

Capt. J. H. ...
1863

RULES
FOR THE
MANAGEMENT AND CLEANING
OF THE
RIFLE MUSKET, MODEL 1863,
FOR
THE USE OF SOLDIERS.
WITH
DESCRIPTIVE PLATES.



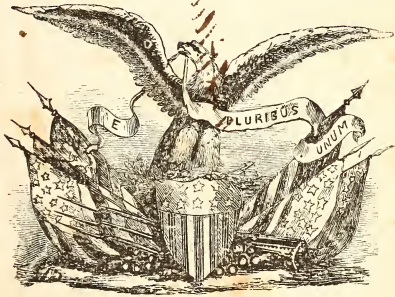
SPRINGFIELD ARMORY, APRIL 28, 1863.

ADOPTED BY THE WAR DEPARTMENT FOR THE GOVERNMENT OF
UNITED STATES TROOPS.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
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EXTRACT FROM ORDNANCE MANUAL,
PAGE 199.

PRESERVATION OF ARMS IN SERVICE.

The officers, non-commissioned officers, and soldiers should be instructed and practiced 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 non-commissioned officer a wire 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 to 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.

NOMENCLATURE DESCRIPTIVE OF THE RIFLE MUSKET.

MODEL OF 1863.

Fig. 1. Barrel, one-seventh size.

a, breech; b, cone-seat; c, rear-sight; d, front-sight and bayonet-stud; e, muzzle.

Fig. 2.

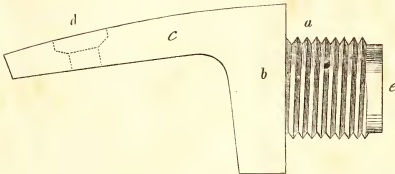


Fig. 2. Breech-screw, full size.

a, plug, with threads; b, tenon; c, tang; d, tang-screw hole; e, face.

Fig. 3.



Fig. 3. Tang-screw, full size.

a, stem; b, head; c, slit; d, thread.

Fig. 4.

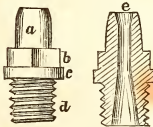


Fig. 4. Cone, full size.

a, nipple; b, square; c, shoulder; d, screw-thread; e, vent.

Fig. 5. Ramrod,

one-seventh size.

a, stem; b, head; c, cup; d, thread; e, brass cap.



Fig. 1.

Fig. 5.

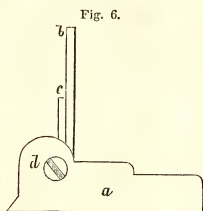


Fig. 6. Rear-sight, full size, side view, complete.

*a, base; b, first leaf;
c, second leaf; d, screw.*

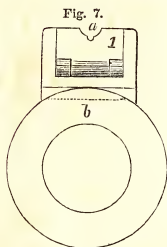


Fig. 7. Front, sectional view on barrel, full size.

*a, notch for 100 yards range;
b, section of barrel.*

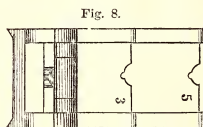


Fig. 8. Top view of sight, complete, showing the graduation marks for 300 and 500 yards, and each leaf closed in the base.

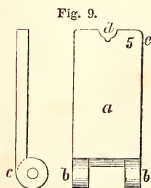


Fig. 9. First leaf, full size.

*a, body;
b, b, ears;
c, screw-hole;
d, sight-notch;
e, graduation mark.*

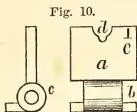


Fig. 10.

Fig. 10. Second leaf, full size.
a, body; *b*, tenon;
c, screw-hole; *d*, sight-notch;
e, graduation mark.

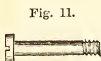


Fig. 11.

Fig. 11. Joint-screw, full size.
 Stem, head, slit, thread.



Fig. 12.

Fig. 12. Base-screw, full size.
a, stem; *b*, head;
c, *c*, holes for screwdriver;
d, thread.

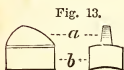


Fig. 13.

Fig. 13. Front sight and bayonet-stud, full size.
a, sight; *b*, stud.

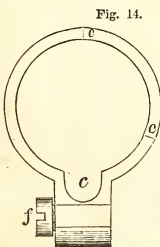


Fig. 14.

Fig. 14. Bayonet-clasp, full size.
a, body; *b*, stud;
c, bridge;
d, groove;
e, *e*, stops;
f, screw.

Fig. 15. Bayonet, quarter size.
a, blade; *b*, neck; *c*, socket;
d, bridge; *e*, stud-mortise; *f*, clasp.



Fig. 15.

Fig. 16.

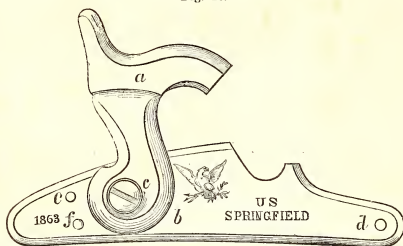


Fig. 16. Lock, outside view, half size.

- a*, hammer; *b*, lock-plate;
c, tumbler-screw;
d, side-screw hole; *e*, sear-screw;
f, sear screw.

Fig. 17.

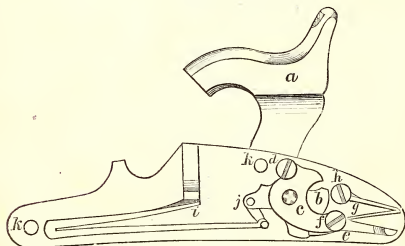


Fig. 17. Lock, inside view, half size, showing the parts at half-cock.

- a*, hammer; *b*, tumbler; *c*, bridle;
d, bridle-screw; *e*, sear; *f*, sear-screw;
g, sear-spring; *h*, sear-spring screw;
i, main-spring; *j*, swivel; *k*, *k*, side-screws.

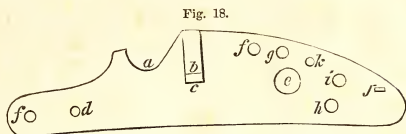


Fig. 18. Lock-plate, half-size, showing the position of the holes, &c. *a*, cone-seat notch; *b*, bolster; *c*, main-spring notch; *d*, hole for main-spring pivot; *e*, hole for arbor of tumbler; *f, f*, side-screw holes; *g*, hole for bridle-screw; *h*, hole for sear-screw; *i*, hole for sear-spring; *j*, sear-spring stud mortise; *k*, bridle pivot hole.

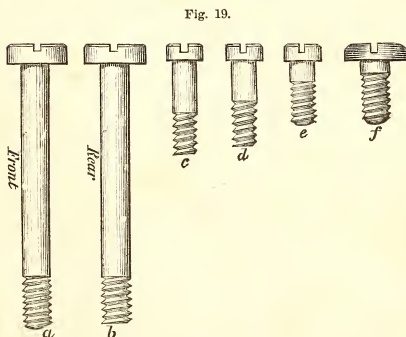


Fig. 19. Lock and side-screws, full size.

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. 20.



Fig. 20. *Mainspring-swivel*, full size.
a, body; *b*, axis; *c*, tumbler-pin hole;
d, tumbler-pin.

Fig. 21.

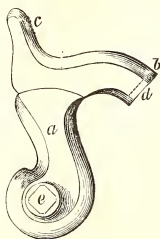


Fig. 21. *Hammer*, half size.
a, body; *b*, head; *c*, comb;
d, countersink; *e*, tumbler-hole.

Fig. 22.

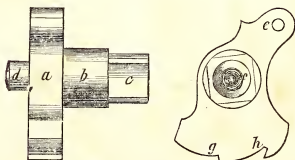


Fig. 22. *Tumbler*, full size.
a, body; *b*, arbor; *c*, squares; *d*, pivot;
e, swivel-arm and pin-hole; *f*, tumbler-screw hole;
g, cock-notch; *h*, half-cock notch.

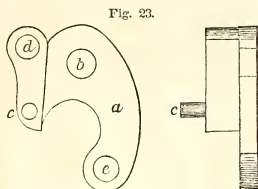


Fig. 23. Bridge, full size.

a, body; *b*, eye for tumbler pivot; *c*, pivot;
d, hole for bridge-screw;
e, hole for sear-screw.

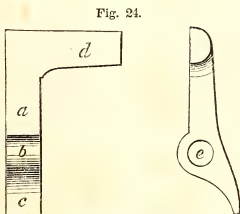


Fig. 24. Sear, full size.

a, body; *b*, eye; *c*, nose;
d, tang; *e*, screw-hole.

Fig. 25.



Fig. 25. Sear-screw, full size.

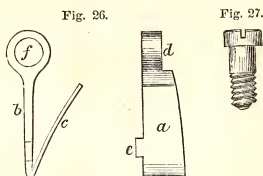


Fig. 26. Scar-spring, full size.
a, blade; *b*, upper branch;
c, lower branch;
d, eye; *e*, stud; *f*, screw-hole.

Fig. 27. Scar-spring screw, full size.

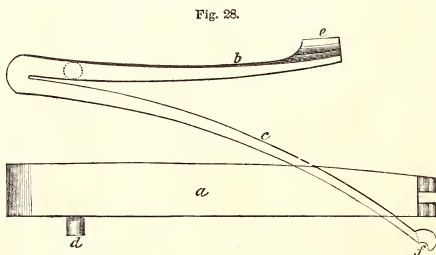


Fig. 28. Mainspring, full size.
a, blade;
b, upper branch;
c, lower branch;
d, pivot;
e, tang;
f, hook.

Fig. 29

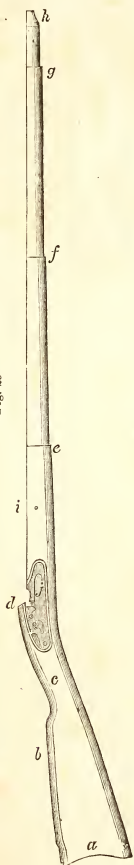


Fig. 29. *Stock*, black walnut, one-ninth size.

- a*, butt;
- b*, comb;
- c*, handle;
- d*, head;
- e*, shoulder for lower band;
- f*, shoulder for middle band;
- g*, shoulder for upper band;
- h*, shoulder and tenon for tip;
- i*, rod spring wire hole;
- j*, bed for lock.

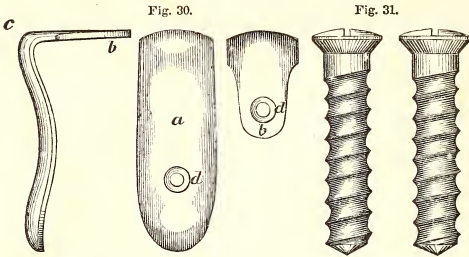


Fig. 30. Butt-plate, one-third size.
a, body; b, toe; c, heel;
d, d, screw-holes.

Fig. 31. Butt-plate screws, full size.

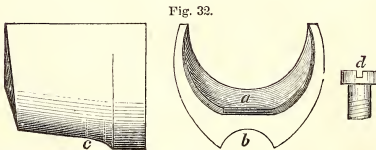


Fig. 32. Tip, full size, (malleable iron.)
a, recess for stock;
b, groove for ramrod;
c, screw-hole;
d, screw.

Fig. 33.

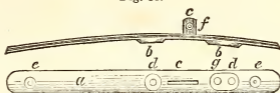


Fig. 33. Guard-plate, quarter size.

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

Fig. 34.

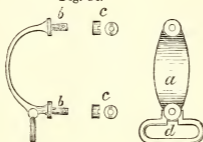


Fig. 34. Guard-bow, quarter size.

a, body ; *b*, *b*, stem ; *c*, *c*, nuts ; *d*, swivel.

Fig. 35.



Fig. 35. Swivel, quarter size.

a, swivel ; *b*, swivel-rivet.

Fig. 36.

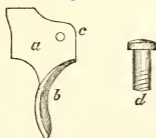


Fig. 36. Trigger, half size.

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

Fig. 37.

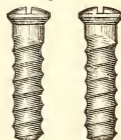


Fig. 37. Guard-screws, full size.

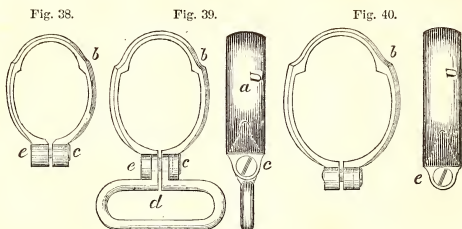


Fig. 38. Upper band, half size.

Fig. 39. Middle band.

Fig. 40. Lower band.

a, body; *b, b, b*, creases;

U, denotes the upper edge; *c, c, c*, studs;

d, swivel, on middle band only; *e, e, e*, screws.

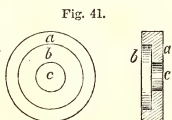


Fig. 41.

Fig. 41. Side-screw washer, full size.

a, body; *b*, countersink; *c*, hole for screw.

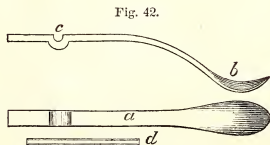


Fig. 42.

Fig. 42. Ramrod spring, half size.

a, blade; *b*, groove for rod;

c, hole for wire; *d*, rod-spring wire.

APPENDAGES FOR RIFLE MUSKET.

MODEL OF 1863.

Fig. 43.

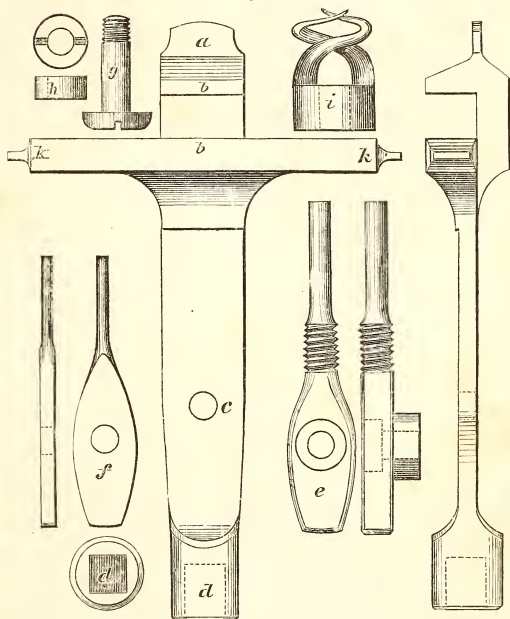


Fig. 43. *Compound appendage*, full size, embracing the vise for mainspring; cone-wrench; 3 screwdrivers; tumbler-punch; vent-wire; wiper and ball-screw, viz: *a*, screwdriver for butt, tang, and guard screws; *b*, mainspring vise; *c*, hole for screw; *d*, cone-wrench; *e*, tumbler-punch; *f*, vent-wire; *g*, screw; *h*, nut; *i*, wiper and ball-screw; *k*, screwdrivers for lock screws.

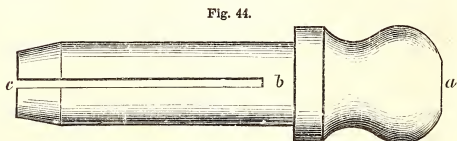


Fig. 44. Tompion, full size.
a, head; b. body; c, slot.

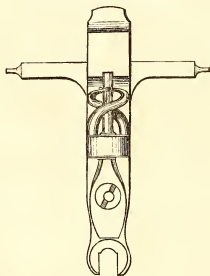


Fig. 45. Cone, full size, (spare.)
a, nipple; b, square; c, shoulder;
d, screw-thread; e, vent.

RIFLE MUSKET AND APPENDAGES.

MODEL OF 1863.

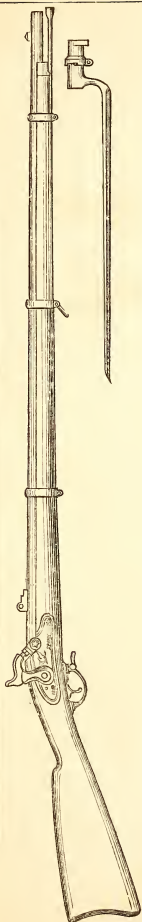
Compound Appendage.



Tompson.



Cone. (spare.)



MATERIALS OF WHICH THE PARTS ARE MADE.

Steel.

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

Malleable Iron.

Tip for Stock.

Wood.

Stock; Tompion.

Iron.

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

RULES FOR DISMOUNTING THE RIFLE MUSKET.

MODEL OF 1863.

- 1st. Unfix the bayonet (15.)
- 2d. Put the tompon (45) into the muzzle of the barrel.
- 3d. Draw the ramrod (5.)
- 4th. Turn out the tange-screw (3.)
- 5th. Take off the lock (16;) to do this, first put the hammer at half-cock, then unscrew partially the side-screws (19 *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 (19 *a, b,*) taking care not to disturb the washers (41.)
- 7th. Take off the upper band (38) by first loosening the screw (*e.*)
- 8th. Take off the middle band (39) in the same manner.
- 9th. Take off the lower band (40) in the same manner.

NOTE.—The letter U on the bands is to indicate the upper side in assembling.

10th. Take out the barrel, (1.) In doing this, turn the musket horizontally, with the barrel downward, holding the barrel loosely with the left hand below the rear sight (6,) 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 (2) should bind in the wood, the head of the stock (29 *d*) would be liable to be split by raising the muzzle first.

The foregoing parts are all that should usually be taken off or dismantled.

The soldier should never dismount the *guard, side-screw, washers, butt-plate, rear-sight, and cone*, 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, proceed—

TO CLEAN THE BARREL.

1st. Stop the hole in the cone (4, *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 comes out clear; take out the peg from the cone and stand the barrel, muzzle downwards, to drain for a few moments.

2d. Screw the wiper (44, *j*) on to the end of the ramrod (5, *d*) 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 (4, *e*), as it will clog the passage, and cause the cap 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 (2, *e*), and immediately insert the tompon (45) 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 of the 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 keep free from 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 great care should be observed 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 it in fine weather, or when there has been no chance for the wet to get between the barrel and the stock, it can be perfectly cleaned in the following manner:

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 does not 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 comes out clear. When clear, withdraw the leather and stand the musket on the muzzle a few moments, then wipe out the barrel, (as given 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 the dirt due to the firing may be removed without taking out a screw. If, however, the hammer is observed to work stiff, or to grate upon the tumbler, the lock must immediately be taken off and the parts cleaned and touched with oil.

TO REASSEMBLE 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 (29, *d.*)

2d. Put on the lower band with the letter U upward, being careful to loosen the screw so as not to mar the stock or barrel in sliding it into its place; screw it on firmly.

3d. Put on the middle, and

4th. The upper band in the same manner.

5th. The lock. 1st, 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 tompion. Oil the stock well with sperm or linseed oil; let it stand a few hours, 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 dismantled.

RULES FOR THE MORE COMPLETE DISMOUNTING OF THE RIFLE MUSKET
WHEN CLEANED BY AN ARMORER.

1st. The parts which are specially assigned to be dismantled by an experienced armorer will be stated 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 guard-screws, (37.) *Note.*—The guard, butt-plate, and side-screw heads have conclave slits for which the screwdriver is adapted. This lessens the danger of the stock being marred by accident or carelessness in letting the screwdriver slip out while in the act of turning the screw. Great care should be taken to prevent injury in this particular.

13th. Take out the guard, using care to prevent injuring the wood at each end of the guard-plate, (33.)

14th. Take out the side-screw washers (41) with a drift-punch.

15th. Take out the butt-plate screws (31) with the largest blade of the screwdriver, (43 *a*.) and remove the butt-plate, (30.)

16th. Remove the rear-sight (6) by turning out the screw, (12,) which will release the sight from the barrel.

17th. Turn out the breech-screw, (2,) by means of a "*breech-screw wrench*" suited to the tenon (*b*) of the breech-screw. No other wrench should ever be used for this purpose, and the barrel should be held in the clamps fitting neatly the breech, (1 *a*.)

In reassembling 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. The cone.

The remaining parts follow as given for the soldier, commencing with the barrel.—(See page 22.)

ORDER IN WHICH THE LOCK IS TAKEN APART.

1st. Cock the piece, and apply the vise of the compound screwdriver (43 *b, c*) on the mainspring, let the hammer down to liberate the spring from the swivel (20) and mainspring-notch (18 *c*.) Remove the spring.

2d. The sear-spring screw. Before turning this screw entirely out, strike the elbow of the spring with the screwdriver, 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 (44 *f*) inserted in the screw-hole, which at the same time liberates the hammer;

7th. Detach the mainspring swivel (20) from the tumbler with a drift-punch.

The lock is reassembled in the inverse order of taking apart, viz:

1st. The mainspring swivel;

2d. Tumbler and hammer;

3d. Tumbler-screw;

4th. Bridle and screw;

5th. Sear and screw;

6th. Sear-spring and screw;

7th. 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 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 soap-suds, 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 practice.

Besides all the precautions in dismounting, remounting, and cleaning, which have been pointed out in the foregoing pages, habitual care in handling the 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 when the exercises take place on pavements or hard roads. This will save the mechanism of the lock from shocks, which are very injurious to it, and which tend to loosen and mar the screws and split the stock.

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 reassembling them.

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 of soft water, two pounds of extract of logwood, half a pound of broken nut galls, 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 prepared should be well stirred and then left to settle. When clear decant it from the sediment and keep well corked for use.

Dry 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 shumac, and again apply the dye as above.

The addition of the logwood is not essential; and a solution of copperas may replace, but not so well, the acetate of iron.

The model of 1863 corresponds with the model of 1861, except in the following particulars, viz:

Barrel.—The cone-seat is reduced in length about two tenths of an inch, fixing the centre of the cone, or vent, on a line with the face of the barrel, and dispensing with the cone-seat screw. The end of the muzzle is rounded to prevent being bruised.

Hammer.—The form of the hammer is changed to conform to that of the barrel, and otherwise improved.

Ramrod.—The “swell” is omitted and the body made larger, with a ball-screw cut on the small end, and a brass cap to protect it from injury.

Ramrod-spring.—Adopted instead of the swell to hold the rod in its place.

Bands.—Open bands fastened by screws instead of tight bands.

Band-springs.—Dispensed with as unnecessary.

Lock.—The lock is case-hardened in colors; the bands, swivels, and guard are blued in the same manner as the rear sight instead of being left bright.

Appendages.—The compound appendage for taking the arm apart is adopted in place of the spring-vice, ball-screw, tumbler, and band-spring punch of model 1861.

NOTE.—The rules for dismounting and reassembling the rifle musket, model 1855, will apply to the model of 1863 by omitting the band-springs and the parts of the lock that apply to the “Maynard primer.”

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