TO COMPLETE DISMOUNTING.

(Not to be done by soldier.)

The bolt and magazine having been dismounted proceed as follows:

1. Remove the screws from the upper and lower bands, and move them forward until clear of hand guards and stock; then remove upper and lower hand guards.
2. Remove the front and rear guard screws, and remove guard and magazine.
3. Remove the barrel and receiver from stock.
4. Remove the stock bolt.
5. Remove the butt swivel plate screws, and remove the butt swivel plate.
6. Unscrew butt plate screws, and remove butt plate from stock.
7. Unscrew butt plate spring screw, and remove the butt plate spring; drive out butt plate pin, and remove butt plate cap.
8. Remove the bolt stop and ejector by unscrewing the bolt stop screw. The bolt stop and ejector can then be disengaged.
9. Remove the bolt stop spring rest.
10. Unscrew safety lock holder screw, and remove holder; turn the thumb piece of the safety lock down and withdraw the safety lock from its housing. The plunger and spring can then be removed.
11. Remove sear and trigger by driving out sear pin (from the right), being careful not to lose sear spring.
12. Remove trigger from sear by driving out trigger pin from either side.
13. Drive front sight out from left, using drift and light hammer.
14. Drive out front sight carrier pin, and force the carrier off the end of barrel, using a hardwood block and hammer.
15. Remove upper and lower bands, also hand guard ring.

TO ASSEMBLE AFTER DISMOUNTING.

Reverse and follow in inverse order, the operations of dismounting.

The sear and trigger, bolt stop and safety lock should be assembled to the receiver before placing the latter in the stock.

The upper and lower bands and hand guard ring must be slipped over the muzzle before the front sight carrier is forced on.

CLEANING THE RIFLE.

The proper care of the bore requires conscientious, careful work, but it pays well in reduced labor of cleaning and in prolonged accuracy-life of the barrel, and better results in target practice. Briefly stated, the care of the bore consists in removing the fouling resulting from firing, to obtain a chemically clean surface, and coating this surface with a film of oil to prevent rusting. The fouling which results from

firing is of two kinds—one, the products of combustion of the powder; the other, cupro-nickel scraped off (under the abrading action of irregularities or grit in the bore). Powder fouling, because of its acid reaction, is highly corrosive; that is, it will induce rust and must be removed. Metal fouling of itself is inactive, but may cover powder fouling and prevent the action of cleaning agents until removed, and when accumulated in noticeable quantities it reduces the accuracy of the rifle.

Powder fouling may be readily removed by scrubbing with hot soda solution, but this solution has no effect on the metal fouling of cupro-nickel. It is therefore necessary to remove all metal fouling before assurance can be had that all powder fouling has been removed and that the bore may be safely oiled. Normally, after firing a barrel in good condition, the metal fouling is so slight as to be hardly perceptible. It is merely a smear of infinitesimal thickness, easily removed by solvents of cupro-nickel. However, due to pitting, the presence of dust, other abrasives, or to accumulation, metal fouling may occur in clearly visible flakes or patches of much greater thickness, much more difficult to remove.

In cleaning the bore after firing, it is well to proceed as follows: Swab out the bore with soda solution (see below) to remove powder fouling. A convenient method is to insert the muzzle of the rifle into the can containing the soda solution and, with the cleaning rod inserted from the breech, pump the barrel full a few times. Remove and dry with a couple of patches. Examine the bore to see that there are in evidence no patches of metal fouling which, if present, can be readily detected by the naked eye, then swab out with the swabbing solution—a dilute metal-fouling solution. (See below.) The amount of swabbing required with the swabbing solution can be determined only by experience and by observation of the color of the patches. Swabbing should be continued as long as the wiping patch is discolored by a bluish-green stain. Normally a couple of minutes' work is sufficient. Dry thoroughly and oil.

The proper method of oiling a barrel is as follows: Wipe the cleaning rod dry; select a clean patch and thoroughly saturate it with sperm oil or warmed cosmic, being sure that the cosmic has penetrated the patch; scrub the bore with the patch, finally drawing the patch smoothly from the muzzle to the breech, allowing the cleaning rod to turn with the rifling. The bore will be found now to be smooth and bright, so that any subsequent rust and sweating can be easily detected by inspection.

If patches of metal fouling are seen upon visual inspection of the bore, the standard metal-fouling solution prepared as hereinafter prescribed must be used. After scrubbing out with the soda solution, plug the bore at the breech with a cork at the front end of the cham-

ber, or where the rifling begins. Slip a 2-inch section of rubber hose over the muzzle down to the sight and fill with the standard solution to at least one-half inch above the muzzle of the barrel. Let it stand for 30 minutes, pour out the standard solution, remove hose and breech plug, and swab out thoroughly with soda solution to neutralize and remove all trace of ammonia and powder fouling. Wipe the barrel clean, dry, and oil. With few exceptions, one application is sufficient, but if all fouling is not removed, as determined by careful visual inspection of the bore and of the wiping patches, repeat as described above.

After properly cleaning with either the swabbing solution or the standard solution, as has just been described, the bore should be clean and safe to oil and put away, but as a measure of safety a patch should *always* be run through the bore on the next day and the bore and wiping patch examined to insure that cleaning has been properly accomplished. The bore should then be oiled, as described above.

If the swabbing solution or the standard metal-fouling solution is not available, the barrel should be scrubbed, as already described, with the soda solution, dried, and oiled with a light oil. At the end of 24 hours it should again be cleaned, when it will usually be found to have "sweated"; that is, rust having formed under the smear of metal fouling where powder fouling was present, the surface is puffed up. Usually a second cleaning is sufficient, but to insure safety it should be again examined at the end of a few days before final oiling. The swabbing solution should always be used, if available, for it must be remembered that each puff when the bore "sweats" is an incipient rust pit.

A clean dry surface having been obtained, to prevent rust, it is necessary to coat every portion of this surface with a film of neutral oil. If the protection required is but temporary and the arm is to be cleaned or fired in a few days, a sperm oil may be used. This is easily applied and easily removed but has not sufficient body to hold its surface for more than a few days. If rifles are to be prepared for storage or shipment, a heavier oil, such as cosmic, must be used.

In preparing arms for storage or shipment they should be cleaned with particular care, using the metal-fouling solution as described above. Care should be taken, insured by careful inspection on succeeding day or days, that the cleaning is properly done and all traces of ammonia solution removed. The bore is then ready to be coated with cosmic. At ordinary temperatures cosmic is not fluid. In order, therefore, to insure that every part of the surface is coated with a film of oil, the cosmic should be warmed. Apply the cosmic first with a brush; then, with the breech plugged, fill the barrel to the muzzle, pour out the surplus, remove the plug, and allow to drain.

It is believed that more rifles are ruined by improper preparation for storage than from any other cause. If the bore is not clean when oiled—that is, if powder fouling is present or rust has started—a half inch of cosmic on the outside will not stop its action, and the barrel will be ruined. Remember that the surface must be perfectly cleaned before the heavy oil is applied. If the instructions as given above are carefully followed, arms may be stored for years without harm.

PREPARATION OF SOLUTIONS.

Soda solution.—This should be a saturated solution of sal soda (carbonate of soda). A strength of at least 20 per cent is necessary. The spoon referred to in the following directions is the model of 1910 spoon issued in the mess outfit.

Sal soda—one-fourth pound, or 4 (four) heaping spoonfuls.

Water—1 pint or cup, model of 1910, to upper rivets.

The sal soda will dissolve more readily in hot water.

Swabbing solution.—Ammonium persulphate—60 grains, one-half spoonful smoothed off.

Ammonia, 28 per cent—6 ounces, or three-eighths of a pint, or 12 spoonfuls.

Water—4 ounces, or one-fourth pint, or 8 spoonfuls.

Dissolve the ammonium persulphate in the water and add the ammonia. Keep in tightly corked bottle; pour out only what is necessary at the time, and keep the bottle corked.

Standard metal-fouling solution.—Ammonium persulphate—1 ounce, or 2 medium heaping spoonfuls.

Ammonium carbonate—200 grains.

Ammonia, 28 per cent—6 ounces, or three-eighths pint, or 12 spoonfuls.

Water—4 ounces, or one-fourth pint, or 8 spoonfuls.

Powder the persulphate and carbonate together, dissolve in the water, and add the ammonia; mix thoroughly and allow to stand for one hour before using. It should be kept in a strong bottle, tightly corked. The solution should not be used more than twice, and used solution should not be mixed with unused solution, but should be bottled separately. The solution, when mixed, should be used within 30 days. Care should be used in mixing and using this solution to prevent injury to the rifle. The ammonia solution should not be used in a warm barrel. An experienced noncommissioned officer should mix the solution and superintend its use.

Neither of these ammonia solutions has any appreciable action on steel when not exposed to the air, but if allowed to evaporate on steel they attack it rapidly. Care should, therefore, be taken that none spills on the machanism and that the barrel is washed out promptly with soda solution. The first application of soda solution removes

the greater portion of the powder fouling and permits a more effective and economical use of the ammonia solution. These ammonia solutions are expensive and should be used economically.

It is a fact recognized by all that a highly polished steel surface rusts much less easily than one which is roughened; also, that a barrel which is pitted fouls much more rapidly than one which is smooth. Every effort, therefore, should be made to prevent the formation of pits, which are merely enlarged rust spots, and which not only affect the accuracy of the arm but increase the labor of cleaning.

The chambers of rifles are frequently neglected because they are not readily inspected. Care should be taken to see that they are cleaned as thoroughly as the bore. A roughened chamber delays greatly the rapidity of fire and not infrequently causes shells to stick.

A cleaning rack should be provided for every barracks. Rifles should always be cleaned from the breech, thus avoiding possible injury to the rifling at the muzzle which would affect the shooting adversely. If the bore for a length of 6 inches at the muzzle is perfect, a minor injury near the chamber will have little effect on the accuracy of the rifle. The rifle should be cleaned as soon as the firing for the day is completed. The fouling is easier to remove then, and if left longer it will corrode the barrel.

If gas escapes at the base of the cartridge, it will probably enter the well of the bolt through the striker hole. In this case the bolt mechanism must be dismounted and the parts and well of the bolt thoroughly cleaned.

Before assembling the bolt mechanism, the firing pin, the barrel of the sleeve, the body of striker, the well of bolt, and all cams should be lightly oiled.

Many of the parts can generally be cleaned with dry rags. All parts after cleaning should be wiped with an oiled rag.

The best method of applying oil is to rub with a piece of cotton cloth upon which a few drops of oil have been placed, thereby avoiding the use of an unnecessary amount of oil; this method will, even in the absence of the oiler, serve for the cams and bearings, which should be kept continually oiled.

Any part that may appear to move hard can generally be freed by the use of a little oil.

The stock and hand guard may be coated with raw linseed oil and polished by rubbing with the hand.

Sperm oil should be used only for lubricating metallic bearing and contact surfaces.

For the chamber and bore, only cosmoline or cosmic should be used. This should be applied also to all metallic surfaces, to prevent rusting when arms are stored or when not used for an appreciable length of time.

PACKING OF RIFLE.

The rifles are issued in arm chests containing:

Ten United States rifles, caliber .30, model of 1917.

One book, Description and Rules for the Management of the United States Rifle, caliber .30, model of 1917, Form 1917.

The interior of the arm chest is provided with wooden packing strips for the purpose of securely holding the rifles in place in transportation. The arrangement of this packing and of the rifles should be carefully observed when arms are received from an arsenal in order that the same method may be used if for any reason the rifles should be shipped away from the post. Rifles should never be shipped in these chests unless all of the packing strips have been properly assembled with the rifles in the chests.

Plate I, at the back of this pamphlet, shows the arm chest in detail.

SPARE PARTS FOR REPAIRS.

The following spare parts for rifle, bayonet, appendages, and accessories will be issued packed in chests, each chest to supply repairs for 100 rifles for one year:

RIFLE PARTS.

2 bolts assembled with extractor collars.
3 bolt stops.
5 bolt stop screws.
5 bolt stop springs.
1 bolt stop spring rest.
2 butt plates assembled (including plate, cap, pin, spring, and spring screw).
3 butt plate screws, large.
3 butt plate screws, small.
Butt swivel. See swivels.
Butt swivel screw. See swivel screws.
3 butt swivel plates.
2 butt swivel plate screws.
5 ejectors.
5 extractors.
30 strikers.
10 cocking pieces.
3 floor plates.
3 floor-plate catches.
3 floor-plate pins.
6 floor-plate springs.
2 followers.
3 guards.
1 guard screw bushing, front (see "stock").
1 guard screw bushing, rear (see "stock").
3 guard screws, front.
3 guard screws, rear.
6 hand guards, front, assembled with front liner.
6 hand guards, rear, assembled with middle and rear liners.
3 hand guard rings.
2 lower bands.
Lower band screw. See "swivel screw."
2 lower band pins.
Lower band swivel. See "swivel."
2 magazines.
6 magazine springs.
4 main springs.
5 rear sight base springs.
3 rear sight base spring screws.
4 rear sight joint bolts.
4 rear sight joint bolt nuts.

6 rear sight leaves assembled (including leaf, slide, slide catch, slide catch spring, slide catch pin, slide stop screw).
3 safety locks.
1 safety lock holder.
3 safety lock holder screws.
2 safety lock plungers.
6 safety lock springs.
3 sears.
3 sear pins.
6 sear springs.
3 sleeves.
2 stacking swivels.
Stacking swivel screw. See "swivel screws."
10 stocks (assembled with guard screw bushings, tie bolts and nuts, and stock pins).
2 swivels (for lower band and butt).
3 swivel screws (for all swivels).
1 trigger.
1 trigger pin.
2 upper bands.
3 upper band screws.

BAYONET PARTS.

2 complete bayonets.
3 bayonet catches.
5 bayonet catch springs.
4 bayonet catch thumb pieces.
6 bayonet grips, right.
6 bayonet grips, left.
4 bayonet screws.
4 bayonet screw nuts.

APPENDAGE PARTS.

3 oil droppers.
13 oiler cap washers.
3 oiler and thong cases (oiler collar, thong case body, and thong case partition assembled).
3 thong case caps and pads (assembled).
20 thong cords.
8 thong tips.
8 thong weights.
18 thong brushes.

ACCESSORY PARTS.

3 cleaning rods (each including handle section, knob, collar, sleeve, second section, third section, brush section).
3 cleaning rod cases.
2 screw drivers assembled (each including large blade, small blade, pin and rivet).

PARTS WHICH ARE MOST LIABLE TO REQUIRE REPAIR.

COCKING PIECE.—Nose worn from neglect to keep it lubricated.

LOWER BAND SWIVEL AND SCREW.—Screw, if not properly expanded, works loose and, with swivel, is lost.

STACKING SWIVEL AND SCREW.—Screw, if not properly expanded, works loose and, with swivel, is lost.

STOCK.—Bruises, cuts, pieces chipped from different points, broken at small.

STRIKER.—Point burned by defective cartridge, or broken by snapping with the chamber empty.

REPLACING BROKEN PARTS.

BUTT PLATE PIN.—This pin has both ends upset; the burr on one end must be filed off and the pin driven out with a drift; when a new pin is put in, its ends must be upset with light blows of a hammer.

SWIVEL SCREWS.—These screws, upon which the stacking swivel, lower band swivel, and butt swivel are mounted, have hollow ends which are expanded to prevent the loosening of the screws. If a burr has been formed by the expanding operation it should be filed off before attempting to remove the screws. After the screw has been replaced it should again be expanded by the use of the special expanding tool provided for that purpose.

TRIGGER PIN.—This is a straight pin and can be driven in or out from either side.

INJURIES WHICH DO NOT RENDER PARTS UNSERVICEABLE.

BOLT.—The entire flange at front end may be broken off, except a small portion on the opposite side from the extractor hook, which is required to hold, in connection with the extractor hook, the empty case while it is being drawn to the rear for ejection.

If automatic ejection be not considered, the entire flange may be dispensed with.

BUTT PLATE.—Bruises, cuts, or wearing.

BUTT SWIVEL.—Bent.

COCKING PIECE.—Moderate wearing of nose. The nose can wear until manipulation of the bolt fails to cock the piece.

EXTRACTOR.—Moderate wear or break of edge of hook.

FLOOR PLATE.—Bent or bruised.

GUARD.—Bent, bruised, or cut.

USING THE RIFLE WHEN CERTAIN PARTS OF THE BOLT AND MAGAZINE MECHANISM ARE WANTING.

The parts not essential, or only so to a degree, are the ejector, safety lock, bolt stop, floor plate, magazine spring, and follower.

In the absence of the ejector, the empty cases drawn to the rear by the extractor can be removed from the receiver by the finger.

The safety lock being merely a precautionary device, its absence does not affect the usefulness of the arm.

The absence of the bolt stop does not affect the usefulness of the arm.

The absence of the floor plate, follower, and magazine spring only prevents the use of the magazine, but does not prohibit the use of the arm as a single-loader. The soldier should be taught to appreciate these facts.

REMARKS.

All cams and bearings should be kept slightly oiled to prevent wear.

When firing many successive rounds care must be taken that unburned grains of powder do not collect and pack in the locking lug recesses of the receiver, as this will interfere with the perfect closing of the bolt. Such accumulations can be blown out from time to time, or, when packed, removed by a knife or the screw driver.

Except when repairs are needed, the following parts will constantly be injured if allowed to be dismounted by the soldier for cleaning; and when repairs are necessary, they should be removed only by a company artificer, or some one familiar with the handling of tools and delicate mechanisms, viz: Bolt stop, safety lock, front sight, lower band, upper band, and stacking swivel screws.

Unless the screw driver is handled carefully, and with some skill, the screws are sure to be injured either at the head or thread.

The BULLET JACKET EXTRACTOR is shown in Figs. 150, 151, and 152. This extractor consists of a steel cylindrical plug provided with lands and grooves on the sides. To use the extractor, it is inserted in the muzzle of the barrel hollow end (see Fig. 152) first. The extractor is then urged down the barrel by pressure applied with the cleaning rod until the jacket and extractor fall out into the chamber. The bullet extractor for the 1917 rifle is different from that for the 1903 rifle and may be distinguished by the fact that it has five grooves and left-hand twist, to accord with the rifling.

FIG.150 FIG.151 FIG.152

The AIMING DEVICE, shown in Fig. 153, in place on a model of 1903 rifle, and Fig. 154 in detail, is intended for use in aiming drill and is issued to infantry, cavalry, and engineers at the rate of four per company. With this device the instructor may give a visual demonstration and thereby convince the soldier of the errors made in aiming.

The device consists of *yoke* A, which by means of the *spring clips* B embraces the small of the stock, the *bracket* C to which the collap-

sible *arms* D are held, and the *eye* E, which is closed by the *shutter* F. The eye is provided with a *stop pin* G, to hold the shutter in an open

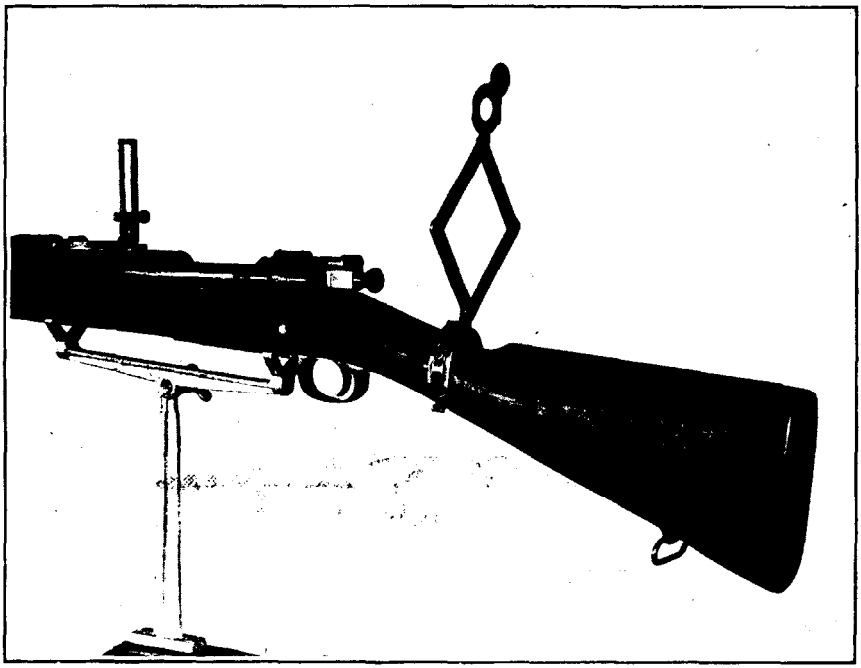

Fig. 153.

position. Tension washers are furnished for the joints to lend stiffness to the mechanism.

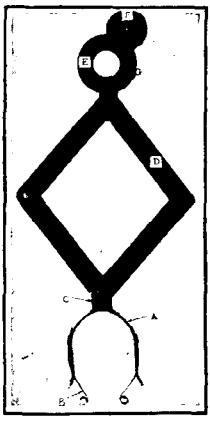

Fig. 154.

To use the device it should be seated firmly on the rifle at the small of the stock. The rifle should then be placed on an improvised rest, or aiming stand. The instructor sights the rifle very accurately, bringing the point of aim, the front sight, rear sight, and the pin hole in the *shutter* F all into line. Then he throws back the shutter of the aiming device so as to expose the large aperture in the *eye* E. He requires the recruit to verify the sight setting.

Then the instructor may change the position of the rifle either slightly or considerably and require the recruit to explain how the line of sight lies with reference to the point of aim, or if very wide of the mark he may direct him to sight the piece and bring the line of sight back on the mark. The recruit uses only the large aperture, which is practically the same as if he did not have the aiming device at all. The instructor then drops the

shutter and shows him conclusively that he has been looking along the right or left side of the front sight, or has failed to look through the middle of the rear sight notch, or has taken a full sight when he said he was taking a half sight, etc

AMMUNITION FOR UNITED STATES RIFLE, CALIBER .30, MODEL OF 1917.

BALL CARTRIDGE, MODEL OF 1906.

The CALIBER .30 BALL CARTRIDGE, Fig. 155, consists of the *case, primer, charge of smokeless powder,* and *bullet.* The case is of cartridge brass. It has a conical body joined to the neck by a sharper cone, called the shoulder. The neck is the seat of the bullet and is very nearly cylindrical. The front end of the case is called the mouth and the rear end the head. The mouth edge of the case is crimped on the bullet, when the cartridge is assembled, in order to keep the bullet secure in the case. The head of case is grooved to provide for extraction of cartridge from the chamber of the rifle and is provided with

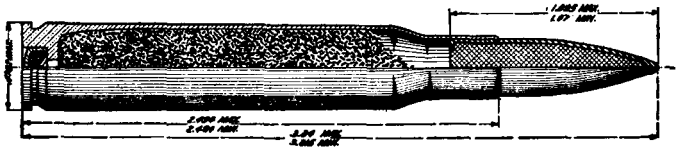

Fig. 155.

a primer pocket and vent. The initials of the place of manufacture, the number of the month, and the year of its fabrication are stamped on the head of case.

The primer consists of the *cup, percussion composition, disk of shellacked paper,* and *anvil.* The cup is of gilding metal and contains 0.46 grain of nonfulminate composition composed of tersulphide of antimony, potassium chlorate, and sulphur. A disk of shellacked paper covers the composition to protect it from moisture and to prevent electrolytic action. The anvil is of brass and is assembled over the paper. After the primer is assembled to the case, a drop of shellac is placed on the head of the primer to make the joint waterproof.

The charge is of pyrocellulose composition very similar to the powders used as propelling charges in field and seacoast guns. The grains are cylindrical, single, perforated, and graphited. The normal charge weighs from 47 to 50 grains, varying with the lot of powder used.

The bullet has a core of lead and tin composition inclosed in a jacket of cupro-nickel. It weighs 150 grains, and the point is much sharper and offers less resistance to the air than that of any previous model in the United States service. The bullet is cannelured to receive the crimp of the case, and the base of the bullet is flat. The neck of the case is shellacked before loading, and a pressure of at least 75 pounds is required to seat the bullet in the case; this, with the addition of the above-mentioned crimp, makes the case waterproof.

The cartridge complete weighs about 395.5 grains, its weight varying slightly with variation in the weight of the powder charge.

Five cartridges are packed in a clip.

The CLIP, Fig. 156, consists of the *body* A and the *spring* B, both of brass. On the exterior of the sides of the body are the *stop lugs* C, which seat the clip in its slots in the receiver of the rifle. The top edges of the slides are folded inward, forming flanges, which, fitting into the grooves in the heads, hold the cartridges in place. The spring is secured to the bottom of the body by two sets of *interlocking lips* E. The spring is provided with narrow *tongues* D, which, when the clip is filled, are pressed into the grooves of the outside cartridges, holding the cartridges securely in the clip. The clip body can be used a number of times, but the springs only once.

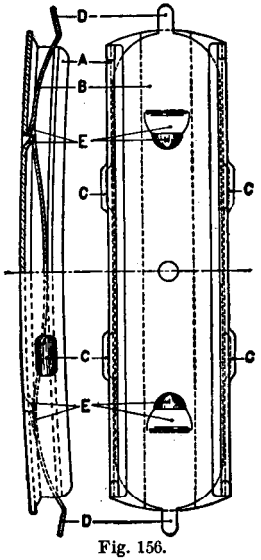

Fig. 156.

The gallery practice and dummy clip is provided with a strong bronze spring without tongues.

Sixty ball cartridges in 12 clips are packed in a bandoleer.

The bandoleer is made of olive-drab cloth and contains six pockets, each holding two clips. The clips can be readily taken out by forcing back the fold of the pocket.

The bandoleer is provided with a shoulder strap of olive-drab webbing by which it is carried over the shoulder, and a safety pin is provided to afford an adjustment of its length to suit the convenience of the soldier. When packed, the bandoleer weighs about 3.88 pounds.

In each bandoleer is placed an identification card showing the number of cartridges, the caliber and model of ammunition and rifle, place and date of manufacture, kind and lot of powder, and muzzle velocity. The shop symbols of loaders, inspectors, and packers are also given. In case of defective ammunition this card should be returned with report.

Twelve hundred cartridges are packed in a terneplate-lined packing box, hermetically sealed. Each box contains 20 bandoleers of 60 cartridges each. The packing box measures 34.5 by 9.5 by 8.25 inches and weighs about 100 pounds when filled.

The lid is held to the box by five brass bolts and can be easily removed without the use of tools. Two wire seals connect the cover with the sides of the box.

When the lid is removed, the lining may be torn open by means of a wire handle on the metal cover.

A metallic packing chest is also in use. It is made of tinned sheet iron painted olive drab. This chest holds 1,200 cartridges packed in 20 bandoleers of 60 cartridges each. It has a terneplate cover under the lid and is hermetically sealed.

The chest measures 8 by 16¼ by 14 inches and weighs about 95 pounds when filled.

A tin seal locks the hasp to the lid. By opening and closing the fold of this seal several times it will break, thus permitting it to be easily withdrawn. When the lid is opened, the cover can be torn off by means of an iron handle attached thereto.

BLANK CARTRIDGE, MODEL OF 1906.

The BLANK CARTRIDGE, model of 1906, Fig. 157, differs from the ball cartridge in the charge of powder and in the bullet and in the fact that the case is tinned. The bullet is of paper, hollow, and contains a charge of 6 grains of "E. C." smokeless powder, which insures the breaking up of the bullet on leaving the bore. This charge is

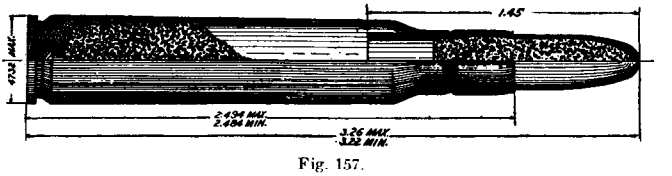

Fig. 157.

retained in the bullet by a drop of shellac. A coating of paraffin on the outside of the bullet prevents the absorption of moisture by the paper. The propelling charge is 10 grains of "E. C." powder.

The cartridge is made 0.1 inch shorter than the ball cartridge. This is a measure of protection against the accidental assembling by the machine of a ball cartridge in a clip of blank ones.

THE BLANK CARTRIDGE, MODEL OF 1909.

In the manufacture of these blank cartridges, Fig. 158, cases are used which have been fired, or which have slight defects, rendering them unsuitable for use in ball cartridges. The charge is 12 grains of "E. C." powder.

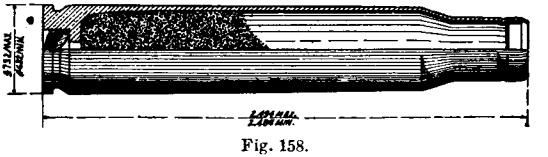

Fig. 158.

The case is closed by means of a paper cup inserted in the mouth of the case and shellacked to render the ammunition waterproof.

DUMMY CARTRIDGE.

The case of the DUMMY CARTRIDGE, Fig. 159, is tinned and provided with six longitudinal corrugations, also three circular holes in the corrugated portion.

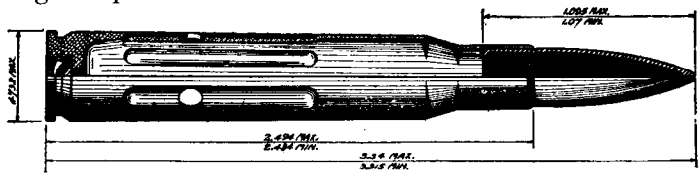

Fig. 159.

The tinning, corrugations, and holes afford unmistakable means for distinguishing the dummy from the ball cartridge, both by sight and touch. The bullet is the same as in the ball cartridge. The dummy primer has cup and anvil, but no percussion composition.

GUARD CARTRIDGE.

This cartridge, Fig. 160, differs from the ball cartridge in the charge of powder and in the fact that second-class bullets having slight

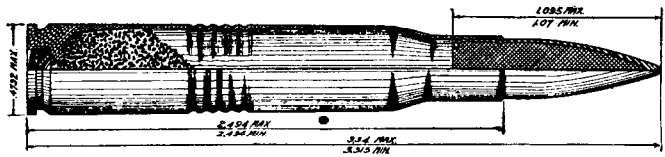

Fig. 160.

imperfections are used. Five cannelures encircle the body of the case at about the middle, affording means for distinguishing it from the ball cartridge by either sight or touch.

The charge, about 9.1 grains bull's-eye powder, or 16.7 grains Du Pont Rifle Smokeless No. 1, gives a muzzle velocity of 1,200 feet per second. This cartridge gives good results at 100 yards and has sufficient accuracy for use at 150 and 200 yards. The range of 100 yards requires a sight elevation of 450 yards, and ranges of 200 and 300 yards require elevations of 650 and 850 yards, respectively.

The guard cartridge, Fig. 161, as now issued, differs from the old issue, Fig. 160, in that six longitudinal corrugations $\frac{3}{16}$ inch long

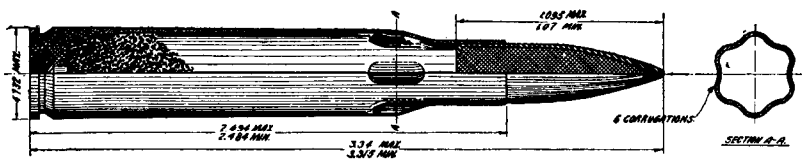

Fig. 161.

start from the shoulder of the case. This affords means of distinguishing this cartridge from the ball cartridge. This cartridge has the same charge of powder, muzzle velocity, etc., as the old issue.

DESCRIPTION OF COLORS AND MARKINGS.

Adopted for the pasteboard and wooden boxes; also the metallic packing chest in which the different kinds of caliber .30 ammunition for the model of 1903 rifle are issued.

Kind of ammunition.	Label on pasteboard box.		Wooden packing box.		Metallic packing chest.	
	Color.	Markings.	Markings.		Markings.	
Ball cartridges, model of 1906.[1]	.....	.....	Red band, 4 inches wide, painted around middle of length and on full length of handles of box.	On both sides of box, the number, kind, model, caliber, kind of powder, and place of manufacture of cartridges; also the model of the rifle; on both ends, the caliber, model, and date, also the lot number, if manufactured under contract; on top, a hand grenade, 5.625 by 2.6875 inches, and "Small-arms ammunition," all in black ink in large figures and letters.	Red band 2 inches wide around middle of length and 3.5 inches length across middle of handle brackets.	On closed end of packing chest, the number, caliber, kind, model of cartridge, model of rifle, kind of powder, and place of manufacture; on lid, the caliber, model of cartridge, and a hand grenade, 5.625 by 2.6875 inches, all in black ink in large figures and letters. Lid marked with month, day, and year the cartridges were loaded, loading-machine number, number of packer, kind of bullet, kind of bandoleer, primer composition, and "Small-arms ammunition" in 0.5-inch figures. Sealing strip with month, day, and year the cartridges were loaded, loading-machine number, number of packer, kind of bullet, kind of bandoleer, and primer composition, with 0.125-inch figures. If manufactured by a contractor, stamp name of contractor and lot number on closed end of packing chest.
Blank cartridges, model of 1906.	Blue....		Blue band, 4 inches wide, painted around box near one end and half of each handle.	On both sides of box, the number, caliber, kind, model, model of rifle, and place of manufacture of cartridges; on both ends of box, the caliber, kind, and model; on cover, a hand grenade, 5.625 by 2.687 ($2\frac{11}{16}$) inches, all in black ink, in large figures and letters; both ends of box marked with month, day, and year the cartridges were loaded with 0.5-inch figures stamped with black ink.		

PRINCIPAL DIMENSIONS AND WEIGHTS OF UNITED STATES RIFLE, CAL. .30, MODEL OF 1917.

DIMENSIONS.

	Inches.
Barrel:	
Diameter of bore	0.30
Exterior diameter at muzzle	0.60
Exterior diameter at breech	1.32
Length of chamber and bore (from face of bolt to muzzle)	26.
Diameter of chamber, rear end	0.4716
Diameter of chamber, front end	0.442
Diameter of neck of chamber, rear end	0.3425
Diameter of neck of chamber, front end	0.3405
Length of body of chamber	1.785
Length of shoulder of chamber	0.16
Length of neck of chamber	0.396
Length of chamber, total	2.341
Rifling:	
Number of grooves, 5.	
Twist, uniform, left hand, one turn in	10.
Width of grooves	0.0936
Width of lands	0.0936
Depth of grooves	0.005
Height of front sight above axis of bore (mean)	1.06
Distance from top of front sight to rear side of leaf, leaf raised	31.76
Stock:	
Length, with butt plate	42.62
Crook, i. e., distance from axis of bore to heel of butt	2.12
Distance from trigger to butt plate	13.5
Length of gun complete	46.3
Sight radius	31.76
Sight radius (battle sight)	31.69

WEIGHTS.

Bayonet	1 lb. 2 oz.
Oiler and thong case	3 oz.
Total weight of arm with oiler and thong case and bayonet	10 lbs. 5 oz.
Total weight of arm with thong case without bayonet	9 lbs. 3 oz.
Weight to compress mainspring	16 to 18 lbs.
Trigger pull (measured at middle of bow of trigger)	4½ to 6½ lbs.

MISCELLANEOUS DATA.

Initial velocity	2,700 ft. per sec.
Powder pressure in chamber, about	51,000 lbs. per sq. in.
Weight of ball cartridge, about	395.5 grains.
Weight of bullet	150 grains.
Weight of powder charge, about	50 grains.

WAR DEPARTMENT,
Office of the Chief of Ordnance,
Washington, January 16, 1918.

OCTOBER 8, 1917.
Revised January 16, 1918.
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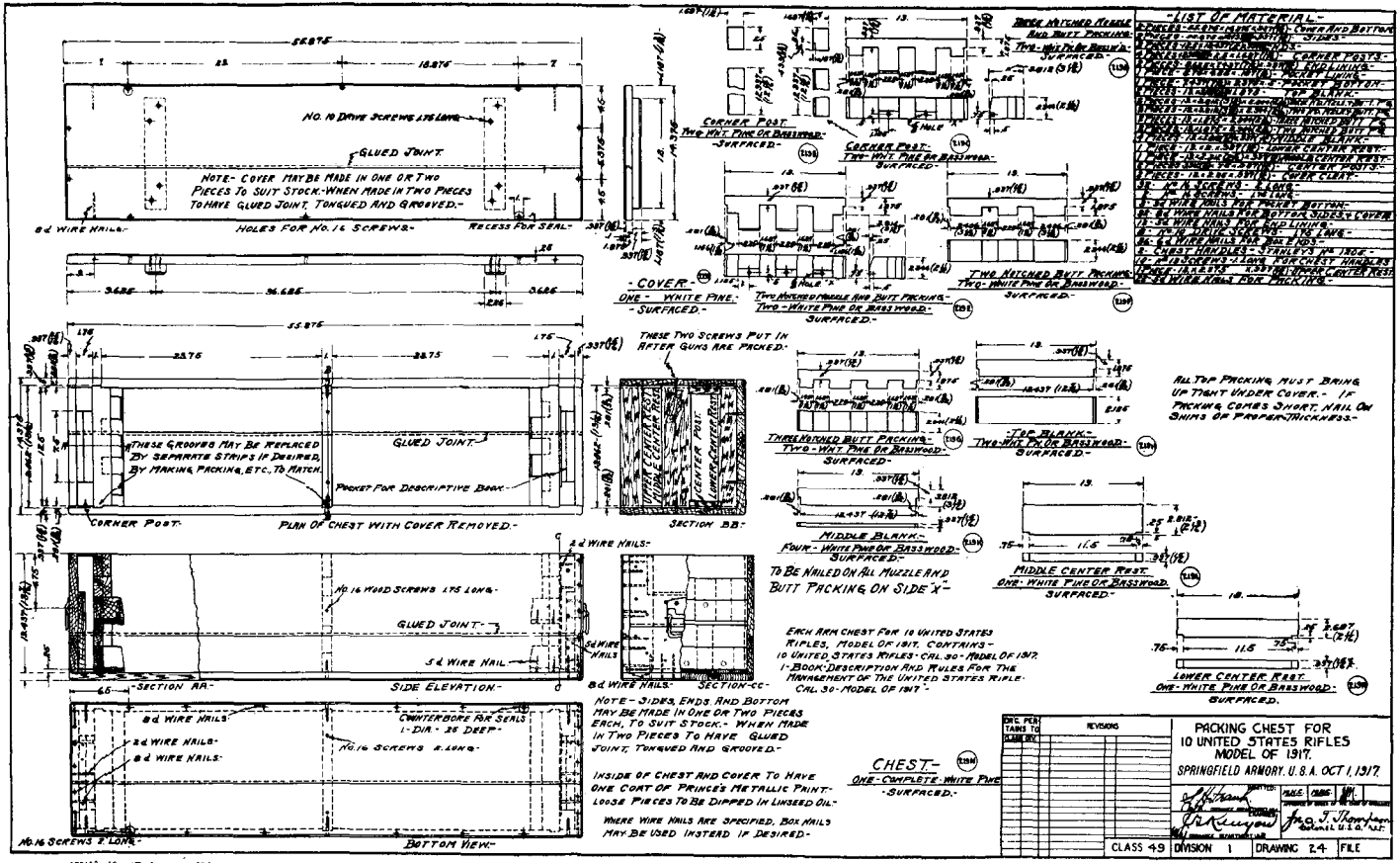

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