this book is numbered, (in red ink,) the numbers commencing and terminating with the year, and each letter is separated from the one which follows it by a red line.

2. The address of all letters should be at the top, the *surname* being written conspicuously in the margin, followed by the official title (if any) and Christian name, thus :

Bvt. Maj. Gen'l ———.
Comd'g, &c., &c., &c., or
Esq. Samuel H.

3. Each letter should be *signed* in the record book by its *writer*.

4. Whenever copies of letters are furnished, the names of the persons to whom they are sent should be noted in red ink in the margin with the *date*, when the last differs from the date of the letter itself. In like manner, when a letter is addressed to one officer, under cover to his commander, &c., this fact should also be noted in red ink in the margin.

5. The name of every person to whom a letter is addressed is indexed alphabetically, in black ink, and the names of the individuals whom it principally concerns are indexed in red ink. A red ink line is drawn in the body of the letter under the names so indexed, to facilitate a reference to them. In the margin, immediately under the name of the person to whom a letter is addressed, there are two references, above and below a short red line, the one above (in red) indicates the last preceding letter to the same individual, and the one below (in black) the next following. A *detached* index is used until the record book is full, when the names are arranged under each letter as in City Directories, and thus classified they are transferred to the *permanent* index attached to the record book.

III. GENERAL ORDERS.—(7 quires, demy-Russia, with spring back.)

1. Every order recorded in this book should be *signed* by the staff officer whose signature was attached to the originals sent from the office, and each order should be separated from the one following by a red line.

2. The mode of numbering, distribution, and general form of orders are prescribed by the Regulations—(see paragraphs 904, 905, and 908, edition of 1847;) but the distribution in each particular case should be noted in red ink in the margin to show that the Regulations have been complied with; and where orders are sent to one officer, under cover to his commander, (which course ought always to be pursued,) or furnished at a date subsequent to that of their issue—these facts should likewise be added: where the order has been *printed*, it will be sufficient to write the word “*printed*” in red ink in the margin, to indicate that the widest circulation has been given to it.

3. There are *two* indexes attached to the book—one of *names*, the other of *subjects*—every order will be indexed in the *latter* immediately after being copied.

For *names*, a *detached* index will first be used until the record book is full, when they will be arranged under each letter as in City Directories, and thus classified, transferred to the *permanent* alphabetical index attached to the record book. Every proper name will be indexed and a red line drawn in the body of the order under it, to facilitate a reference to it.

IV. SPECIAL ORDERS.—(7 quires, demy-Russia, with spring back.)

1. Every order recorded in this book should be *signed* by the staff officer whose signature was attached to the originals sent from the office, and each order should be separated from the one following by a red line.

2. The mode of numbering, distribution, and general form of orders are prescribed by the Regulations—(see paragraphs 904, 905, and 908, edition of 1847;) but the distribution in each particular case should be noted in red ink in the margin, to show that the Regulations have been complied with; and where orders are sent to one officer, under cover to his commander, (which course ought always to be pursued,) or furnished at a date subsequent to that of their issue—these facts should likewise be added.

3. There are *two* indexes attached to the book—one of *names*, the other of *subjects*—every order will be indexed in the *latter* immediately after being copied.

For *names*, a *detached* index will first be used until the record book

is full, when they will be arranged under each letter as in City Directories, and thus classified, transferred to the *permanent* alphabetical index attached to the record book. Every proper name will be indexed and a red line drawn in the body of the order under it, to facilitate a reference to it.

V. ENDORSEMENTS AND MEMORANDA.—(5 quires, Cap—Russia, with *spring back*.) 1. Every endorsement made on letters or other communications sent from the office will be copied in this book, and be *signed* by the staff officer whose signature was attached to the endorsement itself. A brief description of the communication sent out (the name of its writer, date, subject, and *office marks*) should precede the record of the endorsement, to render the latter intelligible; and where such communication has been entered in the book of "letters received," the disposition made of it should also be noted in that book, with a citation of the *page* where the endorsement is recorded. Should the communication be returned to head-quarters, a memorandum will be made to that effect, with the date when received back, in all the books where the fact of the reference from the office may have been noted.

2. In the case of such papers as proceedings of general courts-martial, certificates of disability for the discharge of soldiers, requisitions for ordnance, &c., which are not filed at head-quarters, but forwarded thence for deposit in other offices, it will generally suffice to make a brief memorandum of the general-in-chief's action upon them, instead of copying the endorsements. Where the endorsement, however, settles any rule or principle, it ought, of course, to be copied in full.

3. The name and address of every officer to whom a communication is referred will be written in the margin, and all *proper* names, no matter in what connection employed, must be indexed.

4. The name of the person to whom a communication is sent will be indexed in black ink, and the names mentioned in the description prefixed to the endorsement on the communication, as well as in the endorsement itself, will be indexed in red ink. To facilitate a reference to these last names, a red line will be drawn under them. In the margin, immediately under the name of the person to whom a communication is addressed, there are two references, above and below a short red line; the one above (in red) indicates the last preceding reference to the same individual, and the one below (in black) the next following.

VI. BOOK OF RETURNS.

Besides the foregoing blank books of appropriate size according to circumstances, the following books of reference are necessary: HETZEL'S

Military Laws; Army Regulations; Ordnance Manual; Artillery Manual; Prescribed Tactics for Infantry, Artillery, and Cavalry; McCLELLAND'S Bayonet Exercise; Aide Memoire du Génie; Aide Memoire d'Etat Major; WHEATON'S International Law; KENT'S or STORY'S Commentaries; MAHAN'S Field Fortifications; Military Dictionary.

BOOM—is a chain of masts, or a large cable, or other obstacles stretched over a river for the protection of a military bridge which has been thrown across, or under the fire of fortifications to bar access within a harbor.

BOOTY. (SAXON, *bot, bote*, lawful profit, gain, advantage, distinguished from plunder or pillage.) Despoiling a people or city is barbarous and not tolerated in civilized warfare, but legitimate subjects of *booty* are well described in an act of the British Parliament (2 William IV., c. 53):—as arms, ammunition, stores of war, goods, merchandise, and treasure belonging to the *state* or any *public trading company of the enemy*, and found in any of the fortresses or possessions, and all ships and vessels in any road, river, haven, or creek belonging to any such fortress or possession. It should be the duty of commanding generals to cause an exact account of such captures to be kept, in order that the captors may be remunerated by the government for such stores as are reserved for the public service, and in order that *all* such prizes of war may be legally and equitably divided amongst the captors. Such is the practice in England. There land prizes are divided according to an established rule of division. In the Piedmontese army the administration of booty is intrusted to a special staff corps; the French laws (says Bardin, Dictionnaire de l'Armée de Terre) are silent on this subject, or else those which are in force announce nothing positive; and in their silence, there is inhumanity, hypocrisy, and mental reserve. In a memorial presented by the Duke of Wellington he claimed of his government for the English army, more than a million sterling which had been used in the king's service from captures made by the British army in Spain and France, and the English budget of 1823 shows that the amount so claimed was given to the army. The 58th article for the government of the armies of the United States provides, that "All public stores taken in the enemy's camp, towns, forts, or magazines, whether of artillery, ammunition, clothing, forage, or provisions, shall be secured for the service of the United States; for the neglect of which the commanding officer is to be answerable." This article of war is borrowed from a corresponding British article, which directs that the same stores shall be secured for the king's service. But by proclamation in Great Britain the money value of all captures is invariably divided

amongst the captors. No practice can be more wise and just, for although it is necessary to proscribe *marauding* or *pillage*, it is impossible to extirpate the desire of gain from the human heart, and it is therefore necessary that the law should frankly provide for an equitable distribution of captures amongst the army. The absence of a law of division tends to introduce into an army the greatest evils: soldiers disband themselves in search of pillage, and their cupidity leads to the greatest horrors. These great evils are avoided by a legal division of booty, when all soldiers, animated by the hope of sharing the fruits of victory, are careful not to abandon to the greedy, the cowardly, and the wicked amongst themselves advantages properly belonging to the gallant victors. In the hope that Congress may yet do justice to our army in respect to captures made in the war with Mexico, the rules established in Great Britain are annexed in a series of prize proclamations taken from Prendergast's Law Relating to Officers of the Army:—

I.—*Prize Warrants.*

1.—SCINDE BOOTY.

VICTORIA R.

Victoria, by the Grace of God, of the United Kingdom of Great Britain and Ireland, Queen, Defender of the Faith, To all to whom these presents shall come, Greeting: Whereas the Commissioners of our Treasury have represented unto us, that certain hostilities were carried on in the year 1843 against the Ameers of Scinde by our land forces and the land forces raised and paid by the East India Company, in which a portion of the Indus Flotilla co-operated: and that during the said hostilities certain battles were fought, and a quantity of booty and plunder captured or taken possession of, consisting of gold and silver bars and coins, of ornaments, jewels, and ornamented arms, and of guns, cattle, and other property, of which the following schedule or account has been rendered to our said commissioners, (that is to say,)

| | RUPEES. |
|--|-----------|
| Paid in to the Public Treasury in Scinde } on account of the articles sold, about } | 229,038 |
| Realized at Kurrachie | 17,743 |
| Value of Silver | 2,564,337 |
| Gold sold | 1,713,537 |
| Gold remaining unsold, estimated at | 123,273 |
| Lead, valued at | 15,000 |

to which are to be added the sum due from the Government for articles

transferred to public departments, the sum due from individuals for articles sold in Scinde, and the sum which may be produced by the sale of the jewels, &c., which are at present in deposit at Bombay, but have been ordered to be sold ;

And whereas it has been further represented unto us that the said booty and plunder do of right belong to us in virtue of our Royal prerogative, and that the said booty and plunder should be given and granted in such manner as to us may seem meet and just ;

And whereas our said commissioners, under all the circumstances of this case, have recommended unto us to give and grant the said captured booty and plunder, or the produce or value thereof, as before stated, according to the following scheme, (that is to say :)

Such articles of personal use and ornament to be reserved for the Ameers as may be selected for that purpose by the Governor-general of India in council, with the approbation of the Commissioners of our Treasury ;

The remaining property to be divided into sixths :

One-sixth to be given to all such of the troops stationed at, or between Shikarpoor, Seikkur, and Kurrachie, and all such of the Indus Flotilla stationed between Seikkur and Kurrachie on any day between the 17th of February and 24th of March, 1843, both included, as shall not be otherwise entitled to share in the booty ;

The Major-general commanding in Scinde, and the officers of the general staff of the forces serving under his orders in the above-mentioned operations, to share in this portion as well as in the other portions hereinafter specified.

The remaining five-sixths (subject to the deductions hereinafter specified) to be divided in two equal parts, one moiety to be given to the troops who fought at Meanee, and the other to those who fought at Hyderabad ; the troops who were in both battles receiving a share of each moiety ; and from the share or shares accruing to each individual under the distribution to be made of this portion of the booty there should be deducted and repaid into the Company's Treasury the amount of the Donation of Batta, which the individual entitled to the said share or shares has received under the general order of the Government of India, dated 28th of February, 1844, as having been present at the battles of Meanee or Hyderabad ;

And our said Commissioners likewise recommend that the troops under Lieutenant-colonel Outram, who were detached previously to the battle of Meanee, and directed to fire the Shikargah on upon the right flank of the army, as well as the detachment which so gallantly defend-

ed the British Residency on the 15th of February, and also such portion of the Indus Flotilla as was engaged in that defence, or co-operated with the detachment under Colonel Outram, or was in any other way in immediate connection with the army that achieved the victory of Meanee, should share as if they had all been actually present at the battle of Meanee; and in like manner the garrison of Hyderabad should be entitled to share in the sum allotted to those engaged in the second battle;

Now know ye that We, taking the premises into our Royal consideration, are graciously pleased to approve the said scheme, and do, with the advice and recommendation of our said Commissioners, by this our Royal Warrant, under our Royal sign-manual, give and grant the said captured booty and plunder, or the produce or value thereof as before stated, unto the Directors of the East India Company, or to such person or persons as they shall appoint to receive the same, upon the trust following, (that is to say,) upon trust, after making the reservations and deductions above stated, to distribute the remainder among our land forces, and the land forces of the said Company, and the officers and crews of the Indus Flotilla, engaged in the aforesaid hostilities in accordance with the scheme hereinbefore mentioned and set forth, and with the usage of the army of India;

And we are graciously pleased to order and direct that, in case any doubt shall arise respecting the claims to share in the distribution aforesaid, or respecting any demand upon the said captured booty or plunder, the same shall be determined by the Directors of the East India Company, or by such person or persons to whom they shall refer the same, which determination thereupon made shall, with all convenient speed, be notified in writing to the Commissioners of our Treasury, and the same shall be final and conclusive to all intents and purposes, unless, within three months after the receipt thereof at the office of the Commissioners of our Treasury, We shall be graciously pleased otherwise to order, hereby reserving to ourselves to make such order therein as to us shall seem meet.

Given at our Court at Windsor Castle, this 11th day of November, in the 9th year of our reign, and in the year of our Lord 1845.

By Her Majesty's Command,

(Signed) HENRY GOULBURN,
J. MILNES GASKELL,
WILLIAM CRIPPS.

2.—TARRAGONA BOOTY.

(*Conjunct Expedition of British Land and Sea forces.*)

GEORGE R.

Whereas ordnance arms, stores, magazines, and other booty have been captured from the enemy during the year 1813, at Tarragona, by that part of the British army under Field-marshal the Duke of Wellington, in Spain, which was under the immediate orders of Lieutenant-general Lord William Bentinck, and by H.M.S. *Malta, Fame, Invincible, Merope, Buzzard* and *Volcano*, forming part of the fleet under Admiral Lord Exmouth, then under the immediate orders of Admiral Sir Benjamin Hallowell, and appropriated to the public service; And whereas an Act passed in the 54th year of the reign of our late Royal Father, entitled an Act for regulating the payment of Army prize-money, and to provide for the payment of unclaimed and forfeited shares to Chelsea Hospital; And whereas application hath been made to us by the said F.M. the Duke of Wellington and Admiral Lord Exmouth to grant the sum of £31,531 18s. (being the estimated value of such ordnance and stores) in trust, to be distributed as booty to the officers, non-commissioned officers, and privates serving in that part of the British army under his command in Spain, which was under the immediate orders of Lieutenant-general Lord William Bentinck, and to the officers, non-commissioned officers, seamen, and marines, on board H.M.S. *Malta, Fame, Invincible, Merope, Buzzard* and *Volcano*, placed by Admiral Lord Exmouth under the immediate orders of Admiral Sir Benjamin Hallowell, at Tarragona; And whereas the said Field-marshal the Duke of Wellington, having expressed his wish not to participate in the distribution of the booty as Commander-in-chief of the British army serving in Spain; We, taking the same into our Royal consideration, are graciously pleased to give and grant, and do hereby give and grant, to the said Lieutenant-general Lord William Bentinck and Admiral Lord Viscount Exmouth the said sum of £31,531 18s.; and that the said sum be issued and paid without any fee or other deduction whatsoever, in trust, for the benefit of the said Lord William Bentinck and the officers, non-commissioned officers, and privates serving under him, and of Admiral Lord Viscount Exmouth, and the officers, non-commissioned officers, seamen, and marines actually on board of our before-mentioned ships employed in that service, as booty and prize, or bounty money in the nature of prize-money, under the provisions of the said Act passed in the 54th year of the reign of our late Royal Father, to be distributed under the provisions of the said Act of Parliament, and

agreeably to our Proclamation for the distribution of prize, in force at the time of the said expedition, and this our Royal grant, in manner and in the several proportions following, (that is to say,) such sums being divided into eight equal parts :

- To the said Lieut.-general Lord Wm. Bentinck, Admiral, Lord Viscount Exmouth, and such General Officers and Admirals under their command, who were actually present at the capture of the said booty, so that the said Lieut.-gen. Lord Wm. Bentinck and Admiral Lord Viscount Exmouth shall take one moiety, and the other General Officers and Admirals who were actually present at the capture of the said booty, the other moiety in equal proportions—*One-eighth*.
- To the Colonels, Lieut.-colonels, and Majors in the army, and Captains and Commanders in the navy, who were actually present at the capture of the said booty, to be equally distributed among them, and the persons entitled by the usage of our army to share with them—*Two-eighths*.
- To the Captains in the army and Lieutenants in the navy, and other description of persons entitled by the usage of our army and navy respectively to share with them—*One-eighth*.
- To the Lieutenants, Cornets, Ensigns, and Quartermasters in the army, and Warrant and other Officers in the navy, and other description of persons entitled by the usage of our army and navy to share with them—*One-eighth*.
- To the Sergeants in the army and Petty Officers in the navy, and other description of persons entitled by the usage of our army and navy respectively to share with them—*One-eighth*.
- To the Trumpeters and Soldiers, Seamen, and Marines, and other description of persons entitled by the usage of our army and navy respectively to share with them.—*Two-eighths*

And we are further pleased to direct that all such respective sums of money shall be distributed as prize or bounty money, or money in the nature of prize-money, according to the provisions of the said Act of Parliament of the 54th year of the reign of our Royal Father, and the several Acts relating to the distribution of prize-money in our navy, and our said Proclamation, and this our grant, and the rules and customs heretofore used and observed in our army and navy respectively in that behalf, and the agents intrusted with the distribution thereof by the said Lieutenant-general Lord William Bentinck and Admiral Lord Viscount Exmouth shall give all such notices, and make such notifications of such distribution, as are required by the said Act of Parliament and the several Acts of Parliament in force relating to the distribution

of prize-money in our army, and our said Proclamation, and pay over all unclaimed shares to Chelsea and Greenwich Hospitals respectively, to be hereafter paid to the persons entitled thereto, or remain for the benefit of the said respective Hospitals according to the provisions and regulations of the said Act of Parliament and the several Bills in force relating to the distribution of prize-money in our navy; And We are further graciously pleased to order and direct that in case any doubt shall arise respecting the said distribution, or with respect to any other matter or thing relating thereto, the same shall be determined by the said commanders of the said land and sea forces, Lieutenant-general Lord William Bentinck and Admiral Lord Viscount Exmouth, or by such person or persons to whom the said commanders of the said land and sea forces shall refer the same; and such determination shall be final and conclusive upon all persons concerned, and as to all matters and things relating to the said distribution.

Given at our Court, at Carlton House, this 7th day of June, 1820, in the first year of our reign.

By his Majesty's command,

(Signed)

BATHURST.

3.—GENOA BOOTY.

(Conjunct Expedition of British and Allied Forces.)

In the name and on behalf of His Majesty,

GEORGE P. R.

Whereas it has been represented to us that, at the capture of the Territory and City of Genoa and its dependencies, on the 18th of April, 1814, a quantity of ordnance, military and naval stores, ships and vessels, and other booty, being public property belonging to the enemies of the Crown of Great Britain, was seized and taken possession of by our sea and land forces, under the command of Vice-admiral Sir Edward Pellew, Bart. (now Lord Exmouth,) and Lieutenant-general Lord William Cavendish Bentinck, Knight of the Bath, commanding our naval and military forces in and upon the coasts of the Mediterranean, assisted by certain Sicilian and Italian troops, and troops in British pay, and has been condemned to us as good and lawful prize taken in the said conjunct expedition; And whereas no instructions were given by us for the division or distribution of the booty to be captured on the said conjunct expedition; *And whereas* application hath been made to us that we would be graciously pleased to order and direct that the same ordnance, military and naval stores, ships, vessels and other booty may be distributed between the officers and crews of our ships, and those of our

Ally the King of the Two Sicilies, and the officers and men of our land forces, and those of our Ally the King of the Two Sicilies, according to any plan of distribution We shall be graciously pleased to approve: We, taking the premises into our Royal consideration, are graciously pleased to give and grant, and do hereby give and grant, to the said Vice-admiral Sir Edward Pellew (now Lord Exmouth), Commander-in-chief of our fleet and vessels employed on the said expedition, and Lieutenant-general Lord William Cavendish Bentinck, Knight of the Bath, Commander-in-chief of our land forces employed on the said expedition, the said ordnance, military and naval stores, ships, vessels, and other booty, so as aforesaid taken and condemned to us, in trust, to distribute the same amongst the commanders-in-chief, general and flag officers, and all other officers serving on the said expedition in the following manner, (that is to say), that the division of the booty between the army and navy and the said Sicilian and Italian ships and troops serving in the said expedition, shall be made according to the following scheme or schemes: the whole being first divided into equal parts:

- 1 To the Commanders-in-chief and to the Flag and General Officers serving in the said expedition, one-eighth, to be distributed amongst them, so that each Commander-in-chief shall take double that share which each General and Flag Officer (not being Commander-in-chief) shall take; but if the number of Flag and General Officers, exclusive of the two Commanders-in-chief, shall exceed four, in that case a moiety of the said one-eighth shall be divided between the two Commanders-in-chief, and the other moiety amongst the other Flag and General Officers—*One-eighth.*
- 2 To the Colonels, Lieutenant-colonels, and Majors in the army, and Post Captains, and Masters and Commanders in the navy, *and to the persons of like rank belonging to the said Sicilian and Italian ships and troops*, to be equally distributed amongst them—*One-eighth.*
- 3 To the Captains of Marines and land forces, and the sea Lieutenants, and other description of persons entitled by our Proclamation for the distribution of prize of the 11th November, 1807, or by the usage of our army, to share with them, *and to the persons in like rank belonging to the said Sicilian and Italian ships and troops*—*One-eighth.*
- 4 To the Lieutenants and Quartermasters of marines, and Lieutenants, Ensigns, and Quartermasters of land forces, and the Boatswains, Gunners, Pursers in the navy, and other description of persons entitled by our said Proclamation or by the usage of our army, to share with them, *and to the persons in like rank belonging to the said Sicilian and Italian ships and troops*—*One-eighth.*

- 5 To the Midshipmen, Captains' Clerks, Sergeants of marines and land forces, and the other description of persons entitled by our said Proclamation or by the usage of our army, to share with them, *and to the persons in like rank belonging to the said Sicilian and Italian ships and troops—One-eighth.*
- 6 To the Trumpeters, Quarter-gunners, Seamen, Marines, and Soldiers, and the other description of persons entitled by our said Proclamation, or by the usage of our army, to share with them, *and to the persons in like rank belonging to the said Sicilian and Italian ships and troops—One-eighth.*

And that the portion of the said booty, so belonging to our said land forces employed on the said expedition, *and the persons belonging to the said Sicilian and Italian troops*, shall be distributed between the Commanders-in-chief, officers, and privates composing the same, according to the rule heretofore used and observed by the army, under the above scheme or schedule;

And that the portion of the said booty so as aforesaid belonging to our naval forces employed in the said expedition, *and the persons belonging to the said Sicilian and Italian ships*, be distributed amongst the Commander-in-chief, flag and other officers, and men belonging to our navy employed on the said expedition, *and the persons belonging to the said Sicilian and Italian ships*, agreeably to our Proclamation for the distribution of prize in force at the time of the said expedition.

And we are graciously pleased to order and direct that, in case any doubt shall arise respecting the said distribution, or respecting any charge or demand upon the said captured property, the same shall be determined by the Commanders-in-chief, and flag and general officers, or such of them as can conveniently be assembled, or by such person or persons to whom they, or a majority of them, shall agree to refer the same; which determination so thereupon made, shall, with all convenient speed, be notified in writing to the Clerks of our Council, and the same shall be final and conclusive to all intents and purposes, unless within three months after the receipt thereof at our Council Office, we shall be pleased otherwise to order; hereby reserving to ourself to make such orders therein as to us shall seem fit. Given at our Court at Carlton House, this second day of August, 1815, in the 55th year of our reign.

By command of H.R.H. the Prince Regent, in the name, and on the behalf of, His Majesty. (Signed) BATHURST.

II.—India Prize-Money.

The following is the present standing scale of distribution of prize-

money in India, to European commissioned and non-commissioned officers, privates, &c.

| | SHARES. |
|---|-----------------------------|
| Commander-in-chief | $\frac{1}{3}$ of the whole. |
| General Officers | 1,500 |
| Colonels | 600 |
| Lieut.-colonels, Adjutant-gen. and Quartermaster-general of Her Majesty's and the Hon. Company's troops, Commissary-general, Members of the Medical Board, Inspector of Hospitals of Her Majesty's Troops | 360 |
| Majors, Deputy Adjutant-general, and Deputy Quartermaster-general of Her Majesty's and the Hon. Company's Troops, Deputy Commissary-general, and Superintending Surgeons | 240 |
| Captains, Surgeons, Assistant Adjt.-general, and Assistant Quartermaster-general of Her Majesty's and the Hon. Company's Troops, Assistant Commissary-general, Deputy Assistant Adjutant-general, Quartermaster-general and Commissary-gen., Paymaster, Surgeon to His Excellency the Commander-in-chief, Brigade-majors, Aides-de-camp to His Excellency the Commander-in-chief and General Officers, and Commissaries of Ordnance | 120 |
| Lieutenants, Assistant-surgeons, Cornets, Ensigns, Adjutants and Quartermasters of Her Majesty's Dragoons and Infantry, Veterinary Surgeons, Deputy Commissaries, and Deputy Assistant Commissaries of Ordnance | 60 |
| Conductors, Riding Masters, Apothecaries, Stewards, Sub-assistant and Veterinary Surgeons and Provost Martial | 15 |
| Sub-conductors, Assistant-apothecaries, Assistant-stewards, Regimental Sergeant-majors, Staff-brigade and Farrier-sergeants of Horse Artillery, Park Sergeant, Armorer, and Sergeants of Artillery | 3 |
| Trumpet-majors, Paymaster-sergeants, Saddler-sergeants, Schoolmaster-sergeants, Hospital-sergeants, Drill-sergeants, Color-sergeants, Armorer-sergeants, Drum-majors, Brigade and Staff-sergeants of Foot Artillery, Magazine-sergeants, Laboratory-sergeants, and Sergeants | 2 |

| | SHARES. |
|--|---------|
| Fife-majors, Corporals, Bombardiers, Trumpeters, Farriers, Rough Riders, Gunners, Drummers, and Privates | 1 |
| Volunteers | 1 |

The following scale of distribution of prize-money, for the several classes and ranks of native troops, has been adopted at all the Presidencies of India.

| | SHARES. |
|-------------------------------------|-----------------|
| Subedar, Syrang | } 6 |
| Woordee, Major, Russaldar | |
| Jemedar, Tindal | } 2 |
| Naib Russaldar | |
| Havildar, Native Doctor | 1 |
| Naik, Drummer | } $\frac{2}{3}$ |
| Trumpeter, Gun Lascar | |
| Private, Puckallie | |
| Native Farrier, Duffadar | |
| Nishan Burder, Nuggurchee | |
| Vakell and Hirkarra | |
| Gun-driver, Bheestie | |
| Nakeeb | |

For the Royal Army there is no standing scale of distribution, though, by the foregoing Prize Warrants, it will be seen that a uniform practice is generally observed.

III.—*Prize Proclamation for the Russian War of 1854.*

VICTORIA R.

Whereas by our Royal Proclamation, bearing date the Twenty-ninth day of March, One thousand eight hundred and fifty-four, We have ordered and directed that the net proceeds of all prizes taken during the present War with Russia, by any of our ships or vessels of war, after the same shall have been to us finally adjudged lawful prize, shall be for the entire benefit of the officers and crews of such ships and vessels of war (save as therein excepted), in which Proclamation We have directed in what proportion the land forces, doing duty as Marines, shall be entitled to share: And whereas in the said Proclamation We have reserved to ourselves the division and distribution of all prize and booty taken on any conjunct expedition of our ships and vessels of war with our army; and it is desirable that We should provide for the division and distribution of all prize and booty taken on such conjunct

expedition, as also by our army alone : We therefore hereby order and direct, that in such cases the net proceeds of the share which shall be assigned by us to our army, under our Royal Sign Manual, shall be divided and distributed in the following manner and proportions, viz. :—

| | | |
|-----------------------------------|---|--|
| Commander of the Forces | } | <i>One-fourth of One-tenth part of the net proceeds.</i> |
|-----------------------------------|---|--|

General Officers :

1st Class.—General Officers commanding Divisions, and other Officers, &c., holding equivalent Staff Appointments

2d Class.—Other General Officers, and all other Officers, &c., holding equivalent Staff Appointments

| | |
|---|--|
| } | <i>The remaining Three-fourths of One-tenth part of the net proceeds ; the same to be so divided that a General Officer, &c., of the 1st Class shall receive One-half more in amount than a General Officer, &c., of the 2d Class.</i> |
|---|--|

Field Officers :

1st Class.—Colonels, Lieutenant-colonels, and Brevet Lieutenant-colonels, and other Officers holding Staff Appointments equivalent thereto

2d Class.—Brevet Lieutenant-colonels not holding an Appointment qualifying them to share in the preceding Class of Field Officers, and all Majors, Regimental or Brevet, and all other Officers holding Appointments equivalent thereto

| | |
|---|--|
| } | <i>One-eighth of the remainder of the net proceeds ; the same to be so divided that a Field Officer, &c., of the 1st Class shall receive One-half more in amount than a Field Officer, &c., of the 2d Class.</i> |
|---|--|

The remainder of the net proceeds shall be distributed in the following Classes, so that every Officer, Non-commissioned Officer, &c., shall receive shares or a share according to his Class, as set forth in the following scale :

1st Class.—Captains, and all other Officers entitled according to the usage of our army to share in that rank

2d Class.—Subalterns, and all other Officers entitled according to the usage of our army to share in that rank

| | |
|---|---------------------------------|
| } | <i>Thirty-five Shares each.</i> |
|---|---------------------------------|

| | |
|---|----------------------------|
| } | <i>Twenty Shares each.</i> |
|---|----------------------------|

| | | |
|---|---|--------------------------|
| 3d Class.—Sergeant majors, Quartermaster Sergeants, and all other Staff Sergeants, and others holding equivalent rank | } | <i>Ten Shares each.</i> |
| 4th Class.—Sergeants, and others holding equivalent rank | | |
| 5th Class.—Corporals | } | <i>Four Shares each.</i> |
| 6th Class.—Private Soldiers, Trumpeters, Drummers, &c. | | |

And in the event of any difficulty arising with respect to the Class in which any Officer, &c., shall be entitled to share, our will and pleasure is, that the same shall be determined and adjusted by the Commander-in-chief of our land forces for the time being.

Given at our Court at Buckingham Palace, this Eleventh day of August, in the year of our Lord One thousand eight hundred and fifty-four, and in the eighteenth year of our reign.

GOD SAVE THE QUEEN.

BOUNTY. "Every able-bodied musician or soldier, *re-enlisting* in his company or regiment within two months before, or one month after the expiration of his term of service, shall receive two months' extra pay, besides the pay and allowances due him on account of the unexpired period of his enlistment;" (*Act March 2, 1833.*) *Bounty* lands have also been given by Congress for military service. The principal characteristic of those acts has been to reward alike all grades, and to make no distinction of service, except by granting forty acres for the *minimum* degree of service, and one hundred and sixty acres for the *maximum* of service. A very marked and utterly indefensible departure from the principle upon which such rewards of merit and services were made by the several States immediately after the Revolutionary War.

BOYAU—is a small trench, or a branch of a trench, leading to a magazine, or to any particular point. They are generally called boyaus of communication.

BREACH. Rupture made in a fortification to facilitate the assault. The best mode of doing this is by dividing the wall up into detached parts by making one horizontal and several vertical cuts, and battering each part down. The easiest way to make the cut is to direct the shots upon the same line, and form a series of holes a little greater than a diameter apart, and then fire at the intervals until the desired cut is made. The horizontal cut is finished first. The vertical cuts are then commenced at the horizontal cut, and raised until the

wall sinks, overturns, and breaks into pieces. The effective breaching power of rifle cannon has been shown by recent successful experiments in England, against a martello tower 30 feet high and 48 feet diameter, the walls being of good solid brick masonry, from 7 to 10 feet thick. Armstrong guns with 40 and 80-pounder solid shot, and 100-pounder percussion shells were used at a distance of 1,032 yards, more than twenty times the usual breaching distance. The 80-pounder shot passed completely through the masonry, (7 feet 3 inches,) and the 40-pounder shot and 100-pounder percussion shells lodged in the brickwork, at a depth of five feet. After firing 170 projectiles, a small portion of which were loaded shells, the entire land side of the tower was thrown down, and the interior space was filled with the *debris* of the vaulted roof, forming a pile which alone saved the opposite side from destruction. The superior breaching power of rifle projectiles depends not only on penetration, but on accuracy of flight and consequent concentration on any desired point; (BENTON.)

BREACH OF ARREST. Any arrested officer who shall leave his confinement, before he shall be set at liberty by his commanding officer, or by a superior officer, shall be cashiered; (ART. 77, *Rules and Articles of War.*)

BREAK GROUND—is to commence the siege of a place by opening trenches, &c.

BREASTWORK—is a hastily constructed parapet, not high enough to require a banquette, or at least generally without one; (*See FIELD WORKS.*)

BREECH. The mass of solid metal behind the bottom of the bore of a gun extending to the rear of the base ring. The *base of the breech* is a frustum of a cone or spherical segment in rear of the breech.

Breech of a musket; Breech screw; Breech pin. (For breech-loading arms, *See* CARBINES; PISTOL.)

BREVET. (*French.*) It is derived from Latin, *breve, brevia*, which signify a brief; a parchment containing an annotation or notification; (BARDIN, *Dictionnaire de l'Armée de Terre.*) So also, according to Ainsworth, *To issue out a writ, Mandatum, vel BREVE emittere.* This Latin word *breve, brevia*, is also still preserved in English law, as signifying a writ, or mandatory precept issued by the authority, and in the name of the sovereign or state.—*See Breve, a writ, Breve de Recto, a writ of right, Brevia Formata, the register of writs; (BOUVIER'S Law Dictionary.)* So also in *Scots Law, Breve Testatum (Lat.)* an acknowledgment in writing, which, by the ancient practice, was made out on the land at the time of giving possession to the vassal, and signed by the superior; (OGILVIE.)

The word brevet in French signifies, when applied to officers in the army or navy, *commission*; (SPIERS and SURENNE.) Brevet was taken by the English from the French with this meaning. As used in the United States army, brevet was borrowed with our Articles of War from England, and in the British service it means a commission in the army at large, distinctive of a commission in a particular regiment or corps. But, as both in the British service and our own, *payments* are made for the authorized number of officers of the various grades in the several corps composing an army, ordinary English lexicographers have set down the meaning of brevet as a *commission* which gives an officer title and rank in the army above his pay; (WEBSTER, WORCESTER, and OGILVIE.) This would be the true meaning of brevet, if there was no legislation on the subject of rank by brevet other than that authorizing such rank to be conferred. But as rank by brevet is given in the army of the United States, by and with the advice and consent of the Senate, for "gallant actions or meritorious services," the laws have justly provided that, whenever an officer is on duty, and exercises a command according to his brevet, he shall be entitled to the pay of such grade; (*Acts of 1812 and 1818.*) Brevets, however, being commissions in the army at large, it would also follow, if there was no further legislation, that such commissions would be exercised in the particular regiment in which an officer was mustered. To avoid this, and also to give efficacy to commissions in particular corps where different corps come together, the 61st and 62d Articles of War have regulated the whole subject. The 61st Article provides that within a regiment or corps officers shall take rank and do duty according to the commissions by which they are mustered in their regiments or corps, but brevets or former commissions may take effect in detachments and courts-martial composed of different regiments or corps. As rank, however, means a *range of subordination in the body in which it is held*, it is manifest that rank in any particular body, as a regiment, corps, or the army at large, would not of itself give the right to command out of that particular body, without being *enabled* by further legislation. Hence the necessity of the 62d Article of War, which provides that, when *different* corps come together, the officer highest in rank of the line of the army, marine corps, or militia, by commission there on duty or in quarters shall command the whole, and give orders for what is needful for the service, unless otherwise specially directed by the President of the United States, according to the nature of the case; (*See COMMAND; DETACHMENT; LINE; PRESIDENT; RANK.*)

BRIBE AT MUSTER. Art. 16 of the Rules and Articles of

War provides that any officer convicted of taking any bribe on mustering, or on signing muster rolls, shall be displaced from his office, and be utterly disabled from ever after holding any office or employment in the service of the United States.

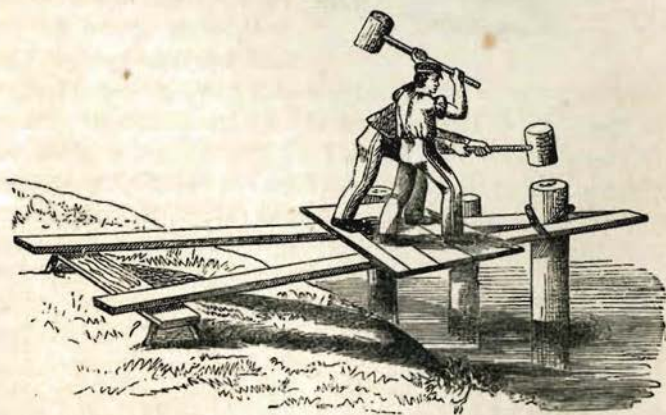
BRICOLE. Men's harness for dragging guns, length 18 feet—used for harnessing men to guns when horses cannot be used.

BRIDGE. If you are at the side of a narrow but deep and rapid river, on the banks of which trees grow long enough to reach across, one or more should be felled, confining the trunk to its own bank, and letting the current force the head round to the opposite side; but if "the river be too wide to be spanned by one tree—and if two or three men can in any manner be got across—let a large tree be felled into the water on each side, and placed close to the banks opposite to each other, with their heads lying up-streamwards. Fasten a rope to the head of each tree, confine the trunks, shove the heads off to receive the force of the current, and ease off the ropes, so that the branches may meet in the middle of the river, at an angle pointing upwards. The branches of the trees will be jammed together by the force of the current, and so be sufficiently united as to form a tolerable communication, especially when a few of the upper branches have been cleared away. If insufficient, towards the middle of the river, to bear the weight of men crossing, a few stakes, with forks left near their heads, may be thrust down through the branches of the trees to support them;" (SIR H. DOUGLAS.)

When a river, which cannot be forded, must be crossed by animals and carriages, a bridge becomes necessary; and in all cases it is better, if possible, to cross by a bridge than by a ford, unless the latter be exceedingly shallow. Military bridges may be of three kinds: 1st. Fixed structures of timber. 2d. Floating-bridges. 3d. Flying-bridges. Timber bridges may be either supported on piles or on trestles. Pile-bridges are the most secure, and where bridges are required to remain in use for a considerable period, as those which may be constructed on the lines of communication of an army, with its base of operations, this form of bridge will generally be adopted. To construct a good pile-bridge over a considerable river, much skilled labor is necessary, and an ample supply of materials essential. When the bottom of the channel is firm, and the river not subject to floods, a pile-bridge may be constructed without difficulty, and will be very durable. The piles must be driven by an engine, which may be constructed of an 8-inch or 10-inch shell run full of lead, suspended by a rope over a pulley. This may be worked by hand, and will drive piles to a depth sufficient to allow of the passage of the heaviest artillery over the bridge. The pulley of the

pile engine should be supported on a framework, some 16 feet high, which may be made to act as a guide to the shell during its fall, and also for the pile while it is being driven. This framework should be erected upon a large flat-bottomed boat. If such a boat is not to be procured, a raft must be made to answer the purpose. When timber of a considerable length can be procured for the joists of the bridge, it will be advisable to make the intervals between the piers or rows of piles, as great as the length of the joists will allow, so that the current of the river may be impeded as little as possible, and its action on the bridge be reduced to a minimum. By this arrangement, too, as much space as possible is given for the passage of floating bodies, and the danger of their damaging the bridge is proportionately diminished. When all the piles have been driven as far as the power of the engine can accomplish, they must be sawn off to the same level, and the superstructure of timber be strongly and carefully fitted. With bays of 20 feet, and a roadway 14 feet wide, there must be at least five or six beams not less than 7 inches by 8. With wider bays, timbers of larger dimensions will be necessary. The planking should not be less than 2 inches thick laid transversely. Bridges on piles, for the passage of infantry over shallow rivers only, may be expeditiously constructed, as the piles may be slight, 6 inches in diameter would suffice, and they can be driven by hand by heavy mauls, or by two men using a beetle. See diagram, Fig. 71.

FIG. 71.

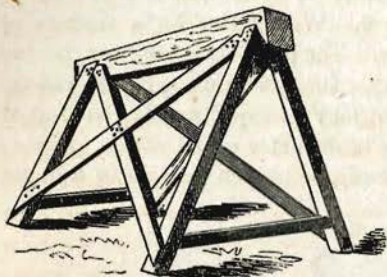


Here the pile is set and kept in its place by means of two spars of planks resting their extremities upon a stool placed on the bank. A plank is then laid across, on which one or two men may stand to drive the pile. The weight of the men may be increased, if necessary,

by stones placed on the platform assisting to force the piles into the ground. When one row of piles is placed, and the floor laid to a cross beam fixed upon them, another row may be set and driven in the same manner, fixing the stool on that part of the floor which will thus have been completed. Piles driven in this way may be safely depended upon to bear infantry with a front of two or three files in open ranks, not keeping step.

Bridges on Trestles.—When rivers are shallow, and not liable to sudden floods, and when their channels are firm and even, very useful bridges may be constructed on trestles. Trestles for this purpose should each consist of a stout transom or ridge piece some 8 inches square and 16 feet long; to this should be fitted four legs adapted to the depth of the river slanting outwards from the vertical, and strengthened by diagonal bracing, (Fig. 72.) For large bridges it will

FIG. 72.



be found advantageous to add an additional pair of legs to each trestle. These, from the difficulty of fitting six legs to the uneven surface of the bottom of the river, should not be attached until the trestle is placed in position; they should then be driven into the bed of the river, and their upper extremities should be firmly nailed to the ridge piece. When

the different parts of the trestles are all prepared beforehand, they can be speedily put together and the bridge completed with great expedition. Fascines may be used for flooring, where plank cannot be obtained. When the intervals or bays are ten feet, the dimensions of the trestle and beams may be as follows:—

| | Length. | Breadth. | Thickness. | |
|-------------|-----------------------|----------|------------|----|
| Trestles. { | 1 Head beam..... | 16 | 8 | 8 |
| | 4 Legs..... | * | 4½ | 4½ |
| | 6 Braces..... | — | — | — |
| | Balks..... | 12 | 4½ | 4½ |
| | Planks for floor..... | 12 | 12 | 2 |

If there be a strong current, a cable should be stretched across the river on each side of the bridge, and the trestles be firmly lashed to them. It may, moreover, sometimes be necessary to load the trestles

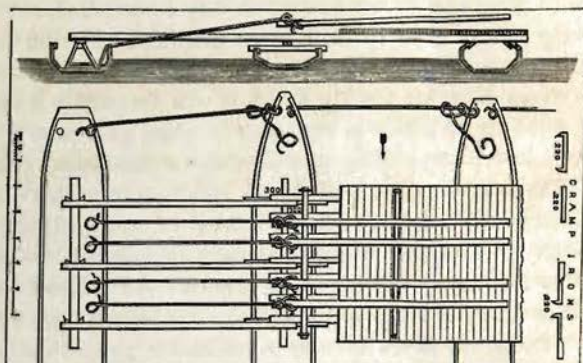
with shot or stones, to keep them in their position until the flooring is laid upon them.

Floating-Bridges are those generally adopted for the passage of troops over rivers. They may be very expeditiously constructed, and can be made strong enough to carry the heaviest artillery. During the last century boats were generally used for this purpose; and, although on navigable rivers, boats are readily found, it was frequently a work of time and difficulty to collect a sufficient number, particularly if the enemy had had the opportunity of removing or destroying them previously. The inconveniences and delays resulting from this cause, always hazardous and often fatal to the success of an expedition, led to the introduction of regular bridge equipages or pontoon trains, duly organized to accompany the march of armies. An efficient pontoon train renders an army independent of the rivers which may intersect its route. By its aid rivers of very considerable magnitude may be bridged in a few hours, and a march of a given distance may thus be with certainty completed in a given time—a matter often of momentous importance to the success of military operations.

Bridges of Boats.—Boats of almost any kind will make a serviceable bridge. For wide rivers the boats should be large. The boats of which a bridge is constructed should, if possible, be nearly of the same size, unless they are all very large, and then variations in dimensions will be of little consequence. Should some be large and some small, the passage of large bodies of troops, of heavy guns and ammunition wagons will depress them unequally, causing the flooring of the bridge to assume an irregular line, straining and injuring, and in some cases fracturing, the timber and destroying the bridge. When boats, all of the same size, cannot be obtained, the larger boats should be placed at wider intervals, so that they may sustain a heavier weight, proportioned to their greater capacity, during the passage of troops, and be depressed to an equal distance with the smaller. The superstructure will consist of balks of timber laid across the gunwales of the boats, and securely fastened, and the flooring of planks laid transversely over. A certain rigidity results from this arrangement, by which, if the boats were subject to much motion, the bridge would be speedily destroyed. In tidal rivers, where a considerable swell must generally be encountered, this manner of securing the timbers will not answer. In this case, it will be found advantageous to erect a trestle or support in the centre of each boat, over which the timbers may be bolted to each other: thus each boat will be allowed independent motion, and this will not endanger the fracture of the bridge.

The boats should be moored head and stern, and should be kept at their relative distances by timbers fixed at the head and at the stern,

FIG. 73.



stretching across the bays, so as to remove unnecessary strain from the timbers of the bridge. The timbers should be as nearly as possible square, and of dimensions proportioned to the space of the intervals. With good timbers, 8 inches by 6, twenty feet may be allowed from trestle to trestle. The width of the bridge should also be proportioned to the dimensions of the timbers. With five balks of 7 inches by 8, the bridge should not exceed 14 feet in width. If too wide there will be danger of the beams being broken by the overcrowding of troops on the bridge.

When there is no regular pontoon train, and boats cannot be procured, rafts may be used in place of boats. These rafts may be made of *casks*, which, if properly arranged and securely lashed, will answer all the purposes of pontoons. Eight or ten casks, all of the same size, should be placed side by side on a level piece of ground, touching each other, bung-holes uppermost. Two stout balks, $4\frac{1}{2}$ inches square, and about 2 feet longer than the sum of the diameters of the casks which are to form the pier, must then be prepared and laid along the upper surface of the casks, parallel to each other, and each about a foot distant from the line of the bung-holes. A piece of 3-inch rope should then be attached to one end of each of these balks, passed under all the casks, and secured to the other end of the same balk.

These ropes are then drawn up towards the balks and tightly lashed by small ropes between every pair of casks, and the smaller ropes of the one side are again lashed across to those of the other side (Fig. 74.) The whole pier thus becomes so compact that it may be rolled

and launched and rowed with as little danger of breaking up as though it were a single pontoon. Piers of casks constructed in this way may be used exactly like pontoons, and will form a most efficient bridge.

FIG. 74.

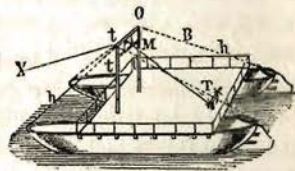


Pontoons are vessels of various forms and dimensions, and are made of various materials. They are generally boat-shaped, of wood, of copper, or of tin, sometimes with decks, and sometimes without. Each boat, or pontoon, is carried on a suitable wagon, which also conveys the portion of superstructure necessary for one bay or interval.

Flying-Bridges.—A flying-bridge is an arrangement by which a stream with a good current may be crossed, when, from a want of time or a deficiency of materials, it may not be possible to form a bridge. It consists of a large boat or raft firmly attached by a long cable to a mooring in the centre of the stream, if the channel be straight, or on the bank if the channel be curved. By hauling the boat or raft into proper positions, it will be driven across the stream in either direction as may be desired.

The bridge is made usually of two, (Fig. 75,) three, and sometimes six boats, connected together, and very solidly floored over, the beams being fastened to the gunwales of the boats with iron bolts or bands, and the flooring planks nailed down upon them. The floor is sometimes surrounded with a guard-rail. The most suitable boats are long, narrow, and deep, with their sides nearly vertical, in order to offer greater resistance to the action of the current. At the end of the rope is fixed an anchor X, which is moored in the channel, if this is in the middle of the stream. If the channel is not in the middle, the anchor is placed a little on one side of it toward the most distant shore. By means of the rudder, the bridge is turned in such a direction that it is struck obliquely by the current, and the force resulting from the decomposition of the action of the current makes it describe an arc of a

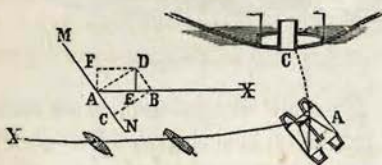
FIG. 75.



circle around the anchor as a centre, and this force acquires its maximum effect when the sides of the boats make an angle of about 55° with the direction of the current.

Suppose M N (Fig. 76) to represent the side of the boat, and A B the resultant of the forces of the current against it. The force A B will be decomposed into two forces; the one, A C, will act in the direction M N as friction, and may be neglected, and the other, A D, will act perpendicularly to the side of the boat. Were the boat free to move, and headed in the same direction, it would descend the river, at the same time crossing it. A D is then decomposed into two other forces, the one A E, in the direction of the current, causing the boat to drift, the

FIG. 76.



other A F, perpendicular to this, which pushes the boat across. If the boat is now attached to a fixed point by the rope A X, the force A E will be neutralized, and all the effort of the current will be reduced to the force A F, which makes the boat revolve around the point X. The length of rope used should be once and a half or twice the width of the river. With a shorter rope the arc described by the bridge is too great, and it performs the ascending branch with difficulty; with a longer one, the rope becomes too heavy, sinks in the water, and fetters the movement. Generally, the arc described by the bridge should not be more than 90° . To prevent the rope from dragging over the deck, which would interfere with the load, it is held up by an arrangement such as is indicated in Fig. 76, and buoyed out of the water nearly to the anchor by skiffs, empty casks, or other floating bodies. When the stream to be crossed is not very wide, a flying-bridge may be made with two ropes, one fastened on each shore, the ropes being used alternately. If the stream, on the contrary, is very wide, several boats are fastened together, floored over, and anchored in the middle, and communication kept up with each shore by a flying-bridge, like the one already described. In about one hour 36 men can construct a flying bridge composed of 6 bridge-boats, and capable of carrying 250 infantry, or 2 pieces of artillery and 12 horses. At least one spare anchor should always be carried on the bridge, to anchor it in case the rope should break or become detached; and oars, a small boat, and a long rope, should also be provided. A flying-bridge may, in case of emergency, be made of any kind of boats with the means of fixing rud-

ders to them. For want of an anchor, a large stone, mill-stone, or a bag or box of sand may be made use of. A flying-bridge may be made of a raft, the best form being lozenge-shaped, with the front angle about 55° . It is attached to a rope stretched across the stream by three others with pulleys, which slide along the first rope, this being tightly stretched across and not allowed to hang in the water. Buttresses constructed on boats or trestles, according to the means at hand, are formed on both sides of the river, at the points where the flying-bridge lands. Wagons impermeable to water may, by means of a rope attached to the wagon body, be used to pass a company with its baggage.

Where large bodies are to be crossed, a common contrivance is the RAFT of logs, but it is the last expedient to be adopted from its want of buoyancy and general manageability, and is inapplicable when the passage of a river is likely to be contested with animation. Its merits are that, at the expense of time, it can be constructed with less experienced workmen; it saves carriage, as it can only be made of materials near the spot. It is, however, an indifferent substitute for boats, pontoons, or casks. An independent raft will require two rows of trees, at least, to float as many men as can stand upon it, and the logs are best bound together by withes, or ropes, and stiffened with cross and diagonal traces.

Timber Bridges.—The rudest form of arch is very strong, easy of construction, and of frequent occurrence; the timbers being roughly notched into each other as in log-houses, and gradually jutting over

FIG. 77.

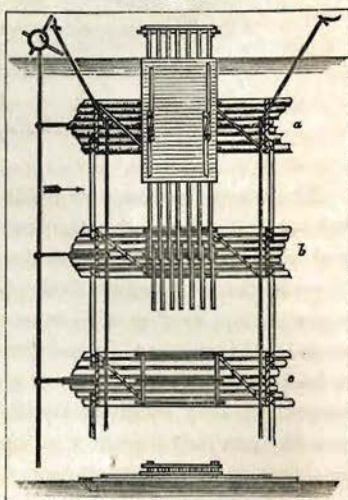
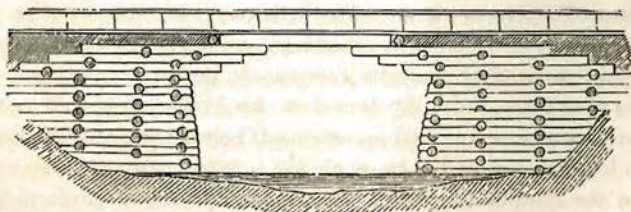
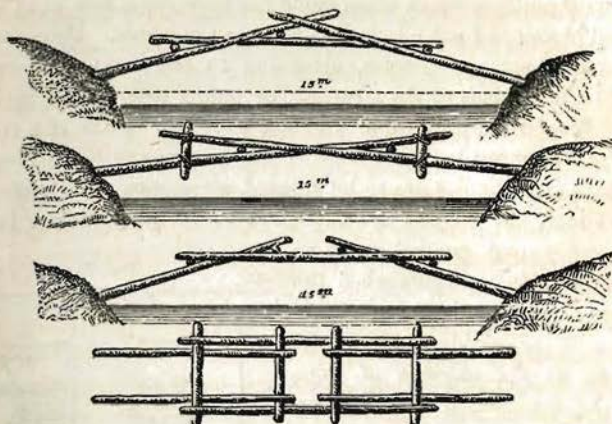


FIG. 78.



the pier or abutment near each other. A few of the upper courses may be trenailed down. Figure 79 shows the manner of construction with hewn or rough timber.

FIG. 79.

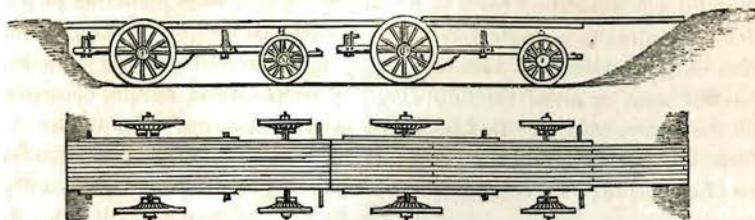


The wagon bodies now made for the United States army are galvanized or zincked iron; the lower and upper rails are of oakwood, covered with sheet iron; wooden supporters are framed into the lower rails like the usual wagon body, the tail piece is hung upon hinges. An important application of these iron wagon bodies, (suggested by Lieutenant-colonel Crossman, United States army,) would be their employment as boats in bridging rivers. If they are so perfected as to render them water-tight, they might be readily converted into a system of pontoons, each one carrying a portion of the string pieces and planks necessary to construct a bridge, without materially interfering with the usual load. Arranged and lashed together in double rows, they would afford a sufficient breadth of roadway for the passage of both cavalry and artillery with facility.

Large trees may be felled to enable infantry to cross narrow streams, placing them so that their butts may rest upon the banks with the top directed obliquely up the stream; if one is not long enough, others may be floated down so as to extend across, being guided and secured by ropes: a footway may be formed by laying planks, fascines, or hurdles over them, and their branches should be chopped off nearly to the level of the water and intertwined below; poles also may be driven into the bed of the river, to aid in supporting the trees by attaching the boughs to them. *Wheel carriages* used to form a foot

bridge may be connected by beams; or a single pair of wheels with an axle-tree to admit two strong posts may be attached and placed in the centre of the stream if it is not too wide. Poles reaching from each bank may be secured to the posts, and the wheels would act as a trestle. With a flooring over the poles, a slight bridge could be

FIG. 80.



rapidly constructed for an advanced guard. *Hide boats* are made of four buffalo hides strongly sewed together with buffalo sinew, and stretched over a basket work of willow 8 feet long and 5 feet broad, with a rounded bow, the seams then being covered with ashes and tallow. Exposed to the sun for some hours, the skins contract and tighten the whole work. Such a boat with four men in it draws only four inches of water. *Inflated skins* have been used since the earliest times for crossing, and if four or more are secured together by a frame, they form a very buoyant raft. *Canvas* (rendered water-proof by a composition of pitch 8 lbs., beeswax 1 lb., and tallow 1 lb., boiled together and laid on quite hot) will serve as a raft or pontoon, if placed over framework or wicker work; (Consult *Memorial des Officiers d'Infanterie et Cavalerie*; *Aide Memoire of the Military Sciences*; DOUGLAS'S *Principles and Construction of Military Bridges*; HYDE'S *Fortifications*; GIBBON'S *Manual*; HAILLOT, *Instruction sur le Passage des Rivieres et la Construction des Ponts Militaires*.)

BRIDGE-HEAD (*la tête du pont*)—is a work consisting of one or more redans or bastions, constructed on the bank of a river, to cover a bridge, to protect a retiring army in crossing the river, and to check an enemy when pressing upon it. (*See REDAN.*)

BRIDOON. The snaffle and rein of a military bridle, which acts independently of the bit, at the pleasure of the rider.

BRIGADE. Two regiments of infantry or cavalry constitute a brigade. (*Act March 3, 1799.*)

BRIGADIER-GENERAL. Rank next below major-general. The commander of a brigade. Entitled to one aide-de-camp.

BRIGADE-INSPECTOR. (*See MILITIA.*)

BRIGADE-MAJOR. An officer appointed to assist the general commanding a brigade in all his duties. (*See MILITIA.*)

BUILDING. (*See BRIDGES; CARPENTRY.*)

BUILDINGS, DEFENCE OF. The objects now under consideration are churches, country-houses, factories, prisons, or other substantial buildings; and as there is but little difference in the mode to be pursued for placing any of them in a state of defence, an explanation of the details applied to a single house will perhaps be sufficient to convey an idea on the subject. A building proper for defensive purposes, should possess some or all of the following requisites: 1. It should **COMMAND** all that surrounds it. 2. Should be **SUBSTANTIAL**, and of a nature to furnish materials useful for placing it in a state of defence. 3. Should be of an **EXTENT PROPORTIONED TO THE NUMBER OF DEFENDERS**, and only require the **TIME AND MEANS** which can be devoted to completing it. 4. Should have walls and projectings that mutually **FLANK** each other. 5. Should be **DIFFICULT OF ACCESS** on the side exposed to attack, and yet have a **SAFE RETREAT** for the defenders. 6. And be in a situation proper for fulfilling the object for which the detachment is to be posted. A church will be found usually to unite all these good properties more than any other building. It may be remarked that though good strong walls are an advantage, yet their thickness should be limited to 2 or 3 feet, from the difficulty there would be in piercing loopholes; unless when they are likely to be battered by artillery, in which case the musketry must be confined to the windows, and the more solid the walls are, the better. It should also be remembered that brick houses and walls are preferable, on several accounts, to those built of stone; for when exposed to artillery, a round shot merely makes a small hole in the former, but stone is broken up in large masses, and dangerous splinters fly from it in all directions. It is much easier also to make loopholes through brickwork than through masonry. Wooden houses, or those made of plaster, are to be avoided, from the facility with which an enemy can set fire to them, and they are frequently not even musket-proof. Thatched houses are equally objectionable, on account of fire, unless there is time to unroof them; and after all it must not be forgotten, that earthen works, when exposed to artillery, are to be preferred to houses, as far as affording security to the defenders is concerned. In seeking this security, however, it should be borne in mind that they are not so *defensible*—for troops cannot be run into a house; but they are not exempt from such an intrusion in an earthen work of the nature under discussion. The two together can be made to form a more respectable post than *either* can be made into singly, for the

merits of both will be enhanced, and the defects be modified, by the union. A building is therefore at all times a capital base to go to work upon. The walls may be partially protected from cannon shot by throwing up earthen parapets round it, and the house may "reciprocate" by acting the part of a keep, and afford the garrison a place of refuge, in which they may either defend themselves with advantage, or if it "suits their book," resume the offensive and drive the assailants out again.

An officer will be able to make his selection at first sight, with reference to most of these points, but it requires a little more consideration to determine whether a building and its appliances are convertible into a post, of a size proportioned to the force under his command. The average number of men, however, proper for the defence of a house, may be roughly estimated on some such data as the following:—That in a lower story it might generally be proper to tell off one man for every 4 feet that the walls measured round the interior. In the second story one man for every 6 feet, and in an attic or roof one man for every 8 feet. For example, if a house of three stories high were found, on pacing it, to measure 140 feet round the interior walls, the number of men for its defence on the above data would be determined thus:—

Feet.

$\frac{140}{4}$ Would give 35; which would be the number of men for the lower story.

$\frac{140}{6}$ Would be about 23 men for the second floor.

$\frac{140}{8}$ Would be 18 men for the attic.

making a total of 76 men for the three stories; to which about one-sixth of the whole, say 14 men, should be added as a reserve, making altogether a garrison of 90 men. If there were out-buildings or walls in addition, the number of men required for their defence, would be determined in a similar manner, by assuming certain data adapted to the circumstances as a guide in the calculation. These numbers are not to be considered *definitive*, but merely to convey an idea on the subject; for if a detachment were much weaker in proportion to the extent, a vigorous defence might still be made. The force might be concentrated where most required, as it is not a matter of course that a place will be attacked on all sides at once; or if a building were found so large that the disposable force would be too much disseminated, or if there were a want of materials and time for putting the *whole* of it in a stato

of defence, a *part* of it only might be occupied. Should there exist any doubt about having sufficient time to complete all that might be wished, it would become matter for consideration what were the points which it would be of the greatest importance to secure first, so as to be in a condition to repel an *immediate* attack, because such points would naturally claim attention to the exclusion of all others. In such a case, it might be well to employ as many men as could work without hindering each other by being too crowded. 1. To collect materials and barricade the doors and windows on the ground floor, to make loopholes in them, and level any obstruction outside that would give cover to the enemy, or materially facilitate the attack. 2. To sink ditches opposite the doors on the outside, and arrange loopholes in the windows of the upper story. 3. To make loopholes through the walls generally, attending first to the most exposed parts, and to break communications through all the party-walls and partitions. 4. To place abatis or any feasible obstructions on the outside, and to improve the defence of the post by the construction of tambours, &c. 5. To place out-buildings and garden walls in a state of defence, and establish communications between them. To make arrangements in the lower story especially, for defending one room or portion after another, so that partial possession only could be obtained on a sudden rush being made. These different works to be undertaken *in the order of their relative importance*, according to circumstances; and after securing the immediate object for which they were designed, they might remain to be improved upon if opportunity offered. An endeavor will now be made to explain the mode of executing these works in the order in which they are mentioned.

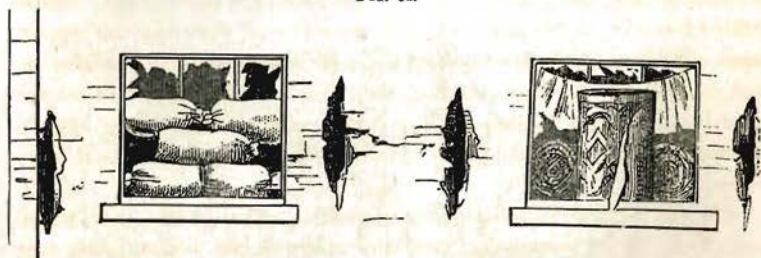
Collecting Materials.—The materials that will be found most useful in barricading the passages, doors, and windows, are boxes, casks, cart bodies, bricks, stones, cinders, dung, &c., and timber of any sort that comes to hand; if they cannot be found elsewhere on the premises, the roof and floors must be stripped to furnish what is required.

Barricading Doors.—In the application of these materials, the boxes and casks filled with cinders or dung, and placed against the doors to a height of 6 feet, will prevent their being forced open, and loopholes may be made through the upper portions, which can be rendered musket-proof to protect the men's heads; short lengths of timber piled one upon another to the same height, leaving a space between any two of them in a convenient situation for firing through, and their ends being secured in the side walls of a passage, or propped with upright pieces on the inside, will effect the same object; or a door may be loosely

bricked up, leaving loopholes, &c. If it is probable that artillery will be brought up for knocking away these barricades, and so forcing an entrance, a passage may be partially filled with dung or rubbish to the thickness of 8 or 10 feet, or thick beams of timber may be reared up on the outside of a door, and the interval filled with the same, or with earth if more convenient. A hole, about 3 feet square, may be left through an ordinary barricade for keeping up a communication with the exterior; but for effecting a retreat, or making sorties, it will be necessary to make a door musket-proof, by nailing on several additional thicknesses of plank, and arrange it so as to open as usual, or contrive something on the spot which shall equally protect the men when firing through the loopholes, and yet be removable at pleasure.

Barricading Windows.—Windows do not require to be barricaded so strongly as doors, unless from their situation an entrance may easily be effected, or an escalade be attempted. The principal object is to screen and protect the defenders whilst giving their fire; any thing, therefore, that will fill up the window to a height of 6 feet from the floor, and that is musket-proof, will answer the purpose. Thus two or three rows of filled sand-bags, laid in the sill of a window, Fig. 81, or

FIG. 81.



short lengths of timber would do; or a carpet, a mattrass, or blankets rolled up, would be ready expedients. Loopholes would, in all cases, be arranged whatever materials were used. If time presses, and windows could not be blocked up, one means of obtaining concealment, which is the next best thing to security, would be to hang a great coat or blanket across the lower part of them as a screen, and make the men fire beneath it, kneeling on the floor. The glass should be removed from windows before an attack commences, as it is liable to injure the defenders, when broken by musketry.

Levelling Obstructions outside.—Any shrubberies, fences, or out-buildings, within musket-shot, which would favor an attack by affording

cover to an enemy, and allowing him to approach unperceived, should be got rid of as soon as possible. The trees should be felled, leaving the stumps of different heights, so as to encumber the ground, and the materials of walls, &c., should be spread about with the same view; but whatever is convertible for barricades should be carried to the house. The thatch from roofs, and any combustibles, should also be removed or destroyed.

Ditches in Front of the Doors, &c.—As a means of preventing a door being forced, a ditch may be dug in front of it, about 7 feet wide and 5 feet deep; such a ditch is also necessary in front of the lower windows, if the loopholes cannot be conveniently made high enough from the outside to prevent an enemy reaching them. These partial ditches may afterwards be converted into a continued ditch all round a house if opportunity offers, as it would contribute to the defence of the post. The floors may also be taken up on the inside, opposite the doors or windows open to attack.

Loopholes.—If the walls are not too thick, they may be pierced for loopholes, at every 3 feet, in the spaces between the windows, &c. (Fig. 82.)

FIG. 82.

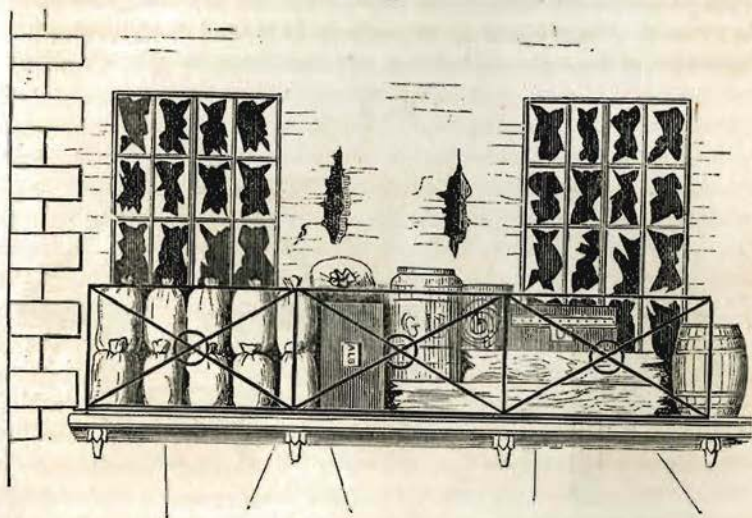


Two tiers of these loopholes may be made if opportunity offers, and a temporary scaffolding of furniture, benches, casks, or ladders, &c., erected for firing from the upper ones: on the lower story a row of loopholes may be made close to the ground. The floor must, in this case, be partly removed, and a small excavation made between the beams for the convenience of making use of them. Just under the eaves of a roof there is generally a place where loopholes can be made

with great facility, and a tile or slate knocked out here and there with a musket, will give other openings, from which an assailant may be well plied as he comes up.

Communications.—A clear communication must be made round the whole interior of the building, by breaking through all partitions that interfere with it: and for the same purpose, if houses stand in a row or street, the party walls must be opened, so as to have free access from one end to the other. Means should likewise be at hand for closing these openings against an enemy, who may have obtained any partial possession. Holes may also be made in the upper floors to fire on the assailants, if they force the lower ones, and arrangements made for blocking up the staircases, with some such expedient as a tree, prepared in the same manner as for an abatis, or by having a rough palisade gate placed across. Balconies may be covered or filled up in front with timber or sand-bags and made use of to fire from downwards. (Fig. 83.)

FIG. 83.

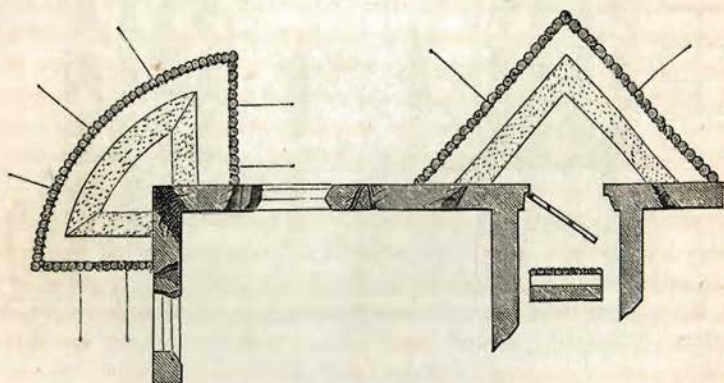


Abatis.—The partial levelling of any object on the outside, that would give concealment to an enemy, and favor an attack, is supposed to have been already attended to: but if time admits, after loopholes, &c. are completed, this system must be extended and perfected, and the formation of a more regular abatis should be commenced, and any other obstruction added that opportunity permits. The best distance for such obstructions, if they are continuous and cannot be turned, is within 20 or 30 yards of a work, or even less, so that every shot may tell

whilst the assailants are detained in forcing a passage through them ; within such a distance also of defenders securely posted, it would not be pleasant for a hostile force in confusion, to "*Fall in,*" or "*Re-form Column.*" If hand-grenades are to play their part in the defence of a post, the obstruction, whatever it may be, should be placed within their influence. A man will easily throw them 20 yards, but a trial on the spot will best determine the distance at which they can be used with effect.

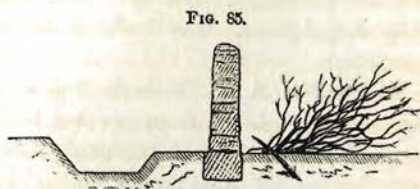
Tambours.—If the building that has been selected has no porches, wings, or projecting portions from which flank defence can be obtained, it will be advisable to construct something of a temporary nature to afford it. Stockade work offers a ready means of effecting this object ; it may be disposed in the form of a triangle, projecting 8 or 10 feet in front of a door or window, planted as described in Article STOCKADE, and with the precautions of having the loopholes high enough. A small hole should be left in the barricade of the door or window to communicate with the interior. Three or four loopholes on each face of the projection cut between the timbers will be found very useful in the defence. These contrivances are usually termed *tambours*, and if constructed at the angle of a building, will flank two sides of it. (Fig. 84.)

FIG. 84.



Out-buildings and Walls.—When the defences of the main building are in a state of forwardness, any out-buildings or walls which have been found too solid to be levelled at the moment, or which have been preserved for the chance of having time to fortify them, and thus to increase the strength of the post, must be looked to. They may be placed in a state of defence by the means already described, and separate communications should be established between them and the

principal building by a trench, or a line of stockade work, and by breaking through the walls when necessary. In this way a post may be enlarged in any required proportion, by turning all objects that present themselves, such as out-buildings, sheds, walls, hedges, ponds, &c., to the best account; first taking the precaution to secure what is absolutely necessary for *immediate* protection, and for placing it in a state to be defended on the shortest notice. An exterior wall or fence, tolerably close to a house and parallel to it, may be retained for the purposes of defence, without the danger of affording cover, and thus faci-



ilitating an attack, by throwing up a slope of earth on the outside of it, or planting an abatis in the same situation; (Fig. 85.) An enemy would thus remain completely exposed, and it would be worse than useless to him. If a post of the description under consideration were composed of two or more buildings, and it were to be left to itself, and were open to attack on all sides, the stockades or trenches, forming the communications between them, would obviously require to be so arranged as to afford cover, and the means of resistance *on both sides*. This would be effected by merely making them *double*, as shown in Fig. 82; but for greater security, the exterior of such communications should be laid under fire from the buildings at their extremities. If cover cannot from circumstances be obtained, screens should be contrived that will conceal the movements that may be necessary. In arranging the defences of such posts, it is an essential point to make each portion of them so far independent of the others, that if any one part, such as a building for instance, be taken, it shall not compromise the safety of the remainder, nor materially impair the defence they will make by themselves; so that whilst free communications are essential in most cases to a vigorous defence, the means must be at hand for instantly cutting them off by some such expedients as would be afforded by a loopholed, musket-proof door, or rough gates, or by letting fall a tree, prepared as for an abatis, and which till wanted might be reared on its end in the situation required, the means of bringing a close fire upon it having been previously secured; (Jebb's *Attack and Defence*.)

BULLET. (See AMMUNITION; ARMS; PERCUSSION BULLET; PROJECTILES; RIFLED ORDNANCE.)

BUNK. A word used in the army, a place for bedding.

BUREAU—of the War Department. During the absence of the quartermaster-general, or the chief of any military bureau of the War Department, his duties in the bureau, prescribed by law or regulations, devolve on the officer of his department empowered by the President to perform them in his absence; (*Act July 4, 1836.*)

BURIAL. The funeral honors paid to deceased officers and soldiers are prescribed by orders from the President contained in the Army Regulations. The coffin is furnished by the quartermaster's department.

BUSHING A GUN—is drilling a hole into the piece where the vent is usually placed, about one inch in diameter, and screwing therein a piece of metal which had previously a vent; the metal used in bushing is pure copper for brass pieces.

C

CADET. A warrant officer; students at the West Point Military Academy are cadets of the Engineer Corps. The number of cadets by appointments hereafter to be made shall be limited to the number of representatives and delegates in Congress and one for the District of Columbia; and each Congressional District, Territory, and District of Columbia shall be entitled to have one cadet at said Academy; nothing in this section shall prevent the appointment of an additional number of cadets, not exceeding ten, to be appointed at large, without being confined to a selection by Congressional Districts; (*Act March 1, 1843, Sec. 2.*) Pay \$30 per month. (*See ACADEMY.*)

CAISSON. The number of rounds of ammunition carried by each caisson and its limber are for 6-pounder guns 150 rounds; 12 pounder guns, 96 rounds; 12-pounder howitzers, 117 rounds; 24-pounder howitzer 69 rounds, and 32-pounder howitzers 45 rounds. The number of caissons with field-batteries are: with a battery of 12-pounders, 8 caissons for guns, and 4 for howitzers; and with a battery of 6-pounders, 4 for guns, and 2 for howitzers.

CALIBRE. The calibre of bullets is determined by the number required to weigh a pound. The calibre of guns is designated by the weight of the shot; siege and sea-coast howitzers, columbiads, mortars by the number of inches of their respective diameters. (*Consult ORDNANCE MANUAL.*)

CALLING FORTH MILITIA. Congress shall have power to provide for calling forth the militia to execute the laws of the Union, suppress insurrections, and repel invasions; (*Constitution, Art. 1, Sec. 8, Clause 15.*) By Act of Congress, Feb. 28, 1795, the President is

authorized to call forth the militia whenever: 1.—“the United States shall be invaded or be in his judgment in imminent danger of invasion, (from any foreign nation or Indian tribe;) and to issue his orders for that purpose to such officer or officers of militia as he may think proper. 2.—In case of an insurrection in any State against the government thereof, on application of the Legislature of such State, or of the Executive, (when the Legislature cannot be convened.) 3.—Whenever the laws of the United States shall be opposed; or the execution thereof obstructed in any State, by combinations too powerful to be suppressed by the ordinary course of judicial proceedings, or by the powers vested in the marshals; but whenever it may be necessary, in the judgment of the President, to use the military force hereby directed to be called forth in case of insurrection or obstruction to the laws, the President shall forthwith, by proclamation, command such insurgents to disperse, and retire peaceably to their respective abodes within a limited time;” (Act Feb. 28, 1795.) In cases where it is lawful for the President to call forth the militia, it shall be lawful for him to employ for the same purposes, such part of the land or naval forces of the United States as shall be judged necessary, *having first observed all the pre-requisites of the law in that respect;* (Act March 3, 1807.) (See INVASION; MARSHAL; OBSTRUCTION; EXECUTION OF LAWS; INSURRECTION.)

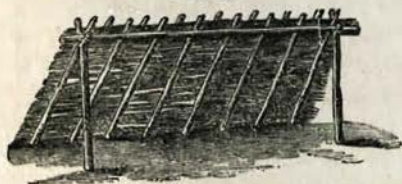
CAMEL. The camel is used in the East as a beast of burthen from 3 to about 16 years of age, and in hot sandy plains, where water and food are scarce, is invaluable. With an army, however, generally speaking, it is not so valuable as the mule or horse. The camel under a burthen is very slow-going, about half the pace of a mule, or from $1\frac{1}{2}$ to 2 miles per hour; he can, however, travel 22 out of the 24 hours, and only requires food once a day. His load varies exceedingly in different countries. In Egypt it is as high as 10 cwt.; and for the short distance from Cairo to Boulac, even 15 cwt. is, it is said, sometimes carried. But in Syria it rarely exceeds 500 lbs., and the heaviest load in the engineer equipment for the British army of the Indus is stated to be 4 cwt. 48 lbs., independent of the pack-saddle. About 400 lbs. is a sufficient load on the march. The pack-saddle or pad is secured in its place by the hump on the back, a hole being made in the pad to let it come through, also by a breast-plate and breeching; no dependence is placed on the girth, which is not kept tight. From the great size of the camel, averaging about 7 feet to the top of the hump, and 8 feet from his nose to his tail, when standing in a natural position, he is capable of carrying light field artillery, and the 12-pounder mountain howitzer, which, with its side arms, weighs from 330 to 350 lbs. The bed or car-

riage is carried by a second, and the ammunition by a third camel. In rocky or slippery ground the camel is apt to slip, and his fore feet then are frequently spread out right and left: when this is the case, he splits up inside the arms, and dies, or becomes useless. Though patient and obedient to his keeper, at whose command he lies down to be loaded, he is frequently very savage with strangers, and his bite is very severe. The camels introduced into the service of the United States on our Western frontiers, carry from 300 to 600 lbs. on continuous journeys, depending on the kind of camel employed. These weights they will carry from 18 to 30 miles a day, according to the character of the country. With lighter loads they travel a little faster. The saddle dromedary will travel 50 miles in 8 or 10 hours; and on an emergency they make 70 or 90 miles a day, but only for a day or two, on a level road. Their use in the United States is still an experiment.

CAMOUFLET—is a small mine, of about 10 lbs. of powder, sufficient to compress the earth all around it, without disturbing the surface of the ground. It is sometimes formed in the wall or side of an enemy's gallery, in order to blow in the earth, and to cut off the retreat of the miner.

CAMP—is the temporary place of repose for troops, whether for one night or a longer time, and whether in tents, in *bivouac*, or with any such shelter as they may hastily construct, as sheds, bowers, &c. Troops are *canton*ed when distributed at any time among villages, or when placed in huts at the end of campaign. *Barracks* are permanent military quarters. *Tents* (says Napoleon) are not wholesome. It is better for the soldier to bivouac, because he can sleep with his feet towards the fire, and he may shelter himself from the wind by means of sheds, bowers, &c. In woods there is great facility in making warm encampments, even in the most bitter weather. A young tree, when felled, yields poles to support branches as shields against weather, and flooring above the snow or damp. A common arrangement is as fol-

FIG. 88.



lows:—A cross-bar is supported by two uprights; against this cross bar a number of poles are made to lean; on the back of the poles abundance of fir branches are laid horizontally; and, lastly, on the back of the fir branches are

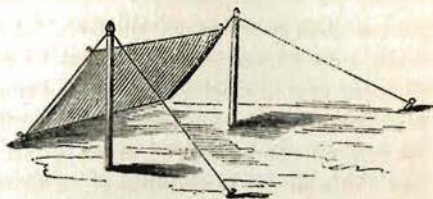
another set of leaning poles, in order to make all secure by their weight. A cloth of any kind is made to give shelter by an arrangement of this

kind. The corners of the cloth should be secured by a simple hitch in the rope and not by a knot. The former is sufficient for all purposes of security, but the latter will jam, and you may have to injure both cloth and string to get it loose again. It is convenient to pin a skewer in the middle of the sides of the cloth, round the ropes.

Good water within a convenient distance is essential in the selection of a camp, as is also the proximity of woods for firewood, material for shelter, &c. Good roads, canals, or navigable streams are important to furnish the troops with the necessaries of life if troops are encamped for long periods. The ground should not be near swamps or stagnant water. This requirement is essential to health. The ground, to be suitable for defence, must admit the manœuvres of troops. The front of the camp of each battalion of infantry or squadron of cavalry must, therefore, be equal to the front of the battalion or squadron. And as far as possible camps for cavalry and infantry should be established on a single line—the cavalry upon the wings, the infantry in the centre. The shelters or huts are alligned, *as well as the nature of the ground admits*, from one extremity of the camp to the other, and arranged by companies in streets, perpendicular to the front. The general thus has the whole extent of his camp in view, and order can be better preserved. When the army is formed upon two lines, there are two camps—one in front of the other. The reserve has also its particular camp. Artillery usually encamps behind the infantry, and thus forms a little separate camp or camps of its own. In establishing a camp, however, no universal rule can be laid down; but it is necessary (says Napolcon) that the genius of the commander should, according to circumstances, decide whether an army ought to be confined to one single encampment or to form as many as it has corps or divisions; where the vanguard and flanks should be posted; where the cavalry, artillery, and wagons should be placed, and whether the army should occupy one or more lines; what should be the distance between the lines; and whether the cavalry should be in reserve behind the infantry, or should be placed on the wings.

Baron Larrey suggests the following sanitary considerations in relation to camps: A camp, especially if permanent, should be selected so as to be

FIG. 57.



accessible to the troops by easy marches ; it should occupy a spacious plain, in a province exempt from both epidemical and endemical diseases ; the soil should be dry, but not too hard, so that it may quickly imbibe the rain ; because it then becomes fit for military operations a few hours after the most violent shower. This prompt absorption, moreover, preserves the troops from the baneful influence of dampness without exposing them to the inconveniences of want of water, since in such a soil wells may be easily dug and water found at an inconsiderable depth, as is the case at Chalons. A good camp should not be intersected by streams or ditches, nor enclosed by large forests. The tents should not be too closely packed, in order to insure good ventilation throughout, and diminish the probability of epidemics. When a river is too near a camp, and its banks are somewhat marshy, the breaking out of intermittent fever should be prevented by deepening the bed of the river, cleansing it as much as possible of all putrefying vegetable and animal substances, raising the banks and giving them at the same time a greater inclination, making channels for carrying off the water, and establishing tents and barracks at a sufficient distance, and as much as possible on rising ground.* When the supply of water to a camp is derived from a river, the latter ought to be divided into three sections : the first and upper one to be exclusively used for drink by the men, the second to be reserved for the horses, and the third and lowermost for washing the linen of the troops. These demarcations should be strictly guarded by sentinels stationed at the proper places. To drive off dampness, bivouac-fires ought to be lighted in the evening ; each tent, moreover, should be surrounded with a gutter communicating with a main ditch to carry off rain-water ; the space occupied by certain corps should also be sanded over, to facilitate the absorption of humidity by the soil. In pitching tents care should be taken to maintain between them a distance of at least two metres ; those of the general officers should be situated in the healthiest quarter. Tents made of white stuff are prejudicial to the eyesight in summer, and should be therefore discarded. A tent being liable to infection like a room, it ought not to be hermetically closed, as is the custom with soldiers, but, on the contrary, well aired ; and the ground ought not only to be scraped and swept, but should also be well rammed. The men ought not to sleep in the tents with their heads near the centre and their feet towards the circumference, but in the contrary position, else they breathe a vitiated instead of a pure air. A tent, generally calculated for 16 men, ought never to contain more than 12 or 13 infantry, and 8 or 10 cavalry. Of the different kinds of tents the conical Turkish tent is the best ; for ambulances the marquee is pref-

erable. The *tente-d'abri*, which is made by joining two camp-sacks together by means of a wooden pole, and keeping them stretched by small stakes stuck into the ground, is a most precious invention. Four men can find shelter under it, and the weight it adds to their kit is trifling, but it can only be used in provisional encampments. The tents of the cavalry ought to be freed from the encumbrance of saddles and accoutrements, which vitiate the air, and should be placed under small sheds in front of the tents, or, better still, in the stable-barracks. The men should be encouraged to cultivate little patches of ground around their tents as gardens; it is both an amusement and a means of purifying the air, only they must not be allowed to manure the soil. As regards sleeping, each soldier should fill a camp-sack with straw and lie down on it as on a mattress, with his blanket to cover him; or, better still, he should get into the sack filled with straw—a much better plan than allowing the men to sleep together in couples on two sacks spread out on the straw, and with the same blanket to cover them. The ground on which the men sleep ought to be swept daily and sanded over, for it easily gets infected; in which case it becomes necessary to shift the tents—a measure which is often sufficient to stop an epidemic at its outbreak. A reserve of planks and trestles ought to be kept in store for extempore bedsteads when the ground has become too damp; or water-proof canvas may be spread over to protect the straw from humidity. In autumn a single blanket is not sufficient, each man should be provided with two.

The guards of camps are: 1. The *Camp-guard*, which serves to keep good order and discipline, prevent desertions and give the alarm; 2. Detachments of infantry and cavalry, denominated *pickets*, in front and on the flanks, which intercept reconnoitring parties of the enemy, and give timely notice of the approach of an enemy; and 3. *Grand-guards*, or out-posts, which are large detachments posted in surrounding villages, farm-houses or small field-works, from which they can watch the movements of the enemy. They should not be so far from the camp as to be beyond succor in case of attack, and not so near as to prevent timely notice being given to the main body of the army on the approach of an enemy. If the camp is to present the same front as the troops in order of battle, 400 military paces will be necessary per regiment of 500 files front. Immediately after arriving on the ground, the number of men to be furnished for guards and pickets are detailed; the posts to be occupied by them are designated; the places of distribution of provisions are mentioned, and, in general, all arrangements made concerning the interior and exterior police and service of the camp.

The *tente-d'abri* has been introduced in the French service since 1837, when first used at the camp of Compiègne. These tents consist of a tissue of cotton cloth impregnated with caoutchouc, and thus made water-proof. Every man carries a square of this cloth, with buttons and button-holes around it, by which it is attached to the squares carried by his comrades, and an excellent shelter for six soldiers is made as follows:—Three tent-sticks are fixed into the ground, whose tops are notched; a light cord is then passed round their tops, and fastened into the ground with a peg at each end; (Fig. 88.) Two sheets, A and B, are buttoned together and thrown over the cord, and then two other sheets, C and D; and C is buttoned to A, and D to B. Lastly, another sheet is thrown over each of the slanting cords, the one buttoned to A and B, and the other to C and D; (Fig. 89.) The sides of the tent are of course pegged to the ground.

FIG. 88.

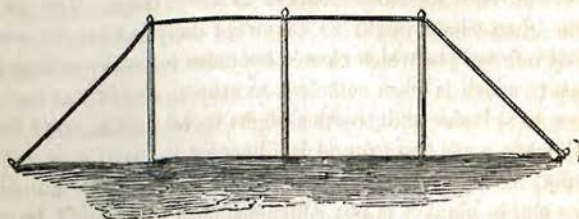
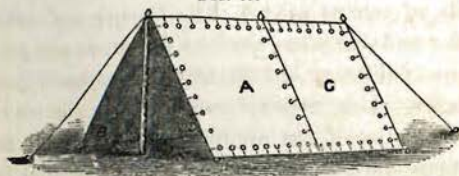


FIG. 89.



There are many modifications in the way of pitching these tents. For want of sticks, muskets can be used.

Preparations for a Storm.—Before a storm, dig a ditch as deep as you can, round the outside of the tent, to turn aside the rain-water, and to drain the ground on which the tent is standing—even a furrow scratched with a tent-peg is better than nothing at all. Fasten guy-ropes to the spike of the tent-pole; and be careful that the tent is not too much on the strain, else the further shrinking of the materials, under the influence of the rain, will certainly tear up the pegs. Earth, banked up round the bottom of the tent, will prevent gusts of wind from finding their way beneath. The accompanying sketch shows a tent pitched

for a lengthened habitation. It has a deep drain, a seat and table dug out, and a fireplace. (Fig. 90.)

Tent Furniture.—A portable bedstead, with musquito-curtains, is a very great luxury, raising the sleeper above the damp soil, and the attacks of most creatures that creep on it; where a few luxuries can be carried, it is a very proper article of baggage. It is essential where white ants are numerous. Hammocks and cots have but few advocates, as it is rare to find places adapted for swinging them; they are quite out of place in a small tent.

Chairs and Tables.—It is advisable to take very *low* strong and *roomy* camp-stools, with tables to correspond in height, as a chamber is much less choked up when the seats are low, or when people sit, as in the East, on the ground. The seats should not be more than 1 foot high, though as wide and deep as an ordinary footstool; but without a seat, a man can never write, draw, nor calculate as well as if he has one. The stool represented in Fig. 91 is a good one; it has a full-sized seat made of leather or canvas, or else of strips of dressed hide. For want of a chair, it is convenient to dig a hole or a trench in the ground, and to sit on one side of it, with the feet resting on its bottom; the opposite side of the trench serves as a table, for putting things on, within easy reach.

FIG. 90.

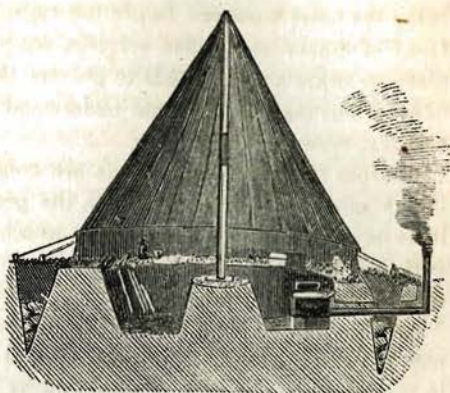


FIG. 91.

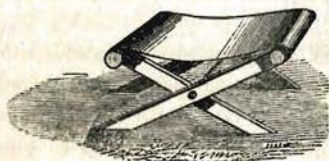


FIG. 92.



To tie clothes, or any thing, up to a smooth tent-pole, a strap with hooks in it, to buckle round the pole, is very convenient. The method shown in Fig. 92 suffices, if the pole is notched, or jointed, or in any

way slightly uneven. Bags, &c., are hung upon the bit of wood that is secured to the loose end. The luxuries and elegancies practicable in tent life are only limited by the means of transport. The articles that make the most show are handsome rugs, and skins, and pillows; canteens of dinner and coffee services, &c.; and candles, with screens of glass, or other arrangements to prevent them from flickering. The art of luxurious tenting is better understood in Persia than in any other country, even than in India.

Losing things.—Small things are constantly mislaid and trampled in the sand: to search for them, the ground should be disturbed as little as possible—it is a usual plan to score its surface in parallel lines with a thin wand. It would be well worth while to make and use a small light rake for this purpose.

Huts.—In making a depot, it is usual to build a house; often the men have to pass weeks in inactivity, and they may as well spend them in making their quarters comfortable, as in idleness. Whatever huts the natives live in are sure, if made with extra care, to be sufficient for travellers.

Walls.—The materials whence the walls of huts may be constructed, are very numerous, and there is hardly any place which does not furnish one or other of them. Those principally in use are as follows: Skins, canvas, felt, tarpauling, bark, reed mats, reed walls, straw walls, wattle-and-dab, log-huts, fascines or fagots, boards, &c., fastened by Malay-hitch, brick, sunburnt or baked, turf, stones, gabions, bags or mats filled with sand or shingle, snow huts, underground huts, tents over holes in earth.

Roofs.—Many of the above list would be perfectly suitable for roofs: in addition may be mentioned slating with flat stones, thatch, sea-weed, and wood shingles.

Floors.—Cowdung and ashes make a hard, dry, and clean floor, such as is used for a threshing-floor. Ox-blood and fine clay, kneaded together, are excellent; both these compositions are used in all hot, dry countries.

Tarpaulings, made in the sailors' way, are much superior to others in softness and durability. As soon as the canvas is sewn together, it is thoroughly wetted with sea-water; and, while still wet, is done over on one side with tar and grease boiled together—about two parts tar and one of grease. Being hung up till dry, it is turned; and the other side, being a second time well wetted, is at once painted over with the tar and grease just as the first side had been done before. The sailors say that "the tar dries in as the water dries out."

Bark.—It is an art to strip it quickly—the Australians understand it well. Two rings are cut round the tree; the one as high as can be reached, the other low down. A vertical slit is then made, and the whole piece forced off with axes, &c. In spring the bark comes off readiest from the sunny side of the tree. A large sheet of bark is exceedingly heavy. It is flattened, as it lies on the ground, by weighting it with large stones, and allowing it to dry, partially at least, in that position.

Straw Walls of the following kind are very effective, and they have the advantage of requiring a minimum of string (or substitute for string) in their manufacture. The straw, or herbage of almost any description, is simply nipped between two pair of long sticks, which are respectively tied together at the two ends, and at a sufficient number of intermediate places. The whole is neatly squared and trimmed; (Fig. 93.) A few of these would help in finishing the roof or walls of a house. They can be made movable, so as to suit the wind, shade, and aspect. Even the hut door can be made on this principle.

Log-huts.—In building log-huts, four poles are planted in the ground to correspond to the four corners: against these, logs are piled one above another, as in Fig. 94; they are so deeply notched where they

FIG. 93.

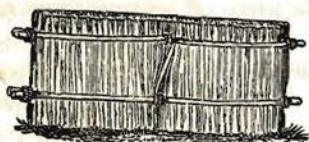
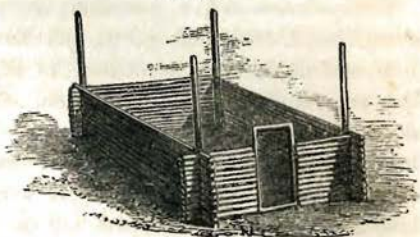


FIG. 94.

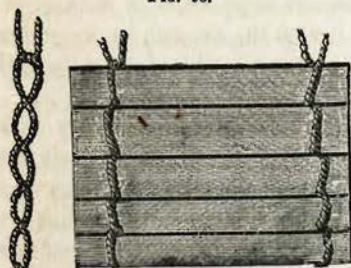


cross one another, that the adjacent sides are firmly dovetailed together. When the walls are entirely completed, the doors and windows are chopped out, and the spaces between the logs must be well caulked with moss, &c., or the log-cabin will be little better than a log-cage. It of course requires a great many trees to make a log-hut; for, supposing the walls to be 8 feet high, and the trees to average 8 inches in diameter, it would require 12 trees to build up one side, or 48 to make all four walls.

Malay hitch.—I know no better name for the following wonderfully simple way of attaching together wisps of straw, rods, laths, reeds, planks, poles, or any thing of the kind, into a secure and flexible mat;

the sails used in the far East are made in this way, and the movable decks are made of bamboos joined together with a similar but rather more complicated stitch; (Fig. 95.) Soldiers might be trained to a great deal

FIG. 95.



of hutting practice in a very inexpensive way if they were drilled at putting together huts whose roofs and walls were made of planks lashed together by this simple hitch, and whose supports were short scaffolding-poles planted in deep holes dug without spades or any thing but the hand and a small stick. The poles, planks, and cords might be used over and over again for an

indefinite time. Further, bedsteads could be made in a similar way by short cross planks lashed together, and resting on a framework of horizontal poles lashed to uprights planted in the ground. The soldier's bedding would not be injured by being used on these bedsteads, in the way it would be if laid on the bare ground. Many kinds of designs and experiments in hutting could be practised without expense in this simple way.

Snow-houses.—Few travellers have habitually made snow-houses, except Sir J. Franklin's party, and that of Dr. Rae. Great praises are bestowed on the comfort of them by all travellers, but skill and practice are required in building them. The mode of erection of these dome-shaped buildings is as follows:—It is to be understood that the hard, compact, underlying snow is necessary for the bottom of the hut; and that the looser textured, upper layer of snow is used to build the house. First, select and mark out the circular plot on which the hut is to be raised. Then, cut out with knives deep slices of snow, six inches wide, three feet long, and of a depth equal to that of the layer of loose snow, say one or two feet. These slices are curved, so as to form a circular ring when placed on their edges, and of a size to make the first row of snow-bricks for the house. Other slices are cut for the succeeding rows; and, when the roof has to be made, the snow-bricks are cut with the necessary double curvature. A conical plug fills up the centre. Loose snow is then heaped over the house, to fill up crevices. Lastly, a doorway is cut out with knives; also a window, which is glazed with a sheet of the purest ice at hand. For the inside accommodation, there is a pillar or two, to support lamps.

Underground Huts are used in all quarters of the globe. The ex-

perience of the British troops encamped before Sebastopol tells strongly in their favor, as habitations during an inclement season. The timely adoption of them was the salvation of the British army. They are, essentially, nothing else than holes in the ground, roofed over. The shape and size of the hole correspond to that of the roof it may be possible to procure for it; its depth is no greater than requisite. If the roof have a pitch of 2 feet in the middle, the depth of the hole need not exceed $4\frac{1}{2}$ feet. In the Crimea, the holes were rectangular, and roofed like huts; (Fig. 96.) Where there is a steep hill side, *a*, an underground hut, *b*, is easily contrived; because branches laid over its top have sufficient pitch to throw off the rain, without having recourse to any uprights, &c. Of course the earth is removed from *a*, at the doorway.

FIG. 96.



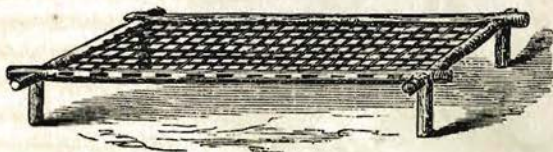
Tents pitched over excavations.—A hole may be dug deeply beneath the tent floor, partly as a store-room, and partly as a living-room when the weather is very inclement. This, also, was done before Sebastopol in the manner shown in the engraving.

Thatching.—After the framework of the roof has been made, the thatcher begins at the bottom, and ties a row of bundles of straw, side by side, on to the framework. Then he begins a second row, allowing the ends of the bundles composing it to overlap the heads of those in the first row.

Wood Shingles are tile-shaped slices of wood, easily cut from fir-trees, and used for roofing on the same principle as tiles or slates.

Fix hooked sticks, and cow or goat horns, round the walls, as pegs to hang things on; and if you want a luxurious bed, make a framework of wood, with strips of raw hide lashed across it from end to end, and from side to side; (Fig. 97.) If you collect bed feathers, recollect that if

FIG. 97.



cleanly plucked they require no dressing of any kind, save drying and beating. Concrete for floors is made of 80 parts large pebbles, 40 river sand, 10 lime; lime is made by burning limestone, chalk, shells,

or coral, in a simple furnace, and whitewash is lime and water. Bark makes a good roof. The substitutes for glass are—waxed or oiled paper or cloth, bladder, fish-membranes, talc, and horn. Glass cannot be cut with any certainty without a diamond; but it may be shaped and reduced to any size by gradually chipping, or rather biting, away at its edges with a key, if the slit between its wards be just large enough to admit the pane of glass easily. A window, or rather a hole in the wall, may be rudely shuttered by a stick run through loops made out of wisps of grass. In hot weather the windows of the hut may be loosely filled with grass, which, when well-watered, makes the hut much cooler. A mosquito-curtain may be taken and suspended over the bed, or place where you sit. It is very pleasant, in hot, mosquito-plagued countries, to take the glass sash entirely out of the window frame, and replace it with one of gauze. Broad network, if of fluffy thread, keeps wasps out. The darker a house is kept, the less willing are flies, &c., to flock in. If sheep and other cattle be near the house, the nuisance of flies, &c., becomes almost intolerable; (*GALTON'S Art of Travel.*)

Major H. H. Sibley, 2d Dragoons, has invented a tent in which a fire can be made in its centre, and all soldiers sleep with their feet to the fire. Major Sibley's tent is conical, light, easily pitched, erected

FIG. 98.

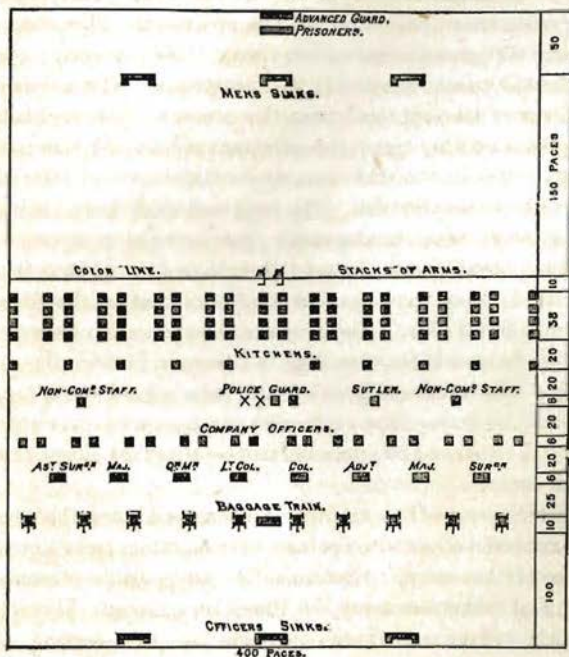


on a tripod holding a single pole, and will comfortably accommodate twelve soldiers with their accoutrements. Where means of transportation admit of tents being used, Major Sibley's will probably supersede all others. (Fig. 98.)

A commander of troops usually sends in advance to prepare the camp. The camping party of a regiment may be the regimental quartermaster, and quartermaster-sergeant, and a corporal and two men per company. The camp of a larger detachment is prepared by the chief quartermaster or some officer of the general's staff, designated

by the commander of the troops assisted by the company camping parties of regiments. With camp colors the direction of the front line of the camp is marked, and the extent of the front of each corps, the intervals between corps, and the beginning, breadth, and direction of streets designated. When the encampment is on two lines, let there be 450 paces between their respective fronts. Behind intrenchments there ought to be about 300 paces between the entrenchments and the front of the camp. The posts of the police guard will be designated, and the necessary works to secure communication between the parts of the camp will also be determined. Fig. 99 gives details for the camp of a regiment of infantry.

FIG. 99.



Camp of Cavalry.—In the cavalry, each company has one file of tents—the tents opening on the street facing the left of the camp. The horses of each company are placed in a single file, facing the opening of the tents, and are fastened to pickets planted firmly in the ground, from 3 to 6 paces from the tents of the troops. The interval between the file of tents should be such that, the regiment being broken into columns of companies, each company should be on the extension of the line on

which the horses are to be picketed. The streets separating the squadrons are wider than those between the companies by the interval separating squadrons in line; these intervals are kept free from any obstruction throughout the camp. The horses of the rear rank are placed on the left of those of their file-leaders. The horses of the lieutenants are placed on the right of their platoons; those of the captains on the right of the company. Each horse occupies a space of about 2 paces. The number of horses in the company fixes the depth of the camp, and the distance between the files of tents; the forage is placed between the tents. The kitchens are 20 paces in front of each file of tents. The non-commissioned officers are in the tents of the front rank. Camp-followers, teamsters, &c., are in the rear rank. The police guard in the rear rank, near the centre of the regiment. The tents of the lieutenants are 30 paces in rear of the file of their company; the tents of the captains 30 paces in rear of the lieutenants. The colonel's tent 30 paces in rear of the captains', near the centre of the regiment; the lieutenant-colonel on his right; the adjutant on his left; the majors on the same line, opposite the 2d company on the right and left; the surgeon on the left of the adjutant. The field and staff have their horses on the left of their tents, on the same line with the company horses; sick horses are placed in one line on the right or left of the camp. The men who attend them have a separate file of tents; the forges and wagons in rear of this file. The horses of the train and of camp-followers are in one or more files extending to the rear, behind the right or left squadron. The advanced post of the police guard is 200 paces in front, opposite the centre of the regiment; the horses in one or two files. The sinks for the men are 150 paces in front—those for officers 100 paces in rear of the camp.

Camp of Artillery.—The artillery is encamped near the troops to which it is attached, so as to be protected from attack, and to contribute to the defence of the camp. Sentinels for the park are furnished by the artillery, and when necessary, by the other troops. For a battery of six pieces the tents are in three files—one for each section; distance between the ranks of tents 15 paces; tents opening to the front. The horses of each section are picketed in one file, 10 paces to the left of the file of tents. In the horse artillery, or if the number of horses make it necessary, the horses are in two files on the right and left of the file of tents. The kitchens are 25 paces in front of the front rank of tents. The tents of the officers are in the outside files of company tents, 25 paces in rear of the rear rank—the captain on the right, the lieutenants on the left. The park is opposite the centre of the camp, 40 paces in

rear of the officers' tents. The carriages in files 4 paces apart; distance between ranks of carriages sufficient for the horses when harnessed to them; the park guard is 25 paces in rear of the park. The sinks for the men 150 paces in front; for the officers 100 paces in rear. The harness is in the tents of the men. (Consult BARDIN; *Mémoires des Officiers d'Infanterie et de Cavalerie*; GALTON'S *Art of Travel*.)

CAMP AND GARRISON EQUIPAGE. (See CAMP; CLOTHING; TOOLS; UTENSILS; QUARTERMASTER'S DEPARTMENT.)

CAMPAIGN. The period of a year that an army keeps the field from the opening of a campaign until the return to quarters or cantonments at the end of the campaign. A series of continuous field operations. An ordinary campaign, in respect to recompense for length of service, is counted as two years of effective service in the French army. In all services excepting our own, additional allowances in campaign are made to troops beyond those given at other periods. (See ALLOWANCES.)

CANISTER—for field service, consists of a tin cylinder attached to a sabot, and filled with cast-iron shot. For siege and garrison guns the bottom is of cast iron, and the cover of sheet iron with a handle made of iron wire. (See SABOT.)

CANNON. (See CALIBRE; ORDNANCE.)

CANTEEN. A small tin caoutchouc or circular wooden vessel, used by soldiers on active service to carry liquor, &c. A small trunk or chest, containing culinary and other utensils for the use of officers. A kind of suttlng house, kept in garrisons, &c., for the convenience of the troops.

CANTONMENTS. Troops are said to be in cantonments when detached and quartered in the different towns and villages, lying as near as possible to each other. (See CAMP.)

CAPITAL. The line drawn bisecting the salient angle of a work.

CAPITULATION. Articles of agreement, by which besieged troops surrender at discretion, or with the honors of war. The terms granted depend upon circumstances of time, place, &c. Any surrender in the open field without fighting was stigmatized by Napoleon as dishonorable, as was also the surrender of a besieged place without the advice of a majority of a council of defence, before the enemy had been forced to resort to successive siege-works, and had been once repulsed from an assault through a practicable breach in the body of the place, and the besieged were without means to sustain a second assault; or else the besieged were without provisions or munitions of war.

CAPONNIERE. Passage from the place to an outwork; it is either single or double, sometimes bomb-proof and loopholed. (See FORTIFICATION.)

CAPS. Percussion caps for small arms are formed by a machine which cuts a star or *blank* from the sheet of copper, and transfers it to a die in which the cap is shaped by means of a punch. The powder with which caps are charged consists of fulminate of mercury, mixed with half its weight of saltpetre.

CAPTAIN. Rank in the army between major and 1st lieutenant, charged with the arms, accoutrements, ammunition, clothing, or other warlike stores belonging to the troops or company under his command ; (ART. 40.)

CAPTURE. (See PRIZE ; BOOTY.)

CARBINE. A cavalry weapon intermediate in weight and length between rifle and pistol, and usually breech-loading. (For PISTOL-CARBINE, see ARMS.) Carbines for the United States' service have been obtained from the following manufactories :—Samuel Colt's, Hartford, Conn.—Colt's Revolving Pistols, Rifles, and Carbines ; Sharpe's Arms-Manufacturing Company, Hartford, Conn., for Sharpe's Carbines and Rifles ; Charles Jackson, Providence, R. I., for Burnside's Carbines ; and Maynard's Arms Company, Washington, D. C., for Maynard's Rifles and Carbines. The breech-loading arms of the foregoing manufactories have been tried more or less in service, and favorably reported upon by boards of officers. They are considered good cavalry arms, but neither have yet been pronounced the best by the ordnance department. (See ORDNANCE DEPARTMENT.)

The distinguishing feature of a breech-loading arm is the method of closing the breech. One of the most serious defects of these arms was the escape of gas through the joint. This defect has been removed by closing the joint at the moment of discharge by the action of the gas itself. This operation, called *packing the joint*, is accomplished : 1st. By the use of cartridge cases of sheet brass, India rubber, or other material ; or, 2d. By the use of a thin, elastic ring of steel, which overlies the joint. By the first method the case is permanently distended, (but may be safely used for several fires,) and some arrangement is required to remove it from the chamber. In the second method, the ring or *gas check* is a part of the arm ; and its elasticity causes it to return to its original form after the discharge.

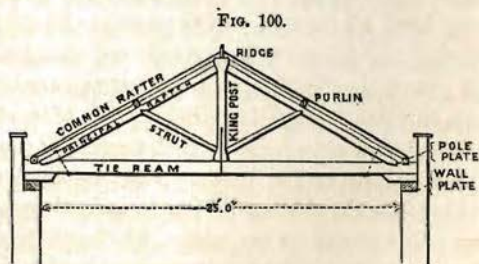
Burnside's Carbine is an example of the first method ; it has a movable chamber which opens by turning on a hinge. A brass cartridge case is used which packs the joint and cuts off the escape of the gas. The advantages of this arm are : its strength, water-proof cartridges, perfectly tight joint, and working machinery. Its disadvantages are the cost, and difficulty of getting the cartridges.

Sharpe's Carbine has a fixed chamber, and the breech is closed by a slide which moves nearly at right angles to the axis of the barrel. By boring a recess into the face of the slide, opposite to the chamber, and inserting a tightly-fitting ring into it, so that the inner rim is pressed against the end of the barrel at the instant of discharge, the escape of gas is prevented.

Maynard's Carbine has a fixed chambered piece, with the joint closed by a metallic cartridge case. (*Consult BENTON.*)

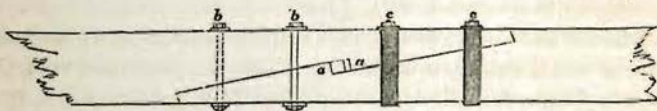
CARCASS. Combustible composition enclosed in globes, formed with iron hoops, canvas, and cord, generally of an oblong shape, and thrown from mortars or stone mortars; it is used in bombardments, firing shipping, &c.

CARPENTRY. An assemblage of pieces of timber connected by framing or letting them into each other, as are the pieces of a roof, floor, centre of a bridge, &c. It is distinguished from joiners' work, by being put together without using other tools than the axe, adze, saw, and chisel. Troops frequently are obliged to hut themselves, make bridges, &c., and some knowledge of rough carpentry is essential in roofing and centring. The obvious mode of covering a building is to place two sloping rafters upon two walls, meeting in the apex, where we will suppose them connected. (Fig. 100.) It is plain that the weight of this rafter will tend to thrust the walls from its vertical line. This is prevented by tying together the feet of the rafters, by means of another beam called a *tie beam*. Beyond certain lengths or spans, however, it is apparent that the *tie beam* will itself have a tendency to bend or sag in the middle, and accordingly it becomes necessary to resort to another contrivance called a *king post*, but more properly a king piece, as it performs the office of tying up the tie beam to prevent it from bending. If the rafters be so long as to be liable to bend, two pieces called *struts* are introduced, which have their footing against the sides of the king post, and act as posts to *strut* up the rafters at their weakest point. This piece of framing thus contrived is called a *truss*. It is obvious that, by means of the upper joints of the struts, we can obtain more points of support or rather suspension. It is not, however, necessary to truss



all, but only the principal rafters of a building. These principal rafters must never be more than ten feet apart, and by the intervention of a *purline* they are made to bear the smaller rafters, the latter being notched down on the purline. These common rafters are received by or pitch upon a plate called a *pole plate*, and the principal rafters which pitch upon the tie beam, are ultimately borne by a wall plate. When beams in either roofs or floors are so long that they cannot be procured in one piece, two pieces to form the required length are *scarfed* together, by indenting them at their joints, and bolting them together thus: (Fig. 101.)

FIG. 101.



The following simple manner of putting up balloon frames, that is, frames without tenons or mortises, is given in the language of a builder in our western country: The best size for a small house is 16 by 32 feet, divided into three rooms and only one story high, unless roofing is very expensive. For such a building six pieces of scantling are required, cut 2 by 8, or $2\frac{1}{2}$ by 10 inches, 16 feet long for sills, and seventeen pieces for sleepers, with seventeen pieces of same size, 18 feet long, for upper floor joists. The studs must be 2 by 4, or $2\frac{1}{2}$ by 5 inches, and 8, 9 or 10 feet long, as you wish the height of your ceiling. The end studs may be longer, so as to run up to the rafters; but this is not important, since studs may be spliced anywhere by simply butting the ends together and nailing strips of boards upon each side, or the timbers may lap by each other and be held in place by a few nails till the siding is nailed on. But to begin at the foundation: Lay down two of the sixteen feet timbers flatwise upon blocks or stones, if you can get them, and make them level all around. Nail on strips where the ends of the sills butt together, and halve on the end sills and nail them together at the corners, and put on the sleepers, with a stout nail toed-in upon each side to hold them in place. Cut all your side studs of an exact length and square at each end, and set up one at each corner exactly plumb and fasten them with stay-laths on the inside. Now measure off for your doors and windows on the sides of the house, and set up studs for them. You are now ready to put on the plates, which are nothing but strips of inch board, just the width of your studs, spliced in length just as directed for splicing studs. The next step is to put up the rest of the studs, nailing

through the plate into their tops, and toeing nails through the bottoms into the sills. Hands may now commence at once to nail the sheathing-boards upon the sides, while others are putting up the joists, which should be 18 feet long and either 2 by 8 or $2\frac{1}{2}$ by 10 inches, according to the strength of the timber. Pine and poplar should always be of the larger dimensions. Cut notches one inch deep in the lower edge of the joists, so that they will lock on to the plate, and project over the sides one foot at each end. Nail up through the plate into the joists with stout nails, having just as many joists as pairs of rafters, the feet of which are to stand on and be nailed to the joists, which project the eaves a foot beyond the sides. This, however, may be dispensed with, if short eaves are preferred, or if timber cannot be got long enough. The end studs will be nailed both to the sill and end sleeper and to the end joists, and to the rafter if long enough to reach up, and if not splice them as before directed. Finish sheathing the sides and ends before you put on the roof. The siding may be afterward put on at your leisure. Boards three-fourths of an inch thick make good sheathing; and the best plan is to put them on without any regard to fitting the edges, and batten all the cracks on the inside with waste pieces of boards or shingles. When shingles are inexpensive they make a better siding and cheaper than sawed clapboards. You will find it a great saving of labor to lay the upper floor before you put on the roof. If you wish to make your house one and a half or two stories high, the following is the way the chamber floor joists are supported: Take a strip of board one inch thick and five inches wide, and let it into the face of the studs on the inside and nail it fast and set your joists on this and nail them to the studs, and also notch your floor boards in between all the studs and nail fast; and you will find, when done, that no old-fashioned frame with its heavy oak timbers and months of mortising, with all its braces, was ever stiffer than your "balloon," which two men can frame and raise, and cover and lay the floors, and get ready to move into in one week's time. There is no difficulty in making a balloon frame-house of any other size desired, by putting in the partitions before you put on the upper joists, so as to rest them upon the caps in the same way as upon the sides. For a house, say thirty-two feet wide, the upper joists would be the same length as for a house sixteen feet, the inner ends resting upon the cap of a centre partition, where they would be strongly spliced, as we have directed, by nailing strips upon each side. The rafters of such a wide roof should be stayed in the middle by strips nailed upon the sides of rafters and joists, to prevent sagging; as it is always to be borne in mind that all

the timbers of such a building are to be as light as possible; the strength being obtained by nailing all fast together.

CARRIAGES. A gun carriage is designed to support its piece when fired, and also to transport cannon from one point to another. Field, mountain, and siege artillery have also limbers, which form when united with the carriage a four-wheeled vehicle. Sea-coast carriages are divided into *barbette*, *casemate*, and flank defence carriages, depending upon the part of the work in which they are mounted. They are now made of wrought iron and found to possess lightness, great strength, and stiffness. The sea-coast carriages are made in a similar manner, and one carriage can be altered to fit another piece by changing the trunnion-plates and transom straps. The carriage consists of two cheeks of thick sheet-iron, each one of which is strengthened by three flanged iron-plates bolted to the cheeks. Along the bottom of each cheek, an iron shoe is fixed with the end bent upwards. In front, this bent end is bolted to the flange of the front strengthening plate. In rear the bent portion is longer, and terminated at top by another bend, which serves as a point of application for a lever on a wheel, when running to and from battery. The trunnion-plates fit over the top ends of the strengthening plates, which meet around the bed, and are fastened to the flanges of the latter by movable bolts and nuts. The *cheeks* are joined together by transoms made of bar-iron. The front of the carriage is mounted on an axle-tree, with truck wheels similar to the wooden casemate carriages. The elevating screws are of two kinds: one for low angles of elevation, and the second for columbiads where great angles of elevation are required. The elevating arc is made of brass and attached to the upper edge of the right cheek, and may be folded down. It is employed to measure the elevation of the piece.—ROBERTS & BENTON. (See CHASSIS; COLUMBIAD.)

CARTE BLANCHE. A blank paper sent to a person, to fill up with such conditions as he may think proper to insert. In the general acceptance of the term, it implies an authority to act at discretion.

CARTEL. An agreement between two hostile powers for a mutual exchange of prisoners. (See WAR.)

CARTRIDGE. Bullets for small arms are made by pressure. To prepare the lead for the press, it is cast into cylinders or drawn out into wires somewhat less in diameter than the bullet. One press can make 3,000 bullets in an hour. Bullets may also be cast in moulds and afterwards *swaged* in a die to proper size and shape.

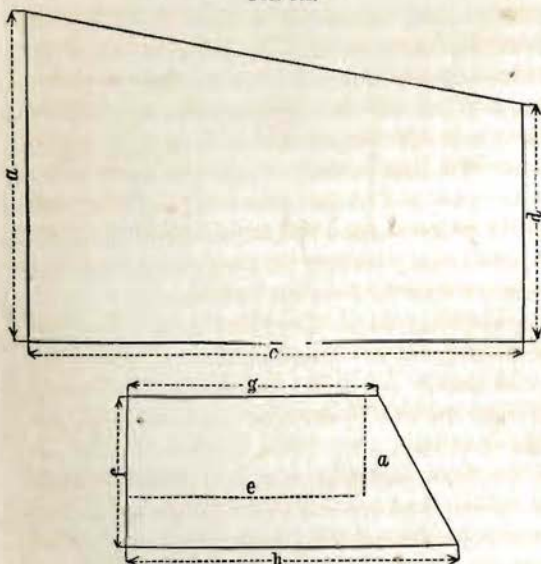
Table of dimensions for formers for making cartridges with elongated expanding bullets. (The dimensions are referred to the plate by means of the letters placed opposite to them.)

| | Altered musket. | New rifle musket. | Pistol carbine. | |
|----------|-----------------|-------------------|-----------------|---------------------|
| | Inches. | Inches. | Inches. | |
| <i>a</i> | 3.5 | 3.5 | 3.5 | } Outer wrapper. |
| <i>d</i> | 2.5 | 2.25 | 2.25 | |
| <i>c</i> | 5.25 | 4.25 | 4.25 | |
| <i>a</i> | 1.1 | 1. | .8 | } Cylinder case. |
| <i>e</i> | 2.75 | 2. | 2. | |
| <i>f</i> | 1.5 | 1.8 | 1.1 | } Cylinder wrapper. |
| <i>g</i> | 2.75 | 2.2 | 2.2 | |
| <i>h</i> | 3.75 | 3. | 3. | |

The diameters of the round sticks on which the powder cases are formed should be .69 inch for the old, and .58 inch for the new calibre. This will make the exterior diameter of the case somewhat larger than the bullet, and will prevent the outer wrapping from binding around its base when the cartridge is broken. The outer wrapper should not be made of too strong paper: that prescribed in the Ordnance Manual for blank cartridges, and designated as No. 3, will answer a better purpose for these cartridges than that designated as No. 1. The cylinder case should be made of stiff rocket paper, No. 4; and its wrapper may be made of paper No. 1, 2, or 3. Before enveloping the bullets in the cartridges, their cylindrical parts should be covered with a melted composition of one part beeswax and three parts tallow. It should be applied hot, in which case the superfluous part would run off; care should be taken to remove all of the grease from the bottom of the bullet, lest by coming in contact with the bottom of the case it penetrate the paper and injure the powder. The bullets being thus prepared, and the grease allowed to cool, the cartridges are made up as follows, viz.: place the rectangular piece of rocket paper, called the cylinder case, on the trapezoidal piece, called the cylinder wrapper, as shown by the broken lines of Fig. 102, and roll them tightly round the former stick, allowing a portion of the wrapper to project beyond both case and stick. Close the end of the case by folding in this projecting part of the wrapper. To prevent the powder from sifting through the bottom, paste the folds, and press them on to the end of the stick, which is made slightly concave to give the bottom a form of greater strength and stiffness. After the paste is allowed to dry, the former stick is inserted in the case, and laid upon the outer wrapper, (the oblique edge from the operative, the longer vertical edge towards his left hand,) and snugly rolled up.

The bullet is then inserted in the open end of the cartridge, the base resting on the cylinder case, the paper neatly choked around the point of the bullet, and fastened by two half hitches of cartridge thread.

FIG. 102.

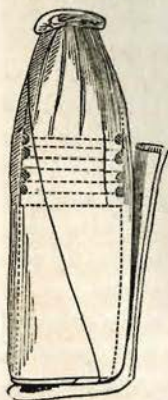


of the bullet, and fastened by two half hitches of cartridge thread. The former stick is then withdrawn, the powder is poured into the case, and the mouth of the cartridge is "pinched" or folded in the usual way. To use this cartridge, tear the fold and pour out the powder; then seize the bullet end firmly between the thumb and fore finger of the right

hand and strike the cylinder a smart blow across the muzzle of the piece; this breaks the cartridge and exposes the bottom of the bullet; a slight pressure of the thumb and forefingers forces the bullet into the bore clear of all cartridge paper. In striking the cartridge the cylinder

should be held square across, or at right angles to the muzzle; otherwise, a blow given in an oblique direction would only bend the cartridge without rupturing it. Cartridges constructed on these principles present a neat and convenient form for carrying the powder and bullet attached to each other, and they obviate two important defects of the elongated bullet cartridges in common use, viz.: the reversed position of the bullet in the cartridge, and the use of the paper wrapper as a patch. (Fig. 103.)

FIG. 103.



Cartridge-bags for field-pieces should be made of wild-bore, merino or bombazette, composed entirely of wool, free from any mixture of thread or cotton, which would be apt to retain fire in the piece. The texture and sewing should be close enough to pre-

vent the powder sifting through. Untwilled stuff is to be preferred. Flannel may be used when other materials cannot be obtained. The bag is of two rectangular pieces, which forms the cylinder, and a circular piece for the bottom. As the stuff does not stretch in the direction of its length, the long side of the rectangle should be taken in that direction, otherwise the cartridge might become too large for convenient use.

Blank-cartridge Bags, or those intended for immediate use, may be made of two rectangular pieces with semicircular ends sewed together. The pieces are marked out with stamps made of one-inch board with a handle in the middle of one side, and on the other two projecting rims of copper or tin, parallel to each other and half an inch apart.

Siege and Garrison Cartridges consist of the charge of powder in a bag, and the projectile always separate from the cartridge.

The Cartridge-bags are usually made of woollen stuff. They are made of two pieces, in the form of a rectangle with semicircular end, which are marked out with stamps and sewed together as described for making blank-cartridge bags for the field service, and are filled, preserved, and packed in the same way.

Paper Bags.—Bags for heavy ordnance may be made entirely of paper. The bottom is circular, and one end of the cylindrical part is cut into slips about one inch long, which are pasted over the paper bottom on a cylindrical former. When a paper bag is filled, the open end is folded down about three-fourths of an inch wide, and this fold is rolled on itself down to the powder, and the part which projects beyond the cylinder is turned in on the top of it. The bags are apt to leave paper burning in the gun, for which reason those made of woollen stuff are preferable. Bags are sometimes made of both paper and woollen stuff, by forming the cylindrical part of paper, and sewing to it a bottom of woollen stuff made of two semicircular pieces.

CARTS AND KITCHEN CART. A system of army transportation proposed by Colonel Cavalli. (*See* **AMBULANCE**; **WAGON**.)

CASCABLE—is the part of the gun in rear of the base ring; it is composed generally of the following parts: the *knob*, the *neck*, the *fillet*, and the *base of the breech*.

CASEMATE. Vaulted chamber with embrasures for guns. It is necessary that they should be bomb-proof and distributed along the faces and flanks of the bastion, to serve as quarters and hospital to the garrison in war; but such subterranean barracks are always unwholesome.

CASE SHOT—are small balls enclosed in a case or envelope, which, when broken by the shock of the discharge in the piece, or by a charge of powder within the case, exploding during the flight of the case,

scatters the balls. The kinds of case shot in use are GRAPE, CANISTER, and SPHERICAL CASE.

CASHIERED. When an officer is sentenced by a court-martial, to be dismissed the service, he is said to be cashiered.

CASTING AWAY—*Arms and Ammunition.* Punishable with death or other punishment, according to the nature of the offence, by the sentence of a general court-martial; (ART. 52.)

CASTRAMETATION. The art of encampment. (*See* CAMP.)

CASUALTIES. A word comprehending all men who die, desert, or are discharged.

CAVALIER—is a term applied to a work of more than ordinary height. It is sometimes constructed upon the terre-plein of the bastion, with faces and flanks parallel to those of the bastion which it commands. Cavaliers are not confined to bastions, but are placed wherever a great command of fire is required, and are sometimes traced straight, on other occasions curved.

CAVALRY. There are two regiments of dragoons, one of mounted riflemen, and two styled cavalry in our army. It has been recommended that these regiments should all be called regiments of cavalry. (*See* ARMY for their organization.) Cavalry is usually divided into heavy and light cavalry. Heavy cavalry acts in heavy masses. Its essential condition is united ranks. It finds its true type in the mailed chivalry of the middle ages, but it is believed that the general introduction into service of rifled muskets will render heavy cavalry entirely useless in war. Formerly cavalry could move against infantry in columns of squadrons first at a trot, then at a gallop, and finally at full speed from a position taken up within 400 yards of infantry. But now that the cavalry comes within range of the rifle at 1,000 yards, the infantry must be greatly demoralized before cavalry can have the least chance of success in a charge. Accordingly at the camp of Chalons, where all arms of the service were supposed to be represented, heavy cavalry were not seen. Light cavalry on the contrary is intended rather to envelop an enemy. Quickness and agility are its primary conditions. Indefatigable and careless of repose it ought to occupy an enemy during entire hours, harass and fatigue him. If he lays himself open pierce him with the quickness of lightning, and cut him to pieces with the sabre. The cavalry soldier must consider his horse as part of himself, and the perfect management of the horse cannot be learned either in schools, or in a few weeks of practice. If daily exercises are dispensed with, both horse and man return to their natural state, and such mounted men cease to be efficient. The main body in all campaigns

against Indians should be infantry. But a small mounted force, kept in high condition, would add much to the efficiency of such a main body. The horses should be well fed; and upon long marches in uninhabited districts this is impossible. The idea of employing such a force as a main body, in order to make rapid marches, is also untenable; for upon long marches of many days, infantry will improve every day, accomplish a greater distance in many successive days, and have at the opportune moment greater vigor than a large cavalry force, necessarily with broken-down horses from want of food; whereas a small cavalry force might be held in hand and maintained in the highest state of efficiency. Cavalry is indispensable in time of war. It will always take a leading part in pursuing a retreating enemy; it is the proper arm in ordinary reconnoissances; it will always serve as *eclaireurs*, and as escorts, and should, in the present state of the art of war, carry carbines and be prepared for service on foot. It is weakened and destroyed when in a country without forage. Its first cost, its constant maintenance, the defects of its employment, and the system of providing horses make it expensive; but it ought nevertheless to be maintained in a complete state, for its art can only be exercised by men and horses that are properly instructed.

Cavalry Tactics.—The individual instruction of men and horses should be regarded as the most important point of the whole system, and should be as simple as possible; the man should be taught to manage his horse with ease and address over all kinds of ground and at all gaits, to swim rivers, to go through certain gymnastic exercises—such as vaulting, cutting heads, to fence, to fire very frequently at a mark, and to handle his weapon with accuracy and effect at all gaits, and in all situations. Individual instruction has been recently made a supplementary instruction in France. Every thing in reference to heavy cavalry, lancers, hussars, &c., should be omitted. Insist upon the sabre being kept sharp in the field, provide the men with means of doing so, and lay it down as a rule that the strength of cavalry is in the “spurs and sabre.” The instruction on foot should be carried no further than its true object requires—that is, to bring the men under discipline, improve their carriage, and enable them to comprehend the movements they are to execute mounted. The formation for review, parade, inspection, &c., to be: the companies deployed in one line, with intervals of 12 paces, or else in a line of columns of companies by platoons, according to the ground. It should be laid down as a fixed rule that no cavalry force should ever charge without leaving a reserve behind it, and that against civilized antagonists the compact charge in line should be used in preference to that as foragers.

Columns to be formed with wheeling distance, and closed in mass; when closed in mass, the file-closers close up to 1 pace from the rank, and the distance between the subdivisions to be just enough to permit each company to wheel by fours. Marching columns to be by file, twos, fours, or platoons; by fours and platoons in preference when the ground permits. Columns of manœuvre to be by fours, platoons, companies, or in double column; the latter always a regimental column, and to be formed on the two central companies, or platoons, without closing the interval between them. Deployments to be made habitually at a gallop, and the individual oblique to be used as much as possible. The instruction in two lines to be provided for. The Russian tactics give a good basis for the system of skirmishers, and charging as foragers. For the use of the mounted rifles, and cavalry acting as such, a thorough system for dismounting rapidly, and fighting on foot, has already been submitted by Captain Maury, and adopted. (*Consult McCLELLAN.*)

CENTRE OF THE BASTION—is the intersection made by the two demi-gorges.

CERTIFICATE. (*See MUSTER.*)

CHAIN-BALL. It has been proposed to attach a light body by means of a chain to the rear of an oblong projectile, when thrown under high angles with a moderate velocity, so as to cause it to move with its point foremost.

CHAIN-SHOT—consist of two hemispheres, or two spheres connected together by a chain. The motion of rotation of these projectiles in flight would render them useful in cutting the masts and riggings of vessels, if their flight was not so inaccurate. When the mode of connection is a *bar* of iron instead of a chain, they are called *Bar-shot*.

CHALLENGE. No officer or soldier shall send a challenge to another officer or soldier to fight a duel, or accept a challenge if sent, upon pain if a commissioned officer of being cashiered; if a non-commissioned officer or soldier, of suffering corporeal punishment at the discretion of a court-martial; (ART. 25.) If any commissioned or non-commissioned officer commanding a guard shall knowingly or willingly suffer any person whatsoever to go forth to fight a duel, he shall be punished as a challenger; and all seconds, promoters, and carriers of challenges, in order to duels, shall be deemed principals, and be punished accordingly. And it shall be the duty of every officer commanding an army, regiment, company, post or detachment, who is knowing to a challenge being given, or accepted, by any officer, non-commissioned officer or soldier under his command, or has reason to believe the same to be the case, immediately to arrest and bring to trial such offenders;

(ART. 26.) Any officer or soldier who shall upbraid another for refusing a challenge shall himself be punished as a challenger; and all officers and soldiers are hereby discharged from any disgrace, or opinion of disadvantage, which might arise from their having refused to accept challenges, as they will only have acted in obedience to the laws, and done their duty as good soldiers, who subject themselves to discipline; (ART. 28.)

CHALLENGE OF MEMBERS OF COURT-MARTIAL. When a member shall be challenged by a prisoner, he must state his cause of challenge, of which the court shall, after due deliberation, determine the relevancy or validity, and decide accordingly; and no challenge to more than one member at a time shall be received by the court; (ART. 71.) Challenges of members are made in writing. The member withdraws and the court is cleared for deliberation. If the challenge is disallowed the member resumes his seat. Blackstone says: A *principal* challenge is where the cause assigned carries *prima facie* evidence of malice or favor; as that a juror is of kin to either party within the 9th degree; that he has been arbitrator on either side; that he has formerly been a juror in the same cause; that he is the party's master, servant, &c. These grounds of challenge, if true, cannot be overruled. Challenges to the favor are, where the party hath no principal challenge, but objects only on probable circumstances of suspicion, as acquaintance and the like; the validity of which is left to the triers; (HOUGH.)

CHALLENGE OF A SENTINEL. Who goes there?

CHAMADE—is a signal made for parley by beat of drum.

CHAMBER OF A MINE—is a cell of a cubical form, made to receive the powder.

CHAMBER of howitzers, columbiads, and mortars, is the smallest part of the bore, and contains the charge of powder. In the howitzers and columbiads the chamber is cylindrical, and is united with a large cylinder of the bore by a conical surface; the angles of intersection of this conical surface with the cylinders of the bore and chamber, are rounded (in profile) by arcs of circles. In the 8-inch siege howitzer, the chamber is united with the cylinder of the bore by a spherical surface, in order that the shell may, when necessary, be inserted without a sabot.

CHAPLAIN. Punished by a court-martial for undue absence; (ART. 4.) One allowed to Military Academy who shall be professor of geography, history, and ethics—with pay of professor of mathematics. Chaplains allowed to military posts, not exceeding twenty, are selected by the council of administration of the post, and are also to be school-masters, with \$70 per month, 4 rations per day, and quarters and fuel; (Acts July 5, 1838; and Feb. 21, 1857.)

CHARACTER. Where a witness is introduced by a prisoner to prove character, the court may ask how long he has known the prisoner, and whether he has known him from that time to the present without interruption, and whether he speaks from his own knowledge or from general report.—*Cross-examination* by the prosecutor, of witnesses introduced by the prisoner to prove character, is not allowed. (*Consult PHILLIPS' Law of Evidence.*)

CHARGE. Cavalry charges have been sometimes made silently. Those of Frederick the Great always began the HURRAH at fifty paces from the enemy. If at the moment of the shock the infantry is not disturbed, but their bayonets and fire have on the contrary saved them from the impulsive force of the charge, the fall of the front ranks of the cavalry will have interposed a rampart behind which infantry cannot fail to be victorious. But if the cavalry has practised the stratagem of beginning operations by drawing the fire of infantry upon skirmishers, and the commander of the cavalry ready for the charge has pushed forward curtains of light cavalry in a single rank, who succeed, by means of clouds of dust, in making an unskilful infantry believe that to be an attack which in reality is only a feint, the infantry may fire its balls at random—the thinness of the curtain of light cavalry will render the infantry's fire of little effect—the infantry will be eager to reload, and this may be done in agitation and disorder. The proper moment is then at hand, and the heavy cavalry in mass, concealed by the dust of their skirmishers, may charge, break, and sabre the infantry. The light cavalry finish the fugitives. The passage of defiles in retreat ought to be secured by a charge of cavalry. Coolness, silence, immobility, contempt of hurrahs, and a reserved fire until within suitable range, are the principal means of resisting a charge of cavalry. The file-closers must prevent firing, not ordered; watch the execution of the fire by ranks; see that it does not commence at too great a distance, then enjoin upon the soldiers to aim at the breast; to act only upon signals of the drum, or at the command of officers on horseback, who occupy the centre of the square, and who from that height alone can judge whether the charge of cavalry is a mere feint or a real attack. This necessary impassibility of infantry is obtained by discipline and experience, and is only perfected upon battle-fields. Without *sang froid*, and also promptness in manœuvring upon any ground, infantry will not be able to exhibit the whole strength of its arm against the best cavalry. Charges by infantry are made in order of battle, in column of attack, and in close columns in mass. Charges in order of battle are executed as follows: If the combat is between infantry and infantry, the troops receiving the

charge, fire at the moment at which it is almost joined with the enemy. The troops making the charge, fire at one hundred or one hundred and twenty paces from the enemy ; without waiting to reload, they march forward at the quick step ; at two-thirds the distance take charging step, and if the ground permits they subsequently take a running step, keeping up the touch of the elbow, and throw themselves upon the enemy with HURRAHS. Frederick the Great says that it is "better for a line to falter in a charge than to lose the touch of the elbow," so necessary is it that the charge should be *en muraille*.

In modern wars the charge in column has been used but not exclusively, and sometimes with fatal results. But whatever may be the form of the charge, success must not make the victor at once pursue his enemy. He must, on the contrary, halt, rally his men, form line if the charge was made in column, reload, fire upon the fugitives, and continue thus to gain ground, by a regulated fire, until at last the cavalry which seconds him comes to his aid. It must be considered that there may be a second line of the enemy, fresh troops, masked batteries, flank fires, or squadrons of cavalry ready to oppose an unforeseen resistance. It may be, that the attacking party has experienced some disadvantage, not far from the point where the infantry has just triumphed in the charge. Such circumstances may cause the infantry to pay dearly for its temporary success, a temporary success sometimes owing to stratagem on the part of the enemy. These precepts are given by the best writers on charges of infantry. (*Consult DECKER ; BARDIN, &c., &c.*)

CHARGER. The horse rode by an officer in the field or in action.

CHARGES AND SPECIFICATIONS. The form of indictments tried by courts-martial. (*See COURT-MARTIAL ; EVIDENCE.*) As to the perspicuity and precision of charges : If the description of the offence is sufficiently clear to inform the accused of the military offence for which he is to be tried, and to enable him to prepare his defence, it is sufficient ; (*Opinions of Attorney-general*, p. 189.)

A copy of charges, as well as a list of witnesses for the prosecution, should be given to the prisoner in all cases as soon as possible. Antecedent to arraignment, charges may be framed and altered by the party who brings forward the prosecution, or by the officer ordering the court, both in regard to substance and in other respects ; but the court, where the deviation was material, would probably deem it sufficient cause for delaying proceedings upon application of the prisoner. As the wit-

nesses of an officer may be at a distance, the sooner a copy is given the better; (Hough's *Law Authorities*.)

CHASE. The conical part of a piece of ordnance in front of the reinforce.

CHASSIS. A traversing carriage. The barbette and casemate carriages consist of gun carriages and chassis. The wrought-iron chassis now made consists of two rails of wrought iron, the cross-section of each being in form of a T, the flat surface on top being for the reception of the shoe-rail of the gun carriage. The rails are parallel to each other, and connected by iron transoms and braces. The chassis is supported on traverse wheels. A prop is placed under the middle transom of the chassis to provide against sagging. The pintle is the fixed centre around which the chassis traverses. In the ordinary barbette, the pintle is placed under the centre of the front transom; but in the columbiad carriage, it is placed under the centre of the middle transom. (*See COLUMBIAD.*)

CHEMIN DES RONDES—is a berme from four to twelve feet broad, at the foot of the exterior slope of the parapet. It is sometimes protected by a quickset hedge, but in more modern works by a low wall, built on the top of the revetment, over which the defenders can fire, and throw hand grenades into the ditch.

CHESSES—are the platforms which form the flooring of military bridges. They consist of two or more planks, ledged together at the edges, by dowels or pegs.

CHEVAUX-DE-FRISE. The principal uses of chevaux-de-frise are to obstruct a passage, stop a breach, or form an impediment to cavalry. Those of the modern pattern are made of iron, whose barrel is six feet in length, and four inches in diameter, each carrying twelve spears, five feet nine inches long, the whole weighing sixty-five pounds. (*See OBSTACLES.*)

CHOLERA. (*See SANITARY PRECAUTIONS.*)

CIRCUMVALLATION. Works made by besiegers around a besieged place facing outwards, to protect their camp from enterprises of the enemy.

CITADEL. A citadel is a small strong fort, constructed either within the place, or on the most inaccessible part of its general outline, or very near to it; it is intended as a refuge for the garrison, in which to prolong the defence, after the place has fallen.

CIVIL AUTHORITY. (*See AUTHORITY; CONTRACTS; EXECUTION OF LAWS; INJURIES; REMEDY.*)

CLERKS. Whenever suitable non-commissioned officers or privates cannot be procured from the line of the army, paymasters, with

the approbation of the Secretary of War, may employ citizens to perform the duties of clerks at \$700 per year; (*Acts* July 5, 1838; and Aug. 12, 1848.) One ration per day allowed when on duty at their station; (*Act* Aug. 31, 1852.)

CLOTHING. The President of the United States is authorized to prescribe the kind and quality of clothing to be issued annually to the troops of the United States. The manner of issuing and accounting for clothing shall be established by general regulations of the War Department. But whenever more than the authorized quantity is required, the value of the extra articles shall be deducted from the soldiers' pay; and, in like manner, the soldiers shall receive pay according to the annual estimated value for such authorized articles of uniform as shall not have been issued to them in each year. And when a soldier is discharged, it is the duty of the paymaster-general to pay him for clothing not drawn; (*Act* April 24, 1816.) The quartermaster's department distributes to the army the clothing, camp and garrison equipage required for the use of the troops. Every commander of a company, detachment, or recruiting station, or other officer receiving clothing, &c., renders quarterly returns of clothing according to prescribed forms to the quartermaster-general. All officers charged with the issue of clothing to make good any loss or damage, unless they can show to the satisfaction of the Secretary of War, by one or more depositions, that the deficiency was occasioned by unavoidable accident, or was lost in actual service, without any fault on their part; or, in case of damage, that it did not result from neglect; (*Act* May 18, 1826.) Purchasing clothing from a soldier prohibited under penalty of three hundred dollars, and imprisonment not exceeding one year; (*Act* March 16, 1802, and Jan. 11, 1812.)

The French system of making up clothing is as follows: Officers commanding regiments make their requisitions for the regulated quantities of cloth and other materials necessary for the clothing of the number of men under their command. The intendant having checked this demand gives an order for the issue, and the materials are made up by soldiers in the regimental workshops under the direction of the clothing captain, an officer holding an appointment in some respects analogous to that of our quartermasters; a fixed rate being paid for each article. Organized as the European armies are, those troops have always a large proportion of skilled workmen undergoing their term of military service; but it is not so with us. Still there are many points in the European system of clothing the troops which might, with advantage to the soldier and with economy to the public, be adapted to the wants of our service.

STATEMENT of the cost of Clothing, Camp and Garrison Equipage for the Army of the United States, furnished by the Quartermaster's Department, during the year commencing July 1, 1859, with the allowance of clothing to each soldier during his enlistment, and his proportion for each year respectively.

| CLOTHING. | Engineer | Hospital | Ordnance | Ordnance | Dragoons. | Cavalry. | Mounted | Light | Artillery. | Artillery. | Infantry. | Proportion for each year. | | | | | Allowance during enlistment. |
|--|----------|-----------|------------|------------|-----------|----------|-----------|------------|------------|------------|-----------|---------------------------|---------|--------|---------|--------|------------------------------|
| | Troops. | Stewards. | Sergeants. | Mechanics. | | | Riflemen. | Artillery. | Artillery. | | | First. | Second. | Third. | Fourth. | Fifth. | |
| | 35 c. | 35 c. | 35 c. | 35 c. | 35 c. | 35 c. | 85 c. | 35 c. | 35 c. | 35 c. | 35 c. | 35 c. | 35 c. | 35 c. | 35 c. | 35 c. | |
| Uniform Hat..... | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 1 | 1 | 1 | 1 | 1 | 5 |
| " " Feather..... | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 1 | 1 | 1 | 1 | 1 | 5 |
| " " Cord and tassels..... | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 1 | 1 | 1 | 1 | 1 | 5 |
| " " Eagle..... | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | | | | | | |
| " " Castle..... | 14 | | | | | | | | | | | | | | | | |
| " " Shell and flame..... | | | 4 | 4 | | | | | | | | | | | | | |
| " " Crossed sabres..... | | | | | 4 | | | | | | | | | | | | |
| " " Trumpet..... | | | | | | 4 | | | 4 | | | | | | | | |
| " " Crossed cannon..... | | | | | | | | | | 8 | 3 | | | | | | |
| " " Bugle..... | | | | | | | | | | 2 | 2 | | | | | | |
| " " Letter..... | | | | | | | | | | 2 | 2 | | | | | | |
| " " Number..... | | | | | | | | | | 2 | 2 | | | | | | |
| " " Cap (old pattern)..... | | | | | | | | | 1 | 13 | | | | | | | 5 |
| " " " " Tulip..... | | | | | | | | | | | | 1 | 1 | 1 | 1 | 1 | |
| " " " " Cord and tassel..... | | | | | | | | | | | | | | | | | |
| " " " " Plate..... | | | | | | | | | | | | | | | | | |
| " " " " Rings, pairs of..... | | | | | | | | | | | | | | | | | |
| " " " " Hair plume..... | | | | | | | | | | 62 | | | | | | | |
| Forage Cap..... | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 1 | 1 | 1 | 1 | 1 | 5 |
| Uniform Coats, Musicians..... | 6 89 | | | | | | | | | 6 89 | 6 89 | 1 | 1 | 1 | 1 | 1 | 5 |
| " " Privates..... | 6 56 | 6 56 | 6 56 | 6 56 | 6 56 | 6 56 | 6 56 | 6 56 | 6 56 | 6 56 | 6 56 | 1 | 1 | 1 | 1 | 1 | 5 |
| " " Jackets, Musicians..... | | | | | 5 52 | 5 52 | 5 52 | 5 52 | 5 52 | 5 52 | 5 52 | 1 | 1 | 1 | 1 | 1 | 5 |
| " " Privates..... | | | | | 5 17 | 5 17 | 5 17 | 5 17 | 5 17 | 5 17 | 5 17 | 1 | 1 | 1 | 1 | 1 | 5 |
| Chevrons, N. C. S., pairs of..... | | | 1 24 | | 1 24 | 1 24 | 1 24 | 1 24 | 1 24 | 1 24 | 1 24 | 1 | 1 | 1 | 1 | 1 | 5 |
| " " 1st Sergeants, pairs of..... | 37 | | | | 87 | 87 | 87 | 87 | 87 | 87 | 87 | 1 | 1 | 1 | 1 | 1 | 5 |
| " " Sergeants, "..... | 25 | | | | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 1 | 1 | 1 | 1 | 1 | 5 |
| " " Corporals, "..... | 19 | | | | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 1 | 1 | 1 | 1 | 1 | 5 |
| Caduceus..... | | 95 | | | | | | | | | | 1 | 1 | 1 | 1 | 1 | 5 |
| Shoulder Scales, brass, pr of N. C. S..... | | 95 | 95 | | 95 | 95 | | | | | 95 | | | | | | |
| " " Do. Sergeants..... | | 80 | | | 80 | 80 | | | | | 80 | | | | | | |
| " " Do. do. Privates..... | | 50 | | | 50 | 50 | | | | | 50 | | | | | | |
| " " Do. bronze, N. C. S..... | | | | | | | 1 15 | | | | | | | | | | |
| " " Do. do. Sergeants..... | | | | | | | | | | 90 | | | | | | | |
| " " Do. do. Privates..... | | | | | | | | | | 60 | | | | | | | |
| Trowsers, Sergeants..... | 3 00 | 3 00 | 3 00 | | 4 05 | 4 05 | 4 05 | 4 05 | 4 05 | 3 00 | 3 00 | 3 | 2 | 2 | 2 | 3 | 13 |
| " " Corporals..... | 2 57 | | | | 3 93 | 3 93 | 3 93 | 3 93 | 3 93 | 2 57 | 2 57 | 3 | 2 | 2 | 2 | 3 | 13 |
| " " Privates..... | 2 82 | | | | 3 87 | 3 87 | 3 87 | 3 87 | 3 87 | 2 82 | 2 82 | 3 | 2 | 2 | 2 | 3 | 13 |
| Sash..... | 3 00 | 3 00 | 3 00 | | 3 00 | 3 00 | 3 00 | 3 00 | 3 00 | 3 00 | 3 00 | | | | | | |
| Blue flannel Sack Coats..... | 2 10 | 2 10 | 2 10 | 2 10 | 2 10 | 2 10 | 2 10 | 2 10 | 2 10 | 2 10 | 2 10 | 2 | 2 | 2 | 2 | 2 | 10 |
| " " Do. do. lined, for Recruits..... | 2 56 | | | | 2 56 | 2 56 | 2 56 | 2 56 | 2 56 | 2 56 | 2 56 | | | | | | |
| Flannel Shirts..... | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 3 | 3 | 3 | 3 | 3 | 15 |
| Drawers..... | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 3 | 2 | 2 | 2 | 2 | 11 |
| *Bootes, pairs..... | 2 20 | 2 20 | 3 20 | 2 20 | 2 20 | 2 20 | 2 20 | 2 20 | 2 20 | 2 20 | 2 20 | 4 | 4 | 4 | 4 | 4 | 20 |
| *Boots, pairs..... | | | | | 3 60 | 3 60 | 3 60 | 3 60 | 3 60 | | | 1 | 1 | 1 | 1 | 1 | 5 |
| Stockings, pairs..... | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 4 | 4 | 4 | 4 | 4 | 20 |
| Great Coats..... | 6 40 | 6 40 | 6 40 | 6 40 | 7 63 | 7 63 | 7 63 | 7 63 | 7 63 | 6 40 | 6 40 | 1 | 0 | 0 | 0 | 0 | 1 |
| " " " " straps, sets..... | 24 | 24 | 24 | 24 | | | | | | 24 | 24 | | | | | | |
| Blankets..... | 2 44 | 2 44 | 2 44 | 2 44 | 2 44 | 2 44 | 2 44 | 2 44 | 2 44 | 2 44 | 2 44 | 1 | 0 | 1 | 0 | 0 | 2 |
| Leather Stocks..... | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 1 | 0 | 1 | 0 | 0 | 2 |
| Knapsacks and straps..... | 2 78 | 2 78 | 2 78 | 2 78 | 2 78 | 2 78 | 2 78 | 2 78 | 2 78 | 2 78 | 2 78 | 1 | 0 | 1 | 0 | 0 | 2 |
| Havresacks..... | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | | | | | | |
| Canteens..... | 32 | 32 | 32 | 32 | 32 | 32 | 32 | 32 | 32 | 32 | 32 | | | | | | |
| Canteen Strap..... | 14 | 14 | 14 | 14 | 14 | 14 | 14 | 14 | 14 | 14 | 14 | | | | | | |
| Fatigue Overalls..... | 71 | 71 | 71 | 71 | | | | | | | | 1 | 1 | 1 | 1 | 1 | 5 |
| Stable Frock..... | | | | | 62 | 62 | 62 | 62 | 62 | | | 1 | 0 | 1 | 0 | 0 | 2 |
| Talma..... | | | | | 5 00 | | | | | | | | | | | | |

* Mounted men may, at their option, receive one pair of "boots" and two pairs of "bootees," instead of four pairs of Bootees.

NOTE.—Metallic Eagles, Castles, Shell and flame, Crossed Sabres, Trumpets, Crossed Cannon, Bugles, Letters, Numbers, Tulips, Plates, Shoulder Scales, Rings, the Cap cord and tassels, and the hair Plume of the Light Artillery, the Sashes, Knapsacks and Straps, Havresacks, Canteens, Straps of all kinds, and the Talmas, will not be issued to the soldiers, but will be borne on the Return as company property while fit for service. They will be charged on the Muster Rolls against the person in whose use they were when lost or destroyed by his fault.

CAMP AND GARRISON EQUIPAGE.

| | | | |
|---|--------|---------------------------------------|---------|
| Bedsack, single..... | \$1 02 | Drum case..... | \$ 20 |
| " double..... | 1 13 | Wall tent..... | \$17 86 |
| Mosquito bars..... | 1 13 | " fly..... | 5 04 |
| Axe..... | 85 | " poles, sets..... | 1 18 |
| " helve..... | 10 | " pins, sets..... | 72 |
| " sling..... | 70 | | 24 80 |
| Hatchet..... | 29 | Sibley tent..... | \$32 30 |
| " helve..... | 03 | " poles and tripod..... | 4 72 |
| " sling..... | 40 | " sets..... | 43 |
| Spade..... | 53 | | 37 50 |
| Pickaxe..... | 56 | " stove..... | 4 00 |
| " helve..... | 10 | Hospital tent..... | \$64 13 |
| Camp kettle..... | 50 | " fly..... | 23 50 |
| Mess pan..... | 18 | " poles, sets..... | 5 60 |
| Iron pot..... | 1 23 | " pins, sets..... | 1 28 |
| Garrison flag..... | 36 66 | | 94 51 |
| " halliard..... | 3 00 | Servant's tent..... | \$6 62 |
| Storm flag..... | 12 85 | " poles, sets..... | 1 10 |
| Recruiting flag..... | 8 77 | " pins, sets..... | 28 |
| " halliard..... | 20 | | 8 00 |
| Guldon..... | 5 23 | Tent pin, large size, hospital..... | 05 |
| Camp color..... | 1 82 | " wall..... | 04 |
| National color, Artillery..... | 35 48 | " small size, common..... | 02 |
| " Infantry..... | 35 48 | Regimental book, order..... | \$2 25 |
| Regimental color, Artillery..... | 42 60 | " general order..... | 2 25 |
| " Infantry..... | 47 60 | " letter..... | 3 50 |
| Standard for Mounted Regiments..... | 20 87 | " index..... | 1 75 |
| Trumpet..... | 3 33 | " descriptive..... | 2 25 |
| Bugle, with extra mouth-piece..... | 3 12 | | 12 00 |
| Cord and tassels for Trumpets and Bugles..... | 75 | Post book, morning report..... | \$2 00 |
| Fife, B..... | 47 | " guard..... | 2 00 |
| " C..... | 41 | " order..... | 1 15 |
| Drum, complete, Artillery or Infantry..... | 5 90 | " letter..... | 1 15 |
| Drum head batter..... | 60 | | 6 30 |
| " snare..... | 19 | Company book, clothing..... | \$2 50 |
| " sling..... | 45 | " descriptive..... | 1 80 |
| " sticks, pairs..... | 23 | " order..... | 1 70 |
| " carriage..... | 64 | " morning report..... | 2 00 |
| " cord..... | 20 | | 8 00 |
| " snares, sets..... | 17 | Record book, for target practice..... | 60 |

The tunic of the French infantry soldier lasts three years and a half, the shell jacket two years, the great coat three years, and the trowsers one year. In the Sardinian and Belgian armies the great coat is intended to last eight years. Those governments credit every man on his enlistment with about eight dollars as outfit money, which is about the annual cost of the clothing of each soldier, and a daily allowance of 10 centimes is given for repairs. Regimental master-tailors are required to make all repairs at a fixed annual contribution from the soldiers' pay. This does not often exceed 80 centimes; and the surplus, after the soldier has paid the cost of his clothing, is handed to him at the end of the year. By this means the soldier is taught economy, but if at any time an article of dress is found to be unfit for use, captains of companies may order it to be renewed at the cost of the soldier. The great durability of the clothing of European armies is attributable to the precautions taken to insure good materials from the manufacturers by whom the cloth is supplied. Not only is every yard of cloth, when delivered into store, subjected to several distinct and minute examinations by boards of officers assisted by *experts*, who weigh it, shrink it, and view it inch by inch against a strong light, so that the

slightest flaw may be detected; but they likewise apply chemical tests to detect the quality of the dye, and the manufactories are at all times open to inspectors, who watch the fabrication at every stage. When clothing has once been manufactured, it is hardly possible with any degree of accuracy to ascertain the quality of the material.

COEHORN MORTAR. Brass 24-pdr. mortar, weighing 164 lbs.

COLONEL. Rank in the army between brigadier-general and lieutenant-colonel.

COLORS. Each regiment of artillery and infantry has two silken colors, but only one is borne or displayed at the same time, and on actual service that is usually the regimental one.

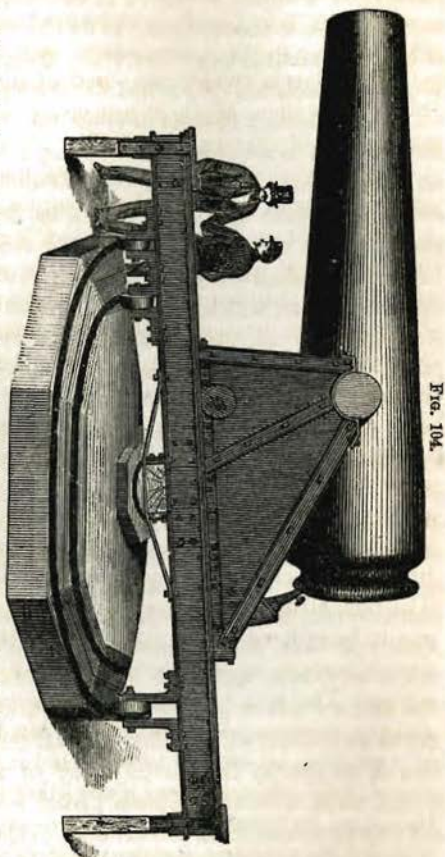
COLUMBIAD. An American cannon invented by Colonel Bomford, of very large calibre, used for throwing solid shot or shells, which, when mounted in barbette, has a vertical field of fire from 5° depression to 39° elevation, and a horizontal field of fire of 360°. Those of the old pattern were chambered, but they are now cast without, and otherwise greatly improved. The 10-inch weighs 15,400 lbs., and is 126 inches long. The 8-inch columbiad is 124 inches long and weighs 9,240 lbs. Rodman's 15-inch columbiad, represented in Fig. 104, was cast at Pittsburgh, Pennsylvania, by Knapp, Rudd & Co., under the directions of Captain T. J. Rodman, of the Ordnance Corps, who conceived the design, which he has happily executed, of casting guns of large size *hollow*, and by means of a current of water introduced into the *core*, which forms the mould of the bore, cooling it from the interior, and thus making the metal about the bore the hardest and densest, and giving the whole thickness of metal subjected to internal strain its maximum strength. The gun has the following dimensions:

| | |
|---|-------------|
| Total length | 190 inches. |
| Length of calibre of bore, | 156 " |
| Length of ellipsoidal chamber, | 9 " |
| Total length of bore, | 165 " |
| Maximum exterior diameter, | 48 " |
| Distance between rimbases, | 48 " |
| Diameter at muzzle, | 25 " |
| Thickness of metal behind the chamber, | 25 " |
| Thickness at junction of bore with chamber, | 16½ " |
| Thickness at muzzle, | 5 " |
| Diameter of shell, | 14.9 " |
| Weight of gun, | 49,100 lbs. |
| Weight of shell, | 320 " |
| Bursting charge, | 17 " |

The gun is mounted upon the new iron centre pintle carriage, (Fig. 104,) which with requisite lightness has great strength and stiffness; and to facilitate the pointing from 5° depression to 39° elevation, a slot is cut in the knob of the cascable, and a ratchet is formed on the base of the breech to receive a "pawl" attached to the elevating screw. If the distance be greater than the length of a single notch of the ratchet, the piece is rapidly moved by a lever which passes through an opening in the pawl. If the distance is less, then the elevating screw is used. The piece was fired and manœuvred during the trials at Fort Monroe, with great facility, being manned by 1 sergeant and 6 negroes; the times of loading were $1' 15''$ and $1' 3''$. Time in traversing $90^{\circ} 2' 20''$, and in turning back $45^{\circ} 1'$. Time of loading, including depression and elevation, $4'$ and $3' 18''$.

The mean ranges at 6° elevation, of ten shots, was 1,936 yards, and the mean lateral deviation 2.2 yards; 35 lbs. of .6-inch grain powder being the charge and $7''$ the time of flight. At 10° elevation and 40 lbs. of powder, large grain, the range was 2,700 yards, and time of flight $11'' .48$. At $28^{\circ} 35'$ elevation the range was 5,730 yards; time of flight $27''$, and the lateral deviation, as observed with a telescope attached to one of the trunnions, very slight. (See ARTILLERY; GUNPOWDER; ORD-
NANCE AND ORDNANCE STORES; RANGES.)

COLUMN—of attack; in route; close column; column of divisions; column at half distance; open column. (See MANŒUVRES IN BATTLE; TACTICS.)



COMMAND. An officer may be said to command at a separate post, when he is out of the reach of the orders of the commander-in-chief, or of a superior officer, in command in the neighborhood. He must then issue the necessary orders to the troops under his command, it being impossible to receive them from a superior officer; (PETER'S *Digest of Decisions of Federal Courts*, vol. 1. p. 179.)

Officers having brevets or commissions of a prior date to those of the regiment in which they serve, may take place in courts-martial and on detachments, when composed of different corps, according to the ranks given them in their brevets, or dates of their former commissions; but in the regiment, troop, or company, to which such officers belong, they shall do duty and take rank, both in courts-martial and on detachments, which shall be composed only of their own corps, according to the commissions by which they are mustered in said corps; (ART. 61.) If, upon marches, guards, or in quarters, different corps of the army shall happen to join and do duty together, the officer highest in rank of the line of the army, marine corps, or militia, by commission there, on duty or in quarters, shall command the whole, and give orders for what is needful to the service, unless otherwise specially directed by the President of the United States, according to the nature of the case; (ART. 62.) The great principle that rank, when an officer is on duty, and military command, are ideas only to be separated by positive law, has always been recognized in legislation. The 61st Article of War, for instance, forbids the exercise of brevet rank within the regiment, troop, or company, to which such officers belong. The 63d forbids engineers to assume, and declares they are not subject to be ordered on any duty beyond the line of their immediate profession, except by the special order of the President of the United States. The acts of Congress giving rank to officers of the medical and pay departments of the army, provide that they shall not, in virtue of such rank, be entitled to command in the line or other staff departments of the army; and so, if any other legal restrictions on rank exist, they must be found in some positive statute. This necessity is made plain by the consideration that *military rank means a range of military subordination*. Higher rank therefore, created by law, cannot be made subordinate to lower rank, except by positive law; or, in other words, a junior cannot command a senior, unless the law shall otherwise decree. The 61st Article of War declares that officers holding commissions of a prior date to the regiment in which they serve, shall nevertheless take rank "both in courts-martial and on detachments composed only of their own corps, according to the commissions by which they

are mustered in said corps." The 98th Article declares that militia officers, when serving in conjunction with the regular forces, shall take rank next after all officers of the like grade in said regular forces, notwithstanding the commissions of such militia officers may be older than the commissions of the officers of the regular forces of the United States. The 27th Article declares that all officers have power to part and quell all quarrels, &c., and to order officers into arrest, and whosoever shall refuse to obey such officer (though of inferior rank) shall be punished, &c. Here are cases in which Congress has decreed that seniors in commission may be commanded by juniors; and if any other cases exist, they likewise must be found in some positive statute. The 62d Article of War is ambiguous, from the use of the words "line of the army;" our legislation having applied those words to contradistinguish regular troops from militia, and also, in many cases, the same words are correlative and contradistinctive of staff of the army. "But," says President Fillmore, after a careful examination on his part, to determine this question, "I find but one act of Congress in which the words 'line of the army' have been employed to designate the regular army in contradistinction to the militia, and none in which they have manifestly been used as contradistinctive of brevet." Whatever ambiguity, therefore, may exist under the 62d Article, in respect to the right of command on the part of officers of staff corps and departments, the article does not decree any restriction on brevet rank; and hence the great principle that rank on duty confers military command has its full force in respect to commissions by brevet, and all other commissions not restricted by law. The President, as commander-in-chief under the 62d Article of War, may relieve any officer from duty with a particular command, or he may assign some officer of superior rank to duty with a command; but the laws have not authorized him to place a junior in command of a senior, and that power which creates rank, viz., Congress, is alone authorized to place restrictions on its meaning. (*See ASSIGNMENT; BREVET; LINE; RANK.*)

The word *command*, when applied to ground, is synonymous with overlook; and any place thus commanded by heights within range of cannon is difficult to defend, if the enemy have been able to seize the heights. (*See BREVET; OATH; OBEDIENCE; RANK.*)

COMMAND OF FIRE. When a work has a sufficient elevation over the work before it, to enable the defensive weapons to act in both works at the same time upon an advancing enemy, even to the foot of the glacis, then the inner work is said to have a command of fire over the other.

COMMAND OF OBSERVATION. When the interior work has only sufficient elevation to look into or even over the work before it, but not sufficient to fire clear of it, then it is said to have only a command of observation.

COMMANDER-IN-CHIEF. The President shall be commander-in-chief of the Army and Navy of the United States, and of the militia of the several States, when called into the actual service of the United States; (*See CONSTITUTIONAL RELATION OF CONGRESS AND THE PRESIDENT TO THE LAND FORCES.*)

COMMANDER OF THE ARMY. That whenever the President shall deem it expedient, he is hereby empowered to appoint, by and with the advice and consent of the Senate, a commander of the army which may be raised by virtue of this act, and who, being commissioned as lieutenant-general, may be authorized to command the armies of the United States; (*Sec. 5, Act May 28, 1798.*)

COMMISSARY OF SUBSISTENCE. An officer of the subsistence department. (*See SUBSISTENCE.*)

COMMISSION. The President shall commission all officers of the United States; (*Sec. 3 Constitution.*) Officers of the United States army may hold their commissions through rules of appointment prescribed by Congress under its authority to raise armies and make rules for their government and regulation, but their commissions must be signed by the President. The words introduced into every officer's parchment:—"this commission to continue in force during the pleasure of the President of the United States for the time being"—have been inserted without authority of law. There has been no legislation on the subject of the form of an officer's commission. The form adopted was borrowed originally from British commissions, and was "probably the pen work of some clerk, or at the most, the hasty direction of the Secretary of War, without reflecting that the chief magistrate in a republic is not the fountain of all honor and power," and that Congress alone has the power to raise armies, and to make rules for their government and regulation.

COMPANY. Companies are commanded by captains having under their orders lieutenants, sergeants, corporals, musicians, and privates. (*See ARMY ORGANIZATION.*)

COMPROLLER. (*See ACCOUNTABILITY.*)

CONDUCT UNBECOMING AN OFFICER AND A GENTLEMAN—punished with dismissal by sentence of general court-martial. What constitutes the offence is not defined, but it is left to the moral sense of the court-martial to determine.

CONFINEMENT. Non-commissioned officers and soldiers charged

with crimes shall be confined until tried by a court-martial, or released by proper authority; (ART. 78.) No officer, or soldier who shall be put in arrest, shall continue in confinement more than eight days, or until such time as a court-martial can be assembled; (ART. 79.) (See ARREST.)

CONGRESS. (See CONSTITUTIONAL RELATION OF CONGRESS.)

CONNIVING AT HIRING OF DUTY. If a non-commissioned officer, shall be reduced. If a commissioned officer, punished by the judgment of a general court-martial; (ART. 48.)

CONSCRIPTION. The only means of raising a NATIONAL ARMY. The system of voluntary enlistments will always divide an army into two castes—officers and soldiers, and the latter will hardly ever be found qualified for promotion. The system of conscription is, too, the only means of raising large armies. This was made plain during the last war with England. Even with the largest bounties in land and money, soldiers could not be procured, and the President and Secretary of War (Messrs. Madison and Monroe) recommended in strong terms a system of conscription. The legislature of New York passed an act at the same time, for raising 12,000 troops by conscription. (See DEFENCE, NATIONAL; RAISE.)

CONSTITUTION. The following provisions of the constitution relate to the land and naval forces: *Preamble*—We, the people of the United States, in order to * * provide for the common defence * * do ordain and establish this constitution for the United States of America.

ART. I. SEC. 1. All legislative powers herein granted, shall be vested in a Congress of the United States, which shall consist of a Senate and House of Representatives.

ART. I. SEC. 8. The Congress shall have power:—

Clause 1. * * To pay the debts and provide for the common defence and general welfare of the United States; * *

Clause 9. * * To define and punish offences against the law of nations; * *

Clause 10. To declare war, grant letters of marque and reprisal, and make rules concerning captures on land and water;

Clause 11. To raise and support armies; but no appropriation of money to that use, shall be for a longer term than two years;

Clause 12. To provide and maintain a navy;

Clause 13. To make rules for the government and regulation of the land and naval forces;

Clause 14. To provide for calling forth the militia to execute the laws of the Union, suppress insurrections, and repel invasions;

Clause 15. To provide for organizing, arming, and disciplining the militia, and for governing such part of them as may be employed in the service of the United States, reserving to the States, respectively, the appointment of the officers, and the authority of training the militia according to the discipline prescribed by Congress.

Clause 16. To exercise exclusive legislation * * over all places purchased, by consent of the legislature of the State in which the same shall be, for the erection of forts, magazines, arsenals, dock-yards, and other needful buildings—and

Clause 17. To make all laws which shall be necessary and proper for carrying into execution the foregoing powers, and all other powers vested by this constitution in the Government of the United States, or in any department or officer thereof.

SEC. 9. *Clause 2.* * * The privilege of the writ of habeas shall not be suspended, unless when, in cases of rebellion or invasion, the public safety may require it. * *

SEC. 10. *Clause 2.* * * No State shall, without the consent of Congress * * keep troops or ships of war in time of peace * * or engage in war, unless actually invaded, or in such imminent danger as will not admit of delay.

ART. II. SEC. 1. *Clause 1.* The executive power shall be vested in a President of the United States of America. * *

SEC. 2. *Clause 1.* The President shall be commander-in-chief of the army and navy of the United States, and of the militia of the several States, when called into the actual service of the United States. * *

SEC. 3. *Clause 1.* * * He shall take care that the laws be faithfully executed; and shall commission all officers of the United States.

ART. III. SEC. 3. *Clause 1.* Treason against the United States shall consist only in levying war against them, or in adhering to their enemies, giving them aid and comfort. No person shall be convicted of treason, unless on the testimony of two witnesses to the same overt act, or on confession in open court.

Clause 2. The Congress shall have power to declare the punishment of treason; but no attainder of treason shall work corruption of blood, or forfeiture, except during the life of the person attainted.

ART. IV. SEC. 4. *Clause 1.* The United States shall guarantee to every State in this Union a republican form of government; and shall protect each of them against invasion, and on the application of the legislature, or of the executive, (when the legislature cannot be convened,) against domestic violence.

Amendments to the Constitution.:—1. Congress shall make no law respecting an establishment of religion, or prohibiting the free exercise thereof; abridging the freedom of speech, of the press; or the right of the people peaceably to assemble, and to petition the Government for redress of grievances.

ART. II. A well-regulated militia being necessary to the security of a free State, the right of the people to keep and bear arms shall not be infringed.

ART. III. No soldier shall, in time of peace, be quartered in any house, without the consent of the owner; nor in time of war, but in a manner to be prescribed by law.

ART. V. No person shall be held to answer for a capital or otherwise infamous crime, unless on a presentment or indictment by a grand jury, except in cases arising in the land or naval forces, or in the militia, when in actual service, in time of war, or public danger; nor shall any person be subject for the same offence to be twice put in jeopardy of life or limb; nor shall be compelled, in any criminal case, to be a witness against himself, nor be deprived of life, liberty, or property, without due process of law; nor shall private property be taken for public use without just compensation.

CONSTITUTIONAL RELATION OF CONGRESS AND THE PRESIDENT TO THE LAND AND NAVAL FORCES OF THE UNITED STATES. The power of making rules for the government and regulation of armies, as well as the power of raising armies, having in express terms been conferred on *Congress*, it is manifest that the President as commander-in-chief is limited by the constitution to the simple command of such armies as Congress may raise, under such rules for their government and regulation as Congress may appoint: "The authorities, (says Alexander Hamilton, *Federalist*, No. 23,) essential to the care of the common defence are these: To raise armies; to build and equip fleets; to prescribe rules for the government of both; to direct their operations; to provide for their support. These powers ought to exist without limitation; because it is impossible to foresee or to define the extent and variety of national exigencies, and the correspondent extent and variety of the *means* which may be necessary to satisfy them."

. . . "Defective as the present (old) Confederation has been proved to be, this principle appears to have been fully recognized by the framers of it; although they have not made proper or adequate provision for its exercise. Congress have an unlimited discretion to make requisitions of men and money; to govern the army and navy; to direct their operations." "The government of the military is that branch

of the code, (says BARDIN, *Dictionnaire de l'Armée de Terre*,) which embraces the military *Hierarchy*, or the gradual distribution of inferior authority." From this principle proceeds the localization of troops, their discipline, remuneration for important services, the repression of all infractions of the laws, and every thing in fine which the legislature may judge necessary either by rules of appointment or promotion, penalties or rewards, to maintain an efficient and well-disciplined army. But, as if to avoid all misconstruction on this point, the constitution not only declares that Congress shall make rules for the *government*, but also for the *regulation* of the army; and *regulation* signifies precise determination of functions; method, forms and restrictions, not to be departed from. It is evident, therefore, that the design of the framers of the constitution, was not to invest the President with powers over the army in any degree parallel with powers possessed by the king of Great Britain over the British army, whose prerogative embraces the *command* and *government* of all forces raised and maintained by him with the consent of parliament, (BLACKSTONE;) but their purpose, on the contrary, was to guard in all possible ways against executive usurpation by leaving with *Congress* the control of the Federal forces which it possessed under the articles of the Confederation, and at the same time to strengthen the powers of Congress by giving that body an unrestricted right to *raise* armies, provided appropriations for their support should not extend beyond two years. The command of the army and navy and militia called into service, subject to such rules for their government and regulation as Congress may make, was given by the constitution to the President; but the power of making rules of government and regulation is in reality that of SUPREME COMMAND, and hence the President, to use the language of the *Federalist*, in his relation to the army and navy, is nothing more than the "*first General and Admiral of the Confederacy*;" or the first officer of the military hierarchy with functions assigned by Congress. A curious example of this contemporaneous construction of the constitution is found in a letter from Sedgwick to Hamilton (vol. 6, Hamilton's Works, p. 394.) Congress, in raising a provisional army in 1798, created the office of commander of the army with the title of *Lieutenant-general*. A year subsequently a provision was made by law for changing this title to that of *General*. This last provision gave great offence to Mr. Adams, then President, who considered it as an evidence of the desire of Congress to make "*a general over the President*." So strangely was he possessed with this idea that he never commissioned Washington as General, but the latter died in his office of *Lieutenant-general*; the President evi-

dently thinking that the title of General conveyed a significancy which belonged to the President alone, although the commander of the army might in his opinion very properly take the title of *Lieutenant-general*, and thus have his subordination to the commander-in-chief of the army and navy and militia clearly indicated. It is plain therefore no less from the appointment by the constitution of the President as commander-in-chief, than from all contemporaneous construction, that his functions in respect to the army are those of First General of the U. S., and in no degree derived from his powers as first civil magistrate of the Union. The advocates of executive discretion over the army must therefore seek for the President's authority in his military capacity, restrained as that is by the powers granted to Congress, which embrace the raising, support, government, and regulation of armies; or, to use the language of the *Federalist*, No. 23, "there can be no limitation of that authority, which is to provide for the defence and protection of the community, in any matter essential to its efficacy; that is, in any matter essential to the *formation, direction, or support* of the NATIONAL FORCES." After the foregoing investigation of the unrestricted power of Congress in respect to the army, *save only in the appointment of the head of all the national forces, naval and military*, it will be plain that the 2d Section of the constitution, in giving to the President the nomination and appointment, by and with the advice and consent of the Senate, of *all other officers* of the United States, *whose appointments are not herein otherwise provided for, excludes* officers of the army and navy. The power of raising armies and making rules for their government and regulation, necessarily involves the power of making rules of appointment, promotion, reward, and punishment, and is therefore a provision in the constitution otherwise providing for the appointment of officers of the land and naval forces. So true is this that the principle has been acted on from the foundation of the Government. Laws have been passed giving to general and other officers the appointment of certain inferior officers. In other cases the President has been confined by Congress, in his selection for certain offices in the army, to particular classes. Again, rules have been made by Congress for the promotion of officers, another form of appointment; and in 1846, an army of volunteers was raised by Congress, the officers of which the acts of Congress directed should be appointed according to the laws of the States in which the troops were raised, excepting the general officers for those troops, who were to be appointed by the President and Senate (*Act June 26, 1846*)—a clear recognition that the troops thus raised by Congress were United States troops, and not militia. It is certainly

true that the military legislation of the country has for long years vested a large discretion in the President in respect to appointments and other matters concerning the army; but it may well be asked whether fixed rules of appointments and promotion which would prevent the exercise of favoritism by the executive might not, with the greatest advantage to the army and the country, be adopted by Congress? "Military prejudices (says Gen. Hamilton) are not only inseparable from, but they are essential to the military profession. The government which desires to have a satisfied and useful army must consult them. They cannot be moulded at its pleasure; it is vain to aim at it." These are maxims which should lead Congress to the adoption of rules of appointment and promotion in the army which would prevent all outrages to the just pride of officers of the army. The organization of every new regiment, where the appointment of the officers has been left to executive discretion, shows that, if the desire has been felt in that quarter to cherish or cultivate pride of profession among the officers of the army, the feeling has been repressed by other considerations. All pride of rank has been so far crushed by this system of executive discretion that it is apparent, if Congress cannot provide a better rule for the government and regulation of the army, a generous rivalry in distinguished services must be superseded by political activity. Rules of appointment and promotion limiting the discretion of the President, and at the same time giving effect to opinions in the army, might easily be devised; or borrowed from existing rules in the French army, which, without ignoring the important principle of seniority, would at the same time afford scope and verge for rewards for distinguished services. (See PROMOTION.) No army can be kept in war in the highest vigor and efficiency without rewards for distinguished activity, and the appointment of Tottleben at the siege of Sevastopol shows how far almost superhuman efforts may be prompted by investing a commander in the field with the power of selecting his immediate assistants. Colonels of regiments with us now exercise this authority in selecting regimental adjutants and quartermasters. Why should not the same trust be reposed in commanding generals of departments, brigades, divisions, and armies? And why should not all necessary restrictions (such as those in operation in the French armies) be put upon the President in making promotions for distinguished services, and also in original appointments, in order to secure justice to the army, and thereby promote the best interests of the country? (*Consult Federalist; HAMILTON'S Works; MADISON'S Works; Acts of Congress; Report of Committee of the Senate, April 25, 1822. See PRESIDENT; RAISE; VICE-PRESIDENT; PROMOTION.*)

CONTEMPT. Any officer or soldier who shall use contemptuous or disrespectful words against the President of the United States, the Vice-President, against the Congress of the United States, or against the chief magistrate or legislature of any of the United States in which he may be quartered, shall be punished as a court-martial shall direct. Any officer or soldier who shall behave himself with contempt or disrespect towards his commanding officer, shall be punished by the judgment of a court-martial; (ARTS. 5 and 6.)

No person whatsoever shall use any menacing words, signs, or gestures, in presence of a court-martial, or shall cause any riot or disorder, or disturb their proceedings, on the penalty of being punished at the discretion of the said court-martial; (ART. 76.) *Contempts* thus rendered summarily punishable by courts-martial are of public and self-evident kind, not depending on any interpretation of law admitting explanation, or requiring further investigation. Courts-martial sometimes act on this power. At other times individuals so offending are placed in arrest, and charges are preferred for trial. A regimental court-martial may punish summarily, but are not competent to award punishment to commissioned officers. A regimental court-martial in such cases would impose arrest. Citizens, not soldiers, would be removed from court; (HUGH'S *Military Law Authorities*.)

CONTRACTS. Supplies for the army, unless in particular and urgent cases the Secretary of War should otherwise direct, shall be purchased by contract, to be made by the commissary-general on public notice, to be delivered on inspection in bulk, and at such places as shall be stipulated; which contract shall be made under such regulations as the Secretary of War may direct; (*Act* April 14, 1818, *Sec.* 7.) No contract shall hereafter be made by the Secretary of State, or of the Treasury, or of the Department of War, or of the Navy, except under a law authorizing the same, or under an appropriation adequate to its fulfilment; and excepting also contracts for the subsistence and clothing of the army and navy, and contracts by the quartermaster's department which may be made by the secretaries of those departments; (*Act* May 1, 1820.) Members of Congress cannot be interested in any contract, and a special provision must be inserted in every contract that no member of Congress is interested in it. Penalty—*forfeiture of three thousand dollars for making contracts with members of Congress*; (*Act* April 21, 1808.)

Liability of Contracts.—By analogy to the rule which protects an officer from the treatment of a trespasser or malefactor, in regard to acts done by him in the execution of the orders of his own government,

a similar immunity is extended to him in respect to contracts which he enters into for public purposes within the sphere of his authority. No private means or resources would otherwise be adequate to the responsibilities which, under any other rule, would effectually deter the best citizens of a state from rendering their services to the government. On high grounds, therefore, of public policy, it has long been established, that no action will lie against any government officer upon contracts made by him in his official character for public purposes, and within the legitimate scope of his duties.

“Great inconveniences (says Mr. Justice Ashurst) would result from considering a governor or commander as personally responsible in such cases. For no man would accept of any office of trust under government upon such conditions. And indeed it has been frequently determined that no individual is answerable for any engagements which he enters into on their behalf.” “In any case (says Mr. Justice Buller) where a man acts as agent for the public, and treats in that capacity, there is no pretence to say that he is personally liable.” This doctrine applies in full force to military officers in the exercise of their professional duties. One of the earliest cases of this nature was *Macheath v. Haldimand*, in which it appeared that General Haldimand, being commander-in-chief and governor of Quebec, had, in those capacities, appointed Captain Sinclair to the command of a fort upon Lake Huron, with instructions to employ one Macheath in furnishing supplies for the service of the Crown. In pursuance of these orders, Macheath had furnished various articles for the use of the fort; and Captain Sinclair, according to his instructions from General Haldimand, drew bills upon him for the amount. Macheath also remitted his accounts to General Haldimand at Quebec, with the following words prefixed: “Government debtor to George Macheath for sundries paid by order of Lieutenant-governor Sinclair.” General Haldimand objected to several of the charges, and refused payment of the amount; but ultimately made a partial payment on account, without prejudice to Macheath’s right to the remainder, to recover which he brought the present action. At the trial it appeared so clearly that Macheath had dealt with General Haldimand solely in the character of commander-in-chief, and as an agent of government, that Mr. Justice Buller told the jury they were bound to find for the defendant in point of law. The jury gave their verdict accordingly; and upon the express ground of General Haldimand’s freedom from personal liability in such a case, the Court of King’s Bench were unanimous in refusing a new trial.

In a case which was tried before Lord Mansfield, one Savage brought

an action against Lord North, as First Lord of the Treasury, for the expenses which he (Savage) had incurred in raising a regiment for the service of government; and Lord Mansfield held that the action did not lie. So in another case of *Lutterlop v. Halsey*, an action was brought against a commissary for the price of forage, supplied to the army by the plaintiff, at the request of the defendant, in his official character; and the commissary was held not to be liable. On another occasion, a suit was instituted in chancery against General Burgoyne, for a specific performance of a contract for the supply of artillery carriages in America. But Lord Chancellor Thurlow said there was no color for the demand as against General Burgoyne, who acted only as an agent for government; and his lordship dismissed the suit with costs. In 1818 an action was brought against Hall, the late purser of *H. M. S. La Belle Poule*, by the purser's steward of the same ship, to recover the amount of pay due to the latter for his services on board. It appeared that the purser's steward could not be appointed without the consent of the commander, and that he was entitled to the pay of an able seaman, but usually received pay under a private contract with the purser. The chief justice, Lord Ellenborough, at first felt some difficulty in the case; but considering how very extensive the operation of the principle might be, if such an action could be supported, and if a person, receiving a specific salary from the Crown in respect of his situation, could recover remuneration for his services from the officer under whose immediate authority he acted, and that the purser had no fund allowed him out of which such services were to be paid, his lordship was of opinion that the plaintiff had no right of action against the purser.

It is quite immaterial also, whether the officer gives the orders in person, or through a subordinate agent appointed by himself. The creditor cannot, in the latter case, charge the officer with a personal liability. In *Myrtle v. Beaver*, the plaintiff, a butcher at Brighton, brought an action against Major Beaver, the captain of a troop in the Hampshire Fencible Cavalry, for the price of meat supplied to the troop when quartered at Brighton, in January and February, 1800. One Bedford, a sergeant in the troop, had been employed by Major Beaver, according to his duty as captain, to provide for the subsistence of the men; and so long as Major Beaver remained with the troop, he regularly settled the butcher's bill monthly, up to the 24th January, 1800. At that date Major Beaver was detached with a small party to command at Arundel, the greater part of the regiment remaining at Brighton under the command of the colonel; and the command of

Major Beaver's troop, with the duties of providing for its subsistence, devolved on Lieutenant Hunt, who continued to employ Sergeant Bedford in providing supplies for the men, and gave him money for that purpose. The plaintiff furnished meat as before, under Sergeant Bedford's orders, but it did not appear that he had been apprised of the change of the authority, under which the sergeant gave those orders. On the 20th February, and before the usual monthly period of settling the butcher's bill, Lieutenant Hunt, who was also paymaster of the regiment, absconded with the regimental moneys, and left the plaintiff's demand and the regimental accounts unsettled. As Sergeant Bedford had, in the first instance, been accredited by Major Beaver, as his agent for ordering the supplies, the plaintiff Myrtle contended that until he had been informed of the discontinuance of that authority, he had a right to presume its continuance, and to look to Major Beaver for payment as before. But the Court of King's Bench held, that although the sergeant acted by Major Beaver's orders, he was not to be considered as the agent of a private individual, as it was plain that he acted as agent for whatever officer happened to have the command of the troop. There was, therefore, no ground for fixing Major Beaver with any personal liability in the matter.

An agent of government may, however, render himself personally liable upon contracts made by himself in the execution of his office. On this principle an action was brought against General Burgoyne, to recover a sum of money due to the plaintiff as provost-marshal of the British army in America; the general having promised that the plaintiff should be paid at the same rate as the provost-marshal under General Howe had been. At the trial, an objection was taken to the legality of the action; but Lord Mansfield refused to stop the case, and the plaintiff thereupon went into his evidence. It appeared, however, in the course of the inquiry, that the plaintiff's demand had been satisfied; and, therefore, the verdict was in favor of General Burgoyne. But it is evident from Lord Mansfield's suffering the trial to go on, that his lordship thought a commanding officer might so act as to make himself personally liable in such a case; and the question, whether he had so acted or not, was for the determination of a jury. In the next case it was accordingly sought to fix a naval officer with a personal liability for supplies furnished to his crew, on the ground of the language used by him on the occasion of ordering the supplies. Lieutenant Temple was first lieutenant of H. M. S. *Boyne*, and on her arrival at Portsmouth from the West Indies, he inquired for a slop-seller to supply the crew with new clothes, saying, "He will run no risk; I will see him

paid." One Keate being accordingly recommended for this purpose, Lieutenant Temple called upon him and used these words, "I will see you paid at the pay-table; are you satisfied?" Keate answered, "Perfectly so." The clothes were delivered on the quarter-deck of the *Boyne*, though the case states that slops are usually sold on the main-deck. Lieutenant Temple produced samples to ascertain whether his directions were followed. Some of the men said that they were not in want of any clothes, but were told by the lieutenant that if they did not take them he would punish them; and others, who stated that they were only in want of part of a suit, were obliged to take a whole one, with anchor buttons to the jacket, such as were then worn by petty officers only. The former clothing of the crew was very light, and adapted to the climate of the West Indies, where the *Boyne* had been last stationed. Soon after the delivery of the slops, the *Boyne* was destroyed by fire, and the crew dispersed into different ships. On that occasion Keate, the slop-seller, expressed some apprehension for himself, but was thus answered by Lieutenant Temple:—"Captain Grey (Captain of the *Boyne*) and I will see you paid; you need not make yourself uneasy." After this the commissioner came on board the *Commerce de Marseilles* to pay the crew of the *Boyne*, at which time Lieutenant Temple stood at the pay-table, and took some money out of the hat of the first man who was paid, and gave it to the slop-seller. The next man, however, refused to part with his pay, and was immediately put in irons. Lieutenant Temple then asked the commissioner to stop the pay of the crew, but he answered that it could not be done. It was in evidence that though the crew were pretty well clothed, yet from the lightness of their clothing they were not properly equipped for the service in which they were engaged; and the compulsory purchases were not improperly ordered by the officer. Under these circumstances, Keate, the slop-seller, being unable to obtain the payment to which he was entitled, brought his action against Lieutenant Temple for the price of the clothing; and Mr. Justice Lawrence told the jury that if they were satisfied that the goods were advanced on the credit of the lieutenant as immediately responsible, Keate was entitled to recover the amount; but if they believed that Keate, on supplying the goods, relied merely on the lieutenant's assistance to get the money from the crew, the verdict ought to be in favor of the lieutenant. The jury found a verdict against Lieutenant Temple, but the Court of Common Pleas set it aside. Eyre, C. J.: "The sum recovered is 57*l.* 7*s.* 8*d.*, and this against a lieutenant in the navy, a sum so large that it goes a great way towards satisfying my mind that it never could have been in contemplation of the

defendant to make himself liable, *or of the slop-seller to furnish the goods on his credit.* I can hardly think that had the *Boyne* not been burnt, and the plaintiff been asked whether he would have the lieutenant or the crew for his paymaster, but that he would have given preference to the latter. . . . From the nature of the case it is apparent, that the men were to pay in the first instance; the defendant's words were, 'I will see you paid *at the pay-table*; are you satisfied?' and the answer was, 'Perfectly so;' the meaning of which was, that however unwilling the men might be to pay of themselves, the officer would take care that they should pay. . . . I think this a proper case to be sent to a new trial." The verdict found against Lieutenant Temple was accordingly set aside. But where an officer, acting in his private capacity and for his own private purposes, enters into any contract with another officer or a private individual, the ordinary rules and principles of law apply to such cases in the same manner as between civilians. (Consult *PENDERGAST.*)

CONVOYS—have for their object the transportation of munitions of war, money, subsistence, clothing, arms, sick, &c. If convoys to an army do not come from the rear, through a country which has been mastered, and consequently far from the principal forces of the enemy, they will be undoubtedly attacked and broken up, if not carried off. There is no more difficult operation than to defend a large convoy against a serious attack. Ordinarily, convoys are only exposed to the attacks of partisan corps or light troops which, in consequence of their insignificant size, have thrown themselves in rear of the army. It is to guard against such attacks, that escorts are usually given to convoys. These escorts are principally infantry, because infantry fights in all varieties of ground, and in case of need may be placed in the intervals between the wagons, or even inside the wagons, when too warmly pressed. Cavalry is, however, also necessary to spy out an enemy at great distances, and give prompt information of his movements, as well as to participate in the defence of the convoy against cavalry. An enemy's cavalry being able rapidly to pass from the front to the rear of the train, would easily find some part of it without defence, if the escort were composed only of infantry. To give an idea of the facility of such attacks, it may be stated that a wagon drawn by four horses occupies ten yards. Two hundred wagons marching in single file and closed as much as possible form a train more than 2,000 yards in extent. In a long line of wagons, therefore, it would be impossible for infantry to meet the feints of cavalry and repulse real attacks.

The escort should then be composed of an advance guard entirely

of cavalry preceding the train, some two or three miles, searching the route on the right and on the left; but as it may happen that the enemy, eluding the vigilance of the advance guard, have made ambuscades between the advance and the head of the column, it is necessary to place another body immediately in front of the train, with a small party in advance and flankers on the right and left. The longer the train the greater the danger of surprise, and consequently the greater the precautions to be used. A convoy is almost as much exposed to attack in rear as in front; it is therefore necessary to have, with a rear guard, some horsemen, who may be despatched to give information of what passes in rear. When the troops constituting the body of the escort are principally composed of infantry, they are divided into three bodies. Workmen will march with the advanced party, and the wagons loaded with tools of all kinds, rope, small beams, thick plank and every thing necessary for the repair of bridges and roads, will lead the convoy. The second detachment will be placed in the middle of the column of wagons, and the third in rear. Care is taken not to disseminate the troops along the whole extent of the train. A few men only are detached from the three bodies mentioned, to march abreast of the wagons, and to force the drivers to keep in their prescribed order, without opening the distance between the wagons. If a wagon breaks down on the route its load is promptly distributed among other wagons. A signal is made if it is necessary for the column to halt, but for slight repairs the train is not halted. The wagon leaves the column, is repaired on one side of the road, and afterwards takes its place in rear. Soldiers should never be permitted to place their knapsacks in the wagons, for a soldier should never be separated from knapsack or haversack, and the wagons would also become too much loaded. Whenever the breadth of the road permits, the wagons should be doubled and march in two files. The column is thus shortened one half, and if circumstances require it, the *defensive park* is more promptly formed. This is done by wheeling the wagons round to the right and left so as to bring the opposite horses' heads together and facing each other—turning towards the exterior the hind wagon wheels. This movement requires ground and time. It ought not to be ordered then except when absolutely necessary. It is much better to hold the enemy in check, by manœuvres of the escort when that can be done, and let the convoy move on. When the park has been formed, however, it constitutes an excellent means of defence, under shelter of which infantry can fight with advantage even when they have been compelled to take such refuge. A convoy usually halts for the night near a village, but it should always pass beyond it, because

on commencing its march in the morning it is better to have the defile behind than before it, in order to avoid ambuscades of the enemy. Places for parking the wagons are sought where there are hedges or walls, as those obstructions offer greater security than any others. The troops, with the exception of the park guard, bivouac at a short distance from the park, in some position which offers the best military advantages. An advance guard and a sufficient number of sentinels for the safety and police of the park and bivouac are then posted. The park is ordinarily a hollow square, but locality will dictate its form. It should furnish an enclosed space for the horses and drivers, and at the same time be an intrenchment in case of attack. The wagons are ranged either lengthwise or side by side—the rule being that the poles are turned in the same direction and towards the place of destination. The wagons laid lengthwise may be doubled, so that the intervals of ranks may be closed by pushing forward the wagon of another rank. When the space for the park is small and the number of wagons great, the wagons are placed upon many lines, and streets sufficiently broad to receive the horses, &c., are made parallel to each other. The important principle in defending convoys on the march is, that the escort should not consider itself tied to wagons, but should repulse the enemy by marching to meet him. It is only after the escort has been repulsed, that it should fall back on the wagons and use them as an intrenchment. Even then a very long resistance may be ill judged if the enemy be greatly superior. It is better to abandon a part of the convoy to save the rest, or else try to destroy it, by cutting the traces, breaking the wheels, overthrowing the wagons, and even setting fire to the most inflammable parts. An attack upon a flank is most dangerous because the convoy then presents a larger mark. The three detachments in this case should be united on the side attacked and pushed forward sufficiently to compel the enemy to describe a great circle, in order to put himself out of reach when he wishes to attack the front or rear of the convoy. The best position to take is that of three echelons, the centre in advance. The convoy, which has doubled its wagons, continues to move forward, regulating its march by the position of the troops which cover it. If the attack be in front, as soon as the enemy has been announced by the first advance guard, which falls back at a gallop for the purpose, the wagons are closed or formed in two files if the road permits; the centre detachment joins the first, either in echelon or according to locality, to prevent a movement upon the flank of the convoy. The third detachment should be held in reserve immediately at the head of the wagons. If however this position be too near that taken by the first and second de-

tachments united, the reserve must then take some position on the flank of the convoy. The defence against an attack upon the rear will be conducted on the same principles. It may be concluded that the attack of a convoy is an operation in which little is to be lost and much gained; for if the enemy be deficient in numbers or skill, a part of his convoy is easily destroyed or brought off. If the attack fail, nothing is to be feared upon retiring. The corps which attacks should be half cavalry and half infantry. It is clear, that if the attacking party has been concealed behind a wood, a height, a corn field, &c., and has been able to surprise the front or rear of the convoy, and enveloped it before aid arrives, full success will be obtained. But this negligence will not often occur on the part of the commander of the escort. If his troops then be in good order and united at the moment of the attack, it is necessary to divide his attention by directing against him many little columns and skirmishers, who seek to open a way to the wagons by killing the horses, and thus encumbering the road. The cavalry making a circuit throw themselves rapidly upon parts badly protected. If they reach some of the wagons they content themselves with driving off the conductors and cutting the traces of the wagons because all the wagons in rear are thus stopped. If we are at liberty to choose the time and place of attack, it is clear that the best time is when the convoy is passing a defile and we can envelop the front or the rear. Success is then certain; the inevitable encumbrance of the defile preventing one part of the troops from coming to the aid of another part. When the whole or part of a convoy has been seized, the prize must be brought to a safe place, before the enemy is in sufficient force to make us abandon it. But sooner than do this, the most precious articles should be placed on horses, the wagons should be destroyed, and the horses put to their speed. The attacking force should avoid further combat, for its object has been accomplished. (*Consult DUFOUR; BARDIN; Ordonnance sur le Service des Armées en Campagne.*)

COOKING. Bread and soup are the great items of a soldier's diet: to make them well is, therefore, an essential part of his instruction. Scurvy and diarrhoea more frequently result from *bad* cooking than any other cause whatever. Camp ovens may be made in twenty-four hours. One hundred and ninety-six pounds when in dough hold about 11 gallons or 90 pounds of water, 2 gallons yeast, and 3 pounds salt, making a mass of 305 pounds, which evaporates in kneading, baking, and cooling about 40 pounds, leaving in bread weighed when stale about 265 pounds. Bread ought not to be burnt, but baked to an equal brown color. The troops ought not to be allowed to eat soft bread

fresh from the oven without first toasting it. Fresh meat ought not to be cooked before it has had time to bleed and to cool; and meats will generally be *boiled*, with a view to soup; and sometimes roasted or baked. Meat may be kept in hot weather by half boiling it; or by exposing it for a few minutes to a thick smoke. To make soup, put into the vessel at the rate of five pints of water to a pound of fresh meat; apply a quick heat, to make it boil promptly; skim off the foam, and then moderate the fire; put in salt according to palate. Add the vegetables of the season one or two hours, and sliced bread some minutes before the simmering is ended. When the broth is sensibly reduced in quantity, that is, after five or six hours' cooking, the process will be complete. If a part of the meat be withdrawn before the soup is fully made, the quantity of water must be proportionally less. Hard or dry vegetables, as the bean ration, will be put in the camp kettle much earlier than fresh vegetables. The following receipts for army cooking are taken from Soyer's *Culinary Campaign*:

SOYER'S HOSPITAL DIETS.

THE IMPORTANCE OF WEIGHTS AND MEASURES IN THE ACCOMPANYING RECEIPTS IS FULLY RECOGNIZED; IT IS THEREFORE NECESSARY THAT TROOPS SHOULD BE SUPPLIED WITH SCALES, AND WITH MEASURES FOR LIQUIDS.

NO. 1.—SEMI-STEWED MUTTON AND BARLEY. SOUP FOR 100 MEN. Put in a convenient-sized caldron 130 pints of cold water, 70 lbs. of meat, or about that quantity, 12 lbs. of plain mixed vegetables, (the best that can be obtained,) 9 lbs. 6 oz. of barley, 1 lb. 7 oz. of salt, 1 lb. 4 oz. of flour, 1 lb. 4 oz. of sugar, 1 oz. of pepper. Put all the ingredients into the pan at once, except the flour; set it on the fire, and when beginning to boil, diminish the heat, and simmer gently for two hours and a half; take the joints of meat out, and keep them warm in the orderly's pan; add to the soup your flour, which you have mixed with enough water to form a light batter; stir well together with a large spoon; boil another half-hour, skim off the fat, and serve the soup and meat separate. The meat may be put back into the soup for a few minutes to warm again prior to serving. The soup should be stirred now and then while making, to prevent burning or sticking to the bottom of the caldron. The joints are cooked whole, and afterwards cut up in different messes; being cooked this way, in a rather thick stock, the meat becomes more nutritious.

Note.—The word "about" is applied to the half and full diet, which varies the weight of the meat; but $\frac{1}{2}$ lb. of mutton will always make

a pint of good soup: 3 lbs. of mixed preserved vegetables must be used when fresh are not to be obtained, and put in one hour and a half prior to serving, instead of at first; they will then show better in the soup, and still be well done. All the following receipts may be increased to large quantities, but by all means closely follow the weight and measure.

No. 2.—BEEF SOUP. Proceed the same as for mutton, only leave the meat in till serving, as it will take longer than mutton. The pieces are not to be above 4 or 5 lbs. weight; and for a change, half rice may be introduced; the addition of 2 lbs more will make it thicker and more nutritive; $\frac{1}{2}$ lb. of curry powder will make an excellent change also. To vary the same, half a pint of burnt sugar water may be added—it will give the soup a very rich brown color.

No. 3.—BEEF TEA. RECEIPT FOR SIX PINTS. Cut 3 lbs. of beef into pieces the size of walnuts, and chop up the bones, if any; put it into a convenient-sized kettle, with $\frac{1}{2}$ lb. of mixed vegetables, such as onions, leeks, celery, turnips, carrots, (or one or two of these, if all are not to be obtained,) 1 oz. of salt, a little pepper, 1 teaspoonful of sugar, 2 oz. of butter, half a pint of water. Set it on a sharp fire for ten minutes or a quarter of an hour, stirring now and then with a spoon, till it forms a rather thick gravy at bottom, but not brown: then add 7 pints of hot or cold water, but hot is preferable; when boiling, let it simmer gently for an hour; skim off all the fat, strain it through a sieve, and serve.

No. 3A.—ESSENCE OF BEEF TEA. For camp hospitals.—“Quarter pound tin case of essence.” If in winter set it near the fire to melt; pour the contents in a stewpan and twelve times the case full of water over it, hot or cold; add to it two or three slices of onion, a sprig or two of parsley, a leaf or two of celery, if handy, two teaspoonfuls of salt, one of sugar; pass through a colander and serve. If required stronger, eight cases of water will suffice, decreasing the seasoning in proportion. In case you have no vegetables, sugar, or pepper, salt alone will do, but the broth will not be so succulent.

No. 4.—THICK BEEF TEA. Dissolve a good teaspoonful of arrow-root in a gill of water, and pour it into the beef tea twenty minutes before passing through the sieve—it is then ready.

No. 5.—STRENGTHENING BEEF TEA WITH CALVES-FOOT JELLY, OR ISINGLASS. Add $\frac{1}{4}$ oz. calves-foot gelatine to the above quantity of beef tea previous to serving, when cooking.

No. 6.—MUTTON AND VEAL TEA. Mutton and veal will make good tea by proceeding precisely the same as above. The addition of a little

aromatic herbs is always desirable. If no fresh vegetables are at hand, use 2 oz. of mixed preserved vegetables to any of the above receipts.

No. 7.—CHICKEN BROTH. Put in a stewpan a fowl, 3 pints of water, 2 teaspoonfuls of rice, 1 teaspoonful of salt, a middle-sized onion, or 2 oz. of mixed vegetables; boil the whole gently for three-quarters of an hour: if an old fowl, simmer from one hour and a half to two hours, adding 1 pint more water; skim off the fat and serve. A small fowl will do.

Note.—A light mutton broth may be made precisely the same, by using a pound and a half of scrag of mutton instead of fowl. For thick mutton broth proceed as for thick beef tea, omitting the rice; a table-spoonful of burnt sugar water will give a rich color to the broth.

No. 8.—PLAIN BOILED RICE. Put two quarts of water in a stewpan, with a teaspoonful of salt; when boiling, add to it $\frac{1}{2}$ lb. of rice, well washed; boil for ten minutes, or till each grain becomes rather soft; drain it into a colander, slightly grease the pot with butter, and put the rice back into it; let it swell slowly for about twenty minutes near the fire, or in a slow oven; each grain will then swell up, and be well separated; it is then ready for use.

No. 9.—SWEET RICE. Add to the plain boiled rice 1 oz. of butter, 2 table-spoonfuls of sugar, a little cinnamon, a quarter of a pint of milk; stir it with a fork, and serve; a little currant jelly or jam may be added to the rice.

No. 10.—RICE WITH GRAVY. Add to the rice 4 table-spoonfuls of the essence of beef, a little butter, if fresh, half a teaspoonful of salt; stir together with a fork, and serve. A teaspoonful of Soy's Sultana Sauce, or relish, will make it very wholesome and palatable, as well as invigorating to a fatigued stomach.

No. 11.—PLAIN OATMEAL. Put in a pan $\frac{1}{4}$ lb. of oatmeal, $1\frac{1}{2}$ oz. of sugar, half a teaspoonful of salt, and 3 pints of water; boil slowly for twenty minutes, "stirring continually," and serve. A quarter of a pint of boiled milk, an ounce of butter, and a little pounded cinnamon or spice added previous to serving is a good variation. This receipt has been found most useful at the commencement of dysentery by the medical authorities.

No. 12.—CALVES-FOOT JELLY. Put in a proper-sized stewpan 2 $\frac{1}{2}$ oz. of calves-foot gelatine, 4 oz. of white sugar, 4 whites of eggs and shells, the peel of a lemon, the juice of three middle-sized lemons, half a pint of Marsala wine; beat all well together with the egg-beater for a few minutes, then add 4 $\frac{1}{2}$ pints of cold water; set it on a slow fire, and keep whipping it till boiling. Set it on the corner of the stove,

partly covered with the lid, upon which you place a few pieces of burning charcoal; let it simmer gently for ten minutes, and strain it through a jelly-bag. It is then ready to put in the ice or some cool place. Sherry will do if Marsala is not at hand. For orange jelly use only 1 lemon and 2 oranges. Any delicate flavor may be introduced.

JELLY STOCK, made from calves' feet, requires to be made the day previous to being used, requiring to be very hard to extract the fat. Take two calf's feet, cut them up, and boil in three quarts of water; as soon as it boils remove it to the corner of the fire, and simmer for five hours, keeping it skimmed, pass through a hair sieve into a basin, and let it remain until quite hard, then remove the oil and fat, and wipe the top dry. Place in a stewpan half a pint of water, one of sherry, half a pound of lump sugar, the juice of four lemons, the rinds of two, and the whites and shells of five eggs; whisk until the sugar is melted, then add the jelly, place it on the fire, and whisk until boiling, pass it through a jelly-bag, pouring that back again which comes through first until quite clear; it is then ready for use, by putting it in moulds or glasses. Vary the flavor according to fancy.

No. 13.—SAGO JELLY. Put into a pan 3 oz. of sago, 1½ oz. of sugar, half a lemon-peel cut very thin, ¼ teaspoonful of ground cinnamon, or a small stick of the same; put to it 3 pints of water and a little salt; boil ten minutes, or rather longer, stirring continually, until rather thick, then add a little port, sherry, or Marsala wine; mix well, and serve hot or cold.

No. 14.—ARROWROOT MILK. Put into a pan 4 oz. of arrowroot, 3 oz. of sugar, the peel of half a lemon, ¼ teaspoonful of salt, 2½ pints of milk; set it on the fire, stir round gently, boil for ten minutes, and serve. If no lemons at hand, a little essence of any kind will do. When short of milk, use half water; half an ounce of fresh butter is an improvement before serving. If required thicker, put a little milk.

No. 15.—THICK ARROWROOT PANADA. Put in a pan 5 oz. of arrowroot, 2½ oz. of white sugar, the peel of half a lemon, a quarter of a teaspoonful of salt, 4 pints of water; mix all well, set on the fire, boil for ten minutes; it is then ready. The juice of a lemon is an improvement; a gill of wine may also be introduced, and ½ oz. of calves-foot gelatine previously dissolved in water will be strengthening. Milk, however, is preferable, if at hand.

No. 16.—ARROWROOT WATER. Put into a pan 3 oz. of arrowroot, 2 oz. of white sugar, the peel of a lemon, ¼ teaspoonful of salt, 4 pints of water; mix well, set on the fire, boil for ten minutes. It is then ready to serve either hot or cold.

No. 17.—RICE WATER. Put 7 pints of water to boil, add to it 2 ounces of rice washed, 2 oz. of sugar, the peel of two-thirds of a lemon; boil gently for three-quarters of an hour; it will reduce to 5 pints; strain through a colander; it is then ready. The rice may be left in the beverage or made into a pudding, or by the addition of a little sugar or jam, will be found very good for either children or invalids.

No. 18.—BARLEY WATER. Put in a saucepan 7 pints of water, 2 oz. of barley, which stir now and then while boiling; add 2 oz. of white sugar, the rind of half a lemon, thinly peeled; let it boil gently for about two hours, without covering it; pass it through a sieve or colander; it is then ready. The barley and lemon may be left in it.

No. 19.—SOYER'S PLAIN LEMONADE. Thinly peel the third part of a lemon, which put into a basin with 2 tablespoonfuls of sugar; roll the lemon with your hand upon the table to soften it; cut it into two, lengthwise, squeeze the juice over the peel, &c., stir round for a minute with a spoon to form a sort of syrup; pour over a pint of water, mix well, and remove the pips; it is then ready for use. If a very large lemon, and full of juice, and very fresh, you may make a pint and a half to a quart, adding sugar and peel in proportion to the increase of water. The juice only of the lemon and sugar will make lemonade, but will then be deprived of the aroma which the rind contains, the said rind being generally thrown away.

No. 20.—SEMI-CITRIC LEMONADE. RECEIPT FOR 50 PINTS. Put 1 oz. of citric acid to dissolve in a pint of water, peel 20 lemons thinly, and put the peel in a large vessel, with 3 lbs. 2 oz. of white sugar well broken; roll each lemon on the table to soften it, which will facilitate the extraction of the juice; cut them into two, and press out the juice into a colander or sieve, over the peel and sugar, then pour half a pint of water through the colander, so as to leave no juice remaining; triturate the sugar, juice, and peel together for a minute or two with a spoon, so as to form a sort of syrup, and extract the aroma from the peel and the dissolved citric acid; mix all well together, pour on 50 pints of cold water, stir well together; it is then ready. A little ice in summer is a great addition.

No. 21.—SOYER'S CHEAP CRIMEAN LEMONADE. Put into a basin 2 tablespoonfuls of white or brown sugar, $\frac{1}{2}$ a tablespoonful of lime juice, mix well together for one minute, add 1 pint of water, and the beverage is ready. A drop of rum will make a good variation, as lime juice and rum are daily issued to the soldiers.

No. 22.—TARTARIC LEMONADE. Dissolve 1 oz. of crystallized tartaric acid in a pint of cold water, which put in a large vessel; when

dissolved, add 1 lb. 9 oz. of white or brown sugar—the former is preferable; mix well to form a thick syrup; add to it 24 pints of cold water, slowly mixing well; it is then ready. It may be strained through either a colander or a jelly-bag; if required very light, add 5 pints more water, and sugar in proportion; if citric acid be used, put only 20 pints of water to each ounce.

No. 23.—CHEAP PLAIN RICE PUDDING, FOR CAMPAIGNING, in which no eggs or milk are required: important in the field. Put on the fire, in a moderate-sized saucepan, 12 pints of water; when boiling, add to it 1 lb. of rice or 16 tablespoonfuls, 4 oz. of brown sugar or 4 tablespoonfuls, 1 large teaspoonful of salt, and the rind of a lemon thinly peeled; boil gently for half an hour, then strain all the water from the rice, keeping it as dry as possible. The rice water is then ready for drinking, either warm or cold. The juice of a lemon may be introduced, which will make it more palatable and refreshing.

THE PUDDING. Add to the rice 3 oz. of sugar, 4 tablespoonfuls of flour, half a teaspoonful of pounded cinnamon; stir it on the fire carefully for five or ten minutes; put it in a tin or pie-dish, and bake. By boiling the rice a quarter of an hour longer, it will be very good to eat without baking. Cinnamon may be omitted.

No. 23A.—BATTER PUDDING. Break two fresh eggs in a basin; beat them well, add one tablespoonful and a half of flour, which beat up with your eggs with a fork until no lumps remain; add a gill of milk, a teaspoonful of salt, butter a teacup or a basin, pour in your mixture, put some water in a stewpan, enough to immerge half way up the cup or basin in water; when boiling, put in your cup or basin and boil twenty minutes, or till your pudding is well set; pass a knife to loosen it, turn out on a plate, pour pounded sugar and a pat of fresh butter over, and serve. A little lemon, cinnamon, or a drop of any essence may be introduced. A little light melted butter, sherry, and sugar may be poured over. If required more delicate, add a little less flour. It may be served plain

No. 24.—BREAD AND BUTTER PUDDING. Butter a tart-dish well, and sprinkle some currants all round it, then lay in a few slices of bread and butter; boil one pint of milk, pour it on two eggs well whipped, and then on the bread and butter; bake it in a hot oven for half an hour. Currants may be omitted.

No. 25.—BREAD PUDDING. Boil one pint of milk, with a piece of cinnamon and lemon-peel; pour it on two ounces of bread crumbs; then add two eggs, half an ounce of currants, and a little sugar: steam it in a buttered mould for one hour.

No. 26.—CUSTARD PUDDING. Boil one pint of milk, with a small piece of lemon-peel and half a bay-leaf, for three minutes; then pour these on to three eggs, mix it with one ounce of sugar well together, and pour it into a buttered mould: steam it twenty-five minutes in a stewpan with some water, turn out on a plate and serve.

No. 27.—RICH RICE PUDDING. Put in $\frac{1}{2}$ lb. of rice in a stewpan, washed, 3 pints of milk, 1 pint of water, 3 oz. of sugar, 1 lemon peel, 1 oz. of fresh butter; boil gently half an hour, or until the rice is tender; add 4 eggs, well beaten, mix well, and bake quickly for half an hour, and serve: it may be steamed if preferred.

No. 28.—STEWED MACARONI. Put in a stewpan 2 quarts of water, half a tablespoonful of salt, 2 oz. of butter; set on the fire; when boiling, add 1 lb. of macaroni, broken up rather small; when boiled very soft, throw off the water; mix well into the macaroni a tablespoonful of flour, add enough milk to make it of the consistency of thin melted butter; boil gently twenty minutes; add in a tablespoonful of either brown or white sugar, or honey, and serve. A little cinnamon, nutmeg, lemon-peel, or orange-flower water may be introduced to impart a flavor; stir quick. A gill of milk or cream may now be thrown in three minutes before serving. Nothing can be more light and nutritious than macaroni done this way. If no milk, use water.

No. 29.—MACARONI PUDDING. Put 2 pints of water to boil, add to it 2 oz. of macaroni, broken in small pieces; boil till tender, drain off the water and add half a tablespoonful of flour, 2 oz. of white sugar, a quarter of a pint of milk, and boil together for ten minutes; beat an egg up, pour it to the other ingredients, a nut of butter; mix well and bake, or steam. It can be served plain, and may be flavored with either cinnamon, lemon, or other essences, as orange-flower water, vanilla, &c.

No. 30.—SAGO PUDDING. Put in a pan 4 oz. of sago, 2 oz. of sugar, half a lemon-peel or a little cinnamon, a small pat of fresh butter, if handy, half a pint of milk; boil for a few minutes, or until rather thick, stirring all the while; beat up 2 eggs and mix quickly with the same; it is then ready for either baking or steaming, or may be served plain.

No. 31.—TAPIOCA PUDDING. Put in a pan 2 oz. of tapioca, $1\frac{1}{2}$ pint of milk, 1 oz. of white or brown sugar, a little salt, set on the fire, boil gently for fifteen minutes, or until the tapioca is tender, stirring now and then to prevent its sticking to the bottom, or burning; then add two eggs well beaten; steam or bake, and serve. It will take about twenty minutes steaming, or a quarter of an hour baking slightly. Flavor with either lemon, cinnamon, or any other essence.

No. 32.—**BOILED RICE SEMI-CURRIED, FOR THE PREMONITORY SYMPTOMS OF DIARRHŒA.** Put 1 quart of water in a pot or saucepan; when boiling, wash $\frac{1}{2}$ a lb. of rice and throw it into the water; boil fast for ten minutes; drain your rice in a colander, put it back in the saucepan, which you have slightly greased with butter; let it swell slowly near the fire, or in a slow oven till tender; each grain will then be light and well separated. Add to the above a small tablespoonful of aromatic sauce, called "Soyer's Relish or Sultana Sauce," with a quarter of a teaspoonful of curry powder; mix together with a fork lightly, and serve. This quantity will be sufficient for two or three people, according to the prescriptions of the attending physician.

No. 33.—**FIGS AND APPLE BEVERAGE.** Have 2 quarts of water boiling, into which throw 6 dry figs previously opened, and 2 apples, cut into six or eight slices each; let the whole boil together twenty minutes; then pour them into a basin to cool; pass through a sieve; drain the figs, which will be good to eat, with a little sugar or jam.

No. 34.—**STEWED FRENCH PLUMS.** Put 12 large or 18 small-size French plums, soak them for half an hour, put in a stewpan with a spoonful of brown sugar, a gill of water, a little cinnamon, and some thin rind of lemon; let them stew gently twenty minutes, then put them in a basin till cold with a little of the juice. A small glass of either port, sherry, or claret is a very good addition. The syrup is excellent.

No. 35.—**FRENCH HERB BROTH.** This is a very favorite beverage in France, as well with people in health as with invalids, especially in spring, when the herbs are young and green. Put a quart of water to boil, having previously prepared about 40 leaves of sorrel, a cabbage lettuce, and 10 sprigs of chervil, the whole well washed; when the water is boiling, throw in the herbs, with the addition of a teaspoonful of salt, and $\frac{1}{2}$ oz. of fresh butter; cover the saucepan close, and let simmer a few minutes, then strain it through a sieve or colander. This is to be drunk cold, especially in the spring of the year, after the change from winter. I generally drink about a quart per day for a week at that time; but if for sick people, it must be made less strong of herbs, and taken a little warm. To prove that it is wholesome, we have only to refer to the instinct which teaches dogs to eat grass at that season of the year. I do not pretend to say that it would suit persons in every malady, because the doctors are to decide upon the food and beverage of their patients, and study its changes as well as change their medicines; but I repeat that this is most useful and refreshing for the blood.

No. 36.—**BROWNING FOR SOUPS, &c.** Put $\frac{1}{2}$ lb. of moist sugar

into an iron pan and melt it over a moderate fire till quite black, stirring it continually, which will take about twenty-five minutes: it must color by degrees, as too sudden a heat will make it bitter; then add 2 quarts of water, and in ten minutes the sugar will be dissolved. You may then bottle it for use. It will keep good for a month, and will always be found very useful.

No. 37.—TOAST-AND-WATER. Cut a piece of crusty bread, about a $\frac{1}{4}$ lb. in weight, place it upon a toasting-fork, and hold it about six inches from the fire; turn it often, and keep moving it gently until of a light-yellow color, then place it nearer the fire, and when of a good brown chocolate color, put it in a jug and pour over 3 pints of boiling water; cover the jug until cold, then strain it into a clean jug, and it is ready for use. Never leave the toast in it, for in summer it would cause fermentation in a short time.

Baked Apple Toast-and-Water.—A piece of apple, slowly toasted till it gets quite black and added to the above, makes a very nice and refreshing drink for invalids.

Apple Rice Water.—Half a pound of rice, boiled in the above until in pulp, passed through a colander, and drunk when cold. All kinds of fruit may be done the same way. Figs and French plums are excellent; also raisins. A little ginger, if approved of, may be used.

Apple Barley Water.—A quarter of a pound of pearl barley instead of toast added to the above, and boil for one hour, is also a very nice drink.

Citronade.—Put a gallon of water on to boil, cut up one pound of apples, each one into quarters, two lemons in thin slices, put them in the water, and boil them until they can be pulped, pass the liquor through a colander, boil it up again with half a pound of brown sugar, skim, and bottle for use, taking care not to cork the bottle, and keep it in a cool place.

For Spring Drink.—Rhubarb, in the same quantities, and done in the same way as apples, adding more sugar, is very cooling. Also green gooseberries.

For Summer Drink.—One pound of red currants, bruised with some raspberry, half a pound of sugar added to a gallon of cold water, well stirred, and allowed to settle. The juice of a lemon.

Mulberry.—The same, adding a little lemon-peel. A little cream of tartar or citric acid added to these renders them more cooling in summer and spring.

Plain Lemonade.—Cut in very thin slices three lemons, put them in a basin, add half a pound of sugar, either white or brown; bruise all together, add a gallon of water, and stir well. It is then ready.

French Plum Water.—Boil 3 pints of water; add in 6 or 8 dried plums previously split, 2 or 3 slices of lemon, a spoonful of honey or sugar; boil half an hour, and serve.

For *Fig, Date, and Raisin Water*, proceed as above, adding the juice of half a lemon to any of the above. If for fig water, use 6 figs. Any quantity of the above fruits may be used with advantage in rice, barley, or arrowroot water.

EFFERVESCENT BEVERAGES. *Raspberry Water.*—Put 2 tablespoonfuls of vinegar into a large glass, pour in half a pint of water; mix well.

Pine-Apple Syrup.—Three tablespoonfuls to a pint.

Currant Syrup.—Proceed the same.

Syrup of Orgeat.—The same.

FIELD AND BARRACK COOKERY FOR THE ARMY, BY THE USE OF SOYER'S NEW FIELD STOVE, NOW ADOPTED BY THE MILITARY AUTHORITIES.—Each stove will consume not more than from 12 to 15 lbs. of fuel, and allowing 20 stoves to a regiment, the consumption would be 300 lbs. per thousand men. Coal will burn with the same advantage. Salt beef, pork, Irish stew, stewed beef, tea, coffee, cocoa, &c., can be prepared in these stoves, and with the same economy. They can also be fitted with an apparatus for baking, roasting, and steaming.

No. 1.—RECIPE TO COOK SALT MEAT FOR FIFTY MEN. 1. Put 50 lbs. of meat in the boiler. 2. Fill with water, and let soak all night. 3. Next morning wash the meat well. 4. Fill with fresh water, and boil gently three hours, and serve. Skim off the fat, which, when cold, is an excellent substitute for butter. For salt pork proceed as above or boil half beef and half pork—the pieces of beef may be smaller than the pork, requiring a little longer time doing.

Dumplings, No. 21, may be added to either pork, or beef in propor-

FIG. 105.



tion; and when pork is properly soaked, the liquor will make a very good soup. The large yellow peas, as used by the navy, may be introduced; it is important to have them, as they are a great improvement. When properly soaked, French haricot beans and lentils may also be used to advantage. By the addition of 5 pounds of split peas, half a pound of brown sugar, 2 tablespoonfuls of pepper, 10 onions; simmer gently till in pulp, remove the fat and serve; broken biscuit may be introduced. This will make an excellent mess.

NO. 1A.—HOW TO SOAK AND PLAIN-BOIL THE RATIONS OF SALT BEEF AND PORK, ON LAND OR AT SEA. To each pound of meat allow about a pint of water. Do not have the pieces above 3 or 4 lbs. in weight. Let it soak for 7 or 8 hours, or all night if possible. Wash each piece well with your hand in order to extract as much salt as possible. It is then ready for cooking. If less time be allowed, cut the pieces smaller and proceed the same, or parboil the meat for 20 minutes in the above quantity of water, which throw off and add fresh. Meat may be soaked in sea water, but by all means boiled in fresh when possible. I should advise, at sea, to have a perforated iron box made, large enough to contain half a ton or more of meat, which box will ascend and descend by pulleys; have also a frame made on which the box might rest when lowered overboard, the meat being placed outside the ship on a level with the water, the night before using; the water beating against the meat through the perforations will extract all the salt. Meat may be soaked in sea water, but by all means washed.

NO. 2.—SOYER'S ARMY SOUP FOR FIFTY MEN. 1. Put in the boiler 60 pints, 7½ gallons, or 5½ camp kettles of water. 2. Add to it 50 lbs. of meat, either beef or mutton. 3. The rations of preserved or fresh vegetables. 4. Ten small tablespoonfuls of salt. 5. Simmer three hours and serve. When rice is issued, put it in when boiling. Three pounds will be sufficient. About eight pounds of fresh vegetables. Or four squares from a cake of preserved vegetables. A tablespoonful of pepper, if handy. Skim off the fat, which, when cold, is an excellent substitute for butter.

NO. 2A.—SALT PORK WITH MASHED PEAS, FOR ONE HUNDRED MEN. Put in two stoves 50 lbs. of pork each, divide 24 lbs. in four pudding-cloths, rather loosely tied; putting to boil at the same time as your pork, let all boil gently till done, say about two hours; take out the pudding and peas, put all the meat in one caldron, remove the liquor from the other pan, turning back the peas in it, add two teaspoonfuls of pepper, a pound of the fat, and with the wooden spatula smash the peas and serve both. The addition of about half a pound of flour, and two

quarts of liquor, boiled ten minutes, makes a great improvement. Six sliced onions, fried and added to it, make it very delicate.

No. 3.—**STEWED SALT BEEF AND PORK.** For a company of one hundred men, or a regiment of one thousand men. Put in a boiler, of well soaked-beef 30 lbs., cut in pieces of a quarter of a pound each, 20 lbs. of pork, $1\frac{1}{2}$ lb. of sugar, 8 lbs. of onions, sliced, 25 quarts of water, 4 lbs. of rice. Simmer gently for three hours, skim the fat off the top, and serve.

Note.—How to soak the meat for the above mess:—Put 50 lbs. of meat in each boiler, having filled them with water, and let soak all night; and prior to using it, wash it and squeeze with your hands, to extract the salt. In case the meat is still too salt, boil it for twenty minutes, throw away the water, and put fresh to your stew. By closely following the above receipt you will have an excellent dish.

No. 4.—**SOYER'S FOOD FOR ONE HUNDRED MEN, USING TWO STOVES.** Cut or chop 50 lbs. of fresh beef in pieces of about a $\frac{1}{4}$ lb. each; put in the boiler, with 10 tablespoonfuls of salt, two tablespoonfuls of pepper, four tablespoonfuls of sugar, onions 7 lbs. cut in slices: light the fire now, and then stir the meat with a spatula, let it stew from 20 to 30 minutes, or till it forms a thick gravy, then add a pound and a half of flour; mix well together, put in the boiler 18 quarts of water, stir well for a minute or two, regulate the stove to a moderate heat, and let simmer for about two hours. Mutton, pork, or veal can be stewed in a similar manner, but will take half an hour less cooking.

Note.—A pound of rice may be added with great advantage, ditto plain dumplings, ditto potatoes, as well as mixed vegetables. For a regiment of 1,000 men use 20 stoves.

No. 5.—**PLAIN IRISH STEW FOR FIFTY MEN.** Cut 50 lbs. of mutton into pieces of a quarter of a pound each, put them in the pan, add 8 lbs. of large onions, 12 lbs. of whole potatoes, 8 tablespoonfuls of salt, 3 tablespoonfuls of pepper; cover all with water, giving about half a pint to each pound; then light the fire; one hour and a half of gentle ebullition will make a most excellent stew; mash some of the potatoes to thicken the gravy, and serve. Fresh beef, veal, or pork will also make a good stew. Beef takes two hours doing. Dumplings may be added half an hour before done.

No. 6.—**TO COOK FOR A REGIMENT OF A THOUSAND MEN.** Place twenty stoves in a row, in the open air or under cover. Put 30 quarts of water in each boiler, 50 lbs. of ration meat, 4 squares from a cake of dried vegetables—or, if fresh mixed vegetables are issued, 12 lbs. weight—10 small tablespoonfuls of salt, 1 ditto of pepper; light the fire,

simmer gently from two hours to two hours and a half, skim the fat from the top, and serve. It will require only four cooks per regiment, the provisions and water being carried to the kitchen by fatigue parties; the kitchen being central, instead of the kitchen going to each company, each company sends two men to the kitchen with a pole to carry the meat.

NO. 7.—SALT PORK AND PUDDINGS WITH CABBAGE AND POTATOES. Put 25 lbs. of salt pork in each boiler, with 50 lbs. from which you have extracted the large bones, cut in dice, and made into puddings; when on the boil, put five puddings in each, boil rather fast for two hours. You have peeled 12 lbs. of potatoes and put in a net in each caldron; put also 2 winter cabbages in nets, three-quarters of an hour before your pudding is done; divide the pork, pudding, and cabbage, in proportion, or let fifty of the men have pudding that day and meat the other; remove the fat, and serve. The liquor will make very good soup by adding peas or rice, as No. 1. For the pudding-paste put one-quarter of a pound of dripping, or beef or mutton suet, to every pound of flour you use; roll your paste for each half an inch thick, put a pudding-cloth in a basin, flour round, lay in your paste, add your meat in proportion; season with pepper and a minced onion; close your pudding in a cloth, and boil. This receipt is more applicable to barrack and public institutions than a camp. Fresh meat of any kind may be done the same, and boiled with either salt pork or beef.

NO. 8.—TURKISH PILAFF FOR ONE HUNDRED MEN. Put in the caldron 2 lbs. of fat, which you have saved from salt pork, add to it 4 lbs. of peeled and sliced onions; let them fry in the fat for about ten minutes; add in then 12 lbs. of rice, cover the rice over with water, the rice being submerged two inches, add to it 7 tablespoonfuls of salt, and 1 of pepper; let simmer gently for about an hour, stirring it with a spatula occasionally to prevent it burning, but when commencing to boil, a very little fire ought to be kept under. Each grain ought to be swollen to the full size of rice, and separate. In the other stove put fat and onions the same quantity with the same seasoning; cut the flesh of the mutton, veal, pork, or beef from the bone, cut in dice of about 2 oz. each, put in the pan with the fat and onions, set it going with a very sharp fire, having put in 2 quarts of water; steam gently, stirring occasionally for about half an hour, till forming rather a rich thick gravy. When both the rice and meat are done, take half the rice and mix with the meat, and then the remainder of the meat and rice, and serve. Save the bones for soup for the following day. Salt pork or beef, well soaked, may be used—omitting the salt. Any kind of vegetables may be frizzled with the onions.

NO. 9.—BAKING AND ROASTING WITH THE FIELD STOVE. By the removal of the caldron, and the application of a false bottom put over the fire, bread bakes extremely well in the oven, as well as meat, potatoes, puddings, &c. Bread might be baked in oven at every available opportunity at a trifling cost of fuel. The last experiment I made with one was a piece of beef weighing about 25 lbs., a large Yorkshire pudding, and about 10 lbs. of potatoes, the whole doing at considerably under one pennyworth of fuel, being a mixture of coal and coke; the whole was done to perfection, and of a nice brown color. Any kind of meat would, of course, roast the same.

Baking in fixed Oven.—In barracks, or large institutions, where an oven is handy, I would recommend that a long iron trough be made, four feet in length, with a two-story movable grating in it, the meat on the top of the upper one giving a nice elevation to get the heat from the roof, and the potatoes on the grating under, and a Yorkshire pudding at the bottom. Four or five pieces of meat may be done on one trough. If no pudding is made, add a quart more water.

NO. 10.—FRENCH BEEF SOUP, OR POT-AU-FEU, CAMP FASHION. FOR THE ORDINARY CANTEEN-PAN. Put in the canteen saucepan 6 lbs. of beef, cut in two or three pieces, bones included, $\frac{3}{4}$ lb. of plain mixed vegetables, as onions, carrots, turnips, celery, leeks, or such of these as can be obtained, or 3 oz. of preserved in cakes, as now given to the troops; 3 teaspoonfuls of salt, 1 teaspoonful of pepper, 1 teaspoonful of sugar, if handy; 8 pints of water, let it boil gently three hours, remove some of the fat, and serve. The addition of $1\frac{1}{2}$ lb. of bread cut into slices, or 1 lb. of broken biscuit, well soaked in the broth, will make a very nutritious soup; skimming is not required.

NO. 11.—SEMI-FRYING, CAMP FASHION, CHOPS, STEAKS, AND ALL KINDS OF MEAT. If it is difficult to broil to perfection, it is considerably more so to cook meat of any kind in a frying-pan. Place your pan on the fire for a minute or so, wipe it very clean; when the pan is very hot, add in it either fat or butter, but the fat from salt and ration meat is preferable; the fat will immediately get very hot; then add the meat you are going to cook, turn it several times to have it equally done; season to each pound a small teaspoonful of salt, quarter that of pepper, and serve. Any sauce or maitre-d'hôtel butter may be added. A few fried onions in the remaining fat, with the addition of a little flour to the onion, a quarter of a pint of water, two tablespoonfuls of vinegar, a few chopped pickles or picalilly, will be very relishing.

NO. 11A.—TEA FOR EIGHTY MEN, which often constitutes a whole

company. One boiler will, with ease, make tea for eighty men, allowing a pint each man. Put forty quarts of water to boil, place the rations of tea in a fine net, very loose, or in a large perforated ball; give one minute to boil, take out the fire, if too much, shut down the cover; in ten minutes it is ready to serve.

No. 12.—**COFFEE A LA ZOUAVE FOR A MESS OF TEN SOLDIERS**, as made in the camp, with the canteen saucepan holding 10 pints. Put 9 pints of water into a canteen saucepan on the fire; when boiling add $7\frac{1}{2}$ oz. of coffee, which forms the ration, mix them well together with a spoon or a piece of wood, leave on the fire for a few minutes longer, or until just beginning to boil. Take it off and pour in 1 pint of cold water, let the whole remain for ten minutes or a little longer. The dregs of the coffee will fall to the bottom, and your coffee will be clear. Pour it from one vessel to the other, leaving the dregs at the bottom, add your ration sugar or 2 teaspoonfuls to the pint; if any milk is to be had, make 2 pints of coffee less; add that quantity of milk to your coffee, the former may be boiled previously, and serve. This is a very good way for making coffee even in any family, especially a numerous one, using 1 oz. to the quart if required stronger. For a company of eighty men use the field-stove and four times the quantity of ingredients.

No. 13.—**COFFEE, TURKISH FASHION**. When the water is about to boil add the coffee and sugar, mix well as above, let it boil, and serve. The grounds of coffee will in a few seconds fall to the bottom of the cups. The Turks wisely leave it there, I would advise every one in camp to do the same.

No. 14.—**COCOA FOR EIGHTY MEN**. Break eighty portions of ration cocoa in rather small pieces, put them in the boiler, with five or six pints of water, light the fire, stir the cocoa round till melted, and forming a pulp not too thick, preventing any lumps forming, add to it the remaining water, hot or cold; add the ration sugar, and when just boiling, it is ready for serving. If short of cocoa in campaigning, put about sixty rations, and when in pulp, add half a pound of flour or arrowroot.

EASY AND EXCELLENT WAY OF COOKING IN EARTHEN PANS. A very favorite and plain dish amongst the convalescent and orderlies at Scutari was the following:—Cut any part of either beef (cheek or tail), veal, mutton, or pork, in fact any hard part of the animal, in 4-oz. slices; have ready for each 4 or 5 onions and 4 or 5 pounds of potatoes cut in slices; put a layer of potatoes at the bottom of the pan, then a layer of meat, season to each pound 1 teaspoonful of salt, quarter one of pepper, and some onion you have already minced;

then lay in layers of meat and potatoes alternately till full ; put in 2 pints of water, lay on the lid, close the bar, lock the pot, bake two hours, and serve. Remove some of the fat from the top, if too much ; a few dumplings, as No. 21, in it will also be found excellent. By adding over each layer a little flour it makes a rich thick sauce. Half fresh meat and salt ditto will also be found excellent.

SERIES OF SMALL RECEIPTS FOR A SQUAD, OUTPOST, OR PICKET OF MEN, which may be increased in proportion of companies. No. 15. *Camp Soup*.—Put half a pound of salt pork in a saucepan, two ounces of rice, two pints and a half of cold water, and, when boiling, let simmer another hour, stirring once or twice ; break in six ounces of biscuit, let soak ten minutes ; it is then ready, adding one teaspoonful of sugar, and a quarter one of pepper, if handy.

No. 16. *Beef Soup*.—Proceed as above, boil an hour longer, adding a pint more water.

Note.—Those who can obtain any of the following vegetables will find them a great improvement to the above soups :—Add four ounces of either onions, carrots, celery, turnips, leeks, greens, cabbage, or potatoes, previously well washed or peeled, or any of these mixed to make up four ounces, putting them in the pot with the meat. I have used the green tops of leeks and the leaf of celery as well as the stem, and found that for stewing they are preferable to the white part for flavor. The meat being generally salted with rock salt, it ought to be well scraped and washed, or even soaked in water a few hours if convenient ; but if the last cannot be done, and the meat is therefore too salt, which would spoil the broth, parboil it for twenty minutes in water, before using for soup, taking care to throw this water away.

No. 17.—For fresh beef proceed, as far as the cooking goes, as for salt beef, adding a teaspoonful of salt to the water.

No. 18. *Pea Soup*.—Put in your pot half a pound of salt pork, half a pint of peas, three pints of water, one teaspoonful of sugar, half one of pepper, four ounces of vegetables, cut in slices, if to be had ; boil gently two hours, or until the peas are tender, as some require boiling longer than others—and serve.

No. 19. *Stewed Fresh Beef and Rice*.—Put an ounce of fat in a pot, cut half a pound of meat in large dice, add a teaspoonful of salt, half one of sugar, an onion sliced ; put on the fire to stew for fifteen minutes, stirring occasionally, then add two ounces of rice, a pint of water ; stew gently till done, and serve. Any savory herb will improve the flavor. Fresh pork, veal, or mutton may be done the same way, and half a pound of potatoes used instead of the rice, and as rations are

served out for three days, the whole of the provisions may be cooked at once.

No. 20.—RECIPTS FOR THE FRYING-PAN. Those who are fortunate enough to possess a frying-pan will find the following receipts very useful:—Cut in small dice half a pound of solid meat, keeping the bones for soup; put your pan, which should be quite clean, on the fire; when hot through, add an ounce of fat, melt it and put in the meat, season with half a teaspoonful of salt; fry for ten minutes, stirring now and then; add a teaspoonful of flour, mix all well, put in half a pint of water, let simmer for fifteen minutes, pour over a biscuit previously soaked, and serve. The addition of a little pepper and sugar, if handy, is an improvement, as is also a pinch of cayenne, curry-powder or spice; sauces and pickles used in small quantities would be very relishing; these are articles which will keep for any length of time. As fresh meat is not easily obtained, any of the cold salt meat may be dressed as above, omitting the salt, and only requires warming; or, for a change, boil the meat plainly, or with greens, or cabbage, or dumplings, as for beef; then the next day cut what is left in small dice—say four ounces—put in a pan an ounce of fat; when very hot pour in the following:—Mix in a basin a tablespoonful of flour, moisten with water to form the consistency of thick melted butter, then pour it in the pan, letting it remain for one or two minutes, or until set; put in the meat, shake the pan to loosen it, turn it over, let it remain a few minutes longer, and serve. To cook bacon, chops, steaks, slices of any kind of meat, salt or fresh sausages, black puddings, &c.: Make the pan very hot, having wiped it clean, add in fat, dripping, butter, or oil, about an ounce of either; put in the meat, turn three or four times, and season with salt and pepper. A few minutes will do it. If the meat is salt, it must be well soaked previously.

No. 21.—SUEET DUMPLINGS. Take half a pound of flour, half a teaspoonful of salt, a quarter teaspoonful of pepper, a quarter of a pound of chopped fat pork or beef suet, eight tablespoonfuls of water, mixed well together. It will form a thick paste, and when formed, divide it into six or eight pieces, which roll in flour, and boil with the meat for twenty minutes to half an hour. Little chopped onion or aromatic herbs will give it a flavor.

A plainer way, when Fat is not to be obtained.—Put the same quantity of flour and seasoning in a little more water, and make it softer, and divide it into sixteen pieces; boil about ten minutes. Serve round the meat. One plain pudding may be made of the above, also peas and rice pudding thus:—One pound of peas well tied in a cloth, or rice

ditto with the beef. It will form a good pudding. The following ingredients may be added: a little salt, sugar, pepper, chopped onions, aromatic herbs, and two ounces of chopped fat will make these puddings palatable and delicate.

CORDON—is the coping of the escarp or inner wall of the ditch, sometimes called the magistral line; as from it the works in permanent fortification are traced. It is usually rounded in front, and projects about one foot over the masonry: while it protects the top of the revetment from being saturated with water, it also offers, from projection, an obstacle to an enemy in escalading the wall.

CORPORAL. Grade between private and sergeant.

CORPOREAL PUNISHMENT, BY STRIPES AND LASHES. Prohibited excepting for the crime of desertion; (*Act* May 16, 1812 and *Act* March 2, 1833.)

CORPS. The Articles of War use the word *corps* in the sense of a portion of the army organized by law with a head and members; or any other military body having such organization, as the marine corps. A regiment is a corps; an independent company is a corps—a body of officers with one head is a corps, as the Topographical Engineers. Detachments of parts of regiments, or of whole regiments, united for a particular object, whether for a campaign or a part of a campaign, are not corps in the sense of the Rules and Articles of War, for such bodies have neither head nor members commissioned in the particular body temporarily so united; but the officers with such detachment hold commissions either in the corps composing the detachment, in the army at large, in the marine corps, or militia.

CORRECTING PROOFS. (*See* PRINTING.)

CORRESPONDENCE WITH THE ENEMY. Whoever shall be convicted of holding correspondence with or giving intelligence to the enemy, directly or indirectly, shall suffer death or such other punishment as shall be ordered by sentence of a court-martial; (*Art.* 57.)

COSINE. The complement of the sine.

COUNCIL OF ADMINISTRATION. Under the act of Congress of July 5, 1838, the council of administration may, from time to time, employ such person as they think proper to officiate as chaplain; who shall also perform the duties of schoolmaster at such post. The chaplain is paid on the certificate of the commanding officer, not exceeding forty dollars per month, as may be determined by the said council of administration with the approval of the Secretary of War. Councils of administration fix a tariff to the prices of sutler's goods—regulate the sutler in other matters, and make appropriations for specific objects de-

terminated by regulations from the post and regimental funds. Those funds are collected in great part by savings of flour, in making bread by troops.

COUNCIL OF WAR. An assemblage of the chief officers in the army, summoned by the general to concert measures of importance.

COUNSEL. All writers admit it to be the custom to allow a prisoner to have counsel.

COUNTER-BATTERY. When a number of guns are placed behind a parapet, for the purpose of dismounting or silencing by direct fire the guns in an enemy's work, it is called a counter-battery.

COUNTERFORTS—are the buttresses by which the revetment walls are backed and strengthened interiorly.

COUNTERGUARD—is a work composed of two faces, forming a salient angle, sometimes placed before a bastion, sometimes before a ravelin, and sometimes before both, to protect them from being breached.

COUNTERMINES—are galleries excavated by the defenders of a fortress, to intercept the mines, and to destroy the works of the besiegers.

COUNTERSCARP. The outer boundary of the ditch—revetted with masonry in permanent fortification to make the ditch as steep as possible.

COUNTERSIGN. A particular word given out by the highest in command, intrusted to those employed on duty in camp and garrison, and exchanged between guards and sentinels.

COUNTERSLOPE. In the case of a revetment, the slope is within instead of on the outside; and is usually formed in steps. In the case of a parapet, the slope is upwards instead of downwards.

COUP D'ŒIL. The art of distinguishing by a rapid glance the weak points of an enemy's position, and of discerning the advantages and disadvantages offered by any given space of country, or selecting with judgment the most advantageous position for a camp or battle-field. Experience is a great aid in the acquisition of this necessary military faculty, but experience and science alone will not give it.

COUP DE MAIN. A sudden and vigorous attack.

COUPURES—are short retrenchments made across the face of any work, having a terre-plein. The ditch of the coupure is carried quite across the terre-plein, and through the parapet of the work in which it is formed, but not through the revetment.

COURT-MARTIAL. Any general officer commanding an army, or colonel commanding a separate department, may appoint general court-

martials whenever necessary; (ART. 65.) General courts-martial may consist of any number of commissioned officers, from five to thirteen, but they shall not consist of less than thirteen, where that number can be convened without manifest injury to the service; (ART. 64.) But no sentence of a court-martial shall be carried into execution until after the whole proceedings shall have been laid before the officer ordering the same, or the officer commanding the troops for the time being; neither shall any sentence of a general court-martial, in time of peace, extending to the loss of life, or the dismissal of a commissioned officer, or which shall, either in time of peace or war, respect a general officer, be carried into execution, until after the whole proceedings shall have been transmitted to the Secretary of War, to be laid before the President of the United States for his confirmation or disapproval, and orders in the case. All other sentences may be confirmed and executed by the officer ordering the court to assemble, or the commanding officer for the time being, as the case may be; (ART. 65.) Whenever a general officer commanding an army, or a colonel commanding a separate department, shall be the accuser or prosecutor of any officer of the army under his command, the general court-martial for the trial of such officer shall be appointed by the President of the United States, and the proceedings and sentence of the said court shall be sent directly to the Secretary of War to be laid by him before the President for his confirmation or approval or orders in the case; (*Act* May 29, 1830.) Every officer commanding a regiment or corps may appoint, for his own regiment or corps, courts-martial to consist of three commissioned officers, for the trial and punishment of offences not capital, and decide upon their sentences. For the same purpose, all officers commanding any of the garrisons, forts, barracks, or other places where troops consist of different corps, may assemble courts-martial, to consist of three commissioned officers, and decide upon their sentences; (ART. 66.) No garrison or regimental court-martial shall have the power to try capital cases, or commissioned officers; neither shall they inflict a fine exceeding one month's pay, nor imprison, nor put to hard labor, any non-commissioned officer or soldier, for a longer time than one month; (ART. 67.) The judge-advocate, or some person deputed by him, or by the general, or officer commanding the army, detachment, or garrison, shall prosecute in the name of the United States, but shall so far consider himself as counsel for the prisoner, after the said prisoner shall have made his plea, as to object to any leading question to any witness, or any question to the prisoner, the answer to which might tend to criminate himself; and administer to each member of the court, before

they proceed upon any trial, the oath prescribed in the Articles of War for General, Regimental and Garrison Courts-martial. The president of the court then administers an oath to the judge-advocate; (ART. 69.) If a prisoner when arraigned stands mute, the trial goes on as if he pleaded not guilty; (ART. 70.) If a member be challenged by a prisoner the court judges of the relevancy of the challenge. Only one member can be challenged at a time; (ART. 71.) All members are to behave with decency and calmness, and in giving their votes to begin with the youngest; (ART. 72.) All persons who give evidence are examined on oath or affirmation; (ART. 73.) On trials of cases not capital before courts-martial, the deposition of witnesses, not in the line or staff of the army, may be taken before some justice of the peace and read in evidence; provided the prosecutor and person accused are present at the taking of the same, or are duly notified thereof; (ART. 74.) No officer shall be tried but by a general court-martial, nor by officers of inferior rank, if it can be avoided. Nor shall trials be carried on except between 8 in the morning and 3 in the afternoon, excepting in cases requiring immediate example in the opinion of the officer ordering the court; (ART. 75.) No person to use menacing words, signs, or gestures before a court-martial, or cause any disorder or riot, or disturb their proceeding, on the penalty of being punished at the discretion of the said court-martial; (ART. 76.) (*Consult DE HART, KENNEDY, and SIMMONS; See ADDRESS; ALIBI; AMICUS CURLE; APPEAL; ARREST; CHALLENGE OF MEMBERS; CHARACTER; CHARGES; CONTEMPT; COUNSEL; CRIMES; CUSTOM OF WAR; DEATH; DECISIONS; DEFENCE; DISMISSION; EVIDENCE; FALSEHOOD; FINDING; JUDGE-ADVOCATE; JURISDICTION; MISNOMER; NEW MATTER; NOTES; OATH; PLEA; PRESIDENT; PRISONERS; PROCEEDINGS; PROSECUTORS; QUESTIONS; RECOMMENDATION; REJOINDER; REPLY; REVISION; SENTENCE; SUMMING UP; SUSPENDED; TRIAL; VERDICT; VOTES; WITNESSES; and References under the heading ARTICLES OF WAR.*)

FORM No. 1.

FORM of a General Order appointing a General Court-martial.

| | |
|-------------------|----------------------------|
| General Orders, } | Head-quarters of the Army, |
| No. } | March , 18—. |

A General Court-martial, to consist of thirteen members, will convene at Fort Monroe, in the State of Virginia, on Monday the 2d of April, 18—, at 11 o'clock, A. M., or as soon thereafter as practicable, for the trial of Captain A. B., of the 1st Regiment of Artillery, and such other prisoners as may be brought before it.

The following Officers are detailed as members of the Court:

- | | |
|----------------------|-----------------------|
| 1. Colonel A. B. | 1st Regiment of _____ |
| 2. Colonel C. D. | 3d Regiment of _____ |
| 3. Lieut.-col. E. F. | 1st Regiment of _____ |
| 4. Lieut.-col. F. G. | 2d Regiment of _____ |
| 5. Major W. T. | 3d Regiment of _____ |
| 6. Major N. M. | 1st Regiment of _____ |
| 7. Captain A. N. | 3d Regiment of _____ |
| 8. Captain B. N. | 1st Regiment of _____ |
| 9. Captain C. N. | 2d Regiment of _____ |
| 10. Captain D. M. | 3d Regiment of _____ |
| 11. Captain E. L. | 1st Regiment of _____ |
| 12. Captain F. H. | 1st Regiment of _____ |
| 13. Captain G. W. | 1st Regiment of _____ |

And the following Officers are detailed as supernumeraries:

- | | |
|---------------|----------------------------|
| Captain N. P. | 2d Regiment of Infantry. |
| Captain D. B. | 1st Regiment of Infantry. |
| Captain N. O. | 1st Regiment of Artillery. |

Captain S. R., of the 4th Regiment of _____, is hereby appointed Judge-advocate.

By command of
 Lieut.-general _____,
 _____, Adjutant-general.

FORM No. 2.

General Orders, } Head-quarters.
 No. }

A General Court-martial is hereby appointed to meet at _____, on the _____ day of _____, or as soon thereafter as practicable, for the trial of _____, and such other prisoners as may be brought before it.

Detail for the Court.

- | | | | |
|----------|----------|-----------|-----------|
| 1. _____ | 5. _____ | 9. _____ | 13. _____ |
| 2. _____ | 6. _____ | 10. _____ | |
| 3. _____ | 7. _____ | 11. _____ | |
| 4. _____ | 8. _____ | 12. _____ | |

_____, Judge-advocate.

No other officers than those named can be assembled without manifest injury to the service.

By order of _____,
 _____, Asst. Adjt.-gen.

FORM No. 3.

General Orders, } Head-quarters of the Army,
 No. } April, 18—.

A General Court-martial, to consist of as many members [within the prescribed limits] as can be assembled without manifest injury to the service, will convene at ———, in the State of ———, on Tuesday the 23d of April, 18—, at 10 o'clock, A. M., or as soon thereafter as practicable, for the trial of Lieutenant C. D., of the 1st Regiment, and such other prisoners as may be brought before it.

The Commanding Officer, at ———, will cause the members of the Court to be detailed from the officers of his command. First Lieutenant B. M., 2d Regiment of Artillery, is hereby appointed the Judge-advocate of the Court.

By order of ———,
 Major-general Commanding in Chief,
 R. J.
 Adjutant-general.

The above form delegating authority for the detail of members of a Court-martial to a distant commander, although not latterly used, is of the greatest practical importance. It conforms to the custom of war in other services, was long used in our own without question of its legality, and might with great benefit to the service be revived.

FORM No. 4.

Mode of recording the proceedings of a General [or other] Court-martial.

Proceedings of a General Court-martial, held at Fort Monroe, in the State of Virginia, by virtue of the following Orders, viz.:

[Here insert a copy of the Order convening the Court.]

Fort Monroe, Virginia,

Monday, April —, 18—.

The Court met pursuant to the above Orders.

PRESENT.

- | | |
|--|----------------------|
| 1. Colonel A. B. 1st Regt. of ———, <i>President.</i> | |
| 2. Colonel C. D. | 3. Lieut.-col. E. F. |
| 4. Lieut.-col. F. G. | 5. Major W. T. |
| 6. Major N. M. | 7. Capt. A. N. |
| 8. Capt. B. N. | 9. Capt. C. N. |
| 10. Capt. D. M. | 11. Capt. E. L. |
| 12. Capt. F. H. | 13. Capt. W. G. |

Members.

Captain S. R., Judge-advocate.

The Court then proceeded to the trial of Captain A. B., of the ——— Regiment of ———, who, being called into Court, and having heard the General Order read, was asked if he had any objection to any of the members named in the General Order, to which he replied in the negative.

The Court was then duly sworn, in his presence, and Captain A. B. was arraigned on the following charge and specifications, viz. :

[Here insert the charge and specifications.]

To which the prisoner pleaded as follows :

Not Guilty, to the 1st specification,

Not Guilty, to the 2d specification,

Not Guilty, to the charge.

All persons required to give evidence were directed to withdraw, and remain in waiting until called for.

Lieut. A. B. of the 2d Regiment of Infantry, a witness for the prosecution, being duly sworn, says : that on the ——— day of ———, &c. &c. ———.

Question by the Judge-advocate. ——— ?

Answer. ———.

Question by the prisoner. ——— ?

Answer. ———.

Question by the Court. ——— ?

Answer. ———.

The prosecution was here closed, and the prisoner produced the following evidence :

Capt. C. D. of the Corps of ———, a witness for the defence, being duly sworn, says : that on the ——— day of ———, &c. &c. ———

Question by the prisoner. ——— ?

Answer. ———.

Question by the Judge-advocate. ——— ?

Answer. ———.

Question by the Court. ——— ?

Answer. ———.

The prisoner, having no further testimony to offer, requested to be indulged with ——— days to prepare for his final defence. The Court granted his request, and adjourned at ——— o'clock, P. M., to meet again at ——— o'clock, A. M., on Wednesday, the ——— day of ———.

SECOND DAY.

Wednesday, ———, 18—.

The Court met pursuant to adjournment: present all the members.

The proceedings having been read over to the Court by the Judge-advocate, the prisoner, Captain A. B., made the following address in his defence:

[Here insert the defence, or if it be too long, it may be marked, and annexed.]

The Court then closed, and proceeded to deliberate on the testimony adduced, and pronounced the following

SENTENCE.

The Court, having maturely weighed and considered the evidence adduced in support of it, is of opinion that &c. ——— &c. ———, and does therefore ——— &c. ——— &c.

A. B. Col. 1st Regt. of ———,
 S. R. Capt. ——— Regt. of ———, *President.*
Judge-advocate.

FORM No. 5.

Form of an Order appointing a Garrison or Regimental Court-martial.

| | | |
|---------|---|----------------------|
| Orders, | } | Head-quarters, |
| No. | | Fort Columbus, N. Y. |
| | | April , 18—. |

A Garrison, [or Regimental Court-martial,] to consist of Captain C. D. ———, 1st Lieutenant D. F. ———, and 2d Lieutenant G. H. ———, will convene at the President's quarters to-morrow morning, at 11 o'clock, for the trial of Sergeant D. E. of ——— Company, ——— Regiment of Artillery, and such other prisoners as may be brought before it.

By order of Colonel A. B.,
 Commanding,
 J. A.,
 Adjutant.

FORM No. 6.

Form of charges and specifications against a prisoner.

Charges and specifications preferred against Capt. C. D., of the 1st Regiment of Infantry.

CHARGE 1st.

DISOBEDIENCE OF ORDERS.

Specification 1st. . . . In this, that he, the said Captain C. D., of the 1st Regiment of Infantry, being ordered, on the 30th day of September, 18—, at the Recruiting Dépôt, in the town of Newport, Kentucky, by Colonel A. B., of the 1st Regiment of Infantry, the commanding officer of said Dépôt, to take command of and march with a detachment of recruits, to Jefferson Barracks, in the State of Missouri, did at said town of Newport, at the time aforesaid, refuse to take command of and march with said detachment of recruits, thereby disobeying the lawful commands and orders of his superior and commanding officer, the said Colonel A. B.

Specification 2d. . . . In this, that he the said Captain C. D., &c. &c.
E. F.

Major 1st Regiment of Infantry.

FORM No. 7.

Form of a General Order approving or disapproving the proceedings of a General Court-martial.

| | |
|------------------|----------------------------|
| General Order, } | Head-quarters of the Army, |
| No. } | January —, 18—. |

I. . . At a General Court-martial, which convened at ——— on the ——— of ———, 18—, pursuant to General Orders, No. ——— of January 18—, and of which Brevet Brigadier-general ——— is President, was tried Captain ———, of the ——— Regiment of Artillery, on the following chargers and specifications preferred by Major ———, of the ——— Artillery, to wit :

CHARGE.

[Here insert charge. See Form No. 5.]

To which charge and specification the prisoner pleaded as follows :

To the 1st specification—[plea.]
To the 2d specification—[plea.]
And guilty [or not guilty] to the charge.

FINDINGS AND SENTENCE

The Court, after mature deliberation on the testimony adduced, find the prisoner, Capt. ———, of ——— Regiment of Artillery, as follows :

Of the 1st specification—[finding.]

Of the 2d specification—[finding.]

And guilty [or not guilty] of the charge.

And the Court do therefore sentence him, Captain _____, of _____
Regiment of Artillery, to [here insert sentence.]

II. . . The proceedings, findings, and sentence are approved, [or
disapproved,] &c., &c., &c.

(Here the authority which constituted the Court will add such
remarks as he may think proper.)

III. . . The General Court-martial, of which Brevet Brigadier-
general _____ is President, is hereby dissolved.

By Command of

Major-general _____,
_____, Adjutant-general.

COURT OF INQUIRY. In cases where the general or com-
manding officer may order a court of inquiry to examine into the nature of
any transaction, accusation, or imputation, against any officer or soldier,
the said court shall consist of one or more officers, not exceeding three,
and a judge-advocate, or other suitable person as a recorder, to reduce
the proceedings and evidence to writing, all of whom shall be sworn to
the faithful performance of duty. This court shall have the same power
to summon witnesses as a court-martial, and to examine them on oath.
But they shall not give their opinion on the merits of the case, except-
ing they shall be thereto specially required. The parties accused shall
also be permitted to cross-examine and interrogate the witnesses, so
as to investigate fully the circumstances in the question; (ART. 91.)
The proceedings of a court of inquiry must be authenticated by the
signature of the recorder and the president, and delivered to the com-
manding officer, and the said proceedings may be admitted as evidence
by a court-martial, in cases not capital, or extending to the dismissal
of an officer, provided that the circumstances are such that oral testi-
mony cannot be obtained. But courts of inquiry are prohibited, unless
directed by the President of the United States, or demanded by the ac-
cused; (ART. 92.)

The court may be ordered to report the *facts* of the case, with or
without an opinion thereon. Such an order will not be complied with,
by merely reporting the evidence or testimony; facts being the result,
or conclusion established by weighing all the testimony, oral and docu-
mentary, before the court.

When a court of inquiry is directed to be assembled, the order should state whether the court is to report the facts or not, and also whether or not it is to give an opinion on the merits. The court should also be instructed, whether its attention is to be extended to a general investigation, or to be confined to the examination of particular points only, as the case may seem to require, in the judgment of the officer under whose authority it is assembled. Where the subject is multifarious, the court should be instructed to state its opinion on each point separately, that the proper authority may be able to form his judgment.

The court may sit with open or closed doors, according to the nature of the transaction to be investigated. The court generally sits with open doors; but there may be delicate matters to be examined into, that might render it proper to sit with doors closed.

The form of proceeding, in courts of inquiry, is nearly the same as that in courts-martial: the members being assembled, and the parties interested called into court, the judge-advocate, or recorder, by direction of the president, reads the order by which the court is constituted, and then administers to the members the following oath: "You shall well and truly examine and inquire, according to your evidence, into the matter now before you, without partiality, favor, affection, prejudice, or hope of reward: so help you God;" (ART. 93.)

The accusation is then read, and the witnesses are examined by the court; and the parties accused are also permitted to cross-examine and interrogate the witnesses, so as to investigate fully the circumstances in question; (ART. 91.)

The examination of witnesses being finished, the parties before the court may address the court, should they see fit to do so; after which the president orders the court to be cleared. The recorder then reads over the whole of the proceedings, as well for the purpose of correcting the record, as for aiding the memory of the members of the court. After mature deliberation on the evidence adduced, they proceed to find a state of facts, if so directed by the order constituting the court, and to declare whether or not the grounds of accusation are sufficient to bring the matter before a general court-martial; and also to give their opinion of the merits of the case, if so required.

The court should be careful to examine the order by which it is constituted, and be particular in conforming to the directions contained therein, either by giving a general opinion on the whole matter, a statement of facts only, or an opinion on such facts. The proceedings of courts of inquiry have been returned to be reconsidered, when the court has been unmindful of these points.

It has been settled that a member of a court of inquiry may be objected to, for cause.

The proceedings must be authenticated by the signatures of the president and recorder, and delivered to the commanding officer or authority which ordered the court; and the said proceedings may be admitted in evidence by a court-martial, in cases not capital, nor extending to the dismissal of an officer, provided oral testimony cannot be obtained; (ART. 92.)

Transactions may become the subject of investigation by courts of inquiry after the lapse of any number of years, on the application of the party accused, or by order of the President of the United States; the limitation mentioned in the 88th Article of War, being applicable only to general courts-martial.

It is not necessary to publish the proceedings or opinion of the court, although it is usually done in general orders.

The court is dissolved by the authority that ordered it to convene.

COVERED WAY. A space between the counterscarp and the crest of the glacis in permanent works, and within the palisades, over which the garrison can run without being seen or subjected to the fire of the enemy. The *crowning* of the covered way by the besiegers is a difficult operation, and often costs them dearly.

COWARDICE. In all cases where a commissioned officer is cashiered for cowardice or fraud, it shall be added in the sentence, that the crime, name, and place of abode and punishment of the delinquent be published in the newspapers, after which it shall be deemed scandalous for an officer to associate with him; (ART. 85.)

CRATER OF A MINE—is the excavation or cavity formed in the ground, by the explosion of the powder.

CREMAILLERE—is an indented or zigzag outline.

CRENELLATED—loop-holed.

CRIMES, DISORDERS, AND NEGLECTS. All crimes not capital, and all disorders and neglects which officers and soldiers may be guilty of, to the prejudice of good order and military discipline, though not mentioned in the Articles of War, are to be taken cognizance of by a general or regimental court-martial, according to the nature and degree of the offence, and be punished at their discretion; (ART. 99.) (See AUTHORITY, CIVIL.)

CRIMINATE. (See EVIDENCE.)

CROTCHETS—are openings cut into the glacis at the heads of traverses, to enable the defenders to circulate round them. These passages are closed by a gate when necessary.

CROWNING. A lodgment prepared by besiegers upon the crest of the glacis to make themselves masters of the *covered way*. It is effected usually by means of the *SAP*—a method apparently slow, but which, advancing night and day without intermission, accomplishes great objects. The work is done by sappers rolling before them a very large gabion stuffed with wool or cotton, or fascines, to shelter themselves from musketry. They fill thus one gabion after another, and do not push forward until the portion of the trench already made has been well consolidated.

CROWN-WORK—is a similar work to horn-work, but consisting of two fronts instead of one. It is connected to the main works in a similar way, and is used for the same purposes as the horn-work.

CROWS' FEET—are iron-pointed stars, or stout nails, so fixed as to radiate, that in any position they may have a point uppermost. They are strewed on the ground over which cavalry may be expected to pass. (*See* OBSTACLES.)

CUNETTE—is a narrow ditch in the middle of a dry ditch, to keep it drained, as well as to form, especially when filled with water, an obstacle to an enemy.

CURTAIN. The curtain is that part of the rampart of the body of the place, which lies between two bastions, and which joins their two flanks together.

CURTAIN ANGLE—is that formed by the meeting of the flank and the curtain.

CUSTOM OF WAR. The custom of war in like cases is the common law of the army recognized by Congress in the 69th Article of War, as a rule for the government of the army whenever any doubt shall arise not explained by the rules and articles established by Congress for the government and regulation of the army. To render a custom valid the following qualities are requisite:—1. Antiquity; 2. Continuance without interruption; 3. Have been acquiesced in without dispute; 4. It must be reasonable; 5. Certain; 6. *Compulsory*, that is, not left to the option of every man whether he will use it or not; 7. Customs must be consistent with each other.

D

DAM. An impediment formed of stones, gravel, and earth, by which a stream of water is made to overflow and inundate the adjacent ground.

DAMAGE. The costs of repairs of *damage* done to arms, equipments, or implements, in the use of the armies of the United States,