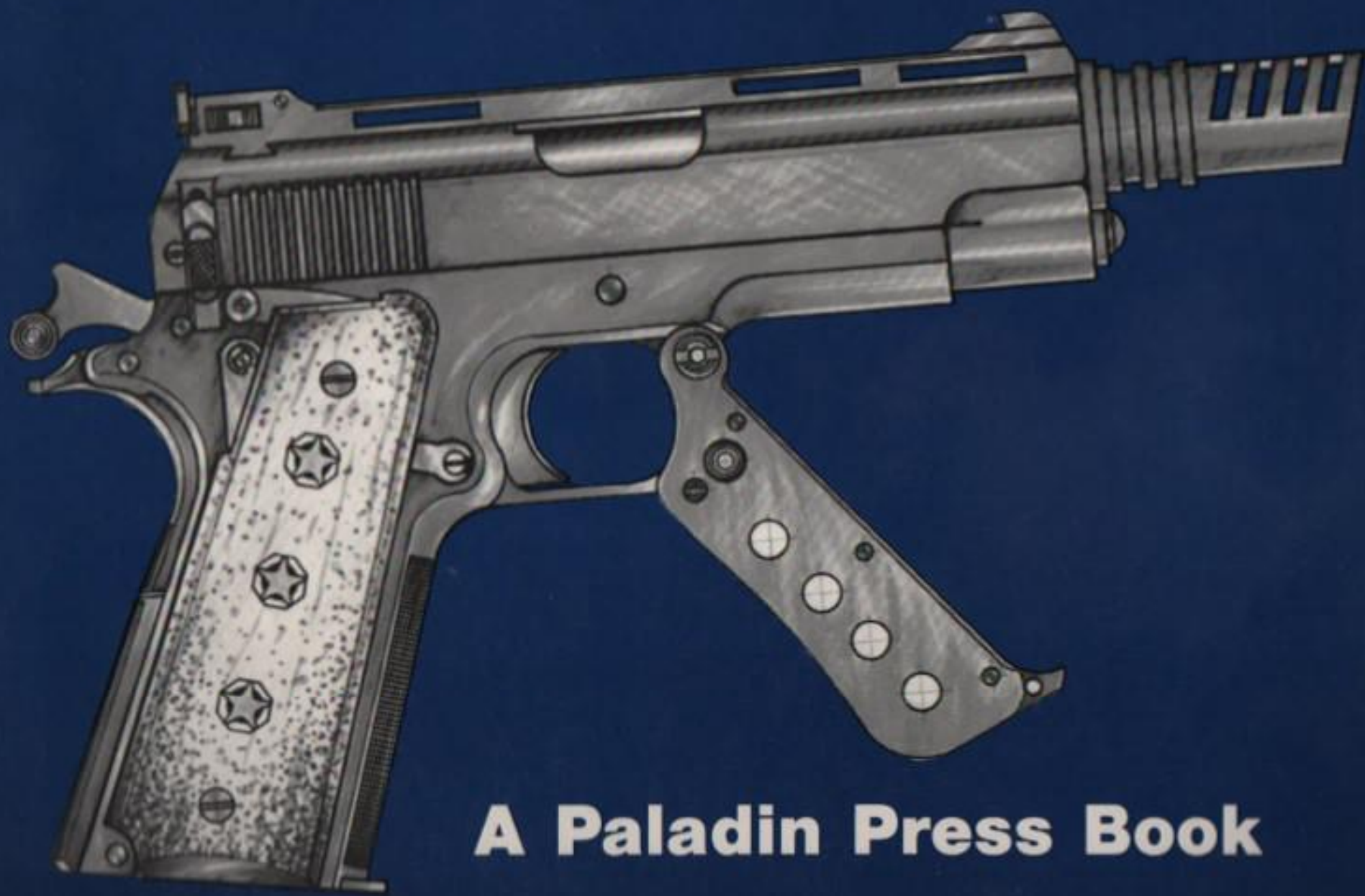


# **The Colt .45 Exotic Weapons System**



**A Paladin Press Book**

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**A Paladin Press Book  
Boulder, Colorado**

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# Warning

It is against the law to manufacture a restricted or prohibited firearm without an appropriate license from the federal government. There are also state and local laws prohibiting the possession of such devices in many areas. Severe penalties are prescribed for violations of these laws. Be warned!

# Introduction

The selective-fire conversion of the Colt .45 automatic pistol, the most famous and reliable automatic pistol ever made in the United States, will be detailed here. The big Colt needs no introduction to anyone who has handled a pistol or revolver. From its introduction in 1904 to its unsurpassed service record in two world wars, Korea, and Vietnam, no other pistol in the world can claim greater merit for its achievements.

Designed by John M. Browning, it was first manufactured by Colt in 1905 in a slightly different configuration from the model used today. Before its adoption by U.S. forces in 1911, American troops fighting Muslim insurgents in the Philippine Islands encountered difficulties stopping fanatical Moros in their charges against entrenched cavalymen armed with the then-new .38 caliber revolver. Records show that tribesmen could be hit with as many as six .38 slugs and still keep coming. Colt .45 revolvers soon replaced the .38.

In 1907, tests of automatic pistols and revolvers were conducted by the U.S. Army. The weapons included in these tests were the Colt, Savage, Luger, Knoble, Bergmann, White-Merril, and the Webley-Fosberry automatic revolver. Revolvers manufactured by Colt and Smith & Wesson were also included.

The Colt .45 exhibited its inherent superiority over other competing weapons with the exception of the Savage automatic pistol (which was favored in the test). By 1910, Colt

and Savage were competing toe to toe for top marks. Both improved weapons were again tested at Springfield Armory, and this time the Colt gained an edge over the Savage since the incidence of breakage was less.

In the spring of 1911, both pistols were again tested against one another. In reliability and endurance testing in which both pistols fired 6,000 rounds each, the Savage had about 50 malfunctions or breakages. The Colt pistol, on the other hand, fired without a single parts breakage or stoppage. With these extraordinary results, the Army decided to adopt the Colt pistol.

More than seven decades after its introduction, the Colt .45 is still the standard U.S. Army issue and popular with the civilian market. In local and international combat competition, the Colt .45 is always a top choice. The number of private manufacturers now offering custom accessories for the big Colt has grown, as has the number of custom gunsmiths who offer fine-tuning of the already reliable factory-produced gun.

Various arms manufacturers, both in the United States and abroad, manufactured the Colt .45 during both world wars. Today, there are many variations added onto it by new manufacturers. AMT, MS Safari Arms, Detonics, Auto Ordnance, and Randall Arms Company all recognized the superiority of the Browning-designed Colt .45. Lama and Star of Spain also imitated big pistol design for the international

market. Perhaps the best improvements to the original Colt pistol design have been the introduction of the collet-type barrel bushing, adjustable sights, speed safety, and slide release. Though not manufactured by Colt, the .45 is now available in stainless steel.

Large-capacity magazines from the conventional stick type to the new drum type holding 30 rounds of ammunition are now available for those who want maximum firepower. With the exception of the Star long-stick magazines (no longer manufactured), no other currently available large-capacity magazine is reliable. As in the case of the Taylor-designed drum magazine, the Star model will only function reliably on Colt-manufactured slides and will not function on Essex frames. In choosing a large-capacity magazine, it is imperative you determine which one works most reliably with your particular gun, an expensive task since such clips have increased in cost. However, the drum magazine is the most adaptable one for reliable operation. Do not load the magazine to full capacity; load two or three fewer rounds in order to give the spring enough room to function without excessive tension.

Colt did some experimentation during WW II on selective-fire conversion of the Colt .45. No conversion, however, passed the prototype stages. With the exception of the Star Company, no Colt .45 copy converted to full auto fire has been on the international market.

Supercompact, fast-firing weapons have been in vogue since the Mauser Broomhandle Schnellfeuer machine pistol was introduced in the early Thirties. It was to compete with the Royal and Astra machine pistols, the Astra being a close copy of the German-made Mauser. The Star machine pistol (a Colt .45 copy converted to selective fire) was available internationally from the early Thirties to the Fifties with very limited success.

During the Vietnam conflict, American small arms designer Gordon Ingram designed a revolutionary machine pistol derived from the very popular Uzi submachine gun. The

machine pistol was much smaller and had a compact configuration. The Ingram, first manufactured by Sionics in Atlanta, Georgia, was offered in three calibers. The larger Model 10 was chambered for the .45 ACP and 9 mm parabellum cartridges, while the much smaller Model 11 was for the .380 ACP. Model 11 is almost identical in size to the Colt .45 pistol and incorporates a staggered column 30-round magazine, firing from an open bolt.

The Ingram machine pistols are manufactured by stamping methods, including the bolt, using lead filling to add the necessary weight. The firing pin is stamped as an external dent on the breech face to simulate a fixed firing pin. All Ingram machine pistols are equipped with front threads on the barrel to take Sionics-designed silencers.

Heckler and Koch (West Germany) and Beretta Arms (Italy) have introduced the VP-70 and the Beretta 93 R machine pistols, respectively. Both firms eliminated the full auto capability, opting for a more ammo-saving three-shot burst system, to give the shooter better control of his weapon in full automatic fire. It has been determined that after three or four shots have been fired, the muzzle of the gun rises considerably and other succeeding shots totally miss the target. Both the H&K VP-70 and Beretta 93 R are equipped with detachable shoulder stocks. In addition, Beretta has added a folding front grip on their machine pistol for maximum control on full automatic. The removal of the shoulder stock from the Heckler and Koch VP-70 pistols will render them semiauto only. The stock contains the converter device for selective-fire operation.

The venerable Colt .45 certainly needs additional development in order to become a compact, fast-firing portable weapon that can be concealed in one's clothing. It has unsurpassable stopping power, especially in cases where an instant volley of fire is required and the weapon must be carried in a low profile. Such a weapon is ideally suited for bodyguards, security agents, and underground forces involved in clandestine operations. It could function as a weapon of

assassination once equipped with a silencer.

Many of the machine pistols now offered on the market are chambered for the less-powerful 9 mm parabellum cartridge. The advantage of this chambering is its larger magazine capacity. Most currently manufactured 9 mm pistols incorporate a 15-round or more staggered column-type magazine that does not protrude below the bottom of the grip.

In the .45-caliber chambering, a double column would be very bulky unless a skeleton-type grip is used without wood panels. The 9 mm round also provides much better weapon control on full auto than the .45 ACP, one of the major reasons why manufacturers converting their standard automatic pistols to selective fire prefer the 9 mm round. The 9 mm version of the Colt automatic is more advisable for those who cannot control the big .45 in its semiautomatic form.

Careful research and design have gone into the final setup of the Colt .45 selective-fire conversion. Incorporating features of current machine pistols, the Colt is even more formidable in its selective-fire version. Undoubtedly it is the ultimate concealable man-stopper of its class. It can rest comfortably in your waistband or in your pocket without the bulk of an Ingram or Mini Uzi.

Attention to detail and simplification in parts manufacture are given primary consideration herein. The conversion process retains all factory components, and minimal additional parts are needed to give the weapon the selective-fire capability. All additional parts are easily hand-built using sheet metal materials.

Since all original parts are retained, 100 percent reliability is assured as long as the gun works properly before conversion. The gun must be in perfect condition and fine-tuned before any work on it is attempted. Remember that once the gun is converted to full auto, it must withstand the constant pressure and vibration of rapid-fire cycling. The rate of fire is extremely fast (about 1200 rounds per minute) due to the extremely short recoil and powerful recoil spring. The frame

and slide will take ten times the normal beating as when the gun is fired on semiautomatic. Never attempt to convert a weapon of questionable quality or one with worn and unsafe components. If in doubt, consult a qualified gunsmith to make sure the gun is in perfect condition. Safety considerations must always come first while shooting or making improvements or repairs.

To aid in controlling the gun in full auto fire, a front grip is a must. The gun is not easy to control in its semiauto mode during rapid fire. Just imagine the amount of recoil when the gun is fired full auto. In addition to the front grip, a muzzle brake compensator device (now offered by independent manufacturers of Colt .45 accessories) is a definite help in stabilizing muzzle climb on full auto. Another welcome addition is a detachable shoulder stock for long-range fire. For optimum performance when the gun is equipped with a shoulder stock, a long barrel and a fully adjustable or telescopic sight may be mounted.

A simple silencer design adaptable to the .45 pistol is also included in this book for those who may not want to bother their neighbors with loud gun noises.

**Note:** When using a large-capacity magazine (such as the Taylor drum) and when the weapon is to be fired on full auto, fire the gun in short bursts to allow for cooling. Since the weapon fires from a closed bolt, the cartridge may detonate itself in the hot barrel, possibly causing serious injury to the operator. Reserve full auto long bursts for emergency situations only.

The conversion system described here can be employed for all Colt .45 automatic pistols, including those that are not of Colt manufacture. Those that are put out by other manufacturers have parts which are interchangeable with original Colt gun parts.

When using large-capacity magazines, it is imperative that you try several types now available by mail order. Use one that functions perfectly with your gun. In most cases, if these

magazines do not work, you may need a good gunsmith to make adjustments or fittings on the magazine (provided your gun works perfectly with the standard magazine that was supplied with it). Never attempt to make unnecessary adjustments on your gun if it works with its original factory-produced magazine just to try to make a large-capacity magazine work. The magazine is the problem—not the gun. Try another type until you find one that will work reliably. The Taylor 30-round drum magazine only works reliably on Colt-manufactured pistols and may not function properly with other variants or copies.



# 1. The Selective-Fire Conversion System

The operating procedures for loading, unloading, and firing are the same as for the factory-produced Colt .45, with the following exceptions:

- a. During field stripping for cleaning purposes, the selector on the slide must be placed in the semiauto position so it can be separated from the receiver. The lower end will otherwise be blocked by the roller or tripper.
- b. During firing, the operator can select either semi- or full auto operation by simply manipulating the slide-mounted fire-selector mechanism.

**Note:** In this conversion, the grip safety front tang that normally blocks the trigger bar will be deactivated. Consequently, the hammer can be lowered from the full-cocked position by the shooting hand. In the original configuration, the hammer cannot be lowered without first squeezing the grip safety, a two-hand operation. The removal of the grip safety tang makes the operation of the gun much simpler. The safety lever mounted on the left side of the gun is all that is needed for practical purposes. This safety locks the sear and hammer engagement when the gun is cocked, while the grip safety only blocks the trigger bar, thereby preventing the trigger pull. The grip safety does not offer the positive safety provided by the side-mounted lever.

## SEMIAUTO OPERATION

With the weapon fully assembled, insert a loaded magazine until the catch engages with the magazine's mating slot. Put the hammer in the half-cocked position (the hammer is slightly retracted), draw the slide to the rear about 1/4 inch, and move the selector upward (if the selector is set at full auto) until it stops and the index ball locks it in this position. Depress the selector upward, with your thumb grasping the slide to move the selector lever into the semiauto position. After the selector has been set to the semiauto position, let the slide move forward by its own spring to relock with the barrel-mating lugs. *Caution: Never press the trigger while retracting the slide during the loading process.*

Draw the slide all the way to the rear. Let it fly forward under the tension of the recoil spring to load and cock the hammer. Your gun is now loaded and ready to fire in the semiauto mode. Put the safety in the "on" upward position if you are not yet ready to shoot.

When you are ready to fire, depress the safety lever and press the trigger (11) to fire the first shot. Immediately after the trigger (11) is squeezed, the top forward hump of the connector (17) is pushed slightly to the rear and downward due to the camming action of the trigger bar cam bushing (10) just before the trigger pull is completed. At the end of the trigger pull, the sear lever unit (15) moves forward, pulled



into this position by its spring (19). The connector front end (18) will jump upward onto the top of the tripper mating toe (20) as soon as the hammer is released. The forward action of the sear lever unit (15) ensures a positive clearance on the front bottom end of the sear (7). It will not be blocked by the trip pin (9) while pivoting to reengage with the hammer (1) during cocking.

After the first shot is fired, the slide (13) recoils rearward to accomplish the extraction and ejection of the fired shell. Recock the hammer (1), and load the top cartridge (5) in the magazine into the chamber (6). While in the recoil position, the slide (13) depresses the disconnecter (4) in the usual manner, causing its lower end (8) to disengage from the lower end of the sear (7). This disconnecting action of the lower end of the sear (7) and that of the disconnecter (8) causes the sear's upper portion (2) to pivot rearward under spring tension to reengage with the hammer (1) during cocking.

While maintaining the trigger pull and while the slide (13) is still on rearward recoil, the top rear part of the tripper (14) always rests on top of the sear lever unit (15) due to the pulling action of its spring (16). While in the downward (rest) position, the bottom end of the tripper (20) always leaves a gap for the downward path of the connector's front end (18) while the camming action of the trigger bar cam bushing (10) is constantly forcing the connector to move downward as the trigger pull is maintained. This action always keeps the connector toe (18) and tripper's mating toe (20) in line, slightly touching each other at all times, while the trigger is being pulled. This action occurs whether one is firing full or semiauto.

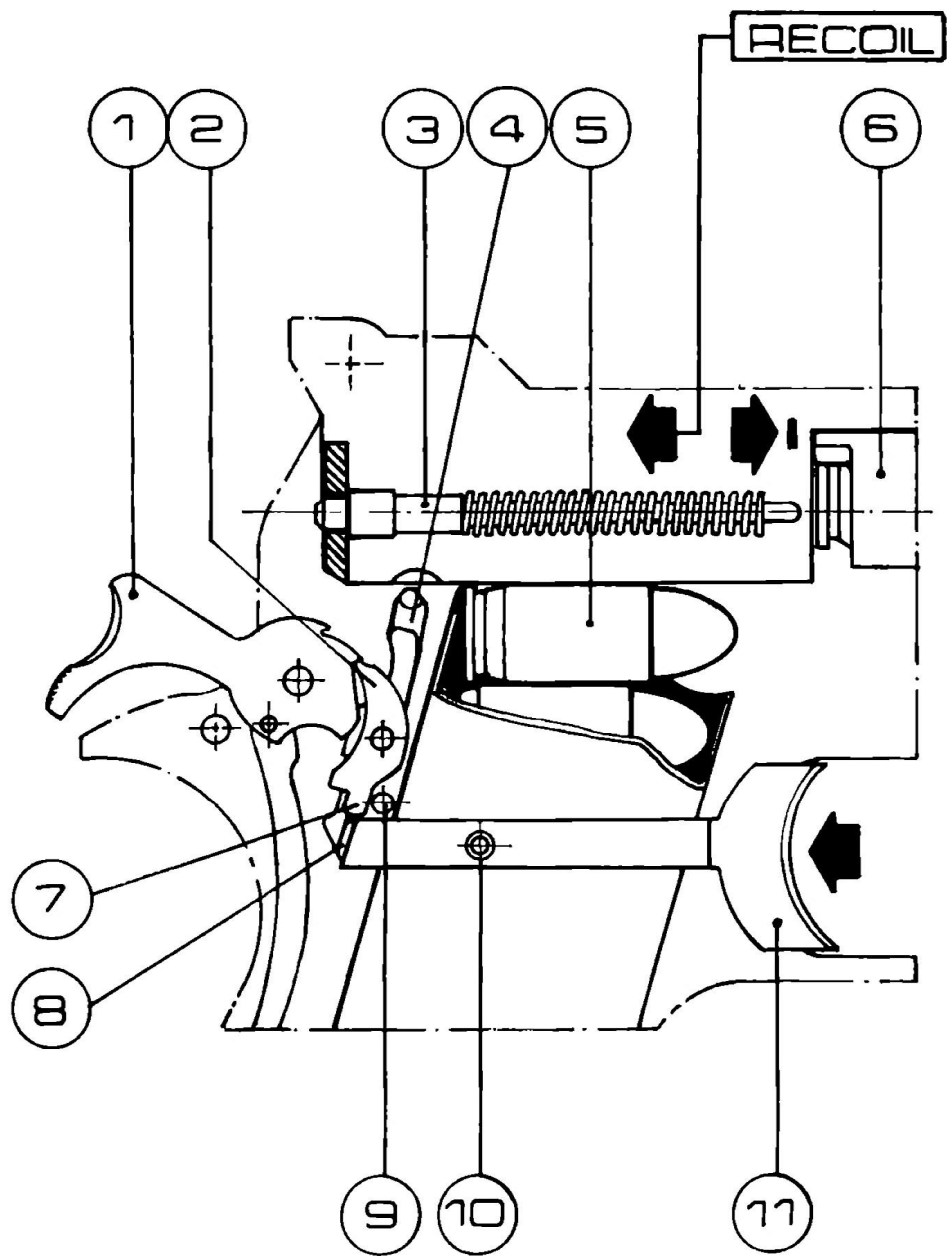
On its forward recoil, the slide (13) picks up the top round in the magazine (5), loading it into the chamber (6). Since the bottom end of the selector lever does not protrude under the slide (13), it has not hit the upper rear part of the tripper (14). Automatic release of the hammer (1) is thereby avoided, resulting in semiauto fire.

To fire the next round, the trigger (11) must be released

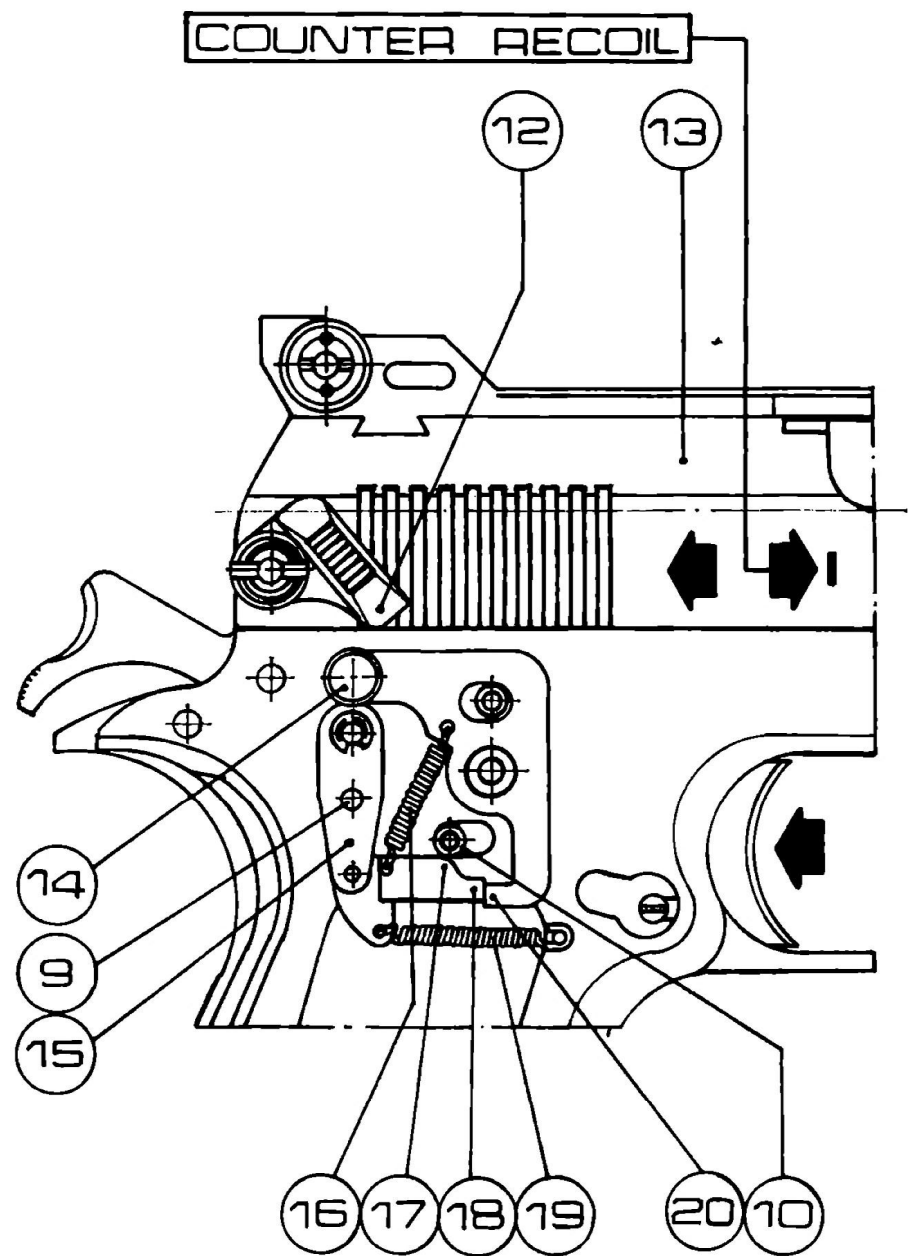
and repulled. The slide (13) will be held open after the last round is fired.

**Note:** The Bingham 30-round snail drum magazine has a rounded follower and does not lock the slide in the open position when the magazine is empty.

# SEMI-AUTOMATIC OPERATION



INTERNAL VIEW



EXTERNAL VIEW

## FULL AUTO OPERATION

The sequence of operation involved in full auto firing is the same as semiauto, with the following exceptions:

With a loaded magazine inserted in the gun, move the fire selector downward as far as it will go until the spring-loaded index ball locks it in place. Draw the slide all the way to the rear. Let it move forward to cock the hammer and load the first round into the chamber. Your gun is now ready to be fired full auto. Note that the top rear portion of the tripper is being pushed forward by the lower end of the selector lever (12) during slide closing. In this position, the connector front end (18) must always rest on top of the tripper's mating toe (20) in order to prevent accidental tripping of the hammer. Such accidental tripping can be caused by the alignment of the connector's front end (18) and the tripper mating toe while the trigger is not being pulled. The alignment of these two parts must be activated only during deliberate trigger pull, and at no other time. In order to prevent accidental discharge, this critical area must be fitted properly before you attempt to fire the gun with live ammo.

Press the trigger to trip the hammer (1). The hammer hits the firing pin (3), and the cartridge loaded into the chamber (6) is detonated. After the shot is fired, the slide (13) recoils rearward to extract and eject the fired shell and recock the hammer. While in the recoil position, the slide depresses the disconnecter (4), causing the lower portion (8) to disconnect from the lower end of the sear (7). The disconnecting action of these two parts then allows the sear (2) to reengage with the hammer during cocking.

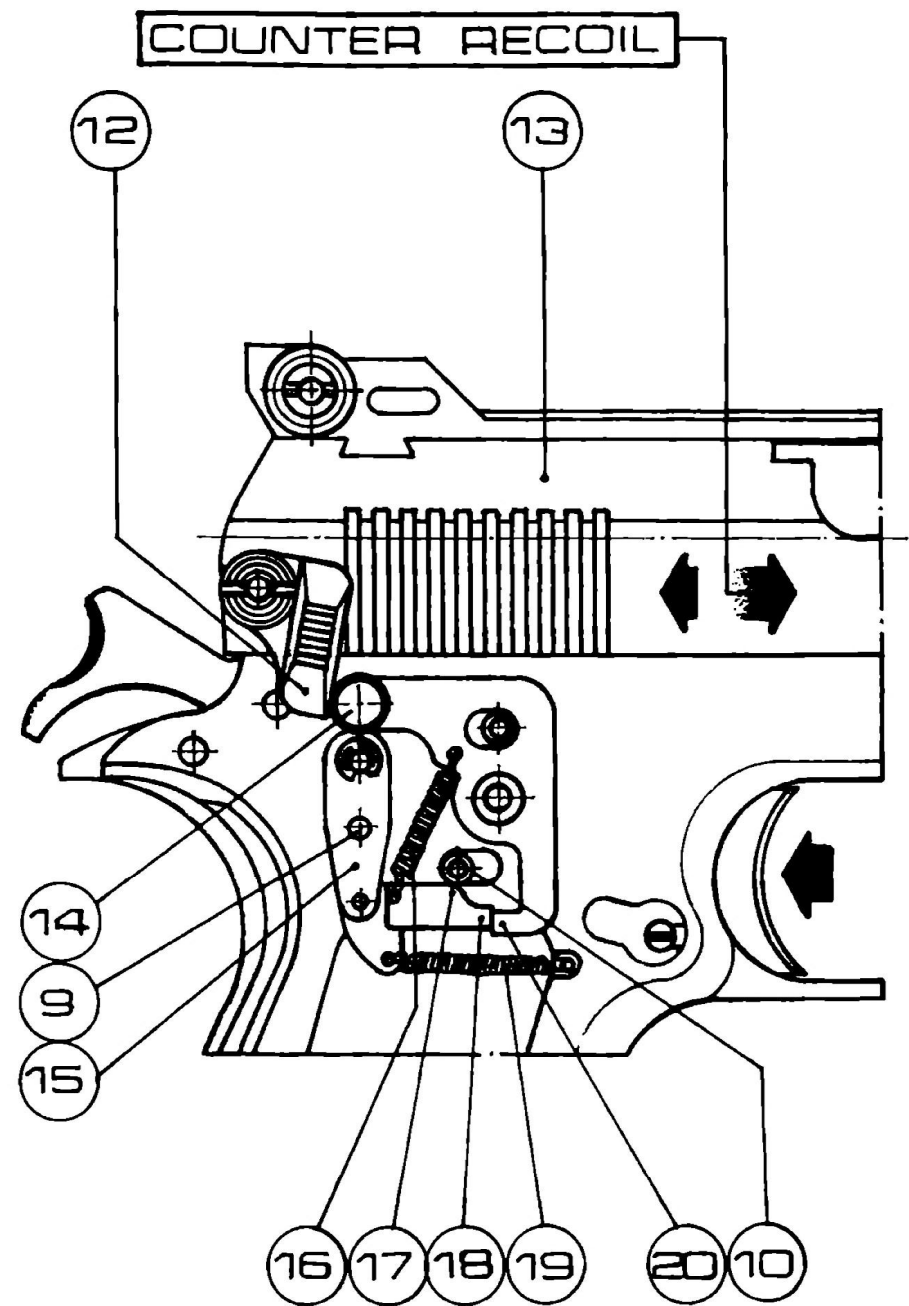
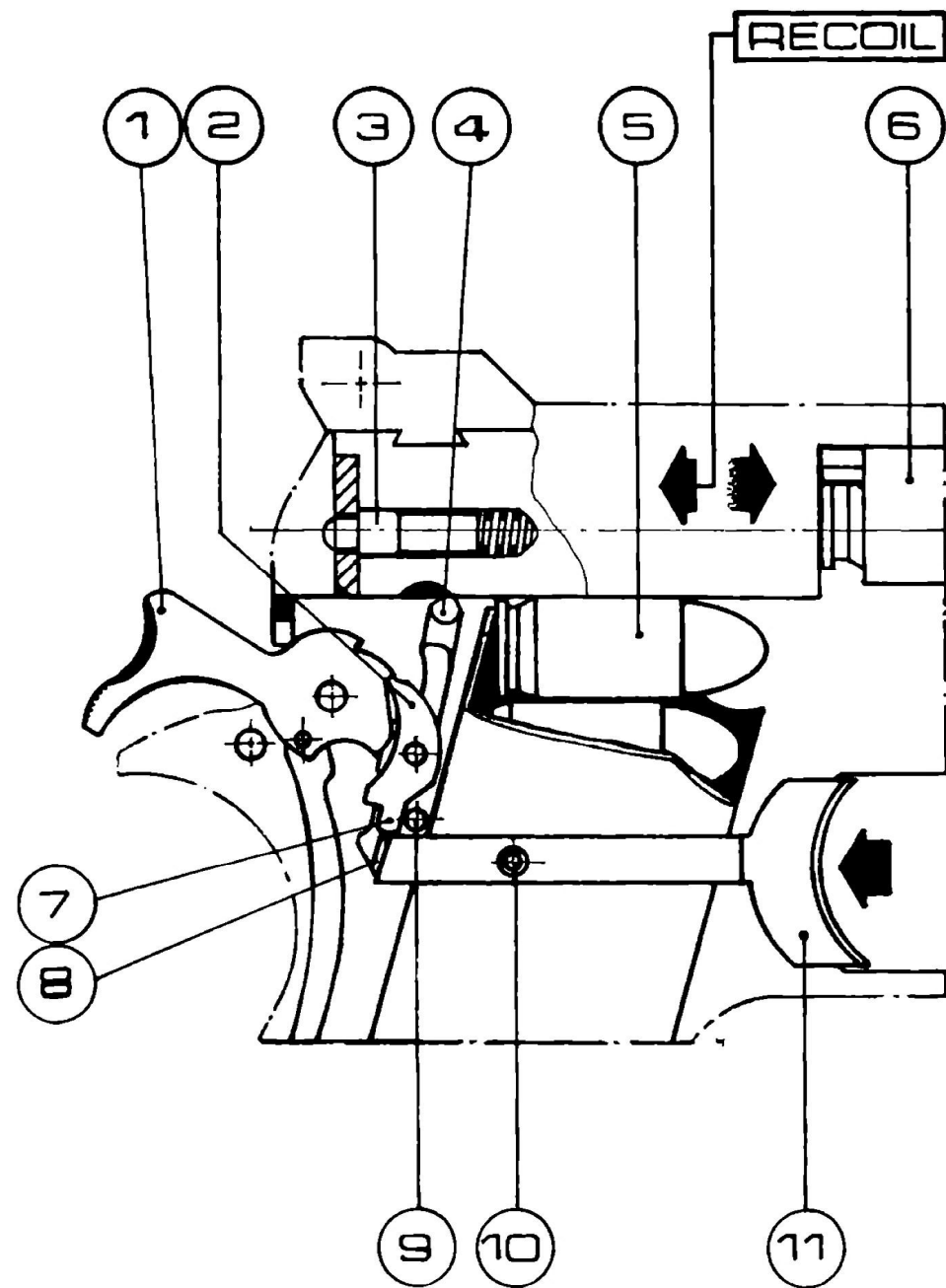
While maintaining the trigger pull and while the slide is still in its rearward recoil, the trigger bar cam bushing (10) constantly depresses the forward hump section of the connector (17), which then lines up with the tripper's mating toe (20).

As soon as the slide recoils rearward, the top rear portion of the tripper (14) moves downward to its normal rest-

ing position at the top of the sear lever (15). The tripper's downward action causes its lower end (20) to pivot forward, leaving a clearance for the connector's front end (18) to move downward when cammed by the trigger bar cam bushing (10) during trigger pull. After the connector is cammed downward by the trigger pull action, it moves slightly forward by the force of its spring (19). The sear lever unit trip pin (9) will not interfere with the sear's engagement with the hammer (1) during cocking.

On its forward recoil, the slide (13) picks up the magazine's top round (5) and loads it into the chamber (6). One eighth of an inch before the slide (13) comes to a full stop, the bottom end of the selector (12) pushes the top rear portion of the tripper (14). At this point, the trip pin (9) pushes the lower end of the sear (7) backward to trip the hammer (1). The slide (13) and barrel are now locked together. As soon as the slide fully closes and stops, the trip pin (9) forces the lower end of the sear (7) to pivot rearward, thereby tripping the hammer (1). The hammer then hits the firing pin (3) and detonates the round in the chamber (6).

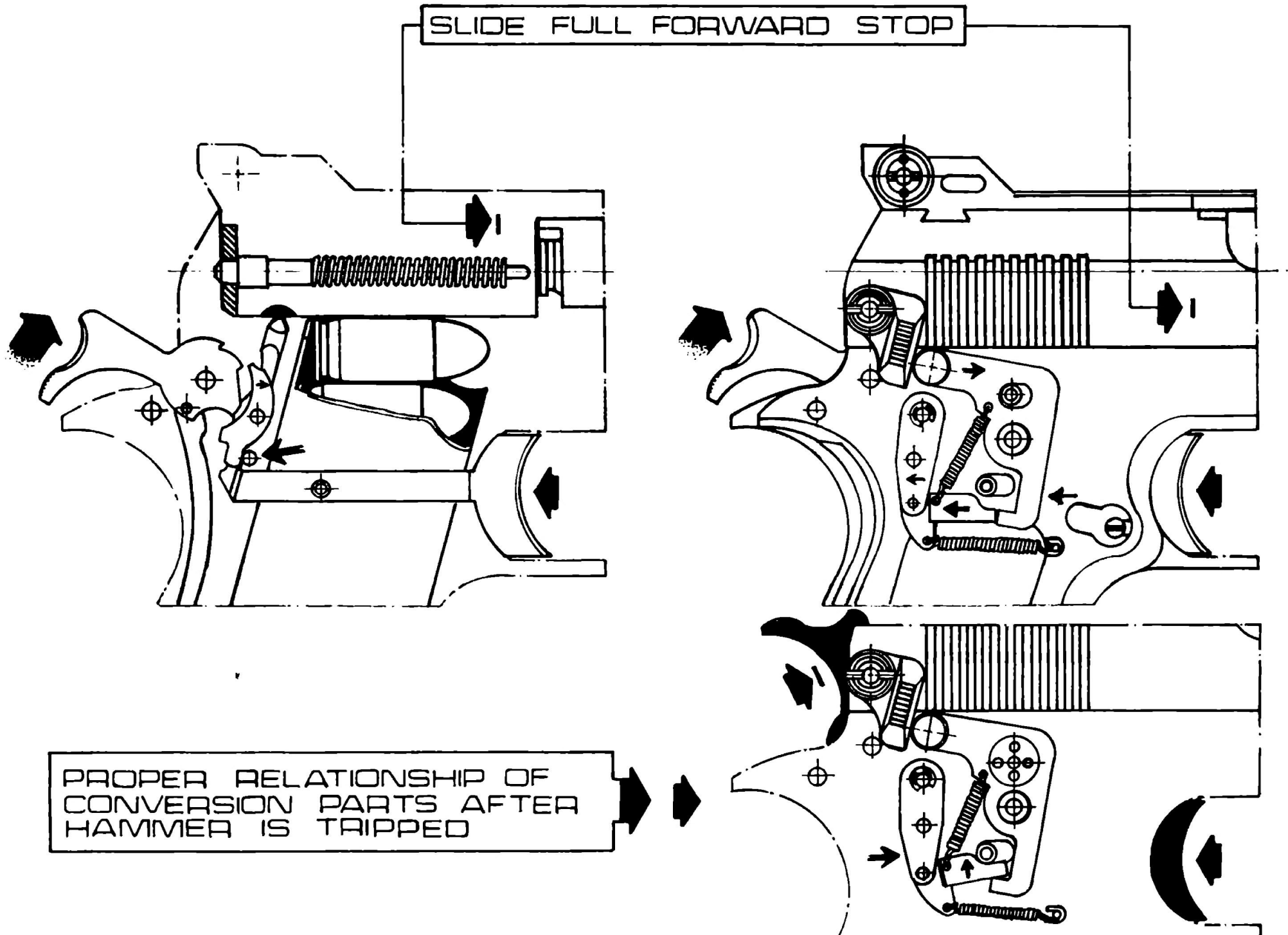
Immediately after the hammer (1) is tripped and the gun has fired, the front end of the connector toe (18) jumps up and rests on top of the tripper mating toe (20). As soon as the slide again recoils, the connector is forced down by the camming action of the trigger pull. The tripper mating toe (20) is realigned as the top rear portion of the tripper (14) moves downward when released from the forward push of the selector's bottom end (12). When the slide (13) moves forward to complete the operating cycle, the hammer is automatically tripped as the slide (13) fully closes. This cycle continues automatically as long as there is ammunition in the magazine or until the trigger pressure is released. The bolt will be held open by the slide lock after the last round is fired except when the Bingham snail drum magazine is used.



NOTE

FIRST SHOT FIRED, TRIGGER PULL MAINTAINED. REAR END OF SLIDE HAS ABOUT  $\frac{1}{64}$  INCH NOT LEVELLED WITH RECEIVER ON ITS FORWARD CLOSING. SELECTOR LEVER START PUSHING TRIANGOR.

FULL AUTOMATIC OPERATION  
- MOMENT OF AUTOMATIC HAMMER RELEASE -

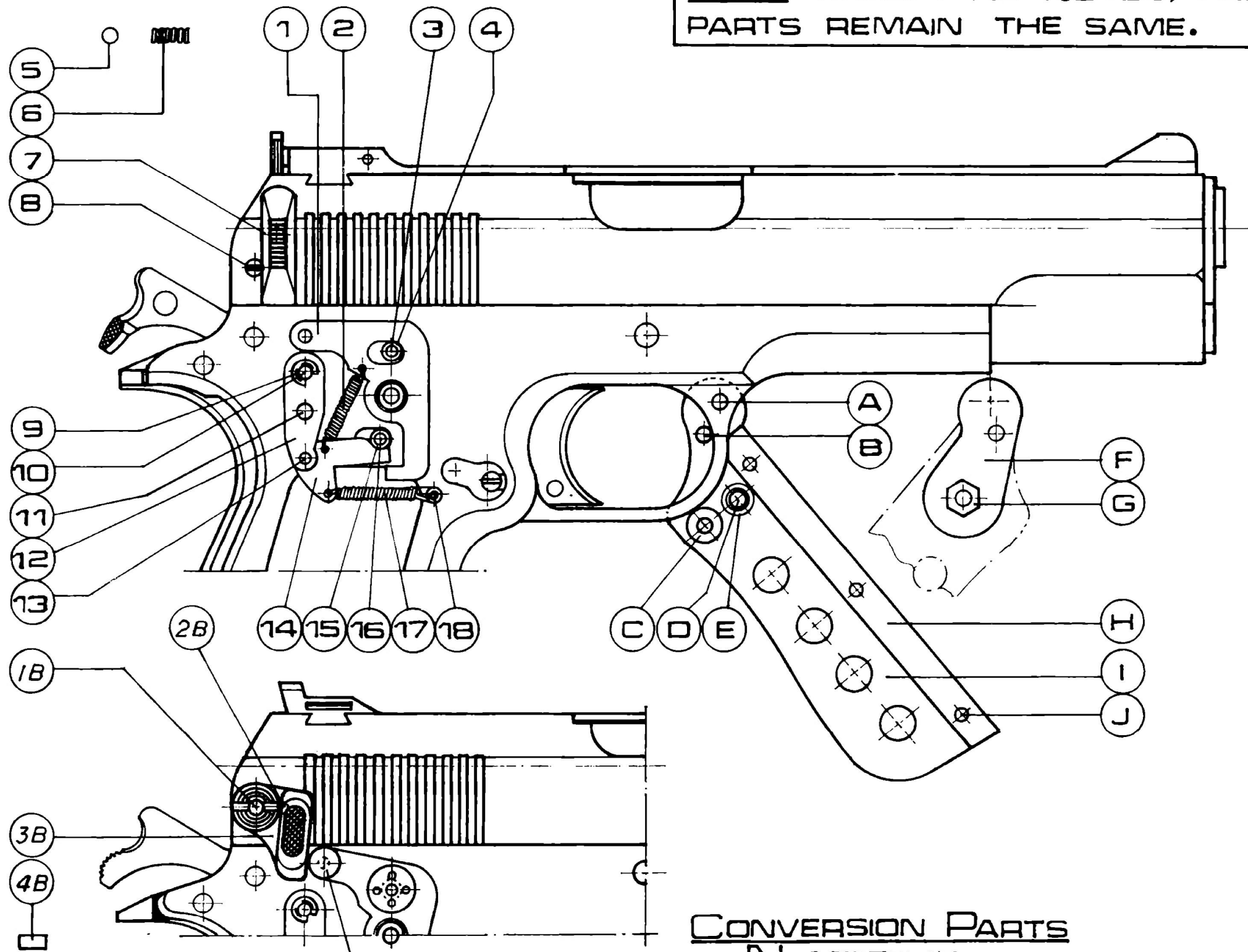


## CONVERSION PARTS AND FUNCTIONS

1. **AUTOMATIC TRIPPER**—activates the sear lever unit during full auto operation as the slide completes its forward closing motion.
2. **AUTOMATIC TRIPPER SPRING**—powers the downward action of the tripper when not activated by the selector unit.
3. **TRIPPER SUPPORT SCREW**—acts as an assembly base for the support bushing.
4. **TRIPPER SUPPORT SCREW BUSHING**—large head-diameter threaded rod which is assembled to the small screw mounted on the receiver. Its large head secures and supports the upper part of the tripper, ensuring full support and rigidity of assembly.
5. **SELECTOR INDEX BALL**—locks the selector lever to its mating notches on the slide.
6. **SELECTOR INDEX BALL SPRING**—powers the index ball.
7. **FIRE SELECTOR MECHANISM**—controls the mode of firing.
8. **SELECTOR STOP SCREW (for sliding type only)**—blocks the selector overtravel from one position to the other, thereby preventing the selector from disengaging from its seat.
9. **SNAP RING (“C” clip retainer)**—secures the sear lever unit to the replacement sear pin.
10. **REPLACEMENT SEAR PIN**—replaces the original sear pin. This part is slightly longer than the original. Its right end has a circular groove which mates with the “C” clip retainer, thereby locking the sear lever unit assembly.
11. **TRIP PIN**—a rigidly riveted pin that is mounted on the center portion of the sear lever with a long protrusion on the left side. This protrusion is inserted through the slotted section of the receiver below the sear pin hole and in front of the sear’s lower end to act as a mechanical trigger during full auto operation.
12. **SEAR LEVER**—part where the trip pin and connector are riveted. The connector must be loosely riveted to the lever to ensure free movement during operation.
13. **CONNECTOR RIVET**—secures the connector to the sear lever.
14. **CONNECTOR**—acts as a bridge between the automatic tripper and sear lever unit.
15. **CAM BUSHING**—threaded rod with a large head that mates with the trigger bar cam screw. The smaller turned portion (bottom part) operates the camming action for the connector when the trigger is pulled. The upper large diameter head end supports the lower section of the tripper and front end of the sear lever connector.
16. **TRIGGER BAR CAM SCREW**—small screw assembled to the right side prong of the bar. The screw acts as an assembly base for the cam bushing operating the sear lever connector.
17. **CONNECTOR SPRING**—powers the forward pull of the connector during operation. The forward force of the spring on the connector also causes the sear lever to move forward in order to provide the necessary clearance in front of the trip pin. The sear can then operate freely when reengaging the hammer during cocking.
18. **CONNECTOR SPRING FRONT END BASE**—small pin (preferably roll pin) press-fitted on the counter-bored hole in the receiver frame which acts as a mounting base for the front end hook of the spring during assembly.
- 1B. **SELECTOR LEVER ASSEMBLY SCREW (for lever type only)**—secures the selector unit to the slide.
- 2B. **SELECTOR LEVER UPPER SECTION**—thick plate riveted to the selector lever to increase its thickness in order to provide adequate pocket depth for the spring-loaded index ball assembly hole.
- 3B. **SELECTOR LEVER (for lever type only)**—lower portion of the selector unit that operates the tripper’s roller mechanism during slide closure.
- 4B. **SELECTOR LEVER STOP PIN (for lever type only)**—prevents overtravel when the selector is moved from one index to another. This pin prevents the unit from disengaging from its index position.



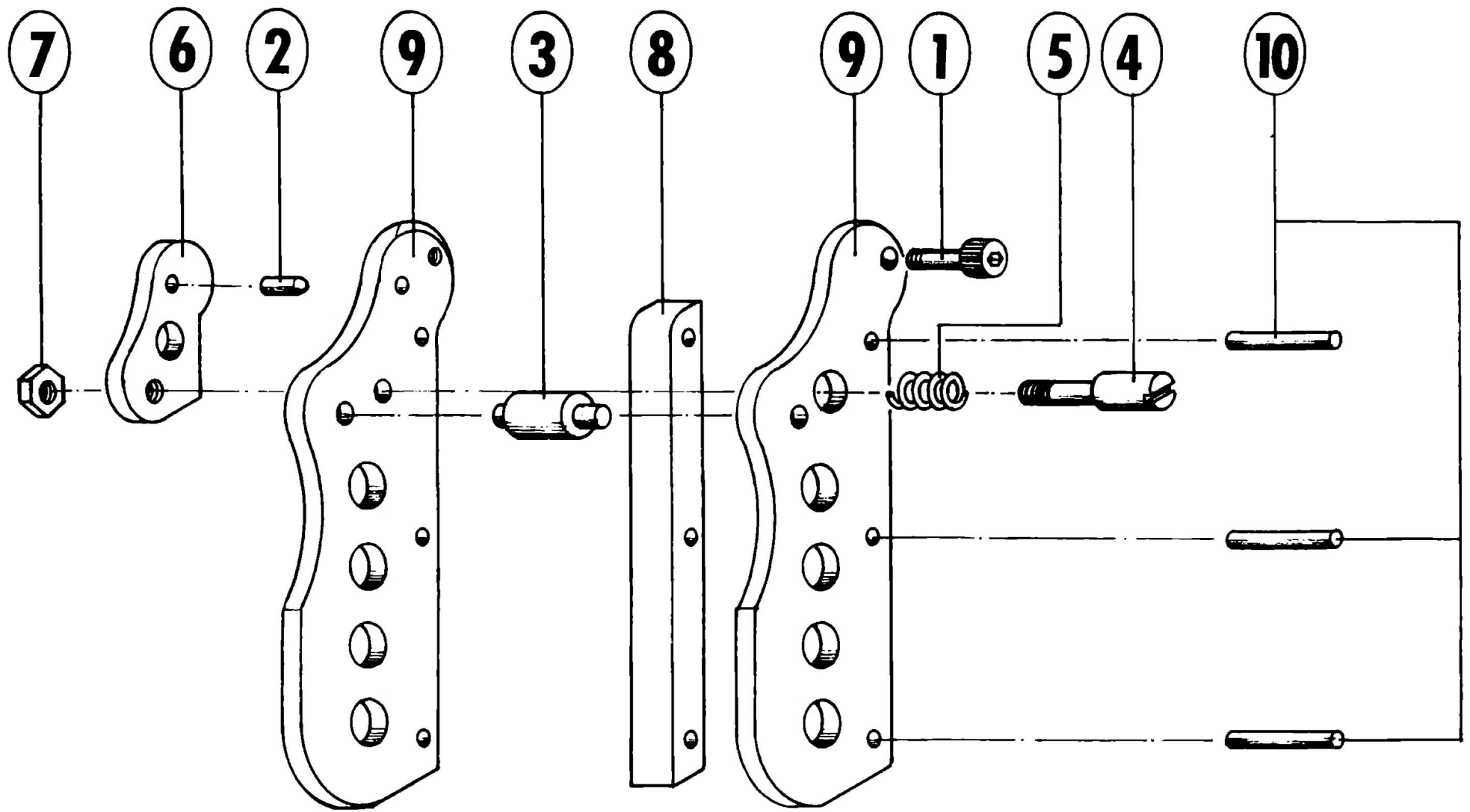
NOTE - EXCEPT AS NOTED, ALL PARTS REMAIN THE SAME.



CONVERSION PARTS  
NUMBERED

## FOLDING FRONT GRIP DESIGN

1. **ASSEMBLY SCREW**—secures the grip to the receiver frame.
2. **LOCKING PIECE INDEX**—a 1/8-inch diameter rod which is riveted to the upper portion of the push-button locking piece. This part acts as an index lock for the front grip when it is either retracted or folded.
3. **GRIP LOWER SUPPORT**—a 5/16-inch diameter rod which is riveted to the grip, positioned precisely at the point where the lower front radius of the trigger guard rests when the grip is in the retracted position. This part assists the top portion of the side-plate insert by absorbing the force of recoil directed against the shooting hand, thereby providing better control of the weapon during rapid firing.
4. **LOCKING PIECE PUSH-BUTTON CATCH**—a 1/4-inch diameter rod which is mated to the index locking piece. When operated, it causes the locking piece to retract toward the left (this holds true for right-hand shooters; reverse the arrangement if left-handed) to disengage the index rod locked against the trigger guard so that the grip can be moved from one position to another.
5. **LOCKING PIECE PUSH-BUTTON CATCH SPRING**—powers the catch assembly.
6. **LOCKING PIECE**—small plate positioned on the left side of the grip. Its lower hole is threaded to mate with the push-button rod. On its upper portion, the locking index rod is permanently riveted.
7. **PUSH-BUTTON CATCH COUNTERNUT**—a standard type (6-32 TPI) hex nut mated to the end of the button rod. This counternut will prevent loosening of the push-button rod when assembled to the locking piece plate.
8. **SIDE-PLATE CENTER INSERT**—thick plate positioned between the two sideplates to assume the gap of the trigger guard clearance. Its upper portion will bear against the upper section of the trigger guard when the grip is in the retracted position, absorbing recoil during firing.
9. **GRIP SIDE PLATE** (two required)—a 1/8-inch thick piece of sheet metal which is riveted on both sides of the center insert which forms the body of the grip unit.
10. **SIDE-PLATE ASSEMBLY RIVETS** (three required)—mild steel rod pins which secure the two sideplates to the center insert to form the grip unit body. Nails of appropriate sizes can be substituted for rivets.



FRONT GRIP PARTS GROUP

## 2. Receiver Modification

Receiver modification required for the converter mechanism has been kept to a minimum and can be easily accomplished with the use of common hand tools. Machining is not required. Four minor modifications are required, including two small elongated slots. One of the slots is smaller than the other and is positioned just below the sear pivot pin hole. The other slot is slightly wider and longer and is cut just below the top grip screw bushing.

The smaller slot, cut under the sear pivot pin hole, provides clearance for the insertion of the sear-connector lever pin. The connector lever pin will rest directly in front of the sear when fully assembled. Its main function is to trip the sear when the weapon is fired on full auto.

The other slot, positioned below the top grip screw bushing, provides clearance for the trigger-bar cam screw and bushing assembly. The trigger-bar cam screw will protrude from this slot and will be held tight to the bar by the counter nut (a threaded bushing with a large head). The large head of the bushing will keep the lower portion of the tripper and connector lever elbow fully supported at all times. It also prevents the tripper and connector lever elbow from shifting or loosening during operation.

The third modification is a 5/64-inch diameter hole drilled just above the top grip screw bushing. This hole is tapped with a 4-40 thread to accept a standard 4-40 set screw. A set screw without a head is installed in this hole

with a 3/32-inch protrusion above the surface of the frame. This screw will mate with another large head bushing similar to the one securing the trigger bar cam screw. This bushing secures the top portion of the tripper to prevent it from shifting under the constant battering of the lower portion of the fire selector lever during full auto fire.

The fourth modification is another small hole drilled in the top front corner of the grip frame opening. This hole is 1/16-inch in diameter and serves as an assembly for the sear lever connector spring.

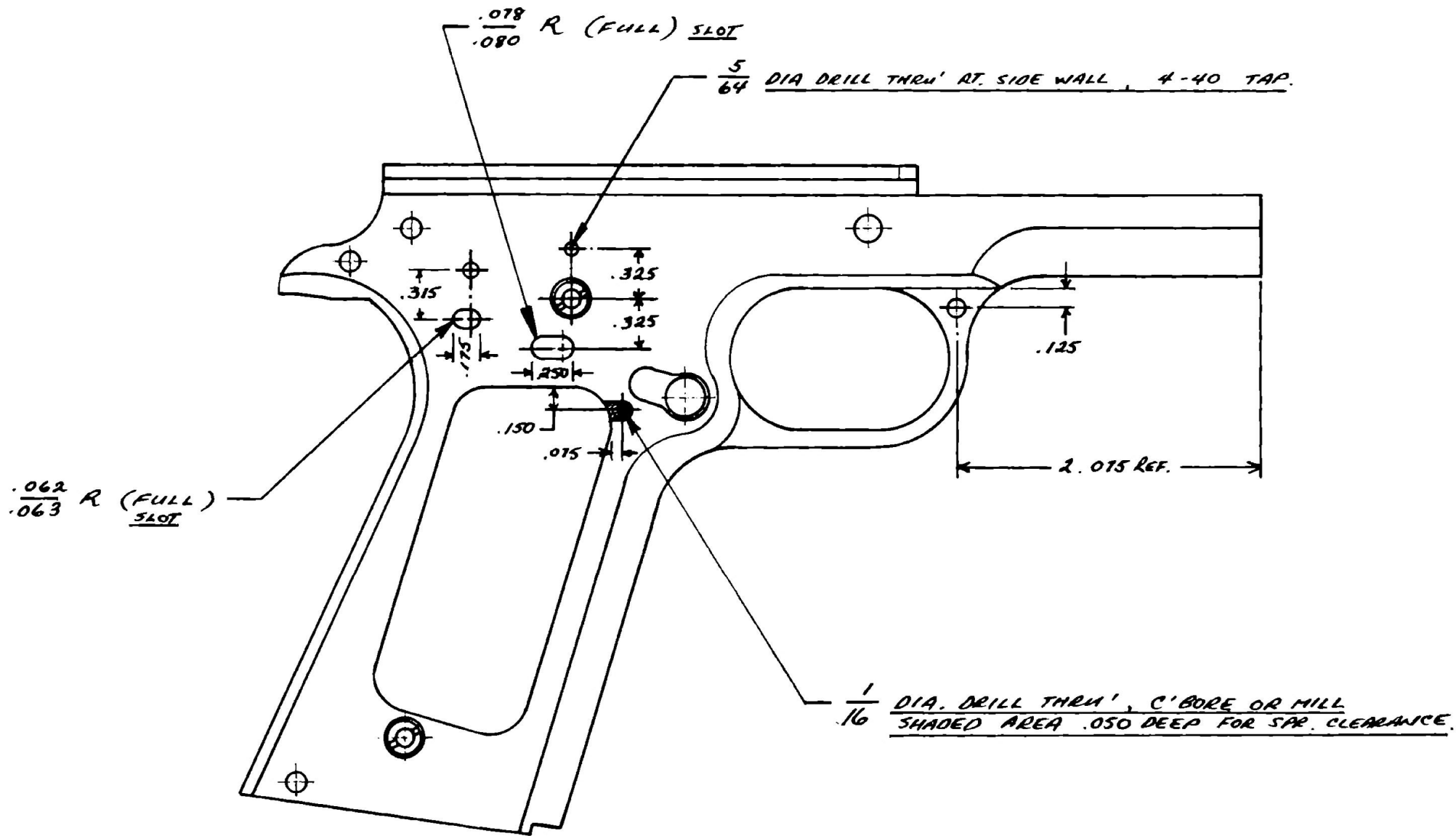
Slotting can be done in two ways. One way is to use a drill of the same size as the radius of the slot. The slot is then elongated to the desired length with a chain-saw file of the same diameter. Refer to location and size of slots on the working drawings.

Slotting should be done gradually in order to keep the cutting neat and straight and avoid unnecessary enlargement of the slot. If slotting is accomplished properly, the modification is hardly noticeable, especially when the converter mechanism is not in place and a non-inletted grip stock is substituted. Note that only half of the small slot below the sear pivot pin hole will be visible when a non-inletted stock (right side) is assembled without the converter mechanism in place. A pair of substitute grips, preferably plastic, should be purchased for use with the conversion unit. The plastic grip is hollow inside and requires very little work for inlet-

ting. Save the original grips for regular use.

To deburr the slot edges after cutting, roll medium fine emery cloth onto a 3/32-inch diameter rod and polish the edges until all burrs are removed. Retouch the slot edges with cold blue until color blends with the original finish. The part to be blued is first degreased with alcohol; the blueing solution or compound should be slightly warm for better penetration of metal surfaces. Follow the manufacturer's instructions for best results.

The other way to cut the slots is to use a milling machine. This is not explained here as it is quite an elementary procedure for a machinist.



Scale: FULL

RECEIVER MODIFICATION



Right side view of the Colt .45, converted to a selective-fire configuration. The above Colt has the sliding type selector mechanism mounted on the vertically positioned dovetail groove in the rear portion of the slide. Note that the selector is set in the full auto position.



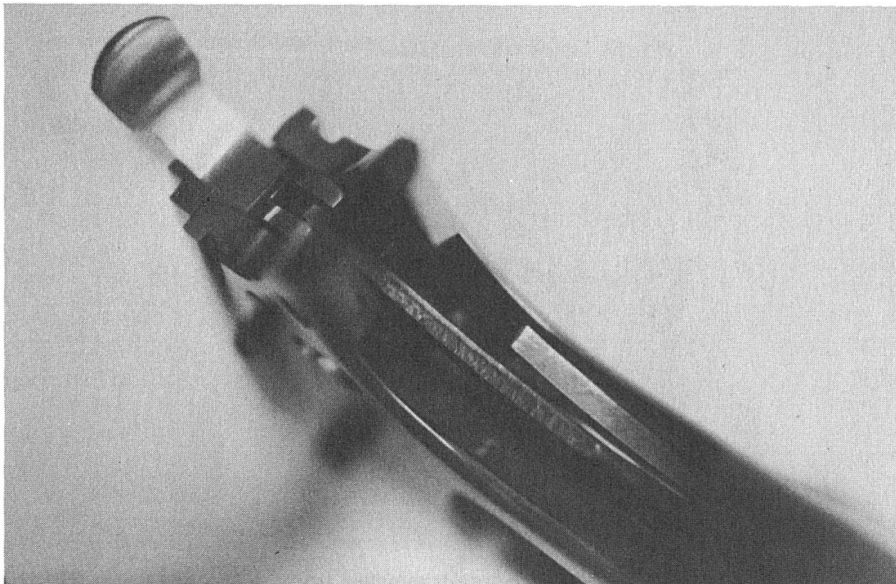
Same weapon with the selective-fire converter removed from the receiver frame. The fire selector was left on the slide. This gun will fire semiauto only, even when the selector is on. Note the small piece of metal behind the grip. This piece has a small, elongated lug which mates with the assembly slot of the sear lever trip pin. Half of this slot is partly visible below the sear pin hole. With this dropped in the slot, the slot will be covered completely. The thin wide portion is secured by the grip stock.



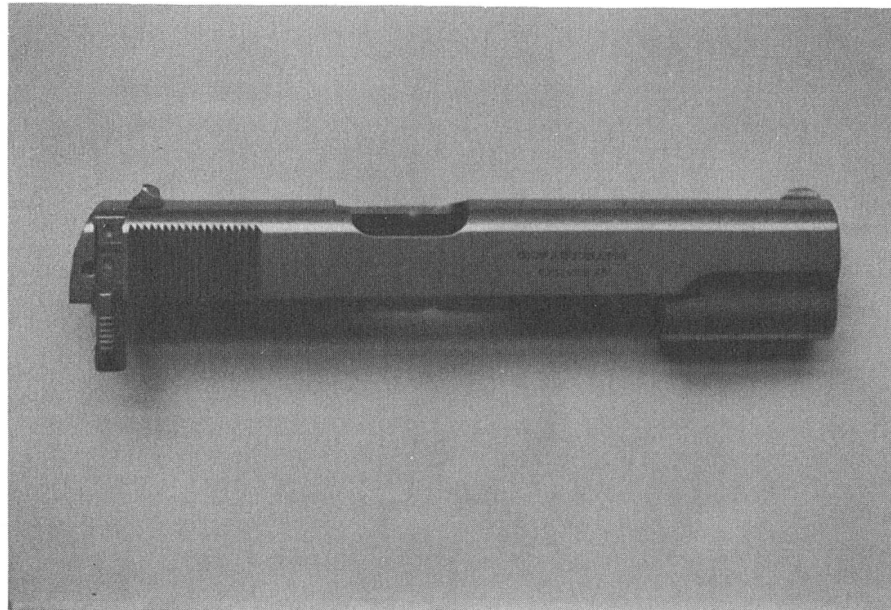
Same weapon with the grip stock removed. The fire selector is in the semiauto position.



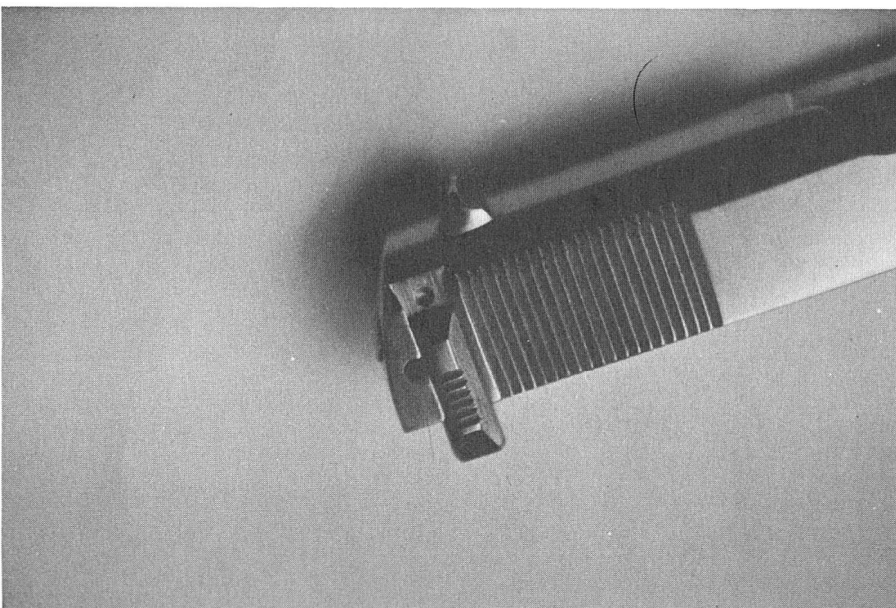
Same gun with the fire selector set at full auto, with the hammer in a cocked position.



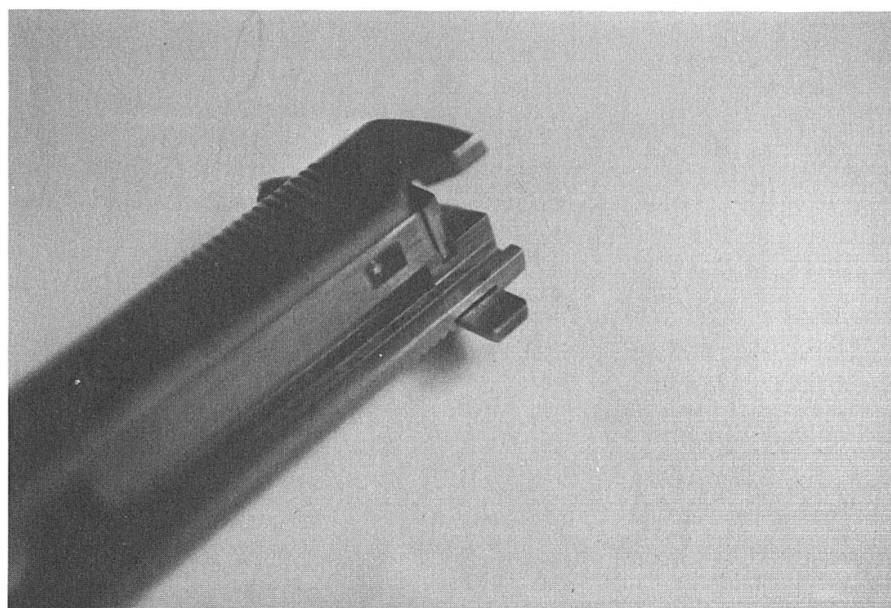
The receiver frame without the grip safety installed. During fitting of the conversion parts, it is best to assemble all components in their normal firing order, minus grip safety and grip stocks, in order to see the proper functioning of the new components. The mechanism inside the gun that is not visible outside the frame can be clearly seen behind the grip where the grip safety normally sits.



Closeup of the slide with the sliding type fire-selector mechanism. This type of selector is pressed down past two index holes for clarity. The selector normally moves downward  $3/16$  to  $1/4$  inch in the full auto position. Further movement is stopped by the stop screw. Note stop screw is not assembled in place.

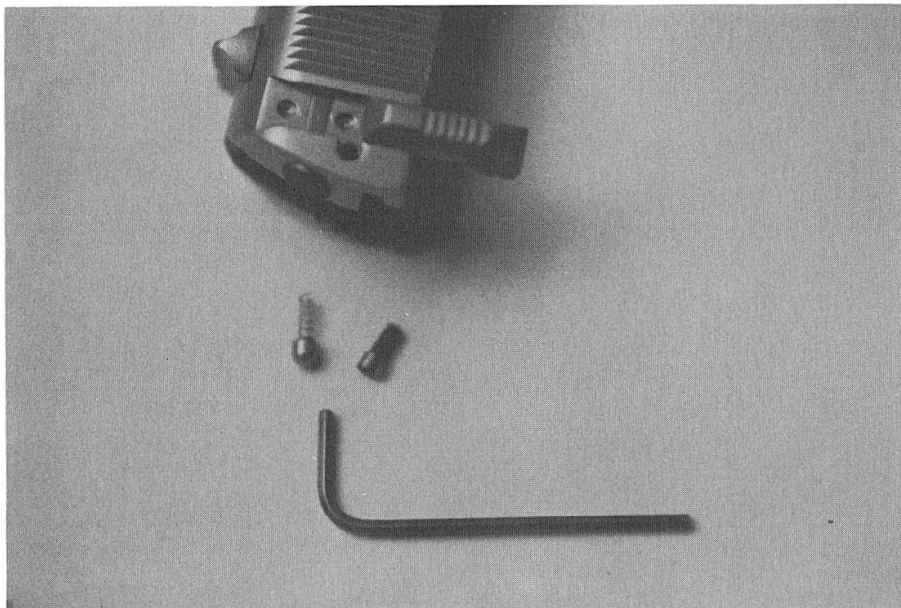


Closeup of the sliding type selector on normal full auto position. In this view, only  $3/16$  inch of its lower end is protruding underneath the lower edge of the slide in order to activate the auto tripper mechanism during full auto operation. The stop screw can here be seen in the centermost rear side of the dovetail groove where the selector is mounted.

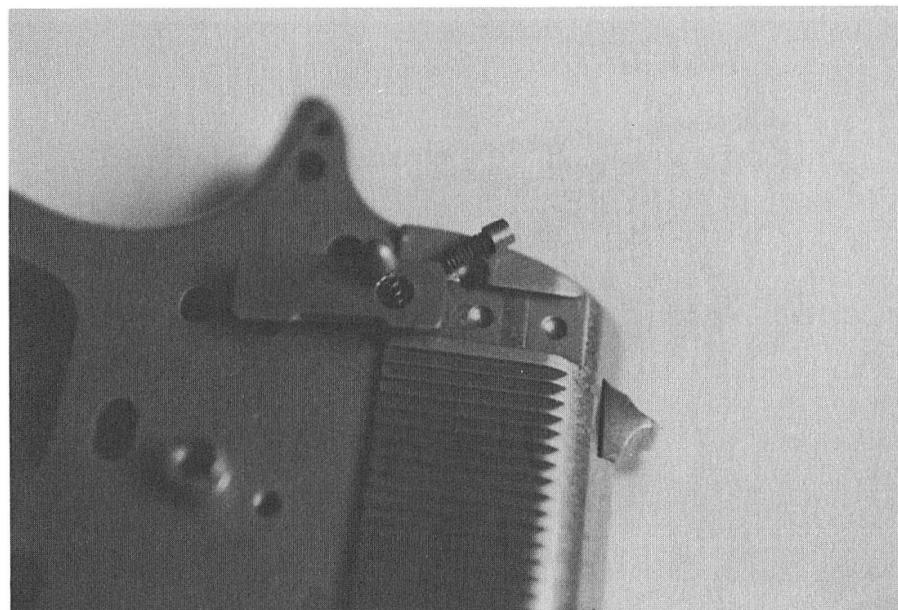


Closeup of the underside of the slide. Note the protruding bottom end of the selector and the depth of the dovetail for receiver clearance. The maximum depth of the dovetail groove is  $.065$  inch. When using this type of selector arrangement, the protruding end of the hammer pin on the right side of the frame must be filed off and leveled with the receiver in order that it will not rub off with the selector during operation.





View showing the selector and its basic components. Behind the slide are the spring-loaded plunger index, stop screw, and Allen wrench used to assemble the screw to the slide.



The same slide is shown here, but the selector has been removed from the slide and turned upside down to better show its bottom part. Note the single hole containing the index plunger and the relief cut on the rear side edge for the stop screw. The stop screw is laid beside its assembly hole.



Right side view of another selective-fire arrangement, which has the lever type selector design. This gun operates the same converter unit mounted on the receiver frame that is used with the sliding type selector mechanism. The selector is seen in full auto position. The removable folding front grip is not assembled to the gun.



Same gun with the selector set at semiauto. The hammer is at the half-cocked notch. It is advisable to place the hammer in the half-cocked position before moving the selector from one index to the other. The slide needs to be retracted slightly (approximately 1/4 inch for the lever type selector and about 1/8 for the sliding type) to clear the roller so the lower end is not pressing hard against the tripper.



Same gun viewed from the left. The hammer is cocked, and the safety is on. The front grip is in the folded position. The locking piece containing the index on the top portion of the grip is operated by the push-button catch.



Right side view of the same gun with the hammer in the full-cocked position. The selector is set at full auto, and the front grip is shown in the retracted position. Note the long, straight magazine.



At top, Czechoslovakia's Skorpion .32ACP Kurz machine pistol, a favorite hit gun of international terrorists, is shown. Below it is the newly reborn Colt .45 machine pistol, the way Uncle Sam's fighting men would have liked it. Smaller and flatter than the Skorpion, the Colt has twice the punch.



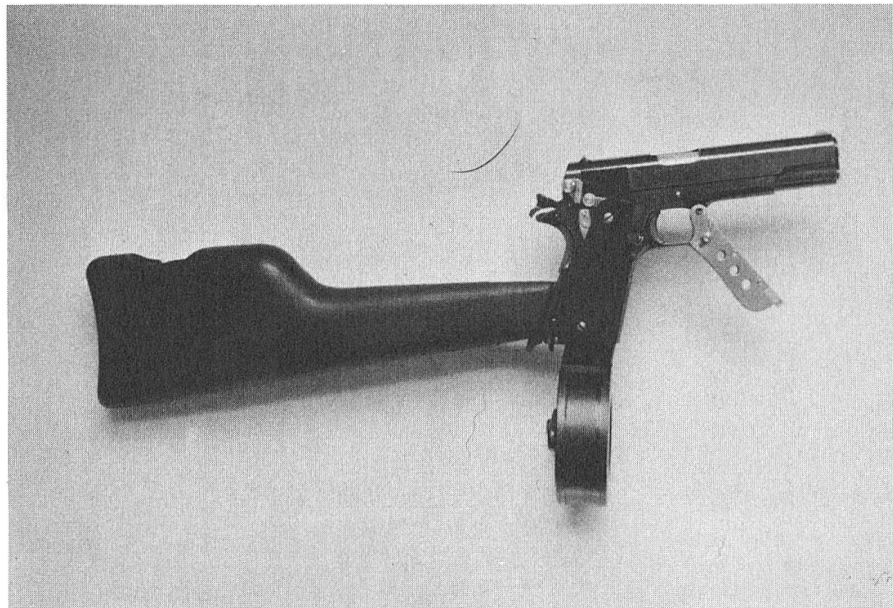
Same two guns with their stocks in the ready-to-use position. While the Colt .45 has the detachable Browning Hi-Power stock slid in, the Skorpion has its retractable wire stock extended. The Colt fires from the closed, locked breech system, while the Skorpion is an open-bolt "blowback" design, using a retarder mechanism to slow the rate of full auto fire.



Perspective frontal view of the new Colt .45 machine pistol. This one has the Lebanese-issue, detachable shoulder stock and the 30-round Bingham snail drum magazine for ultimate firepower. Note the two pocket magazine pouches riveted to the shoulder stock.



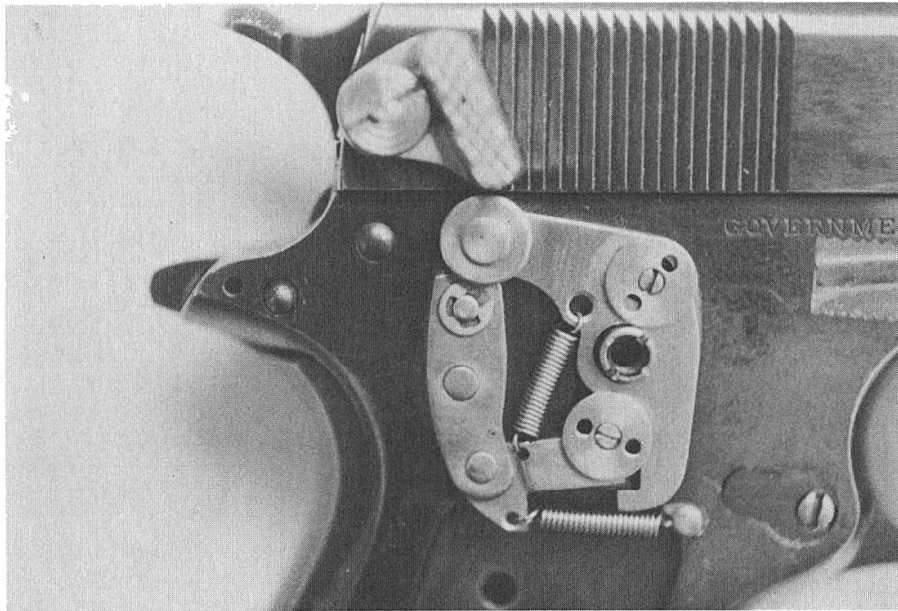
Same gun as viewed to the left, but this one has the Browning Hi-Power stock substituted. During testing, it was found the Hi-Power stock is far superior in design and function than the Lebanese type. The Lebanese stock latch that locks the stock to the main-spring housing of the gun tends to disengage easily during firing.



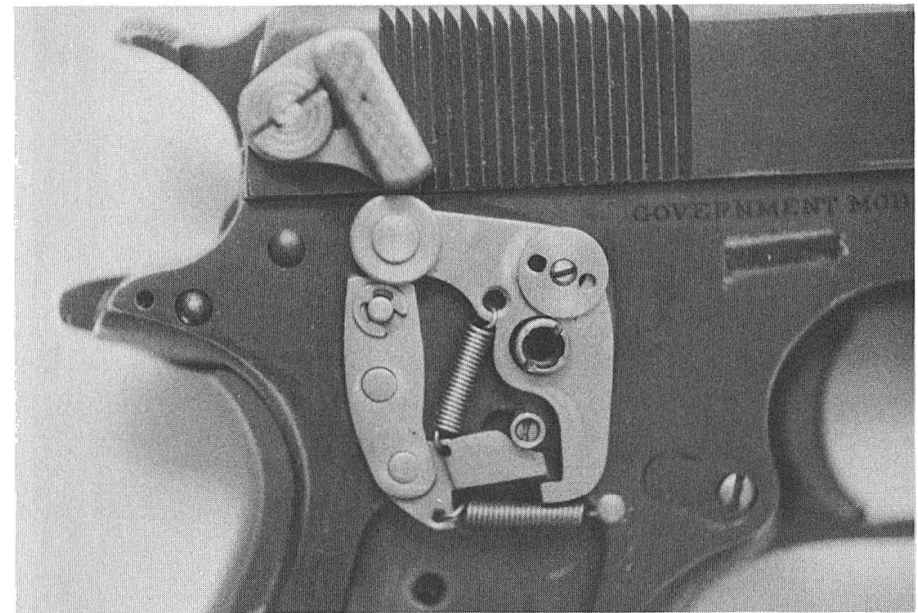
Right side view of the same gun with Hi-Power shoulder stock and Bingham 30-round snail drum magazine. Another useful accessory that can be added to this exotic gun is a good muzzle brake: The front grip is seen in the retracted position. The front grip is a must for full auto firing for maximum control.



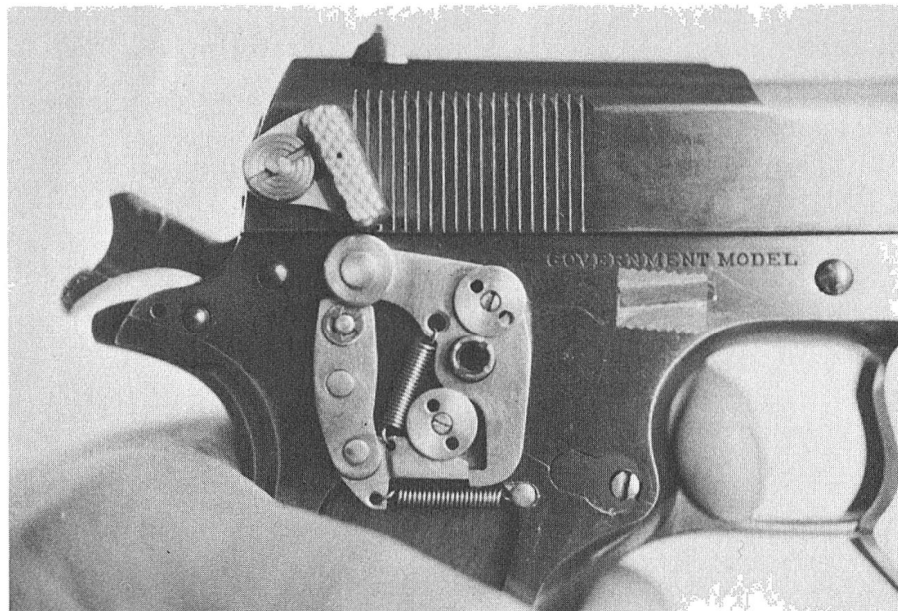
The right side stock is disassembled. The hammer is in the cocked position, the selector is set at full auto, and the front grip is in the retracted position.



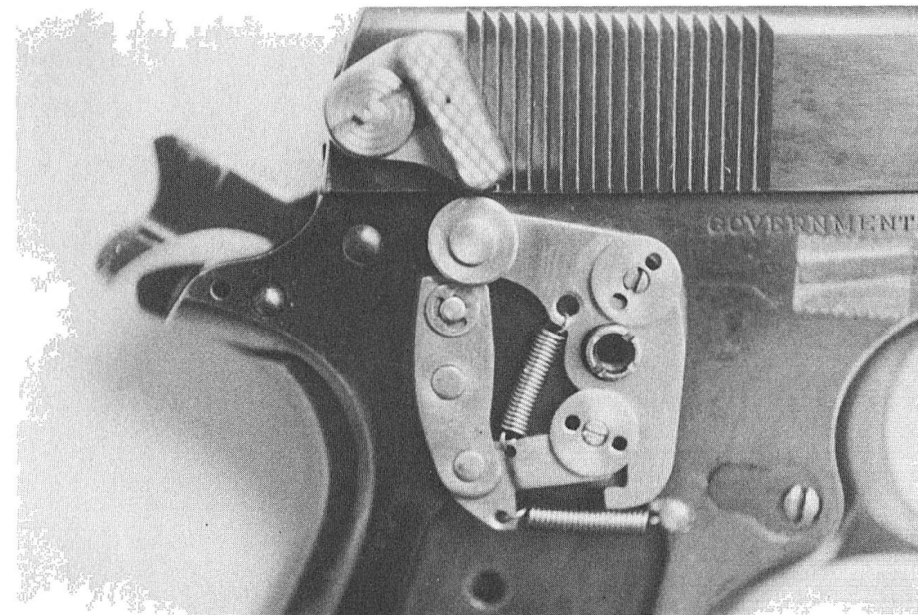
This closeup shows the converter mechanism. The hammer is in the full-rest position, and the selector is set at semiauto.



Same view but with the trigger bar cam bushing replaced with one without the large head to show the proper relationship of the unit in this sequence.



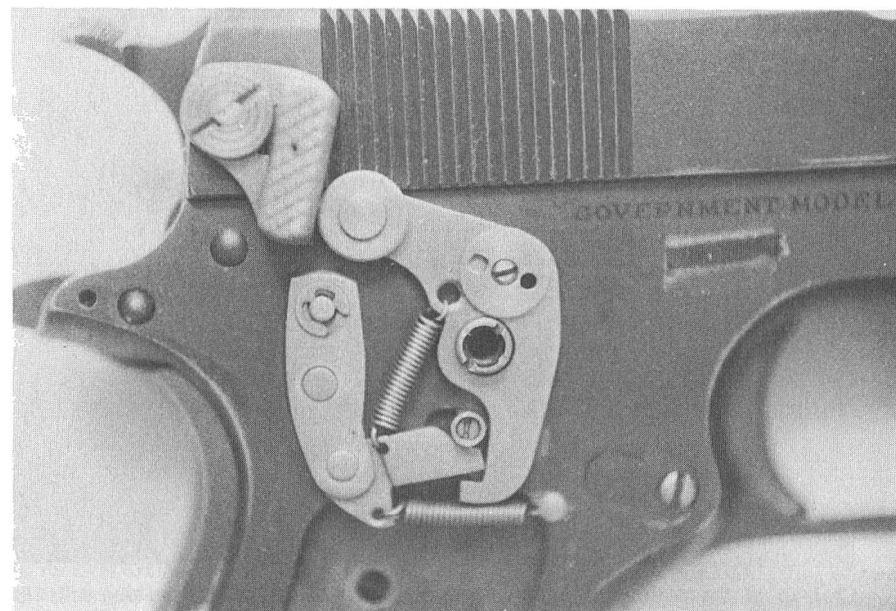
Closeup showing the gun after the first shot has been fired in semiauto operation. The hammer is recocked after the rearward recoil of the slide, and trigger pull is maintained.



Proper relationship of the converter group in semiauto position with the hammer in the full-cocked position.



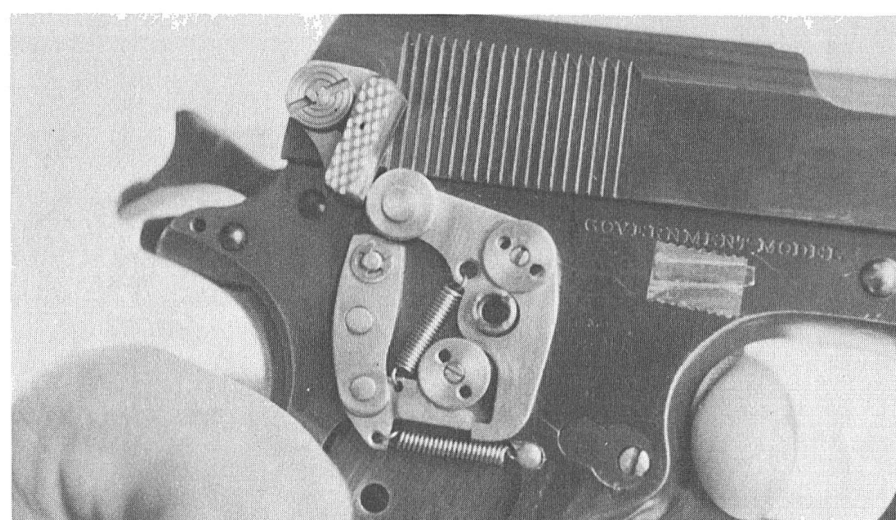
Proper relationship of converter mechanism with the hammer in the full-rest position and selector set at full auto. The trigger bar cam bushing is not assembled in place. The sear lever connector toe will rest slightly higher against the cam screw without the bushing in place.



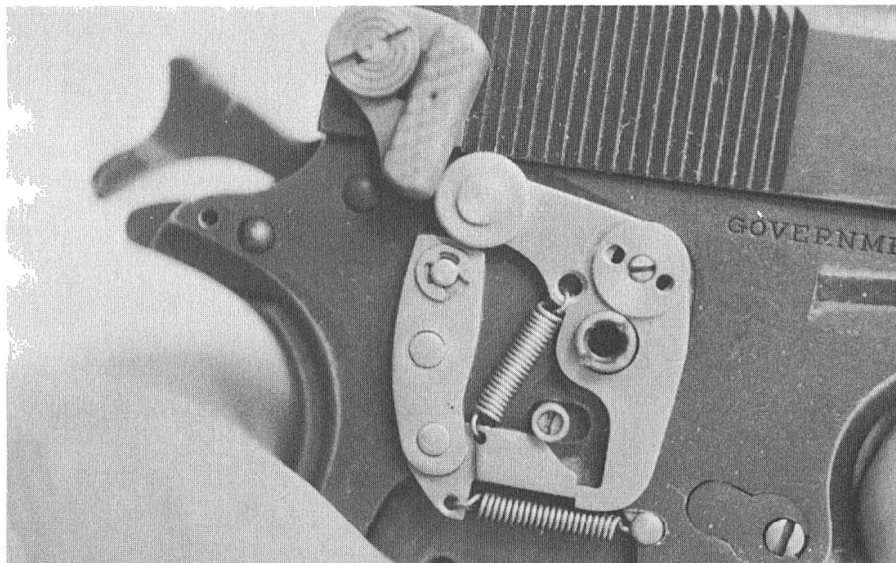
The selector is set at full auto, and the hammer is in the full-rest position. The bushing without the large head was assembled to the cam screw. Compare the elevation of the sear lever connector toe in this view to the one without the bushing in place.



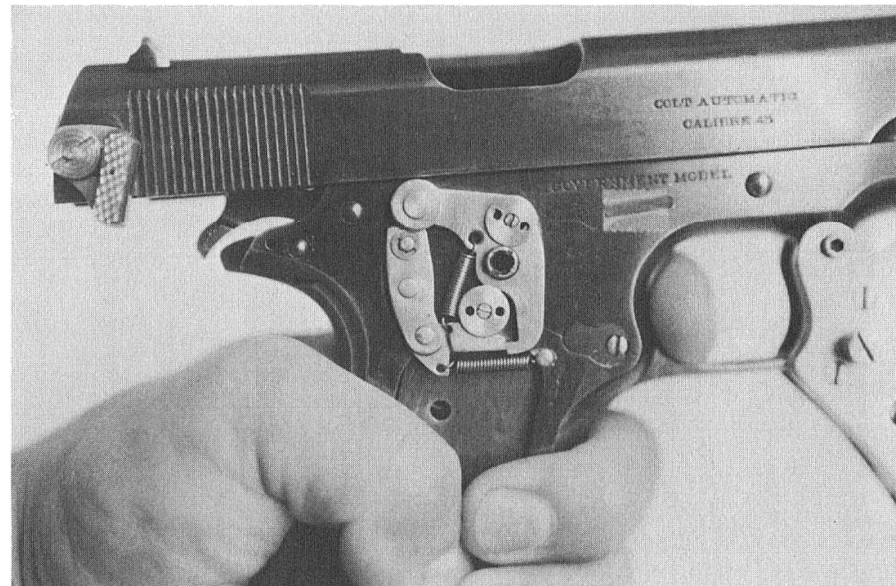
Closeup view of the Colt, with the other cam bushing substituted. Note the sear connector lever toe is resting over the tripper toe (lower portion of tripper) and against the cam bushing of the trigger bar. The connector always rests in this position as long as the trigger is not pulled (whether the selector is set on semi or full auto) to prevent accidental tripping of the hammer when the selector hits the roller during forward closing of the slide while in the process of loading (but not firing).



The proper relationship of the converter mechanism in full auto operation. Action sequence shows the gun has been fired, the hammer recocks, and the trigger pull maintained. The sear lever connector toe and tripper toe are lined up and touching on their front ends. At this point the roller is pushed upward halfway by the selector. The rear of the slide still has about 1/16 inch that is not leveled to the receiver frame. At this point, the slide and barrel are fully locked. Further forward thrust of the slide to complete its closing will force the roller to move further forward, thereby pushing the sear lever rearward to trip the hammer automatically.



Closeup of the same view in full auto operation with the other bushing substituted in order to show the detail of the mechanism in this operation sequence. The trigger bar cam bushing is forcing the connector down to line up with the tripper's mating toe. The lower rear portion of the slide is not leveled fully with the receiver frame. This must be the proper relationship of the mechanism before the slide fully stops forward and automatically trips the hammer.



The slide is shown in rearward recoil after a shot has been fired. Immediately after recoil, the roller moves downward to its normal resting position on top of the sear lever. The tripper's lower portion pivots forward, leaving a clearance for the connector to realign itself as it is constantly forced downward by the trigger cam while the trigger pull is maintained.



Rear view showing the gun on its forward closing on full auto operation. Note that the rear end of the slide is not fully closed or leveled with the rear portion of the receiver. The hammer is still in the full-cocked position. The hammer is automatically tripped once the slide reaches its full forward stop.



Action sequence showing the hammer tripped on full auto operation. Immediately after the hammer is released, the connector toe automatically jumps up on top of the tripper mating toe as it is pulled by the springs operating the tripper and connector. The connector rests in this position until the slide retracts rearward during recoil to let the roller move downward. The roller's downward motion causes the tripper's lower portion to partly retract forward. The connector toe realigns with the tripper's mating toe to fire the next shot automatically during full closure of the slide and while the trigger is continually pulled.



The gun shown in a normal field-stripped view. It is necessary to put the selector in the semiauto position while removing the slide from the receiver frame so that it is not blocked by the roller.



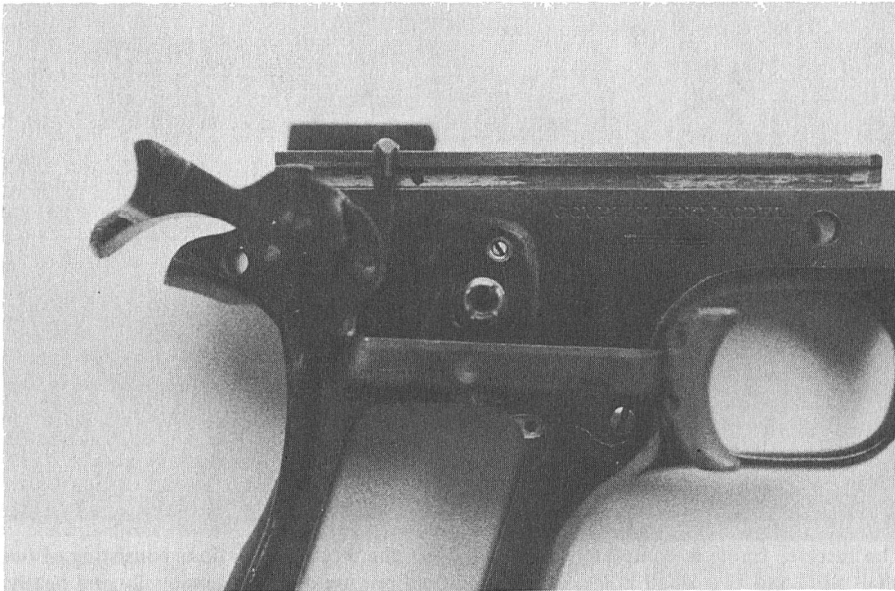
The receiver frame is completely stripped. Note the modified portions consisting of two small slots and two small holes. If the modifications are done professionally and neatly, it is hard to notice when an unmodified grip stock is used. With an unmodified grip in place, the only visible modified portion is half of the sear lever assembly slot below the sear pin hole. This slot can be covered easily with a small piece of thin sheet metal with a center lug the size of the slot. The center lug will be inserted into the slot, and the thin wide portion will be kept in place by the grip stock.



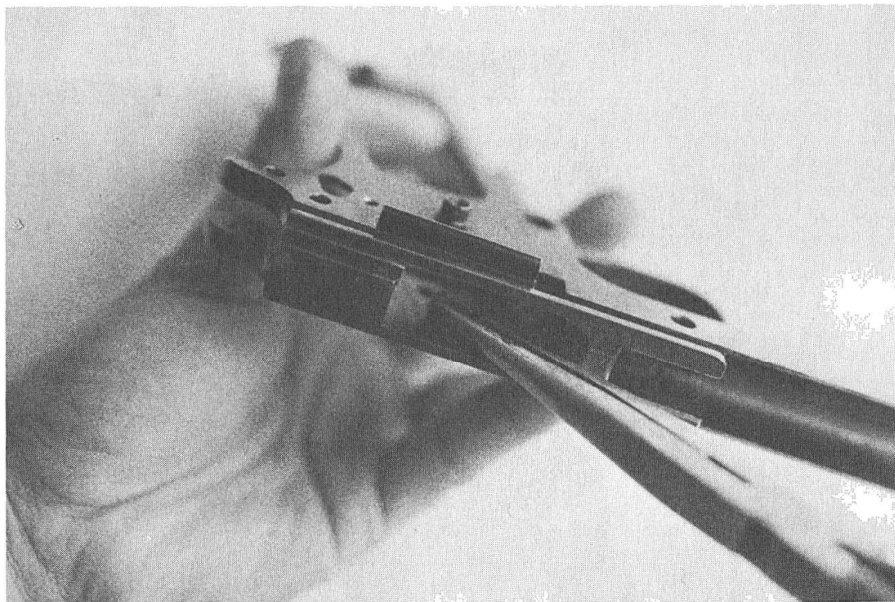
Closeup of the receiver where minor modification was done. It is best to gradually cut metal while doing the receiver modification in order to avoid overcutting and to keep the size of the modified areas to a minimum, especially the slots.



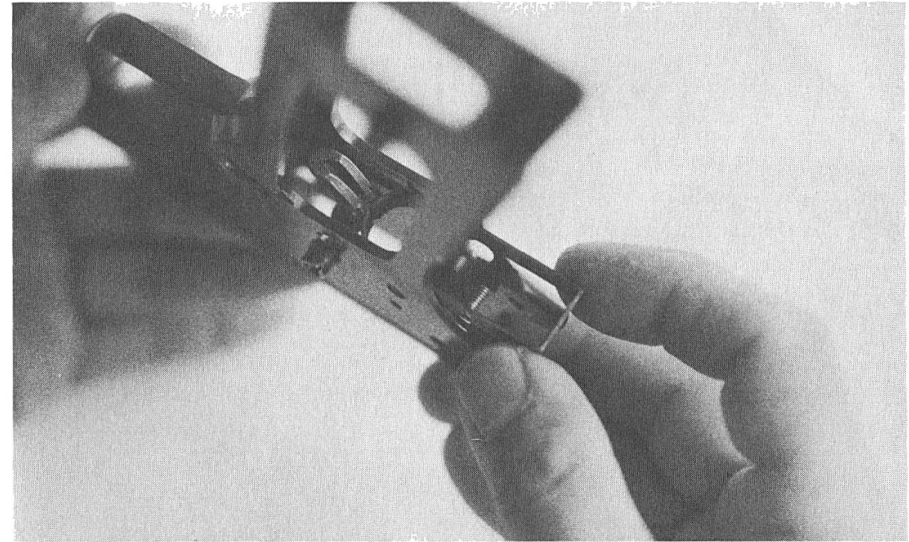
The modified grip safety has been placed on the right side of the receiver where it would normally sit. In this view, the front end of the tang that normally blocks the trigger bar when safety is not squeezed has been cut off. It is not covering the assembly slot for the trip pin.



The trigger components have been placed on the right side of the receiver frame. The mechanisms were arranged in their normal firing order with the hammer in the full-cocked position. Over half of the sear lever trip pin assembly slot is visible on the lower front end section of the sear. This opening is where the trip pin lines up during assembly to trip the sear on full auto operation.



The tripper support screw has been installed from the inside of the grip opening with a long needle-nose plier. This assembly is necessary only if the bottom part is also flared so that the screw can be tightened counterclockwise. As soon as the screw starts to mate with the hole threads, its remaining installation can be done with a small screwdriver that is inserted through the hole.



The modified trigger bar with preassembled cam screw being inserted to the receiver body is shown here. This arrangement is necessary only if the bottom end of the screw is flared so it can be tightened counterclockwise prior to mating with the cam screw bushing. The screw is first assembled from the inside of the trigger bar but with its top end flush with the right side surface of the bar so it can be inserted freely into the receiver. The front end of the screw is then tightened through the slot where it lines up before the mating bushing is assembled to it for maximum tightness.



Here the slightly protruding end of the screw is turned counterclockwise by a small screwdriver until it protrudes completely and is tightened. The arrangement offers increased rigidity and tighter assembly since the flared end of the screw will oppose the turning of the screw once it reaches the end and will tighten itself. If a nonflared screw is used and the assembly is on the right side of the frame, insert the magazine to the grip and place a thin insert on the gap between the magazine and frame opening to prevent the screw bottom end from protruding inside the frame when the bushing is tightened.



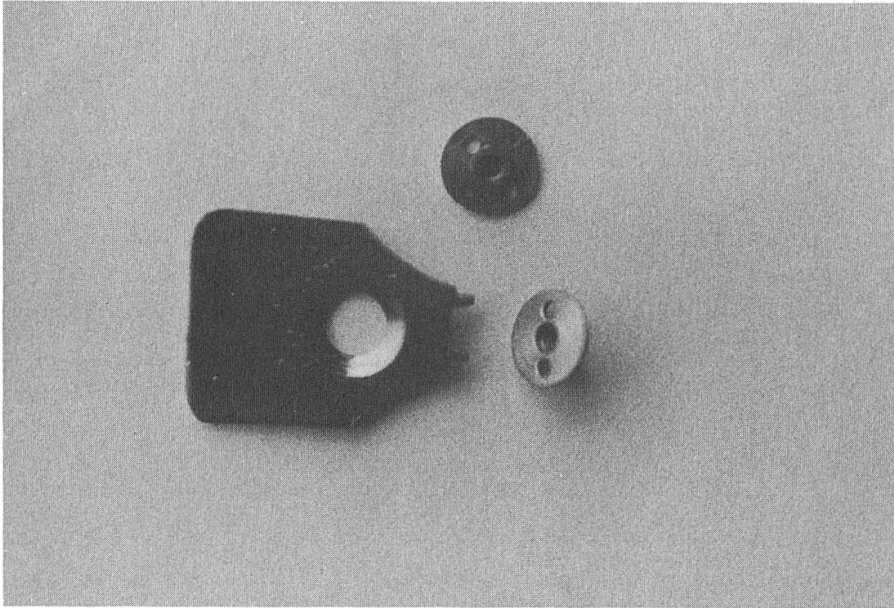
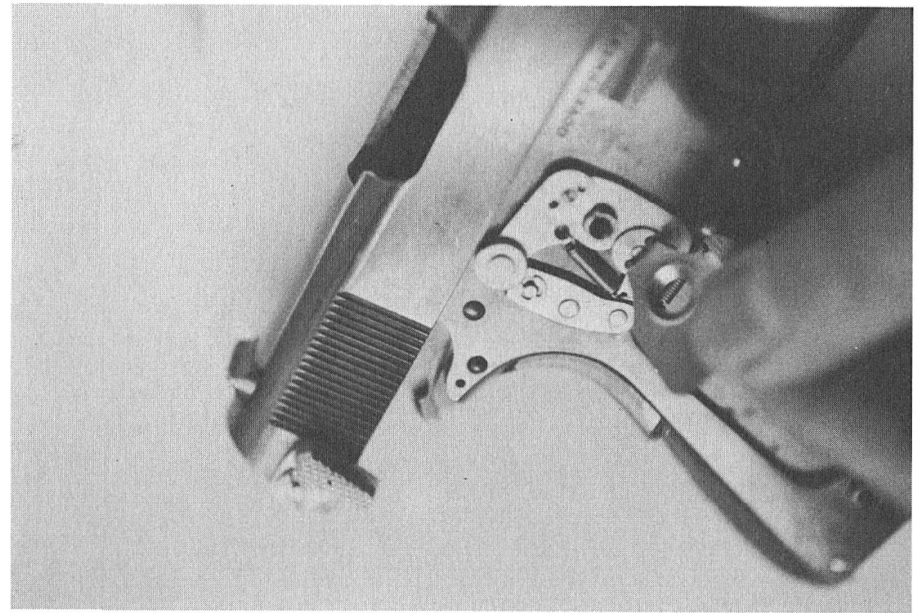
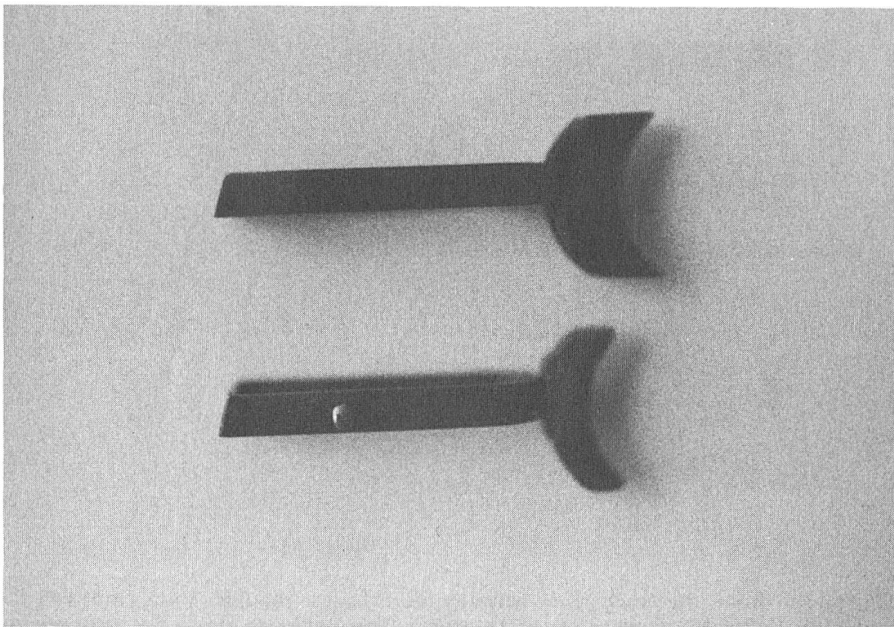


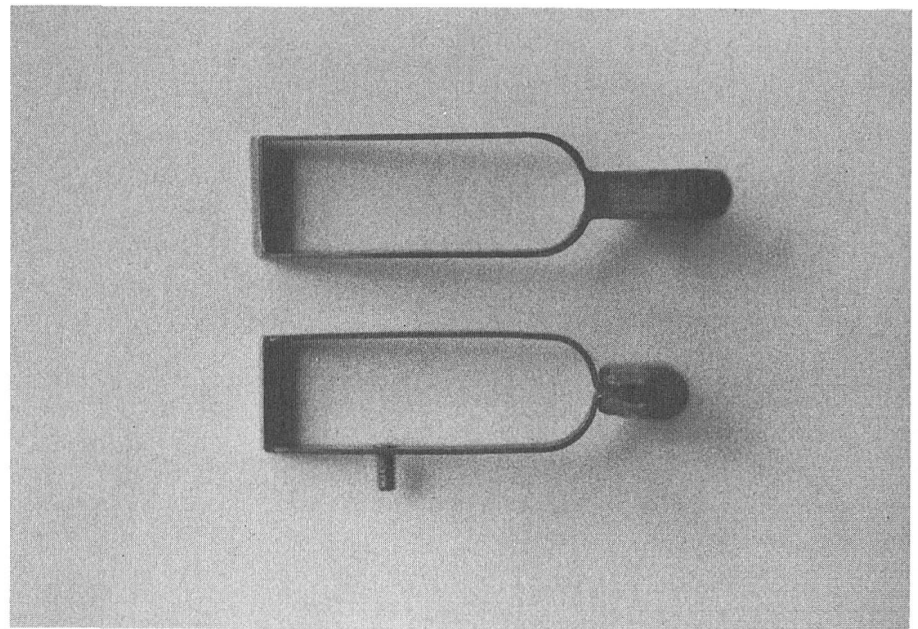
Photo showing the two mating bushings for the trigger bar cam screw and trigger supporting screw. Also shown is the hand-made, two-pronged key to mate with the dual holes of the bushing when it is tightened onto the screw.



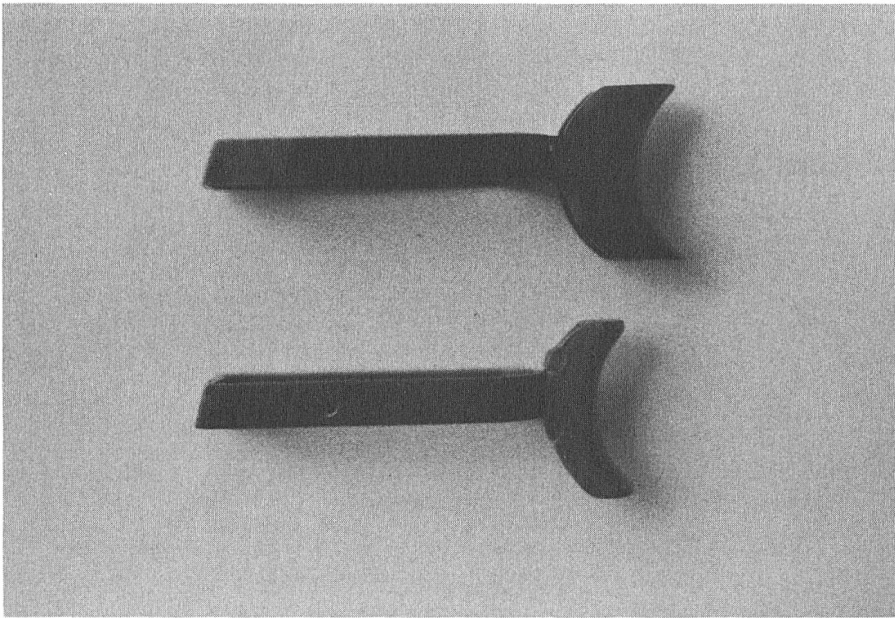
Here the trigger bar cam screw bushing is being tightened during the final assembly of the converter unit to the receiver.



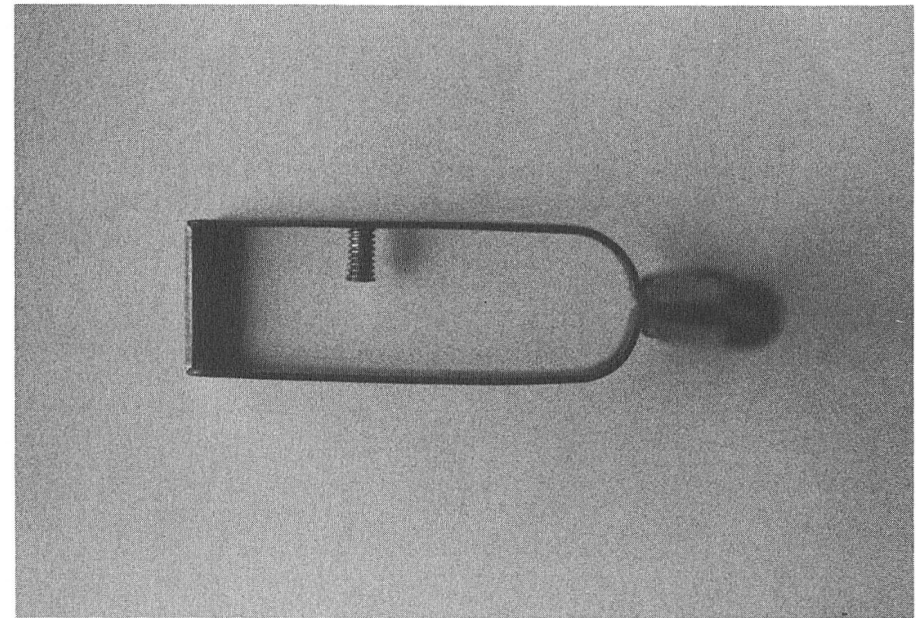
The unmodified (top) and modified trigger bar (bottom) are shown here. The modified trigger bar has a small hole on the right-side prong on its middle portion. It is threaded to mate with a standard 4-40 set screw to act as a cam for the sear lever connector.



Same two trigger bars viewed from the top. The small screw protrudes from the right side of the modified bar.



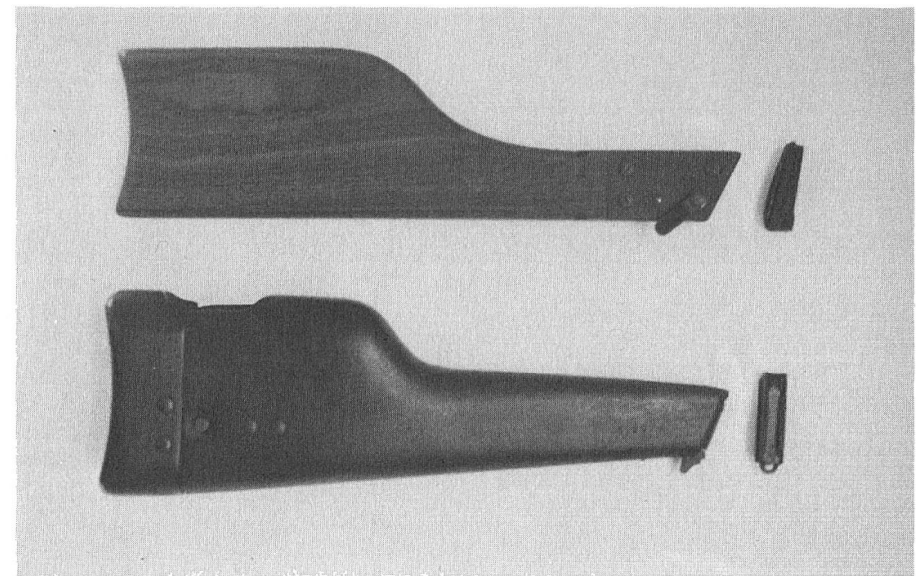
Same two trigger bars, but the set screw has been removed from the modified bar. The cam screw must be removed from the bar if it is to be used in semiauto only without the converter group assembled to the receiver using a noninletted grip stock.



Bottom view of the modified trigger bar. The cam screw is partially assembled to the right prong without its front end protruding. This is the proper way to install the cam screw prior to inserting the bar into the receiver when using the screw with a flared bottom end.



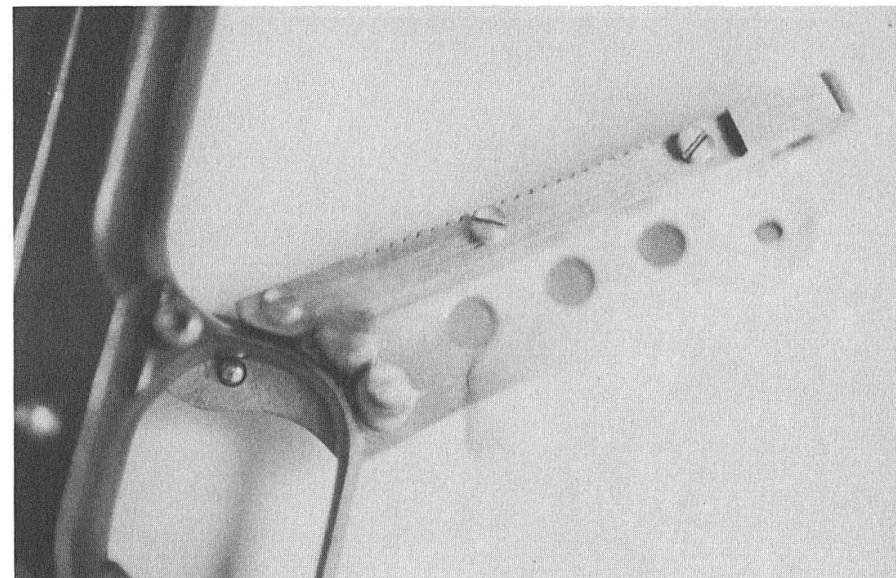
The cam screw protrudes past the slot and is fully tightened prior to the assembly of the converter mechanism. Both the trigger support screw and trigger bar cam bushing must be assembled before the converter unit is assembled to frame.



This photo shows the comparison between the Lebanese shoulder stock (top) and the Browning Hi-Power shoulder stock (bottom). The Lebanese stock has two vertical grooves cut on both sides of the mainspring housing for stock catch assembly. The Hi-Power stock has a large "T" slot groove cut on the back of the housing for stock assembly. During test-firing, the Lebanese stock latch tended to disengage from its locked position, thereby causing the gun to come off from its seat on the stock.



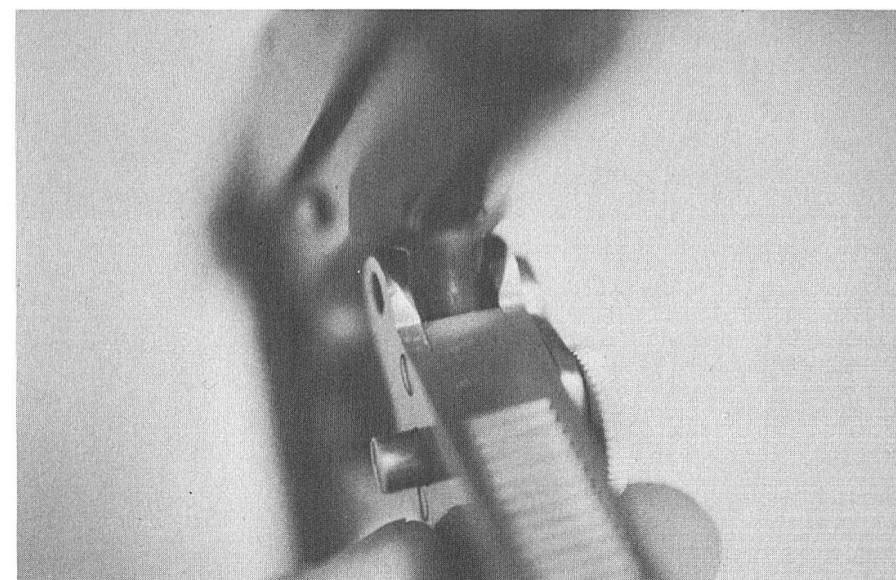
A frontal view of the front grip. Here the push-button is being depressed by the left thumb. The locking piece on the left side of the grip is retracted about 1/8 inch, disengaging its locked position against the trigger guard, thereby permitting the grip to move from one position to another.



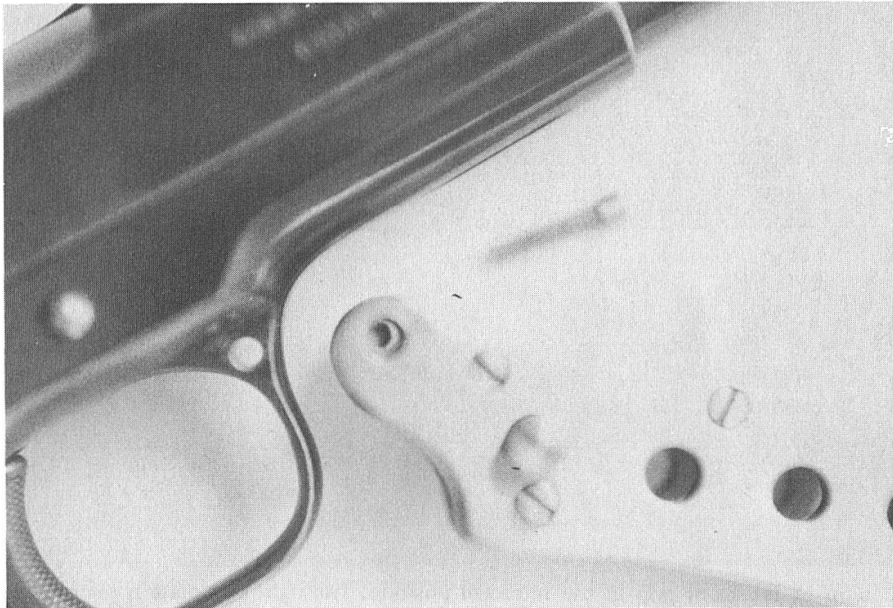
Closeup of the front grip in the retracted position. The right side plate is removed to show the proper relationship of components. Note the locking piece index bearing against the inside contour of the trigger guard. The top portion of the plate is inserted as well as the lower support rod positioned beside the catch button. During firing, the top end of the insert plate and the lower support rod take the push of the recoil.



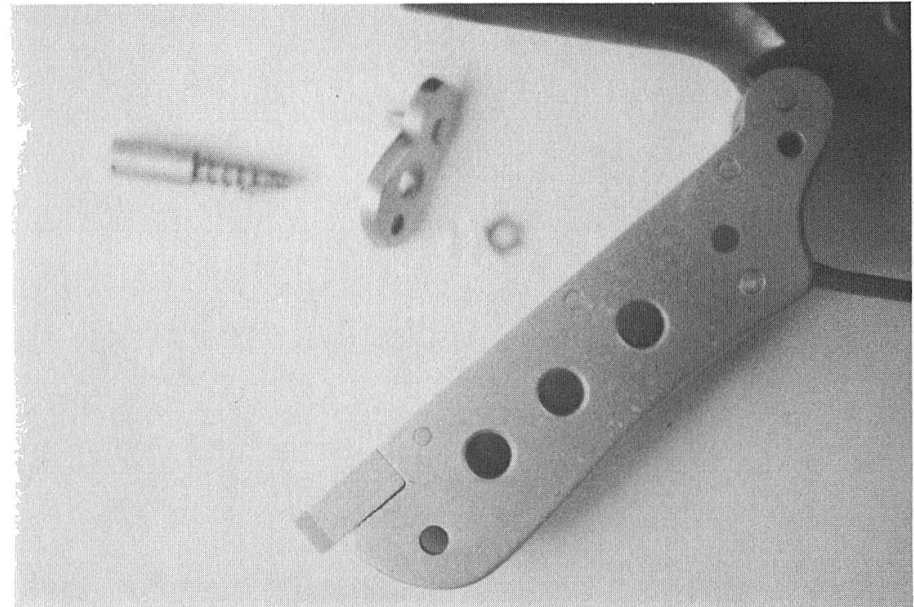
The same grip is shown here, but in the folded position. The locking piece index is bearing against the outside contour of the trigger guard. The locking piece index rod must be precisely positioned so that it fits snugly against the trigger guard in both folded or retracted positions to avoid unnecessary play during indexing.



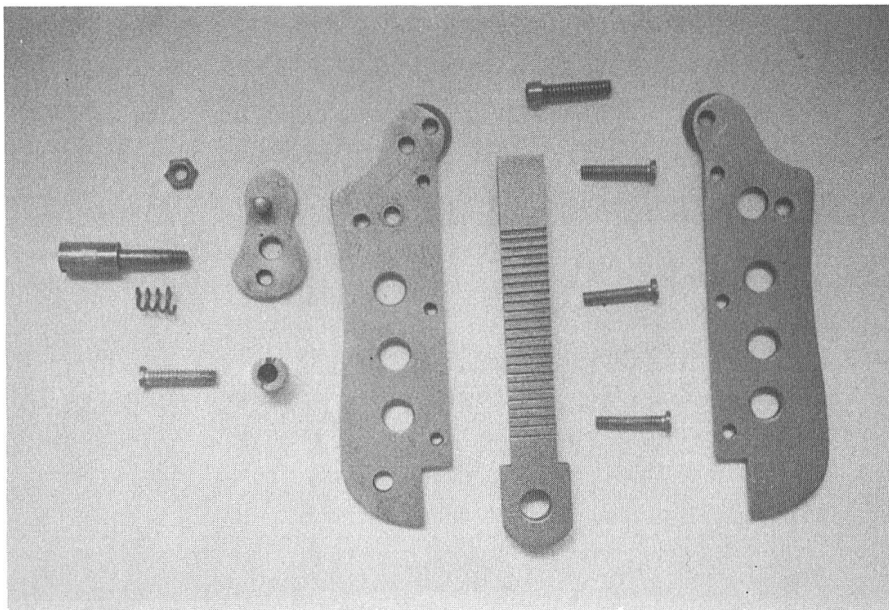
Frontal bottom view shows the chamfered portion on the top end of the front grip side plates. Chamfering these portions of the side plates is necessary so that the top end of the grip fits snugly to the underside contour of the receiver where the grip will sit. Chamfering is best done gradually after the grip is completed until the pivot hole lines up with its assembly hole on the trigger guard in both folded and retracted positions.



The front grip has been removed from the gun. Note the 1/8-inch diameter hole that has been drilled to the front top section of the guard. Before drilling this hole, make sure the hole is absolutely centered on both sides of the internal and external contour of the upper part of guard to get maximum thickness on both sides.



Left side view of the front grip installed on the gun. The push-button catch and locking piece assembly are not assembled to the grip. Make sure all rivets and screw ends on the side of the left side plate are flush so that the locking piece lies snugly against the side plate when assembled to the grip.



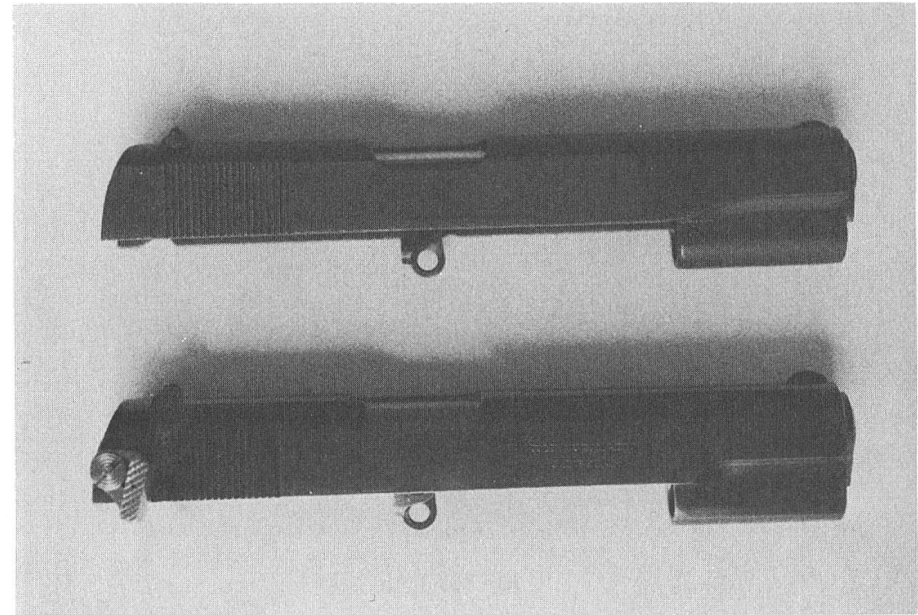
The front grip has been completely disassembled. For simplified manufacture, the three screws securing the center insert to the side plates can be replaced by rivets, and the lower support (bushing with screw) can be replaced with a 5/16-inch diameter rod, both ends turned down to 1/8 inch in diameter to be inserted to the plates.



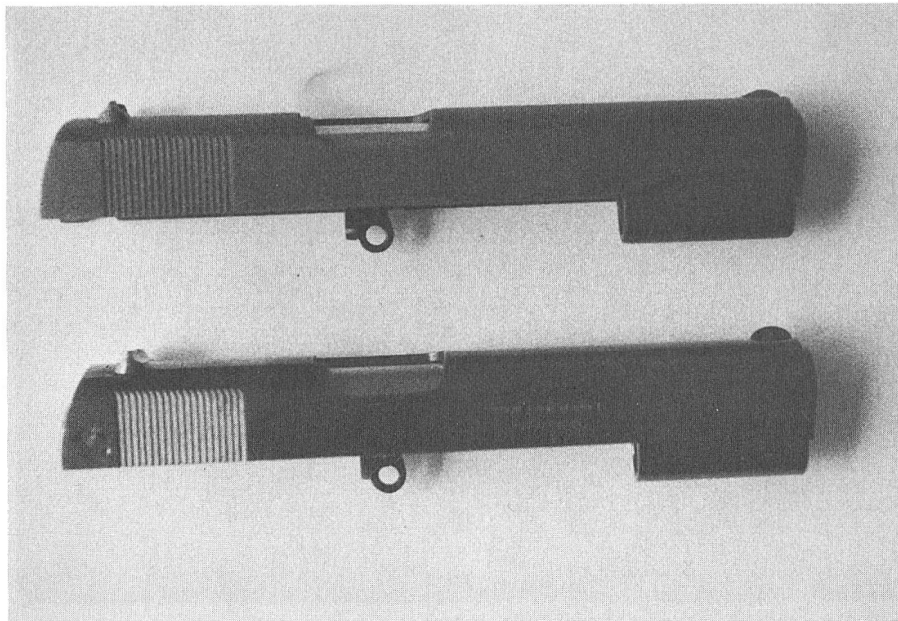
The newly finished frame is shown after the modification is done on the frame and slide for scratchproof surfaces. The slide with the selector also adds more grasping surface when one retracts the slide.



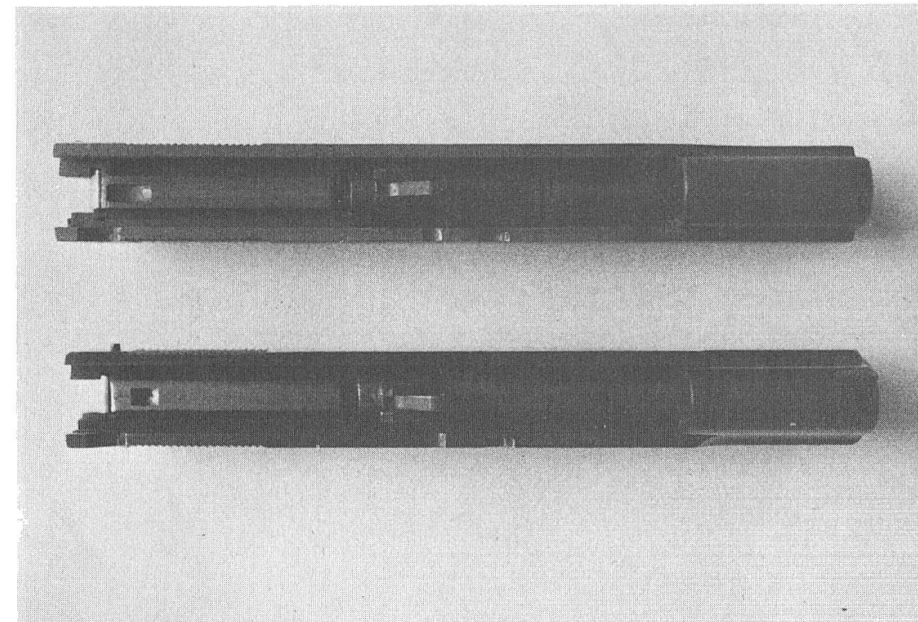
The lever type selector mechanism has been disassembled from the slide. The only visible modifications on this type of arrangement are four small holes. One hole is for the selector assembly screw that is threaded to take a standard 6-32 screw positioned at the end of slide. The center hole is for the stop pin, while the two shallow holes are for the selector index notches.



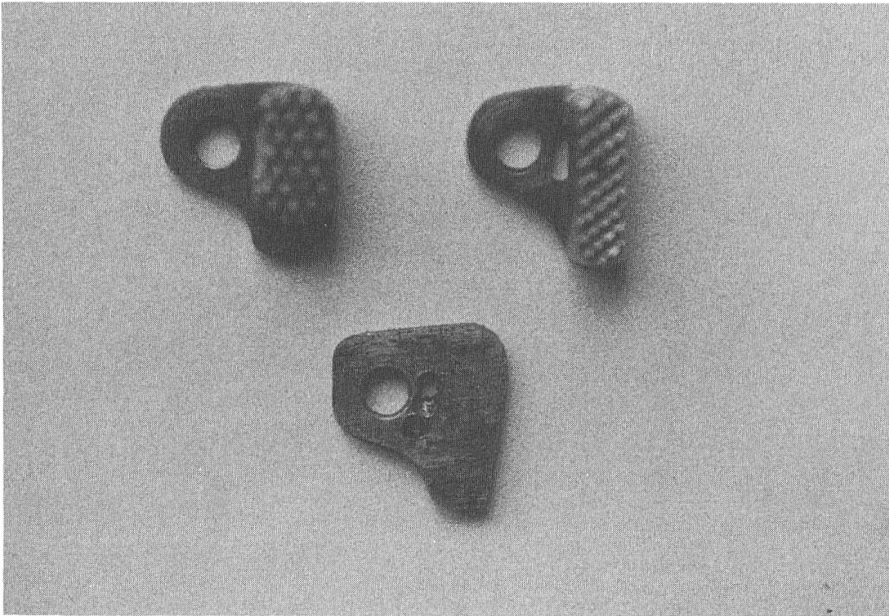
View showing the comparison between an unmodified (top) and modified (bottom) slide for the lever type selector arrangement.



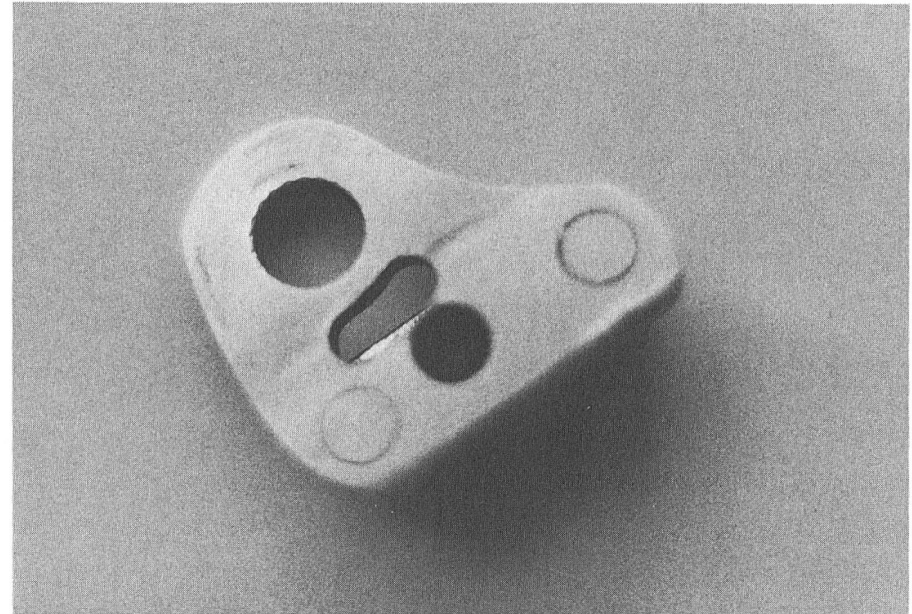
Same two slides but with the selector lever unit removed. The stop pin is left on the modified slide.



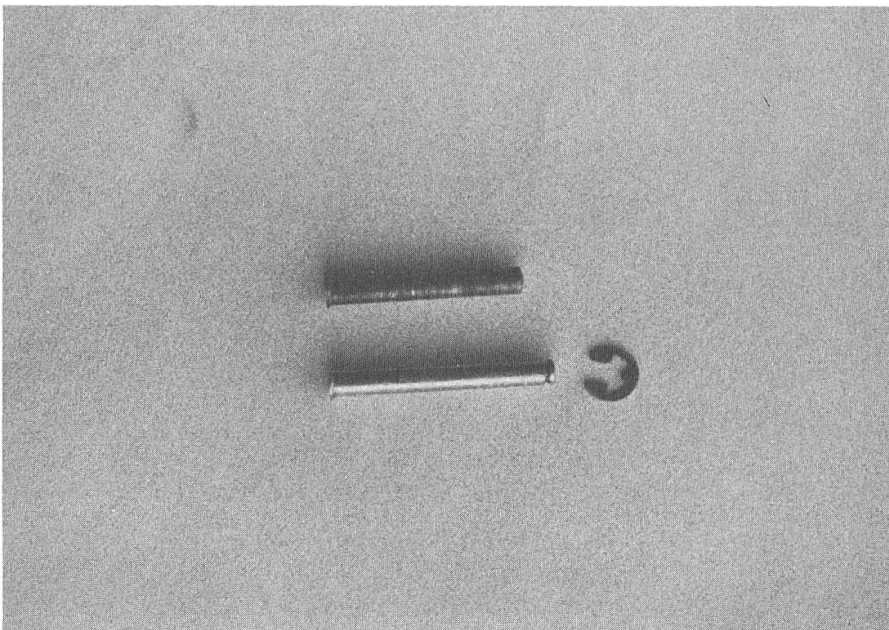
Same two slides as viewed from the bottom. Note the protruding stop pin for the selector on the right side of slide. This pin can be left if it is press-fitted, or it can be pulled out if it is loosely assembled when the gun is to be used semiauto only.



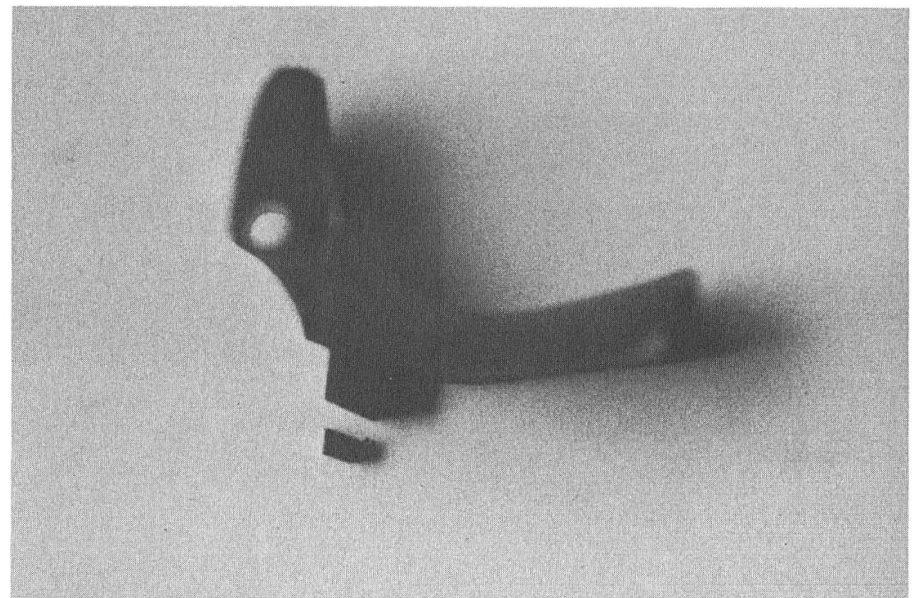
Details showing lever type selector prototypes. The bottom one is unfinished. Note the three small holes drilled in line for making the clearance slot for the stop pin. The slot is finished with a round needle file.



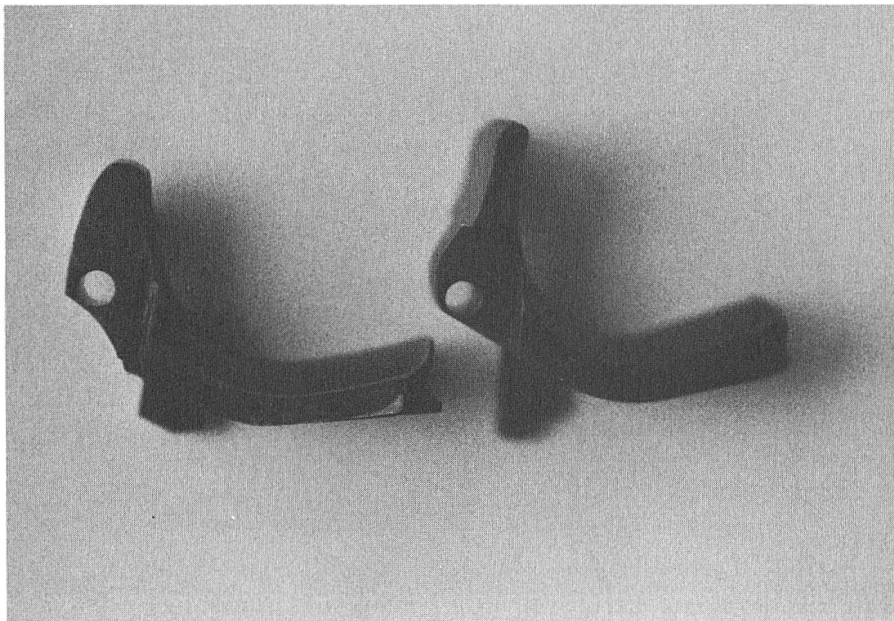
Closeup of the finished selector lever as viewed from the bottom. The large hole is for the assembly screw, the circular slot is for the stop pin travel clearance, and the small hole is for the index ball and spring assembly pocket. The two round lines on both sides of the index hole are the rivets securing the two-piece lever.



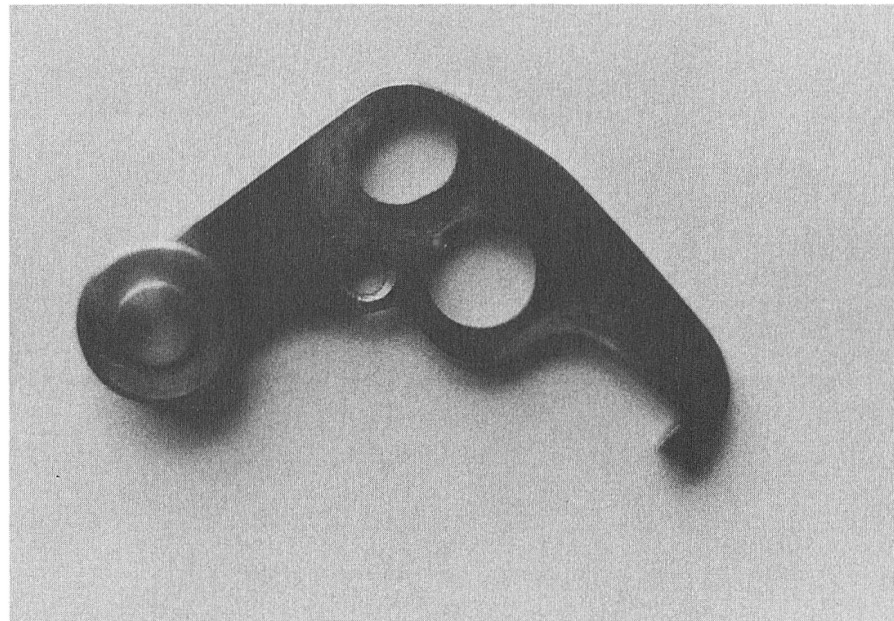
The original sear pin (top) and the longer replacement sear pin (bottom). The longer pin has a circular groove on its right end to secure the sear lever assembly using a small "C" clip.



The modified grip safety is seen here. Shown beside its front end is the cut portion that normally blocks the trigger bar when the grip is not squeezed. The removal of this small piece of metal is necessary so that the sear lever trip pin can be inserted freely into its assembly slot below the sear pin hole. The removed portion of the safety tang levels exactly on the trip pin assembly slot when it is assembled to the receiver.



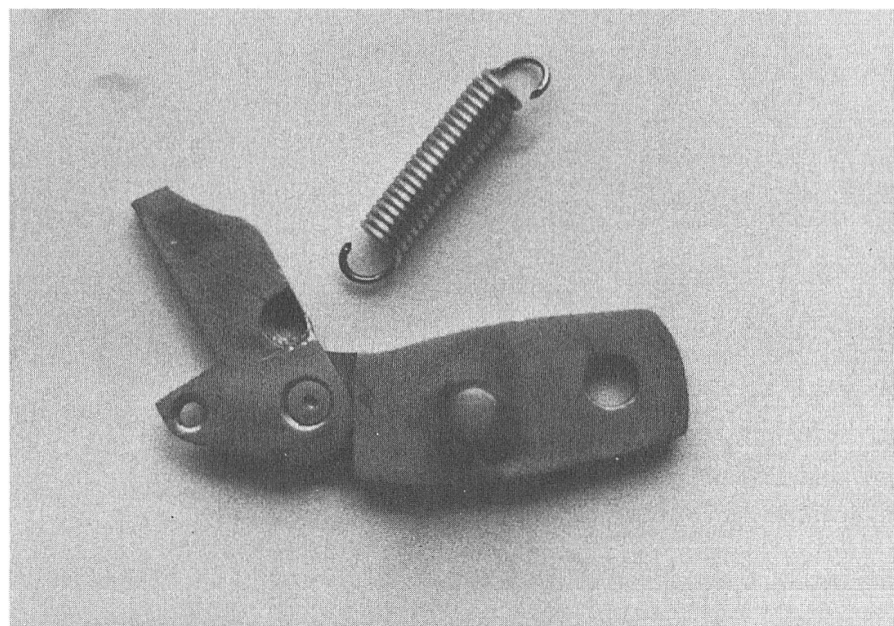
Comparison between modified (left) and unmodified (right) grip safety. Note the shorter front tang of the modified model.



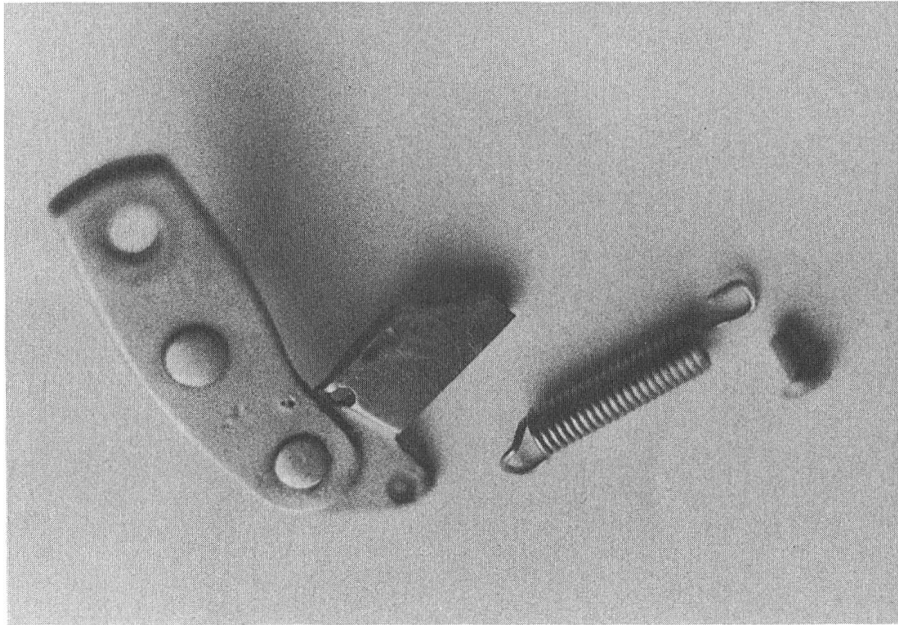
Closeup of the right side of the automatic tripper. The roller is riveted onto its rear end. The roller can be riveted tightly or free-turned if desired (but not very loosely). The roller is required only when the lever type selector mechanism is used. It is not necessary when the sliding type is incorporated.



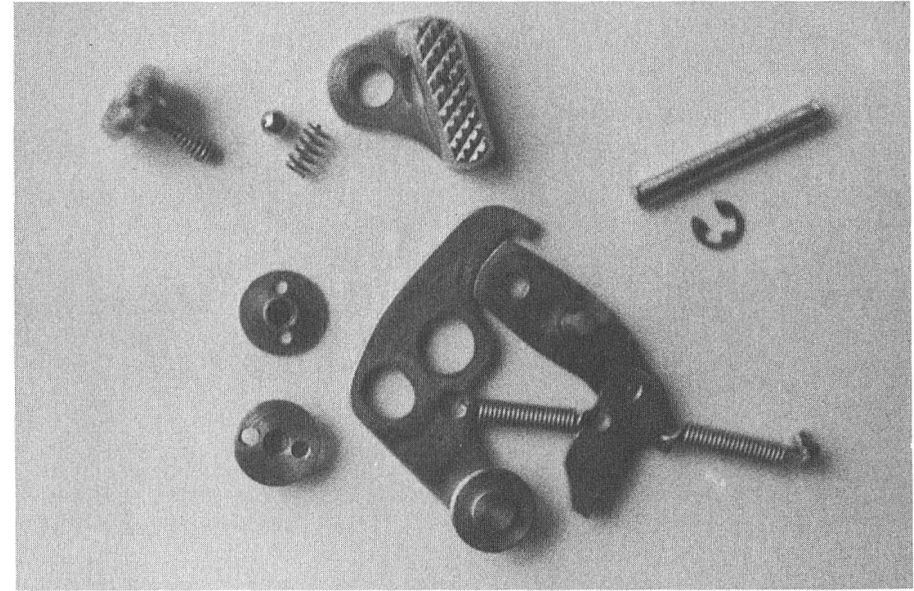
Same tripper turned upside down. Note the end of the roller rivet is flush to the surface of the tripper. The large center hole is assembled to the top grip screw bushing, and counterbored to accommodate the stop ring of the bushing in order for the tripper to lie flush on the receiver frame during assembly. The tripper spring is removed from its assembly hole.



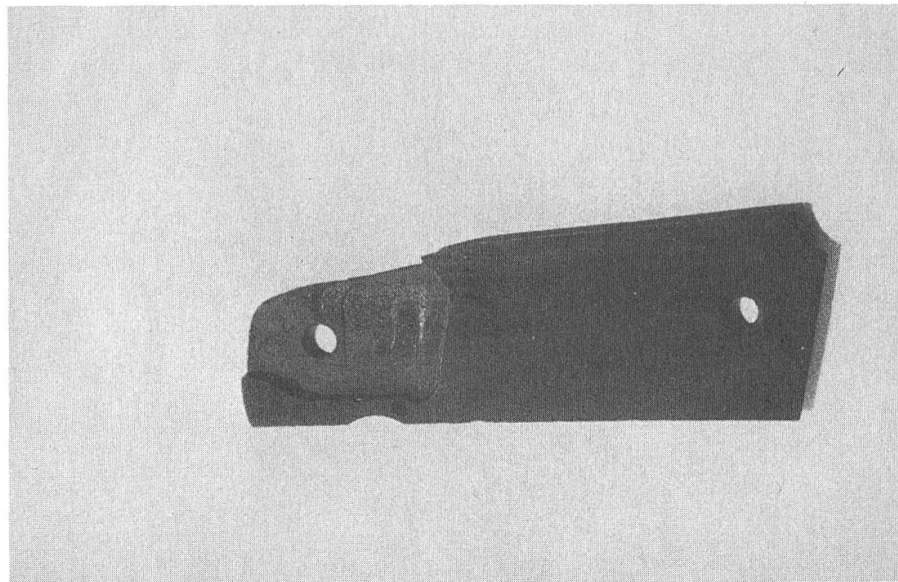
This lever unit is viewed from the left. The lever trip pin is visible. The rivet end connecting the lever and connector is ground down so that it can lie flush to the receiver surface when assembled. Note countersunk spring assembly hole.



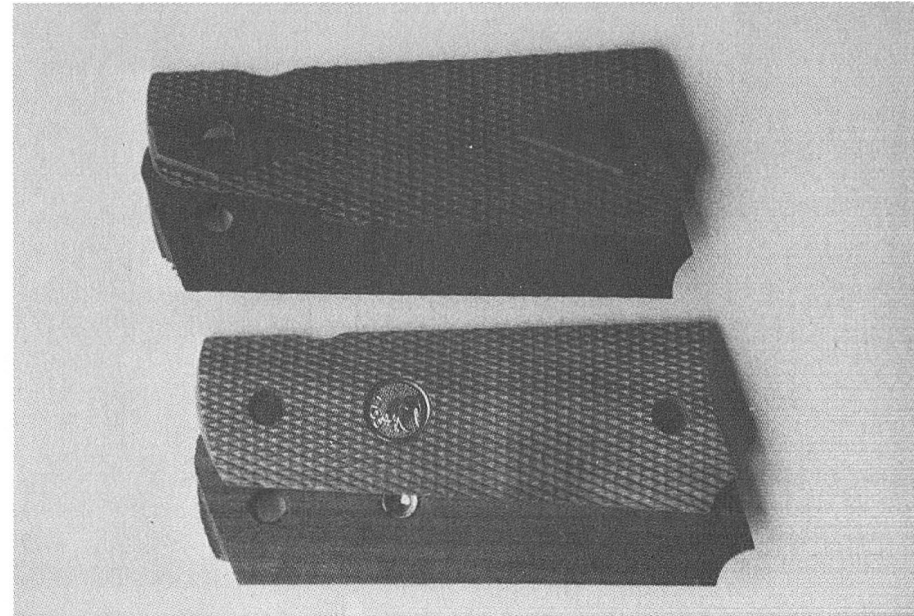
The same lever unit is shown with its spring and the small pin that secures it to the receiver. Normally, a roll pin for a 1/16-inch diameter hole press-fitted to the receiver is all that is needed to assemble the front end of the connector spring to the frame.



The conversion parts are removed from the gun except for two small set screws for the trigger bar cam and the tripper support screw (left assembled on the gun for quick assembly purposes using the inletted grip). All these parts are hand-made, using only common hand tools. Not only are the conversion parts easy to build, but the system employed has proven to be very reliable during extensive testing.



Closeup of the underside of the right grip stock inletted for converter unit clearance. In order to avoid breakage, careful wood removal is advised during inletting, especially on the rear surface where the stock is thin. It is best to use the plastic grip if you are not familiar with inletting work. The plastic grip is hollow inside, and limited filing is required to fit the converter during final assembly.



Two wood grips are shown. The top one is inletted for use with the conversion unit. The stock below it is ordered separately (unmodified) for nonselective semiauto firing only without the converter unit assembled to the gun.



# 3. Grip Safety Modification

The original grip safety will need simple modification, involving removal of the tang that blocks the trigger bar when the safety is not depressed. This tang blocks installation of the sear connector lever's trip pin in the assembly slot in the receiver.

The removal of this part of the grip safety does not render the gun less safe to operate. The grip safety only blocks the trigger from being pulled. The main safety is the lever on the left side of the frame which locks the sear and hammer when set in the safe position. Many combat competition shooters have found the grip safety unnecessary and have deactivated it by removing the tang.

In this conversion project, the tang portion of the grip safety is cut off first with a hacksaw and then filed smooth. Refer to the working drawing for the amount of metal to be removed from the grip safety.

**Note:** If you do not wish to alter the original grip safety, it is best to purchase a spare surplus part for about \$10 and use it for the conversion.

# 4. Trigger Bar Modification

The only alteration to the trigger bar is drilling a 5/64-inch diameter hole in its right side prong. The hole is drilled in the middle section parallel to the front slot under the top grip screw bushing of the receiver frame. It is best to locate the hole with the trigger bar and mechanism assembled on the frame.

Once the complete trigger group is assembled onto the receiver, cock the hammer and set the safety in the safe position to lock the sear and hammer on full cock. Looking at the front slot where the trigger bar is now visible, insert a 1/8-inch diameter drill and press it against the front radius of the slot, at the same time turning it manually so that its point will make a mark on the bar. Insert an empty magazine before pressing the drill against the bar to prevent deforming. Use just enough pressure to make a center mark where the hole is to be drilled. Next disassemble the trigger group and mark the point on the trigger bar to be drilled with a center punch.

**Note:** Insert a metal plate to support the portion of the trigger bar to be marked with the center punch to prevent deforming during marking. This precaution will also apply when drilling the part. After drilling the hole, thread it with a 4-40 tap. Deburr both sides of the hole after threading, using a triangle file. Then polish with fine emery cloth and touch up with cold blue.

# 5. Automatic Tripper Mechanism

The automatic tripper is constructed from .075-inch-thick sheet metal of sufficient quality to be tempered after fitting. Mild steel is also usable provided it is case-hardened on its contact points and stress areas after fitting.

A cardboard template traced from a full-size drawing of the part is first prepared. The templates are then traced onto the metal after it has been covered with Prussian blue or other metal ink. The contours can be roughly cut out with a hacksaw and finished with appropriate files. A mini-hacksaw is preferable here since the metal being cut is thin and the part is fairly small.

Make sure the center axis of each hole is properly marked and drilled, then enlarged as required prior to fitting. It is best to make the part slightly oversize to provide fitting allowances. If the part is too large, you can continue to decrease it until perfect mating is completed. It is always preferable to have the part oversize than undersize to avoid building another one in case it does not fit properly.

The part must be cut to final shape and all edges polished before riveting the roller on its top rear section. The roller must not be riveted tightly; it should rotate freely but not be excessively loose.

Heat-treat the part only after it has been fitted together with the other components after final testing. Polish and reblue the part if desired.

**Note:** A wood plane blade slightly thicker than 1/16 inch

was used in the conversion and is stronger than the thinner material specified. The plane blade is highly recommended here for the converter mechanism, including the selector lever (lower part). The lower end of the blade is tempered, but its upper section can be cut to shape.

# 6. Sear Connector Lever

The sear connector lever is a two-piece part consisting of the upper lever and the connector. The pieces are loosely riveted together to form a unit. The portions of both parts in which the rivet is positioned must be reduced by half in thickness so that the rivet will be level with the original thickness of the part. A metal thickness of .075 inch (plane blade) is preferred, but will require deeper inletting on the grip stock for the converter mechanism clearance. The thickness of the connector lever part must be the same as that of the automatic tripper.

The construction procedure is identical to that of the automatic tripper. Both parts are cut out with a hacksaw and finished with appropriate files. Again, it is important to make the parts slightly oversize to allow for fitting. In the center bottom portion of the lever, a 3/32-inch hole is drilled. The hole must be countersunk on the right side end to flush the rivet end of the trip pin.

In the joint section of the two-piece part, a 5/64-inch hole is drilled. The right side of the sear lever where this hole is drilled is countersunk as is the left side mating hole of the connector toe so that the rivet heads will lie flush when the two parts are riveted together.

After the two parts are riveted, make sure that both parts may move freely. You can insert a piece of paper between the two parts prior to riveting. After riveting, burn the paper away by putting the part on top of a stove burner. After the

paper is burned, the part can be loosened with a retracting motion. Apply oil on the joints while doing this to speed the process. If parts are excessively loose, tap gently on both sides of the rivet heads with the part resting on a brass or aluminum plate until the right fitting is achieved.

Location of the connector lever pivot hole which is installed on the extended end of the sear pin is best done after the trip pin is riveted. After the trip pin has been riveted to the sear lever and the proper protrusion length inside the receiver has been cut, insert the pin into the small slot under the sear pivot pin hole. Push the lever to the front end of the slot and hold it there. While in this position, put the middle top section of the lever on the center axis of the sear pin hole. Insert a drill bit similar in diameter to the sear pin, and mark the location on the lever where it will be drilled by turning the drill manually. Remove the lever from the receiver frame and check if the drill mark is centered. If it is not, apply metal blueing and repeat the procedure until the mark for the hole is centered on the top portion of the part. Center punch this mark before drilling. Start with an under-size drill bit and finish with the final size for accurate fitting.

Check the fitting of the sear lever by installing the replacement sear pin and mounting the part. Insert the trip pin first to the slotted portion, then the sear pin. The lever must be free to move back and forth. If tightness occurs, enlarge the area of the slot that is rubbing against the pin. Do this

gradually to prevent excessive enlargement of the slot. Once this is completed, remove the sear lever unit and install the trigger mechanism. Cock the hammer and put the safety on.

Reinstall the sear lever in the manner described above. The trip pin is inserted in front of the sear's lower portion. If the pin does not go in freely, the front portion of the slot must be further lengthened until the pin mates with the sear. Again, gradual filing is a must to prevent making the slot oversize. Check the trip pin for proper length. This is done by leaving off the grip safety while assembling the trigger mechanism on the frame. The opening at the back of the frame where the grip safety normally goes will provide a clear view of the internal fitting and mating of the parts. This is the best way to see how parts are working inside the frame and should be applied during the entire fitting process.

The final step is drilling the 1/16-inch diameter hole for connector spring installation. The left side of this hole is countersunk with a 1/8-inch diameter drill bit about .035 inch deep to prevent the spring from rubbing against the surface of the receiver when assembled with the sear lever unit.

After the part is fitted, polish all surfaces with fine emery cloth and temper. Buff and blue if desired.

# 7. Slide Modification

In the conversion system, the fire selector is positioned on the right rear part of the slide. To fire the weapon semiauto, the selector is raised to the “up” position, leveled with the bottom edge of the slide. In this position, the selector will not engage with the tripper’s roller and will fire semiauto only. When the selector is pressed downward, it will protrude about 1/4-inch below the bottom edge of the slide. The protruding portion will then hit the roller during forward slide movement and fire the weapon automatically. The hammer release is precisely timed to occur after the barrel and slide lock together, making the system safe and reliable in operation.

There are two ways to install the selector unit on the slide. Type One arrangement is much simpler and less noticeable after slide modification. This conversion requires drilling four small holes on the slide for selector mechanism mounting. One 3/32-inch hole is drilled through the right rear side of the slide parallel to the grooved section which retains the firing pin locking plate (which is inserted through the bottom to secure the assembly of the firing pin and extractor). This hole will be threaded 6-32 TPI to mate with the selector retaining screw. The middle hole is the same size and is 1/8-inch deep. This hole will accommodate the selector stop pin. When installed, the stop pin will protrude about 1/16-inch above the slide surface. The protruding end will be inserted into the circular slot of the selector lever during assembly.

This circular slot controls selector travel from one index to another. The two remaining holes for selector index ball locking are 5/64-inch in diameter and .065-inch deep.

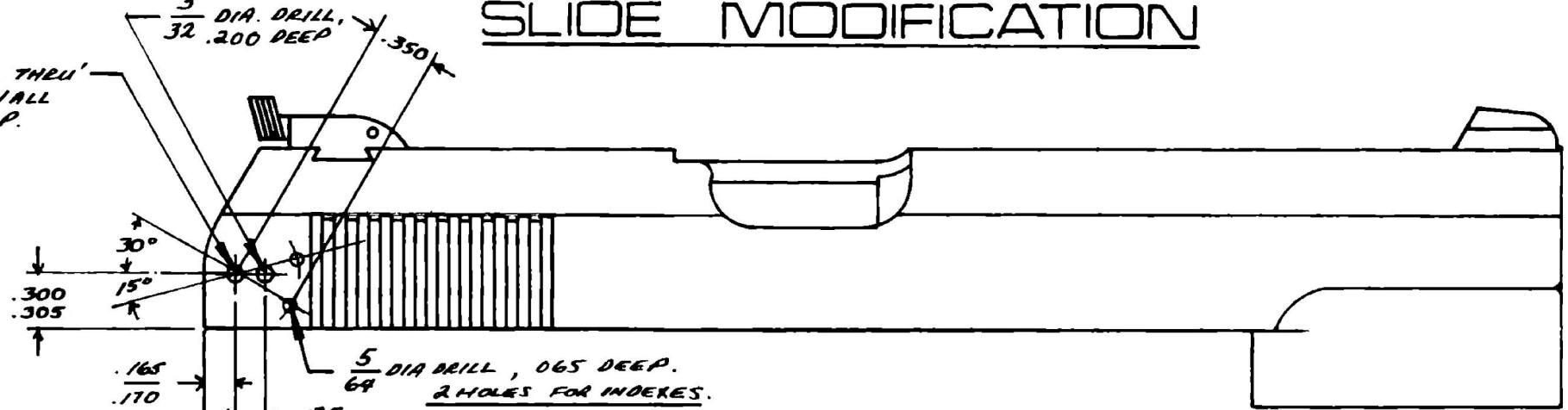
Type Two arrangement for selector installation incorporates a sliding plate that is vertically mounted on a dovetail groove which is also cut on the right rear section of the slide. This type of arrangement was employed on Spanish-made Star machine pistols.

A long vertical dovetail groove is milled on the slide to contain the sliding selector. In the middle portion of the selector plate, a 1/8-inch diameter hole is drilled to a 3/16-inch depth. This hole will take a spring-loaded plunger for selector indexing. The operating procedure required to move the selector from semi to full auto position is identical to that of the lever type. The selectors are to be moved up or down with the slide slightly retracted during index changing for the type of desired fire.

With the Type Two selector arrangement, the vertically mounted sliding plate (mounted on the dovetail groove on the slide) rests much closer to the surface of the receiver frame with only about .010-inch clearance between the two parts. Due to the close fit of the sliding plate when depressed for full auto fire, it is necessary to file or grind off the excess protrusion on the right side end of the hammer pivot pin to provide clearance for the sliding selector during rearward recoil. File the end of the pin level to the external surface of

# SLIDE MODIFICATION

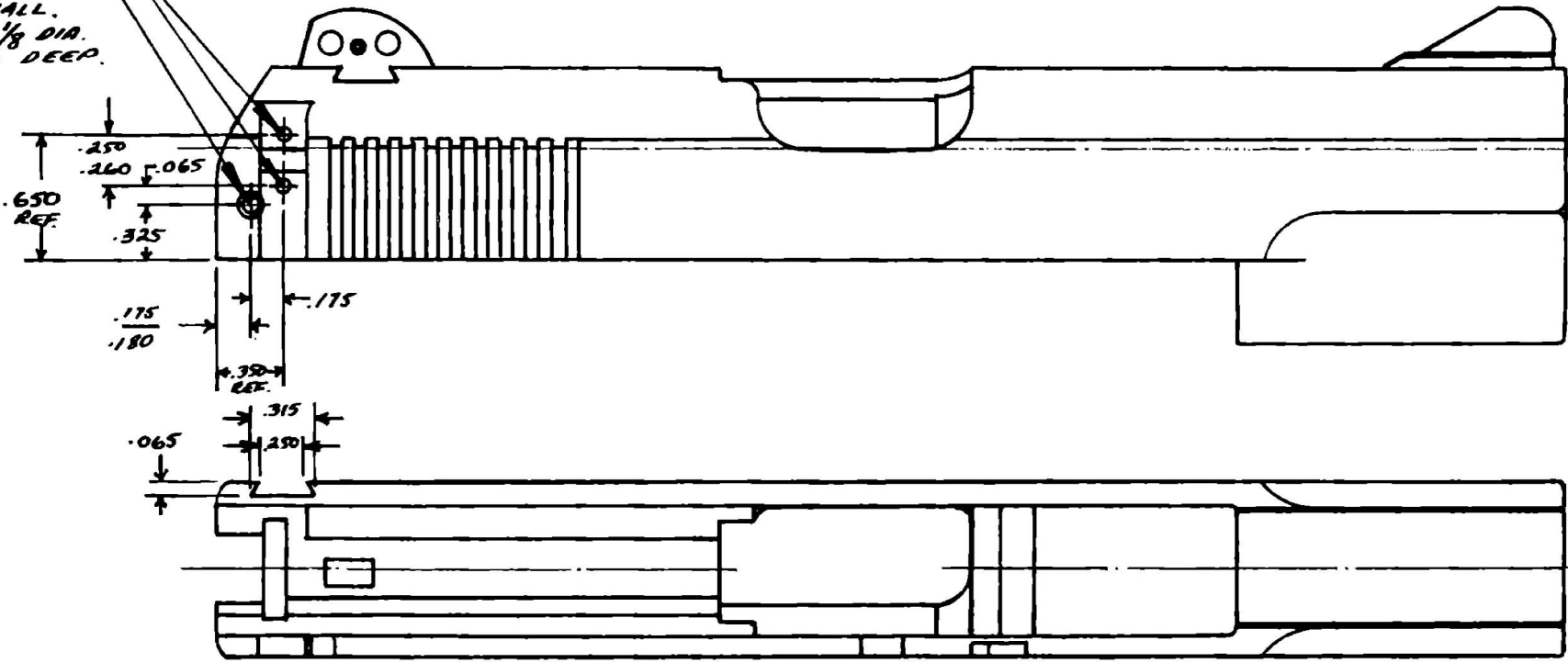
$\frac{7}{64}$  DIA. DRILL THRU'  
RT. SIDE WALL  
6-32 TAP.



FOR LEVER TYPE SELECTOR

$\frac{3}{32}$  DIA DRILL,  $\frac{1}{16}$  DEEP  
(2 HOLES)

$\frac{5}{64}$  DIA. DRILL THRU'  
RT. SIDE WALL.  
#-40 TAP,  $\frac{1}{8}$  DIA.  
C'BORE, .070 DEEP.



FOR SLIDING TYPE SELECTOR

the receiver on the right side if the Type Two selector is used.

**Note:** On the Type Two selector arrangement, the roller can be omitted since the selector plate directly strikes the tripper. The lower section of the Type One selector will hit the roller riveted on the right rear end of the tripper and not the tripper itself. The roller can be riveted tight or loose. However, with the roller tightly riveted, the selector will always hit the same area, and wear on contact surfaces will be faster. On the loose roller, a new surface will engage with the selector each time the slide closes, giving longer part life and smoother operation during battery.



# 8. Fire Selector Mechanism

The fire selector mechanism controls the mode of fire the operator wishes to use. In the upward position, the selector's lower end sits level with the slide's lower edge and will not make contact with the automatic tripper. On the full auto index, the lower section of the selector will protrude about 3/16-inch below the slide. It will activate the auto tripper each time the slide fully closes and will give full automatic fire.

As noted previously in the slide modification procedures, there are two possible arrangements using different types of selector mechanism. Type One uses a lever system, while Type Two incorporates a sliding selector.

## TYPE ONE SELECTOR MECHANISM

Type One selector consists of four basic components: the lever (which contains the index ball and spring), the retaining screw, the index ball, and the index ball spring. The lever can be built as one piece with a hacksaw and file; it is faster, however, to build it as two pieces, using rivets to fasten the parts together. For the two-piece selector, the lower section is first cut to shape with a mini-hacksaw and then finished with files of appropriate sizes and shapes. This piece is made from 1/16-inch sheet metal of good quality. The second piece, which is cut from 3/16-inch thick plate, is 1/4-inch wide. Both ends of this plate are riveted to the lower piece to form

a unit. It is best to drill the hole for the selector assembly screw and cut the circular slot for the stop pin before riveting the parts together. The circular slot can be made by drilling two 3/32-inch diameter holes about 1/8-inch apart and then removing the remaining metal in between with a small round needle file. After the slot is cut, install the stop pin on the slide and then insert the lower part of the selector onto it. Install the retaining screw in the threaded hole of the slide with the selector fully assembled except for the thick plate which will be riveted on later. Now rotate the selector and ensure that it turns smoothly without hesitation.

If the selector is hard to rotate, see if any part of the circular slot is rubbing against the stop pin. If this is the case, remove the metal that is rubbing. The allowance for this fitting must be kept to a minimum to leave enough metal on the front section of the slot for the 1/8-inch diameter hole for the steel index ball and its spring. After fitting the slot clearance with the stop pin, push the selector upward as far as it will go and see if its lower end is level with the lower edge of the slide. If any portion protrudes past the edge, gradually file away more metal on the lower end of the circular slot using the round needle file until the lower end of the selector is level with the lower edge of the slide. It is best to have the lower end of the selector positioned about .050-inch past the lower edge of the slide to clear the roller if the Type One selector is used.

Once this fitting is completed, the top portion can now be riveted and shaped to its final configuration. Locate the center axis for the index ball assembly hole. With the selector unit assembled in place, put the selector in the full downward (full auto) position. Looking at the top of the selector, measure about 1/8-inch from the lower edge of the slide and mark the upper level to the top of the selector. This is the position of the index ball above the slide's lower edge. Now locate an axis on the middle portion of the slide's upper part where the 1/8-inch diameter hole for the index ball assembly can be drilled without hitting the circular slot or touching the serrated section of the slide. Allow at least .030-inch between the circular slot and the rear edge of the 1/8-inch hole for the steel ball assembly. After the proper location for the index ball hole is determined, drill a 1/16-inch hole in its center from the top of the selector while holding the lever in the full auto position. Drill through the selector until the drill makes a shallow hole on the slide surface. Now move the selector upward as far as it will go, and from the top of the selector again drill a shallow hole on the slide for the semi-auto position.

After this operation, remove the selector from the slide and counterdrill the bottom portion with a 1/8-inch bit to the specified depth for the spring and ball assembly pocket. The portion of the slide marked for indexing is then redrilled with a 5/64-inch diameter drill to a depth of 1/16 inch.

## TYPE TWO SELECTOR MECHANISM

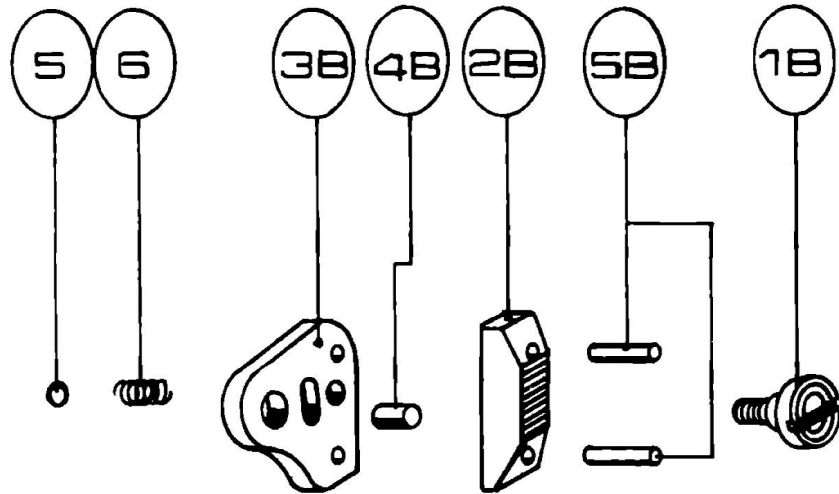
Type Two selector is of the sliding type and is mounted directly on the slide on a vertical dovetail groove. The front portion of the selector plate must be the same distance from the rear end of the slide as the Type One for accurate tripping distance. If the front portion of the selector on either the Type One or Type Two is excessive, the hammer will be tripped too early and the gun may discharge when not fully locked. In addition, the slide may not fully close since the

tripper will have already reached its full stop and its top rear end will be resting against the lower edge of the slide. Finally, damage to the tripper group will eventually occur since the selector will continue striking the tripper without enough allowance to move any further until the slide has fully stopped.

There are two ways to remedy the problem of tripper damage: first, metal may be gradually removed from the front portion of the selector until the slide fully closes. Second, the rear end radius of the sear trip pin assembly slot below the sear pivot pin hole may be lengthened. The second remedy will apply only if the top portion of the tripper can still move further upward and the sear tripping action is not sufficient to release the hammer during full auto operation. If the hammer is tripped in the full auto mode but is caught in the half-cocked position instead of hitting the firing pin, the sear trip pin assembly slot needs to be lengthened to the rear to allow the sear to move further rearward to clear the hammer safety notch and prevent it from being caught in the half-cocked position.

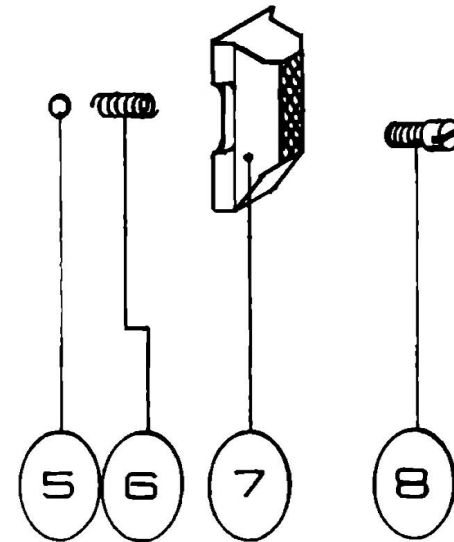
The selector on the Type Two model is constructed from 1/4-inch sheet metal. The front and rear edge sections must be chamfered to mate with the dovetail groove mount on the slide. The overall length of the selector must be the same as the entire length of the grooved section of the slide or longer on top. Two index holes are then drilled on the dovetail groove for indexing. A powerful spring-loaded plunger locks the selector on either setting. To locate the index holes for the Type Two selector, apply metal ink on the bottom part where the spring-loaded plunger will mate. Assemble the selector in the usual order in the dovetail groove, and slide it back and forth 1/4-inch below the slide's lower edge. Push it back several times until the bottom end is level with the slide, then remove it from the groove. The spring-loaded plunger will scribe a heavy indentation from one point to another. Mark each end of this line with a center punch and then drill 1/16-inch diameter holes just to clear the center

# FIRE SELECTOR PARTS GROUP



**LEVER TYPE**  
*TO BE USED WITH ROLLER TRIPPER ONLY.*

During extensive testing of the two types of fire selector mechanisms, the sliding type proved to be more versatile and stronger than the lever type. The sliding type has fewer parts and is much easier to build; however, it is more advisable to use in the conversion.



**SLIDING TYPE**

punch marks. Reassemble the part to the dovetail with the spring-loaded plunger also assembled. Recheck the settings for the indexes. If the settings are accurate, redrill the index holes on the slide dovetail groove with a 5/64-inch diameter bit to a depth of 1/16 inch. See the workman's drawings for specifications and location of the selector stop screw.

Both Type One and Type Two selectors must be polished smooth on contact areas and heat-treated for lasting durability. Repolish the part after heat treatment if blueing is required. Heat treatment must be done after the parts are fitted.

**Note:** A small amount of metal will need to be filed from the top portion of the extractor showing on the dovetail groove level with the depth of the dovetail. This is necessary to mount the selector in the groove.

# 9. Grip Stock (Right Side) Modification

The top rear section of the right side grip stock must be inletted for automatic tripper unit clearance. The depth of the inletting will depend on the maximum height of the tripper group when assembled on the receiver frame. This can be measured from the top of the tripper spring or from the top of the large head bushings that secure the tripper and sear lever connector in place. It is important to give an extra allowance during inletting of about .010-inch above the highest level of the converter group so the mechanism will work freely and reliably.

Wood grips look good, but inletting will take longer and more care will be needed during the cutting due to the thinner profile of the grip where it will cover the converter unit. The plastic grip, available from many surplus stores or by mail order, is more advisable to use for the conversion parts. These plastic grips are hollow inside, are easier to work on, and do not break or crack as easily as wood grips during inletting. The plastic grip will still need to be filed in areas that are not hollowed and which will rest on top of the tripper group.

The converter unit must be fully assembled on the receiver frame during inletting to check the proper functioning of the parts while fitting the inletted stock. Gradual inletting is performed until the unit works reliably and freely with the stock mounted over it and grip screws tightened. Apply a

thin coat of lacquer on the inletted portion of the grip to seal and strengthen it.

# 10. Removable Folding Front Grip Design

The unsurpassed success of the Colt .45 in the international market has led to the introduction of many accessories for this pistol, devices ranging from heavy-duty recoil springs, muzzle brakes, and large-capacity magazines to detachable shoulder stocks and custom-made spare parts.

In the Colt's original semiautomatic form, many of these devices will be of great assistance in recoil compensation. However, in the full auto mode, the only accessories that may help are the muzzle brake, the shoulder stock, and the heavy-duty recoil spring with shock absorbers. Probably the most valuable accessory for better control during automatic fire is a front grip. During testing, the two-hand hold plus a shoulder stock did little to control the muzzle climb of the weapon. After three shots have been fired, the muzzle is already pointed well upward, and successive shots totally miss the target. The rate of fire on full auto is over 1,000 R.P.M. To decrease the rate of fire, it is best to add more weight to the slide itself. This can be accomplished by welding two plates 1/8-inch or more thick on both sides of the slides. This will, however, make the slide bulkier and more cumbersome to carry concealed.

In the conversion project, a removable folding front grip is added. Some of the Colt factory-converted .45's as well as the Libman-converted Colt used by Baby Face Nelson had a front grip attached to the lower front section of the receiver just in front of the trigger guard. To use such an acces-

sory, a mounting plate must be brazed or welded on. This will be a permanent assembly unless the mount is dovetailed or a "T" slot is milled on it to accept a sliding front grip attachment.

The folding front grip featured in this book is simple, straightforward, and very easy to build with common hand tools. The only modification required on the frame is a 1/8-inch diameter hole on the top front section of the trigger guard. The grip is secured to it by an Allen screw and can be installed or removed in a few minutes. The push-button catch positioned on the right side of the grip locks it in the folded or retracted position. A special holster with added space in front of the trigger guard to accommodate the folding grip must be used.

The front grip consists of three basic parts. It is constructed as a sandwich, using 1/8-inch thick sheet metal for both side plates; a metal plate the same width as the trigger guard is riveted in between the side plates. The grip shown in this book has the center plate secured by three screws, which requires counterboring for the screw heads to sit flush with the side plate surface; simple riveting or soldering is faster. The push-button catch is made of 1/4-inch diameter mild steel rod and is reduced on one end for spring insertion. The smaller diameter end section is threaded to mate with the locking piece plate which is also made of 1/8-inch mild steel. A 1/8-inch diameter drill rod is riveted on the locking piece's

top portion. This rod is positioned where it locks against the trigger guard in the folded or retracted position to prevent any play in either position.

The front grip rests against the upper portion of the thick plate insert and on the lower support bushing positioned against the lower front portion of the trigger guard when the grip is held and during recoil. It does not rest against the 1/8-inch rod riveted on the locking piece. The small riveted rod is added to index the grip in any position but not to counter the recoil.

# 11. Assembly: Conversion Parts

Field stripping for cleaning the converted gun is the same as for the unconverted weapon. The selector, however, must be placed in the semiauto (upward) position before the slide is separated from the receiver to clear the path of the roller or tripper.

Assembly of the conversion parts requires disassembly of the original sear pivot pin, which is to be replaced by the longer one with a snap ring for sear lever retention. The right side grip must also be disassembled to install the automatic tripper group. After the sear pin is replaced and the right side grip is removed, the following assembly procedures should be followed:

## FIRE SELECTOR GROUP ASSEMBLY

1. Retract the slide and hold it open with an empty magazine. Do not insert a loaded magazine. Make sure the chamber of the gun is empty before assembly or disassembly.

2. Insert the selector stop pin in the middle hole in the slide where the selector group is to be installed.

3. Insert the steel ball spring into its assembly pocket on the selector lever. It is best to resize the free end of the spring slightly larger than the diameter of its assembly hole so that it will not fall off when the selector is turned on its bottom during assembly.

4. Place the steel ball on the upper index on the top of the slide (semiauto position) with the gun laid with its right side facing up.

5. Carefully align the end of the spring protruding under the selector with the steel ball on top of the slide index and slowly depress it against the ball. At the same time realign the circular slot of the selector with the protruding stop pin on top of the slide and restrain the selector lever at this position while inserting the pivot screw.

6. Tighten the assembly screw (pivot screw) with a screwdriver until it stops at its shoulder. Make sure there is no looseness in the selector lever after the assembly screw has been tightened. If looseness does occur, shorten the step that controls the tightness of the screw against the lever until snug retention is achieved. The lever must firmly hug the side of the slide when fully assembled.

**Note:** The tightness of the assembly screw is controlled by its middle shoulder. The selector must have enough allowance to be operated from one index to another but must also be kept rigid. Slight tightness is preferred during assembly since the selector's lower portion will undergo constant battering against the tripper roller each time the slide closes.

Check the screw occasionally for tightness after heavy use on full auto as it may tend to loosen unless metal glue is used during tightening of the screw.



## AUTOMATIC TRIPPER GROUP ASSEMBLY

Assuming the original sear pin has been replaced with the longer one and the right side grip has been removed from the receiver, the following steps can now be followed for tripper group assembly.

1. Connect the tripper spring to the connector toe's upper part.
2. Connect the connector spring to the connector toe's lower portion.
3. Connect the tripper spring assembled earlier to the upper part of the tripper's connector.
4. Insert the front end hook of the connector spring to the press-fitted roll pin in the receiver to retain its front end in place.
5. Reposition and align the sear lever trip pin to its assembly slot in the lower portion of the sear pin hole and insert it through and in front of the lower portion of the sear.
6. While inserting the trip pin into its assembly slot on the receiver, realign the top hole of the lever to the extended end of the replacement sear pin protruding on the right side of the frame.
7. After the lever is inserted onto the pin, press it hard against the receiver and insert the "C" clip onto the grooved end portion of the pin to secure the lever assembly.
8. Insert the tripper's large center pivot hole onto the top grip screw bushing on the receiver, with its counterbored side facing down to sit flush on the frame body. Make sure both the tripper and connector springs are mounted securely in their respective locations without rubbing against the surface of the receiver.
9. Screw-assemble the top support screw that secures the top portion of the tripper through its assembly slot. When assembling this screw, make sure that its bottom end that mates with the receiver does not protrude beyond the external wall of the frame and prevent magazine insertion.
10. Reassemble the large head threaded bushing for the

above screw using the hand-built two-prong key to tighten it, allowing rigid support to the upper portion of the tripper. This is necessary since the lower portion of the selector will constantly strike the roller which is riveted onto the top rear end of the tripper. Without this supporting bushing, the tripper will tend to side-play or wiggle during fire and may cause malfunction of the tripper unit or breakage of the inletted portion of the grip.

**Note:** When tightening the bushing, make sure it has enough looseness to allow the tripper to move freely during operation. It should not have unnecessary side-play; keep the part rigid at all times. This rule also applies when assembling the counternut (bushing) of the trigger bar cam screw.

11. Screw-assemble the cam screw to the trigger bar through the slot on the receiver until its bottom end sits flush to its internal surface. Check this by inserting a finger below the large slot of the grip and touching the bar inside to see if the pin protrudes through it. Test also by inserting a magazine into the grip. If the magazine is tight when inserted, there is too much protrusion. Turn the screw counterclockwise to reduce protrusion inside the frame.

12. Assemble the mating large head threaded bushing to the cam screw using the two-pronged key. While turning the key to tighten the bushing onto the screw, slightly retract the connector toe downward to clear the lower end of the bushing until it sits tight against the trigger bar. Again, test the tightness of the tripper and connector resting below the large head of the cam screw bushing. These parts must function freely, but they cannot be loose. Unscrew the bushing clockwise to adjust the gap if needed until the proper fitting of the parts is achieved.

13. Hand-cycle the action of the gun and observe how the converter mechanism functions in both semi- and full auto operation. Do not insert a magazine while making this test. If the parts work well, insert an empty magazine and repeat

the procedure. Note any tightness of the magazine when inserted and whether the trigger moves back and forth freely when pressed or released. If any problem does occur, check if there is still too much protrusion of the cam screw inside the frame. Make sure the lower portion of the cam screw bushing is not tight against the slot when the trigger is pressed.

14. Reassemble the stock onto the grip and tighten both retaining screws.

15. Recycle the action and see if all parts work smoothly. If not, portions of the converter mechanism are rubbing against the inletted portion of the grip. Apply typewriter correction fluid to the inletted section of the grip and reassemble it. Recycle the action, then remove the grip. Examine the inletted section; the whitened areas are rubbing against the converter mechanism. These must be sanded down gradually until all parts work smoothly.

16. To disassemble the conversion parts, reverse the above order.

### **IMPORTANT NOTES DURING FITTING OF THE CONVERSION PARTS**

For accurate results during final fitting, it is advisable to familiarize yourself beforehand with the proper relationship of all parts in their progressive functioning stages.

These operating stages are clearly illustrated and described in the closeup photos. The builder should refer to them from time to time until the fitting of the conversion unit is completed.

# 12. Assembly: Front Grip

The three screws shown in the photograph securing the three-piece grip can be replaced with rivets which can be improvised from 3/32-inch diameter nails or similar materials. The parts can also be brazed or soldered if desired for maximum strength.

To assemble the front grip to the gun, the following steps must be followed:

1. Assemble the catch spring to the end of the push-button rod through the smaller diameter end.

2. Insert the riveted pin (index) of the locking piece to its mating hole on the left side of the front grip below the grip's pivot hole and align its lower hole to the push-button rod's end assembly hole.

3. Insert the push-button rod with the spring installed on its smaller end through the large assembly hole on the right side plate of the grip. Align its front end containing the spring with the smaller hole on the left side-plate.

4. After the button is inserted through both side-plates, insert its protruding end into the threaded hole of the locking piece and tighten the slotted head of the button with a screwdriver.

5. After tightening the button onto the locking piece, assemble the counternut onto the remaining protrusion of the button end on top of the locking piece to prevent it from loosening.

6. Push the button catch rod several times to test its retraction. The button must retract the locking piece smoothly and return it to its normal position when released. The underside of the locking piece must lie flush to the left side plate when not operated. The index of the locking piece which is riveted on its top portion must come level with the internal surface of the left side plate when the push-button rod is depressed to clear the trigger guard when the grip is moved from one position to another.

7. Install the front grip on the receiver frame by realigning its pivot hole to the drilled hole on the top front section of the trigger guard, preferably in the folded position.

8. Insert and tighten the assembly screw.

9. After the screw has been tightened, depress the button rod and move the grip back and forth to check its tightness. Make any required adjustments or corrections.

10. To remove the grip from the gun, remove the assembly screw. The front grip unit can be stored or carried fully assembled in a pocket with the assembly screw left on the pivot hole for quick attachment if needed. An Allen wrench is normally needed for tightening the assembly screw. However, a large serrated head screw which can be hand-tightened can be substituted.

# 13. Final Fitting Guide

Listed below are some problems the builder may encounter during fitting, as well as corrective measures that must be taken to ensure proper fitting of the new parts before any live-fire testing is attempted.

During fitting, the gun must be assembled as it comes from the factory. Assemble the replacement sear pin and remove the right side grip stock during the fitting process. It is also advisable not to install the grip safety when the gun is put together so that you can see the proper order of the trigger group, as well as the trip pin operating in front of the sear, by looking through the grip opening normally covered by the grip safety.

Fitting of the conversion parts is not difficult as long as the builder understands how the conversion system works and notes the specific areas of each part that need adjustment in order to function reliably with the other components.

Fitting procedures require a cut-and-try method. The parts must be manufactured slightly oversize and then gradually reduced in areas which are tight or which do not mate properly.

Small files are helpful during the fitting process. Emery cloth is useful for polishing contact areas, such as the front top portion of the connector hump which operates against the trigger bar cam bushing.

## CAUSE OF MALFUNCTION

Sear does not engage with hammer when cocked.

## REMEDY

The sear connector lever trip pin is pressing against the sear, causing the sear to be in the retracted (pushed) position, thereby missing the hammer notch when cocked.

There are two basic remedies to correct this problem.

- a. Lengthen the front end of the trip pin assembly slot so the pin can move further to the front to clear its contact with the sear.
- b. Either the diameter of the trip pin is too large or the pin is too tight for free movement on its assembly slot.

## CAUSE OF MALFUNCTION

Slide does not fully close when selector is set at full auto position with the trigger pulled.

## REMEDY

Excessive length at the front of the connector toe or the auto tripper toe. These two parts make contact when the trig-

ger is pulled. Gradual removal of metal from this end of the tripper or connector toe must be done until slide closes properly.

#### CAUSE OF MALFUNCTION

Slide does not fully close when selector is set at full auto position with the trigger not pulled.

#### REMEDY

The trip pin is resting on the rear end of its assembly slot on the receiver. Lengthen the rear end of the slot so the trip pin can move further to the rear and allow the upper portion of the tripper (where the roller is riveted) to move further forward to complete closure of the slide.

The top end portion of the tripper where the roller is riveted is pressing against the bottom edge of the slide, thereby preventing further forward motion of the tripper to complete the full cycle of the slide. File off the portion on the top rear end of the tripper that is hitting the underside of the slide until the slide closes properly.

#### CAUSE OF MALFUNCTION

Hammer is tripped on full auto but stops in the half-cocked position and does not hit the firing pin.

#### REMEDY

The tripping action of the trip pin is restricted. The rear end portion of the assembly slot is too short, preventing full rearward pivot of the tripper that pushes the lower end of the sear. Lengthen the rear end of the slot until the sear clears the hammer notches completely when activated by the tripper. This type of problem can also be noticed when the slide does not close properly.

The connector toe or the tripper toe is too short and the trip pin is too far from the sear when the hammer is at the full-cocked position, preventing full rearward movement of the tripper to the sear and resulting in limited retraction of sear to fully clear the hammer notches. Gradual removal of metal is necessary until perfect fitting of parts is achieved. Replace the sear lever and reposition the trip pin closer to the sear with the hammer in full-cocked position.

#### CAUSE OF MALFUNCTION

Connector toe does not retract downward and align with the tripper toe when the trigger is pressed.

#### REMEDY

Springs are too powerful. Replace the spring with a weaker one until the retraction is perfected.

Upper hump portion of the connector is too high, rough, and cut too far to the rear, thereby preventing the cam of the trigger bar from reaching it when the trigger is pulled. Reduce the height of the hump, and polish smooth the top edge that contacts the trigger cam bushing. To determine whether the hump is high or low before removing any metal from the connector, depress the connector downward and pull the trigger all the way to the rear. While maintaining the pull, release the connector under its own spring tension to rest under the lower portion of the cam screw bushing.

If the connector lines up with the tripper toe with sufficient contact surface, the top front end of the connector hump must be reduced slightly and polished until smooth downward retraction is accomplished at the end of the trigger pull.

If little or no portion of the connector toe is lining up with the tripper toe, the hump portion has been cut too low. Replace the connector with one that has a higher hump and gradually make the necessary adjustment to prevent over-

cutting on the critical portion.

The front end of the connector toe is too long. Shorten the front end gradually until it is just long enough to clear and line up properly with the tripper mating toe. Do not overcut this portion as it may reduce the tripping allowance of the sear lever, thereby impeding sear operation during full auto operation.

The lower portion of the tripper does not retract far enough to the front to clear the connector toe when the connector is cammed downward by trigger pull action during slide recoil. Remove some metal from the top of the sear connector lever where the roller rests in the downward position until the lower section of the tripper retracts further forward enough to clear the front end toe of the connector during its downward movement.

### **CAUSE OF MALFUNCTION**

Tripper group does not operate freely.

### **REMEDY**

Check the tripper support screw bushing and the trigger bar cam screw bushing for tightness. Loosen slightly if too tight until parts work freely.

Stock inletting is too shallow and parts are rubbing tightly against it. Deepen the inletting until the mechanism works unimpededly.

# 14. Test Firing Procedures

Test-firing with live rounds must be done only after the gun is fully fitted and precisely adjusted. The following features must be double-checked before any firing is undertaken.

1. The *hammer timing release* is the key to safe and reliable performance of the converted gun, especially when fired at full auto. The barrel and slide must be fully locked together before the hammer hits the firing pin. Otherwise, a serious accident can result. Misfire may also result if the slide is not at full stop when the hammer hits the firing pin.

2. The *hammer and sear* must engage fully when cocked. It is necessary to check this to prevent accidental discharge caused by unintentional release of the hammer if not fully engaged with the sear during slide closing. This is one of the major causes of accidental discharge caused by reducing the engagement step on the hammer for that hair trigger type release. It is possible for the sear and hammer to engage during cocking of the hammer with only a small fraction of the hammer step mating with the sear. This is very dangerous and must be corrected before firing with live rounds.

This problem can be detected by applying metal ink on the hammer step notch before assembling it on the gun. With the gun fully assembled, work the slide back and forth, at the same time dry-firing several times. The sear making engagement with the hammer will make a white mark on the inked hammer notch. Disassemble the hammer from the gun

and check if there is full engagement on the notch. With full engagement, the whitened portion on the step will be past the center close to the step wall. If the whitened area is on the release edge of the notch, it is making insufficient engagement with the sear and accidental release is possible.

If full hammer and sear engagement results without the conversion parts being installed and slight engagement is evident when the converter unit is assembled, the trip pin is not retracting fully forward to give enough clearance for the sear's lower portion to reach its normal position for positive hammer engagement. To correct this problem, lengthen the front end of the trip pin assembly slot on the receiver so that the trip pin will move further forward to allow the sear to pivot normally for positive engagement with the hammer.

## **WARNING!**

Never attempt to use a hammer with reduced notch step for sear engagement adjusted for extremely light trigger pull and fast hammer release for the conversion. Use a standard part to prevent accidental release of the hammer when the slide moves forward during closing. Honing and buffing the hammer step as well as the sear engagement blade will reduce the trigger pull while maintaining full contact of both parts during cocking.

3. For final inspection, double-check all the parts of the gun (check the frame, slide, and barrel for cracks) as well as all of its other components and make certain that all are in good condition, designed to take and fire modern ammunition. Remember, you will be firing a large caliber handgun on full auto. Do not attempt to convert any gun of questionable strength or quality.

### **TEST-FIRING WITH LIVE ROUNDS**

When test-firing the converted gun, the factory-supplied magazine is to be used. Load the gun in normal fashion with the selector set at "semiauto" before loading. Your finger must be off the trigger. Fire the first fully loaded magazine at semiauto until empty. Observe for any malfunctions. If the gun works perfectly, load another magazine and set the selector at "full auto" with the hammer at full cock. Your finger must be off the trigger during selector changing and muzzle end pointing in a safe direction. Before firing, keep a firm grip on the weapon if you do not have the front grip attached. Use the two-hand hold and a correct stance. At full auto, the seven round magazine will be empty before you can release the trigger pull.

It is advisable to load only three rounds into the magazine the first time it is fired at full auto. Once you have familiarized yourself with the recoil, you may load more rounds in the magazine until you have perfected quick-trigger release to control firing. If you have an original Colt .45, the 30-round Bingham snail drum magazine is advisable to use. Its additional weight will help control muzzle rise during full auto fire. A shoulder stock, front grip, muzzle brake, and a good recoil spring with shock absorber are the best accessories you can add to the converted gun for optimum control during full auto fire.



# 15. Silencer Design

There are numerous ways to silence the .45 ACP round. The .45 ACP cartridge is one of the few pistol rounds that travels at subsonic velocity. It is therefore ideal for use with a silencer.

Silencer installation can be a major problem for the Colt .45 pistol. This can be attributed primarily to its locking system, which employs a tilting method for locking and unlocking of the slide and barrel. Putting additional weight on either part will affect the weapon's operation. The barrel may also not be fully in line with the silencer bore axis when a round is fired, as the barrel moves downward and to the rear slightly to start the unlocking process. An oversize link and an under-size bushing must be fitted to the gun to correct this problem. This will ensure proper alignment of the bore axis as well as much more rigid locking of the slide and barrel during battery.

Installing the silencer directly onto the barrel requires fine threading of the non-standard outside circumference of the barrel. A barrel with at least 1/2 inch of extra length is required to be threaded for silencer attachment. Probably the most practical method is to mount the silencer unit to the barrel bushing itself. Some companies market a replacement barrel bushing with a front extension that acts as a muzzle brake. These muzzle brakes come in two lengths. The shorter one has three slots and the longer has vent holes on top. The longer one is preferable for the silencer attachment method

described herein.

A vital factor in building the silencer for the Colt .45 pistol is to keep the weight to a minimum (5 to 6 oz. maximum). Any weight beyond this will definitely affect the operation of the gun. The recoil spring may also have to be modified (several coils removed) or a wadcutter ammo spring (for lighter loads) substituted to reduce the resistance of the slide during battery. High-velocity ammo must be used in order to cycle the action. Low powered ammo will not have sufficient recoil to operate the action.

## **PARTS NOMENCLATURE— SIMPLIFIED SILENCER DESIGN**

1. **EXTENDED BARREL BUSHING** (purchased, 3" O.L.)—normally marketed with top vent holes on the longer model and three slots on the shorter one. The longer model is used here. The vent holes can either be enlarged or additional holes drilled around the front extension to vent as much gas as possible. An elongated slot 3/16-inch wide x 1-inch long can be cut every 90 degrees (4 slots required) for maximum gas venting into the first expansion chambers for best results.
2. **BUSHING RETAINING SCREW**—standard 6-32 x 1-inch socket head screw (2 required) should be purchased. The overall length of the screw must not pro-

trude beyond the inside diameter of the bushing's front extension so as not to interfere with the barrel sliding inside it during recoil. Cut off any excess protrusion.

3. **REAR END CAP**—This part can be installed on the silencer tubing either by threading or press-fitting. If press-fitting is used (for those who do not have access to a lathe) it is best to apply Loctite or epoxy around the part before fitting it to the tubing to prevent gas leakage from the expansion chamber. The part is then secured further by two set screws retaining the bushing on it during assembly.

**Note:** The front extension of the bushing is also assembled by press fitting. Epoxy or Loctite must be applied around it before assembling it to the rear end cap before the cap is installed on the tubing. It is best to drill and tap the bushing retaining screw hole after the two parts (bushing and rear end cap) are assembled to the silencer tubing for precise alignment.

4. **CHAMBER SPACER**—determines the length of the expansion chamber. The maximum wall thickness is 1/16-inch. The walls must be perforated with large holes (3/8-inch diameter minimum) to lighten the part.
5. **CHAMBER DIVIDER**—separates the expansion chamber and the large front chamber. The rear expansion chamber is where most of the gases will be bled off and trapped during firing. The gases will be force-vented to the front chamber while the bullet is still traveling through the diffuser tube. The part has 8 vent holes (5/16-inch diameter) drilled through it every 45 degrees.
6. **SILENCER TUBING**—contains the components of the entire unit.
7. **DIFFUSER TUBE**—a small tube with an inside diameter of 1/2 inch and a maximum wall thickness of .065-inch. This tubing is perforated drilled with two lines of

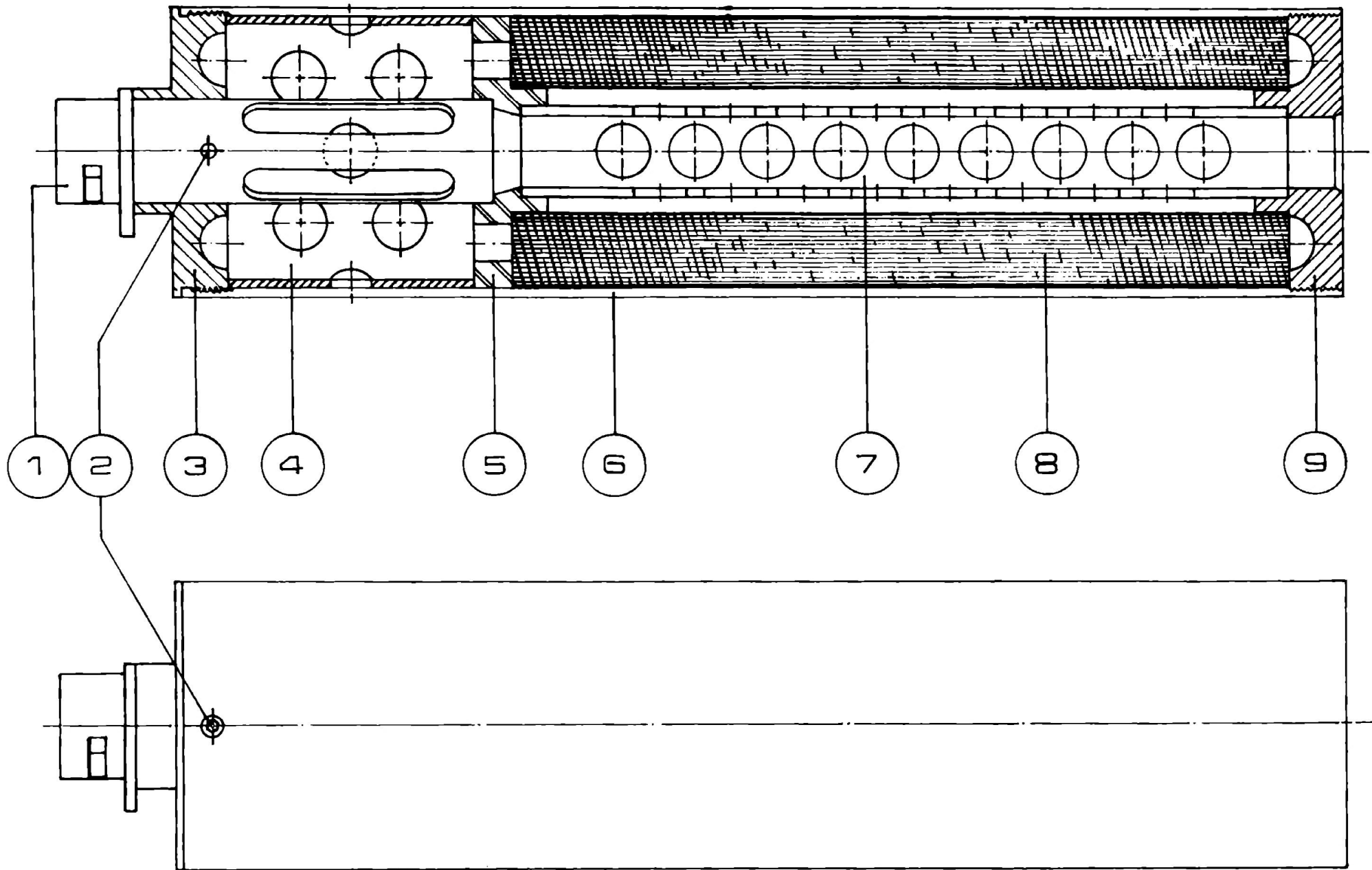
nine holes 3/8 inch in diameter every 180 degrees alternating two lines of eight holes also drilled at 180 degrees. These holes are drilled 1/2 inch apart. Large holes are preferred for better venting as well as keeping the part lighter.

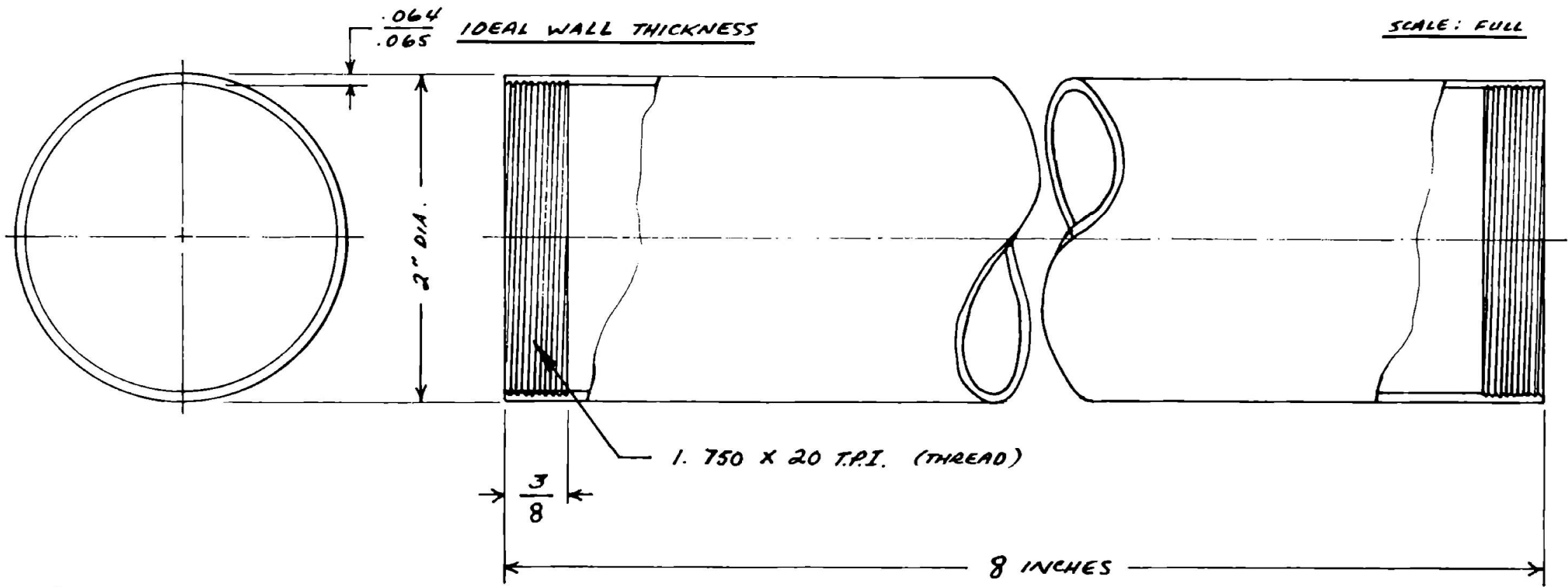
8. **WIRE MESH (lightweight) ROLLED SCREEN**—the mesh seam should be soldered after rolling for faster insertion during assembly and disassembly.
9. **FRONT END CAP**—uses the same material and assembly procedures as the rear end cap.

**Note:** Both rear and front end caps must have concave relief cuts on their internal surfaces to further reduce weight and to keep the overall weight of the unit to the minimum.

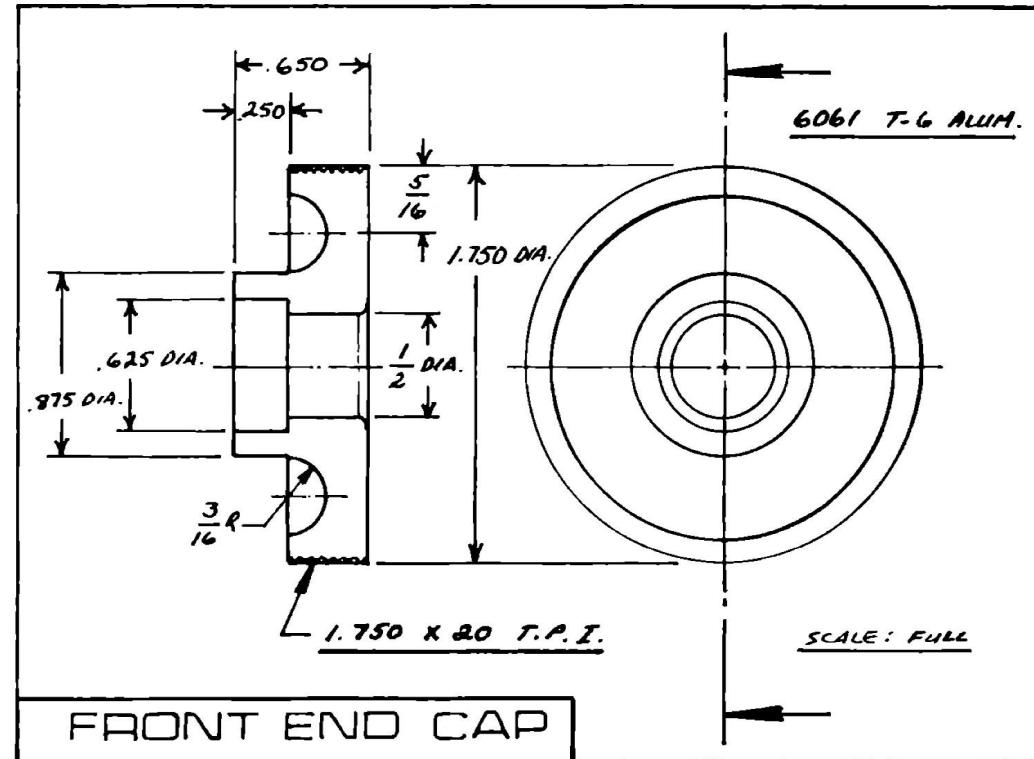
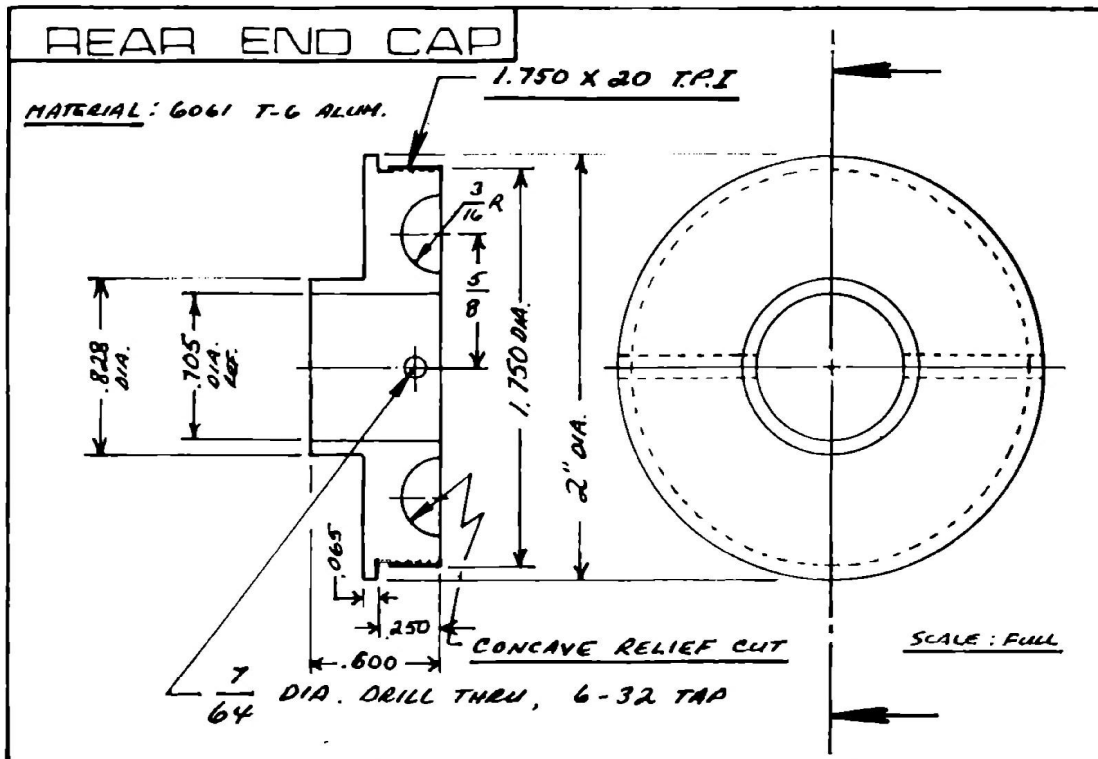
With the exception of the wire mesh and bushing retaining screw, all parts must be made of high-strength, lightweight aluminum materials to keep the weight down to no more than five to eight ounces.

# SIMPLIFIED SILENCER DESIGN - COLT .45



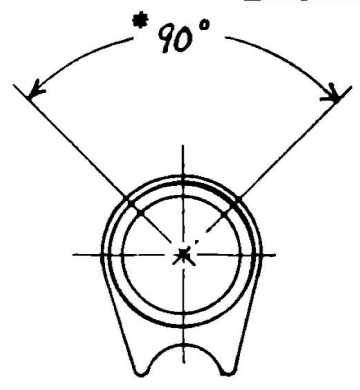
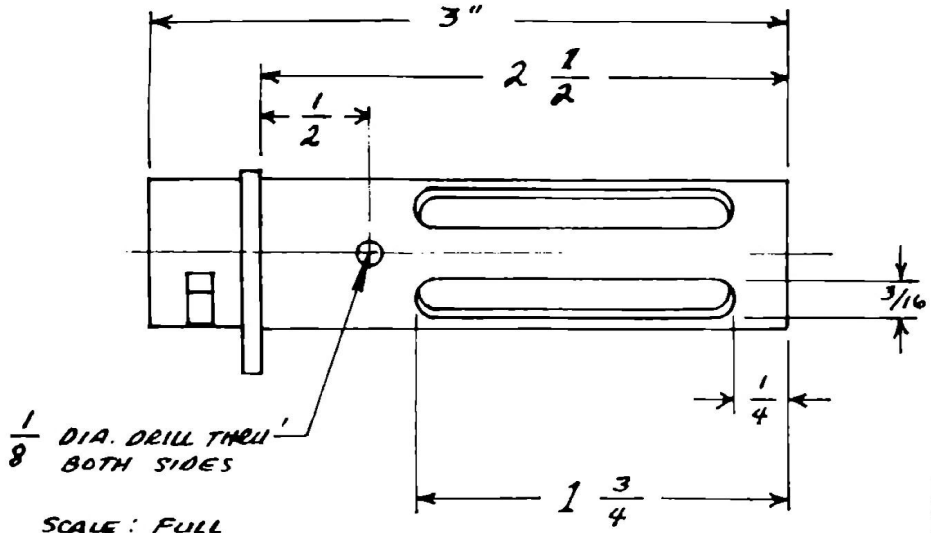


MATERIAL: 6061 T-6 ALUM.



# EXTENDED BARREL MODIFICATION

- ANNEAL PART IF HARDENED -



RE TEMPER PART AFTER SLOTTING & DRILLING REQUIRED HOLES

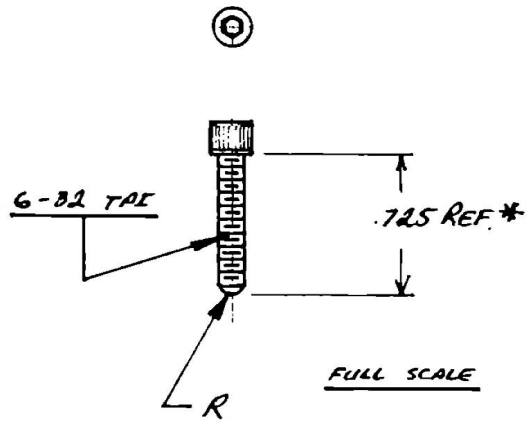
$\frac{1}{8}$  DIA. DRILL THRU BOTH SIDES

SCALE: FULL

NOTE:  $\frac{1}{4}$  DIA. HOLES DRILLED ALTERNATELY AROUND FRONT EXTENSION COVERING SLOT LENGTH CAN BE USED AS SUBSTITUTE INSTEAD OF SLOTS.

MATERIAL: STEEL (PURCHASED)

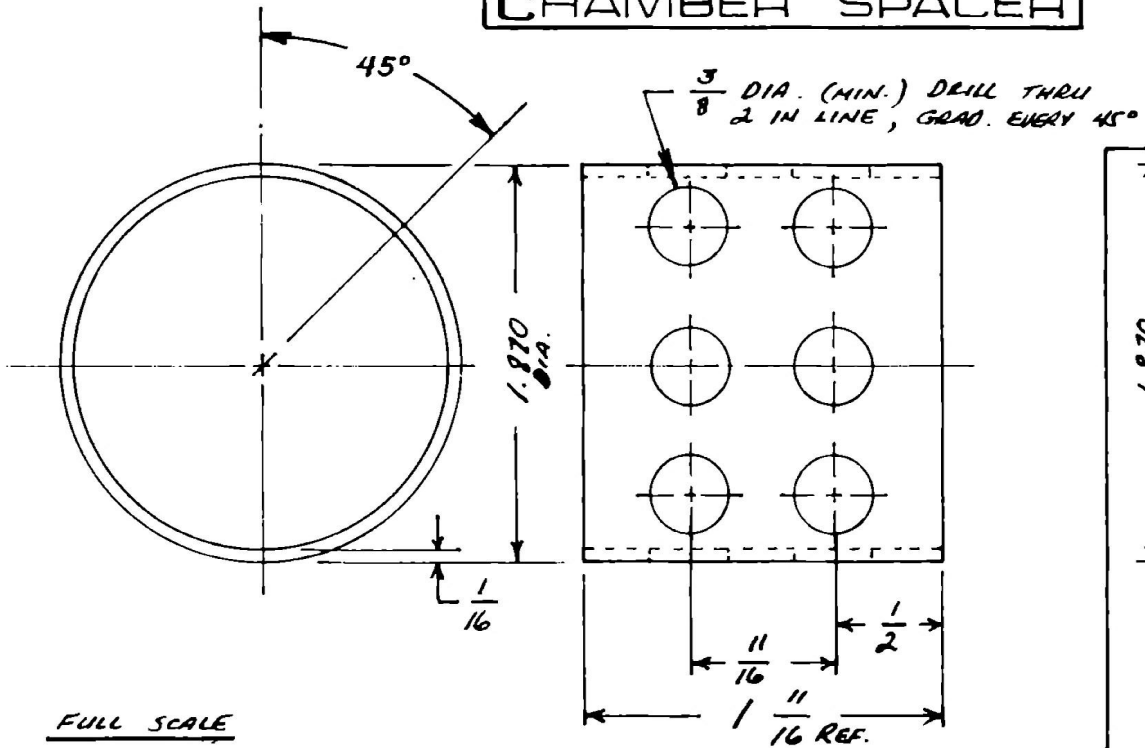
# BARREL BUSHING RETAINING SCREW (2 REQ.)



\* REMOVE ANY EXCESS PROTRUSION INSIDE BUSHING HOLE TO CLEAR BARREL MOVEMENT SLIDING.

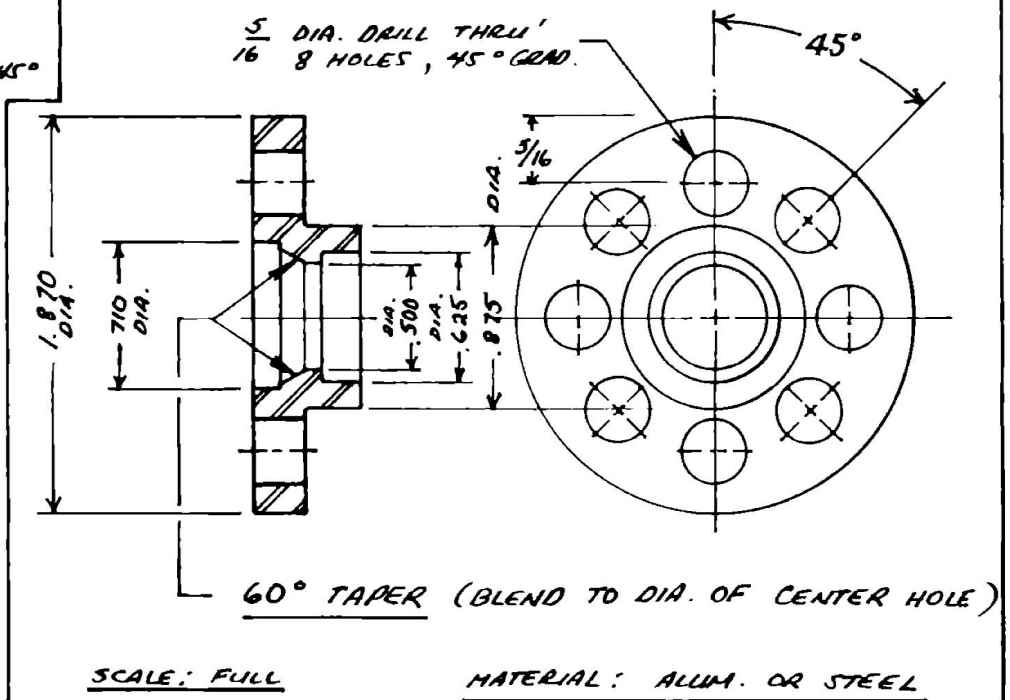
MATERIAL - ALUM.

# CHAMBER SPACER



FULL SCALE

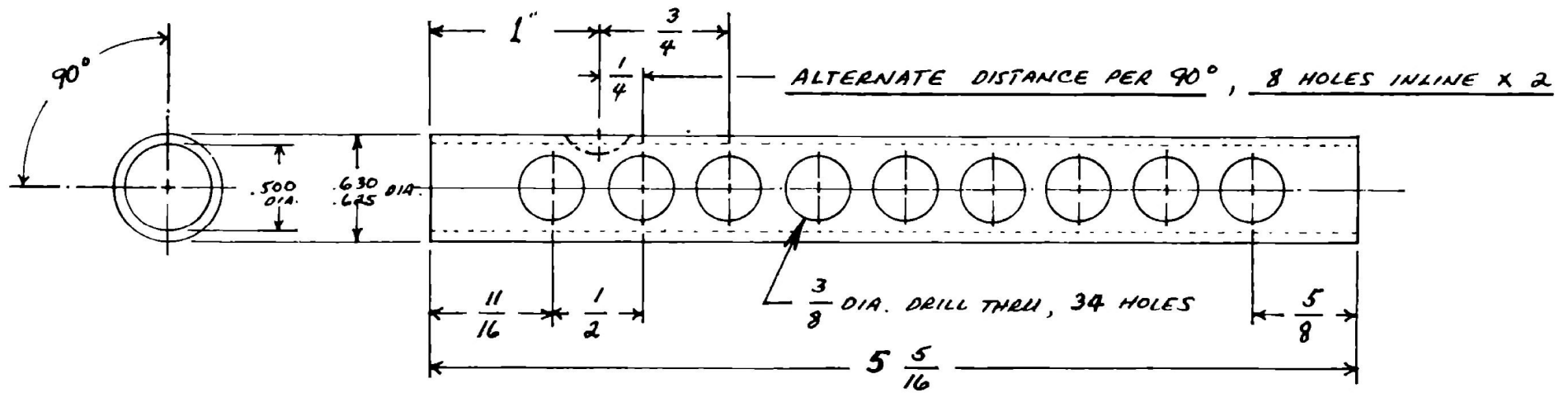
# CHAMBER DIVIDER



SCALE: FULL

MATERIAL: ALUM. OR STEEL

60° TAPER (BLEND TO DIA. OF CENTER HOLE)

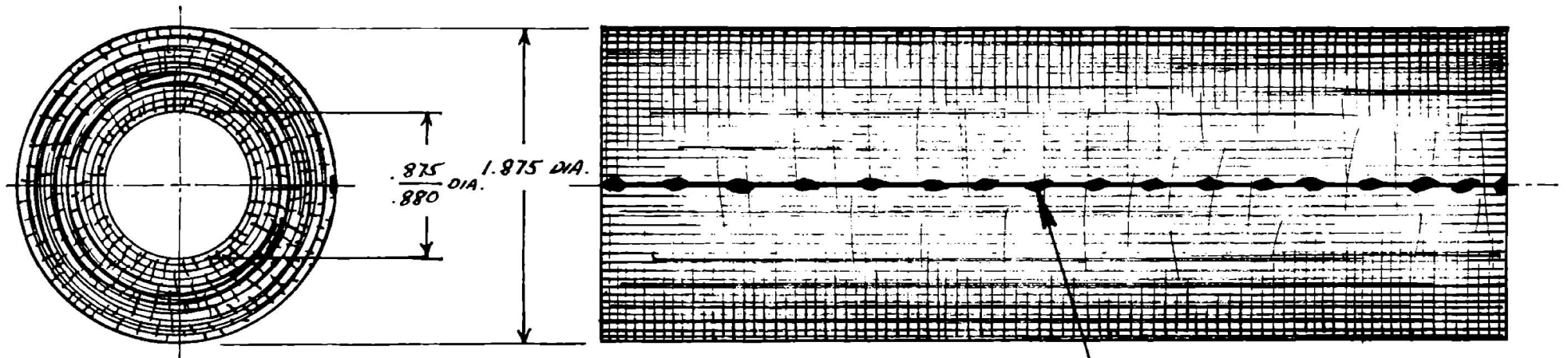


DIFFUSER TUBE

FULL SCALE.

MATERIAL: ALUM.

SCALE: FULL

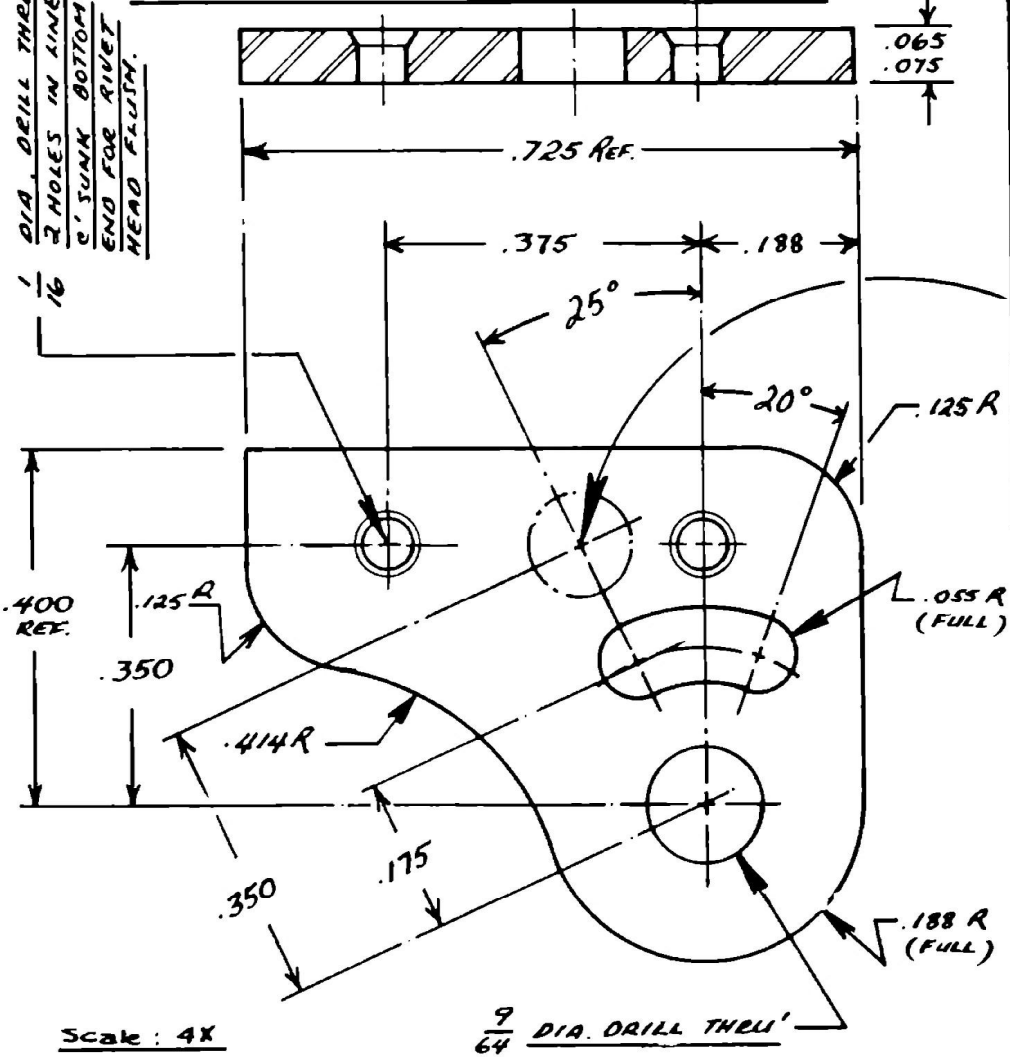


WIRE MESH

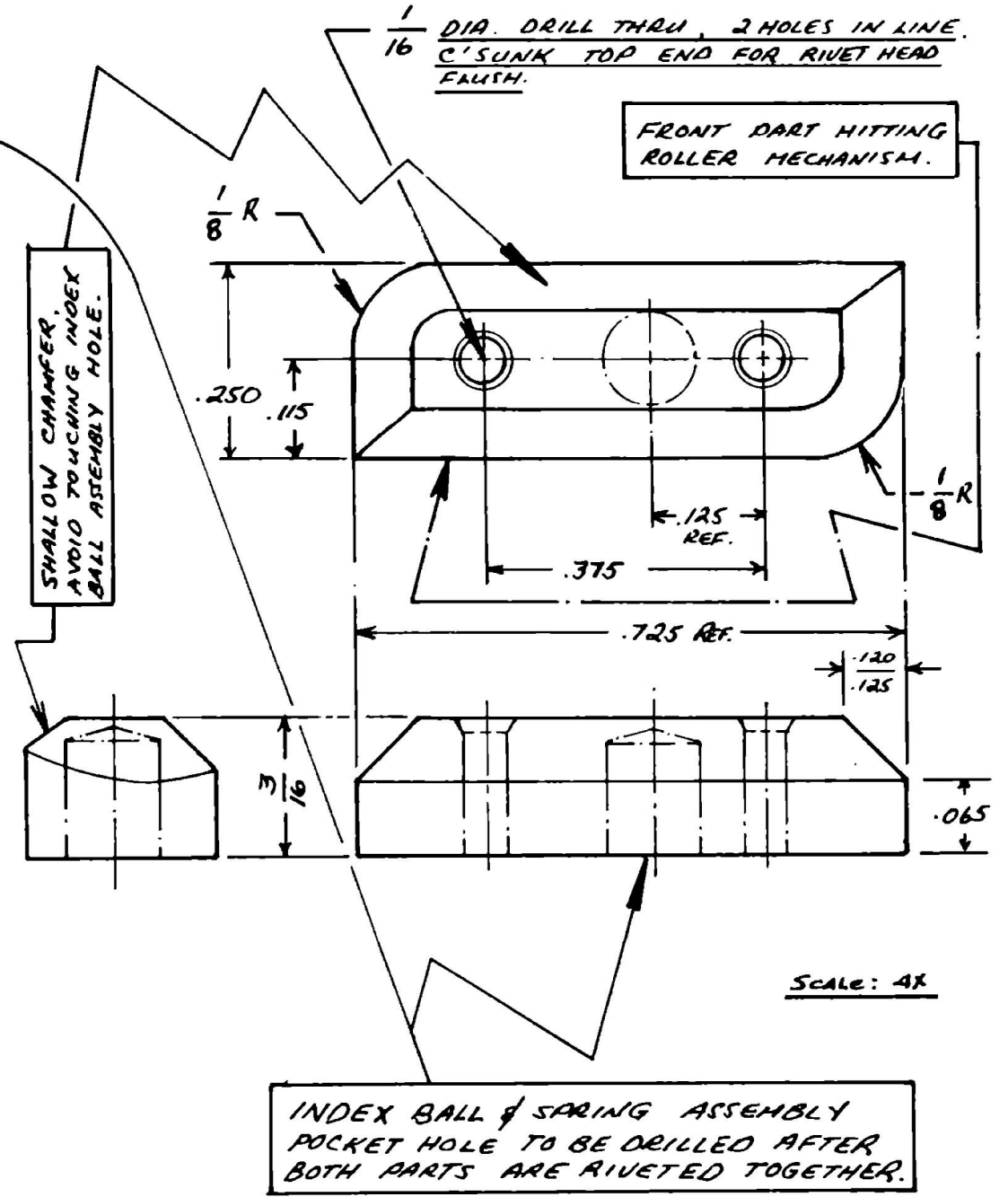
MATERIAL: WIRE MESH - ROLLED

# 16. Machinist's Drawings and Templates

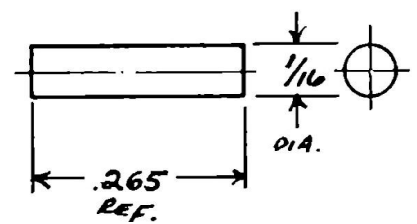
The keys to a successful project are patience and careful fitting of all parts. This weapon must be fine-tuned to functional order before being fired with live ammo. All critical parts, particularly portions subject to wear, such as the contact areas, must be tempered properly and then polished smooth for trouble-free operation after all components are fitted in working order. Always wear eye and hearing protection whenever you are shooting a gun. Observe all safety precautions to avoid injury to yourself and anyone around you.



DETAIL-SELECTOR LEVER  
TOP PIECE



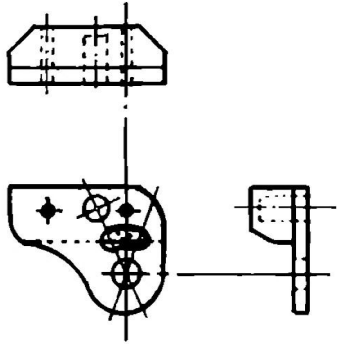
SELECTOR LEVER RIVET  
(2 REQUIRED)



SCALE: 4X

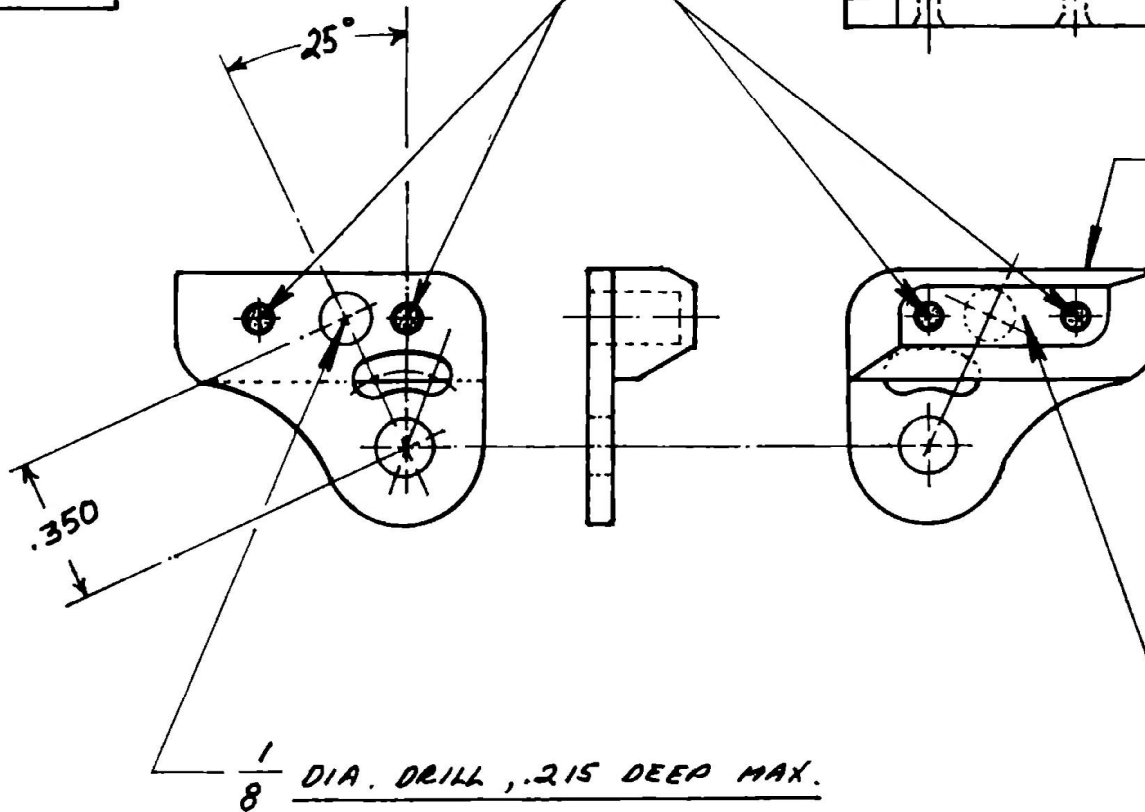
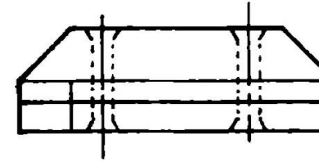


FULL SCALE



- AFTER RIVETING -

FILE RIVET ENDS TO FLUSH.



PORTION HITTING ROLLER  
CAN BE FILED OFF GRADUALLY  
TO REDUCE HAMMER TIMING  
RELEASE ON FULL AUTO.

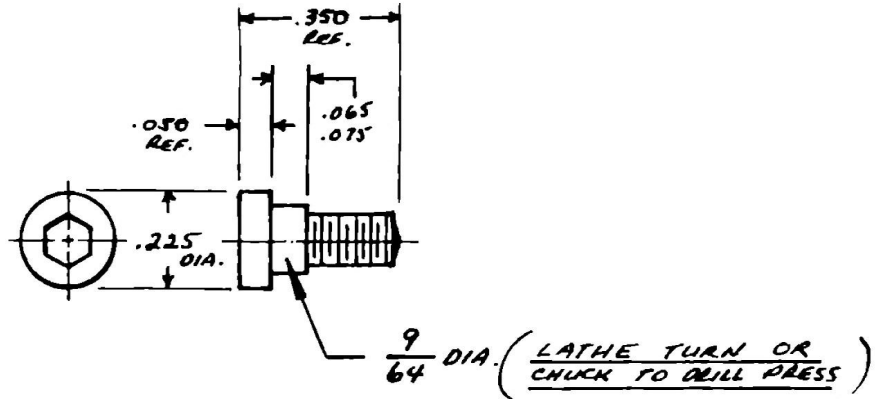
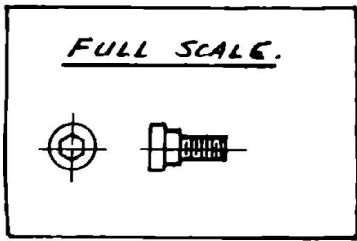
SERRATE OR CHECKER  
TOP PORTION OF SELECTOR.

SCALE: 2X

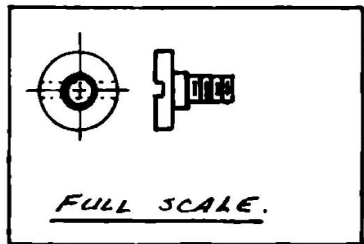
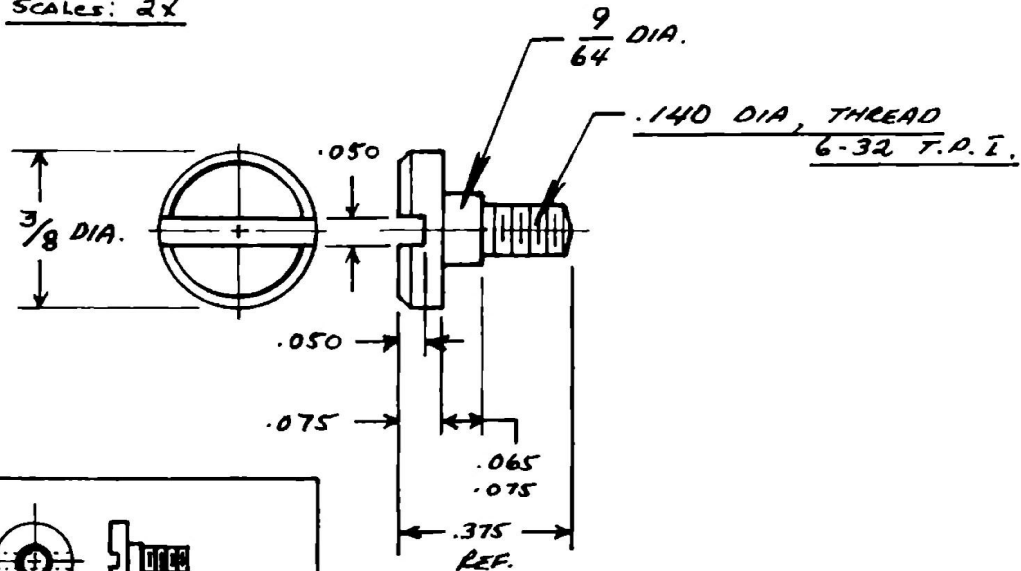
NOTE: JOINTS OF PARTS CAN BE SOLDERED IF REQUIRED FOR BEST RESULT.

# SELECTOR LEVER ASSEMBLY SCREW

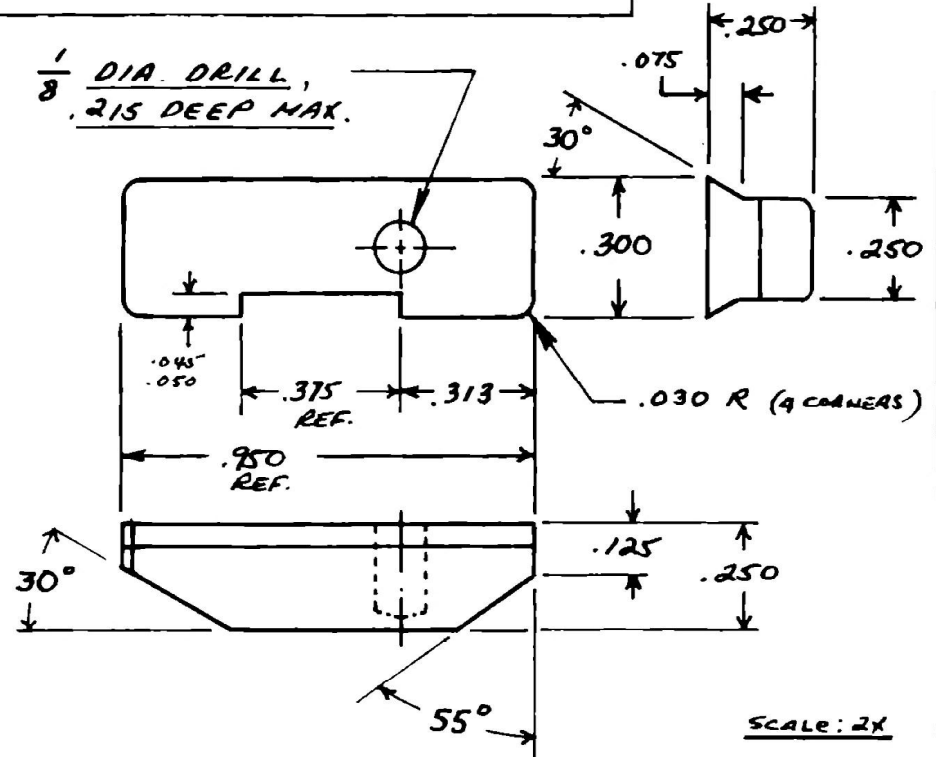
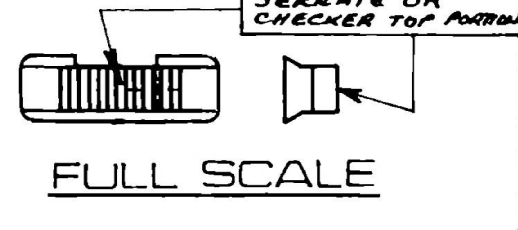
STD. SOCKET HEAD 6-32 X  $\frac{3}{8}$  COMMERCIAL SCREW.



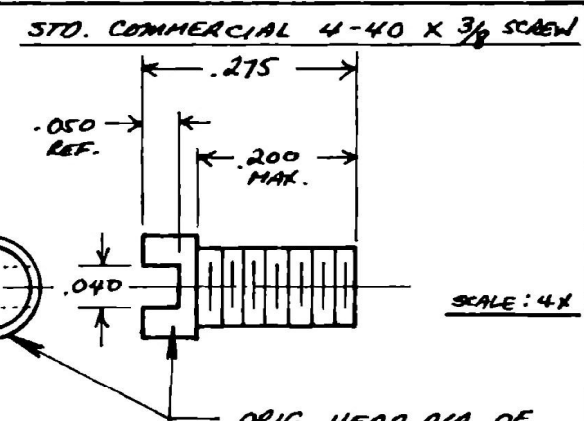
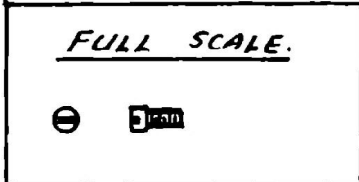
Scale: 2X



HOMEMADE SCREW WITH LARGER HEAD (PREFERRED)



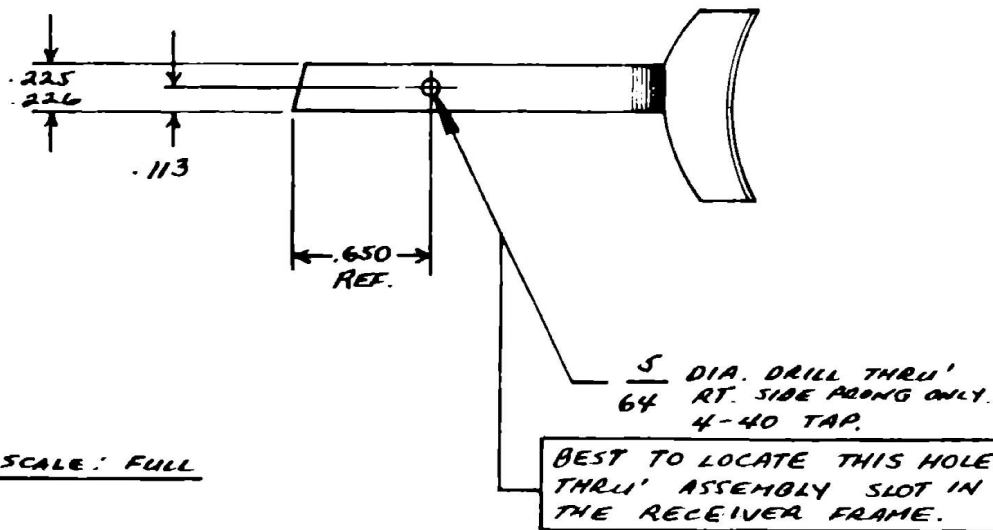
## SELECTOR - SLIDING TYPE



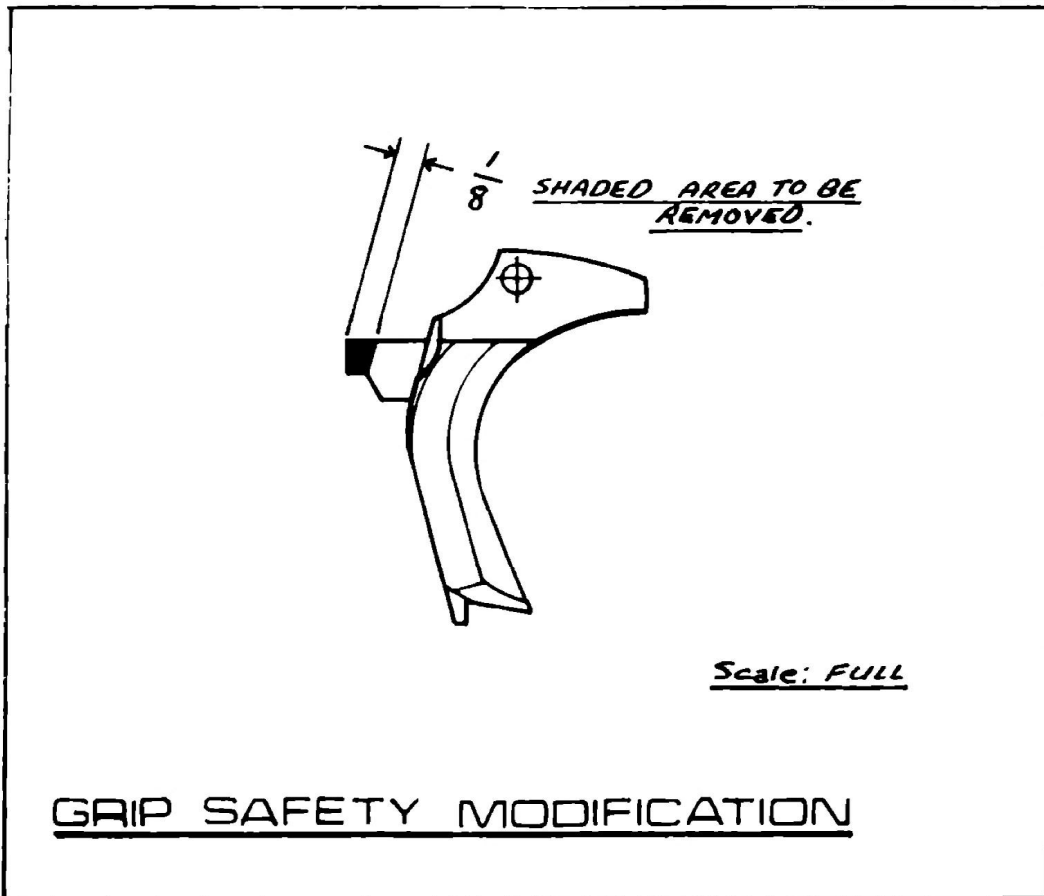
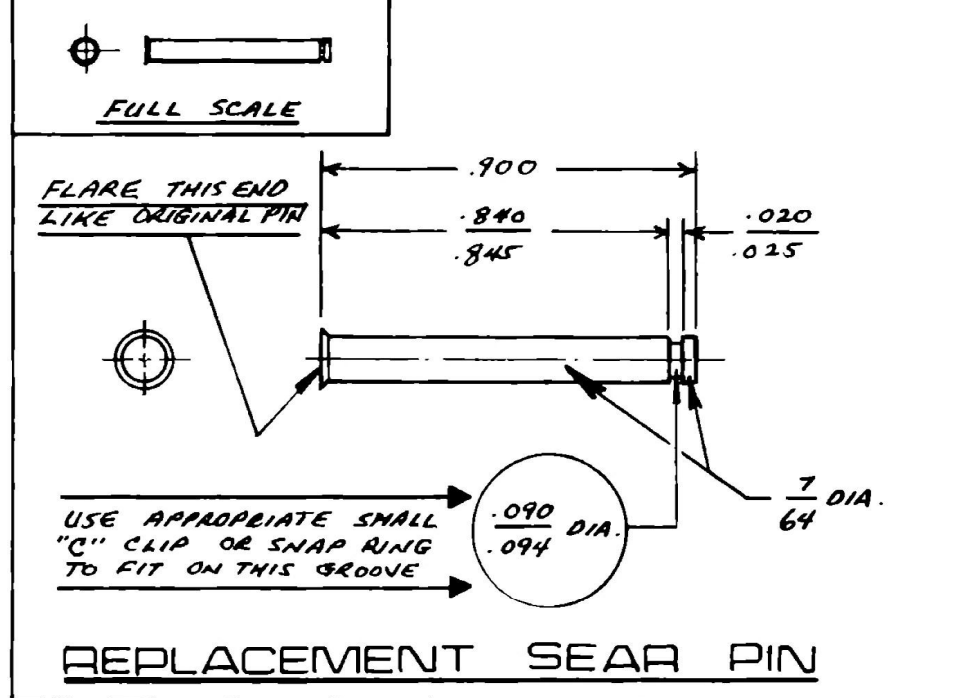
ORIG. HEAD DIA. OF SCREW IS REDUCED TO .130 DIA.

SELECTOR - SLIDING TYPE

# TRIGGER BAR MODIFICATION



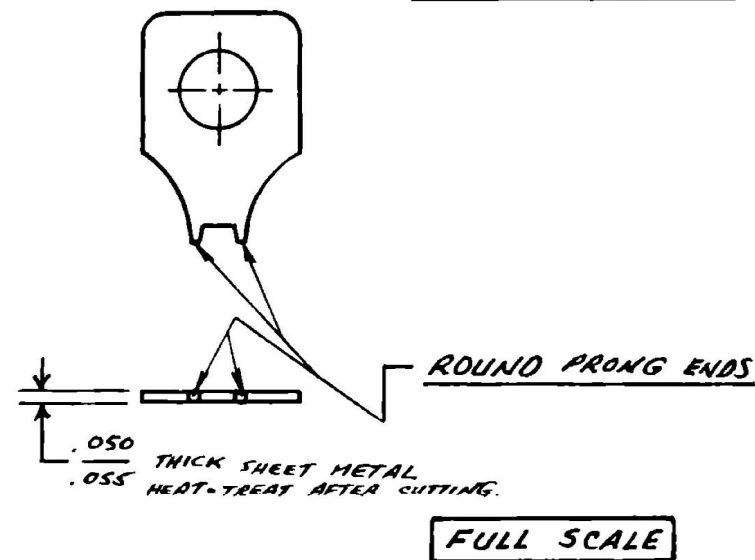
SCALE: FULL



# BUSHING ASSEMBLY KEY

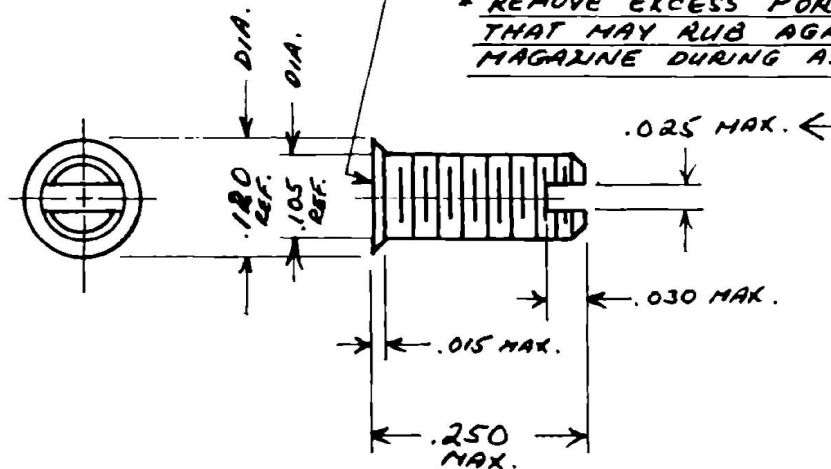
NOTE:

$\frac{17}{64}$  WIDE SCREW  
DRIVER BLADE CAN  
BE CUT TO SHAPE  
AS SHOWN FOR USE.



# TRIGGER BAR CAM SCREW

FULL SCALE.



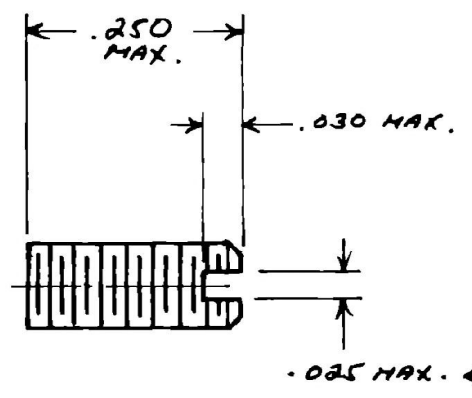
HAMMER AROUND END OF SCREW TO FLARE END.\*

\* REMOVE EXCESS PORTION THAT MAY RUB AGAINST MAGAZINE DURING ASSEMBLY.

NOTE: SCREW PARTS ARE CUT FROM COMMERCIAL 4-40 SCREW. CASE-HARDEN AFTER FITTING.

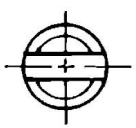
SCREW NOTCH CAN BE CUT WITH MINI HACKSAW TO SPEC. DEPTH.

SCALE: 4X

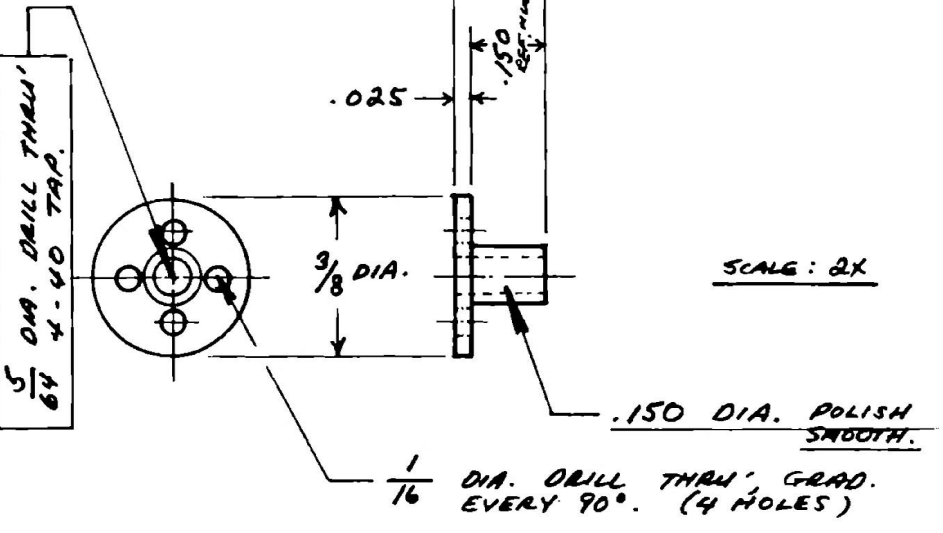
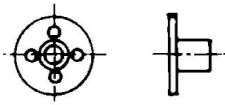


# TRIPPER SUPPORT SCREW

FULL SCALE.

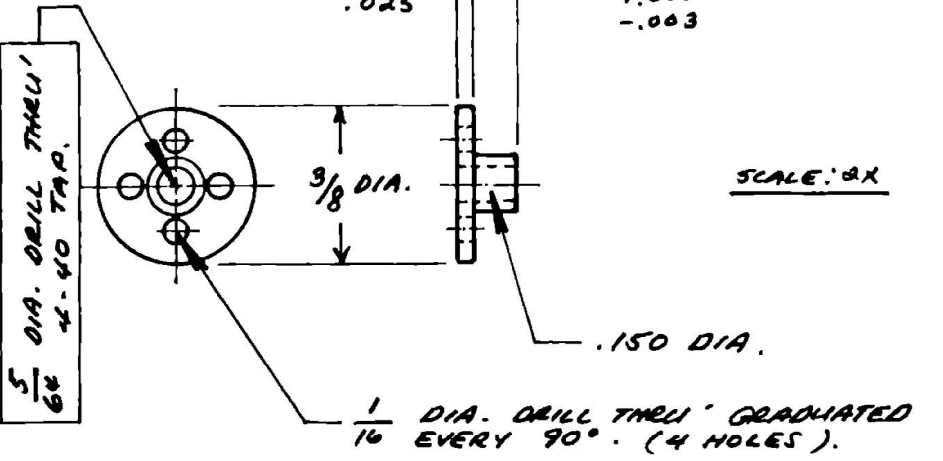
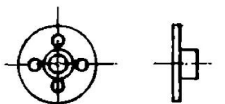


FULL SCALE:



SCALE: 2X

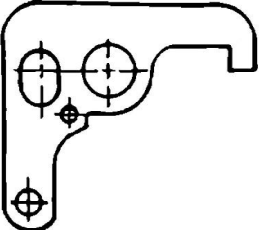
FULL SCALE:



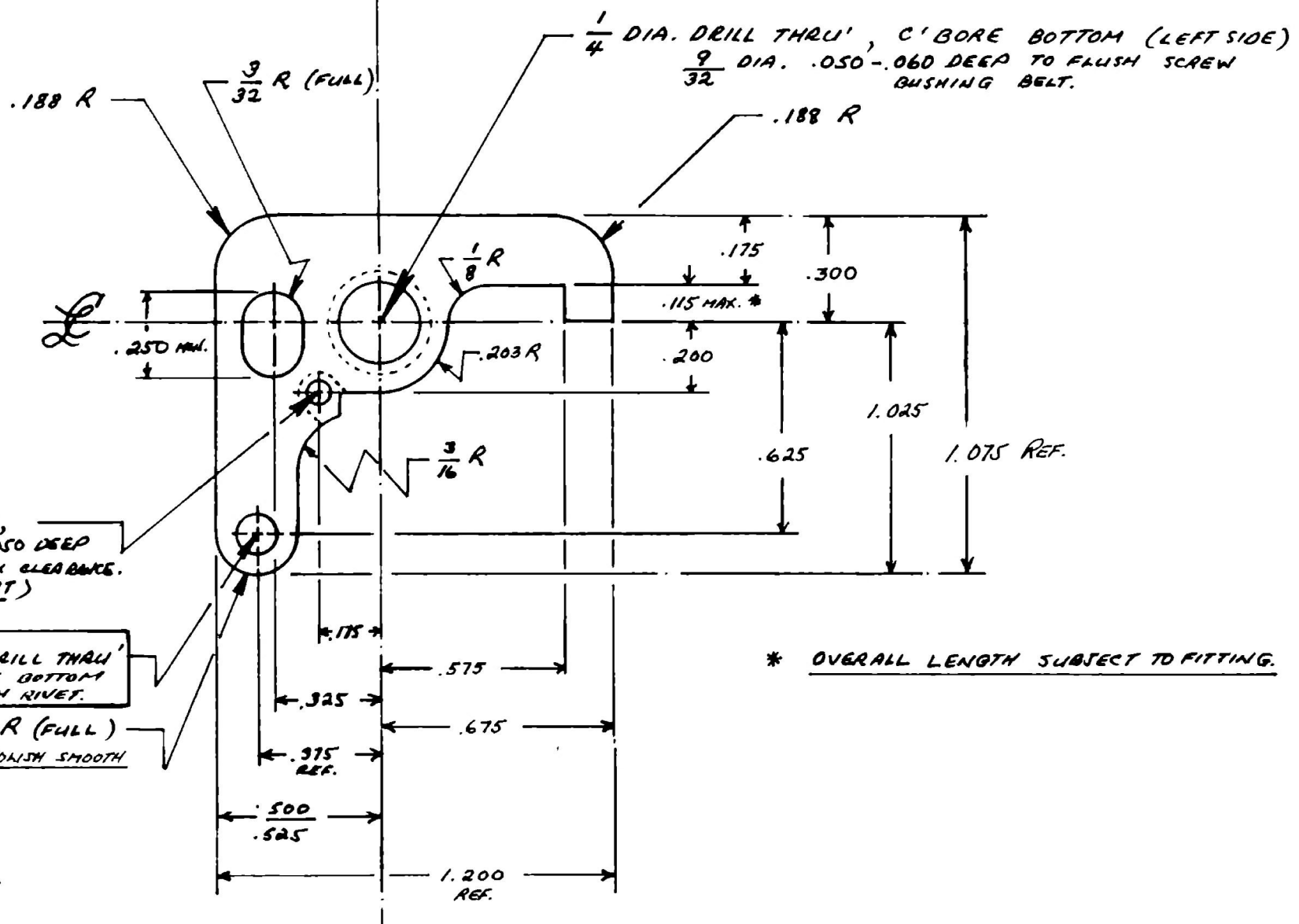
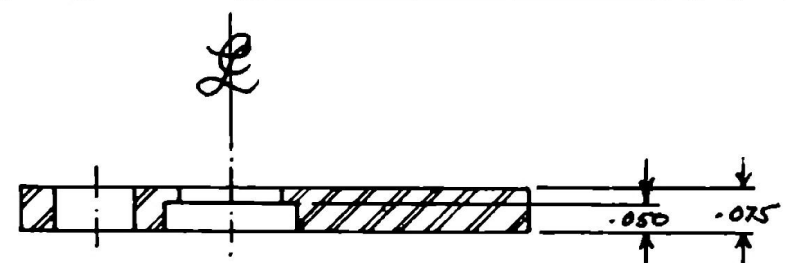
SCALE: 2X

# TRIPPER SUPPORT SCREW BUSHING.

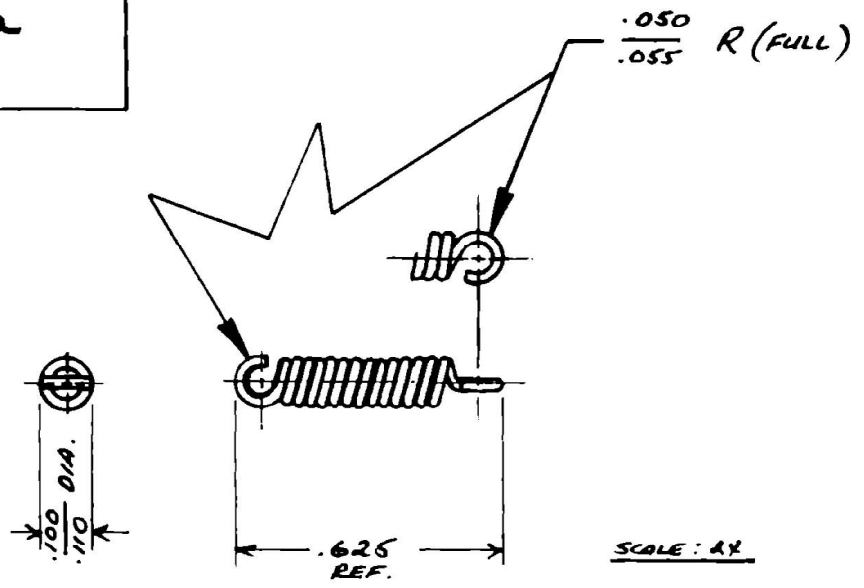
# AUTOMATIC TRIPPER



FULL SCALE

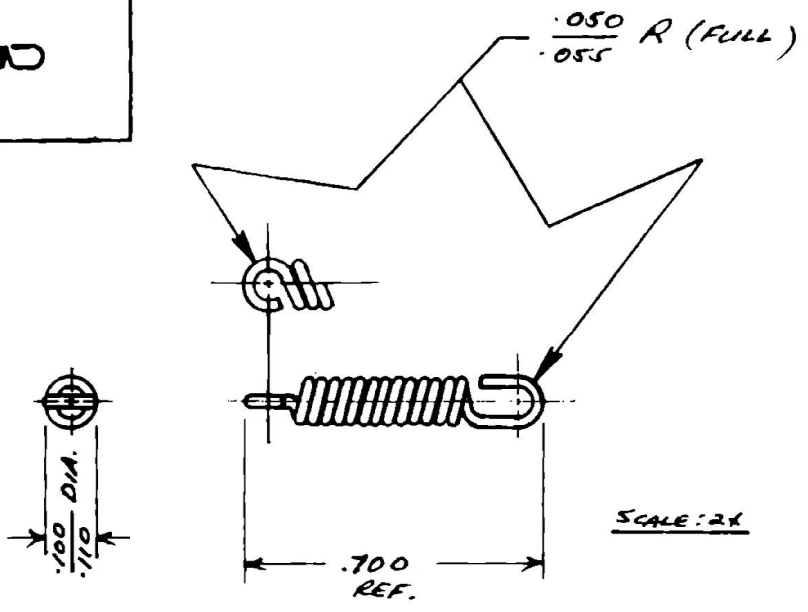
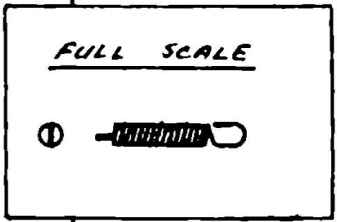


SCALE: 2X



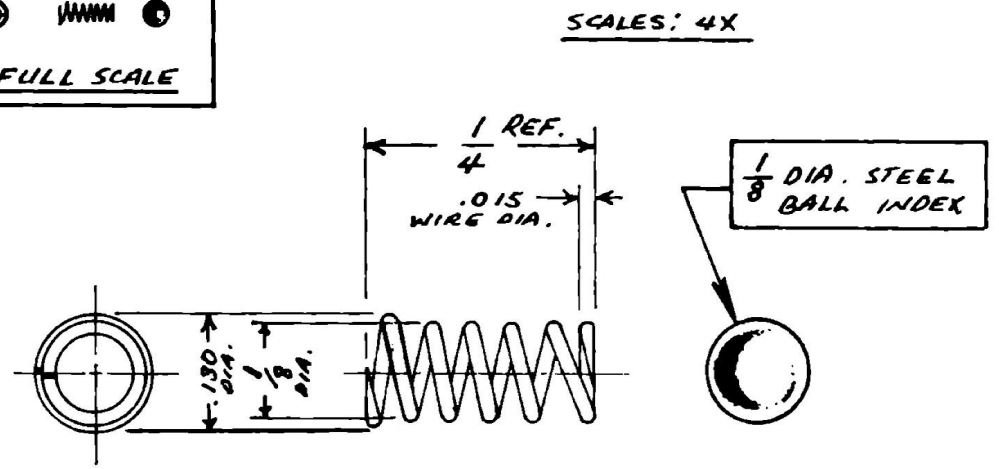
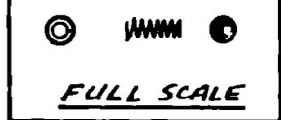
NOTE:  
 MAX. WIRE DIA. OF SPRING IS .020.\*

\* READY-MADE SPRING CAN BE IMPROVISED FROM TYPE WRITER PAPER BAIL EXTENSION TYPE SPRING. SEE WIRE DIA. SPECIFICATION.

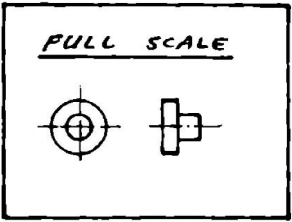


CONNECTOR SPRING

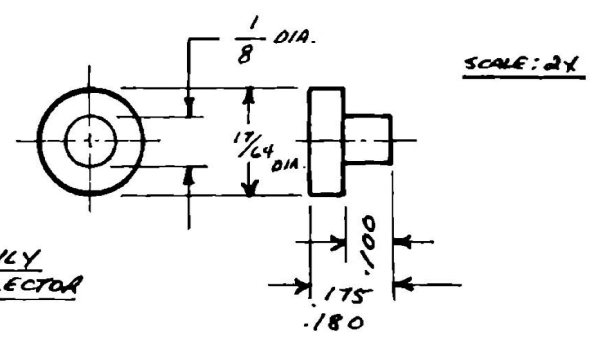
FIRE SELECTOR INDEX BALL & SPRING \*



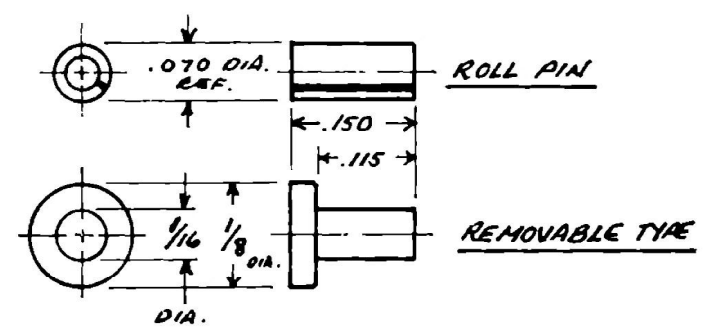
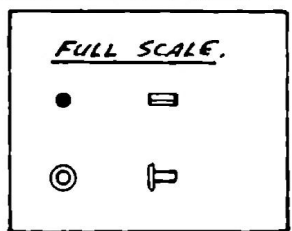
NOTE:  
 \* SPRING & STEEL BALL INDEX IS ADAPTABLE TO BOTH LEVER OR SLIDING TYPE FIRE SELECTOR. READY-MADE SPRING CAN BE IMPROVISED FROM ANY 1/8 DIA. COIL EXTRACTOR SPRING LIKE ON 1022.



TRIPPER ROLLER \*

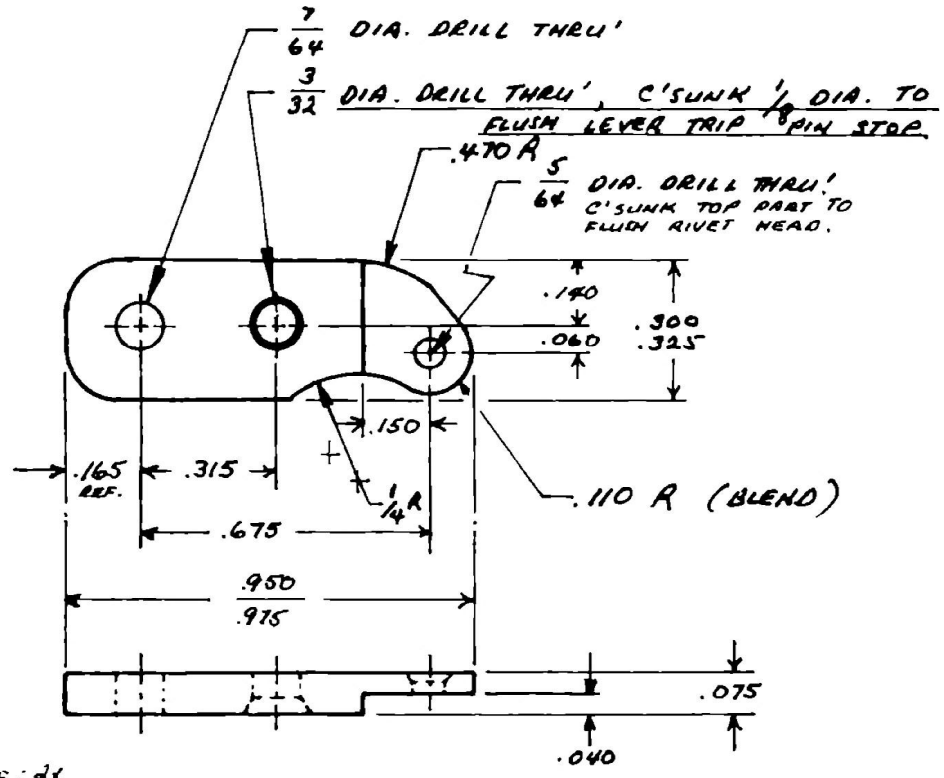
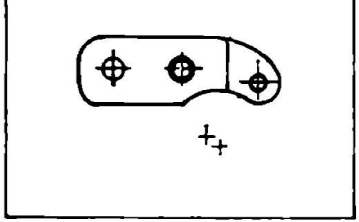


NOTE:  
 \* ROLLER IS REQUIRED ONLY IF LEVER TYPE FIRE SELECTOR IS INCORPORATED.

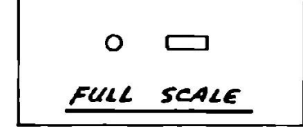


CONNECTOR SPRING SUPPORT BASE

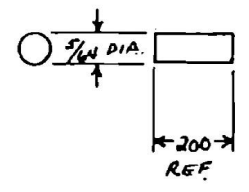
# SEAR LEVER



SCALE: 2X

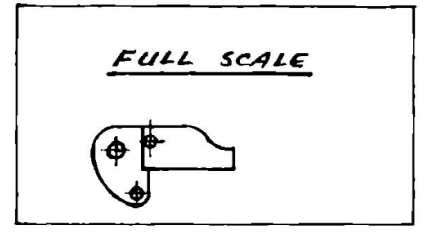


FULL SCALE

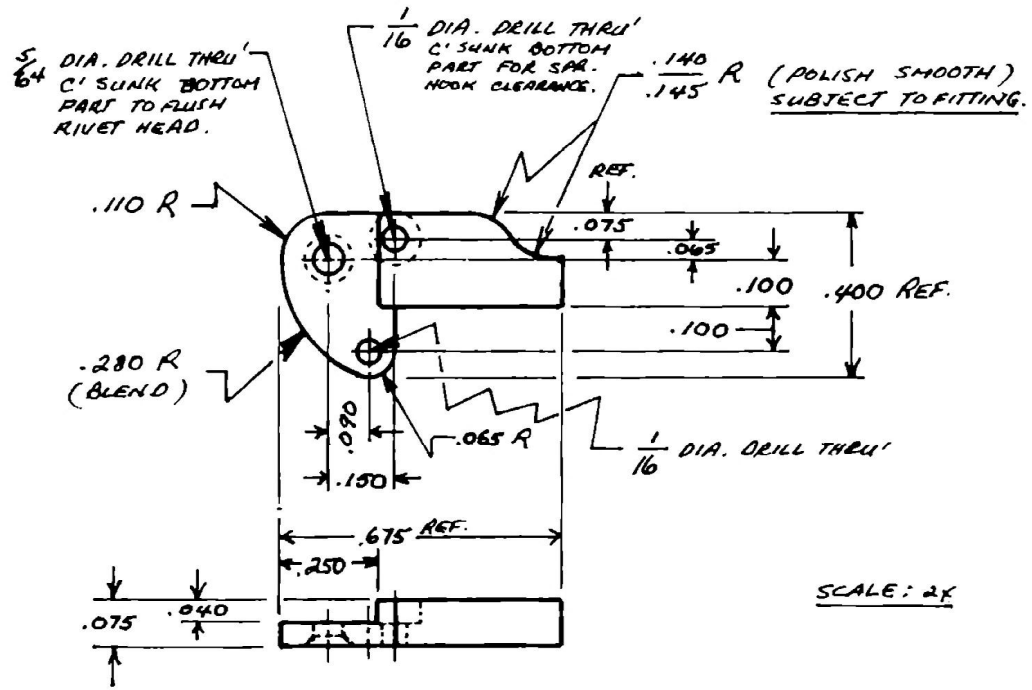


SCALE: 2X

# LEVER/CONNECTOR RIVET



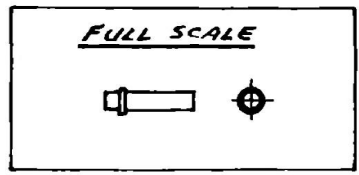
FULL SCALE



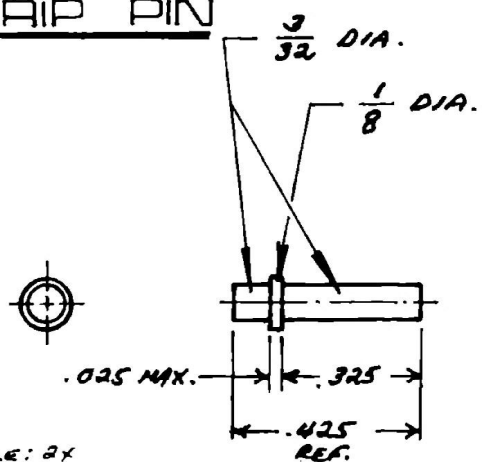
SCALE: 2X

# SEAR LEVER CONNECTOR

# SEAR LEVER TRIP PIN

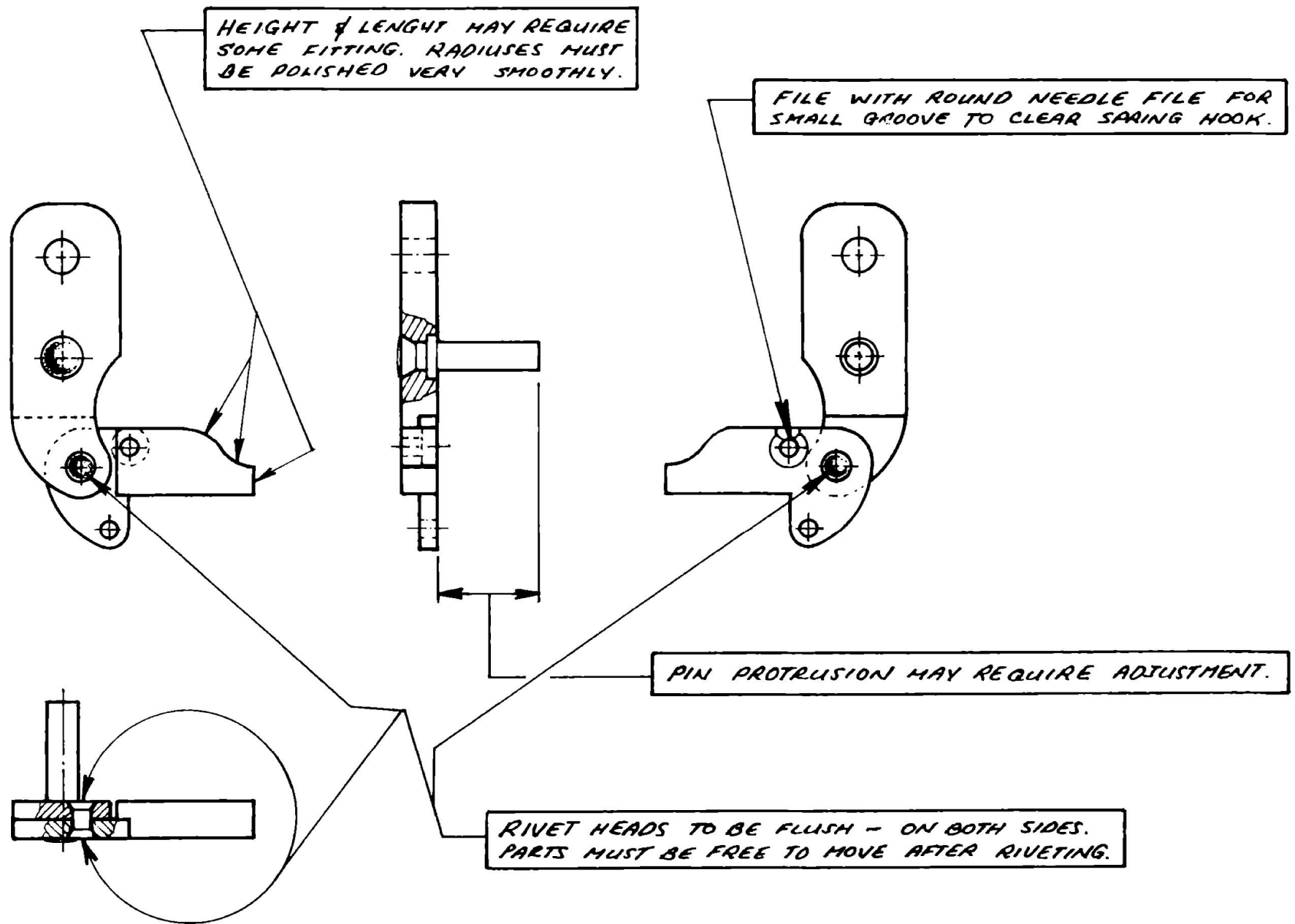


FULL SCALE



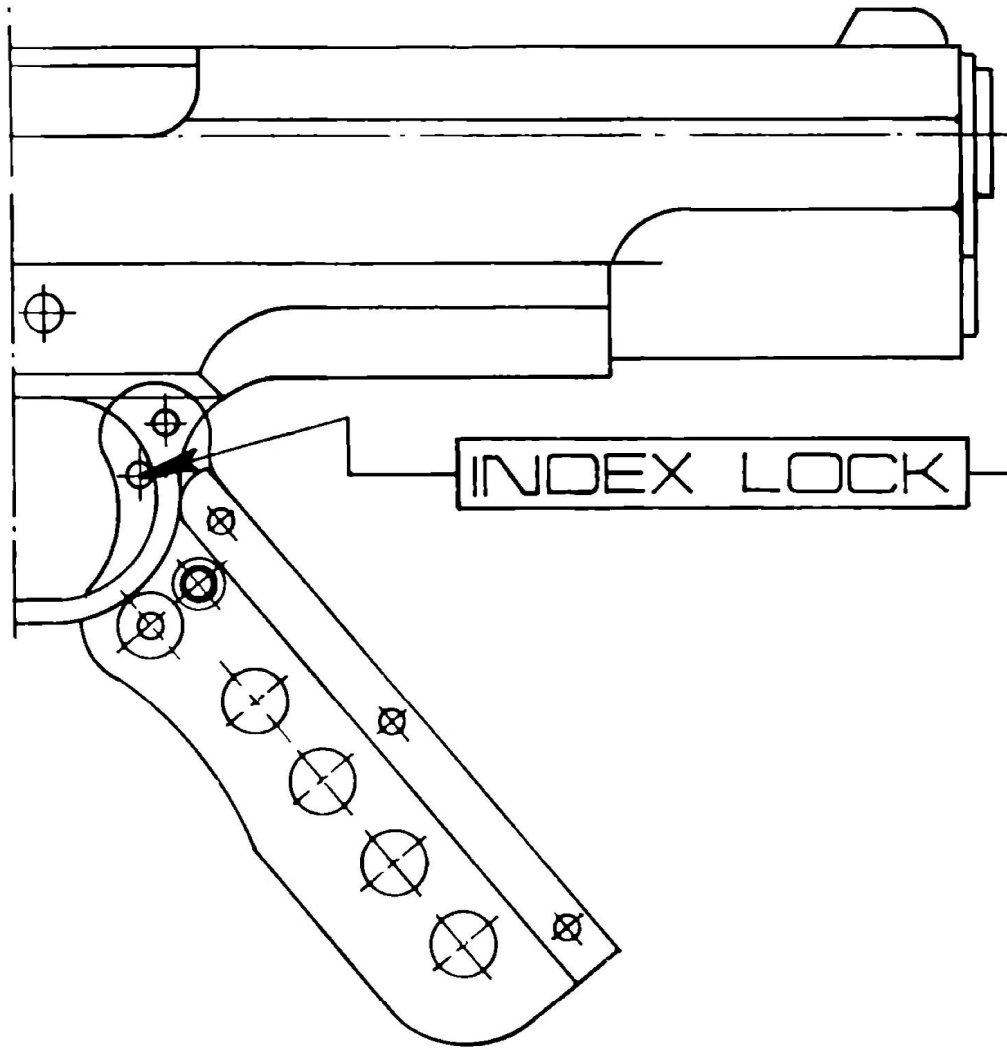
SCALE: 2X

# SEAR LEVER UNIT AFTER RIVETING

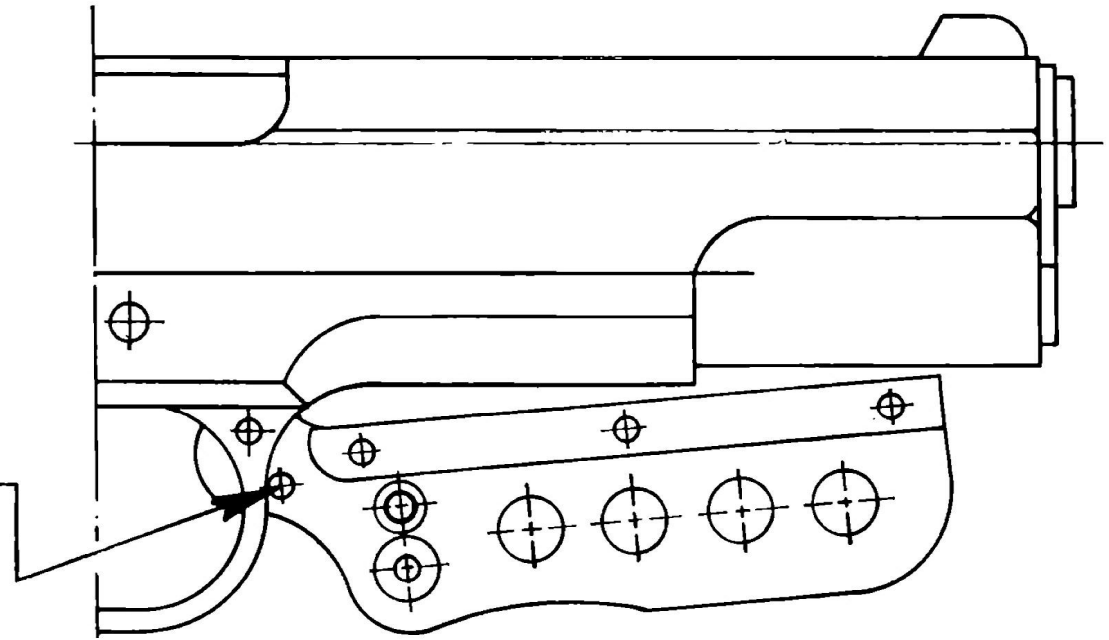




# DETACHABLE FOLDING FRONT GRIP DESIGN



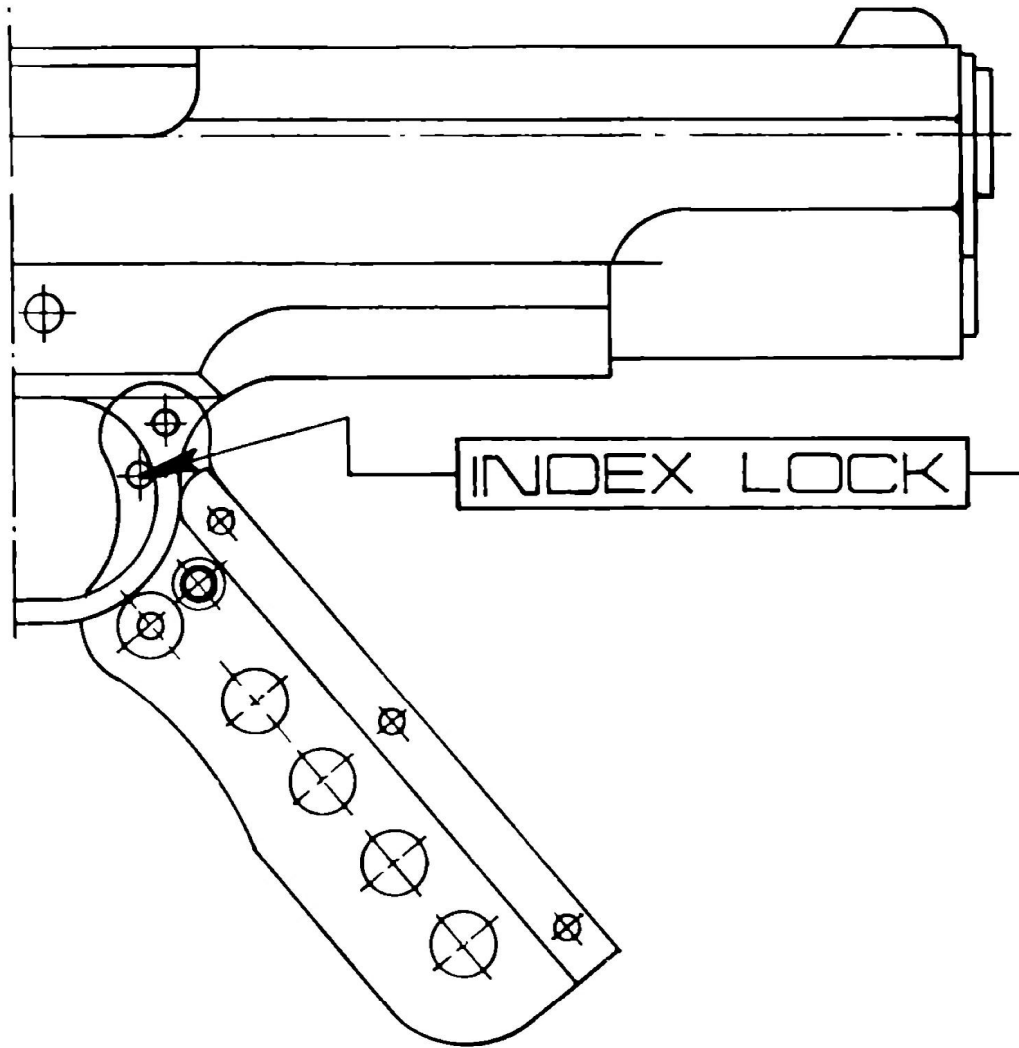
RETRACTED POSITION



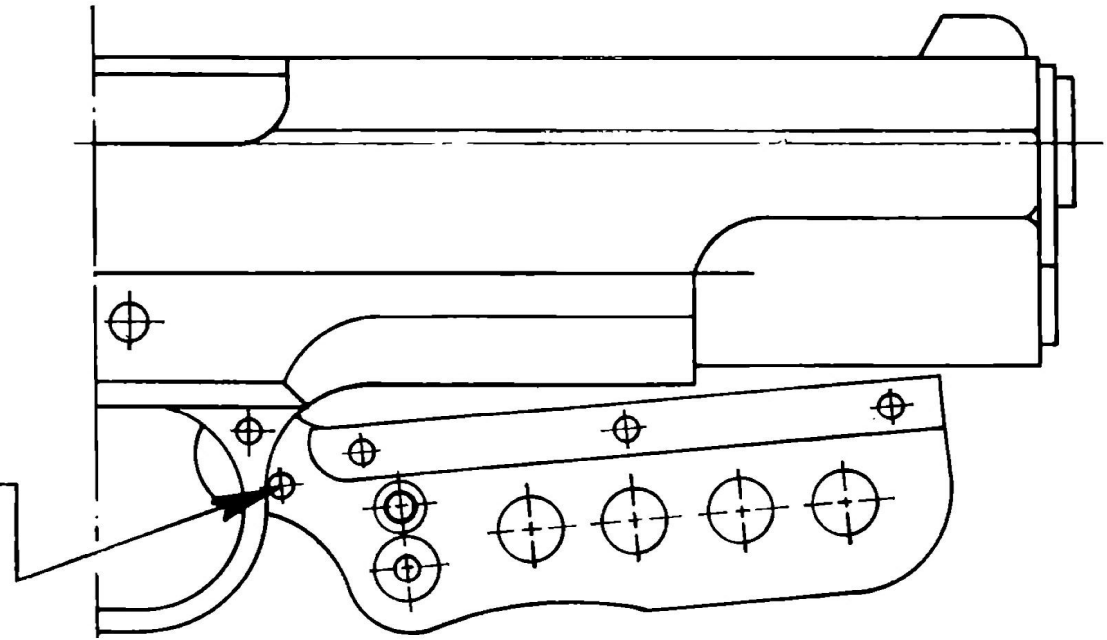
FOLDED POSITION

NOTE: RIGHT SIDE PLATE NOT SHOWN IN DIAGRAM.

# DETACHABLE FOLDING FRONT GRIP DESIGN



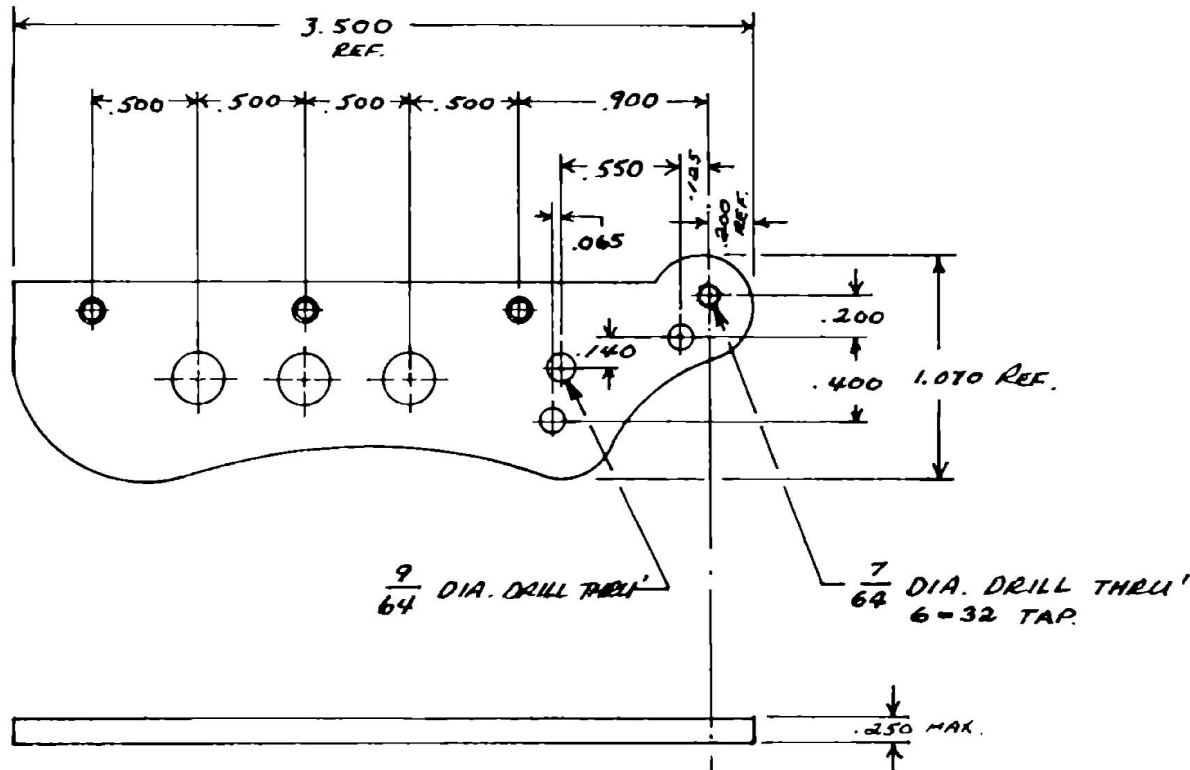
RETRACTED POSITION



FOLDED POSITION

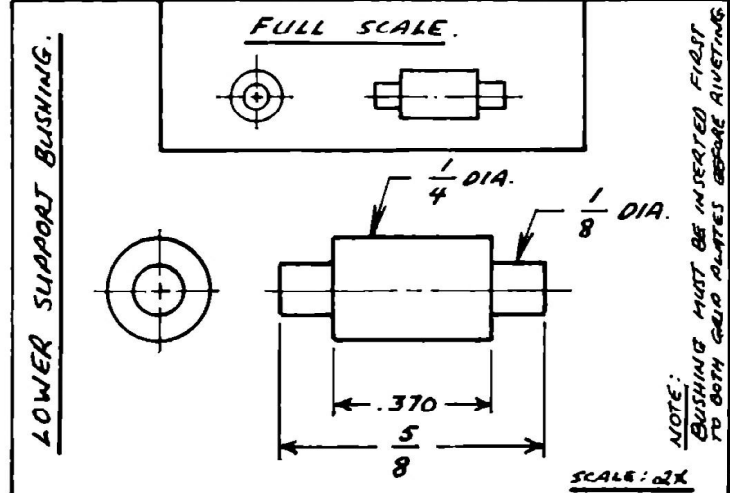
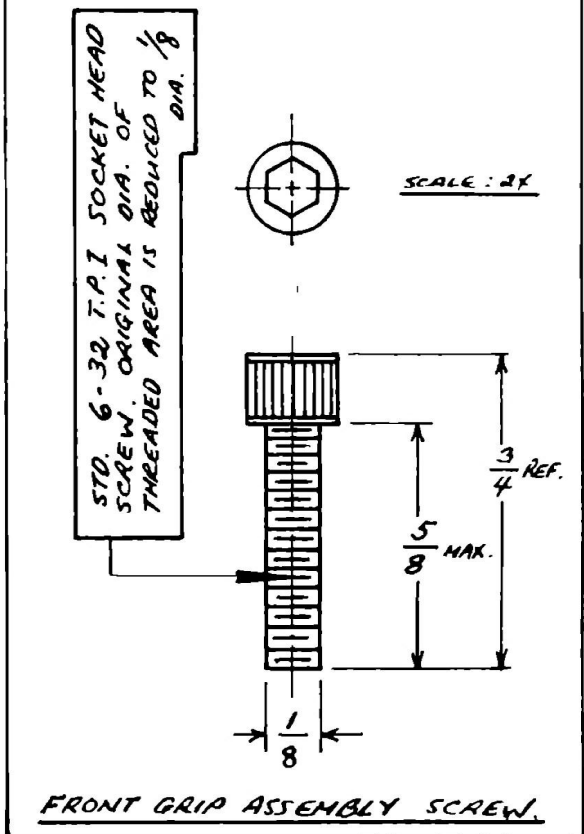
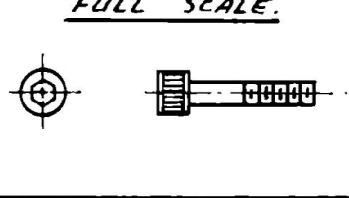
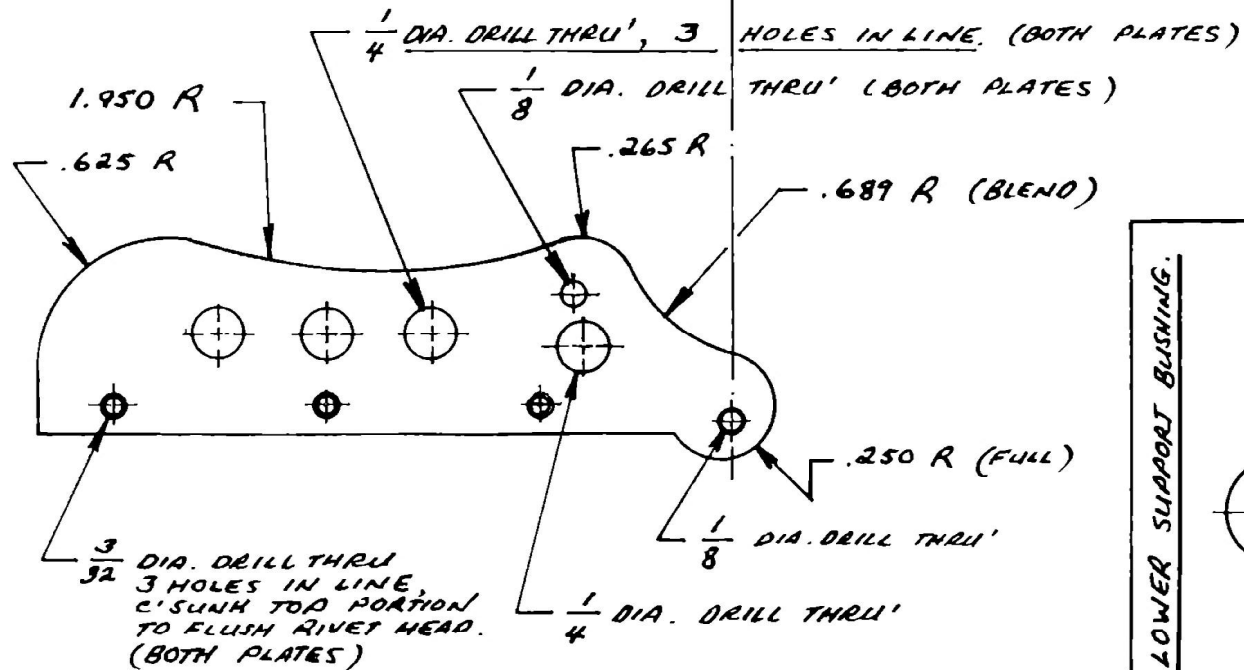
NOTE: RIGHT SIDE PLATE NOT SHOWN IN DIAGRAM.

LEFT



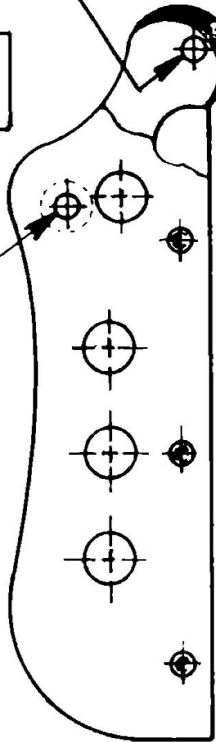
SCALE: FULL

RIGHT

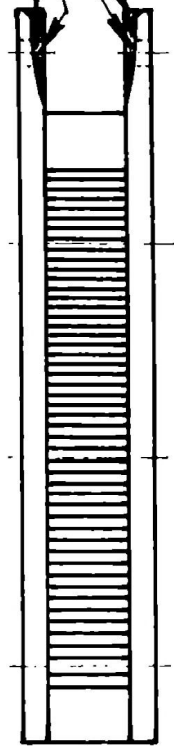


PIVOT HOLE

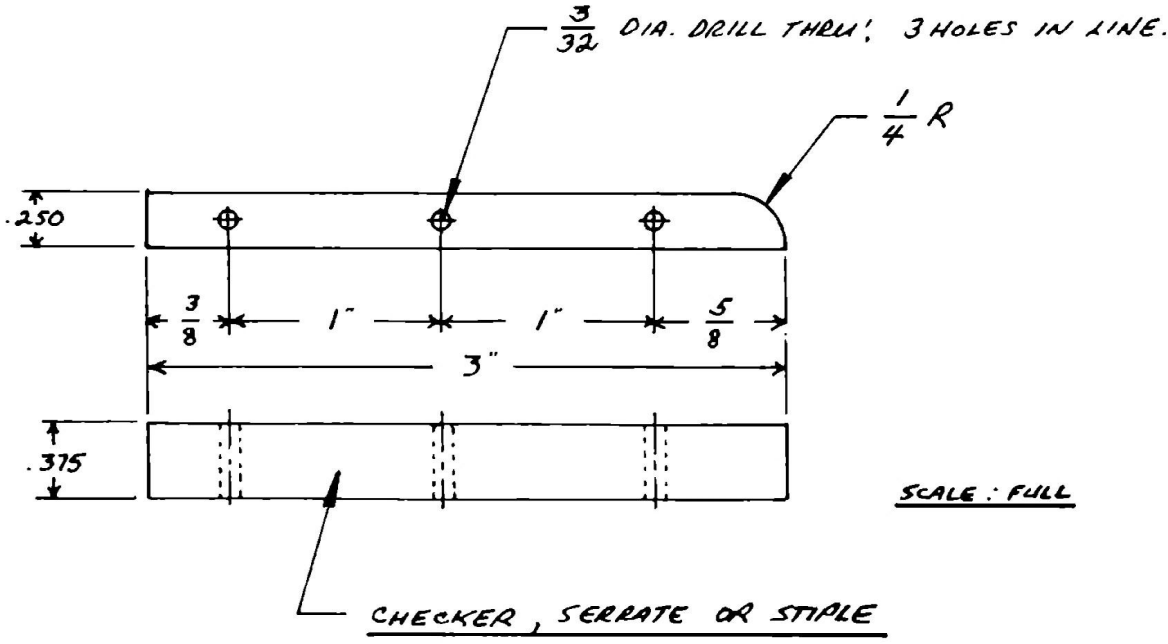
INSERT LOWER SUPPORT  
WASHING BETWEEN PLATES  
ASSEMBLY HOLES BEFORE RIVETING  
GRIP UNIT PERMANENTLY.



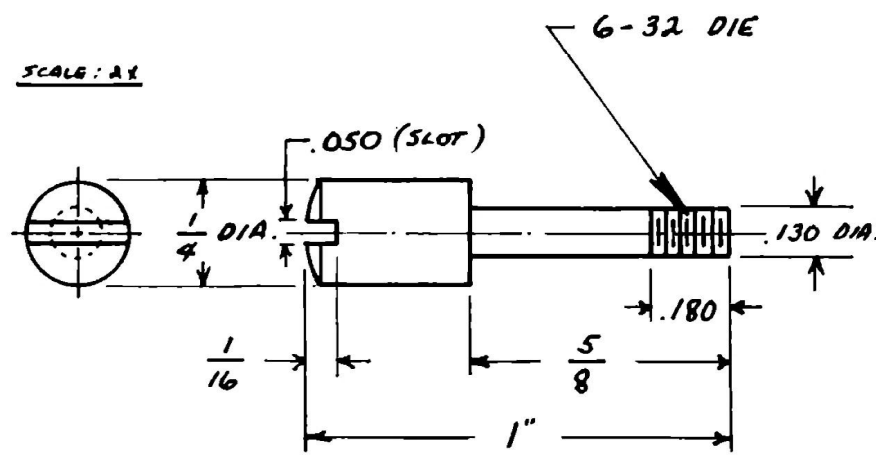
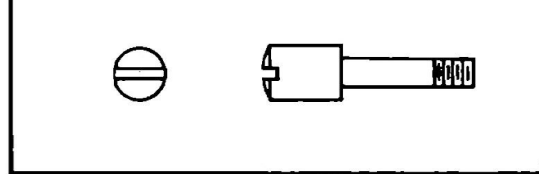
CHAMFER BOTH INSIDE RADIUS DURING FITTING  
OF FRONT GRIP TO RECEIVER CONTOUR UNTIL  
THE PIVOT HOLE LINES UP WITH THE ASSEMBLY  
HOLE ON THE TRIGGER GUARD. GRADUAL FILING  
IS REQUIRED TO PREVENT OVER CUTTING. CHAMFER  
MUST ALSO PERMIT GRIP TO BE FOLDED FORWARD.



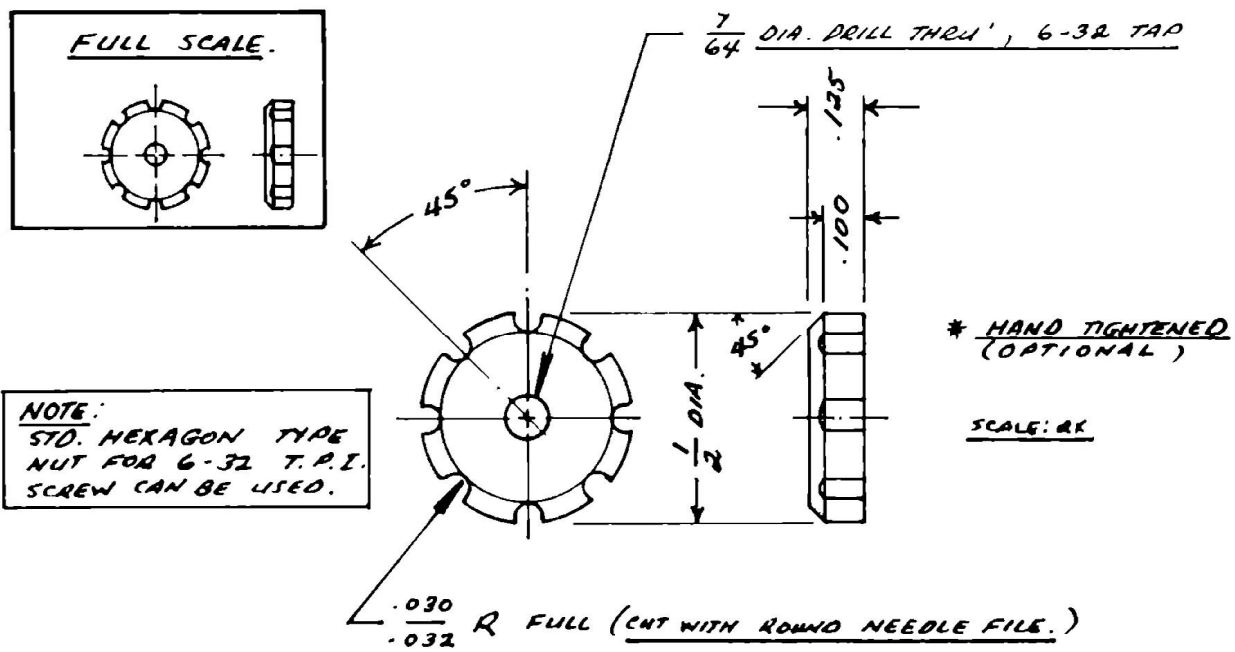
FITTING OF FRONT GRIP TO RECEIVER



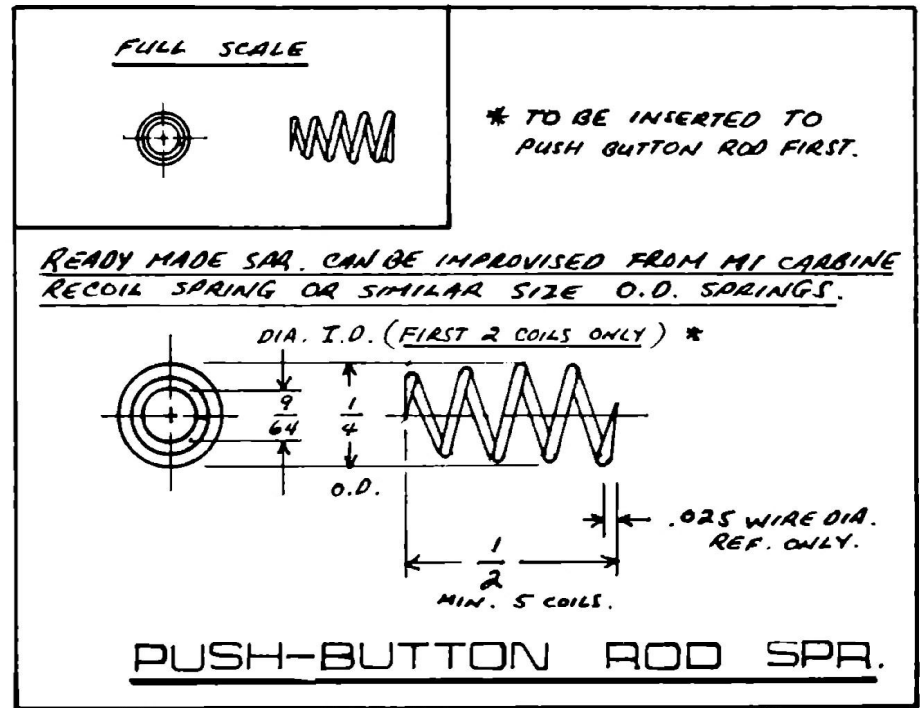
FRONT GRIP INSERT



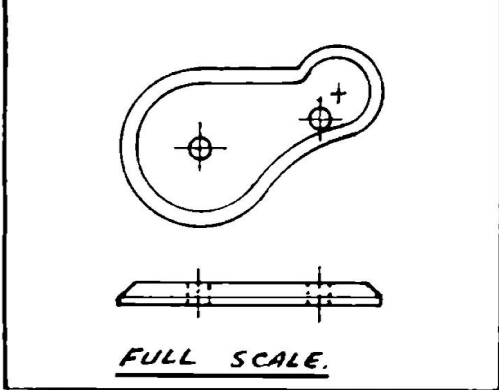
PUSH-BUTTON ROD



PUSH-BUTTON ROD COUNTERNUT \*

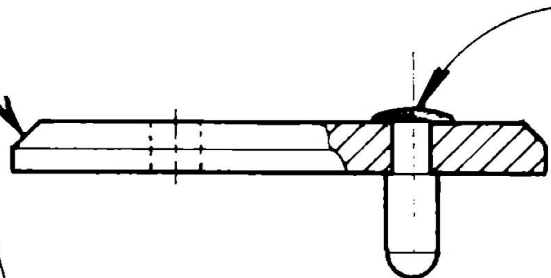


# AFTER RIVETING INDEX ROD

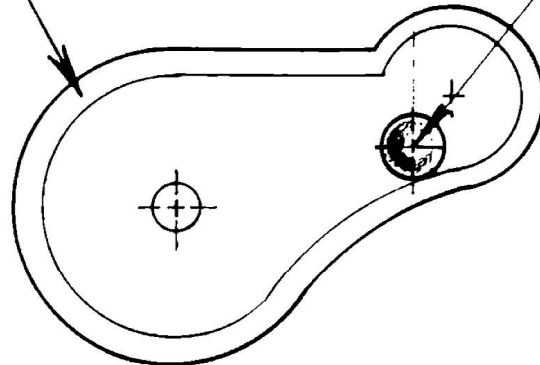
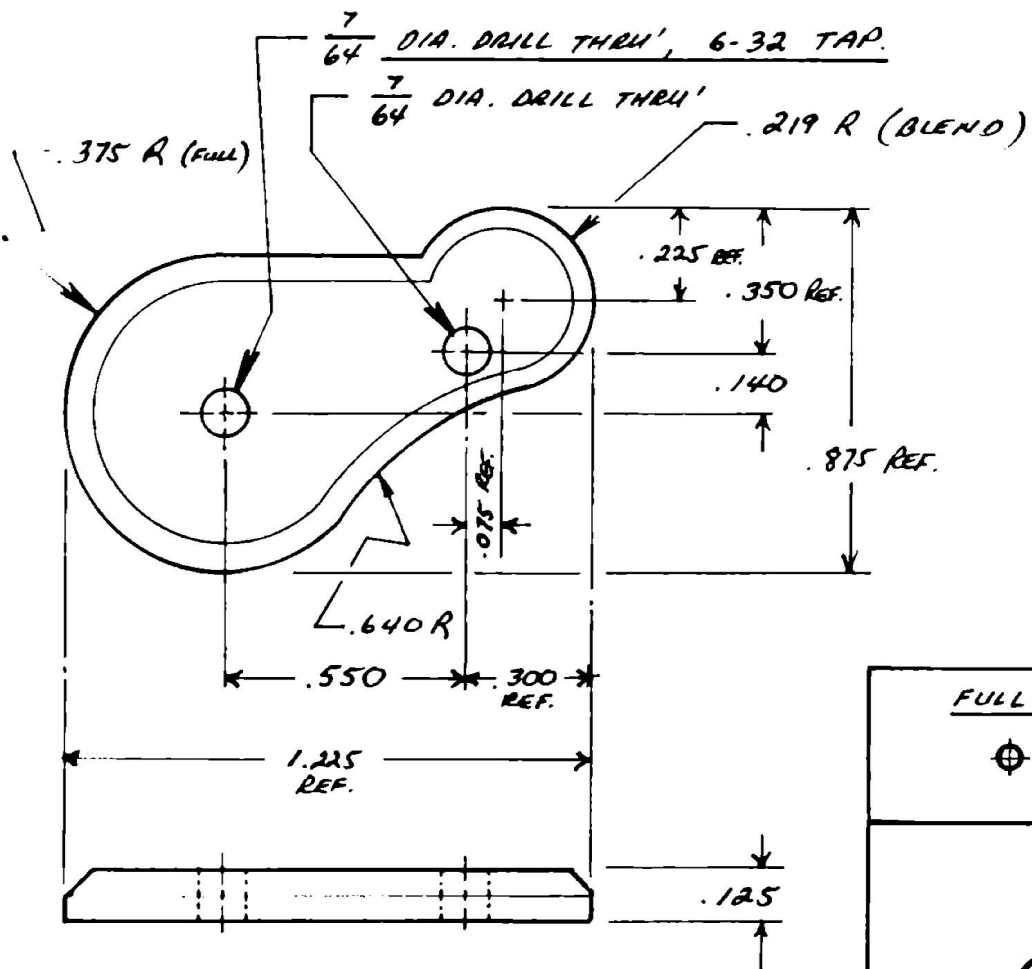


SCALE: 2X

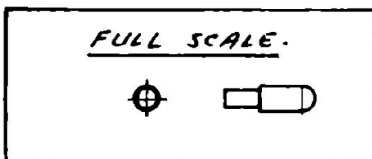
CHAMFER AROUND PLATE TO BLEND.



SLIGHT PROTRUSION OF RIVET HEAD IS ACCEPTABLE.

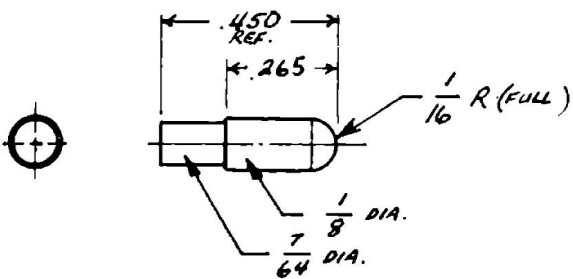


LOCKING PIECE PLATE

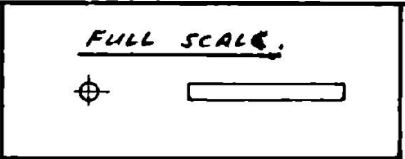


FULL SCALE.

SCALE: 2X

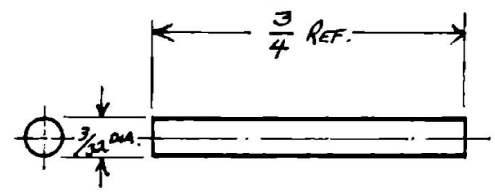


INDEX ROD



FULL SCALE.

SCALE: 2X

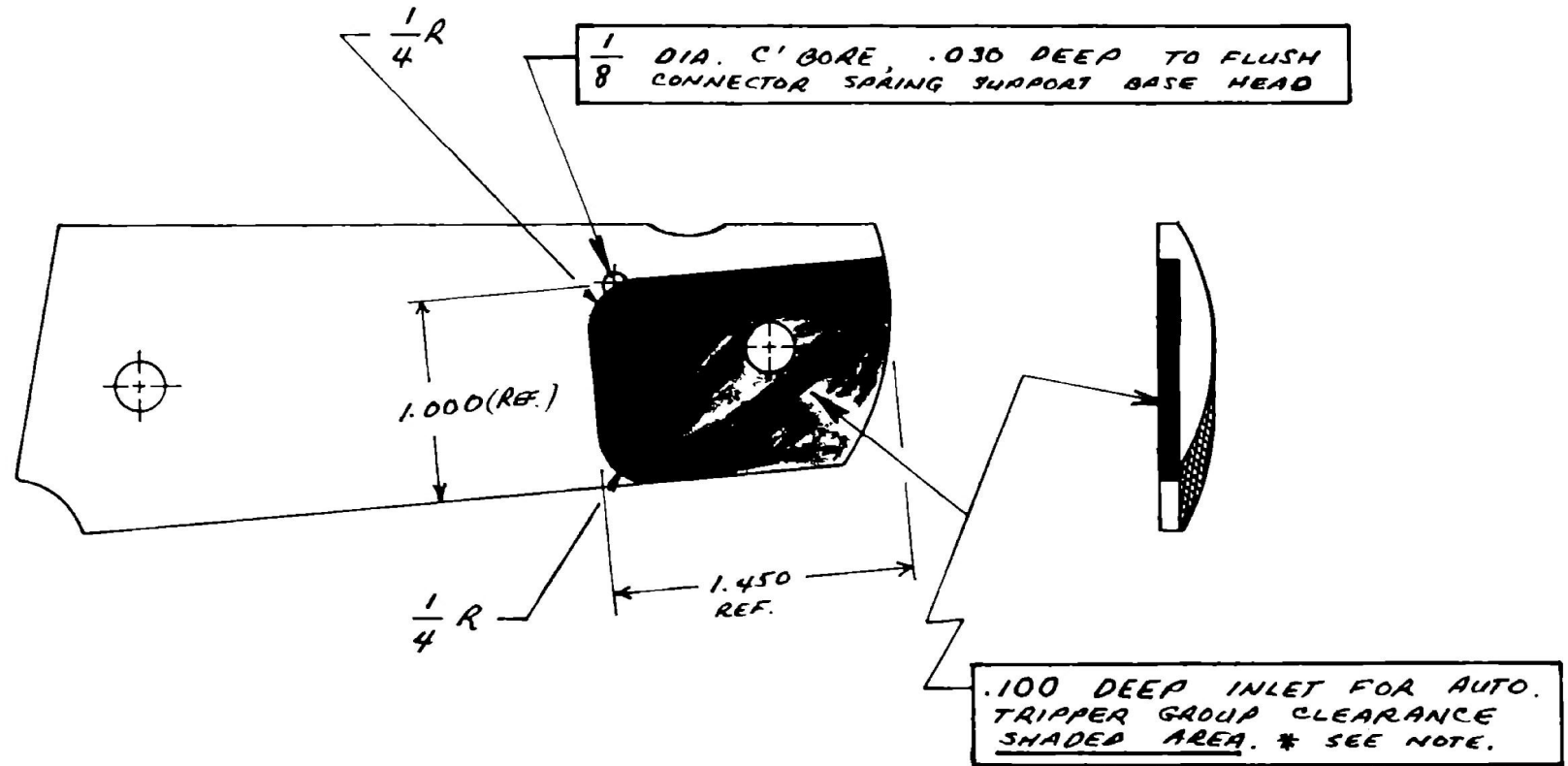


FRONT GRIP RIVET (3 REQ.)

# GRIP MODIFICATION - RIGHT SIDE

\* NOTE:

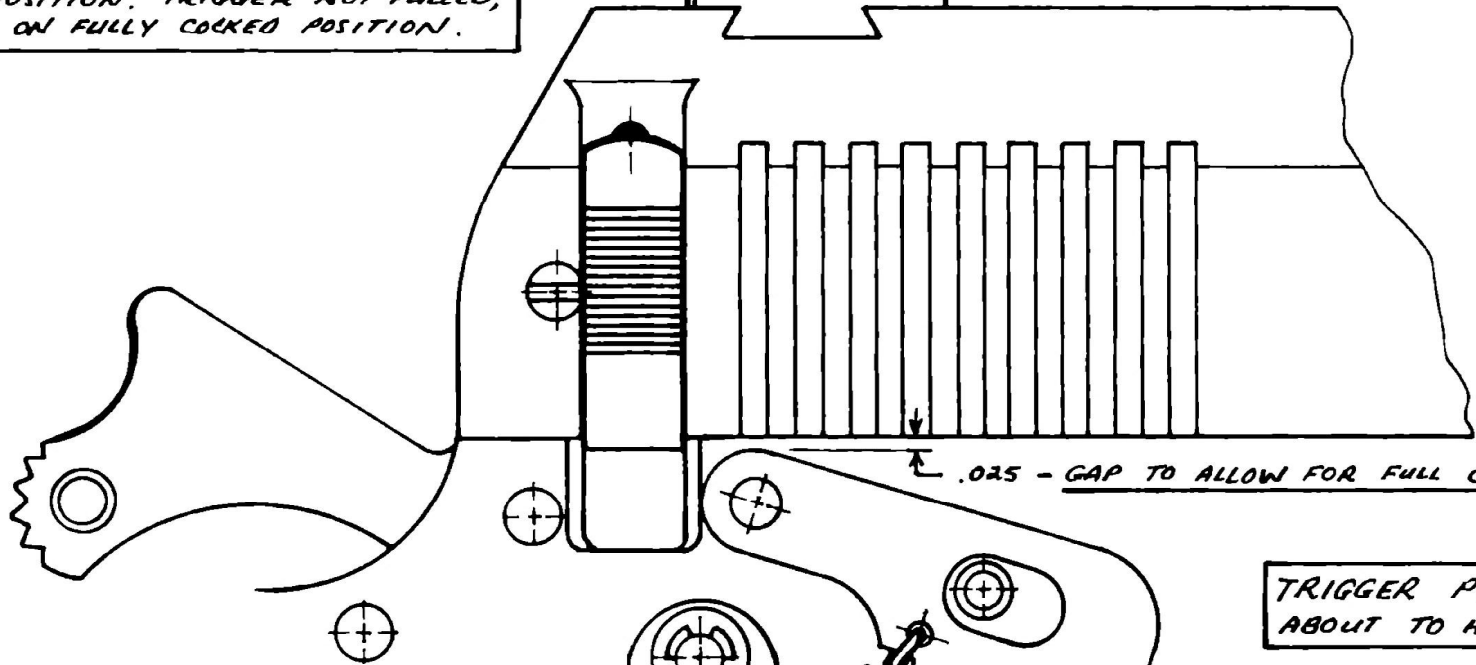
DEPTH OF INLETTING MUST PERMIT TRIPPER GROUP TO FUNCTION FREELY FOR RELIABLE & TROUBLE-FREE OPERATION WHEN ACTIVATED BY SELECTOR.



FULL SCALE:

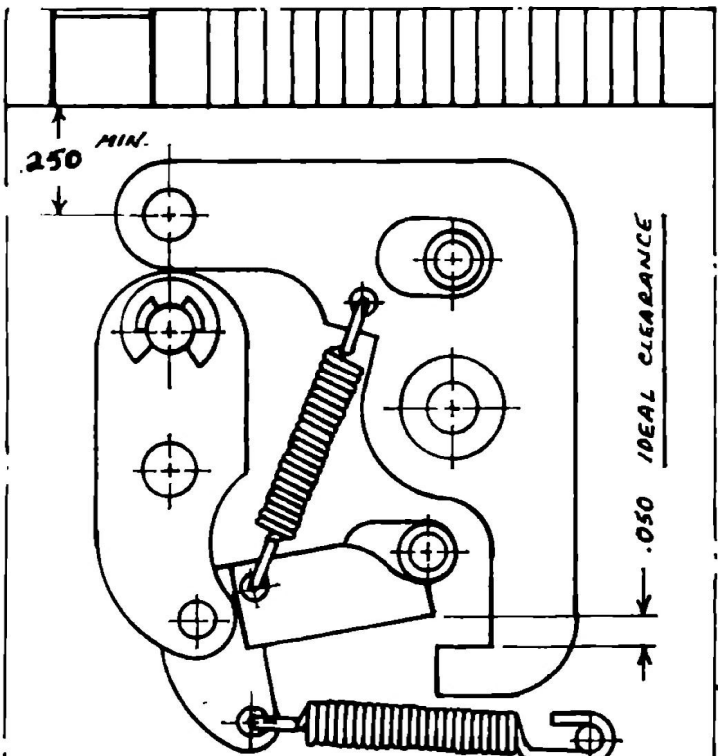
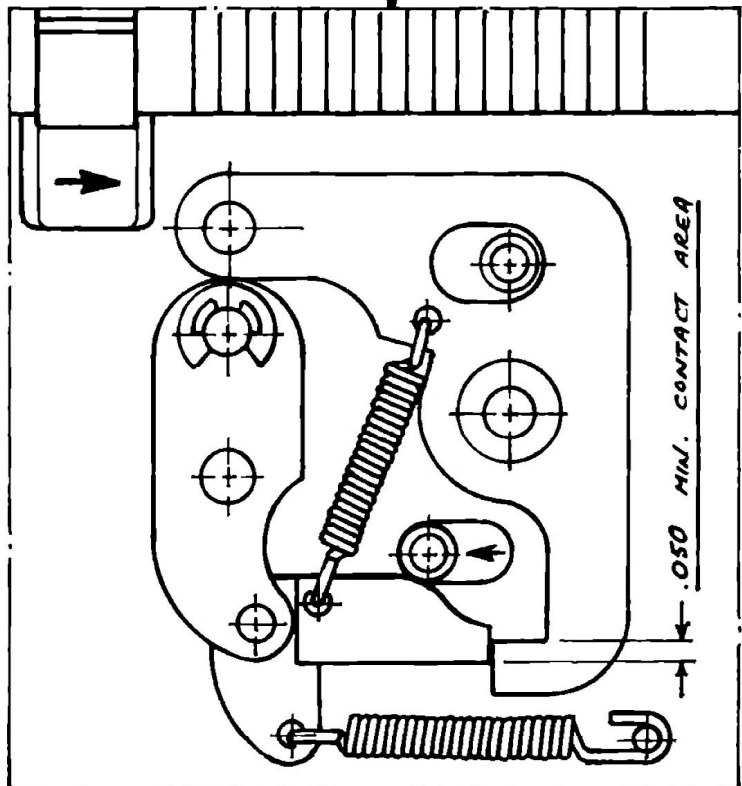
SELECTOR SET AT "FULL AUTO" DOWNWARD POSITION. TRIGGER NOT PULLED, HAMMER ON FULLY COCKED POSITION.

FINAL FITTING GUIDE



.025 - GAP TO ALLOW FOR FULL CLOSURE OF SLIDE.

TRIGGER PULLED, FIRE SELECTOR ABOUT TO HIT REAR OF TRIPPER.



TRIPPER GROUP ON REST POSITION. SELECTOR ON UPWARD SEMI-AUTO POSITION. TRIGGER NOT PULLED.



# **Warning**

**It is against the law to manufacture a firearm without an appropriate license from the federal government. There are also state and local laws prohibiting the possession of such weapons in many areas. Severe penalties are prescribed for violations of these laws. Be warned!**

**A Paladin Press Book  
Boulder, Colorado**