

CHAPTER 2

DESCRIPTION AND FUNCTIONING

Section I

GENERAL

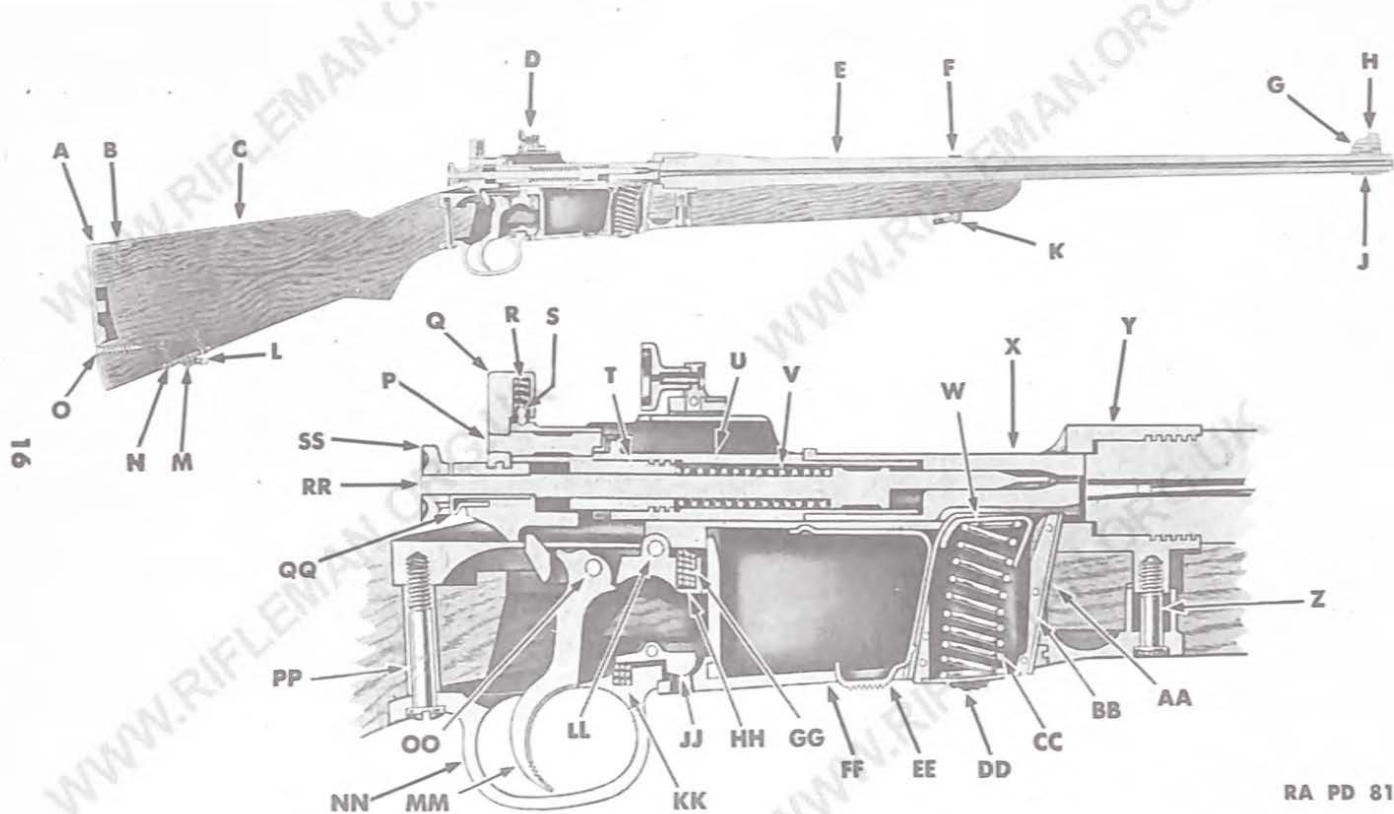
6. GENERAL.

a. For convenience, the parts of the rifles have been listed together in groups and assemblies. A group consists of a number of parts, or parts and assemblies, which function together and are so closely related to each other that they should be considered together. An assembly consists of two or more parts and/or assemblies which are either permanently or semipermanently assembled together and so carried in the Standard Nomenclature List 2 and so stored. An assembly frequently is issued as a unit for replacement purposes.

b. Any of the caliber .22 rifles covered in this manual may be disassembled into five groups of parts and/or assemblies: bolt (and firing mechanism) group; magazine group; rear sight group; barrel and receiver group; and stock group. For convenience and clarity, the description and functioning of each rifle is covered according to these five groups. Where a complete group is carried as an assembly, it is referred to as an assembly.

c. Nomenclature of like parts, assemblies or groups, composing the rifles covered in this manual, vary somewhat. For example, the bolt groups are designated either as groups or assemblies according to how they are carried in the Standard Nomenclature List pertaining to the rifles. The bolt group of the U.S. rifles is termed "bolt with firing mechanism assembly," that of the Winchester Model 75 rifle as "breech bolt assembly," that of the Stevens Model 416-2 rifle as "bolt assembly," that of the Remington Model 513T rifle is not designated as an assembly in the Standard Nomenclature List and is therefore called a "group" in this manual. However the completely assembled bolt of this latter rifle may be issued as a complete assembly. For convenience, such complete bolt assemblies or groups are sometimes referred to in this manual as the "bolt," as in chapters on "Operation," and "Disassembly and Assembly." Likewise the magazine assembly is referred to as the "magazine."

NOTE: At present, there are no organizational spare parts for the commercial rifles issued to the using arms. Such rifles must be sent to an arsenal for other than minor repair.



RA PD 81971

Figure 13 — U.S. Rifle, Cal. .22, M2 — Sectional View

A—PLATE—C3831
B—SCREW—B146873
C—STOCK—D28225
D—LYMAN RECEIVER REAR SIGHT
NO. 48C
E—BARREL—D1816
F—BAND—B8563
G—STUD—B128427
H—SIGHT—A130025
J—STUD—B128426
K—SWIVEL—B8890
L—SWIVEL—A130036
M—PLATE—B128410
N—SCREW—B146873
O—SCREW—B128412

P—SPINDLE—A130028
Q—PIECE—B128409
R—SPRING—B146885
S—PLUNGER—A130012
T—SLEEVE—C45033
U—HANDLE—D28222
V—MAINSRING—B147303
W—FOLLOWER—B8565
X—HEAD—D28223
Y—RECEIVER—D28224
Z—SCREW—B128413
AA— $\left\{ \begin{array}{l} \text{SIDE—D28312} \\ \text{SIDE—D28311} \end{array} \right.$
BB—RIB—C46041
CC—SPRING—B147068

DD—BASE—B8562
EE—SPRING—D28315
FF—PLATE—C4007
GG—SPRING—B146886
HH—SEAR—B128416
JJ—CATCH—A135890
KK—SPRING—B146883
LL—PIN—A130009
MM—TRIGGER—C64032
NN—GUARD—D28221
OO—PIN—A130010
PP—SCREW—B128414
QQ—SPRING—A13484
RR—PIN—C3996
SS—NUT—B8796

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Nomenclature for Figure 13 — U.S. Rifle, Cal. .22, M2 — Sectional View

Section II

U.S. RIFLES, CAL. .22, M1 AND M2

7. GENERAL.

a. The manual operation and mechanical functioning of the M1 and M2 Rifles (fig. 13) are identical and, with the exception of the bolt mechanism and magazine, both rifles are the same. Because of this fact, and because the M1 Bolt is no longer being manufactured, the M2 only is described with the points in which the M1 differs being explained where necessary.

8. BOLT WITH FIRING MECHANISM ASSEMBLY.

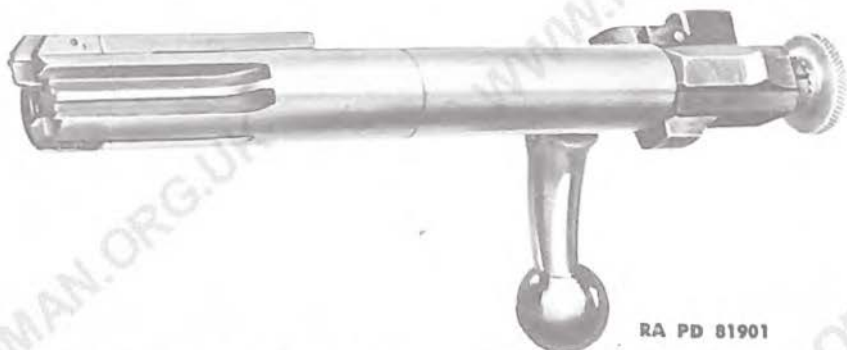
a. The bolt with firing mechanism assembly can be removed from the rifle as a unit (fig. 14). It includes the bolt head assembly, the bolt handle group, and the firing mechanism assembly (fig. 15). For convenience, the firing mechanism assembly is described as two groups: the bolt sleeve group, and the firing pin group.

NOTE: The bolt with firing mechanism assembly of the M1 (fig. 16) includes the bolt head assembly, the bolt handle assembly, and the firing mechanism assembly (fig. 17). However, these assemblies differ from like assemblies of the M2 as explained in the notes pertaining thereto.

b. The Bolt Head Assembly.

(1) The bolt head assembly consists of the bolt head, extractor, ejector, ejector retaining pin, and ejector spring.

(2) The front end of the bolt head has the firing pin hole through which the firing pin passes to strike the cartridge (fig. 18). The front end is also chambered to receive the cartridge rim. Extending back on the bottom of the bolt head are two magazine clearance grooves



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Figure 14 — Bolt With Firing Mechanism Assembly of
U.S. Rifle, Cal. .22, M2

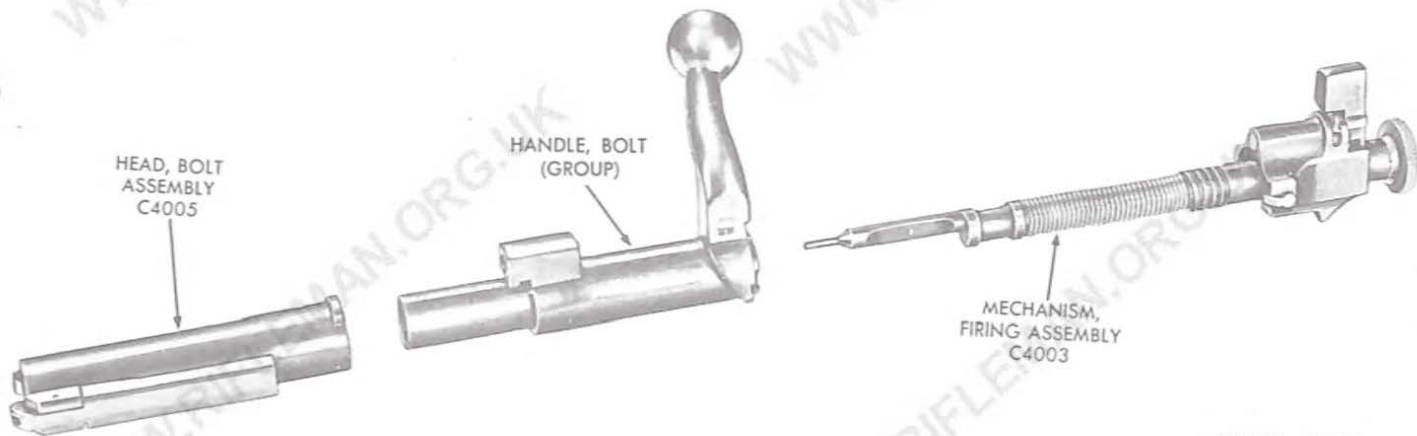
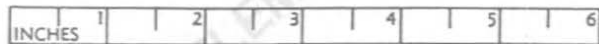
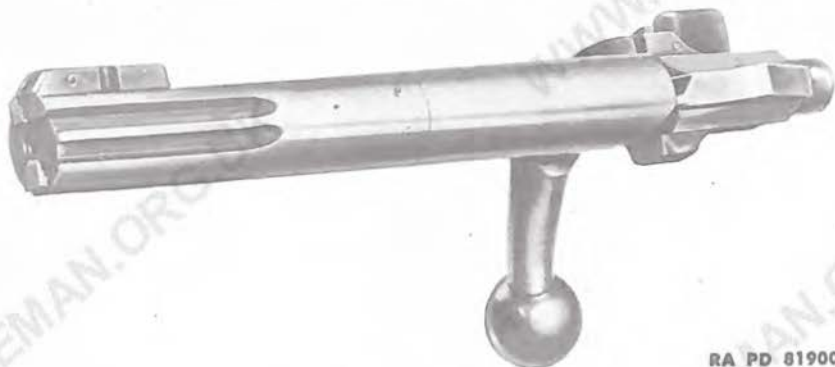


Figure 15 — Bolt Subassemblies of U.S. Rifle, Cal. .22, M2 — Exploded View



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**Figure 16 — Bolt With Firing Mechanism Assembly of
U.S. Rifle, Cal. .22, M1**

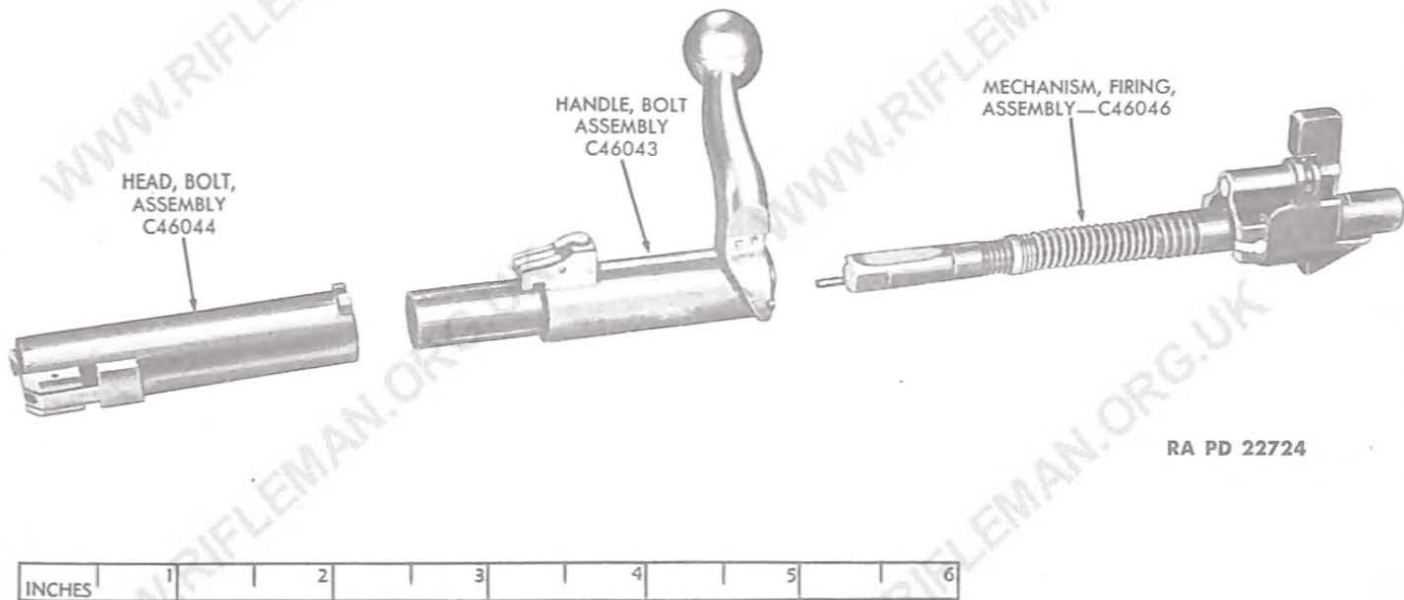
which permit the bolt to clear the sides of the magazine tube. Between the grooves is a lug which serves to push the cartridge forward until it is out of the magazine and received by the chambered front of the bolt head. The bolt head is also slotted on the right side to provide a seat for the extractor.

(3) At the front end of the extractor, there is a hook by which the cartridge case is extracted from the chamber (fig. 19). The tongue just back of the hook rides in a groove in the extractor slot, and the undercut lug seats in an undercut hole in the extractor slot to hold the extractor in the bolt head.

(4) The back portion of the bolt head is bored out to receive the bolt handle and a smaller bore at the top continues to the front of the head to receive the firing pin. On the top back of the bolt head is a latch lug which engages the locking lug located on the bolt handle (fig. 20).

(5) The ejector is mounted by means of the ejector retaining pin on the left front side between two lugs which serve also as a guide for the bolt in the receiver. The ejector spring returns the ejector to position after the cartridge case has been ejected.

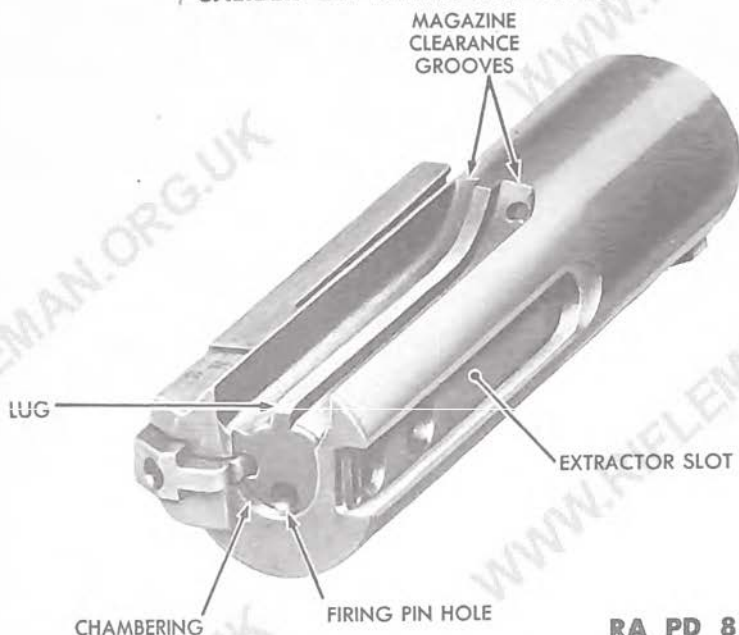
(6) The ejector is operated by the ejector stop group which includes a thumbpiece which is part of the body (fig. 21). The ejector stop is mounted in the left side of the receiver by a spindle and locked in place by a set screw passing through the thumbpiece of the ejector stop. On the back of the ejector stop is a plunger which rides in a groove in the receiver under pressure of the ejector stop spring to retain the ejector stop in either of its two positions. The inside of the ejector stop has a dismounting groove which matches the inside of the receiver, thus opening the passage way for the retraction of the bolt when the stop is turned to its horizontal position.



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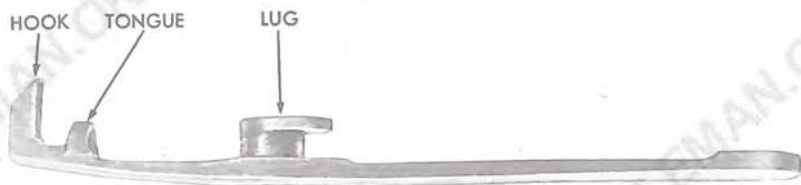
Figure 17 — Bolt Subassemblies of U.S. Rifle, Cal. .22, M1 — Exploded View

CALIBER .22 RIFLES, ALL TYPES



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Figure 18 — Bolt Head Assembly, Extractor Removed, of U.S. Rifle, Cal. .22, M2



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Figure 19 — Extractor of U.S. Rifle, Cal. .22, M2

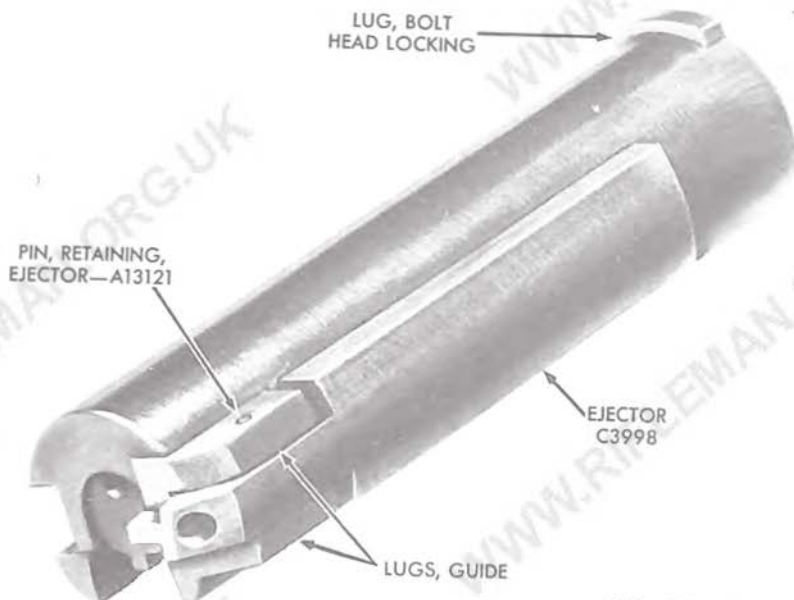
NOTE: The bolt head assembly on the M1 is essentially the same as on the M2, but the ejector is not as long (fig. 22). The M1 Locking Lug is split into two twin lugs to receive the bolt head latch. The extractor is the same except for the dimensions and the contour of the hook, and should never be interchanged with the M2 Extractor.

c. Bolt Handle Group.

(1) The bolt handle group consists of the bolt handle, the head space adjusting screw, and the head space adjusting screw locking plug (fig. 23).

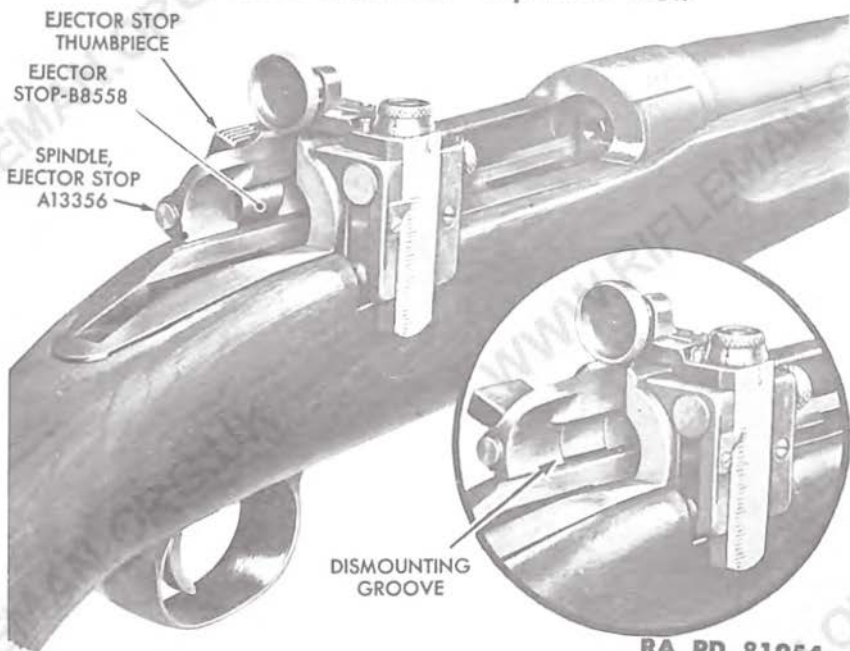
(2) The forward portion of the bolt handle sleeve is reduced in diameter to fit into the bolt head. A locking lug is formed on the outer surface of the sleeve of the bolt handle and extends slightly over the reduced portion. The lug sustains the shock of discharge by

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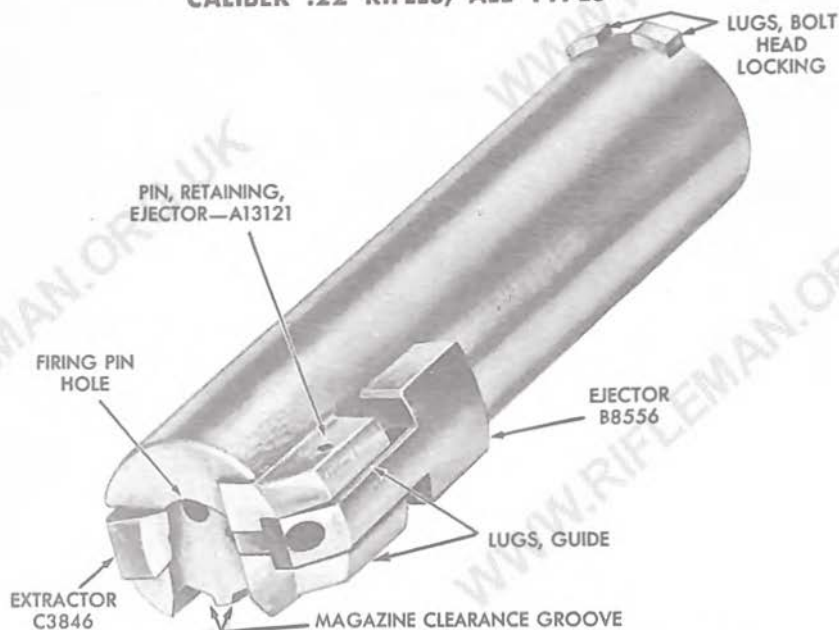
Figure 20 — Bolt Head Assembly of U.S. Rifle, Cal. .22, M2, Extractor Removed — Top Front View



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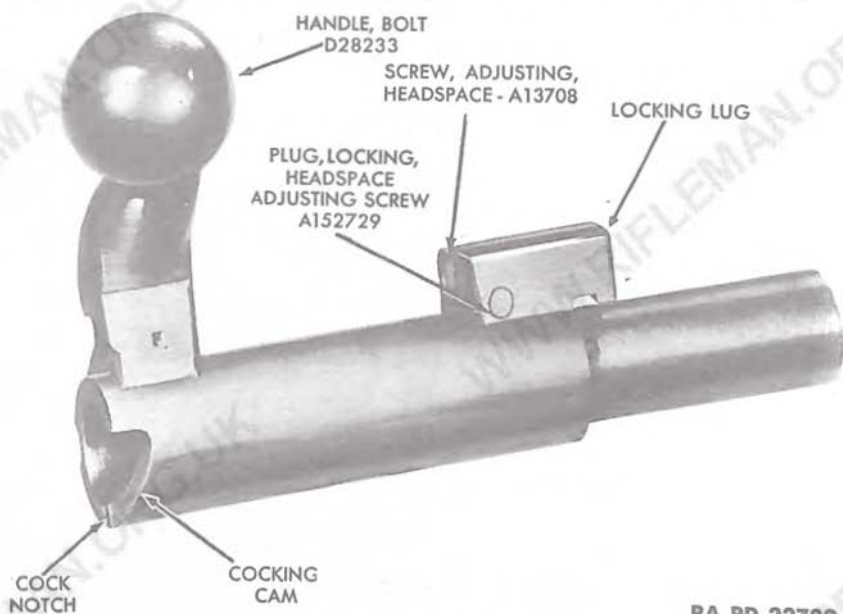
Figure 21 — Receiver Section Showing Ejector Stop on U.S. Rifle, Cal. .22, M2 — Locked and Unlocked Positions

CALIBER .22 RIFLES, ALL TYPES



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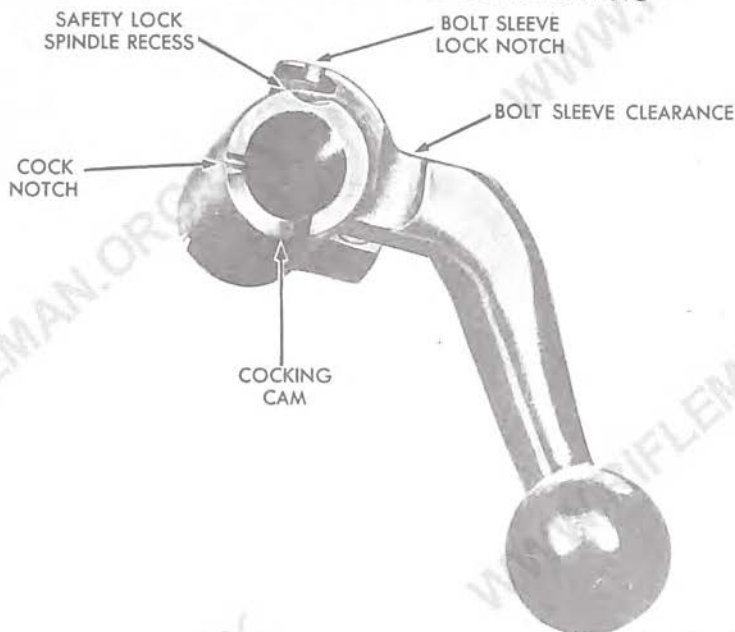
Figure 22 — Bolt Head Assembly of U.S. Rifle, Cal. .22, M1



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Figure 23 — Bolt Handle Group of U.S. Rifle, Cal. .22, M2 — Side View

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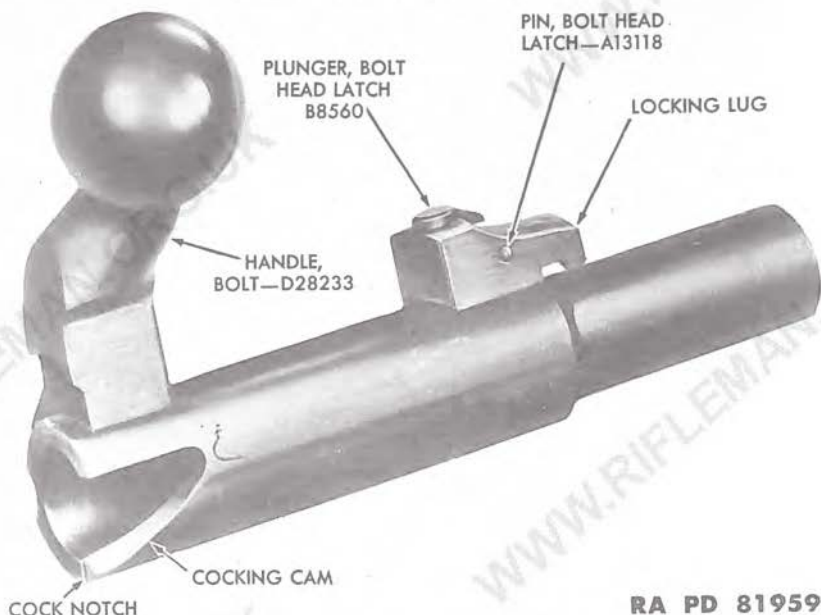
**Figure 24 — Bolt Handle Group of U.S. Rifle, Cal. .22,
M2 — Back View**

engagement with the locking shoulders on the inside of the receiver. The lug is grooved on the under side permitting it to pass over the lug on the rear of the bolt head when the handle is lifted, thus locking the bolt head and handle. This is accomplished because the firing pin hole in the bolt head is off center so that the firing pin and bolt sleeve will not turn in the bolt head. Since the bolt handle is locked to the bolt sleeve when it is raised, it is also locked to the bolt head.

(3) A head space adjusting screw is located lengthwise in the lug. It is locked by a head space adjusting screw locking plug. No adjustment should be made except by qualified ordnance personnel. (On early types of M2 Rifles, the head space adjusting screw was adjusted with a screwdriver and was locked by a set screw in the side of the lug. The hole for the adjusting screw was then plugged to prevent accidental loosening and tampering by unauthorized personnel.)

(4) The back of the bolt handle (fig. 24) is recessed to provide clearance for the bolt sleeve and to act as a stop for the handle. The back end is also machined out to provide a recess for the front of the safety lock spindle when the safety lock is turned. Just above the safety lock spindle recess is the bolt sleeve lock notch in which the bolt sleeve lock seats to lock the sleeve to the handle.

(5) The bottom of the bolt handle is recessed to form the cocking



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Figure 25 — Bolt Handle Assembly of U.S. Rifle, Cal. .22, M1 — Side View

cam in which the nose of the cocking piece is seated when the rifle is not cocked. The cam action forces the firing pin to the rear to cock the rifle when the handle is lifted. A cock notch is located just at the upper end of the cocking cam to receive the cocking piece nose when the rifle is cocked.

(6) The front of the handle proper is cut away to provide the extractor cam which engages the cam on the inner surface of the receiver to force the bolt assembly to the rear when the handle is raised.

(7) The interior of the bolt handle is threaded to receive the bolt sleeve.

NOTE: The M1 Bolt Handle Assembly is essentially the same as the M2 (fig. 25), except that the head space adjusting feature is missing and that the locking lug is replaced by a split locking lug in the center of which is located a bolt head latch, bolt head latch plunger, bolt head latch spring and bolt head latch pin. The latch, latch plunger, and latch spring are mounted in the split in the lug by means of the latch pin. The latch plunger projects above the top of the locking lug; when the bolt handle is raised, the plunger is depressed by contact with the receiver, thus depressing the plunger which pushes the back end of the latch down to raise the front end to allow it to pass over the first of the twin lugs on the bolt head and then seat

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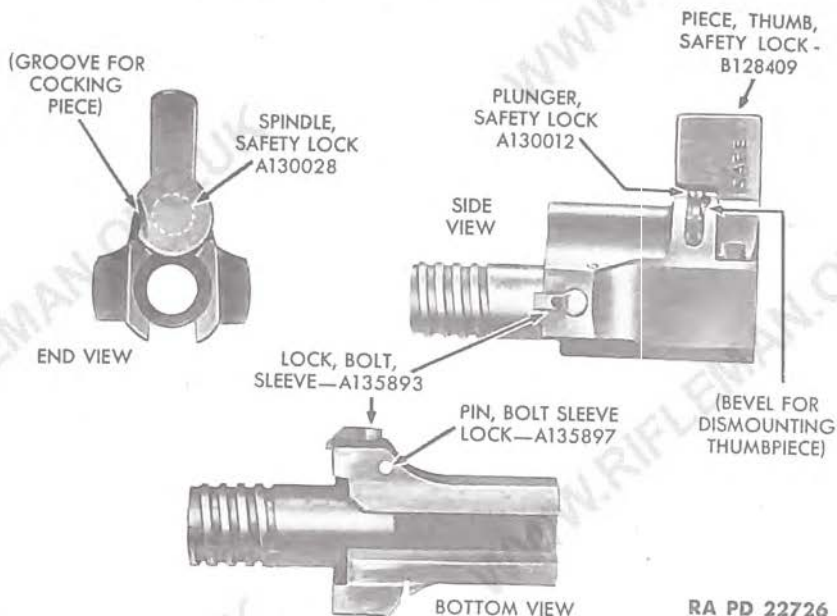


Figure 26 — Bolt Sleeve Group of U.S. Rifle, Cal. .22, M2

between them and lock the head and handle together as the latch spring returns both parts to position.

d. Bolt Sleeve Group.

(1) The bolt sleeve group consists of the bolt sleeve assembly and the safety lock assembly (fig. 26).

(2) The bolt sleeve assembly includes the bolt sleeve, the bolt sleeve lock, the bolt sleeve lock pin, and the bolt sleeve lock spring.

(3) The barrel of the bolt sleeve is threaded to secure the sleeve to the bolt handle. The front of the sleeve is cut away to permit seating over the bolt handle. A cocking piece slot at the bottom of the bolt sleeve provides an opening for the cocking piece.

(4) The bolt sleeve lock with its spring is mounted in a recess in the left side of the bolt sleeve. It locks the bolt sleeve to the bolt handle by entering its notch in the bolt handle. It is designed to prevent accidental turning of the sleeve when the bolt is drawn back.

(5) The safety lock spindle is seated in a hole drilled in the top of the bolt sleeve. There is a groove in the top of the bolt sleeve in which the plunger of the safety lock moves. Three detents are provided in the groove for the three positions of the safety lock. Extending back from the groove is a bevel for dismantling the safety lock from the bolt sleeve.

(6) The safety lock is a permanent assembly. It consists of a safety lock with thumbpiece for turning the safety lock, safety lock

spindle, the safety lock plunger, and the safety lock spring (fig. 26).

(7) The safety lock is mounted to the bolt sleeve by means of the safety lock spindle which extends through a hole in the top of the lock and the sleeve. When the safety lock is in the safe position, the bolt handle is prevented from rotating by contact with the front of the safety lock spindle. The bolt handle clearance on the front of the safety lock spindle permits the bolt handle to clear the spindle in the ready and neutral positions.

(8) The safety lock plunger, assembled in the thumbpiece, projects into its groove in the bolt sleeve under pressure of the plunger spring and prevents any movement of the lock to the rear.

(9) Two cams on the bottom of the thumbpiece form a locking groove between them. When the safety lock is moved from "ready" position to either "neutral" or "safe," the cams pass on each side of the locking shoulder of the cocking piece, thus permitting the locking groove of the safety lock to seat over the locking shoulder of the cocking piece and preventing it from moving when the trigger is pulled. A cocking piece groove on the thumbpiece permits the cocking piece to move when the safety lock is in the "ready" position.

e. Firing Pin Group.

(1) The firing pin group consists of the cocking piece, locking spring, firing pin, firing pin nut, and main spring (fig. 27).

(2) The front of the firing pin is a striker. Back of the striker is a shoulder against which the main spring seats. The rear end of the firing pin rod is reduced in diameter to take the cocking piece and is threaded to receive the firing pin nut and locking spring. The inside of the nut is serrated to lock against the locking spring located in a notch in the back end of the cocking piece. This prevents the firing pin nut from being jarred loose by the vibration of discharge.

(3) The cocking piece has two grooves cut in its top to form a locking shoulder between them over which the cocking piece groove of the safety lock slides (subpar. d (6), above). The nose of the cocking piece rests against the lower edge of the cocking cam of the bolt handle when the gun is uncocked. When the gun is being cocked, the cocking cam of the cocking piece moves upward in the cocking cam of the bolt handle until it seats in the cock notch of the bolt handle which prevents it from accidentally returning to the uncocked position. At the bottom of the cocking piece is a sear notch which engages the sear nose when the gun is being cocked, thus keeping the cocking piece and the firing pin stationary while the bolt moves forward when the handle is returned to the closed position.

NOTE: The firing mechanism assembly of the M1 Rifle is different from the M2. The striker assembly consists of the firing pin head and the striker (fig. 28). These are permanently assembled during manufacture. The firing pin head is slotted to provide a clear

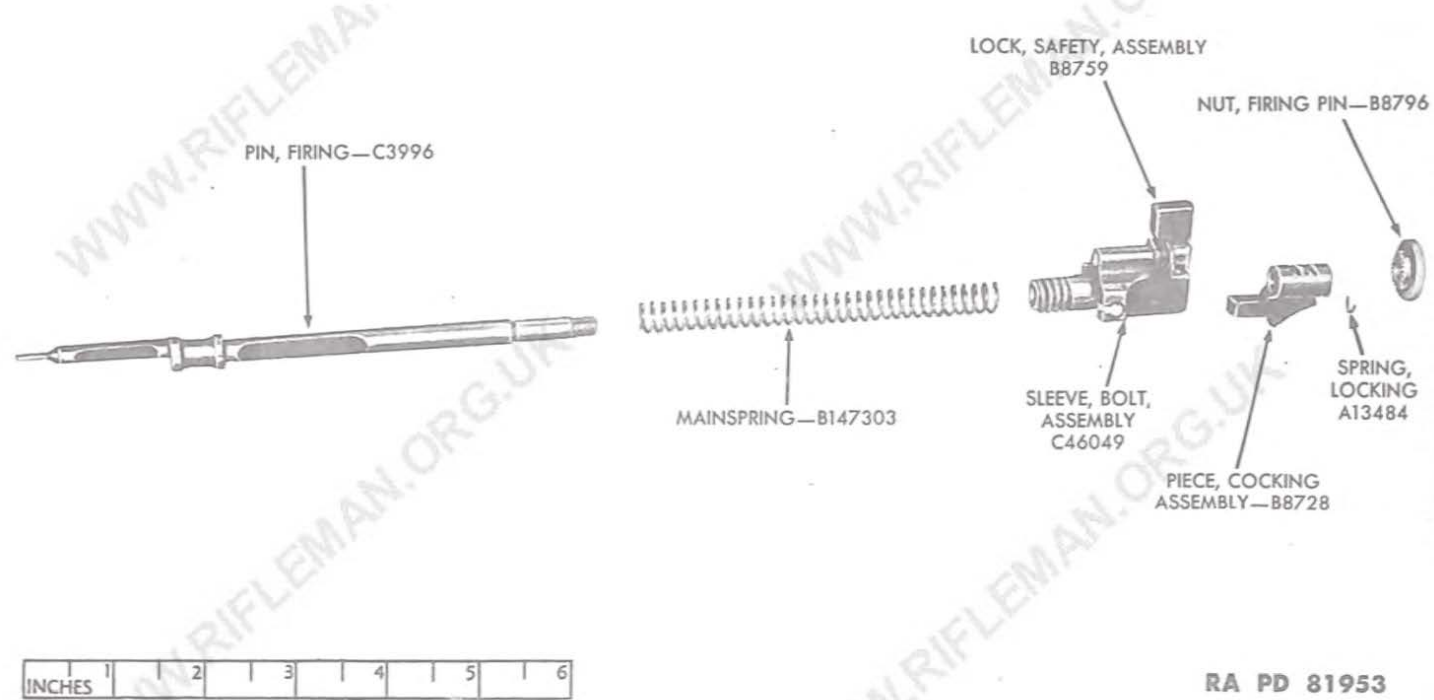
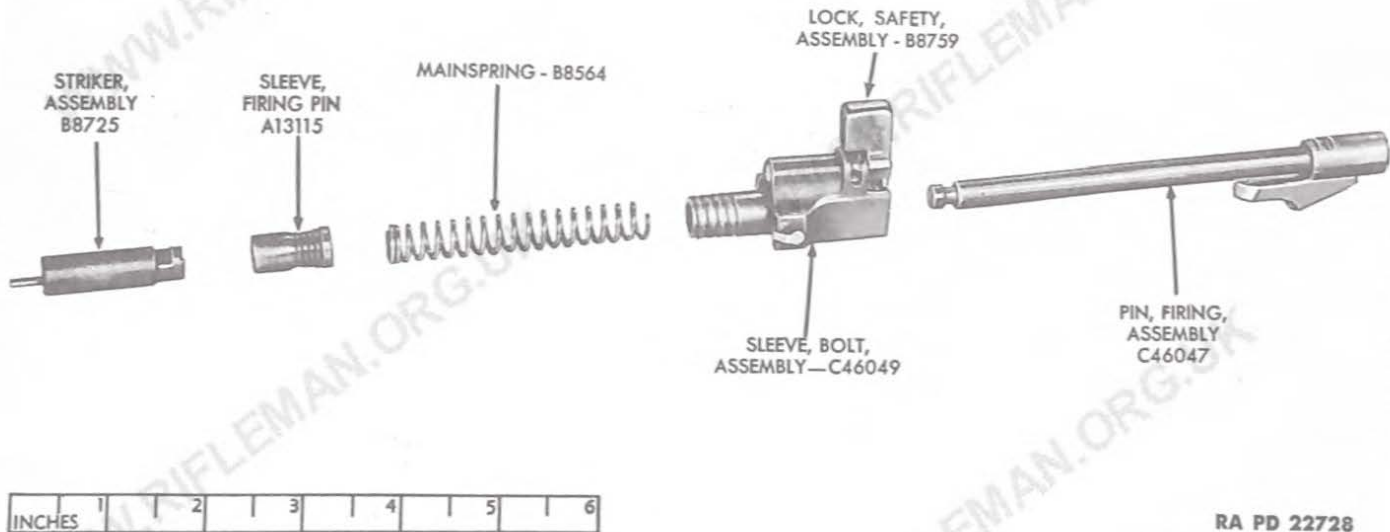
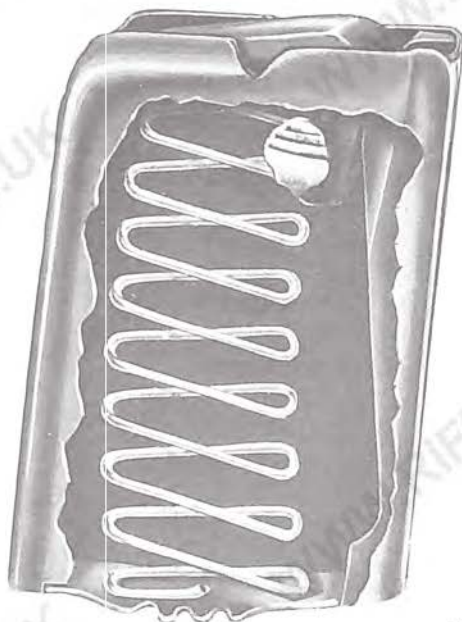


Figure 27 — Firing Mechanism Assembly of U.S. Rifle, Cal. .22, M2 — Exploded View



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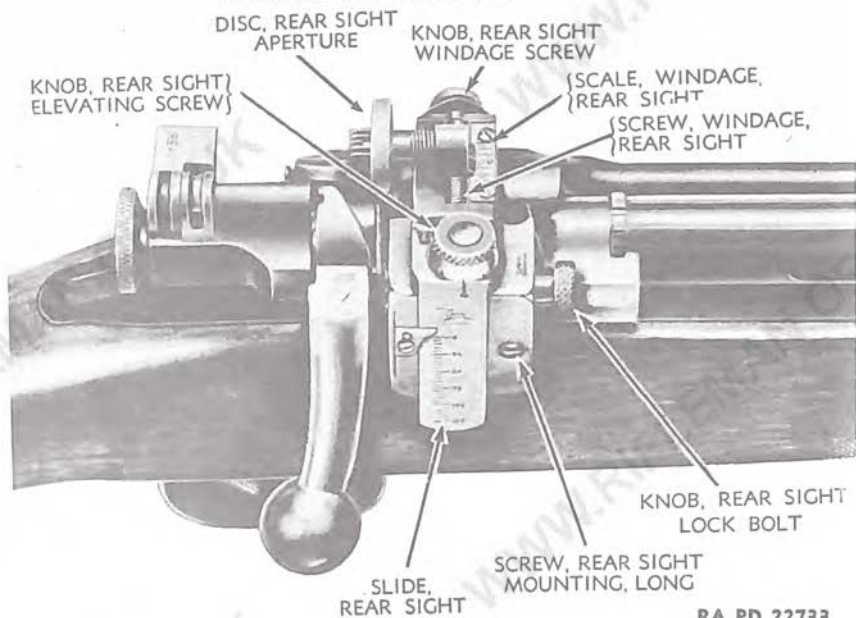
Figure 29 — Magazine Assembly of U.S. Rifle, Cal. .22, M2 — Cutaway View

ance for the ejector. The striker assembly is secured to the firing pin rod by means of a joint hole. The firing pin sleeve fits over the rear end of the firing pin head and the front end of the firing pin rod covering the joint hole and preventing accidental separation of the firing pin head and firing pin rod. Its rear end forms the front bearing for the mainspring while the back end of the mainspring seats against the bolt sleeve. The firing pin assembly consists of the firing pin rod and the cocking piece. The rod is screwed to the cocking piece and riveted over in assembly. The front of the firing pin rod consists of a neck and head which fit over the joint hole of the striker, being held in place by the action of the mainspring against the firing pin sleeve which slides over the end of the striker. The cocking piece has two locking grooves cut in its top to form a locking shoulder over which the cocking piece groove of the safety lock slides.

9. MAGAZINE ASSEMBLY.

a. The magazines of the M2 and the M1 Rifles appear the same but are not interchangeable and *must* be used with their corresponding bolts. Complete units of both bolt and magazine must be used together. The magazine is inserted through the floor plate and is retained in place by the magazine retaining spring which seats in the bottom of the receiver against the magazine (par. 11 b).

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RA PD 22733

Figure 30 — Rear Sight Assembly Mounted on U.S. Rifle, Cal. .22, M2 — Right Top View

b. The magazine assembly includes the magazine tube, the magazine base, magazine spring, and magazine follower (fig. 29).

c. The magazine tube is a permanent assembly and no attempt should ever be made to take it apart.

d. A serrated thumbpiece on the follower extends through a slot in the side of the magazine tube and is used to compress the magazine spring when loading the magazine.

e. The magazine base fits in two slots in the bottom of the tube.

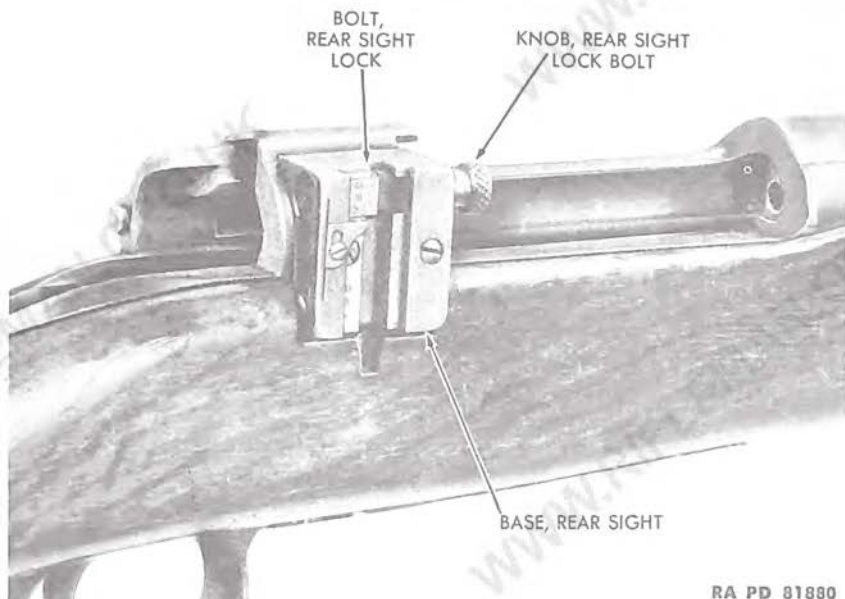
f. The magazine spring maintains a pressure on the magazine follower, forcing the cartridge to the top of the magazine where lips on the tube retain it until it is moved forward to a point where a slot in each lip permits the cartridge rim to enter and the cartridge to leave the magazine.

10. REAR SIGHT GROUP.

a. A Lyman No. 48C sight (assembly) is mounted on the receiver bridge (fig. 30) by means of two mounting screws, one long and one short. The short screw is located under the elevating slide.

b. The rear sight base is slotted to take the elevating slide, and drilled longitudinally at the top for the rear sight lock bolt (fig. 31). The bolt and base are grooved in the center to take the rear sight

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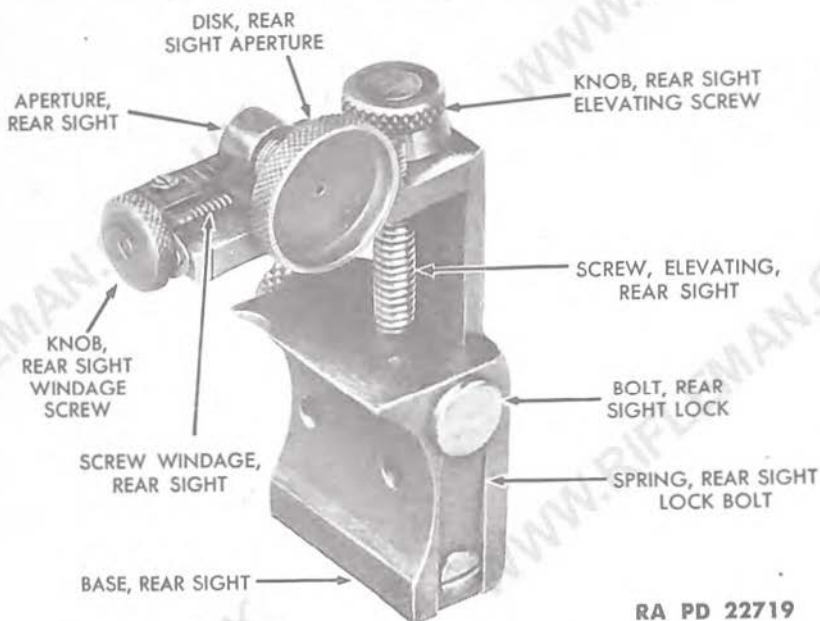
Figure 31 — Rear Sight Base Mounted on U.S. Rifle, Cal. .22, M2

elevating screw. The bolt is slotted at the left end to hold the flat rear sight lock bolt spring which is attached at the bottom of the base with a screw. The left side of the grooved portion of the bolt is threaded to correspond with the threads of the elevating screw. These threads are held in tension against the elevating screw by the spring permitting the elevating screw to be turned up or down in the threads. The rear sight lock bolt knob screws on the right side of the rear sight lock bolt and is held by the rear sight lock bolt knob set screw. This permits the rear sight lock bolt knob to be unscrewed part way when pressure against the knob releases the rear sight elevating screw from the threads of the lock bolt allowing the slide to be moved up. The rear sight pointer is screwed on the back side of the elevating base.

c. The elevating slide is graduated and indexed, and provided with micrometer adjustment by means of the knurled knob located at its top. The rear sight pointer is screwed to the base to the left of the elevating slide. The screw hole is elongated to provide for adjustment.

d. The elevating slide is an inverted L-shape. Its top extension is slotted in the center for the rear sight windage screw at the end of which is the knurled rear sight windage knob. The rear sight aperture is assembled on the rear sight windage screw and is threaded to remove when the rear sight windage screw knob is turned. The rear sight aperture disk is screwed into the back of the aperture (fig. 32). The rear sight windage scale is screwed to the top piece of the

CALIBER .22 RIFLES, ALL TYPES



RA PD 22719

Figure 32 — Rear Sight Assembly of U.S. Rifle, Cal. .22, M2 — Left Rear View

elevating slide directly in front of the aperture. The screw holes of the windage scale are elongated to provide for adjustment.

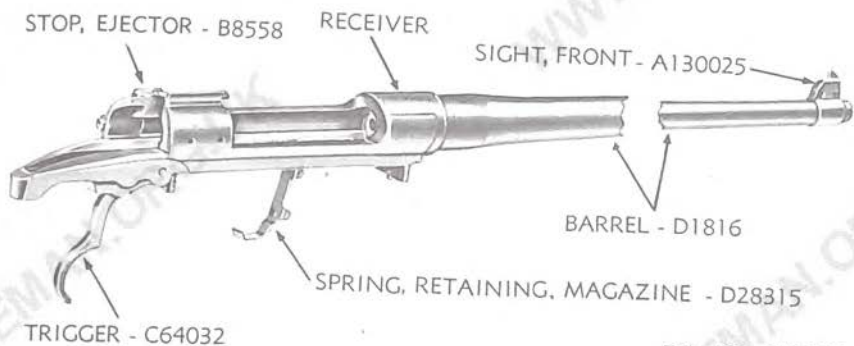
11. BARREL AND RECEIVER GROUP.

a. The barrel and receiver assembly, composed of the barrel assembly and receiver, of the M2 and M1 Rifles are identical with the exception of the identification markings on the upper front surface of the receiver. The barrel and receiver assembly are a permanent assembly and are not to be separated. The barrel and receiver group is composed of the barrel and receiver assembly, the front sight group, the trigger mechanism group, and the magazine retaining spring (fig. 33).

b. Barrel Assembly.

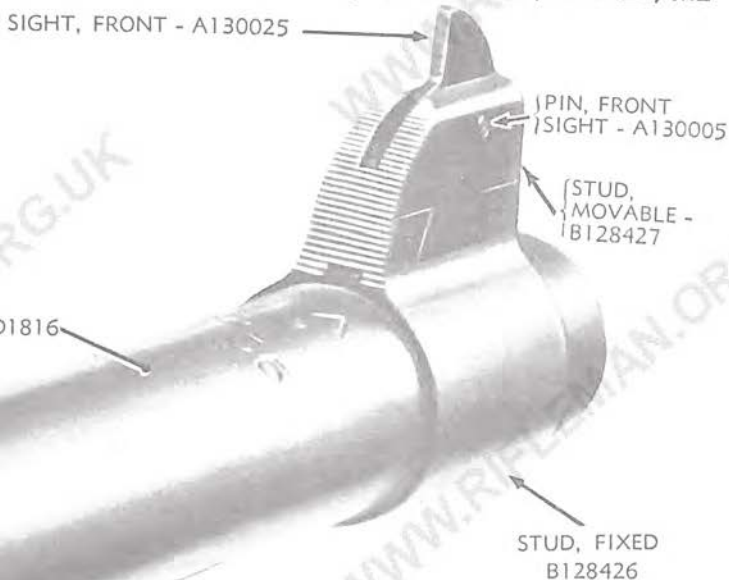
(1) The barrel assembly consists of the barrel, fixed stud, and the fixed stud pin. The barrel is 24 inches long and the rifling consists of four plain grooves 0.0025 inch deep. The twist is uniform right hand, one turn in 16 inches. The muzzle is rounded to protect the rifling, and the tenon at the rear is threaded for the purpose of securing the receiver to the barrel. The breech of the barrel is recessed to receive the ends of the ejector and extractor. On the top in the rear of the fixed stud are stamped the ordnance escutcheon, the initials of the place of manufacture, and the month year of manu-

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Figure 33 — Barrel and Receiver Group of U.S. Rifle, Cal. .22, M2



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Figure 34 — Front Sight Group of U.S. Rifle, Cal. .22, M2

facture. On the upper left hand side, directly in front of the tenon threads is stamped "Long rifle Cart'ge only."

(2) The fixed stud, to which is assembled the front sight group, is prevented from moving laterally by a slot which bears on a lug on the upper side of the barrel. The fixed stud pin enters a hole in the fixed stud and a slight recess on the top of the barrel, preventing longitudinal displacement of the stud.



RA PD 22714

Figure 35 – Receiver Section of U.S. Rifle, Cal. .22, M2 – Bolt Removed – Top View

c. Front Sight Group. The moveable stud of the front sight group (fig. 34) fits into the undercut slot in the fixed stud. The front sight fits in a slot in the moveable stud and is held in place with a tapered pin both ends of which are upset to prevent accidental removal. The rear face of both the fixed stud and the moveable stud are serrated on the back to prevent any reflection of light from the surface interfering with the aiming of the rifle.

d. Receiver. The receiver (fig. 35) is machined to receive the bolt and is open at the forward portion for the ejection of cartridge cases. The rear portion is bridged; the front surface of the bridge forming a locking shoulder and cam for the locking lug on the bolt handle (par. 8 c). Two tapped holes in the bridge of the receiver serve as a mounting for the rear sight assembly. A cam on the rear inside of the bridge of the receiver acts to start the initial backward and final forward movement of the bolt (par. 13). A rectangular groove extends the full length of the receiver on the left side. This groove serves as a guideway for the ejector lugs, and prevents rotation of the bolt head. An extension to the rear of the receiver is tapped for the rear guard screw. The front end of the receiver, which seats in the stock, is tapped for the front guard screw. An oblong hole is provided in the bottom of the receiver for the magazine. Another slot is provided for the sear. The ejector stop is mounted in a slot in the left back of the receiver.

e. Trigger Mechanism Group. The trigger mechanism (fig. 36) includes the sear, sear pin, trigger, and trigger pin. The sear is pivoted on a pin between the lugs on the receiver and the trigger pivots in a slot in the sear. The sear spring is seated in a seat in the forward end of the sear and bears against the receiver bottom. The

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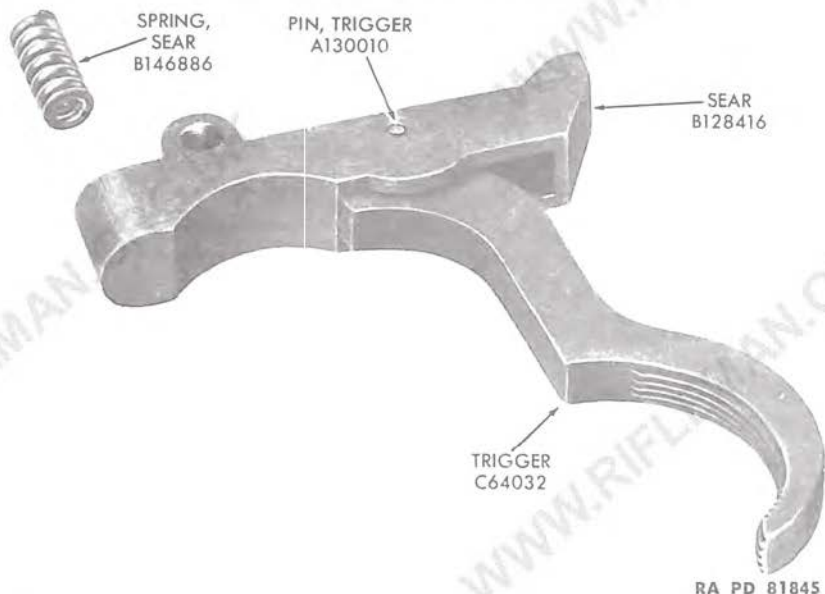


Figure 36 — Sear and Trigger Group of U.S. Rifle, Cal. .22, M2

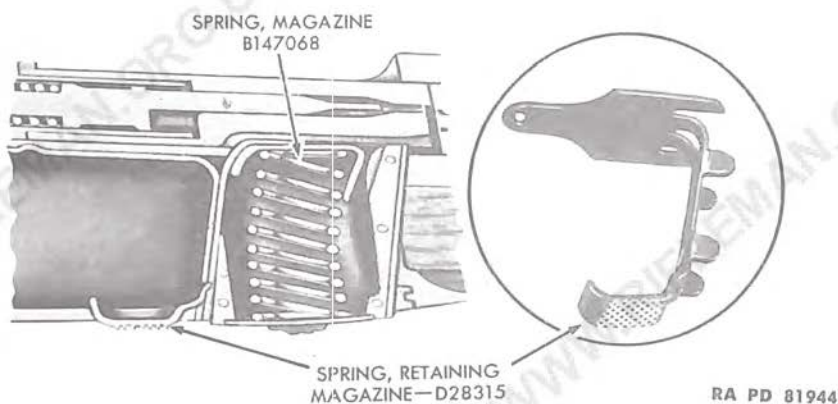
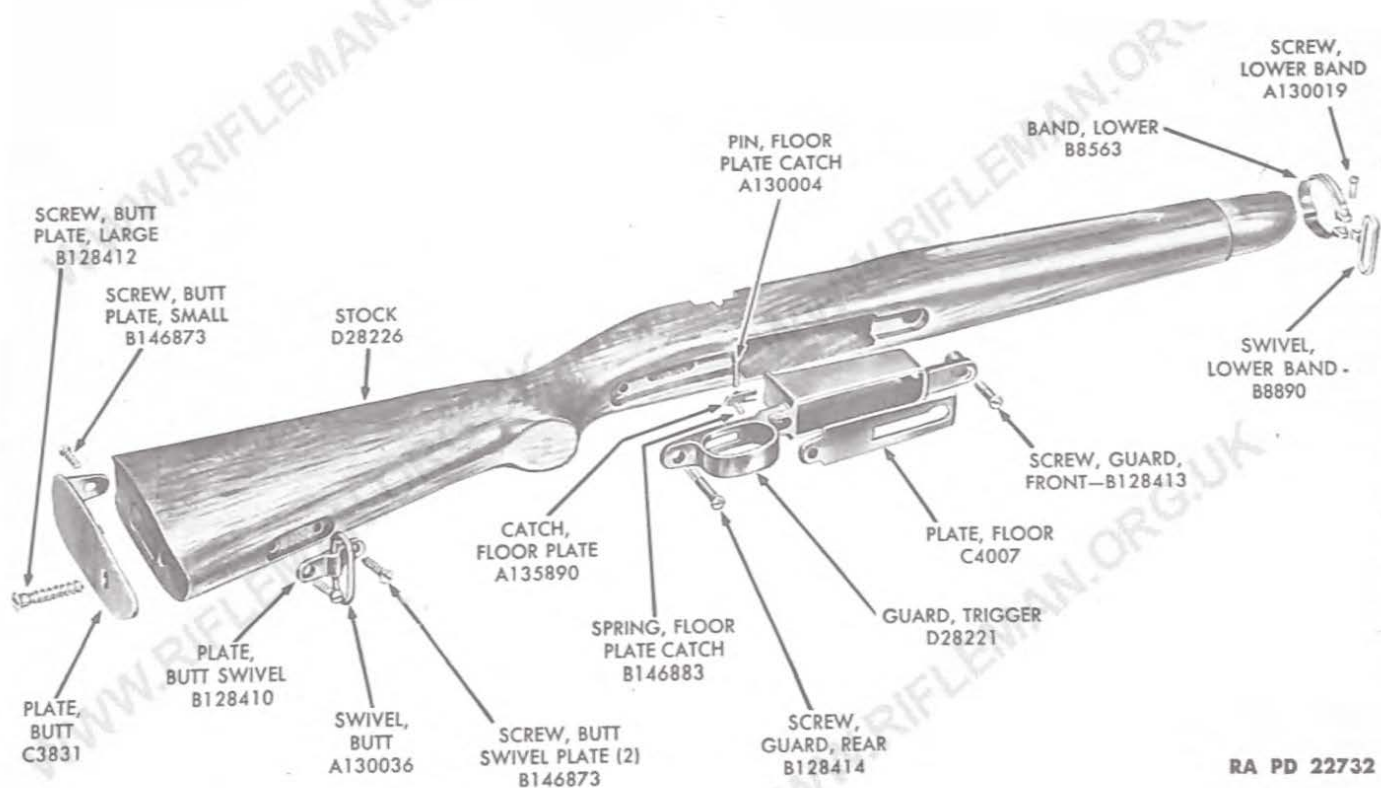


Figure 37 — Magazine Retaining Spring of U.S. Rifle, Cal. .22, M2 — Showing Position When Assembled

sear nose extends through the bottom of the receiver in the path of the sear notch of the cocking piece.

f. Magazine Retaining Spring. The magazine retaining spring is formed with a flat base which fits into grooves in the receiver (fig. 37). A detent on the end of the base engages a depression in the receiver and retains it in position. Lugs on the sides of the spring act as guides for the magazine and a shoulder is provided for engage-



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Figure 38 — Stock Group of U.S. Rifle, Cal. .22, M2 — Exploded View

DESCRIPTION AND FUNCTIONING

ment with the retaining recess in the magazine. The lower end of the retaining spring is bent backward. The outer surface is serrated and extends slightly beyond the floor plate. Pressure on this serrated portion of the spring releases the magazine.

12. STOCK GROUP.

a. The stock group includes the stock assembly, butt plate, floor plate, trigger guard group, lower band, lower band swivel, and butt swivel assembly (fig. 38).

b. The stock is cut out at the top for the barrel, receiver, and rear sight. A shoulder is cut near the forward end as a seat for the lower band, and the two projecting ends of a pin set in the stock hold the band in position. Grasping grooves are cut in the front sides of the stock. The top of the butt plate seat is mortised into the back of the butt. The bed of the stock is mortised to receive the magazine, floor plate, trigger-sear, and trigger guard groups.

c. The guard screw bushing fits tightly in a hole in the stock between the receiver and the rear tang of the trigger guard and serves to prevent the stock from being crushed when the guard screw is tightened.

d. The butt plate is attached to the rear of the stock by two screws.

e. The butt swivel assembly includes the butt swivel plate, the butt swivel, and the butt swivel pin. The butt swivel pin retains the butt swivel in place in the plate and two screws retain the butt swivel plate to the stock.

f. The floor plate fits into its mortise in the bottom of the stock (fig. 38). The tenon of the floor plate fits into a groove at the front end of the trigger guard and with the assistance of the floor plate catch retains the floor plate securely in its place at the bottom of the trigger guard. The lug of the floor plate is slotted to receive the floor plate catch, and the lug has a tenon on its front end which fits into a slot in the trigger guard. Directly in back of the lug is a hole through which the floor plate catch projects. The magazine spring and magazine project through openings provided in the floor plate.

g. The trigger guard is set flush in the bottom of the stock and is secured in place by the two guard screws engaging drilled and threaded lugs in the receiver.

h. The floor plate catch is secured to the trigger guard by means of the floor plate catch pin. A floor plate catch spring, under the catch, maintains a tension on the catch for the retention of the floor plate.

i. The lower band is formed to the contours of the stock and barrel and is positioned on the stock against the shoulder provided for it. The front or upper end of the lower band is designated by the stamped letter "U," which must be assembled with the open end

facing the muzzle. The band is split at the bottom, the ends being formed into ears which are machined and threaded for the lower band screw. The swivel fits between the ears of the band.

13. FUNCTIONING.

a. When the bolt handle is raised, the bolt head is kept from rotating by its engagement with the ejector slot in the receiver, and the bolt sleeve is kept from turning by the cocking piece which seats in its slot in the sleeve and a slot in the receiver.

b. The rotation of the handle engages the locking lug with the lug on the bolt head, and causes the cocking cam on the rear of the handle to force the cocking piece backward until the cocking piece nose seats in its cock notch on the handle. The rearward movement of the cocking piece also retracts the firing pin to which it is attached, thus compressing the mainspring.

c. During the latter part of the handle movement, the sleeve lock enters its notch in the bolt handle and the extraction cam on the bolt handle engages a cam on the inner surface of the receiver, forcing the bolt head, handle, and sleeve to the rear for about one-eighth of an inch. This action brings the bolt back far enough so that the bolt sleeve latch plunger is released, allowing the lock to lock the bolt handle and sleeve together. At the same time, the discharged cartridge case is loosened from the chamber. The lift of the handle is stopped by contact with the receiver.

NOTE: On the M1, the bolt head latch plunger is depressed as it hits the bridge of the receiver when the handle is raised. This action lowers the back end of the bolt head latch and raises the front end permitting it to pass over the right-hand lug of the bolt head. When the bolt is retracted and the bolt head latch passes out from the rear of the receiver bridge, the latch spring returns the plunger and latch to position, thus seating the latch between the two twin lugs on the bolt head and locking the bolt head and handle together.

d. As the bolt is retracted, it carries the discharged cartridge case back with it, since the rim of the case is held by the hook of the extractor. Near the limit of retraction, the ejector strikes the ejector stop. As the bolt continues its rearward movement, the ejector is held stationary, so pushing the cartridge case out from under the hook of the extractor and ejecting it from the rifle to the right. The engagement of the ejector with the ejector stop prevents full withdrawal of the bolt from the receiver. The bolt handle is prevented from turning by the eccentric bearing of the firing pin in the bolt head.

e. As the bolt uncovers the magazine on its retraction, the magazine spring and follower raises a cartridge partially out of the magazine until the rim is retained between the lips formed on the walls and the cartridge is held in an inclined position with the bullet extending

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facing the muzzle. The band is split at the bottom, the ends being formed into ears which are machined and threaded for the lower band screw. The swivel fits between the ears of the band.

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a. When the bolt handle is raised, the bolt head is kept from rotating by its engagement with the ejector slot in the receiver, and the bolt sleeve is kept from turning by the cocking piece which seats in its slot in the sleeve and a slot in the receiver.

b. The rotation of the handle engages the locking lug with the lug on the bolt head, and causes the cocking cam on the rear of the handle to force the cocking piece backward until the cocking piece nose seats in its cock notch on the handle. The rearward movement of the cocking piece also retracts the firing pin to which it is attached, thus compressing the mainspring.

c. During the latter part of the handle movement, the sleeve lock enters its notch in the bolt handle and the extraction cam on the bolt handle engages a cam on the inner surface of the receiver, forcing the bolt head, handle, and sleeve to the rear for about one-eighth of an inch. This action brings the bolt back far enough so that the bolt sleeve latch plunger is released, allowing the lock to lock the bolt handle and sleeve together. At the same time, the discharged cartridge case is loosened from the chamber. The lift of the handle is stopped by contact with the receiver.

NOTE: On the M1, the bolt head latch plunger is depressed as it hits the bridge of the receiver when the handle is raised. This action lowers the back end of the bolt head latch and raises the front end permitting it to pass over the right-hand lug of the bolt head. When the bolt is retracted and the bolt head latch passes out from the rear of the receiver bridge, the latch spring returns the plunger and latch to position, thus seating the latch between the two twin lugs on the bolt head and locking the bolt head and handle together.

d. As the bolt is retracted, it carries the discharged cartridge case back with it, since the rim of the case is held by the hook of the extractor. Near the limit of retraction, the ejector strikes the ejector stop. As the bolt continues its rearward movement, the ejector is held stationary, so pushing the cartridge case out from under the hook of the extractor and ejecting it from the rifle to the right. The engagement of the ejector with the ejector stop prevents full withdrawal of the bolt from the receiver. The bolt handle is prevented from turning by the eccentric bearing of the firing pin in the bolt head.

e. As the bolt uncovers the magazine on its retraction, the magazine spring and follower raises a cartridge partially out of the magazine until the rim is retained between the lips formed on the walls and the cartridge is held in an inclined position with the bullet extending

DESCRIPTION AND FUNCTIONING

up and out of the magazine. When the bolt is pushed forward, the lug on the bottom of the bolt head pushes the cartridge forward until the rim is released at the end of the magazine lips and forced up under pressure of the magazine spring into the recess in the bolt head face and under the extractor. Further closing of the bolt pushes the cartridge into the firing chamber of the barrel.

f. As the bolt sleeve contacts the back of the receiver, the bolt sleeve lock plunger is depressed, thus unlocking the bolt sleeve from the handle and permitting the handle to be turned down. At the same time, the lug of the cocking piece engages the sear in the bottom of the receiver holding the sear and firing pin stationary. As the handle is turned downward, the bolt assembly continues its forward movement as the cam on the locking lug bears against the locking shoulder in the receiver. The rifle is now cocked and ready to fire.

NOTE: On the M1 Rifle, as the bolt head latch passes the rear of the receiver bridge, the latch plunger is depressed. This action lowers the back end of the bolt head latch and raises the front end unlocking the bolt handle from the bolt head, thus permitting the handle to be turned down.

g. As the finger piece of the trigger is drawn to the rear, its contact with the receiver is transferred from the normal bearing surface on the trigger to the trigger heel, which gives a creep to the trigger. On this preliminary pull, the trigger pivots on its pin, the bearing engaging the receiver and partially rotating the sear around its pin, slightly depressing the sear nose. The contact of the heel completes the preliminary pull. Further pressure on the trigger releases the sear nose from the cocking piece and the firing pin is driven forward by the mainspring to strike the cartridge.

NOTE: In firing, unless the bolt handle is turned fully down, the cam on the cocking piece will strike the cocking cam on the bolt, and the energy of the mainspring will be expended in closing the bolt instead of on the cartridge head. This prevents the firing of a cartridge before the bolt is closed.
