FN FAL
Light Automatic Rifle
Cal. 7.62x51mm
Complete User and [Dis]Assembly Guide from IMBEL.
Scanned and compiled by NiKKKY.

FOREWORD

The IMBEL Light Automatic Rifle, 7.62 mm, is an internationally accepted weapon because of its extraordinary characteristics which have been proved under the most severe conditions.

This weapon has been designed and developed to provide the soldier with an, up to now, unequalled weapon with the following most important features:

— Easy handling,
— Possibility to deliver instantly a very dense aimed fire,
— Easy stripping in the field,
— Perfect safety of functioning.

The objective of this manual is to make the soldier conversant with his new weapon and make him know the minimal details so that he can make use of it with maximum effectiveness.

I. GENERAL CHARACTERISTICS

1. **Method of operation.** The weapon is gas-operated with an adjustable regulator to ensure certainty and smoothness of operation without excessive recoil. The bolt is mechanically locked before firing can take place and is not unlocked until the bullet has left the barrel.

The bolt being in the forward position when the trigger is pressed, there is no disturbance of aim due to a more or less heavy mass moving forward, a drawback in many automatic weapons.

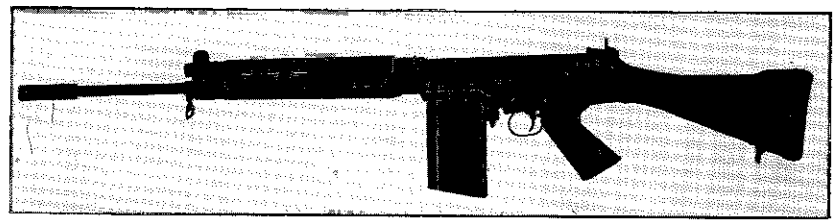


Fig. 1

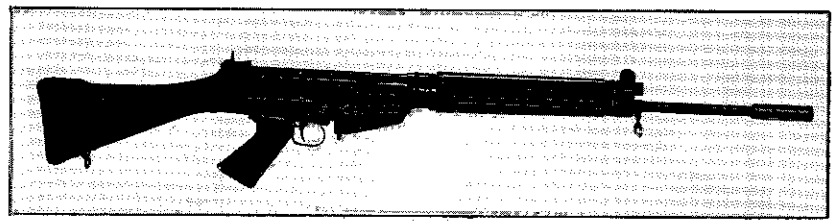


Fig. 2

After firing, the mechanism extracts the fired case and feeds a new cartridge into the chamber as long as there are rounds in the magazine. When the magazine is empty, the bolt remains to the rear, this indicates to the firer the need to replace the magazine.

2. **Firing.** — The weapon can be fired in two ways, either single shot or fully automatic, by moving the change lever placed on the left-hand side of the frame.

3. **Stability.** — By placing the gas cylinder above the barrel and by careful attention to design, the centre of gravity of the weapon has been placed in line with the barrel axis. The recoil, therefore, does not tend to jerk the weapon upwards as is the case with most existing rifles. The firer can thus keep his sights on the target without difficulty. On the other hand, the danger common to rectilinear weapons with raised sights, which force the soldier taking cover to disclose his position when he fires, has been avoided.

4. **Method of feed.** — This is from a magazine housed under the receiver. The magazine holds 20 rounds.

5. **Sights.** — They consist of:

   — A robust aperture back-sight graduated up to 600 meters which is fitted on the frame.

   — A blade front-sight with strong protectors which is fixed at the forward end of the gas cylinder.

   The line of sight is very low; this enables the soldier to remain well protected when firing.

6. **Gas regulator.** — This is designed on the exhaust principle, i.e. the regulator only allows sufficient gas for correct functioning to act on the piston, the surplus being vented into the air. This ensures that fouling is kept to the minimum, and that the mechanism is not submitted to undue stress.

7. **Weather proofing** . — The weapon has been designed in such a way that its weather proofing (against dust and mud) is thoroughly ensured without the help of any accessory.

8. **Handiness**. — The reduced weight of this weapon and its length make it very handy.

   — It is very comfortable to fire as its weight is proportioned to the power of the cartridge.

   — The "IMBEL Light Auto-Rifle" cal. 7.62 mm is so designed that all operations such as cocking, feeding, putting the weapon on safety, etc. are done with the left hand, while right hand remains on the pistol grip and the weapon can be kept resting on the shoulder.

   — In addition, the rifle has a collapsible handle fitted at the centre of gravity; this can be used for carrying the weapon when progressing in the field.

9. **Disassembling and assembling.** — Stripping and assembly for cleaning and normal maintenance can be done without the aid of any tools. For ordinary cleaning purposes it is sufficient to take out the magazine, gas plug and piston and the slide/bolt assembly (fig. 3). The latter can be withdrawn with the greatest of ease as the butt is hinged to the receiver and the weapon only has to be swung open to give immediate access. The return springs, which are encased in the butt, should never be removed.

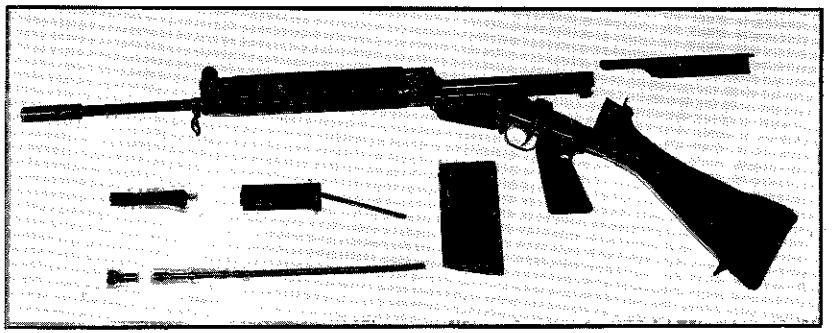


Fig. 3

10. General Data

1. Weights:
   a) Gun without magazine: 4.5 kg
   b) Empty magazine: 240 g
   c) Full magazine: 720 g
   d) Barrel: 800 g
   e) Bayonet with scabbard: 340 g
2. Lengths:
   a) Gun overall: 1.10 m
   b) Barrel: 533 mm
   c) Bayonet: 290 mm
3. Method of operation: gas operated.
4. Method of feed: magazine, 20 round capacity.
5. Location of feed opening: underneath the receiver.
6. Location of ejection opening: right side of receiver.
7. Location of cocking handle: left side of receiver.
8. Location of change lever: left side of frame.
9. Sight base: 553 mm.
10. Sight graduation: up to 600 m, in 100 m steps.
11. Rifling of barrel: number of grooves: four. Direction and pitch: right handed 1 in 305 mm.
12. Cyclic rate of fire:
    a) Theoretical: 650 — 700 r.p.m.
    b) Practical in automatic fire: 120 r.p.m.
    c) Practical in semi automatic fire: 60 r.p.m.

II. OPERATION OF MECHANISM

1. ACTION OF THE GAS REGULATOR AND GAS PLUG

— Starting point:
a round is in the chamber;
the weapon is bolted;
a round has been fired.

— The bullet travels through the bore of the barrel, and arrives at the tapped gas port (**f**) (fig. 4).

The gas passes through the tapped gas port (**f**) and arrives at the gas plug (**a**) which is fixed on the front end of the gas cylinder (**b**); if the gas plug is closed (letters Gr up), it completely stops any entry of gas into the gas cylinder, in this case the weapon does not function automatically any longer but it can be hand operated.

The gas plug (**a**) is open (letter A up), it allows free access of the gas from the barrel into the gas cylinder and the gas acts on the piston head (**d**).

— Under pressure of the gas the piston retrocedes and uncovers the gas escaping slot (**e**).

— The gas escaping slot (**e**) is partially closed by the gas regulator sleeve (**c**), which makes it possible to control the action of the gas on the piston.

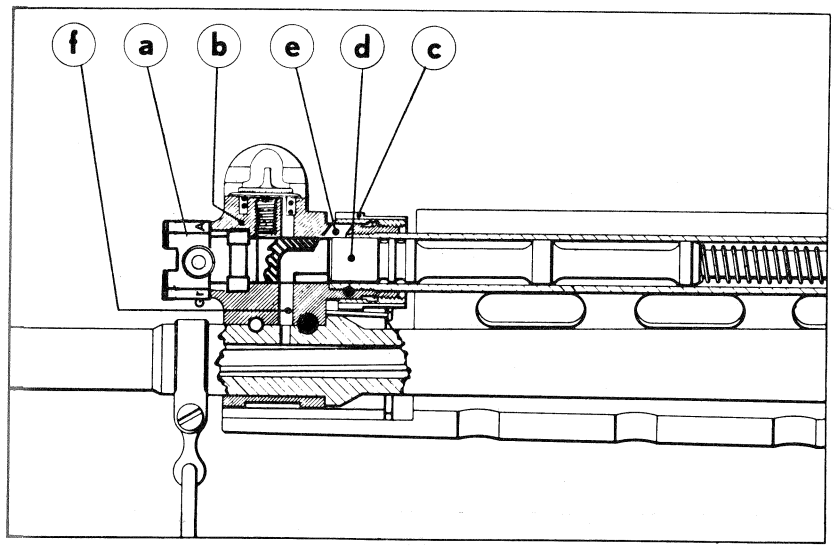


Fig. 4

— The piston (P) in its rearward movement strikes the slide (B) (fig. 5) and drives it backwards.

— The piston spring, which has been compressed by the rearward movement of the piston, releases it and strikes the piston on its front position.

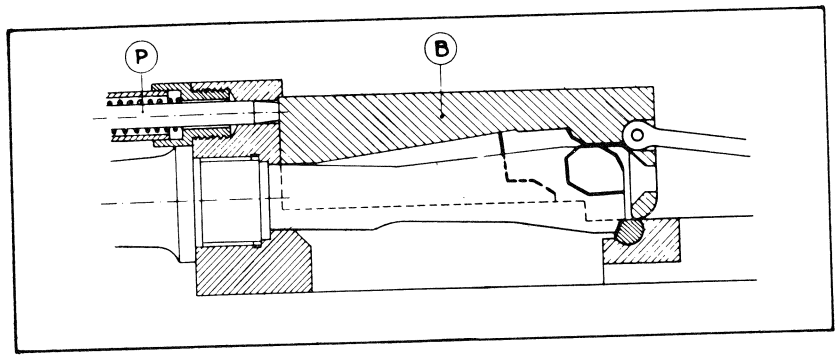


Fig. 5

2. REARWARD MOVEMENT OF THE MOVABLE PARTS

a. Unlocking

— The slide in its rearward movement, the ramps (B1) of the slide engage the cams (C1) on the bolt (fig. 6) and lift it out of engagement with the locking shoulder (D) in the receiver (E) (fig. 7).

— The weapon is unlocked.

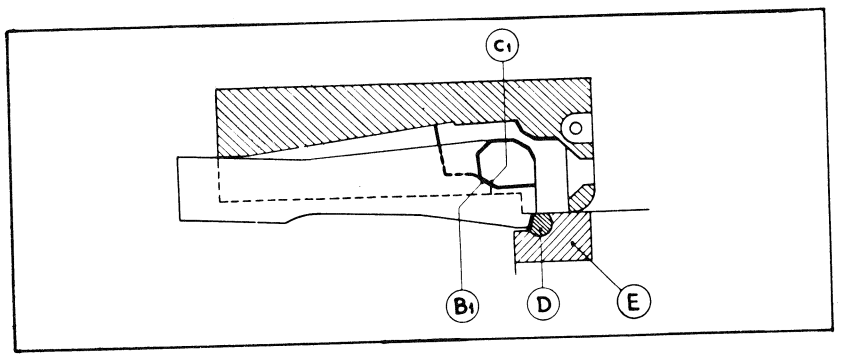


Fig. 6

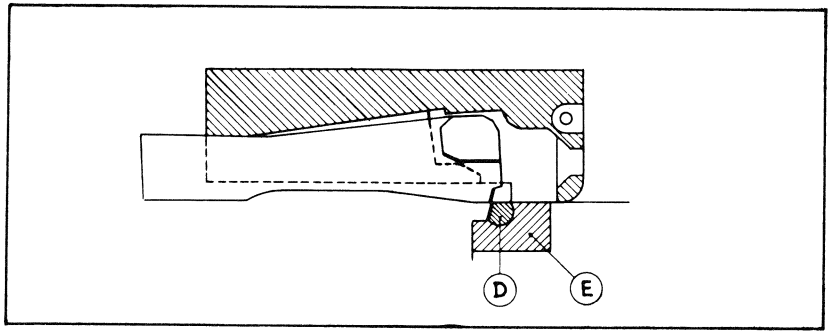


Fig. 7

b. Extraction

— The shoulders (B2) of the slide force the bolt up through its shoulders (C2), and the bolt is driven rearwards. (Fig. 8)

— During this movement, the extractor has withdrawn the fired case from the chamber, keeping it in the cartridge groove housing.

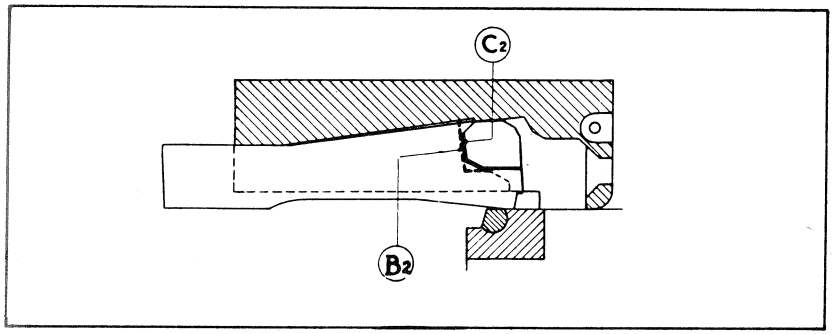


Fig. 8

c. Ejection

— When the front of the bolt reaches the rear face of the ejection window, the fired case strikes the ejector, which is salient, in the cartridge brass base housing, forcing the

case to rotate the extractor and to be thrown out of the gun to the right (fig. 9).

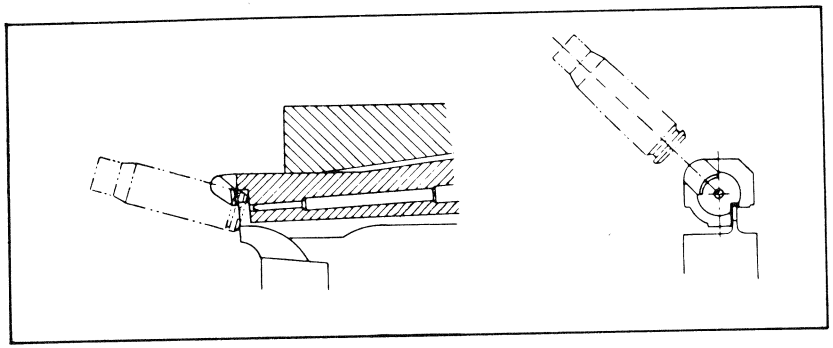


Fig. 9

— After this operation the movement of the movable parts continues until the bolt and slide assembly stops against the rear block of the trigger housing.

— The return springs have been fully compressed during the rearward movement by the action of the rod rotating in the rear face of the slide.

3. FORWARD MOVEMENT OF THE MOVABLE PARTS

a. Beginning of the movement

— The return springs are extended and by the action of the slide rod drive the slide forward; the push ramps get in touch and drive the bolt forward.

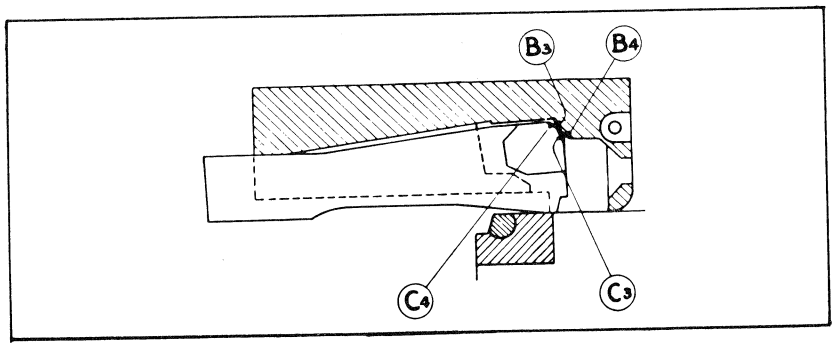


Fig. 10

b. Feeding

— During the last stage of the movable parts movement, the magazine rounds, which are no longer compressed by the bolt, lift it under the action of the magazine platform spring until the upper round gets in touch with the magazine edge.

— When the movable parts return to the forward position, the lower front face of the bolt engages the upper round brass base of the magazine and pushes a round to the front.

— Like this the round bit reaches the feeding ramp. It guides the bullet until the chamber and then unfastens partially the round from the magazine edge.

— The cartridge brass base is still held by the magazine edge.

c. Loading

— The bolt pushes the cartridge brass base, it releases the cartridge from the magazine rear edges and introduces it into the chamber.

— At this moment, the bolt continues its forward movement and forces the extractor to lift, allowing the cartridge brass base be set into its housing in the bolt.

— The bolt travels forward and the weapon is closed (but not locked).

d. Locking

— The bolt does not continue through the floor of the receiver and it is held in place by the action of the slide push ramps (B3) on the shoulders of the bolt (C3) (fig. 10).

— The locking ramps of the slide (B4) and the bolt (C4) (fig. 10) come in contact and push it down into engagement with its locking shoulders (D) (fi. 11).

— The weapon is locked.

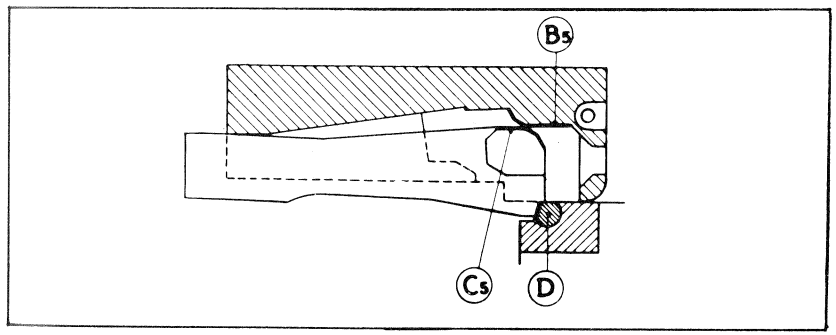


Fig.11

e. Safety

1. Lock setting

— The slide continues its forward movement and its surface (B5) is brought on the bolt surface (C5) (fig. 11) avoiding the bolt to lift and unlock.

2. Firing pin

— During the movable parts movement the firing pin head is concealed by the slide (fig. 12).

— The locking is confirmed when the firing pin head is not covered by the slide.

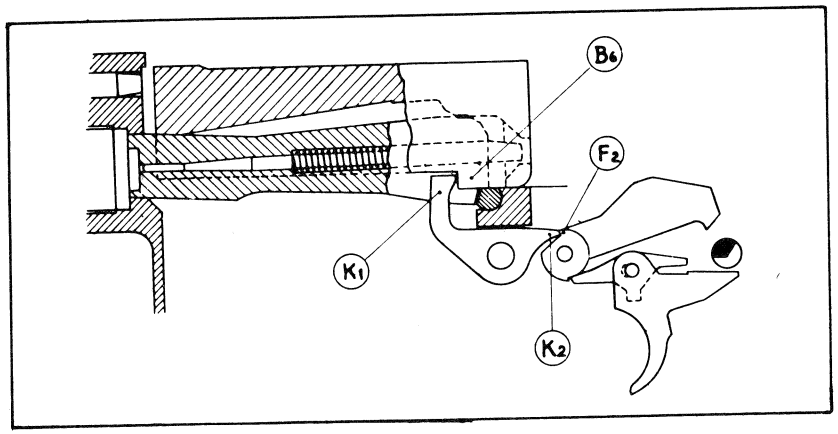


Fig.12

The action of the hammer on the firing pin is not possible before this moment.

3. Safety sear

— During the forward movement of the safety sear, the movable parts keep the hammer downward.

— As soon as the rear face of the slide overcomes the hammer, it lifts again and gets in touch with the safety sear nose (K2) by the hammer notch (F2), which makes it ready to be fired (fig. 12).

— During the last millimeters of is forward travel, the slide gets in touch with the safety sear nose (K1) by its support (B6) (fig. 12).

— The safety sear is pushed by the slide, rotates and releases the hammer (fig. 15) which is right away retained in its front sear nose (F1) by the catch nose of the trigger sear (G1).

4. BOLT CATCH

— After the last round has been fired, since the magazine is empty, the rear end of the magazine platform gets in touch with the bolt catch.

— After the rearward movement of the movable parts, the magazine platform, under the action of its spring, lifts the bolt catch (fig. 13) and it projects a lug at the receiver, avoiding the forward movement of the movable parts.

— The weapon is therefore open and the shooter can see that the magazine is empty.

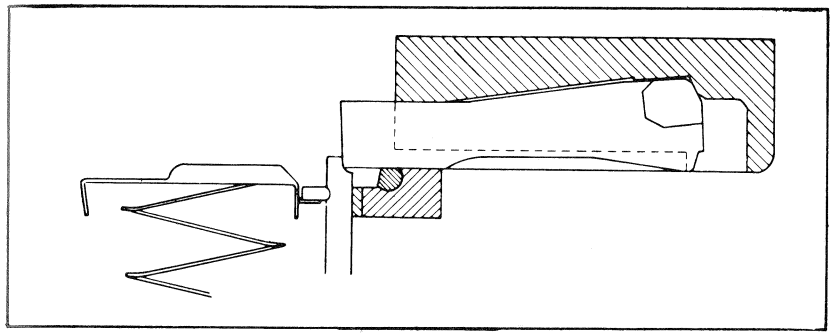


Fig.13

5. TRIGGER MECHANISM

Starting point:

Locking mechanism
Hammer in its firing position

a. Safe position:

— The change lever is set in "S" position;

— The change lever axle has in the rear (H3) of the trigger a rounded part (J1) (fig. 14); in this position the stud of the change lever axle locks the trigger mechanically, avoiding any possibility of accidental discharge.

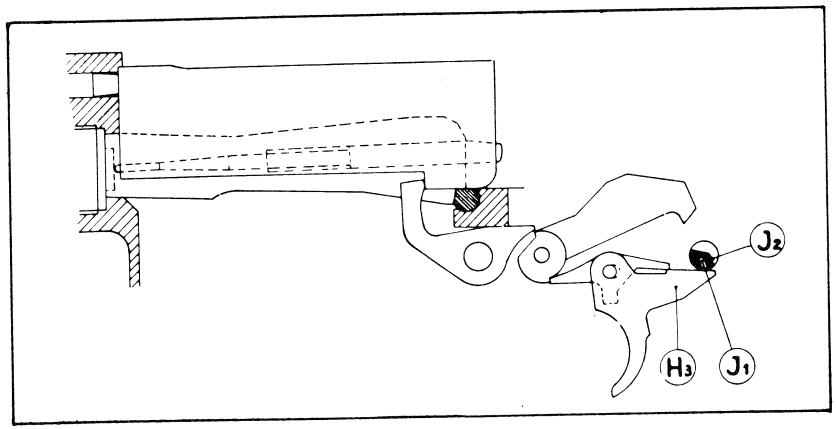


Fig.14

b. **Single shot firing position**

— The change lever is set in the "R" position;
— The change lever axle has in the rear end (H3) of the trigger a less deep notch (J2) (fig. 15).

1. **Hammer release**

— The pressure of the finger on the trigger brings the lug (H2) in contact with the rear nose (G2) of the sear (fig. 15).

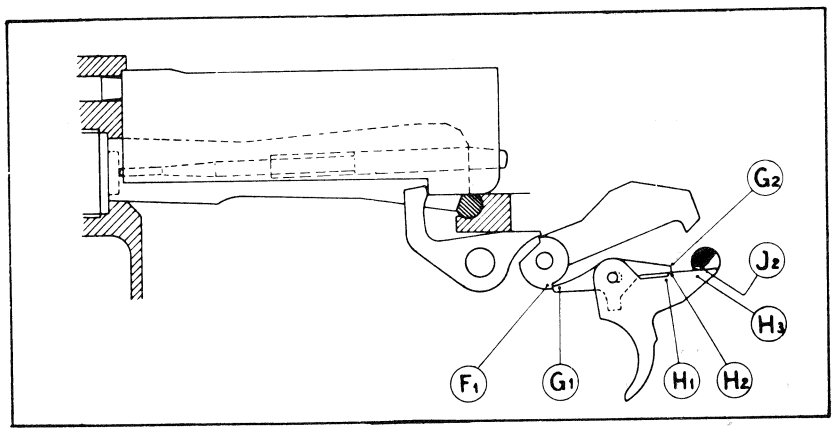


Fig.15

— The trigger, which continues its movement by the action of the finger pressure, lifts the rear nose (G2) of the sear.
— Consequently, the front nose (G1) of the sear lowers and disengages from the hammer notch (F1); when the hammer is released, by the action of the spring, causing the weapon to fire off.
— During the hammer release, the sear which has been released by the hammer and due to the oval housing of its axle, it travels forward (fig. 16) by the action of its spring.
— In this position the rear nose (G2) of the sear loses contact with the stud of the trigger lug (H2) and falls in the trigger notch (H1); the front nose (G1) of the sear rises again and it is in this position where it will engage the hammer.

2. **Hammer cock**

— The movable parts retrocede bringing the hammer to its lowest position and during the forward movement the safety sear keeps the hammer down during the safety time. (See § 3. e. 3, safety sear, page 14)
— At the end of the travel of the movable parts, the safety sear releases the hammer.
— The hammer rotates fast around its axle and its cocking nose (F1) strikes upon the rear notch (G1) of the sear and forces it to drive backwards against the upright part of the trigger lug (H2) (fig. 15).
— When the pressure of the finger on the trigger stops it returns to the starting position by the pressure of the spring making the support of the trigger (H2) disappear, allowing the sear to retrocede and take its starting position (fig. 15).

c. **Automatic firing position**

— The change lever is in the "A" position.
— The change lever axle has in the rear end (H3) of the trigger its deeper notch (fig. 16).

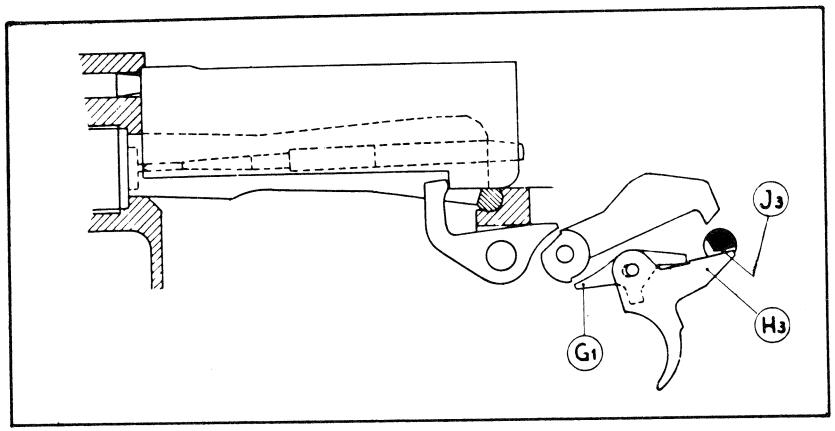


Fig.16

— When the finger is pressed on the trigger, the movements of the trigger and the sear are the same as in the single shot firing.

— But, as the trigger travel is longer, the front nose (G1) of the sear is held out of engagement with the notch of the hammer and the hammer is controlled by the safety sear.

— When it intercepts the hammer release before the end of the slide travel, the safety sear makes possible automatic firing (it is the second function), since if the hammer had not been kept until the end of the slide travel, the hammer would follow the slide and would therefore drive the firing pin forward instead of striking it.

— When the pressure of the finger on the trigger stops, the forward movement of the movable parts are the same as for the single shot firing.

III. HANDLING

a. **Filling the magazine**

1. **With a magazine filler**

A magazine filler (fig. 17) can be used to fill the magazine.

It is fitted over the mouth of the magazine, with the clip guides turned to the rib of the magazine.

Insert a five round clip into the rear guides, by means of the thumb, located as near as possible to the clip, force the rounds downwards into the magazine.

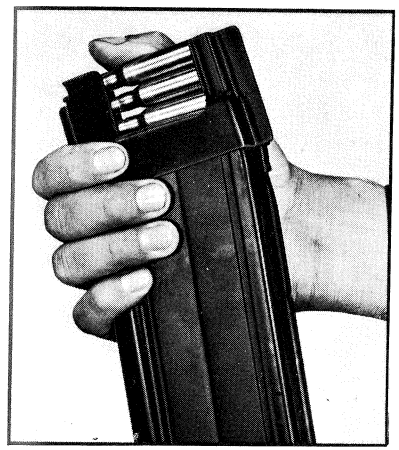


Fig.17

Fig.18

2. **Without a magazine filler**

Take the rounds out of the clip and insert them one by one into the magazine (fig. 18).

b. **Loading**

The initial cocking of the weapon is done with the help of the cocking handle located on the left hand side of the receiver. To do this, hold the weapon by the pistol grip with the right hand ready for firing and pull the cocking handle to the rear with the left hand.

Fit in a loaded magazine, forward first (fig. 19) in the opening located at the bottom of the receiver. When fully engaged, the magazine is held home by the magazine catch.

Fig.19

By fully pulling the cocking handle to the rear, till the slide end, the mechanism is brought back and the return springs are compressed.

When the cocking handle is released, the mechanism as well as the cocking handle are brought forward by the action of the return springs.

These return springs, located in the stock, act on the rear end of the slide through an articulated rod.

During the forward movement, the lower front face of the bolt engages the top of the head of the upper round in the magazine and pushes it forward into the chamber while the extractor engages the groove of the cartridge case.

The weapon is now loaded and ready to fire.

As the cocking handle does not move when the weapon is fired, it will not hurt the face of the shooter nor hinder him while he is aiming.

c. **Changing the magazine**

When the last round of the magazine has been fired, the mechanism is kept in its rear position by the bolt catch.

The empty magazine should then be replaced by a loaded one.

The mechanism must be released from the catch by depressing the latter (fig. 20) with a salient end on the left-hand side of the receiver, between the rear face of the magazine and the trigger guard.

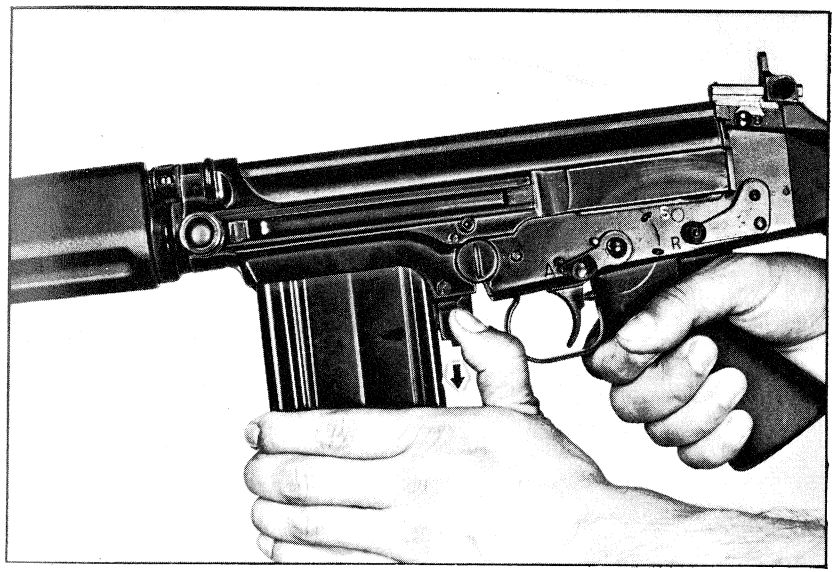


Fig.20

d. **Unloading**

Set the change lever on "safe" and remove the magazine by pulling it down and forward while pressing the magazine catch (fig. 21).

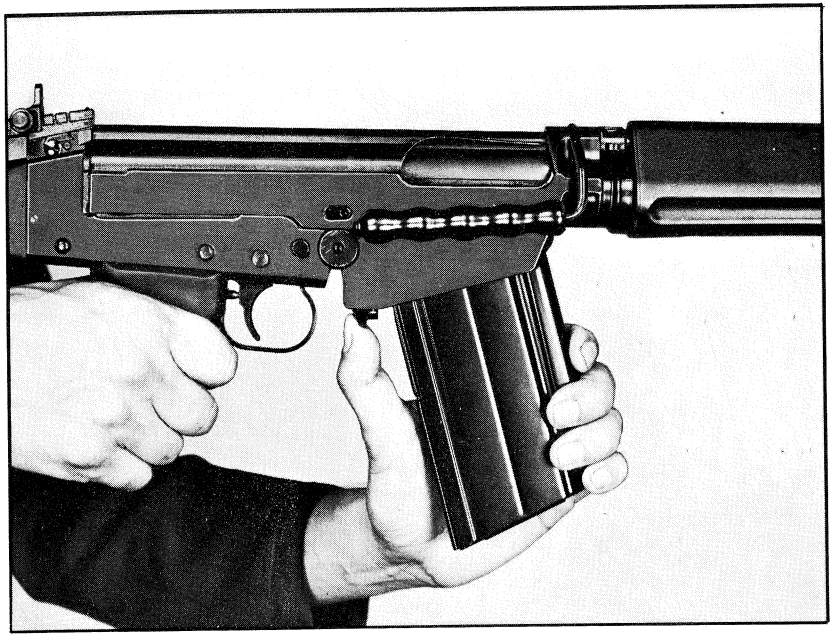


Fig.21

Pull the cocking handle fully to the rear in order to eject the last round from the chamber, then release the cocking handle forward.

The weapon is unloaded.

e. **Using the weapon as a single shot fire**

Turn the gas tube sleeve in order that the letters Gr show up on the weapon, instead of letter A.

With the magazine removed, pull the cocking handle fully to the rear.

With the right hand, pull the bolt catch (fig. 22) upwards and keeping it in this position, let the mechanism gently come forward until it is stopped by the bolt catch which keeps the mechanism in its rear position; the weapon is now in the open position.

Using the right hand, introduce a round into the chamber and make sure that it is fully home by pushing it with the thumb.

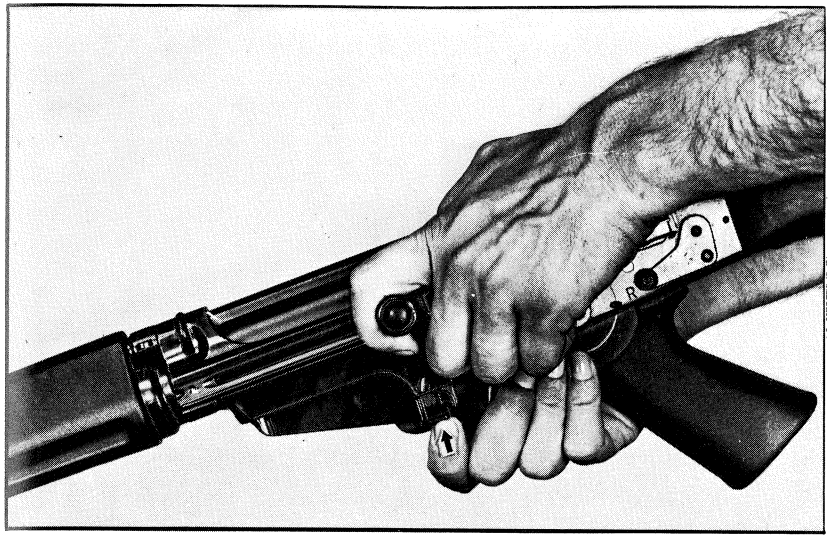


Fig.22

Press down the bolt catch (in the same manner as when using the magazine filler (fig. 20), the bolt will be brought back by the return springs and the weapon is ready to be fired.

It is necessary to repeat same procedure for each round.

IV. GAS REGULATOR

General

The purpose of the gas regulator is to ensure a correct functioning of the weapon with a maximum gas escape or, in other words, with a minimum of gas used to force the piston to the rear without excessive force, which would result in undue wear of the mechanism.

1. Method of gas regulator adjustment

Each one can use his own gas regulator adjustment method, but, we suggest the following:

— Fit an empty magazine on the rifle.
— Cock the gun and insert by hand the rounds, one by one, into the chamber, through the ejection opening.
— The correct gas adjustment will be determined by the bolt catch engaging or not engaging the mechanism.

2. Operations

Operation 1: After fully tightening the gas regulator sleeve so that it strikes against the block (fig. 23) unscrew the sleeve by one turn until n.° 7 appears (fig. 24) this brings the gas regulator sleeve fully open and causes, when firing, what we call "short recoil" (mechanism not caught by the bolt catch).

Operation 2: Tighten the regulator sleeve a click at a time and fire a round after each movement, until the mechanism is held to the rear by the bolt catch (fig. 13).

Operation 3: Make sure the gas adjustment is correct by firing several more rounds single shot.

Operation 4: If one of the shots did not catch the mechanism, tighten the regulator further by one click and repeat operation 3.

Operation 5: Repeat the adjustment as set in operation 4 until the bolt is caught during 5 consecutive rounds.

Fig.23

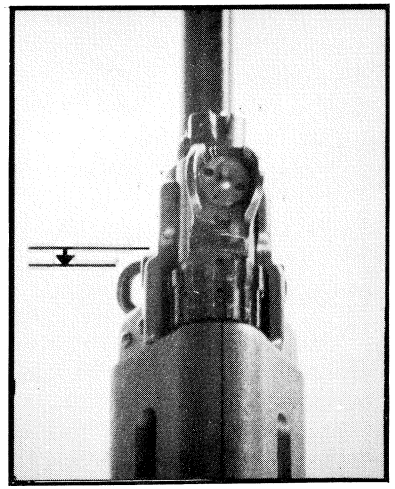


Fig.24

Operation 6: Tighten the regulator further by two more clicks as a safety margine and the rifle is now adjusted.

Note: In case a special wrench is not available (fig. 25) the adjustment can be done with the use of a round end (fig. 26) or by hand.

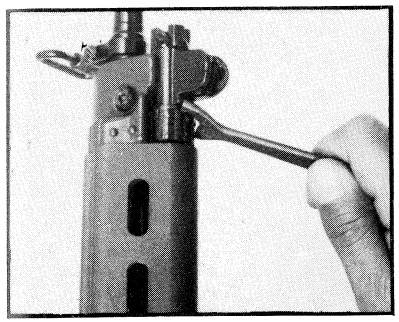


Fig.25

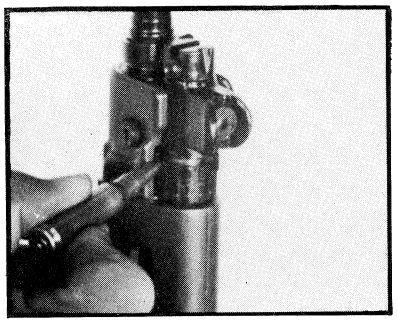


Fig.26

V. SIGHTING-IN THE RIFLE

The rifle has been sighted before being put into action but it may be necessary some corrections of elevation and direction in order to fit the weapon to who will be using it.

This ought to be carried out by a skilled armorer, who must have at his disposal special tools and spare front sights.

1. Correction for elevation

The errors in elevation are corrected by screwing the front sight in or out. Screwing the front sight out will lower the midpoint and vice-versa.

The projections of the spring steel washer locating the front sight engage in the indents on the collar of the sight. There are 16 indents on the collar, this helps the armorer to estimate the required adjustment for elevation of the midpoint.

The dislocation of 1 indent from the front sight is equal to 1 cm, at an average midpoint, at 100 m distance.

2. Correction for direction

The errors in direction are corrected by moving the rear sight to the left or to the right.

If the midpoint is at the right of the point of aim, the left rear sight screw is to be slightly turned out and the right rear sight screw turned in, this will move the rear sight, in the dovetail, from the right to the left. Turn in the left rear sight screw.

When the correction has been performed and before firing, both rear sight screws ought to be correctly tightened.

If the midpoint is at the left of the aiming point, the rear sight ought to be moved from the left to the right.

The dislocation of 1 indent of the rear sight screw is equal to 1 cm, at an average in direction of midpoint, at 100 m distance.

VI. CAUSES OF STOPPAGES AND IMMEDIATE ACTION TO BE TAKEN

1. Immediate action

If, during firing, the functioning is stopped, independently of the shooter's wish, this is what is called stoppage.

The stoppage (except for the one caused by an empty magazine) can often be corrected by "immediate action" without even looking for the cause of the stoppage.

2. Application of immediate action

Operation 1: Remove the magazine.

Operation 2: Pull the cocking handle fully in order to clear from the mechanism the defective or misplaced round.

Operation 3: Release the cocking handle in order to let the mechanism return freely to the front.

Operation 4: Pull back the magazine.

Operation 5: Reload by pulling the cocking handle fully to the rear then releasing it in order to load a new round into the chamber.

Operation 6: Resume firing.

Should the stoppage happen again, look for the cause.

3. Stoppage

Stoppages should rarely happen if proper attention is paid to care and maintenance. The principal cause is lack of gas power, which is due to incorrect setting of the gas regulator, excessive fouling on the piston head or inside the gas plug or grit in the mechanism. The following table indicates the type of stoppage, its cause and cure.

1. Misfeeds

Cause	Remedy
— Insufficient gas to drive the bolt far enough to the rear to feed the next round or to raise the empty case.	— Adjust gas regulator by screwing-in the regulator sleeve.

Cause	Remedy
— Too much gas giving violent action and causing the bolt to override the round in the magazine without catching it, insufficient time being given to the follower spring in the magazine to raise the round to the necessary height (violent recoil distance, the empty case is thrown during ejection).	— Unscrew the gas regulator sleeve to increase the discharge of gas.
— Dirty magazine	— Clean it
— Damaged magazine	— Examine magazine and replace it if necessary

2. **Failure to feed**

— Dirty chamber	— Clean chamber
— Dirty rifle	— Clean rifle
— Defective cartridge	— Immediate action
— Case rupture	— Replace the part of the empty case which is in the chamber

3. **Failure to fire**

— Defective cartridge	— Immediate action
— Broken firing pin	— Change firing pin
— Dirt preventing bolt closing fully or dirt jamming action of hammer	— Clean rifle

4. **Failure to extract**

— Insufficient gas	— Adjust gas regulator sleeve
— Dirty chamber	— Clean chamber
— Dirty rounds	— Clean rounds
— Broken extractor	— Replace extractor

5. **Mal ejection**

— Insufficient gas	— Adjust gas regulator sleeve
— Greasy receiver assembly	— Clean it
— Broken ejector	— Replace ejector

6. **Failure of bolt catch**

— Insufficient gas	— Adjust gas regulator sleeve
— Greasy catch	— Clean it
— Deteriorated magazine	— Examine and replace magazine

VII. GRENADE LAUNCHING

1. Flash-hider grenade-launcher

The IMBEL Light Auto-Rifle is equipped with a device which consists of a flash-hider and a grenade-launcher tube. This device allows to correctly launch anti-tank and anti-personnel grenades.

This device consists of a tube fitted at the front end of the barrel on which the grenade is set. A fastening spring keeps it in place. It contains, in four generators, oblique orifices which have the function of flash-hider (fig. 27).

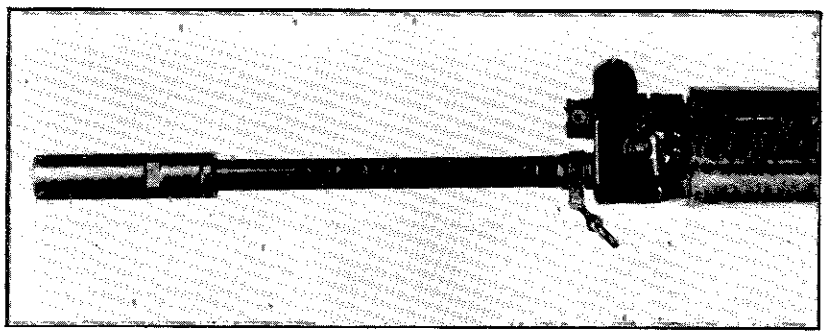


Fig.27

Its front end is threaded in order to screw on a device for cartridge blank buffer.

Its rear face has a groove which is used to engage a bayonet.

Because of the pistol grip, the launching of the grenade happens with greater ease than most other weapons. The shooter can keep his finger on the trigger. When the recoil happens, the hand, which is placed on the pistol-grip, returns together with the weapon and the forefinger is not exposed to accidents which are much feared when launching grenades with other weapons. This safety feature is an unquestionable advantage which allows the soldier to obtain larger precision in grenade launching.

2. Grenade launching with the graduated plate

To launch a grenade with the IMBEL Light Auto-rifle, 7.62 mm, it is necessary to rotate the gas plug by 180.°, until the letters Gr appear on the upper part in place of letter A, and by putting the corresponding graduated plate on the grenade flange (fig. 28).

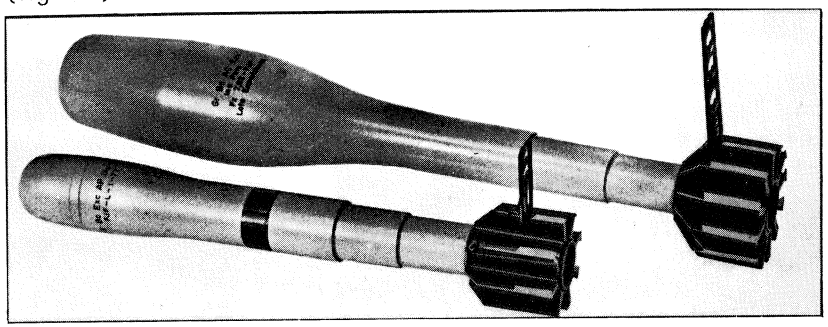


Fig.28

In fig. 29 the graduated plates for grenade launching can be seen (the 32 z anti-personnel and the 65 AC anti-tank).

The plate for anti-personnel grenades has a graduation for distances of 100, 125 and 150 metres; the plate for anti-tank grenades has a graduation for distances of 50, 80, 100 and 120 metres.

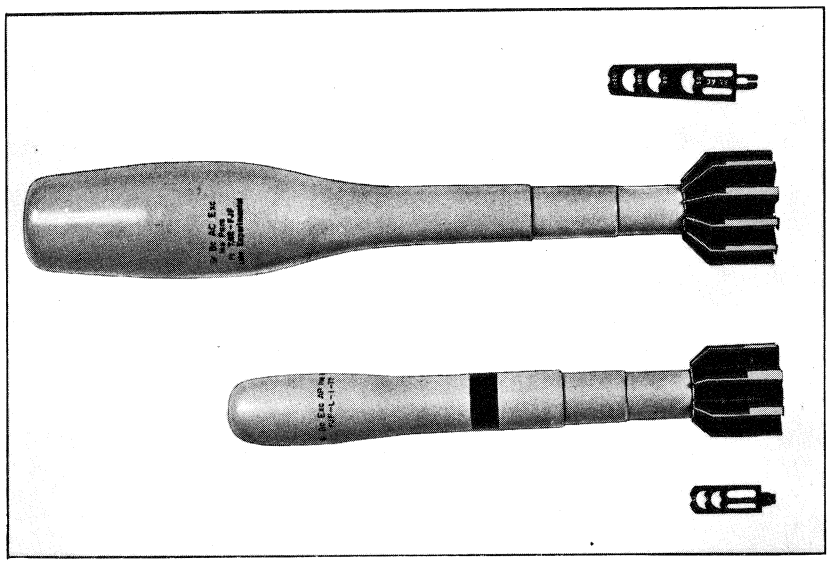


Fig.29

The guide sight is made aiming to the target the line composed of a distance indicator, by one part, and of the grenade vertex, by the other part.

To launch to the maximum distance (indirect fire), support the weapon on the butt plate, inclining the weapon 45.° in relation to the horizontal line aiming it to the desired direction (fig. 34).

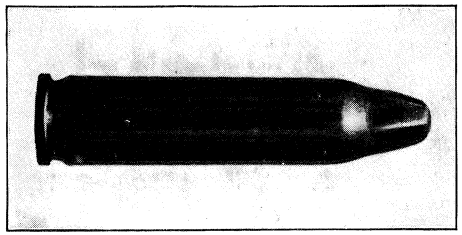


Fig.30

3. **Cartridge**

The ammunition used is a special round called "Propeller cartridge" or "Launching cartridge". This cartridge does not carry a bullet, the cartridge case is closed at the front end by a star form setting making it tight by the addition of wax. (fig. 30).

4. **Handling**

Operation 1: set the change lever on "safe".

Operation 2: unload (see chapter III, d).

Operation 3: rotate the gas plug 180.° in order to eliminate the gas action on the piston head. To do this press the gas plug lock (fig. 31).

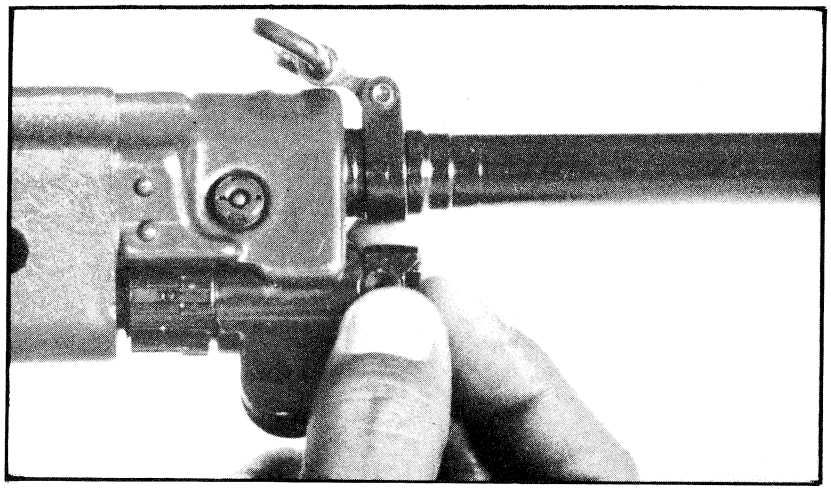


Fig.31

Operation 4: pull the cocking handle fully to the rear, with the left hand.

With the right hand, introduce a propeller round into the chamber (fig. 32).

Let the movable parts move forward (to make it easier, point the muzzle of the weapon downward).

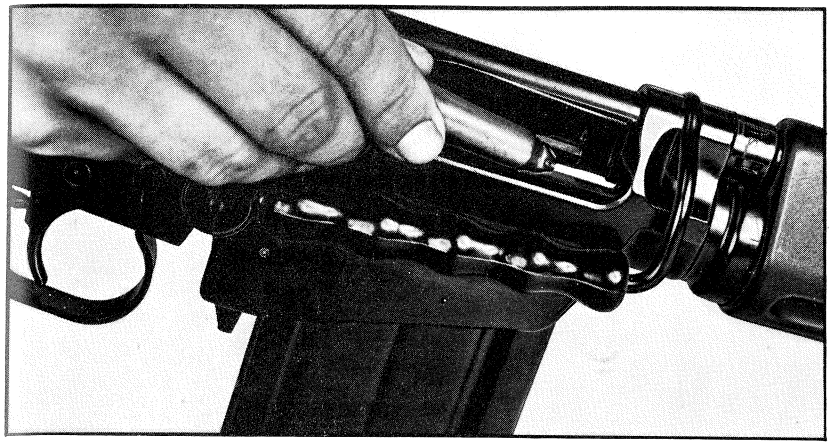


Fig.32

Operation 5: set the grenade with the plate on the grenade launcher and check if it is fully inserted.

Operation 6: release the safety catch of the weapon and eventually of the grenade. The weapon is ready to fire.

5. **Firing position**

a. **Direct fire** (fig. 33)

— In three classic positions (standing, kneeling and lying) the soldier holds the weapon the same way.
— Hold firmly the middle point of the handguard with the left hand.
— Hold the pistol grip firmly with the right hand, with the forefinger fully inserted in front of the trigger.

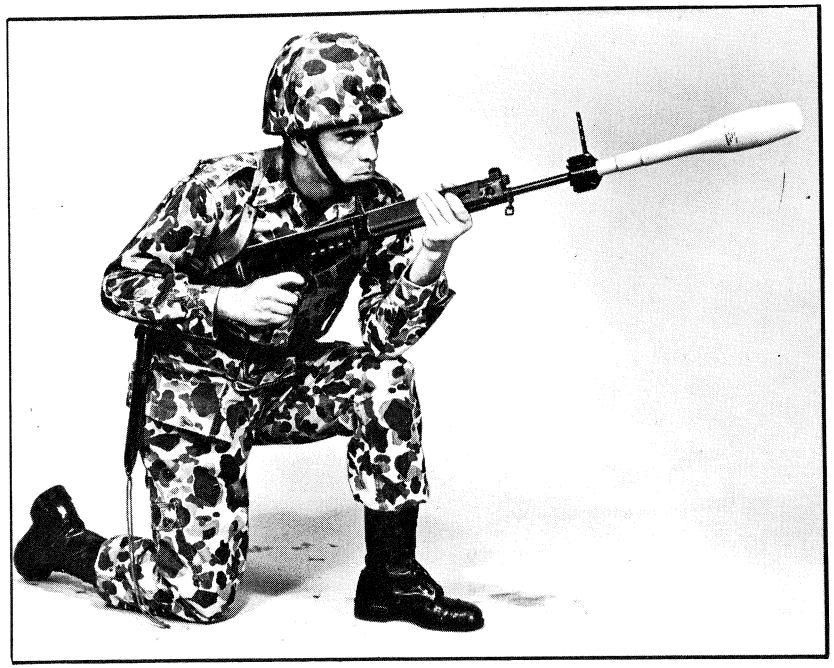


Fig.33

— Set the stock under the right arm; never support it on the shoulder.

b. **Indirect fire** (fig. 34)

— Lower the butt plate on the ground; the pistol grip pointed to the shooter.

— Set the weapon at the desired angle.

— Support the stock edge with the foot in order to avoid any sideslip of the stock.

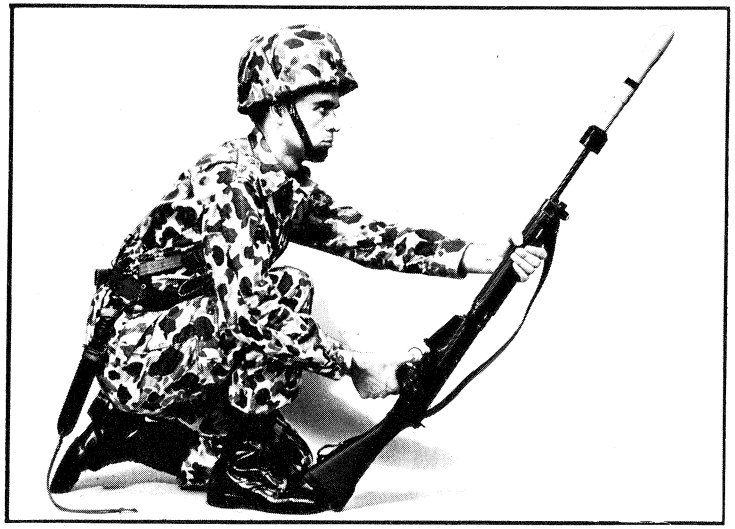


Fig.34

c. **Note**

It is recommended, as much as possible, not to support the stock against hard objects, like concrete, rock, etc., mainly in the positions for indirect firing and lying, when the soldier has the tendency of anchoring the stock edge, in order not to feel the recoil of the weapon.

VIII. MAINTENANCE AND CLEANING

1. General

It has to be especially emphasized that automatic weapons must always be kept clean and that most of the stoppages are generally the result of the carelessness of the soldier regarding his weapon or of his lack of knowledge. A gun, whether it be an automatic weapon or a repeater, must always be cleaned daily after firing, mainly after firing with blank cartridges.

2. Maintenance of the rifle

a) Maintenance done by the soldier

Maintenance of the IMBEL Light Auto-rifle, 7.62 mm when the rifle needs only to be field stripped, consists of:

— Running the pullthrough soaked in a special oil through the bore a number of times;
— Next, running through two or three dry rags;
— Cleaning the chamber, by using the chamber cleaning brush;
— Cleaning the slide, the rear end of the barrel and the interior of the receiver;
— Cleaning the bolt, the firing pin and the firing pin housing in the bolt;
— Cleaning the extractor without disassembling it;
— Removing and cleaning the gas plug, the piston and the piston spring, as these parts were submitted to the action of the gas;
— Cleaning and running a slightly oiled rag through the gas cylinder and the bore;
— Oiling the movable parts slightly.

b) Inspection and maintenance to be effected by the armorer

It is further necessary for the armorer to inspect the weapon periodically in order to assure that it has been properly cared for by the soldier.

All the parts will be inspected in order to check their good functioning. This inspection will also enable the following operations:

— Cleaning the gas escape hole of the gas cylinder;
— Disassembling and cleaning the extractor;
— Checking the gas regulator;
— Checking if the sighting is properly fixed.

3. Complete cleaning of the barrel

Let us first remember that the barrel ought to be regularly cleaned as described below, to avoid the need for using abrasives such as emery powder, sand or brick powder, of which the effects are very harmful.

Complete cleaning of the barrel should be done when possible as follows:

— Wash the barrel in soapy water (use a solution of about 15% in weight of black soap containing no acid or special oil) using a pullthrough. Take care that no water gets into the mechanism.
— After washing, dry the barrel completely using clean rags. After drying, the rags which are generally white flannel, should come out of the bore clean.
— Dry the outside part of the barrel and rub it with a greased rag.
— When no firing is expected for a certain time, grease the bore with barrel grease.

4. Assembling and oiling before firing

— Before firing clean and assemble the weapon, taking care to slightly oil it according to chart below:

OIL	NO OILING
— Inside of slide	— Gas cylinder
— Bolt	— Gas plug
— Receiver bottom surface and bolt slide groove	— Piston and piston spring
— Bolt catch	— Barrel
	— Chamber
	— Upper surface of bolt slide
	— Face of bolt
	— Magazine catch
	— Magazine and magazine platform
	— Rear sight

Note: The grip of the IMBEL Light Auto-rifle, 7.62 mm, has an opening where small cleaning devices and materials can be stored, consisting of an oil-can and a tube which holds small cleaning materials (pullthrough, brush, etc.).

IX. DISASSEMBLY AND ASSEMBLY

The rifle has been designed so that it may be taken apart and put together easily. No force is needed if these operations are correctly performed.

In order to make the assembly easy, take care, when disassembling to put all the parts on a clear, level surface and to put them back in the same order of disassembling. This will prevent the loss of parts and will make the assembly easier, since it is just the disassembly inversed.

A. DISASSEMBLY

The disassembly of the rifle consists of 18 groups of operations. The soldier is only allowed to perform group of operations 1 and 18.

The operations of the other groups are not at all difficult and do not require any special ability, but the result of many disassemblies will be the extra wear of some parts. In addition some of these operations require the use of special tools.

Group of operations for disassembling

The details of the 18 groups of disassembly operations are indicated below:

Column 1: Number of group operations.

Column 2: Specification of the operation.

Column 3: Number of the group of operations which has or have to be performed before proceeding to the disassembly in view.

Column 4: Disassembly permitted:
X to the soldier
XX to the armorer
XXX to the machine shops

Column 5: Number of the page describing the operation.

1	2	3	4	5
1	Field stripping	—	X	40
2	Removing the extractor	1	XX	45
3	Removing the hand-guard	—	XX	46
4	Removing and disassembling the carrying handle	3	XX	47
5	Removing the gas regulator sleeve and gas cylinder	1-3	XX	49
6	Removing the front sling swivel	—	XX	52
7	Removing the front sight	—	XX	53
8	Removing the frame-receiver pivot	1	XX	54
9	Removing the safety sear	1-8	XX	57
10	Removing and disassembling the cocking handle	1	XX	58
11	Removing the magazine and bolt catches	1	XX	62
12	Removing the locking shoulder	1	XXX	65
13	Disassembling the trigger mechanism and the pistol grip	1-8	XX	66
14	Removing the rear sling swivel and butt plate	—	XX	76
15	Removing the return springs and the butt	1-14	XX	78
16	Disassembling the receiver-frame catch assembly	1-8-14-15	XX	80
17	Removing the rear sight	—	XX	83
18	Disassembling the magazine	—	X	85

1. FIELD STRIPPING

The soldier must learn the steps of field stripping so well that he can be able to do it in the dark. He can field strip the rifle by only using a cartridge and proceeding as follows:

— Remove the magazine;

— Cock the mechanism in order to make sure there is no cartridge in the chamber; release the mechanism forward and put the rifle on "safe", the hammer remaining in the cocked position.

a) **Disassembling the mechanism**

— Press the receiver locking lever rearward as far as it will go, on the left side of the frame; at the same time press down the butt which will open as if it were a shop-gun (fig. 35).

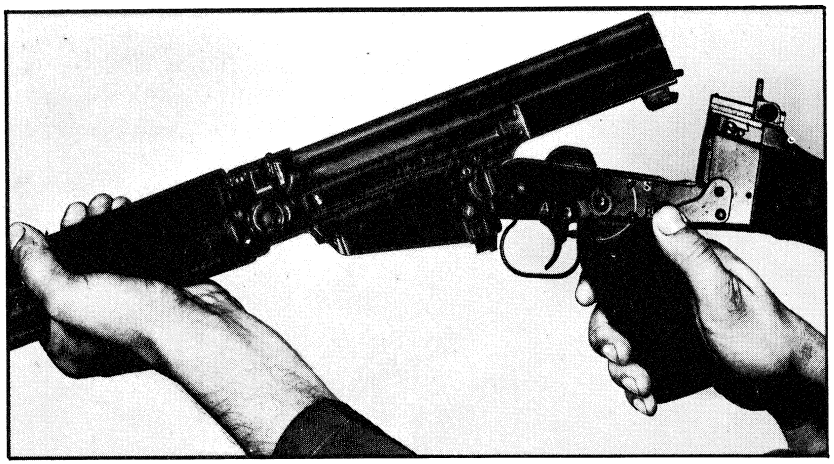


Fig.35

Pull the slide and the bolt assembly to the rear by means of the end of the connecting rod (fig. 36).

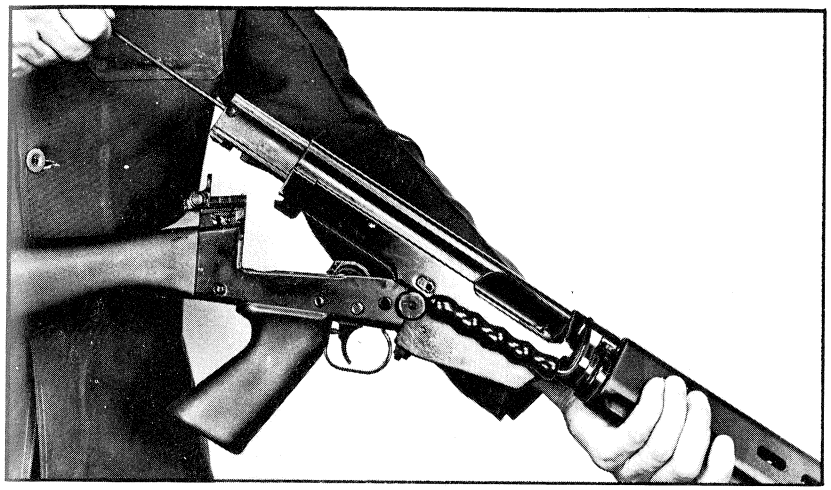


Fig.36

b) **Remove the cover** from the receiver by pulling it to the rear (fig. 37).

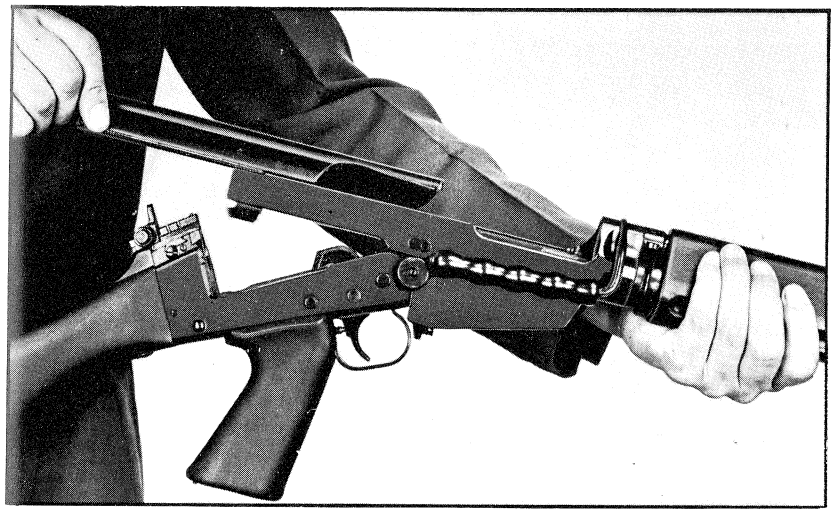


Fig.37

c) **Separate the slide from the bolt** — To do this disengage the fore part of the bolt from the slide and continue the movement by pivoting the bolt and at the same time pressing in on the rear of the firing pin (fig. 38).

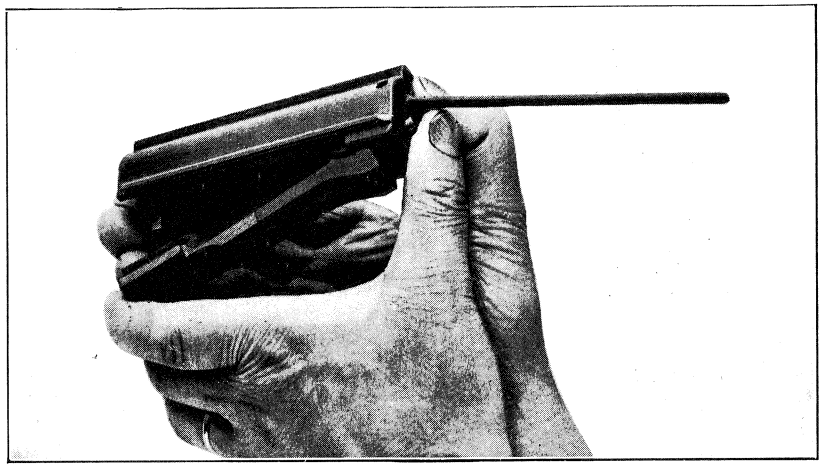


Fig.38

d) **Remove the firing pin** — Press on the rear end of the firing pin, push out the retaining pin; if retaining pin does not fall out, use the point of a cartridge (fig. 39).

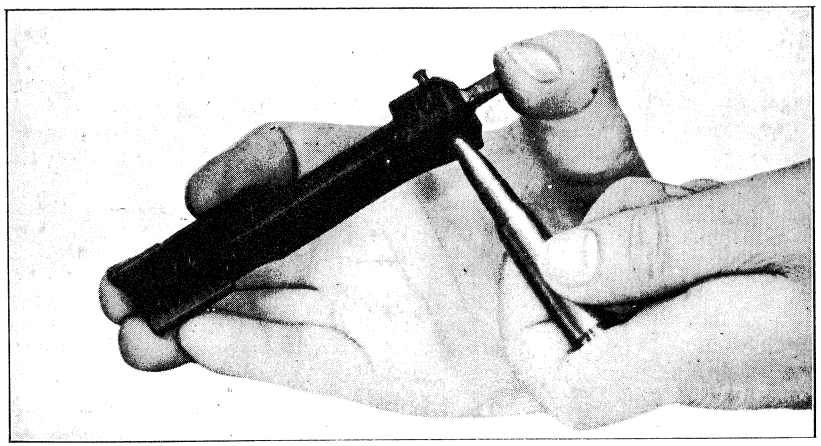


Fig.39

With firing pin retaining pin removed, firing pin will be pushed out of its housing by its spring (fig. 40).

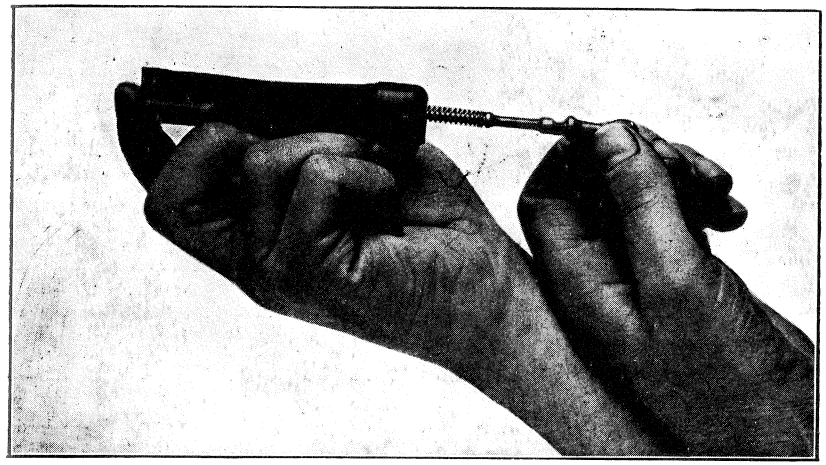


Fig.40

e) **Remove gas plug** — Using the point of a cartridge, depress gas plug lock (fig. 41), rotate the gas plug one quarter of a turn clockwise (fig. 42).

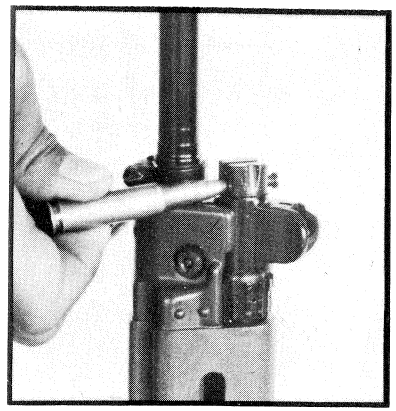


Fig.41

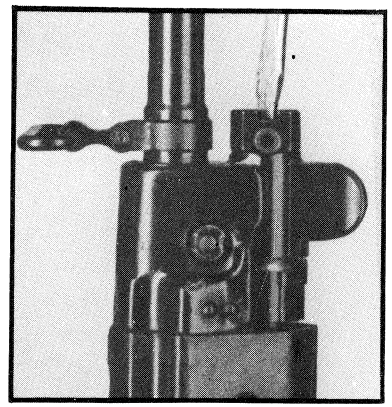


Fig.42

In this position, the plug will be pushed out of its housing by the piston spring (fig. 43).

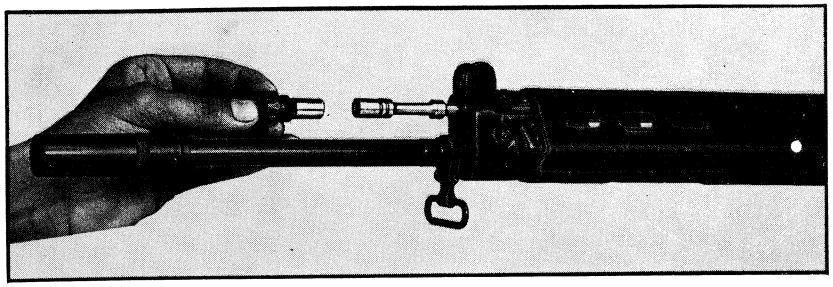


Fig.43

f) **Remove piston** and piston spring from the gas cylinder (fig. 44).

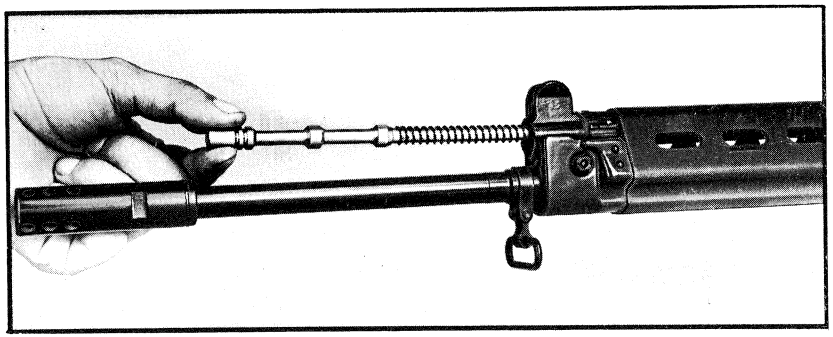


Fig.44

Remove the spring from the piston rod (fig. 45).

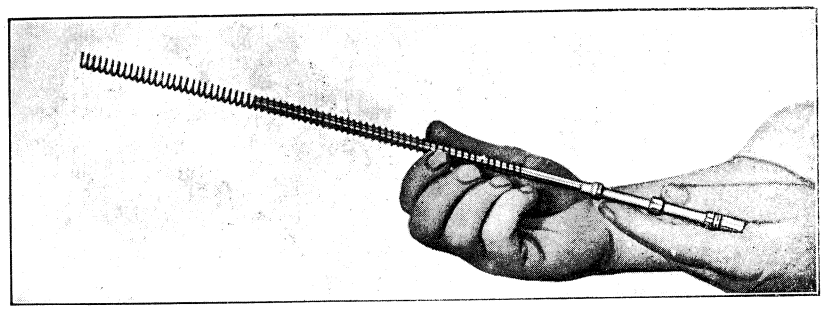


Fig.45

2. EXTRACTOR

a) **Remove the extractor**

Put the nose of a bullet under the claw of the extractor plunger and push outwards as far as possible, until the extractor is released from the plunger (fig. 46). Remove the extractor from its housing or let if fall in while keeping pressure on the extractor plunger.

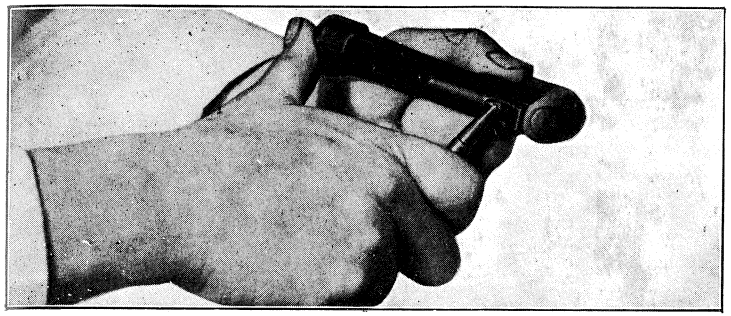


Fig.46

Note: This operation can be done using a special tool which makes this operation easier and quicker (fig. 47).

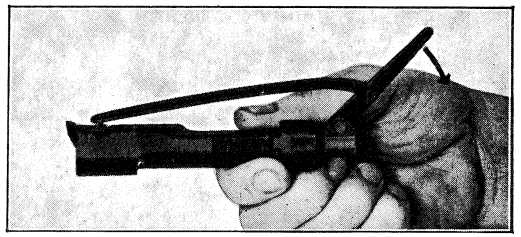


Fig.47

b) **Remove the plunger and the spring**

Since the extractor has already been removed disengage the extractor spring and remove the plunger and the spring from its housing (do not disassemble) (fig. 48).

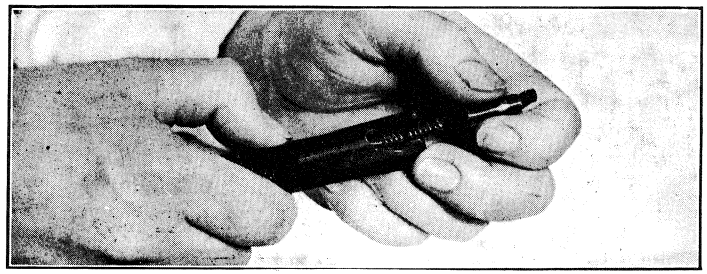


Fig.48

3. HAND-GUARD

Unscrew hand-guard screw, remove screw (fig. 49).

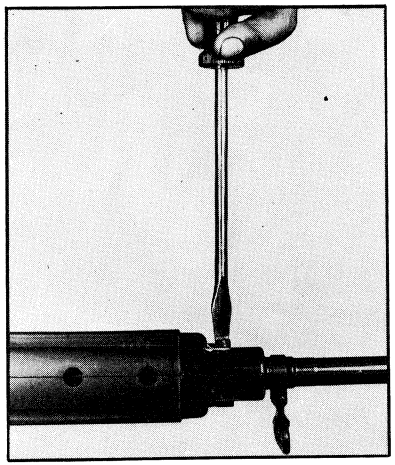


Fig.49

Separate both hand-guards, pulling them slightly up (fig. 50).

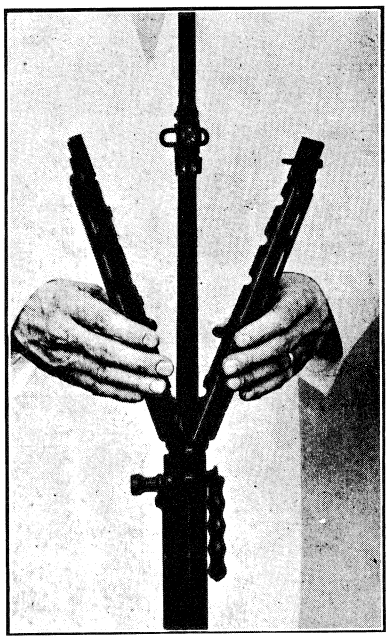


Fig.50

4. CARRYING HANDLE

Disassemble hand-guard (group operation n.° 3).

Completely unscrew the fastening nut of the gas cylinder (fig. 51) and push it forward.

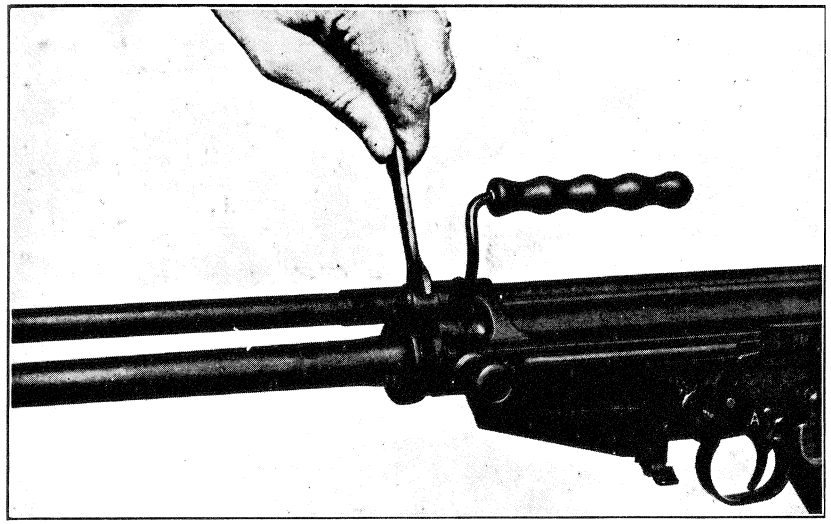


Fig.51

Remove carrying handle (fig. 52).

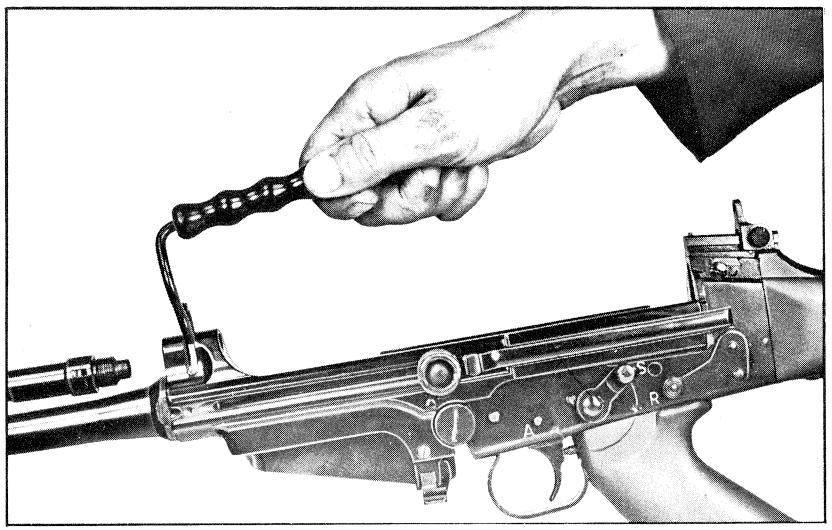


Fig.52

The components of the carrying handle are the stem, the body, two connecting washers and two spring washers (fig. 53) which fasten the carrying handle body on the stem.

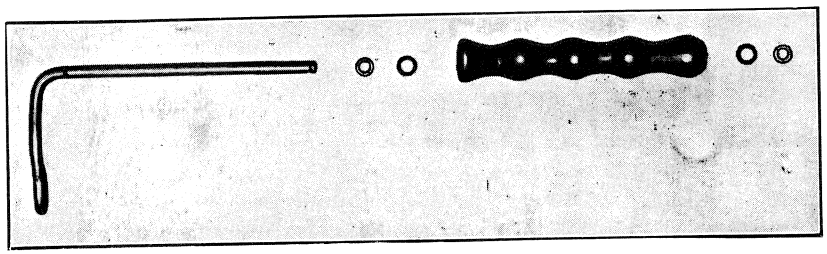


Fig.53

5. GAS REGULATOR SLEEVE AND GAS CYLINDER

Remove the piston (see group of operation n.° 1).
Remove the hand guard (see group of operation n.° 3).

a) **Gas regulator sleeve**

Using the special tool, completely unscrew the regulator sleeve (fig. 54) and pull it to the rear clear of its spring.

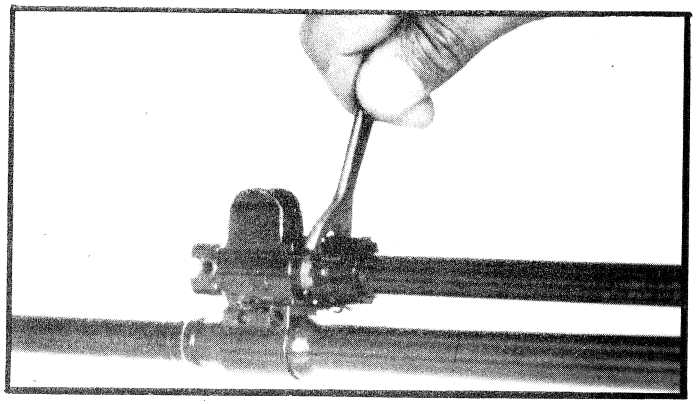


Fig.54

Using a screwdriver, release the spring from its two securing recesses in the bracket (fig. 55).

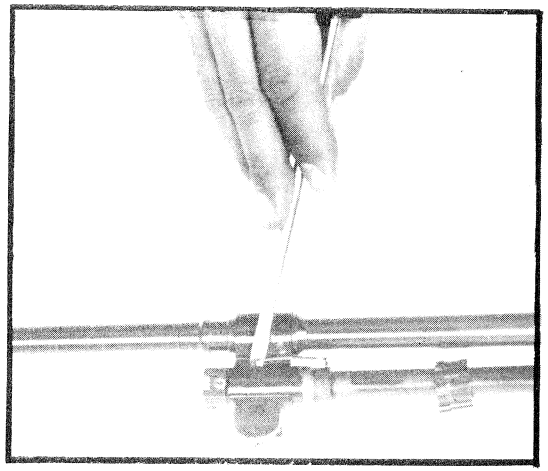


Fig.55

Remove the sleeve spring to the rear (fig. 56).

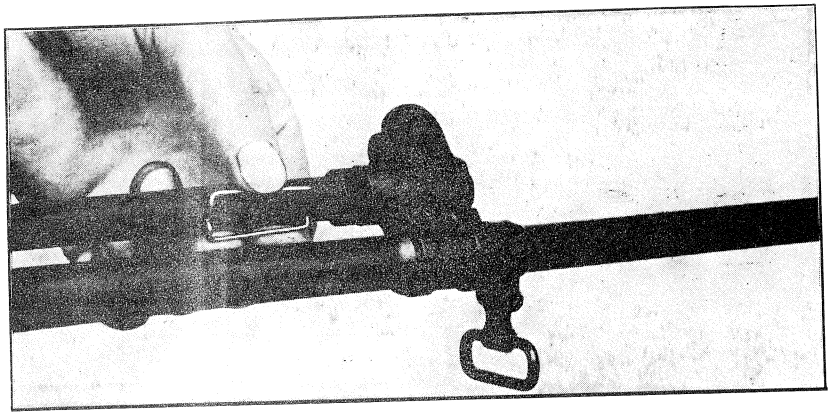


Fig.56

b) **Gas cylinder**

Using a special tool, completely unscrew the fastening nut of the gas cylinder (fig. 57) and push it forward.

Remove the gas cylinder retaining pin (fig. 58).

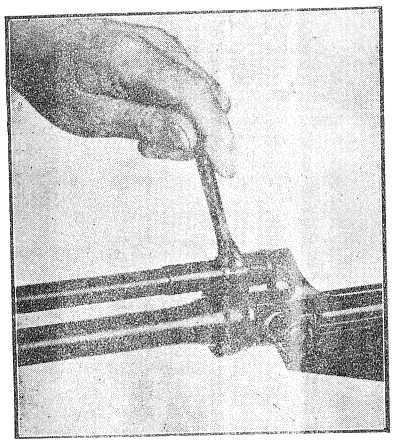


Fig.57

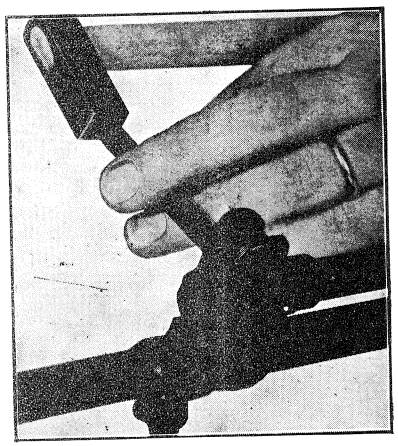


Fig.58

Unscrew the gas cylinder and remove it rearward (fig. 59).

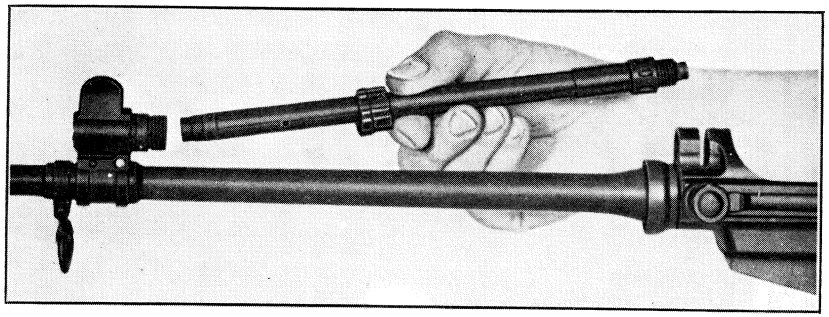


Fig.59

Remove the fastening nut of the gas cylinder and the gas regulator sleeve (fig. 60).

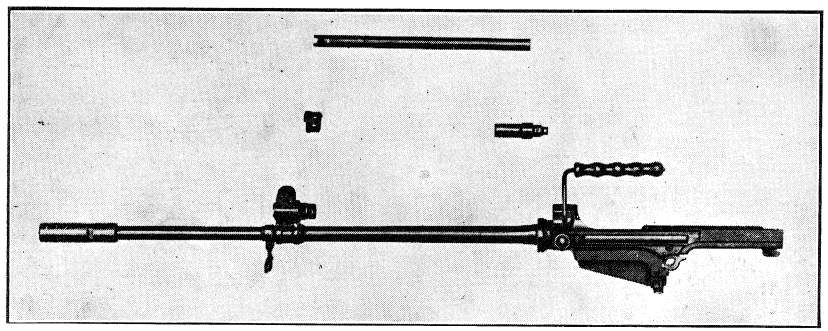


Fig.60

6. FRONT SWIVEL

Unscrew the front swivel screw (fig. 61) this releases the front swivel from the bracket (fig. 62).

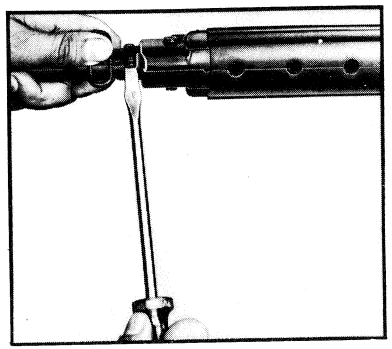


Fig.61

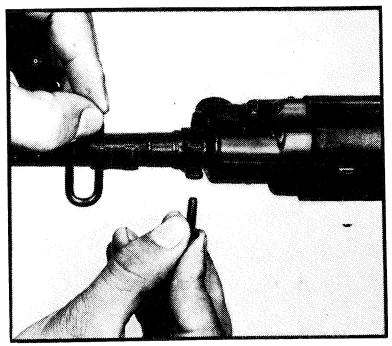


Fig.62

Forcing the bracket open, separate it from the barrel (fig. 63).

Note: It is not advisable to remove the bracket, since it has to be forced open.

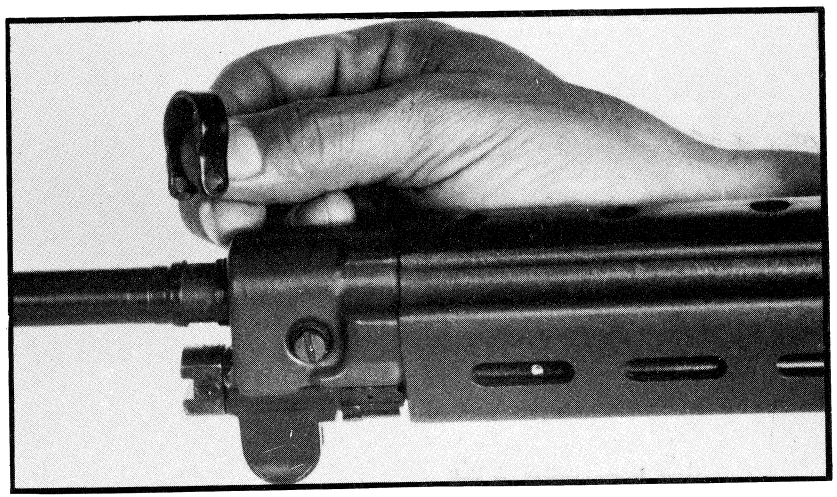


Fig.63

7. FRONT SIGHT

Before removing the front sight, screw it fully in, counting the clicks, to be able to replace the front sight at the right height when replacing it.

Using the special wrench, unscrew the front sight (fig. 64).

Remove the front sight (fig. 65).

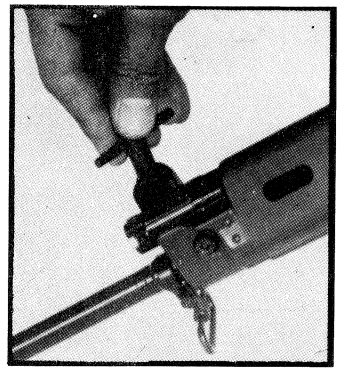


Fig.64

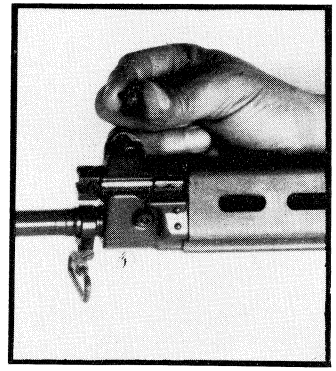
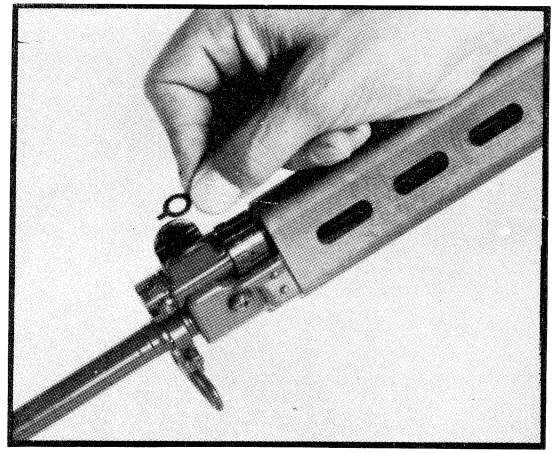


Fig.65

Remove the front sight fixing plate and the front sight spring from its housing (fi. 66).



Fug.66

8. FRAME-RECEIVER JOINT PIN

With the gun field stripped (group operation n.° 1).

First open the gun as far as it will go. Using a coin or a screwdriver, unscrew the frame joint pin spindle (fig. 67).

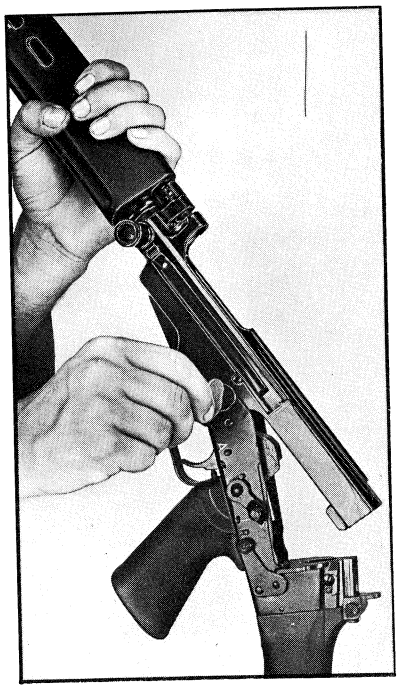


Fig.67

Fig.68

Remove the frame joint pin spindle (fig. 68).

Using the nose of a cartridge push the frame joint pin. The frame joint pin will be pushed out about 1 cm.

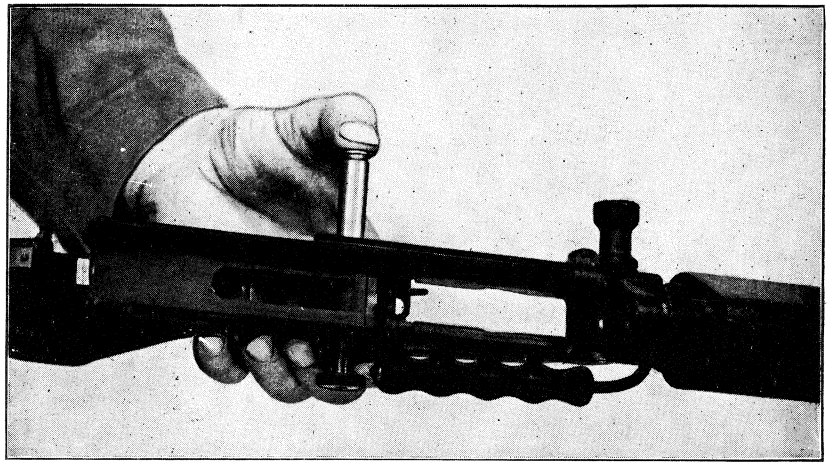


Fig.69

Remove the frame joint pin (fig. 70).

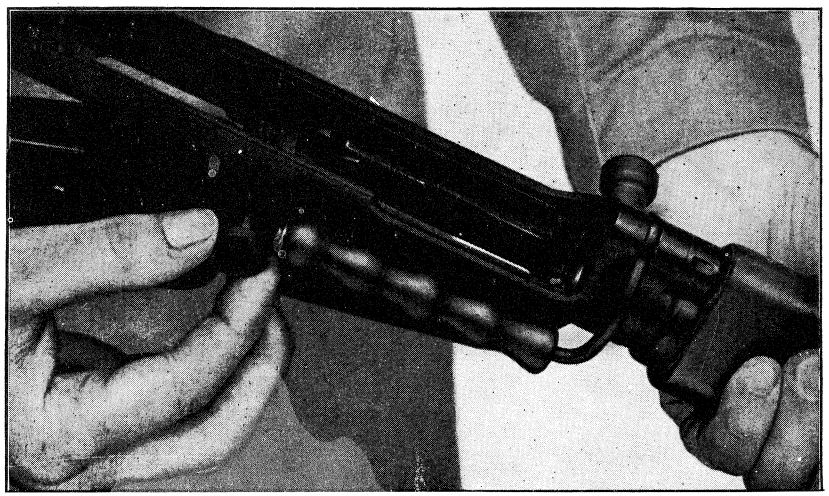


Fig.70

With the frame joint pin removed, separate the trigger guard group from the receiver group (fig. 71).

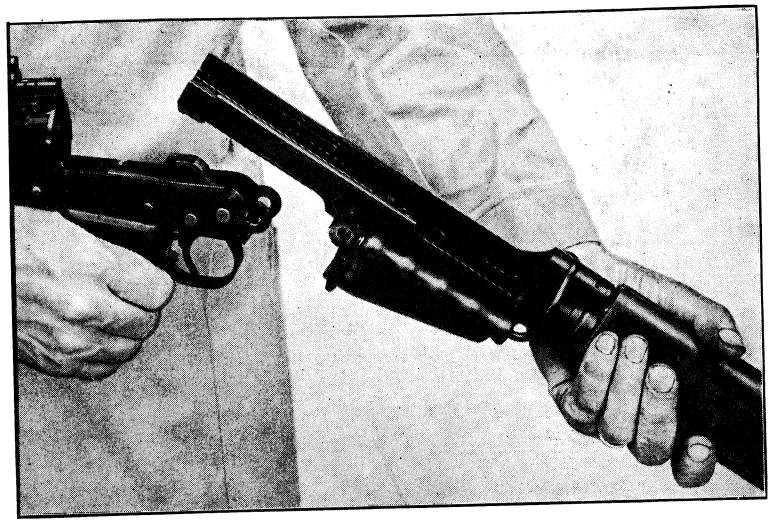


Fig.71

9. SAFETY SEAR

With the gun field stripped (group of operation n.° 1).

Remove the frame joint pin (group of operation n.° 8).

Rotate the safety sear about 90.° pulling it slightly to the rear (fig. 72), until it is clear of the receiver.

Note: Since the sear spring is riveted, it should not be removed.

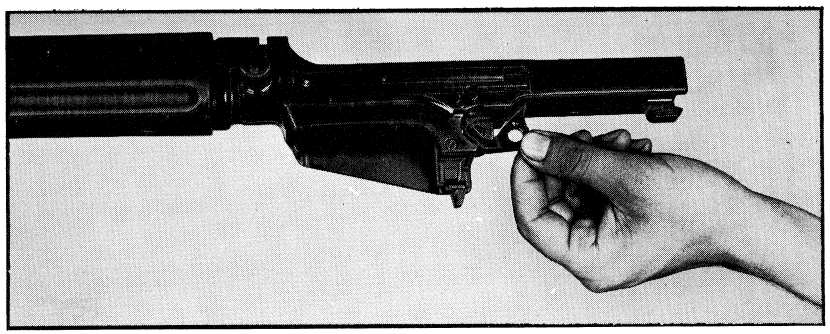


Fig.72

10. COCKING HANDLE

With the gun field stripped (group of operation n.° 1). Using a drift, remove the stop pin of the stud (fig. 73).

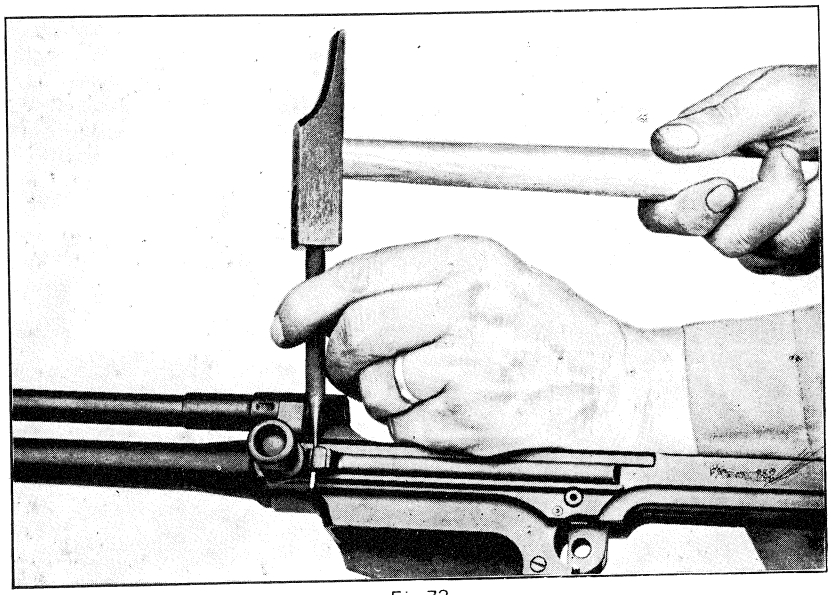


Fig.73

Remove stud from cocking handle (fig. 74). If the stud is slightly tight in its base, push it, using a drift, from the inside of the weapon.

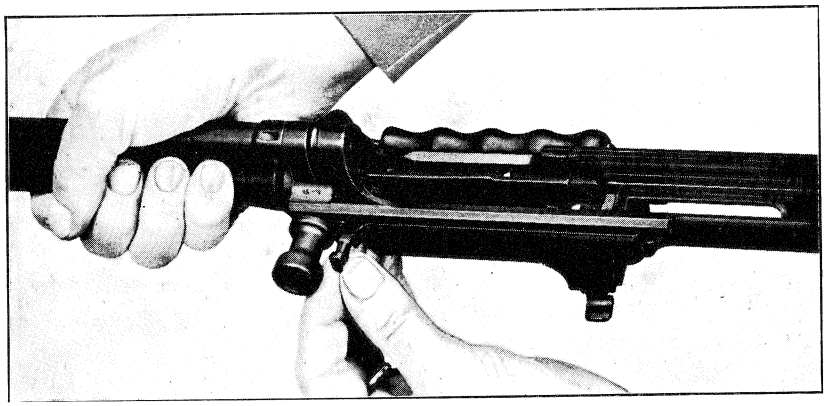


Fig.74

Pull the cocking handle to its rearward position. In this position, simultaneously, pull the handle to the rear and using a drift or connecting rod, depress the plunger of the knob (fig. 75) until the handle is free to be brought to the rear.

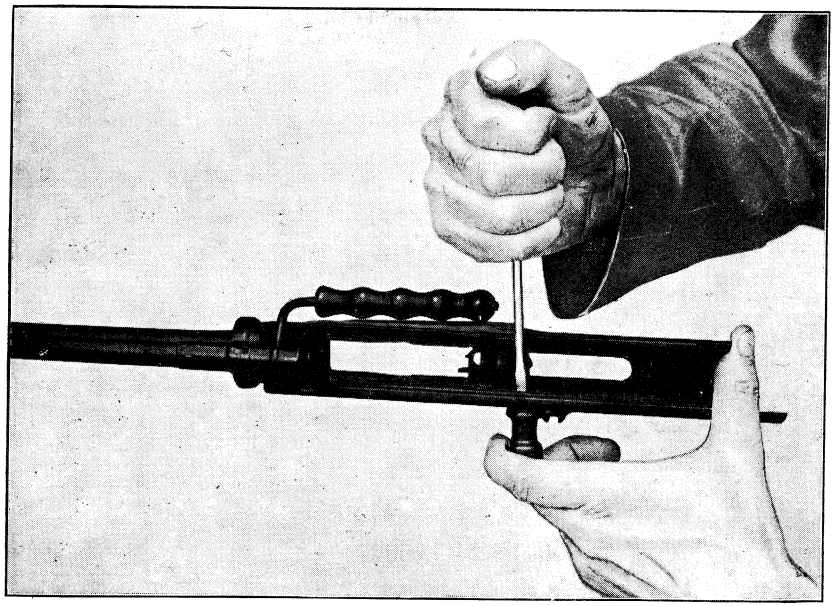


Fig.75

Pull the handle fully to the rear (fig. 76).

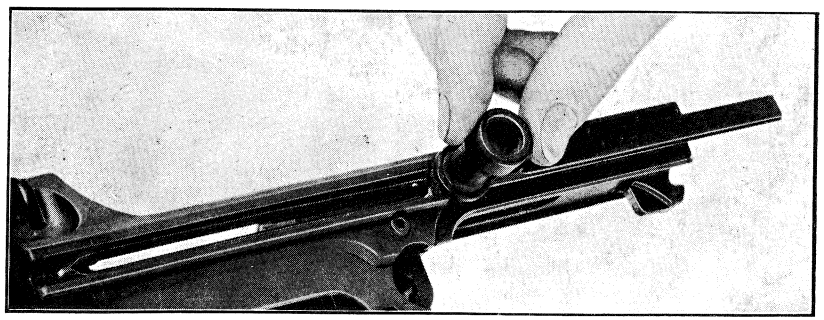


Fig.76

Note: In case the hand guard was previously removed (group of operation n.° 3) after removing the handle stud (fig. 73 and 74), the handle can be removed by merely pulling it forward (fig. 77).

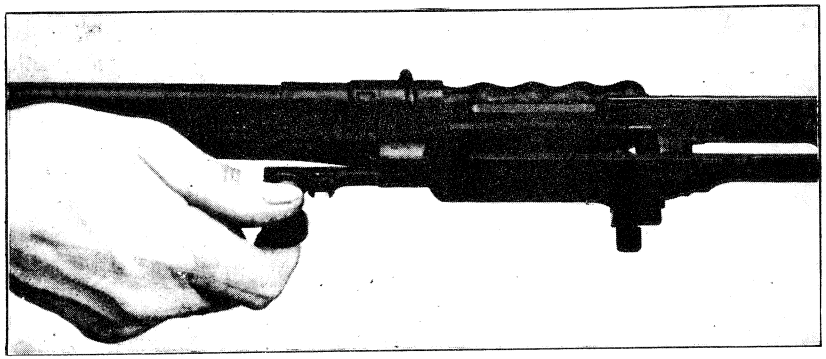


Fig. 77

Using a drift, push the plunger retaining pin out (fig. 78).

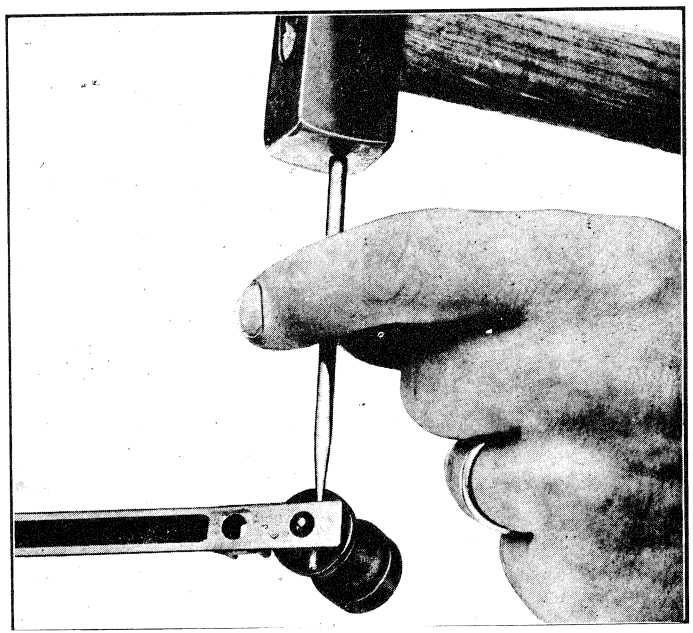


Fig. 78

This will remove the plunger and its spring (fig. 79).

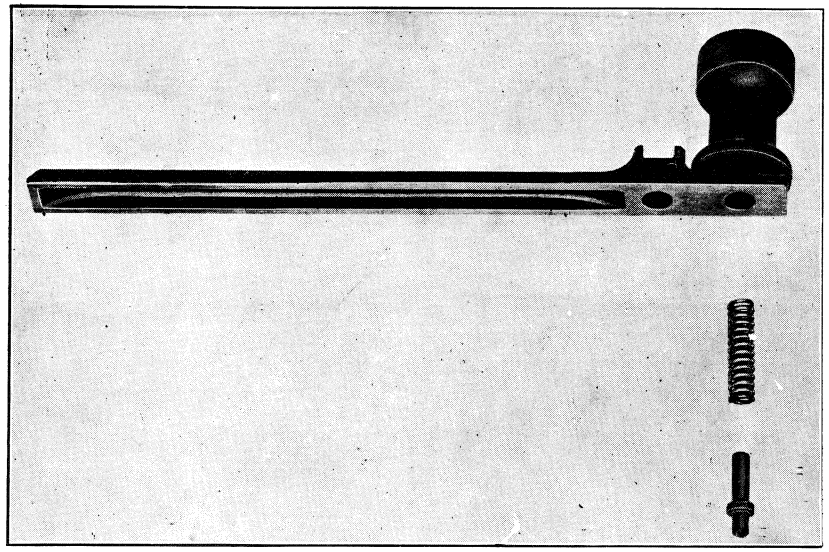


Fig. 79

11. MAGAZINE CATCH AND BOLT CATCH

The weapon being field stripped (group of operation n.° 1). Unscrew the pivot of the magazine catch (fig. 80).

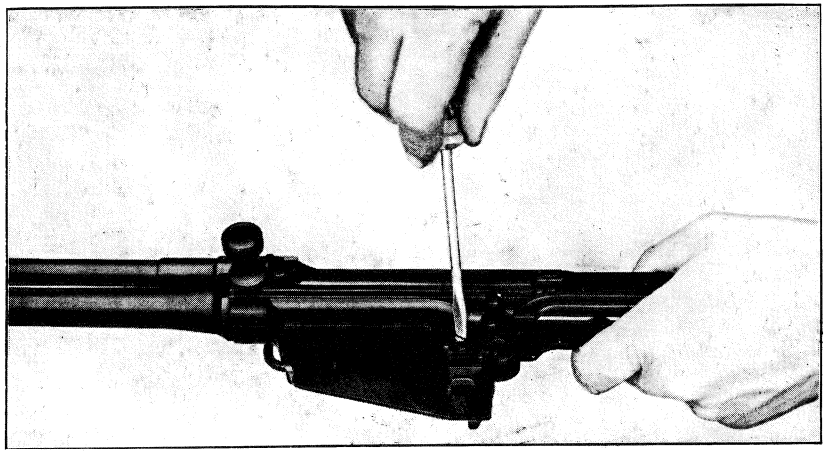


Fig.80

Remove the pivot of the magazine catch (fig. 81).

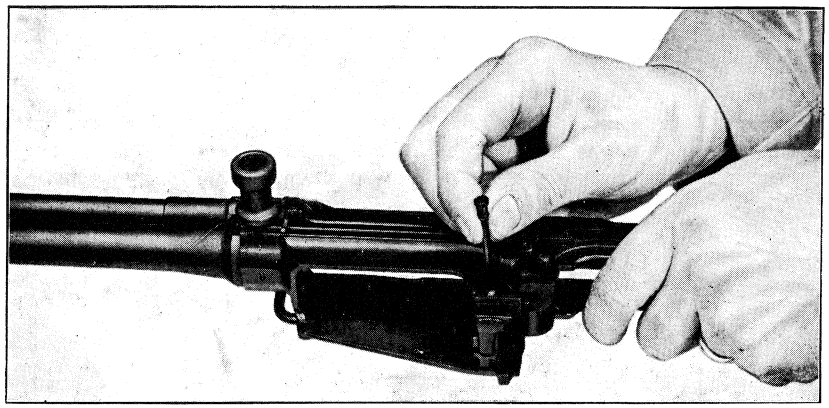


Fig.81

a) **Magazine catch.** — Using a screwdriver blade, compress the magazine catch spring while pulling the magazine catch (fig. 82).

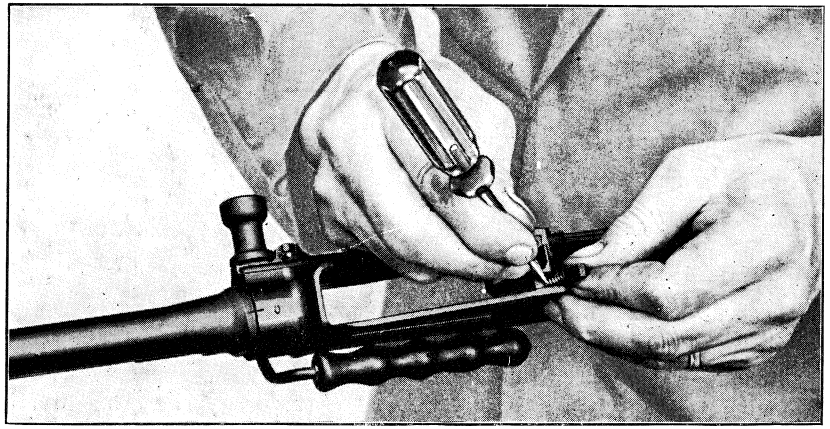


Fig.82

When the spring is clear of its housing in the receiver, remove the magazine catch (fig. 83).

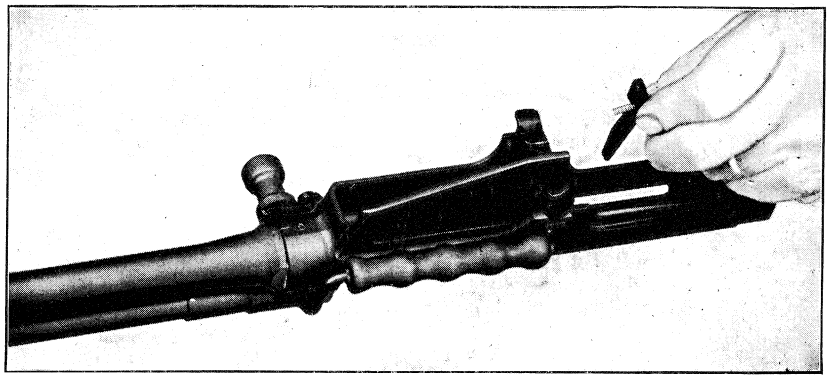


Fig.83

b) **Bolt catch.** — Remove bolt catch from its housing (fig. 84)

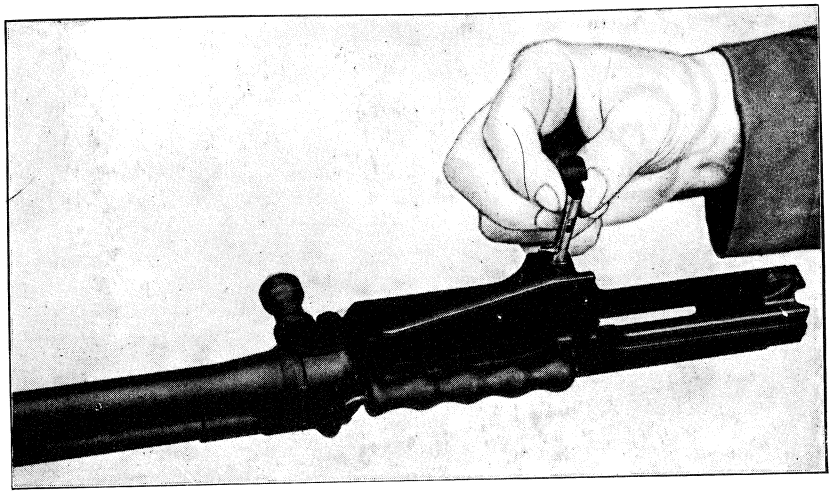


Fig.84

12. LOCKING SHOULDER

The weapon being field stripped (group of operation n.° 1).

Push out the locking shoulder from the left to the right, using a drift (fig. 85).

Note: Removal of the locking shoulder is only carried out when adjusting the head-space.

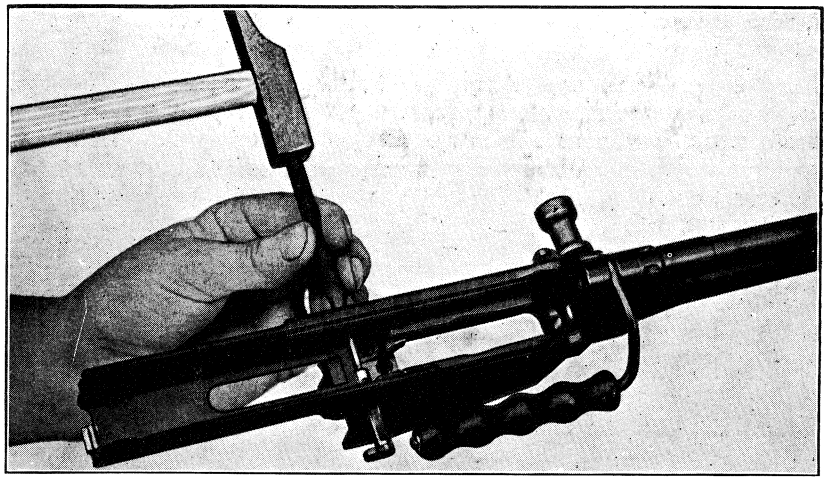


Fig.85

Remove the locking shoulder (fig. 86).

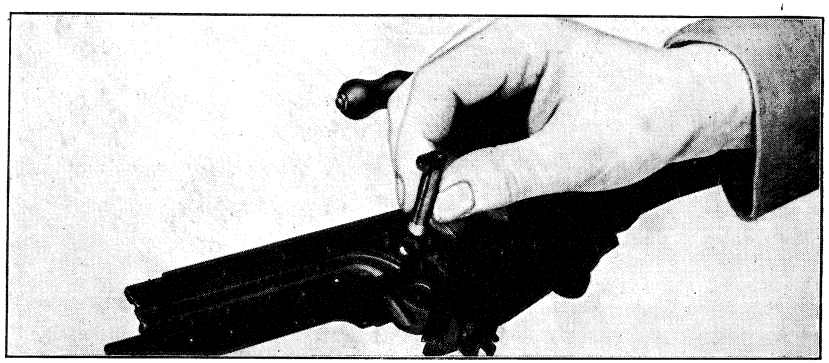


Fig.86

13. FRAME ASSEMBLY AND PISTOL GRIP

With the weapon field stripped (group of operation n.° 1). Remove the frame joint pin (group of operation n.° 8).

a) **Change lever.** — Rotate the change lever upwards in the vertical position and remove the change lever (fig. 87).

Note: The removal of the change lever can also be effected without any previous stripping.

Open the gun, as far as the field stripping (fig. 35) and remove the change lever as indicated.

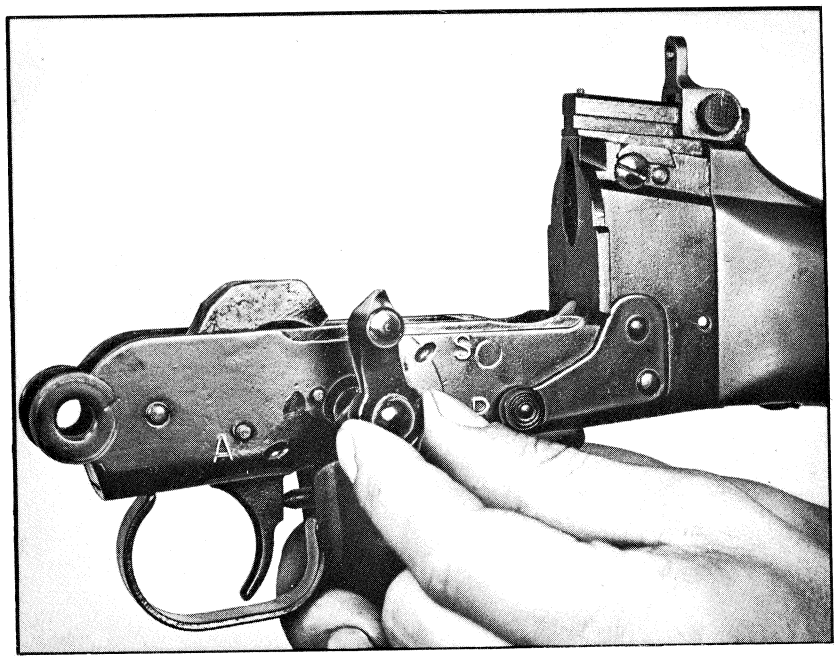


Fig.87

Push out the pin of the change lever (fig. 88).

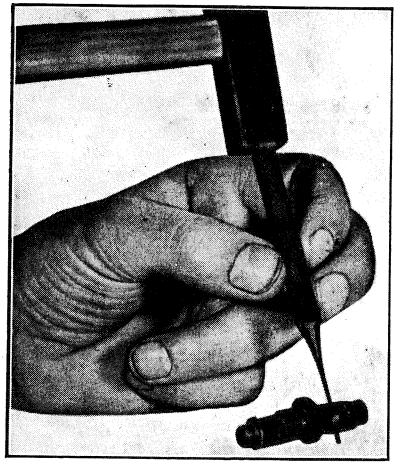


Fig.88

This releases the change lever spring and spring plunger (fig. 89).

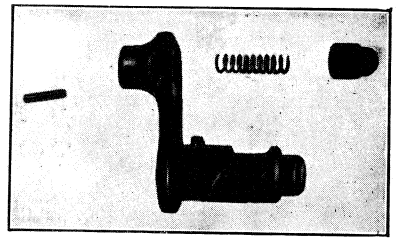


Fig.89

b) **Hammer.** — With the thumb on the hammer to control its movement, depress the trigger and let the hammer gently down (fig. 90).

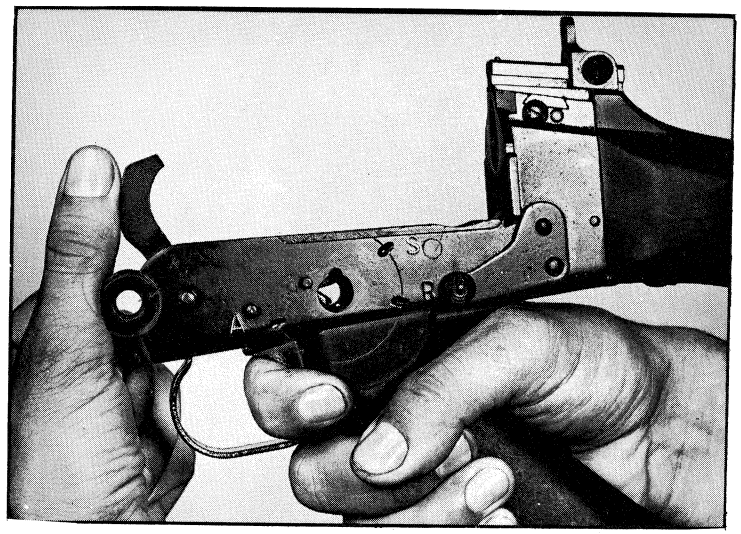


Fig. 90

Using the nose of a cartridge, force the hammer spring plunger upwards in order to release it from the stop notch in the frame, while holding the spring plunger with the thumb in the frame, while holding the spring plunger with the thumb in order to prevent it from flying out under the action of the hammer spring (fig. 91).

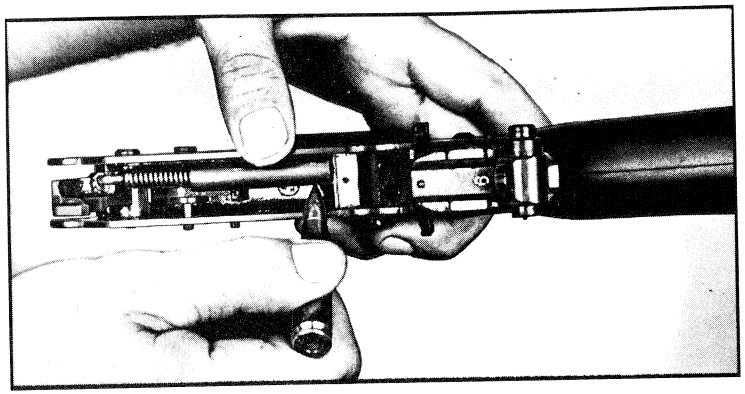


Fig. 91

Remove the hammer spring plunger and the hammer spring (fig. 92).

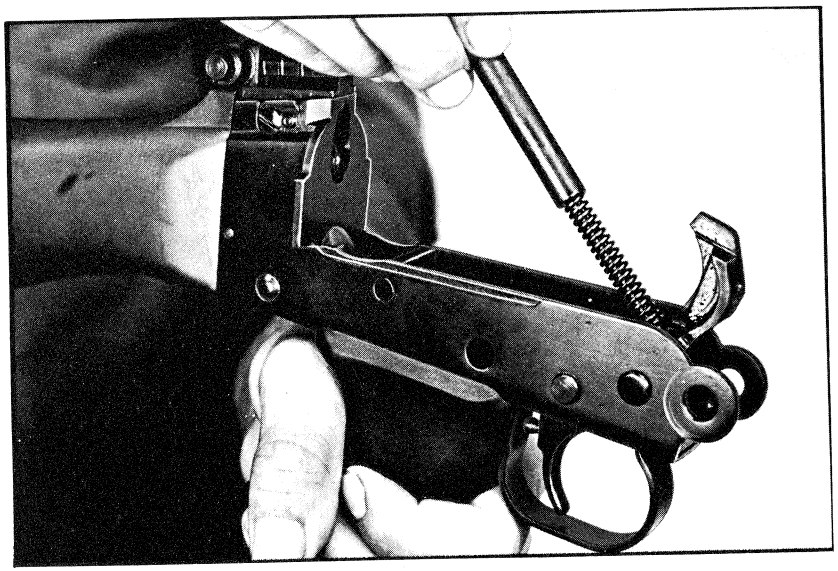


Fig. 92

Separate the hammer spring plunger, the hammer spring and the hammer spring rod by pulling them apart (fig. 93).

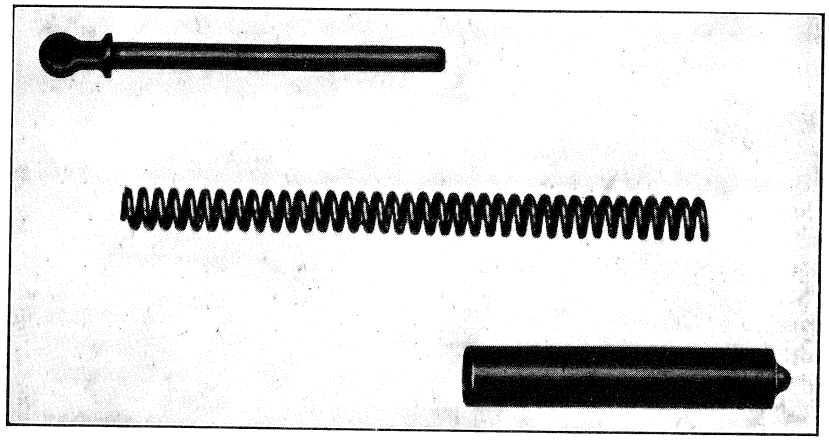


Fig. 93

Lift the free end of the locking plate upwards as far as it will go and put it back (fig. 94).

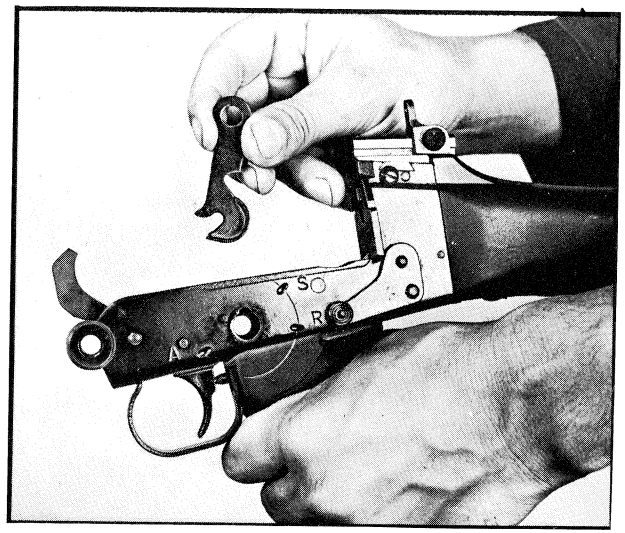


Fig. 94

Using the nose of a cartridge, push the hammer pin out (fig. 95).

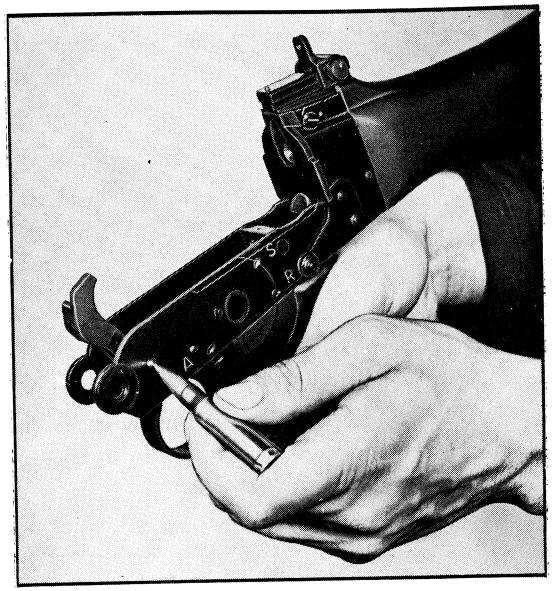


Fig. 95

Remove the hammer pin and the hammer (fig. 96).

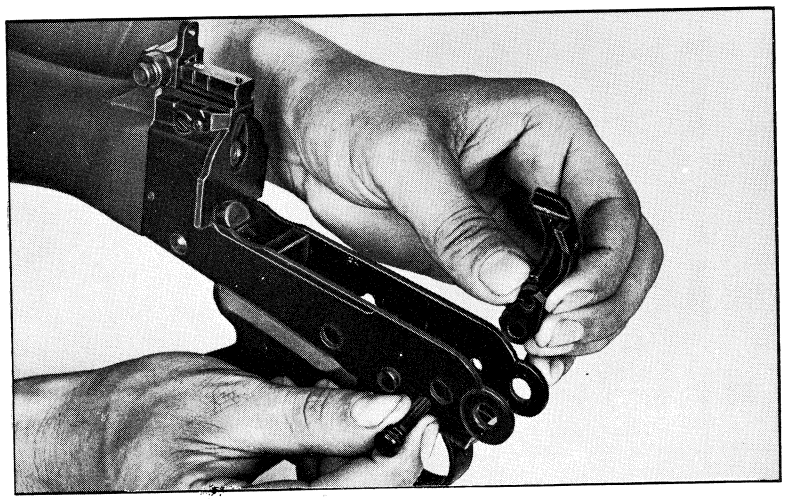


Fig. 96

c) **Sear.** — Using the nose of a cartridge, push the sear pin out (fig. 97).

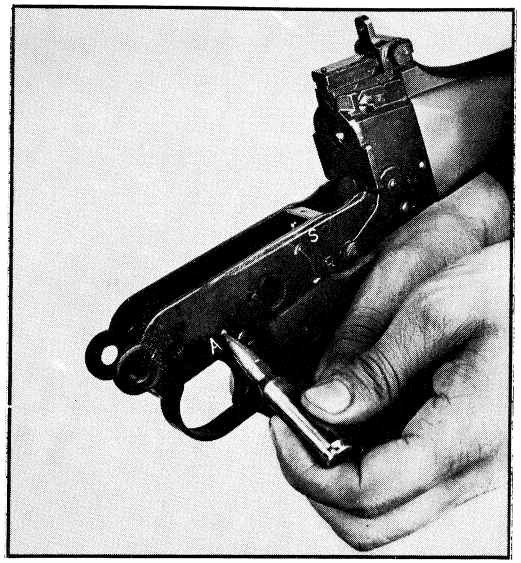


Fig. 97

Holding the sear with the left hand in order to avoid it flying out under the action of its spring, remove the sear pin (fig. 98).

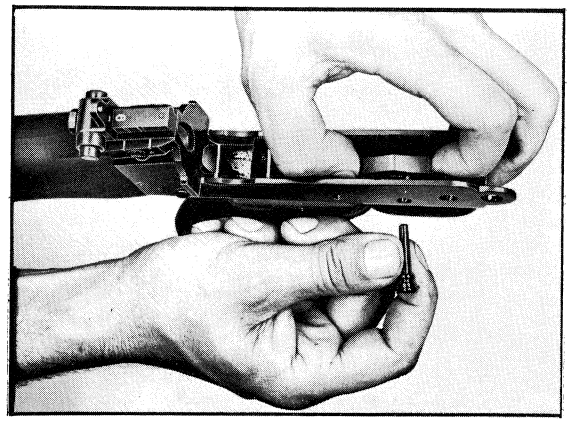


Fig. 98

Remove sear (fig. 99).

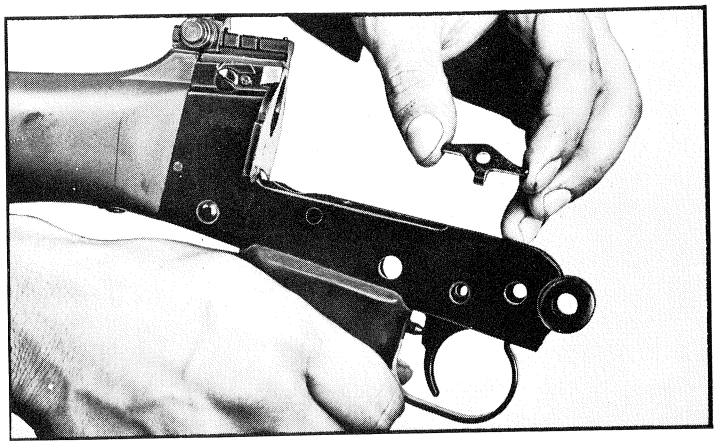


Fig. 99

d) **Trigger.** — Remove trigger releasing it from the trigger spring plunger (fig. 100).

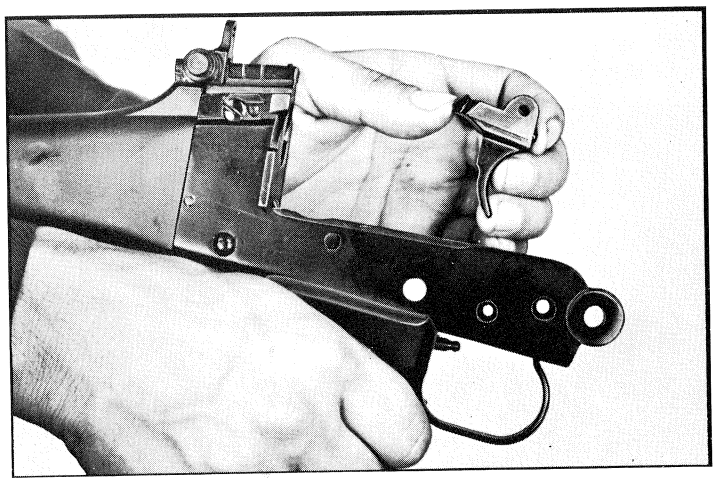


Fig.100

Since the last sear spring coil is open, remove the sear

spring and the plunger from the trigger body with a screwdriver (fig. 101).

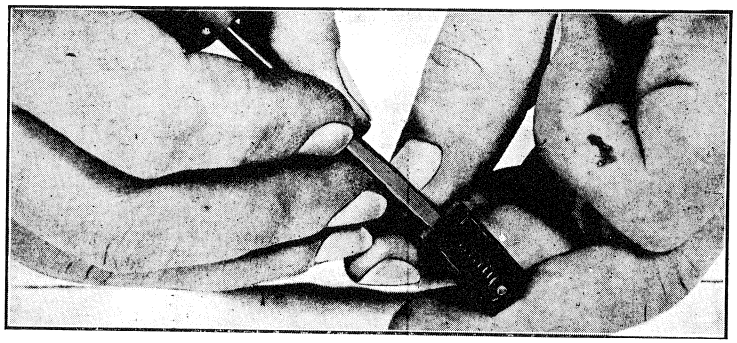


Fig.101

e) **Pistol grip.** — Remove from the pistol grip the cleaning materials after loosening its holding spring (fig. 102).

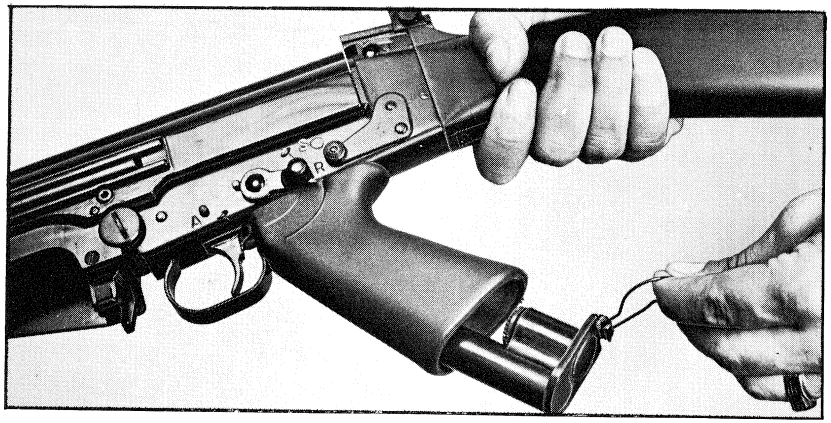


Fig.102

Using a screwdriver, unscrew the pistol grip fastening screw (fig. 103).

Remove the screw and the grip (fig. 104).

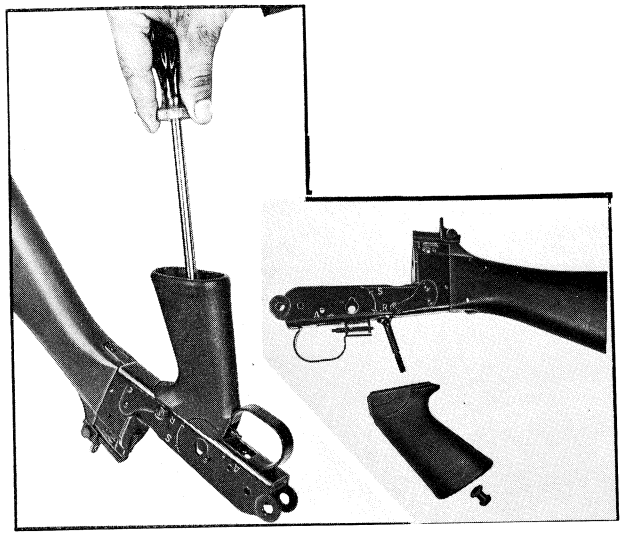


Fig.103

Fig.104

f) **Trigger guard.** — Remove the trigger guard, by tilting it forward while slightly pulling it down (fig. 105).

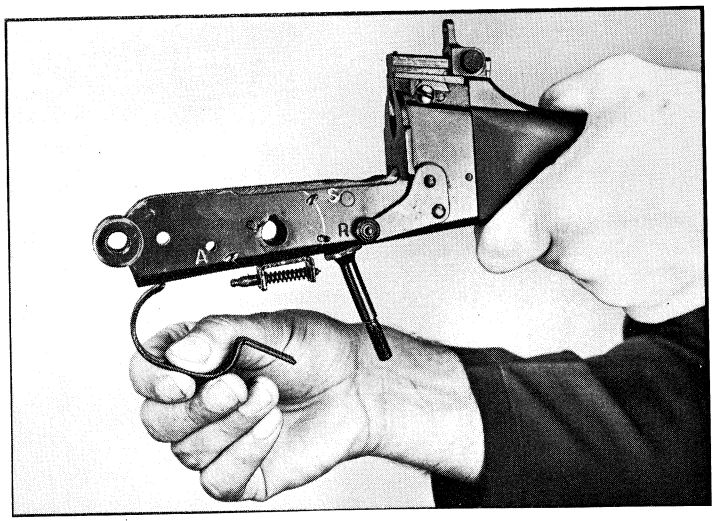


Fig.105

g) **Trigger spring.** — With the finger depress to the rear trigger spring plunger in order to compress the trigger spring, swing plunger downwards (fig. 106).

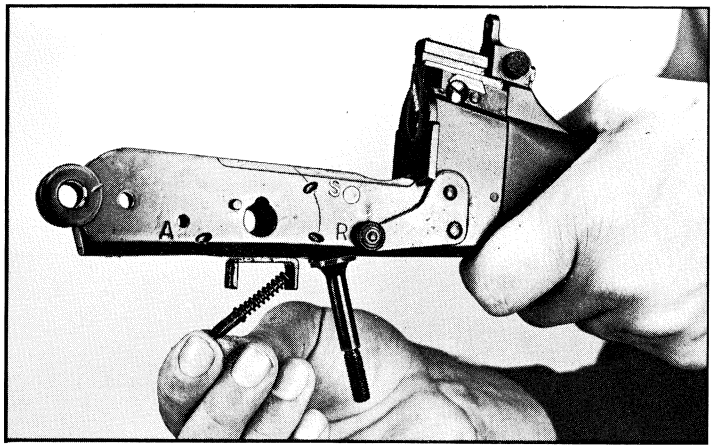


Fig.106

This releases the trigger spring plunger and the trigger spring (fig. 107).

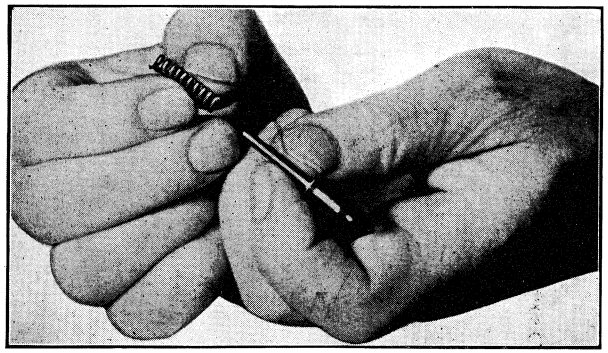


Fig.107

14. REAR SLING SWIVEL AND BUTT PLATE

a) **Rear sling swivel.** — Unscrew both screws of rear sling swivel base (fig. 108).

This releases the rear sling swivel base and rear sling swivel (fig. 109).

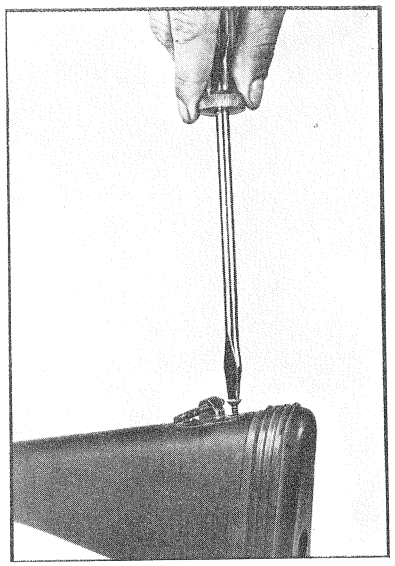


Fig.108

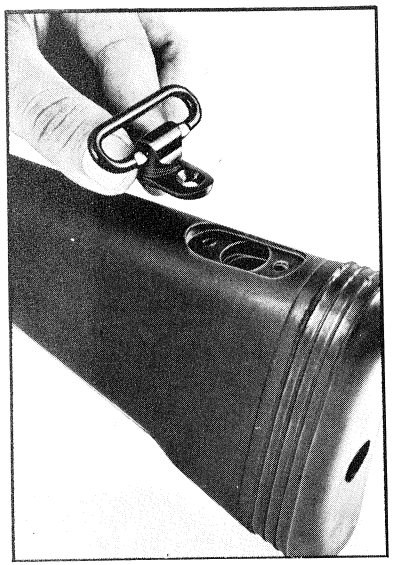


Fig.109

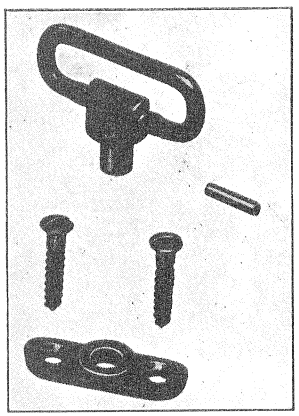


Fig.110

Remove the rear sling swivel pin and separate the base from the sling pivot (fig. 110).

b) **Butt plate.** — Unscrew butt plate screw (fig. 111).

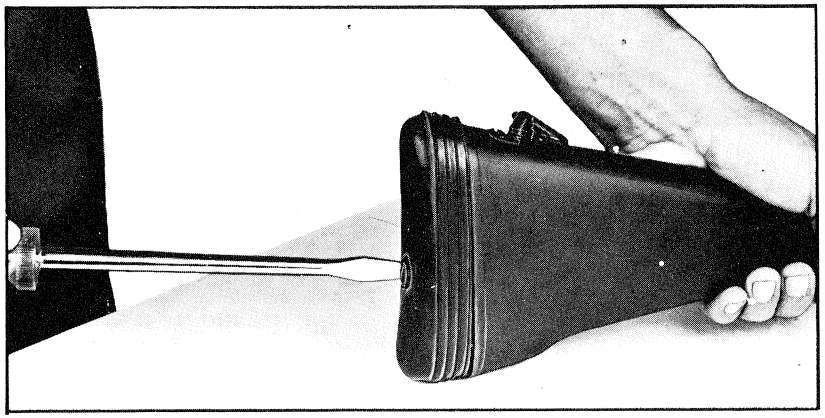


Fig.111

Remove butt plate (fig. 112) and the lockwasher of the butt plate screw.

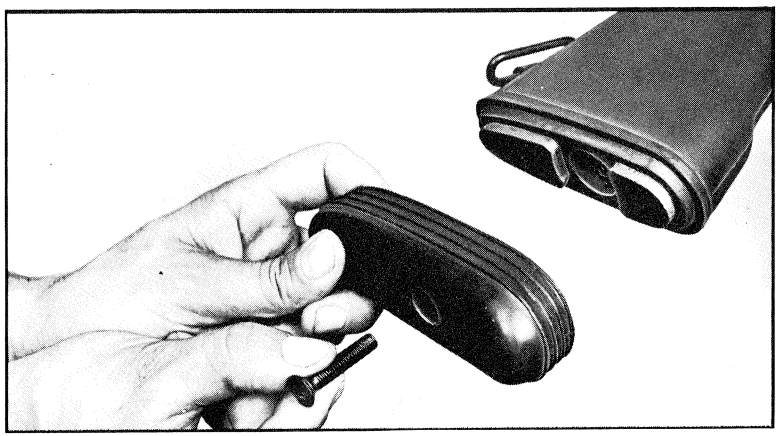


Fig.112

15. RETURN SPRINGS AND BUTT

With the weapon field stripped (group of operation n.° 1).

Remove butt plate (group of operation n.° 14).

a) **Return springs.** — Using a special tool, unscrew the butt screw, hold the tool firmly in order to balance the action of the springs (fig. 113).

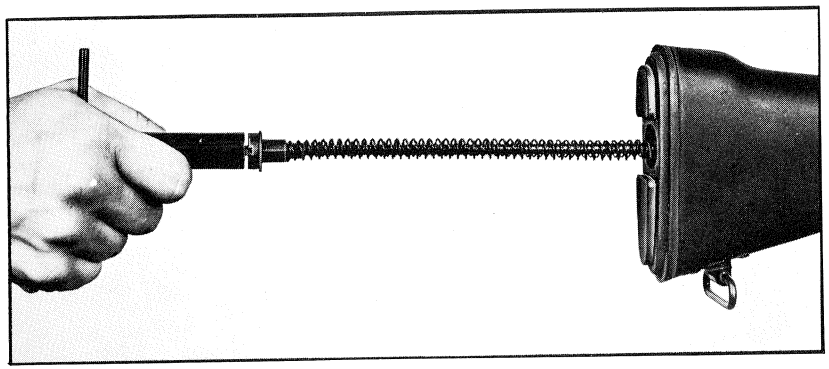


Fig.113

Separate the butt screw, the screw washer, the return springs plunger and the return springs (inner and outer) (fig. 114).

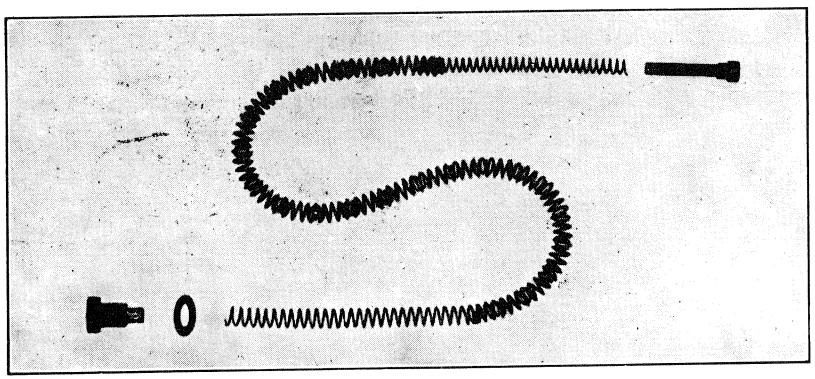


Fig.114

b) **Butt.** — Unscrew the frame tang screw (fig. 115).

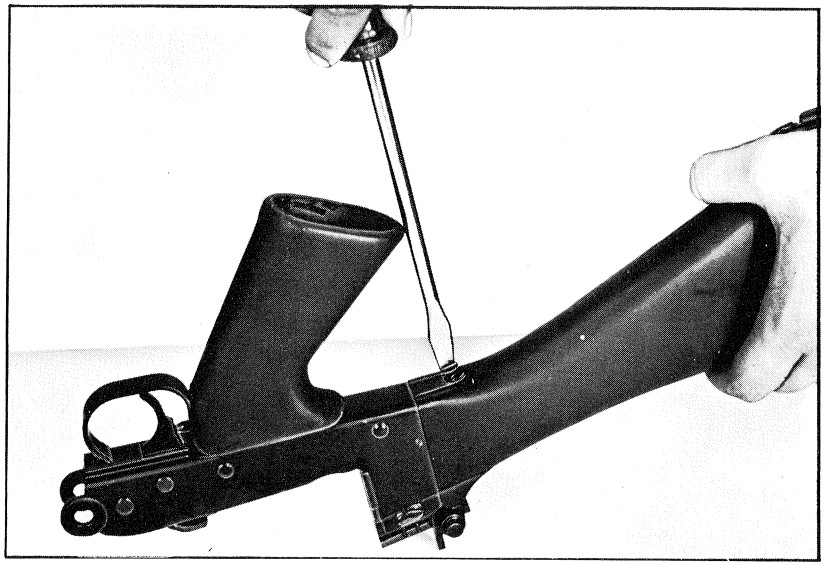


Fig.115

Separate the butt and the frame (fig. 116).

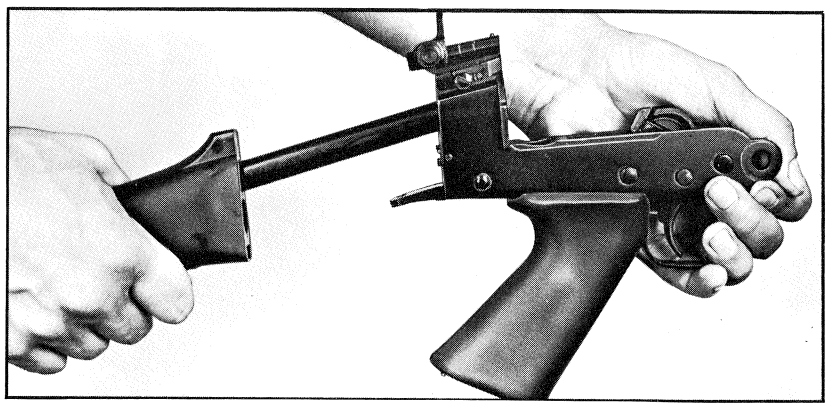


Fig.116

16. FRAME-RECEIVER LOCK

With the weapon field stripped (group of operation n.° 1).

Remove the frame-receiver joint pin (group of operation n.° 8).

Remove butt plate (group of operation n.° 14).

Remove return springs and the butt (group of operation n.° 15).

With a screwdriver remove the lock lever fastening screw (fig. 117).

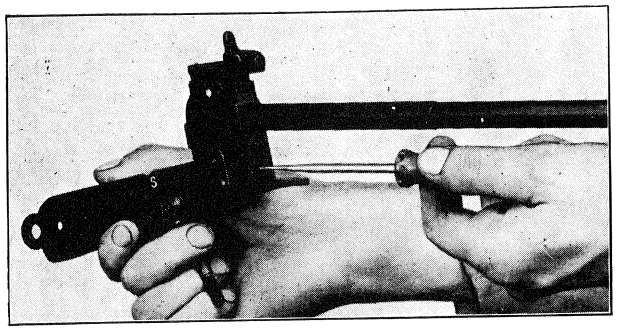


Fig.117

Using a drift, push the frame lock guide-pin out, do not remove the drift at once in order to prevent the projection of the lock spring (fig. 118).

Fig.118

Retain the lock spring with the thumb, while removing the drift (fig. 119).

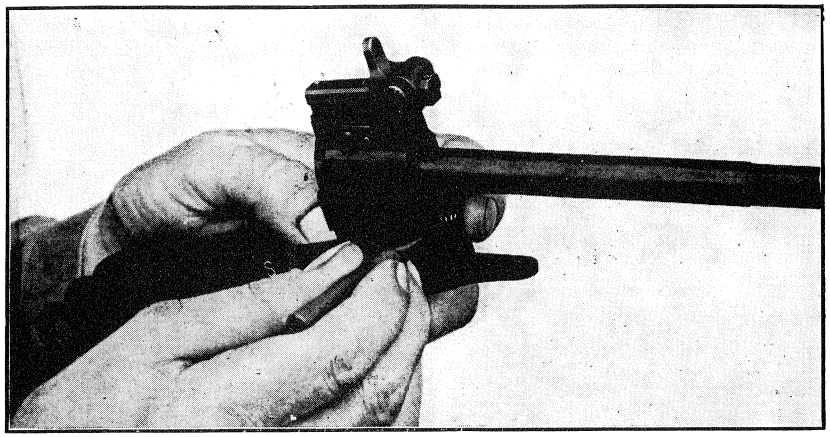


Fig.119

Remove the lock spring and the spring plunger (fig. 120).

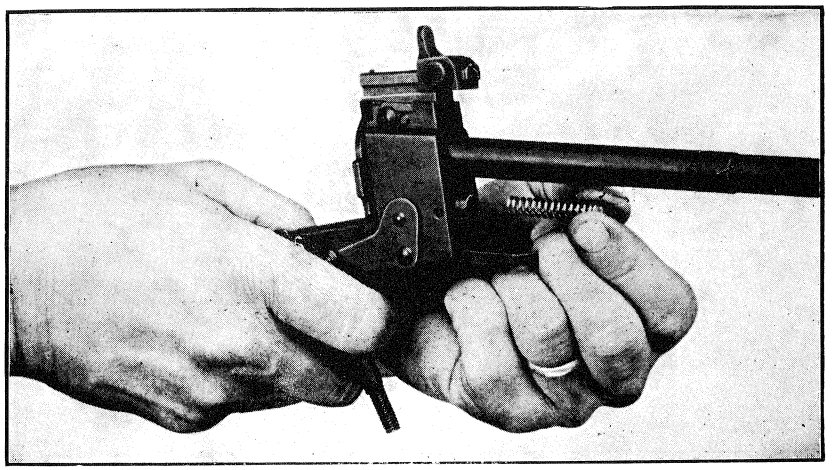


Fig.120

Press the end of the lock lever with the finger (right side of the frame) and remove the lock lever on the left side of the frame (fig. 121).

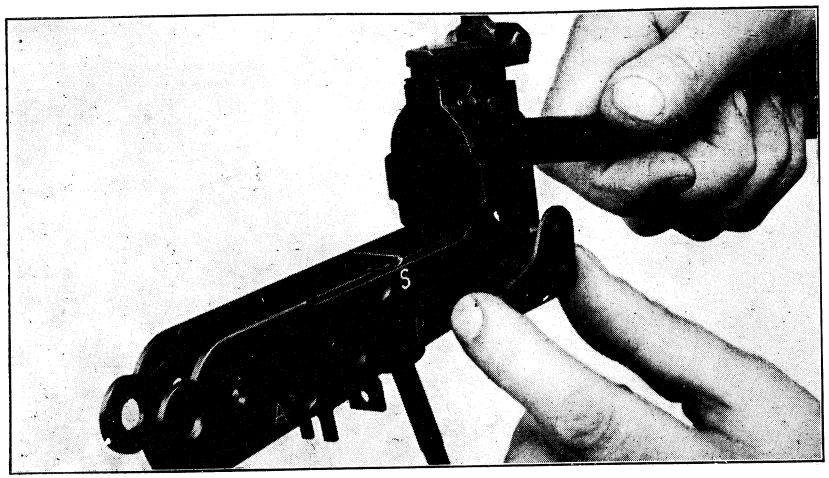


Fig.121

Remove the frame lock from its housing (fig. 122).

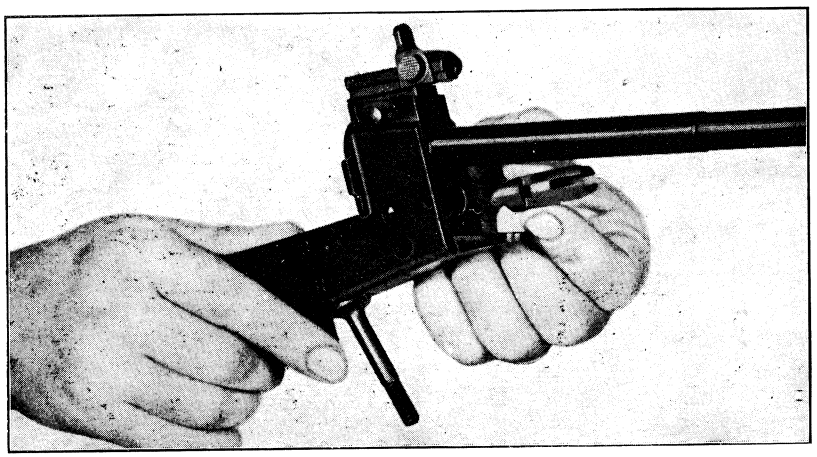


Fig.122

17. REAR SIGHT

Unscrew one of the rear sight adjusting screws (fig. 123).

Note: It is recommended not to remove the other adjusting screw, which will be used as a stop, locating the sight when assembling.

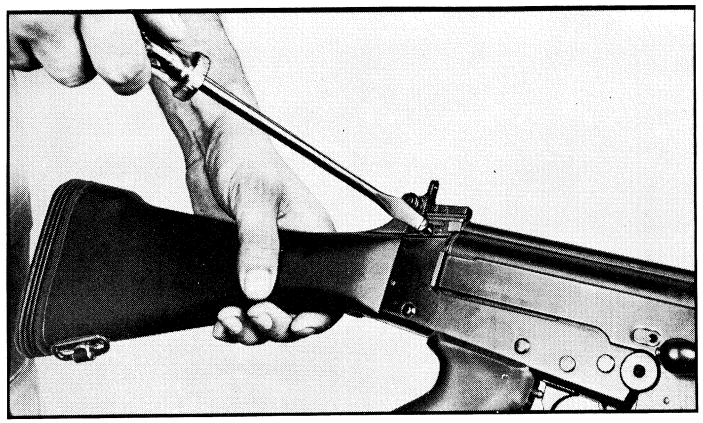


Fig.123

Slide the rear sight to the side of the screw which was removed (fig. 124).

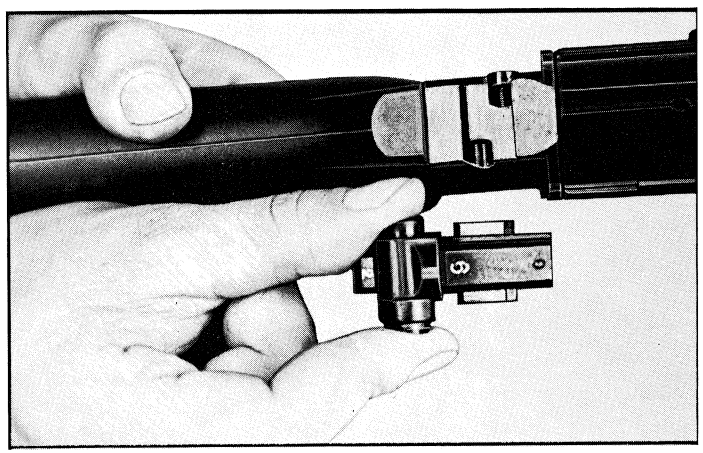


Fig.124

While depressing the sight slide lock (fig. 125), remove the sight slide to the rear.

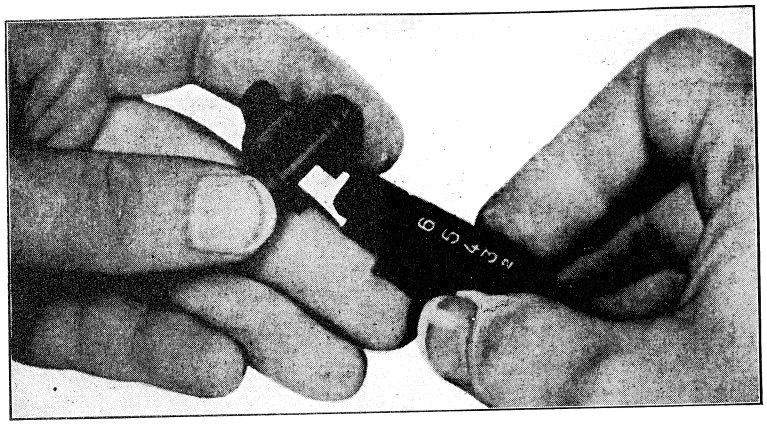


Fig.125

This releases the sight slide lock and its spring, remove the adjusting screws, stop spring and rear sight stop pin (fig. 126).

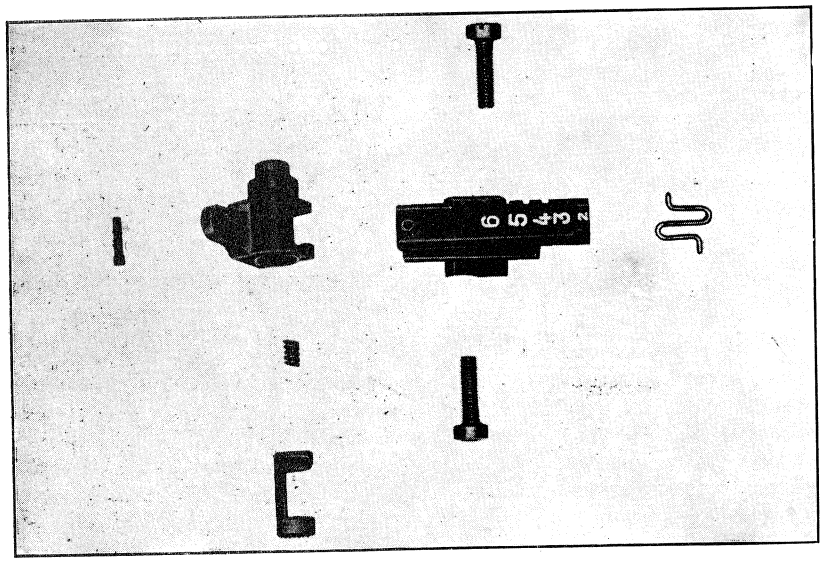


Fig.126

18. MAGAZINE

Using the nose of a cartridge remove the magazine lower plate (fig. 127).

Knock the rear of the magazine strongly against a piece of wood. This operation should be carried out until the lower plate comes out for about half a centimetre (fig. 128).

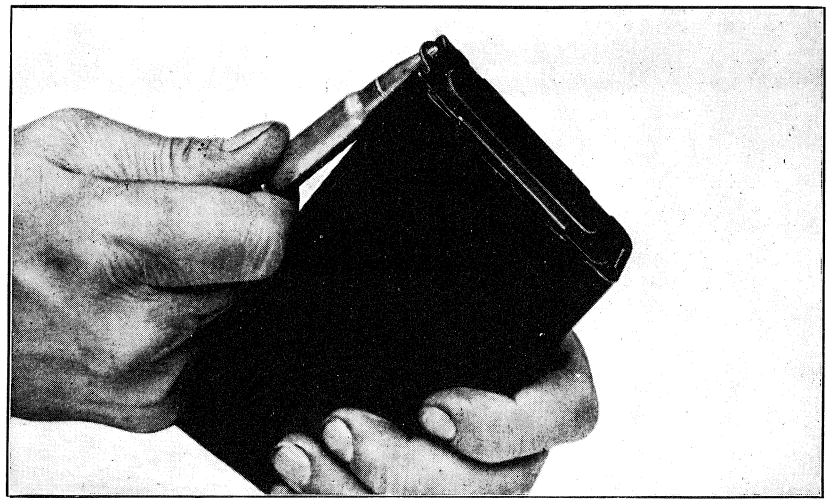


Fig.127

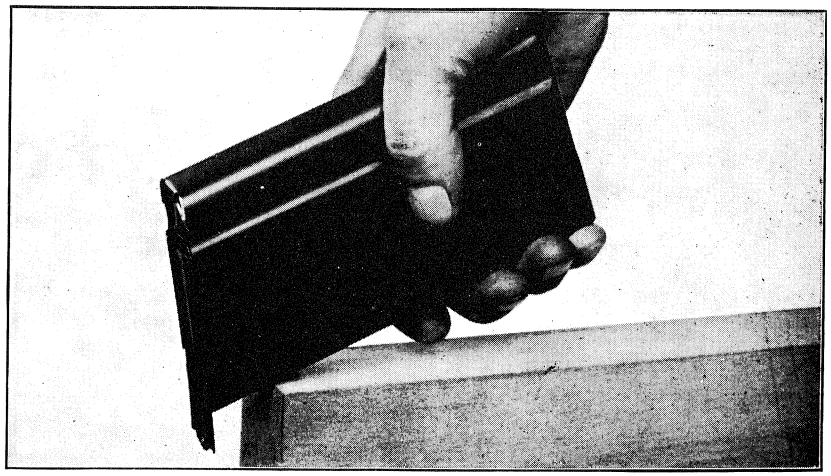


Fig.128

Remove the magazine lower plate, taking care to hold the spring down with the thumb (fig. 129).

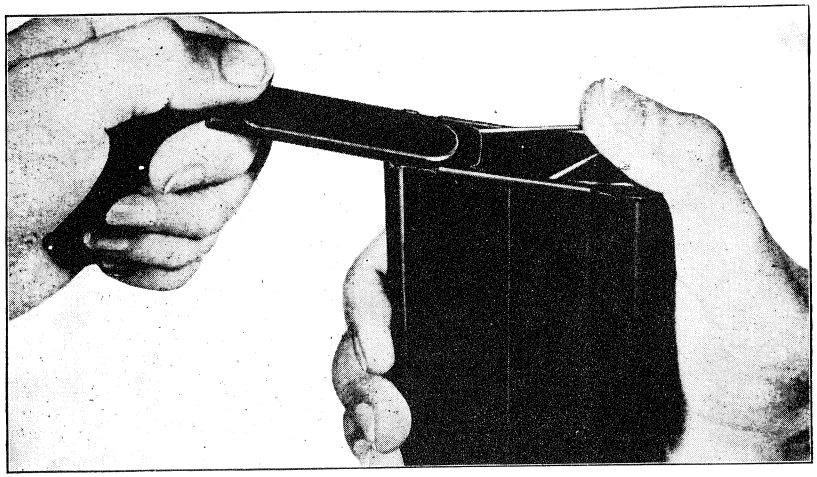


Fig.129

Remove the platform spring fully (fig. 130).

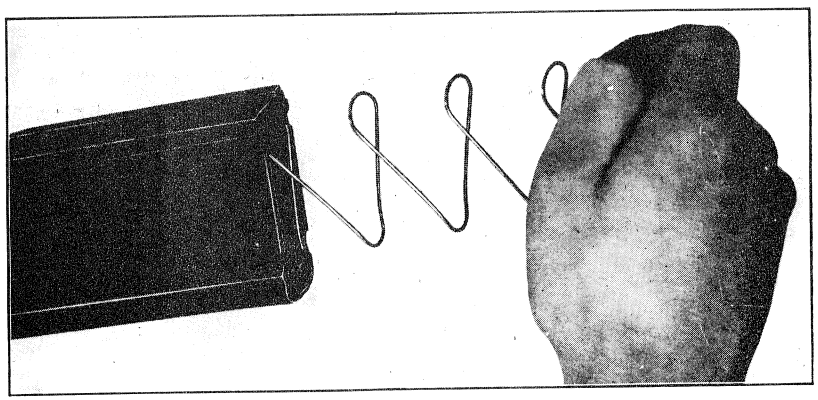


Fig.130

Pressing the spring, incline the platform by 45.° inside the magazine and remove the magazine platform (fig. 131). Release the spring from the rear holding lugs and the front guide lug on the magazine platform.

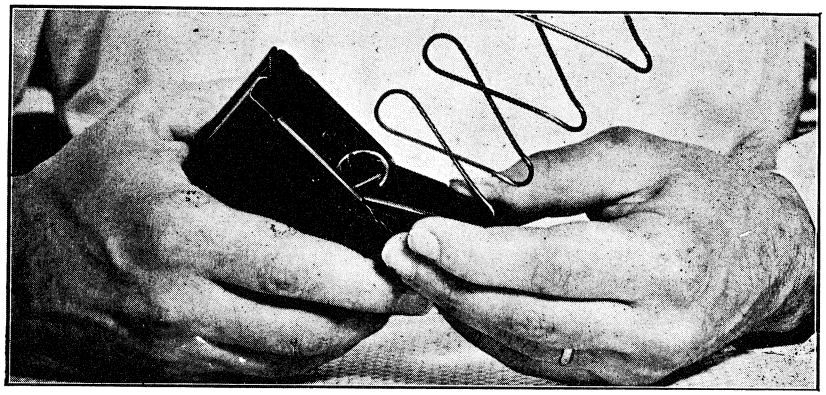


Fig.131

B. ASSEMBLING

The component parts are assembled in the inverse order of disassembling, for this reason the parts should be laid out in the order of disassembling.

To make the assembling easier see the figures for stripping.

1. MAGAZINE

Replace the platform spring into the magazine casing, taking care that the spring buckle is correctly positioned between the spring holding lugs and the guide lugs on the magazine platform (fig. 132).

Replace the magazine platform by first introducing the front part of the platform, from the bottom, into the magazine casing (fig. 133) and place the magazine in its normal position.

Compress the platform spring and replace the magazine lower plate (fig. 129).

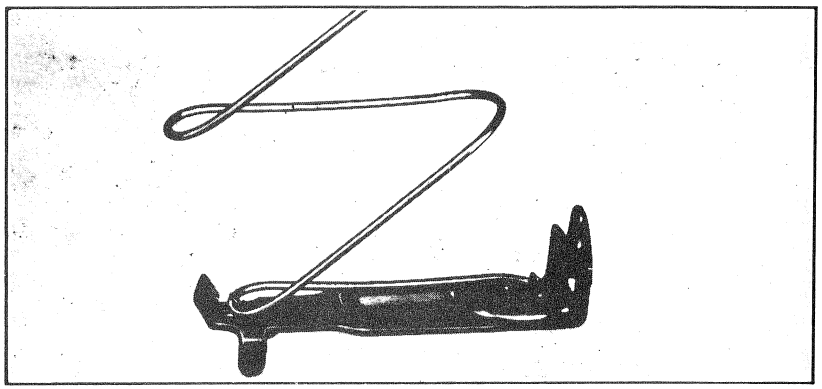


Fig.132

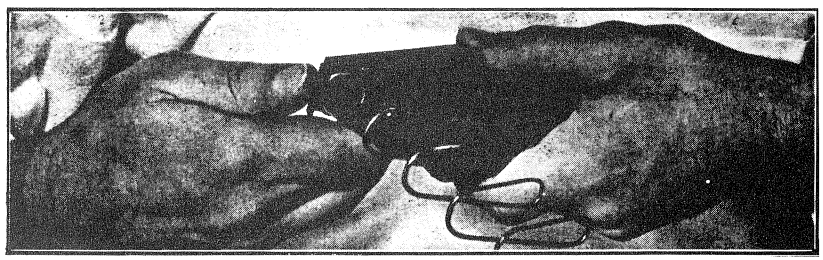


Fig.133

2. REAR SIGHT

Replace the rear sight slide lock spring into its housing on the sight slide; replace the slide lock on the slide and the slide on the sight base.

Replace the adjusting screw stop spring as shown in fig. 134.

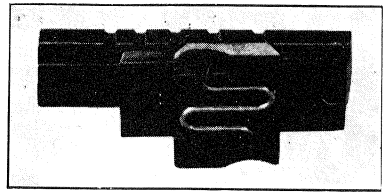


Fig.134

Replace rear sight stop pin in the sight base and replace sight unit on the frame against the adjusting screw which was not removed.

Screw the secund adjusting screw tightly in (fig. 123).

3. FRAME-RECEIVER LOCK

— Replace the lock as shown in fig. 122.
— Replace the lock lever (fig. 121) and swing it in order to locate the stud in the lock.
— Replace the lock spring and lock spring plunger in the lock (fig. 120).
— Compress the lock spring and insert a drift in the seat of the pin (fig. 135).

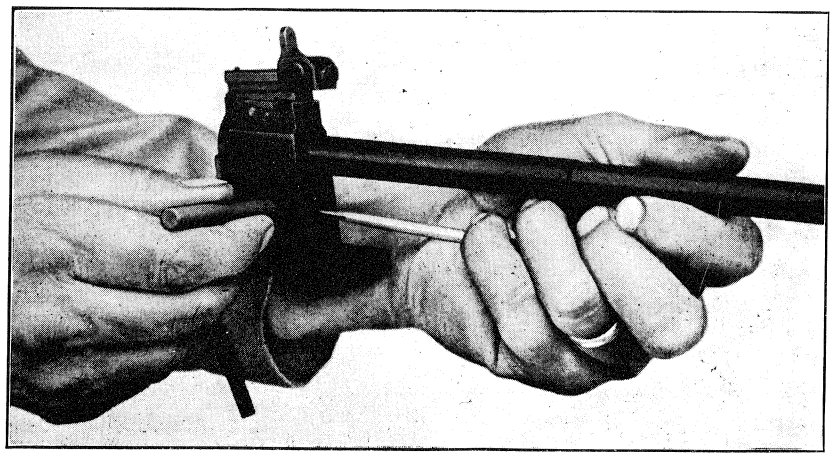


Fig.135

— Insert the pin and withdraw the drift progressively from the pin.
— Screw in the locking lever fastening screw (fig. 117).

4. BUTT AND RETURN SPRINGS

a) **Butt**

Replace the butt on the frame (fig. 116) and screw in the frame tang screw (fig. 115).

b) **Return springs**

— Insert the inner spring into the outer spring.
— Replace spring plunger on the front end of the inner spring. The plunger is held on the spring since the last coil is slightly reduced.
— Insert the springs (with the plunger forward) into the return springs tube.
— Place the butt screw and the butt screw washer on the special tool.
— Insert the tool stem into the return springs and compress the springs (fig. 113).
— Screw in tightly.

5. BUTT PLATE AND REAR SLING SWIVEL

a) **Butt plate**

Replace the butt plate and fasten in with its screw (fig. 112 and 111).

b) **Rear sling swivel**

Assemble the base and the sling swivel with the pin. Insert the rear sling swivel in its housing and fasten the screws.

6. PISTOL-GRIP AND TRIGGER MECHANISM

a) **Pistol-grip**

— Replace plunger in the trigger spring (fig. 107).
— Replace trigger spring and its plunger as shown in fig. 106. Compress the trigger with a finger and swing it upwards in place.

— Replace the trigger guard in the frame and swing in to the rear (fig. 105).
— Replace pistol grip and fasten the screw (fig. 103 and 104).
— Replace the cleaning materials in the pistol grip and fasten it with its holding spring (fig. 102).

b) **Trigger mechanism**

— Replace the sear spring in its housing on the trigger with the spring sear pin outward.
— Replace the trigger (fig. 100) making sure that the plug of the trigger fits in correctly into its housing in the trigger.
— Replace the sear so that the spring sear pin falls into its housing.
— Compress the sear spring between the thumb and fore-finger, by locating the sear in its housing, then replace the sear pin (fig. 99).
— Replace the hammer and its pin (fig. 96).
— Push down the locking plate of the pins and make sure that they are held in place (fig. 94).
— Replace the plunger and the plunger spring (fig. 89) in the change lever and fasten them with the pin.
— Replace the change lever in the frame by introducing it vertically (fig. 87), exercise a slight pressure and turn it to position "S" safety.
— Replace spring and spring plunger on the hammer rod.
— Replace hammer spring rod in its housing (fig. 92).
— Compress the hammer spring with the thumb and push it forward and downward so that it falls into its housing (fig. 136).
— Cock the hammer.

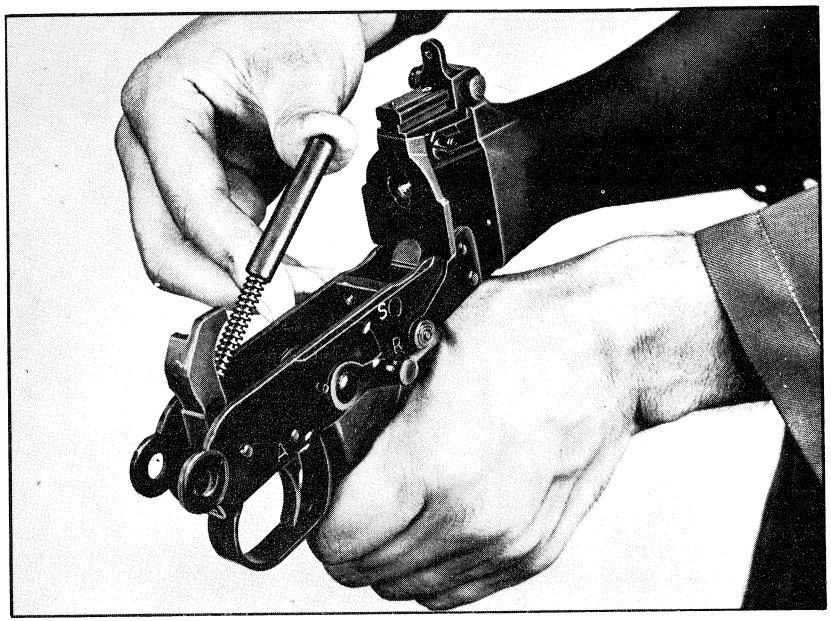


Fig.136

7. LOCKING SHOULDER

Insert the shoulder by hand as far as it will go (fig. 86) and force it carefully home into the receiver, using a hammer.

8. BOLT CATCH AND MAGAZINE CATCH

— Replace the bolt catch in its housing (fig. 84).

— Replace the magazine catch taking care to replace the end of the spring in the notch cut in the receiver, using a screwdriver (fig. 83 and 82).

— Replace the magazine catch pivot screw and screw it in (fig. 81 and 80).

9. COCKING HANDLE

— Insert plunger and plunger spring (fig. 79) into the housing.

— Depress plunger and replace stop pin.

— Replace the handle on the weapon, inserting it from the rear (fig. 76), press the handle slightly against the weapon and push it forward.

— Replace the stud (fig. 74) and force it fully home.

— Replace the stud stop pin.

10. SAFETY SEAR

— Insert the safety sear in the way shown in fig. 72, push it to its housing making a slight swing upwards until the seats of the frame receiver joint pin are in the same position.

11. FRAME-RECEIVER JOINT PIN

— Insert the frame in the receiver (fig. 71), make sure that the safety sear spring is still in the correct position.

— Insert the frame joint pin from the right side of the weapon (fig. 70).
Note: If the seat of the sear pin is not in line, put it in the correct position using the nose of a cartridge.

— Insert the frame joint pin retainer from the left side of the gun (fig. 68) screw in the retainer with the gun in the open position (fig. 67).

12. FRONT SIGHT

— Replace the front sight spring (fig. 66) in its housing in the bracket.

— Replace the fixing plate on the spring, with its lugs upwards.

— Screw in the front sight fully (fig. 65 and 64) taking care that the fixing plate ends are correctly seated in its housing in the bracket.

— Unscrew the front sight in the same number of clicks registered when removing it.

13. FRONT SLING SWIVEL

— Replace the front sling swivel bracket (fig. 63) and tighten it.

— Replace the front sling swivel and its screw (fig. 62 and 61).

14. GAS CYLINDER AND GAS REGULATOR SLEEVE

a) **Gas cylinder**

— Replace the fastening nut and the regulator sleeve on the cylinder.
— Screw in fully the cylinder on the bracket (fig. 59) then unscrew it slightly in order to guide the two seats of the gas cylinder downward.
— Replace the cylinder retaining pin and press them to the bottom.
— Using the special tool (fig. 57) screw in the fastening nut of the gas cylinder and correctly lock it.

b) **Gas regulator sleeve**

Note: The gas regulator sleeve has to be replaced over the gas cylinder before screwing in the barrel.

— Replace the gas regulator sleeve spring, using a screwdriver in order to reinsert the ends of the spring in their seats in the bracket (fig. 137).
— Screw in the gas regulator sleeve after forcing it beyond the sleeve spring (fig. 54).
— Unscrew it to return to the initial regulation.

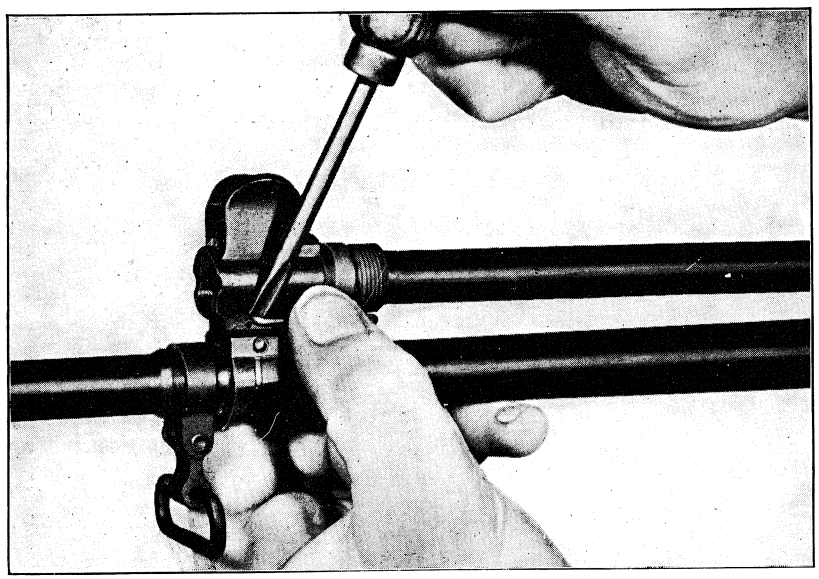


Fig. 137

15. CARRYING HANDLE

— Replace one of the spring washers on the carrying handle stem and press it until the second rib of the stem.
— Replace the connecting washer, the handle body and the other connecting washer.
— Replace the second spring washer and press it until the first rib of the handle body (fig. 53).
— Replace the assembled handle in its housing on the receiver (fig. 52).
— Screw in the gas cylinder and the carrying handle fastening nut.

16. HAND-GUARD

— Replace both hand-guards, replacing them first in the assembling cap (fig. 50)
— Then swing the guards against the barrel
— Replace and screw in the hand-guard screw (fig. 49).

17. EXTRACTOR

— Replace the extractor spring with the buffer in its housing on the extractor plunger.
— Replace this assembly in its housing on the bolt (fig. 48).
— With the nose of a cartridge or with a special tool (fig. 46 and 47), press the extractor spring fully holding it in this position.
— Replace the extractor in the bolt depressing it.
— Let the extractor plunger come back by the action of the extractor spring.

18. ASSEMBLY AFTER FIELD STRIPPING

— Replace the piston spring on the piston stem (fig. 45).
— Replace the piston and its spring in the gas cylinder (fig. 44).
— Insert the gas plug, compressing the piston spring, with the big end of the stop button turned to the barrel (fig. 43).
— With the gas plug pushed fully home, rotate it 1/8 of a turn so that the letter "A" is moving upwards.
— Using the nose of a cartridge, press the stop button and complete the rotation movement in such a way that the letter "A" will be placed on top of the weapon (fig. 41).
— Replace the firing pin spring and firing pin in the bolt (fig. 40), compress the spring by depressing the firing pin and insert the firing pin retainer.

— Replace the bolt in the slide. Insert the rear end of the bolt obliquely in the slide (fig. 138). Depress the bolt in order to compress the firing pin slightly and swing the bolt downwards in order to replace it in the bolt slide.

— Insert the ribs of the cover in the grooves in the receiver (fig. 37) and slide the cover fully forward.

— Replace the mechanism in the weapon, inserting the ribs of the slide in the grooves of the receiver. Push the bolt to its forward position (fig. 139), and keep the rifle with the muzzle turned down; the mechanism will drop itself in place.

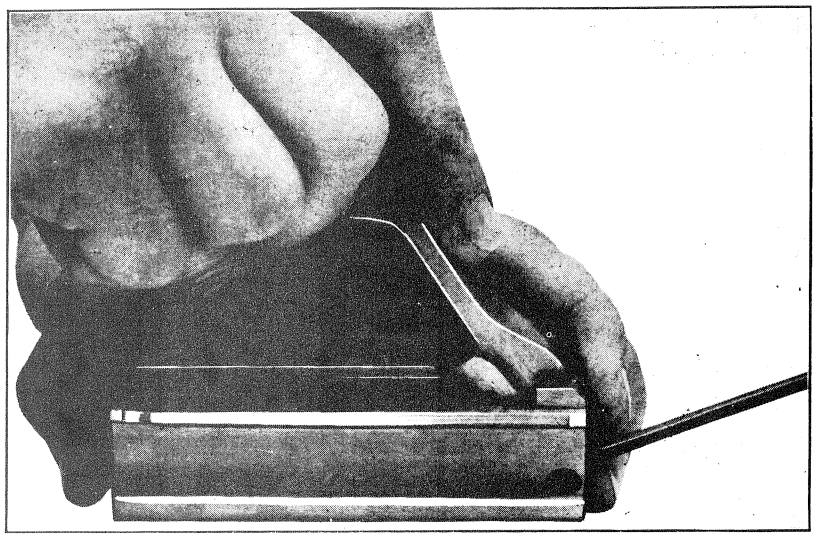


Fig.138

— Close the gun, holding the rifle with the muzzle in a downward position in order to prevent the connecting rod from coming out.

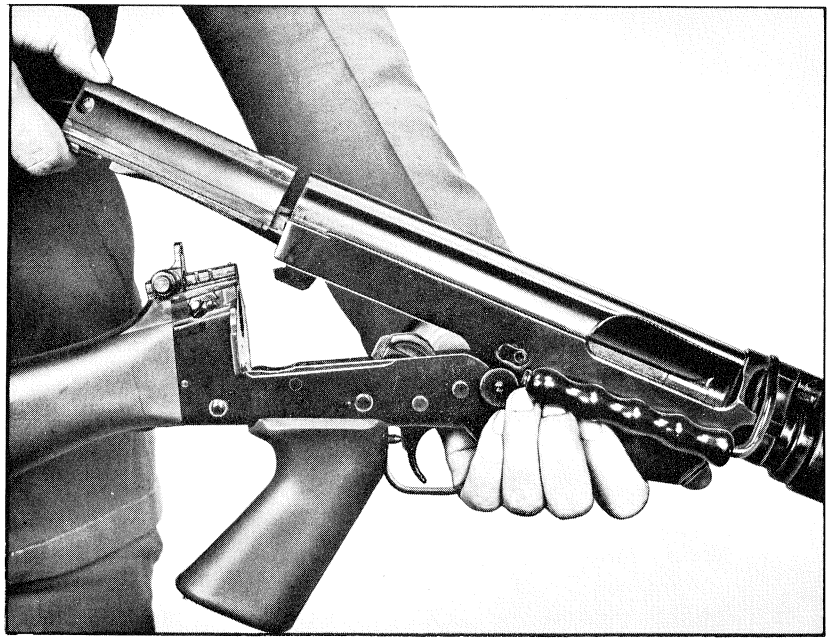


Fig.139

X. ACCESSORIES

1. BAYONET

The bayonet fits on the grenade launcher flash-hider and it is fixed at the rear-end of the flash-hider by the introduction of its catch in the breach.

The tubular handle eliminates the need of handle plates and increases its firmness.

It is provided with four holes for escaping and expanding gas which comes from the flash-hider (fig. 140).

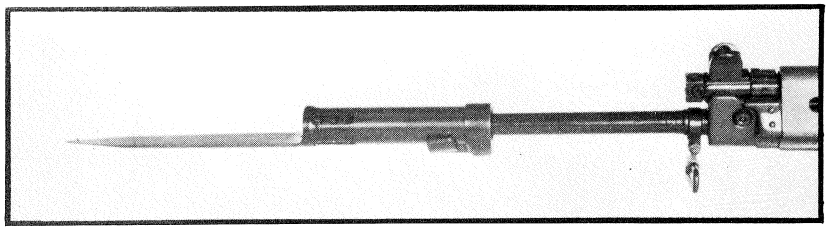


Fig.140

2. CARTRIDGE BLANK BUFFER

The IMBEL Light Auto-Rifle, 7.62 mm, can be equipped with a cartridge buffer (see Chapter VIII-1) which is screwed on the front end of the flash-hider grenade-launcher (fig. 141).

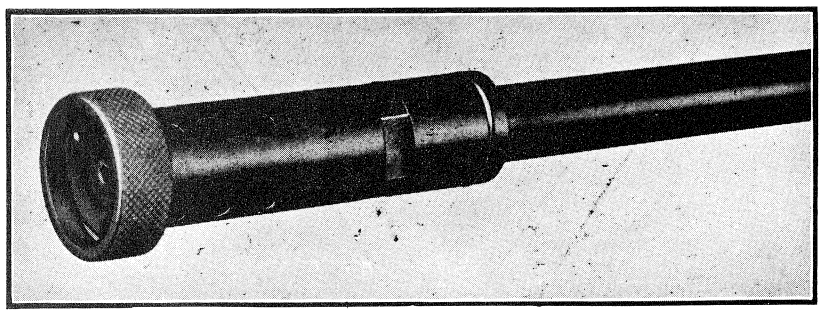


Fig.141

XI. L. A. R. — PARA

The Light Automatic Rifle — PARA (fig. 142) has been known to meet the requirements of paratroops, not only during the jump but also for transportation since it is a light and shorter weapon, but, with the same ballistics characteristics as the L. A. R. standard. This weapon can evidently be used by other troops where its characteristics are important, like: armed troops, vehicle borne or anti-guerrilla personnel.

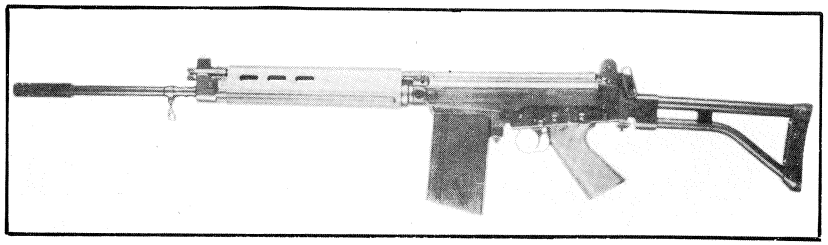


Fig. 142

The length of the L. A. R. — PARA can ben reduced by 25 centrimetres, since the butt can be swung over so that is folds on to the right face of the weapon (fig. 143 and 144) without reducing the length of the barrel or of the sight line.

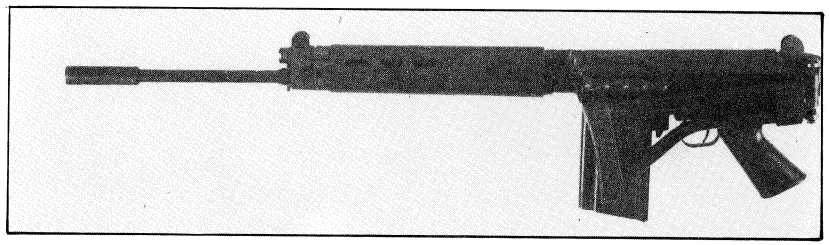


Fig. 143

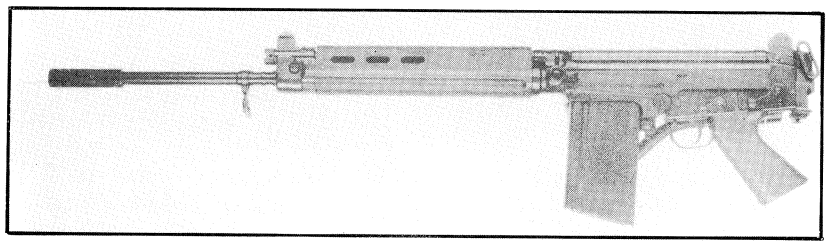


Fig. 144

— The ballistics characteristics of the standard L. A. R. are therefore maintained totally. The swinging of the butt maneouver is quick and easy.
— The butt is made of a light alloy.
— The two return springs are incorporated to the mechanism and placed into the cover (fig. 145) which form an assembly, simplifying the operations of assembly and disassembly. The L. A. R. — PARA can also launch grenades.

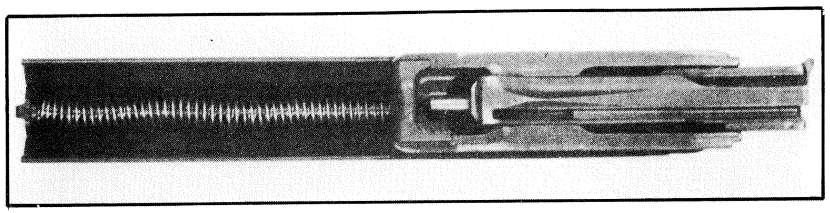


Fig. 145

Specific characteristics of the L. A. R. — PARA:
— Weight of the weapon without the magazine: 4.5 kg.
— Overall length of the weapon: folded butt: 0.85 m; butt in position: 1.10 m.
— Rear sight with two range positions for 150 m and 250 m (fig. 146).

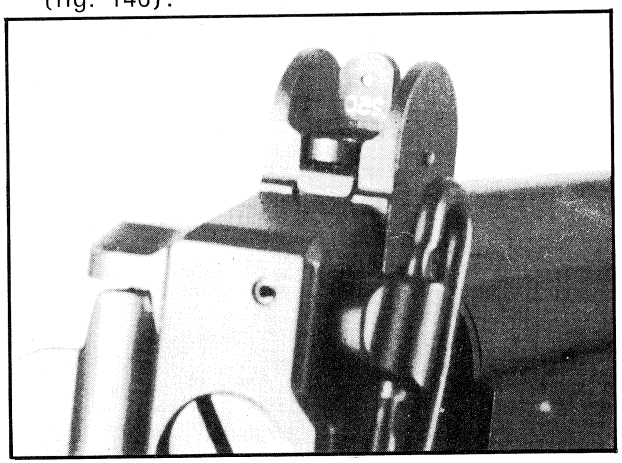


Fig. 146

There is a simplified model of the L. A. R. — PARA with a shortened barrel (456 mm), single battle sight (300 m), folding cocking handle, no carrying handle. Its weight is 4.4 kg and its overall length is 1.00 m.

XII. LIST OF PARTS AND ASSEMBLIES

Number	Description	Quantity
4	Gas cylinder	1
5	Cylinder retaining pin	1
6	Gas regulator sleeve	1
7	Gas cylinder and carrying handle fastening nut	1
8	Flash-hider	1
9	Grenade retaining spring	1
10	Gas regulator sleeve spring	1
11	Front sight	1
12	Front sling swivel bracket	1
14A	Front sling swivel	1
19	Front sling swivel screw	1
20	Front sight spring	
21	Piston	1
22	Piston spring	1
23	Front sight fixing plate	1
25	Locking shoulder	1
28	Ejector	1
29	Ejector retaining pin	1
30	Slide cocking handle	1
31	Slide cocking stud	1
32	Cocking handle plunger	1
33	Cocking handle plunger spring	1
34	Stud stop pin or plunger retaining pin	2
35	Cocking handle knob	1
36	Cocking handle rivet	1
39	Bolt catch spring plunger	1
40	Bolt catch spring	1
41	Bolt catch knob	1
42	Bolt catch knob rivet	1
43	Magazine catch	1
44	Magazine catch spring	1
45	Magazine catch pivot screw	1
46	Bolt	1
47	Extractor	1
48	Extractor spring	1
49	Extractor spring buffer	1
50	Firing pin	1
51	Firing pin spring	1

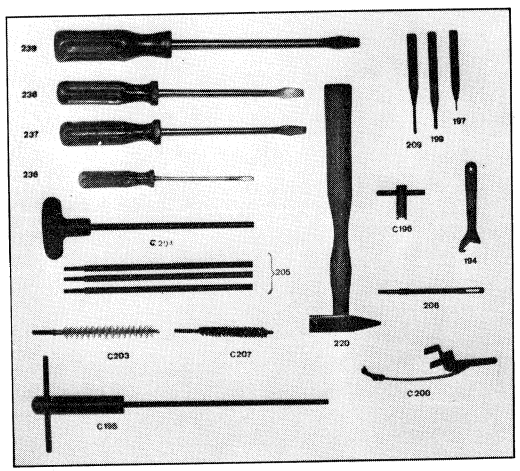
52	Firing pin retaining pin	1
53	Slide	1
54	Slide rod	1
55	Slide rod spring	1
56	Slide rod spring plunger	1
57	Slide rod pin	1
58	Extractor plunger	1
62	Locking plate	1
67	Return spring tube	1
70	Hammer	1
71	Hammer pin	1
72	Hammer spring rod	1
73	Hammer spring	1
74	Hammer spring plunger	1
75	Trigger	1
76	Trigger spring	1
77	Trigger spring plunger	1
78	Sear	1
79	Sear spring plunger	1
80	Sear spring	1
81	Sear and trigger pin	1
84	Change lever plunger spring	1
85	Change lever plunger	1
86	Change lever pin	1
87	Frame lock	1
88	Frame lock spring	1
89	Frame lock plunger	1
90	Frame lock guide-pin	1
95	Lock lever fastening screw	1
96	Trigger guard	1
97	Pistol grip	1
98	Pistol grip fastening screw	1
101	Magazine platform	1
102	Magazine platform spring	1
103	Magazine bottom plate	1
104	Cover	1
105	Outer return spring	1
106	Inner return spring	1
107	Plunger — return springs	1
108	Safety sear	1
109	Safety sear spring	1
110	Frame-receiver joint pin	1
111	Frame-receiver joint pin retainer	1
112	Rear sight base	1

113	Rear sight adjusting screw	2
114	Sight slide	1
115	Sight slide lock	1
116	Sight slide lock spring	1
117	Rear sight slide stop pin	1
118	Rear sight adjusting screw-stop spring	1
119	Rear sling swivel	1
122	Rear sling swivel pin	1
125	Butt plate	1
126	Butt screw washer	1
128	Butt plate screw	1
129	Rear sling swivel base screw and frame tang screw	3
138	Handguard screw	1
139	Handguard rear assembling cap	1
140	Carrying handle stem	1
141	Carrying handle body	1
142	Carrying handle connecting washer	2
143	Carrying handle spring washer	2
144	Handguard screw washer	1
145	Butt plate screw washer	1
146	Handguard screw spring washer	1
147	Bayonet blade with tubular handle	1
150A	Bayonet catch	1
151	Bayonet catch spring	1
152	Bayonet catch pin	1
153	Scabbard body	1
159	Scabbard knob	1
162	Belt	1
163	Shoulder belt end	2
164	Shoulder belt loop	2
170	Oil-can cap	1
171	Spoon stem	1
172	Joint for oil-can	1
174	Cleaning-brush container cap	1
175	Holding spring of cleaning device	1
178	Rag holder end	1
179	Cleaning device screw end	1
180	Cleaning device twine	1
STD 13	Black rivet	2
STD 14	Black rivet	4

Assembly Number	Description	Components
4/1	Bolt catch body with pin	37, 38
4/2	Bolt catch spring plunger and spring	39, 40
7/1	Change lever	82, 83
9/1	Magazine body	99, 100
10/1	Rear sling swivel body	120, 121
16/1	Scabbard collar and spring	154, 154-A, 155, 157
16/4	Scabbard support	158, 213, 215, 216, STD 12, STD 16
20/1	Cleaning device body	169, 173
20/2	Oil-can cap and spoon	170, 171
53/1	Extractor spring with buffer	48, 49
2	Gas plug assembly	15, 16, 17, 18
3	Receiver assembly	24, 26, 27, 28, 29
4	Bolt catch	41, 42, SC 4/1, SC 4/2
6	Frame assembly	59, 60, 61, 63, 64, 65, 66, 67, 68, 69
7	Change lever assembly	84, 85, 86, SC 7/1
8	Lock lever assembly	91, 92, 93, 94
9	Magazine assembly	101, 102, 103, SC 9/1
10	Rear sling swivel assembly	119, 122, SC 10/1
11	Plastic butt assembly	123, 124
12	Butt plate	127, 127-A
13	Right handguard	130-A, SC 13/1
14	Left handguard	132-A, 134, 136, 137 SC 14/1
15	Bayonet assembly	147, 150-A, 151, 152
16	Scabbard assembly	153, 159, STD 13, SC 16/1, SC 16/4
17	Magazine filler	160, 161
18	Shoulder belt	162, STD 14, SC 18/1
19	Cartridge blank buffer	165, 168, SC 19/1
20	Cleaning case	172, 174, SC 20/1, 20/2
21	Pullthrough	176, 177
23	Barrel and bracket assembly	1, 3, SC 23/1
24	Cocking handle assembly	30, 31, 32, 33, 34, 35, 36
25	Slide assembly	53, 54, 55, 56, 57
26	Safety sear assembly	108, 109
27	Carrying handle assembly	140, 141, 142, 143
28	Cleaning device	178, 179, 180
53	Bolt and slide assembly	46, 47, 50, 51, 52, 58, SC 53/1
57	Frame lock spring and plunger assembly	88, 89

APPENDIX: List of tools used by the armourer

Number	Description	Quantity
194	Wrench for removing the gas cylinder fastening nut and for adjustment of gas regulator sleeve	1
C195	Wrench for disassembling the return springs	1
C196	Wrench for adjustment of front sight	1
197	1.3 mm drift	1
199	3.3 mm drift	1
C200	Wrench for disassembling the extractor	1
C203	Gas cylinder pullthrough	1
C204	Cleaning rod handle	1
205	Cleaning rod stem	3
206	Rag holder end	1
C207	Barrel pullthrough	1
209	2.8 mm drift	1
220	100 g armorer hammer	1
236	3 mm screwdriver	1
237	5 mm screwdriver	1
238	7 mm screwdriver	1
239	12 mm screwdriver	1



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