

MODEL 8 & 81

DISASSEMBLETake down the arm.

Move safety lever down (off position), this releases breech bolt. Open breech bolt by pulling rearward the operating handle on right side of the arm. Unscrew fore-end screw and remove fore-end by pulling downward and forward. This exposes the take down screw with lever attached which holds barrel jacket and receiver together. Turn the lever crosswise (Fig. 2) of the take down screw and unscrew it. Pull barrel jacket forward off the receiver.

Barrel Jacket

Use spanner wrench on barrel nut at muzzle and hold barrel extension from turning by a screwdriver blade in slot of extension, turn off barrel nut. Pull barrel rearwardly out of barrel jacket. Use spanner wrench on barrel jacket bushing and unscrew it from barrel jacket (do this carefully so as to control recoil spring and prevent it flying from barrel jacket). This will release recoil spring, barrel nut washer, recoil spring case, and buffer spring. If needed, the rear sight may be removed by taking out the two base screws, lift off the sight, and take out from inside jacket the rear sight stud. Loosening the rear sight base screw usually throws the sight out of proper alignment and sight will require realignment when screws are tightened. Front sight may be removed by loosening set screw and driving out from left to right.

Breech Bolt Carrier

Push down the front end of barrel lock to release bolt carrier which will then stop upon magazine indicator. Lift operating handle plunger and slide handle forward and out of receiver. Push down magazine indicator at left side of arm, this will release bolt carrier permitting it to spring quickly out front end of receiver. (To prevent injury to prongs on front of bolt carrier it should be caught in a heavy cloth or ball of cotton waste.)

Breech Bolt Carrier Components

Drive out link pin from bolt carrier and remove link. Drive out firing pin pin and remove firing pin and firing pin buffer spring. Remove cam pins, pull breech bolt with extractor forward out of bolt carrier. Remove firing pin spring. Drive out bolt lock pin and remove bolt lock and bolt lock spring from bolt carrier. Drive out ejector pin and remove ejector and spring from breech bolt.

MODEL 8 & 81

Butt Plate

Remove two butt plate screws and remove butt plate.

Stock

Remove tang screw and pull off stock.

Trigger Plate

Remove trigger plate screw and hammer pin. Pull rear end of trigger plate downward and rearward out of receiver.

Trigger Plate Components

Push magazine upward through trigger plate, this will release side springs. Uncock hammer, letting it forward easily to prevent marring trigger plate. Drive out hammer bushing and remove hammer with hammer roll attached. Take out main spring screw and remove main spring and trigger spring. Drive out trigger pin and remove trigger.

Action Spring

Compress action spring. Drive out action spring plug pin. (Do this carefully so as to control action spring and prevent it flying from action spring tube.) This will release action spring with plug and follower attached.

Receiver Components

Turn receiver bottom up, depress front end of bolt carrier latch spring from under stud in receiver wall and slide rear end of spring off rear stud. Slide bolt carrier latch off bolt carrier latch screw in receiver side wall (it is not necessary to remove this screw). Slide barrel lock off barrel lock screw in receiver side wall (it is not necessary to remove this screw). Take out magazine indicator from side wall of receiver (this is pivoted on its stud which fits into hole in receiver side wall). Carefully lift safety thumb piece slightly away from receiver all, slip a card under it to protect receiver and swing it downward as in (Fig. 3). Drive upon left end of safety pivot until the safety is removed out the right side of the receiver. This will release safety rocker from inside receiver.

ASSEMBLE

Barrel Jacket

If rear sight is removed, place rear sight stud inside barrel jacket, assemble in top of jacket with raised portions of stud protruding through holes in top of jacket, hold position

MODEL 8 & 81

and place rear sight over stud, screw two base screws tightly into place. Drive in front sight from right to left, tighten down set screw. Place barrel into barrel jacket, assemble over barrel and into front end of jacket in following order - buffer spring, recoil spring case, and recoil spring. Place barrel nut washer over muzzle, aligning tongue on washer with keyway on barrel. Screw on barrel nut. Use spanner wrench on barrel nut while holding barrel from turning by inserting a screwdriver blade in slot of extension. Using spanner wrench, screw barrel jacket tightly into place.

Breech Bolt Carrier Components

Place firing pin buffer spring over firing pin and assemble into rear of bolt carrier. Line up slot in firing pin with firing pin pin hole, drive in firing pin pin. Place firing pin spring over firing pin from front. Place extractor on breech bolt and assemble to bolt carrier, aligning ears on sides of extractor with grooves in top of carrier. Assemble cam pins. Place bolt lock over spring, into slot in left side of carrier with point A (Fig. 4) forward, compress spring, align holes, and drive in bolt lock pin. Place link into slot in rear bottom of carrier, align holes, and drive in link pin.

Trigger Plate

Assemble trigger through slot in bottom of trigger plate with finger piece extending in trigger bow, align pin holes, and drive in trigger pin. Slide ears on edge of trigger spring into slots in rear of trigger plate, with bend of spring down and slotted end forward. Slide spring forward until slotted end of spring straddles tongue on top of trigger and hole in spring aligns with main spring screw hole in trigger plate. Place main spring into slot in top of trigger plate with slot in main spring straddling ears on top of trigger and bend in main spring down, align hole in main spring with hole in trigger spring and main spring screw hole. Screw in main spring screw tightly through bottom of trigger plate. Place hammer in slot back of magazine opening with hammer roll to rear, align holes, and drive in hammer bushing. Compress main spring so point of spring is under roll and cock hammer. Place stud in end of side springs into holes in sides of magazine (wide side of spring toward rear). Slide magazine with side springs attached down through magazine opening in front end of trigger plate until it stops against shoulder on front of magazine.

Receiver

Assemble safety rocker to inside of receiver with extended arm of rocker toward right side of receiver. Insert safety pivot through right side of receiver and into safety rocker, aligning tongue on safety with keyway in rocker. Drive safety pivot tightly in safety rocker. Slip a card under safety thumb piece

MODEL 8 & 81

to protect receiver and swing safety thumb piece upward to stop. Place stud in front end of magazine indicator into hole in left side of receiver and magazine indicator thumb piece into slot in left wall of receiver. Slide barrel lock on barrel lock screw in left side of receiver with barrel lock spring toward bottom of receiver. Slide bolt carrier latch on bolt carrier latch pin in left wall of receiver, with rounded end toward bottom of receiver and over end of barrel lock. Place loop of bolt carrier latch spring over rear stud in left side of receiver with bent end up or toward bolt carrier latch, compress spring and place small end under front or shouldered stud in left side of receiver. Assemble action spring with follower and plug attached into action spring tube with action spring follower toward front of receiver, push plug into tube compressing spring and drive in action spring plug pin. Place assembled bolt carrier into receiver from front end with link toward rear. Lifting up front end of barrel lock through bottom of receiver slide bolt carrier into receiver until link enters recess in end of action spring follower. Throw safety to off position, push back bolt carrier from front of receiver and place bolt handle into slot in right side of carrier through ejection port, rounded end of lug toward rear. Lift up on operating handle plunger and slide handle back until plunger drops into detent in bolt carrier. Place assembled trigger plate into opening in bottom of receiver, enter lug on front end of trigger plate into slot in front end of trigger plate opening in receiver. Push down rear end aligning holes. Screw in trigger plate screw.

Butt Plate

Place butt plate on butt of stock and screw in two butt plate screws.

Stock

Place stock on rear of receiver entering action spring tube into hole in front of stock. Tap into place and screw in trigger plate screw.

Barrel

Place barrel extension into front end of receiver. Screw in take down screw tightly.

Fore-end

Place end of take down lever into hole in rear of fore-end. Bring fore-end up against barrel and screw in fore-end screw.

MODEL 8 & 81

FITTING NEW PARTS AND ADJUSTING

Action Spring, Follower and Plug

Take down the arm, remove stock, compress action spring, and drive out action spring plug pin releasing action spring with plug and follower.

Put old follower and plug into new action spring and assemble into receiver, drive in pin. The spring should slide smoothly in the tube. If new follower or plug is to be fitted, substitute the new part for the old one and assemble the arm.

Action Spring Tube

Take down the arm, remove stock and action spring with plug and follower. Heat rear end of tang to melt solder in joint and unscrew tube from tang.

If tube is broken off, leaving short piece in tang, heat tang to melt solder at joint of tube with tang and unscrew broken piece by using three-cornered file stuck inside enough to grip the tube but not expand it. While still hot, turn in the new tube which has previously been solder coated on threads.

Barrel Jacket Bushing

Use spanner wrench to unscrew barrel jacket bushing from muzzle of barrel jacket. Turn in new bushing.

Barrel Lock

Take down the arm, remove stock and trigger plate. Turn receiver bottom up and depress bolt carrier latch spring from under head of stud and remove the spring.

Lift barrel lock with barrel lock spring off pivot screw and remove for receiver (it is not necessary to remove screw from receiver). Put old barrel lock spring into new barrel lock and assemble the arm.

Bolt Lock

Take down the arm and remove breech bolt carrier. Drive out bolt lock pin and remove bolt lock. Put in new bolt lock, make sure that bolt lock spring is under rear end of bolt lock, drive in bolt lock pin. Depress rear of lock, push fully into bolt carrier, release bolt lock and pull it forward again. The lock should snap promptly into notch in rear end of bolt as soon as bolt is forward. Assemble the arm completely, open action until bolt carrier locks back into receiver, test bolt lock by pushing rearward upon front of bolt. If the bolt moves back and rotates, then remove the bolt again and file away a very little metal at A (Fig. 4).

MODEL 8 & 81

Bolt Carrier

Take down the arm, remove breech bolt carrier. Remove breech bolt carrier components. Assemble all the old parts into a new bolt carrier and put bolt carrier complete into receiver. Open and close action by letting the bolt carrier forward slowly. If it sticks when entering slot in barrel extension, note the place and file or polish the vertical sides to clear sides of barrel extension slot.

Load magazine (with dummy cartridges) and close action to engage extractor with shell rim and open action to extract and eject shell. If extractor does not hold shell to extract or eject properly, examine tension of extractor at claw by moving it up and down. There should be no lost motion between extractor claw and the shell.

Bolt Carrier Latch

Take down the arm, remove stock and trigger plate. Release bolt carrier latch spring from under stud held inside of receiver and take out the spring. Slide latch off the pivot screw and put in new latch, replace the spring and assemble complete arm. Test the latch by opening action, the latch should hold the bolt carrier at rear position. Load magazine (with dummy cartridges), close the action, press muzzle of barrel on floor to move barrel and bolt carrier about one-half inch, pull action fully open until bolt carrier locks back, release barrel quickly, the bolt carrier should then close. If it does not do so, remove the barrel lock and bend rear end upward slightly until latch will release.

Buffer Spring

Remove barrel nut and barrel jacket, bushing, take out barrel nut washer, recoil spring with case, and buffer spring, put in new buffer spring and assemble arm.

Ejector

Take down the arm and remove breech bolt carrier. Drive out firing pin pin and remove firing pin; push out two bolt cam pins and pull bolt with extractor forward out of bolt carrier. Drive out ejector pin and remove ejector with spring. Try new ejector into hole with old spring. It should slide in and out easily. If it does not, remove it and file clearance for pin a little deeper at A (Fig. 5). The corner at B (Fig. 5) should be slightly under front of bolt face at C (Fig. 5) to prevent catching shells during feeding from magazine. The top corner should project beyond face C of bolt enough to push the shell forward and tilt it under extractor claw during ejection. If the ejector does not move forward enough to produce good ejection, more clearance should be made at rear end of pin slot.

MODEL 8 & 81

Extractor

Take down the arm. Remove breech bolt carrier and pry front lug extractor out of slot in top side of bolt and pull extractor forward out of slot in bolt carrier. Try the new extractor in slot in bolt carrier, it should slide freely. Lift front end so extractor lug will pass over rim of extractor lug slot in bolt and let the lug snap into slot. If it does not enter, remove extractor and file rear of lug thinner until it will enter freely. The claw should lap over front end of bolt and engage rim of shell when placed in the heading counterbore of the bolt. If claw does not engage shell rim firmly at D (Fig. 5) remove the extractor and bend middle upward, as indicated by the arrow, this will cause extractor lugs to hold middle down and free front end at D and rear end at E with greater force and hold claw D in firmer contact. If the top surface of extractor projects above top of bolt carrier and rubs hard inside receiver, it should be filed lower and polished smooth. If extractor does not ride over shell rim easily when shell is put into barrel and action closed by action spring, the beveled front face at D should be polished smooth.

Firing Pin

Take down the arm and remove breech bolt carrier. Press firing pin forward to relieve pressure on firing pin pin and drive out firing pin pin (if firing pin is not compressed the pressure of the firing pin spring will cause pin to fly out of the breech bolt carrier). Remove buffer spring. Remove cam pins and pull breech bolt with extractor forward out of bolt carrier. Remove firing pin spring. Put in new firing pin and try fit of front end in small hole in breech bolt by pressing latch on left side and pushing bolt back into carrier while holding firing pin forward. If firing pin sticks in bolt, remove all burrs or roughness from hole and polish the firing pin. Assemble pin and test by holding front end of bolt up. The pin should slide backward and forward freely. If it does not, remove firing pin and deepen slot F (Fig. 5). The ends of this slot should be finished slightly rounded to prevent cracking.

Hammer

Take down the arm. Remove breech bolt carrier and trigger plate, drive out hammer bushing and remove hammer. Put in new hammer with old bushing and cock the hammer; with trigger held in pulled position swing hammer fully rearward allowing trigger to catch rear notch. Release trigger, which should promptly disengage rear notch and catch the hammer on front notch. If it does not release rear notch, remove hammer and smooth the notch with fine oil stone to remove any roughness or burrs. If front trigger notch will not catch hammer, the trigger notches should be brought closer together by bending front trigger prong rearward slightly. If trigger will then not release hammer, the

MODEL 8 & 81

notches are too near together and should be slightly widened by using an oil stone to cut a little metal off point of front notch. Assemble complete arm and try safety, there should be only a slight motion of trigger when safety is on and should not allow hammer to release.

Magazine Indicator

Take down the arm. Remove breech bolt carrier and trigger plate. Remove bolt carrier latch and spring, lift out magazine indicator complete with spring. Put in new indicator complete, being sure to put small prong at front end of spring into slot in receiver side wall. Assemble complete arm.

Test by firing with one or more cartridges in magazine. The indicator spring should be strong enough to hold the indicator from being jarred upward by recoil to intercept the bolt carrier and prevent the action closing. If magazine is empty, the magazine follower should lift rear end of indicator into contact with bolt carrier and lock it in the open position.

Magazine Side Spring

Take down the arm. Remove breech bolt carrier and trigger plate. Push magazine upward through trigger plate and remove side spring. Put on new spring and assemble together with magazine into trigger plate. The top of the side spring should press inward against magazine with enough tension to hold five cartridges in position. It should also hold three cartridges when pressed to bottom and suddenly released. If any cartridges jump straight upward past the side spring, it should be given more tension by bending more in same direction as it is curved. Assemble complete arm. Test by filling magazine and firing. The cartridges should feed promptly upward but not jump beyond top end of spring. They should also slide freely forward when breech closes and enter barrel without jamming. If cartridges jam when moving forward, the inner top edge of the spring should be polished very smooth.

Main Spring

Take down the arm. Remove breech bolt carrier and trigger plate. Push magazine upward through trigger plate, uncock hammer, letting it forward easily to prevent marring trigger plate. Take out main spring screw and remove main spring. Put in new main spring. Press front end of spring down to engage hammer roll and cock the hammer. If front end of main spring strikes bottom of slot in trigger plate, remove the spring and cut away lower front corner until it clears the slot. Turn the main spring screw in tightly.

Recoil Spring

Take down the arm. Using spanner wrench remove barrel nut.

MODEL 8 & 81

Pull barrel rearwardly out of barrel jacket. Using spanner wrench remove barrel jacket bushing. This will release recoil spring. Put in new recoil spring. Assemble barrel nut washer and barrel nut. Replace barrel into barrel jacket and screw in barrel jacket bushing. Assemble the arm.

Safety

Take down the arm. Remove stock and trigger plate. Carefully lift safety thumb piece slightly away from receiver wall, slip a card under it to protect receiver and swing it downward as in (Fig. 3). Drive upon left end of safety pivot until the safety is removed out the right side. This will release safety rocker from inside receiver. Try new safety into old safety rocker to test engagement of two lugs on safety stem with slot in end of safety rocker. It should enter freely but not have much side play when rotated. If it has more than an easy sliding fit, the ears may be widened by flattening a little with a light hammer. Assemble into receiver (using cardboard to protect receiver), and try safety at the (on and off) positions. It should snap freely from one to the other but not too easily because it might be unconsciously moved off when carrying the arm with gloved hands.

Safety Rocker

Take down the arm. Remove stock and trigger plate. Carefully lift safety thumb piece slightly away from receiver wall, slip a card under it to protect receiver, and swing it downward as in (Fig. 3). Drive upon left end of safety pivot until the safety is removed out the right side. This will release safety rocker from inside receiver. Try new rocker upon old safety stem to test engagement of two lugs on safety stem with slot in end of safety rocker, this should enter freely but not have much side play when rotated. If it has more than an easy sliding fit, the ears may be widened by flattening a little with a light hammer. Assemble into receiver on safety stem (using cardboard to protect receiver). Set safety on. Put barrel on and tighten takedown. Try safety by pulling on operating handle, a little freedom between safety rocker and bolt carrier is desirable. Assemble trigger plate. Pull trigger, the hammer should not release. When the trigger is released move safety off, the hammer should remain cocked. If safety cannot be set on with hammer cocked, a little metal should be filed off lower edge of prong which engages trigger. Only a very little clearance is allowed at this point for if much clearance is made the trigger will put out of full cock when safe is on.

Take Down Screw

Take down the arm, unscrew the take down screw all the way out of the barrel jacket head, remove any washers which may be under the head. Put in new screw and assemble barrel portion to receiver with take down screw turned up tight, swing lever away

MODEL 8 & 81

from barrel. If the screw has tightened in such a position that the lever will not swing downward far enough to allow fore-end to be easily placed in position, one or more spring washers should be fitted under the screw head to stop the lever at the proper position, preferably to swing straight downward.

Trigger

Take down the arm. Remove stock and trigger plate. Push magazine upward through trigger plate, this will release side springs. Uncock hammer, letting it forward easily to prevent marring trigger plate. Take out main spring screw and remove main spring and trigger spring. Drive out trigger pin and remove trigger. Put in new trigger. Replace trigger spring, main spring and main spring screw. Press front end of main spring down to engage hammer roll and cock hammer while holding trigger in pulled position to engage rear notch. Release trigger, the rear notch should release; if it does not, make smooth by using oil stone to remove any roughness or burrs. When adjusted properly at rear notch, release trigger allowing hammer to catch on front notch; if it releases from rear notch and jumps past the front notch, the front prong of trigger must be bent backward to shorten the space between the front and rear notch. If the space is too small and hammer will not release from front notch when trigger is pulled, the front notch must be cut forward slightly by using oil stone. Assemble complete arm, except stock. Cock hammer and set safety on. If it fails to go on, remove the trigger and cut away a very little metal from rear shoulder which engages prong on safety rocker. If it fails to lock trigger and prevent pulling out of hammer notch, the prong on safety rocker may be swaged to make it longer and reach the trigger.

Trigger Spring

Take down the arm. Remove stock and trigger plate. Push magazine upward through trigger plate, this will release side springs. Uncock hammer, letting it forward easily to prevent marring trigger plate. Take out main spring screw and remove main spring and trigger spring. Put in new trigger spring, being sure to fit prongs over the rear end of trigger as these will sometimes go under trigger without being noticed and when hammer is cocked may break off prongs of trigger spring. Assemble main spring, main spring screw, side springs and magazine into trigger plate. Assemble complete arm.

MODEL 8 & 81

FAILURES TO OPERATE

Action fails to close when magazine is loaded.

- Cause - Magazine indicator spring broken, weak or out of position.
Remedy - If spring is broken or weak, fit a new one.
If out of position, be sure to fit front end of spring into slot in receiver.

Action fails to lock open when magazine is empty.

- Cause - Magazine indicator broken.
Remedy - Fit new magazine indicator

Barrel sticks back after firing.

- Cause A- Bolt broken
Remedy - Return to factory for fitting new bolt.
Cause B- Buffer spring broken.
Remedy - Fit new buffer spring.
Cause C- Shell sticks in chamber, (usually chamber rusted or greased.)
Remedy - Return to factory for fitting new barrel.

Barrel Jacket loose.

- Cause A- Threaded joint with jacket head has become strained and threads do not fill the hole in jacket head.
Remedy - Return to factory for fitting new barrel jacket.
Cause B- Barrel jacket broken off inside jacket head.
Remedy - Return to factory for fitting new barrel jacket.

Extraction fails.

- Cause A- Extractor claw slips off shell rim.
Remedy - Bend middle of extractor upward to increase tension of claw.
Cause B- Extractor broken at lug which engages bolt or the claw may be broken.
Remedy - Fit new extractor.
Cause C- Chamber rusted or gas cut allowing shells to swell.
Remedy - Return to factory for fitting new barrel.

Ejection fails.

- Cause A- Extractor has light tension at claw.
Remedy - Bend upward the middle of extractor spring to produce more tension at claw.
Cause B- Extractor has too much space between claw and bottom of counterbore in face of breech bolt.
Remedy - Fit new extractor.
Cause C- Ejector spring weak or ejector rusted fast in hole.

MODEL 8 & 81

- Remedy - If spring is weak, fit new spring, if rusted, remove ejector spring, clean and polish, oil thoroughly and assemble.
- Cause D - Ejector does not have enough forward motion.
- Remedy - Remove ejector and file rear end of clearance slot to provide more forward motion, be sure lower front corner of ejector is filed below front face of bolt to permit shell head to feed upward freely.

Feeding fails from magazine.

- Cause A - Magazine spring assembled with wide side toward front of arm.
- Remedy - Assemble spring with wide side of spring toward rear.
- Cause B - Top of magazine sides not opened wide enough.
- Remedy - Bend top edges of magazine slightly wider at points about middle of cartridge.
- Cause C - Bullet incline in magazine rough or rusty.
- Remedy - Polish incline at front end of magazine very smooth.
- Cause D - Side of magazine dented or closed in slightly causing follower to stick.
- Remedy - Adjust sides of magazine to relieve sticking.

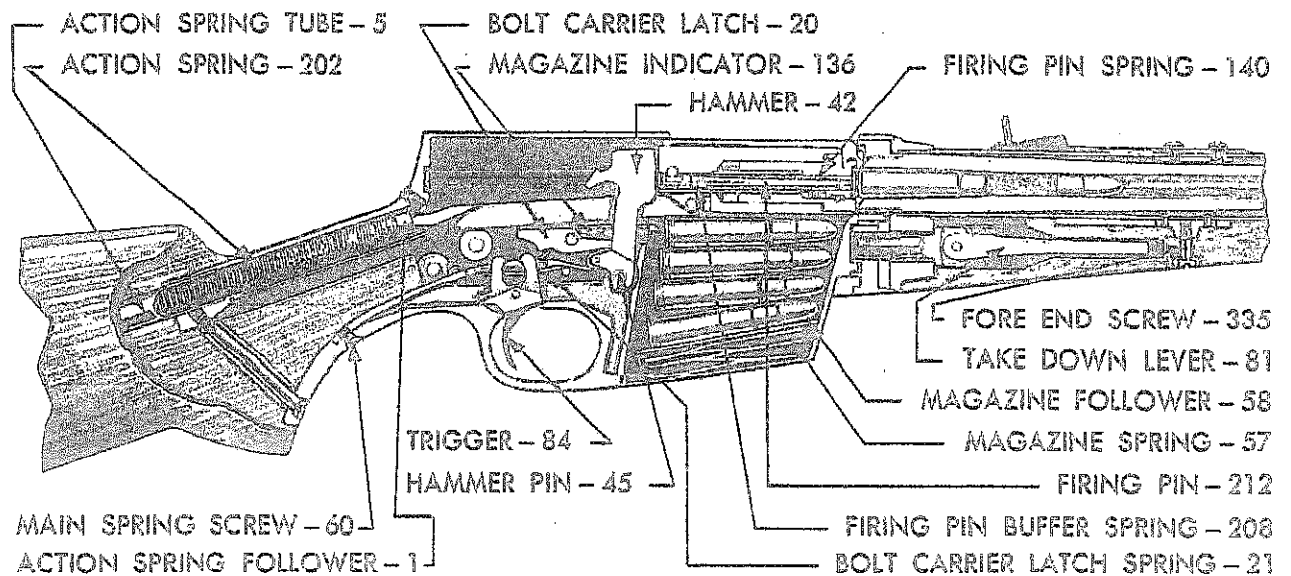
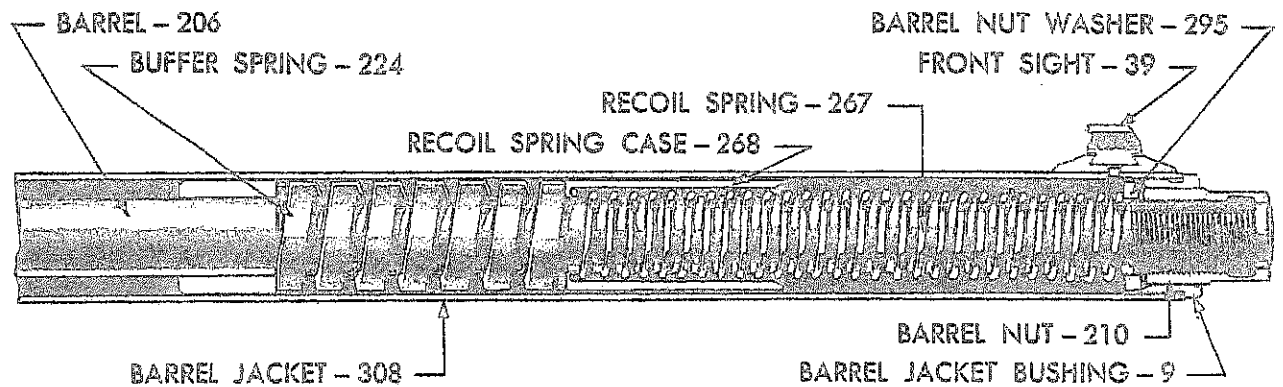
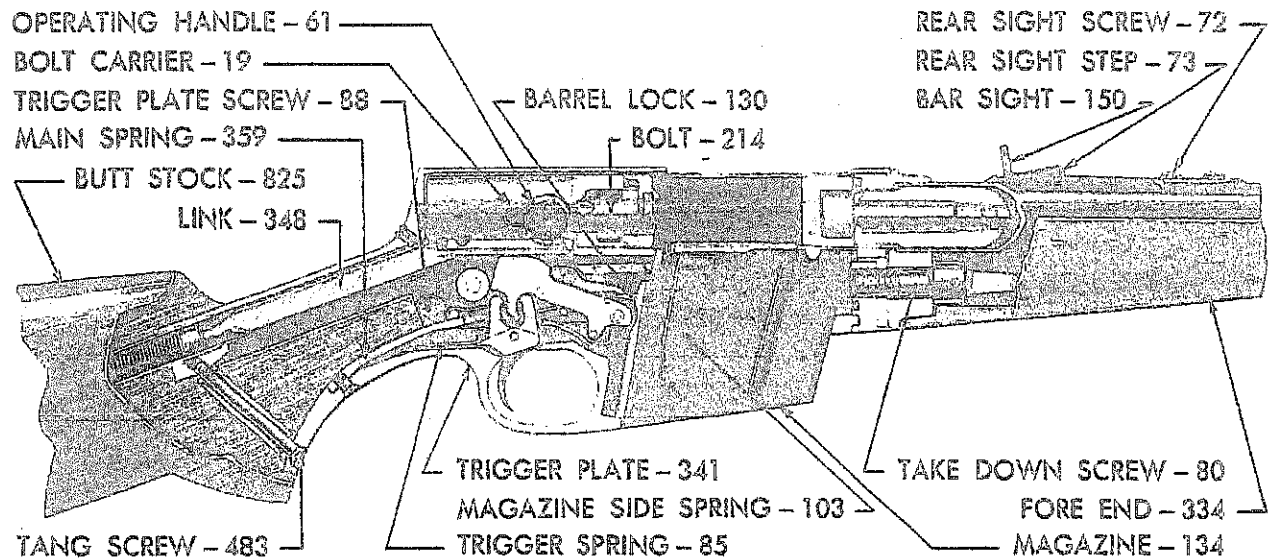
Jar off.

- Cause A - Hammer broken at notches.
- Remedy - Fit new hammer.
- Cause B - Hammer or trigger worn at notches.
- Remedy - Bend front prongs of trigger to slightly close space between front and rear notches.
- Cause C - Trigger spring broken
- Remedy - Fit new trigger spring.

Misfire

- Cause A - Firing pin broken.
- Remedy - Fit new firing pin.
- Cause B - Main spring broken.
- Remedy - Fit new main spring.
- Cause C - Hammer roll pin loose and roll missing.
- Remedy - Fit new roll and pin.

MODEL 8 & 81



MODEL 8 & 81

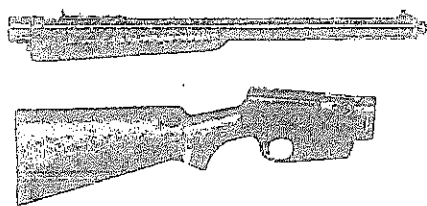


Fig. 1

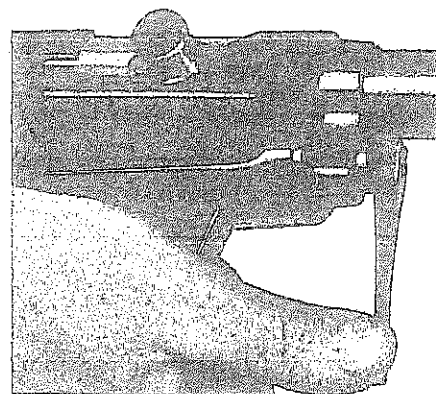


Fig. 2

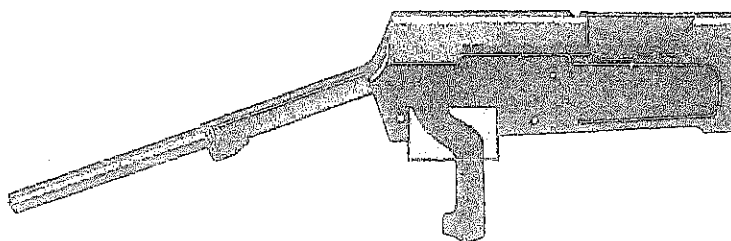


Fig. 3



Fig. 4

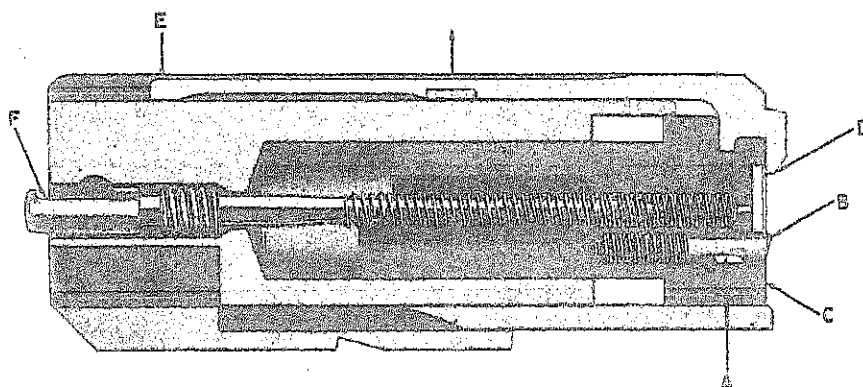


Fig. 5

MODEL 8 & 81

