

LEWIS MACHINE GUN
(AIRPLANE TYPE)

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GENERAL DESCRIPTION

MODERN machine guns are classified by feeding means, operating means and cooling means. The Lewis Machine Gun is magazine-fed, gas-operated and air-cooled.

The magazine is a circular drum in which the cartridges are arranged radially, bullet ends toward the center. The magazine center has a deep spiral groove in which the bullet ends of the cartridges engage and by which they are controlled. The other parts of the magazine are rotated around the center during the operation of the gun, thus driving the spirally arranged column of cartridges down the helical groove of the magazine center until they are successively reached by the feed operating arm.

Motive power for the operation of the mechanism is obtained from gas pressure produced in the barrel by the exploding cartridge. This gas is taken through a hole near the muzzle of the barrel into a cylinder under the barrel, in which it drives a piston rearward. This directly produces the opening stroke of the action and, by winding the mainspring, stores the motive power to be used in the closing stroke.

Cooling in the Lewis Machine Gun, Airplane Type, is by air, but the conditions of its use make the positive air cooling device with which the Standard Type gun is equipped unnecessary.

The Airplane Type gun is moved through the air at the rate of from 90 to 140 miles per hour. This corre-

sponds to a continuous air-blast on the gun, whether it is firing or not, of from 132 to 308 feet per second. The gun is in action generally at great altitudes, where the cold is intense. Also there is no opportunity in aerial warfare for sustained machine gun fire and the firing consists of short, infrequent bursts.

WEIGHTS *and* MEASUREMENTS

The weights and measurements of the Lewis Machine Gun, Airplane Type, are as follows:

Weight of gun without mounting yoke, magazine or shell deflector	17 lbs. 4 oz.
Weight of mounting yoke	1 lb. 1 oz.
Weight of shell deflector	1 lb. 15 oz.
Weight of 97 round magazine (empty)	2 lbs. 14 oz.
Weight of 97 round magazine (filled)	8 lbs. 2 oz.
Length of gun with spade grip	41.80"
Length of barrel	26.056"
Distance between front sight and ring sight	17.50"
Distance between front sight and back sight	32.02"
Trigger pull	12 to 14 lbs.
Diameter of bore	0.30"
Rifling, number of grooves	4
Twist uniform—one turn in ten inches	
Weight—Bullet	150 gr.
Weight—Powder	48 to 50 gr.
Weight—Cartridge	About 395 gr.
Muzzle velocity	2700 ft. per second
Chamber pressure	About 51,000 lbs. to sq. in.

In the Lewis Machine Gun cartridges are under positive mechanical control at all times. The gun will function perfectly at any angle of elevation or depression and when turned on either side or upside down.

In this hand-book, instructions as to manual operation and description of the corresponding mechanical functioning of the gun are so combined as to associate

the effect with the cause, and to lead in the most direct way to actual familiarity with the gun.

To handle a machine gun properly, the operator must know it as he knows himself. He must know its parts, their functions, relations and adjustment, their characteristics and their tendencies so well that it is not necessary to stop to think about them.

He must be able to dismount and assemble the gun as naturally and easily as he would handle his rifle.

The slightest unusual symptom when the gun is firing must tell the operator at once not only what is the matter, but how to fix it. And he must fix it at once as naturally and subconsciously as he would extract a fired shell from his rifle. Recognition should be immediate and instinctive—correction, immediate and reflexive.

DISMOUNTING *and* STRIPPING

To dismount the gun, a cartridge and the spanner (which has a screwdriver end) are sufficient. For detailed stripping, drifts are required.

Warning. In stripping or assembling, gun parts must always be kept under operator's control. Care must be taken to hold parts so that springs, when released, can neither throw other parts nor throw themselves out of the operator's hands.

Bolt and rack should be forward when dismounting and stripping.

SPADE GRIP

To Remove. Press and hold in butt latch with point of bullet, give spade grip one-eighth turn to left and withdraw.

To Strip. (It is not advisable to strip spade grip.) Turn out spade grip tang screw, releasing spade grip tang handle from spade grip tang.

After removing spade grip hold back trigger, pull back guard far enough to permit rear end of gear casing to swing down until it hangs at such an angle that the receiver locking pin moves freely. Then slide guard forward gently against gear so as to use guard as handle for receiver in further dismounting.

FEED COVER

To Remove. Press both thumbs against rear end of receiver and pull feed cover rearward with fingers until its lugs clear their retaining surfaces on the receiver. Then lift feed cover off.

To Strip. Press the stud on the stop and rebound pawls spring out of its seating in the transverse rib by pressing with the point of a bullet introduced through the channel and hole from the opposite side of the rib. When spring is removed lift stop pawl and rebound pawl off their studs. Press stud of cartridge guide down and slide it out of its seating.

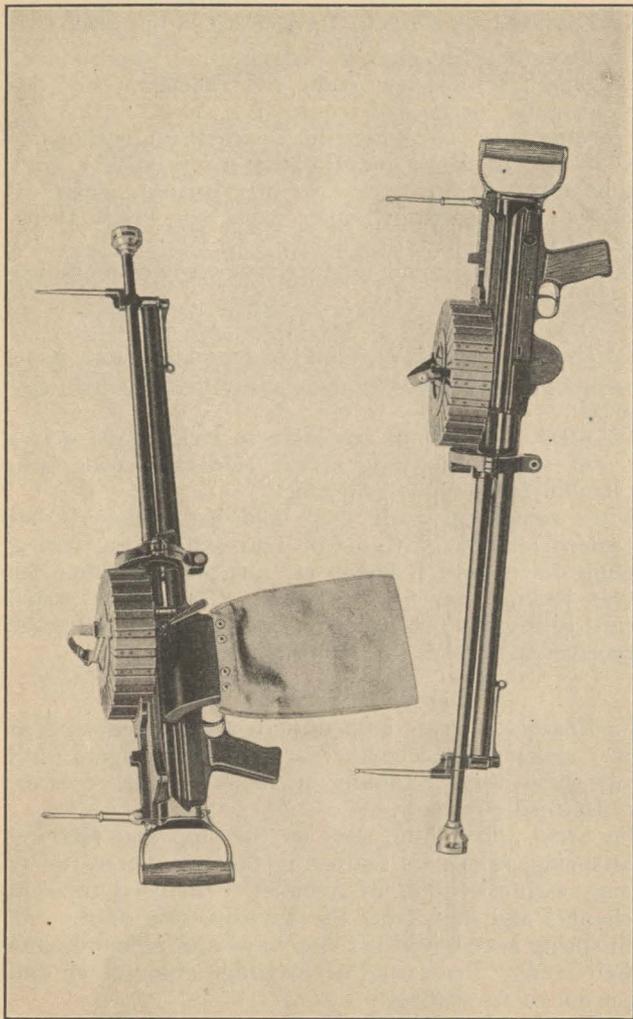


PLATE II—VIEW SHOWING RIGHT AND LEFT SIDES OF GUN

FEED OPERATING ARM

To Remove. Swing feed operating arm forward to right around magazine post until front edge of feed operating arm clears its cut in receiver. Slide feed operating arm up magazine post against key. Then swing feed operating arm back until key way is in line with key. Then lift feed operating arm off magazine post.

To Strip. Lift feed pawl spring and feed pawl off their posts.

CHARGING HANDLE

To Remove. Draw back until rear end of rack reaches rear of receiver and pull charging handle out to side.

PISTON AND RACK AND BOLT

To Remove. After rear end of gear casing is released and charging handle is removed as above, draw the rack (carrying bolt on striker post) and piston back entirely out of receiver. Lift bolt off striker post.

To Strip Piston and Rack. To remove striker, drive out striker fixing pin. It is not advisable to separate piston from rack. To do so, drive out piston connecting pin, unscrew piston from rack.

To Strip Bolt. Unscrew and remove feed operating stud. To remove either extractor, lift hook of extractor with point of bullet until stud on shank of extractor is clear of its recess in bolt. Then pull extractor forward out of its slot.

RECEIVER

To Remove. Push receiver locking pin to the rear with point of bullet until it clears its hole in the locking piece. Turn receiver off barrel (right-handed thread), using guard as handle.

GEAR CASING

(NOTE.—The Airplane Type gun is equipped with improved gear casing, which has a longitudinal groove in the back of its hook at the front end. This groove is designed to clear the receiver locking pin, when the gear case is swung down, enough to permit removal and insertion of gear assembled. It permits changing gear and mainspring without removing gear casing.)

To Remove. Push receiver locking pin forward out of receiver and unhook gear casing from the gear case hinge pin.

To Strip. Press up gear stop with point of bullet and allow mainspring to unwind. Unscrew collet pin and shake out gear. Press through the gear against the mainspring collet with point of bullet so as to force out mainspring casing. The mainspring collet may be removed from the mainspring casing with the point of a bullet. Mainspring must not be taken out of mainspring casing except when new mainspring is to be put in.

GUARD

To Remove. Hold back trigger and pull guard off to the rear.

To Strip. Punch out trigger pin and sear pin. Pull back trigger and lift out trigger and sear.

EJECTOR

Pry up rear end of ejector cover with point of bullet and draw out. Insert point of bullet in hole in receiver for ejector hub, so as to raise rear end of ejector out of recess, and lift out with fingers.

GAS REGULATOR CUP

Lift end of gas regulator key with point of bullet until it clears gas cylinder casing. Unscrew and remove gas regulator cup.

BARREL RETAINING NUT

Unscrew the barrel retaining nut from locking piece with spanner and slide barrel retaining nut forward on barrel.

LOCKING PIECE

Slide locking piece off barrel to rear.

GAS CYLINDER

Slide gas cylinder casing off gas cylinder to the rear. Unscrew and remove the gas cylinder, using the piston and rack as a wrench (the cross section of the rack permits this).

RECOIL CHECK

Unscrew recoil check with spanner (thread is left-handed).

GAS CHAMBER GLAND

Turn out of gas chamber with spanner (thread is left-handed).

GAS CHAMBER

When the gas chamber gland comes out of the gas chamber the gas chamber is free and may be slipped forward off barrel, followed by barrel retaining nut.

BARREL GROUP (3) AND RACK AND PISTON GROUP (8)

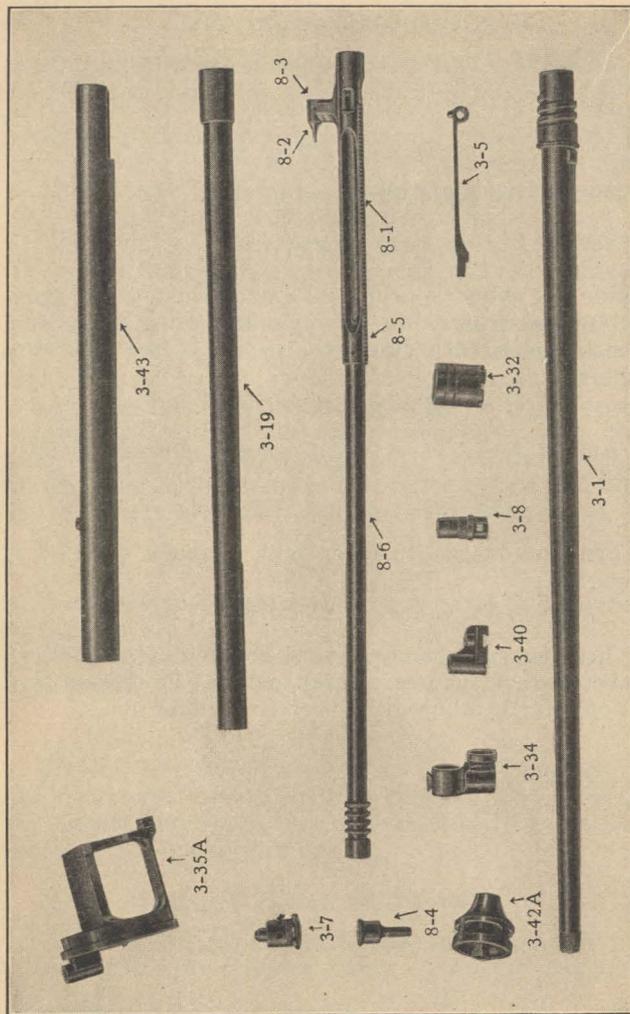


PLATE III—GUN PARTS. BARREL GROUP AND PISTON AND RACK GROUP

- 3-1 Barrel
- 3-5 Gas Regulator Key
- 3-7 Gas Chamber Gland
- 3-8 Gas Regulator Cup
- 3-19 Gas Cylinder
- 3-32 Barrel Retaining Nut
- 3-34 Gas Chamber
- 3-35A Locking Piece (assembled)
- 3-36 Rear Sight Base
- 3-37 Rear Sight Base Rivet
- 3-38 Sight Retaining Spring
- 3-40 Front Sight Base
- 3-41 Front Sight Base Screw
- 3-42A Recoil Check (assembled)
- 3-43 Gas Cylinder Casing

- 8-1 Rack
- 8-2 Striker
- 8-3 Striker Fixing Pin
- 8-4 Charging Handle
- 8-5 Piston Connecting Pin
- 8-6 Piston

PLATE IV

FEED MECHANISM GROUP (6 AND 7) BOLT (4)

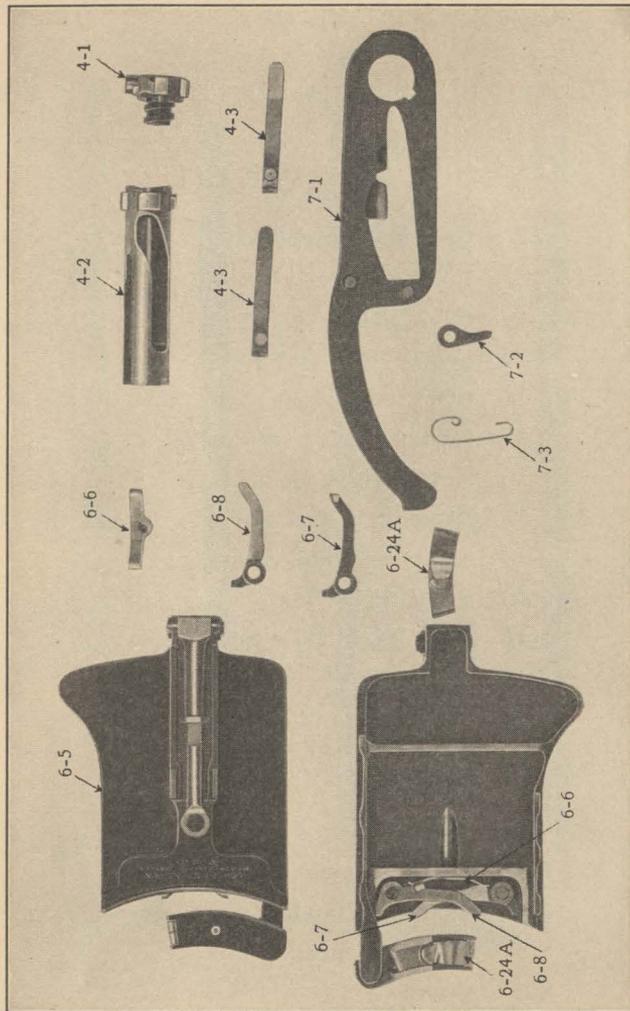


PLATE IV—GUN PARTS. FEED MECHANISM, BOLT AND EXTRACTORS.

- 6-1 Back Sight Axis Pin
- 6-2 Back Sight Axis Pin Washer
- 6-3 Back Sight Axis Pin Split Keeper
- 6-4 Back Sight Bed Spring
- 6-5 Feed Cover
- 6-6 Pawls Spring (Stop and Rebound)
- 6-7 Stop Pawl
- 6-8 Rebound Pawl
- 6-24A Cartridge Guide (assembled)
- 6-30 Back Sight Body
- 6-31 Back Sight Stem
- 6-32 Back Sight Stem Nut
- 7-1 Feed Operating Arm
- 7-2 Feed Pawl
- 7-3 Feed Pawl Spring
- 7-4 Feed Pawl Retaining Pin
- 7-5A Feed Operating Arm (assembled)
- 4-1 Feed Operating Stud
- 4-2 Bolt
- 4-3 Extractor
- 4-4A Bolt (assembled)

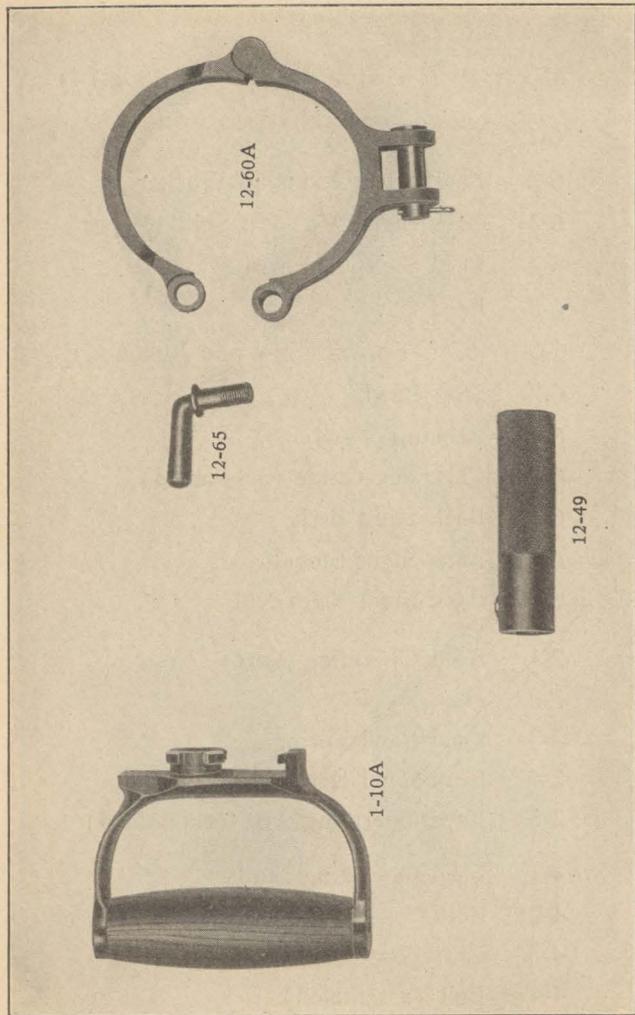


PLATE V—SPADE GRIP, WITH MOUNTING YOKE

PLATE V

SPADE GRIP (1) WITH MOUNTING YOKE

- 1-10A Spade Grip (assembled)
- 12-65 Mounting Yoke Clamp Key
- 12-60A Mounting Yoke (assembled)
- 12-49 Magazine Filling Handle

ASSEMBLING

The gun is assembled by reversing the operations just given for dismounting. When completely dismounted it is advisable to assemble in the following order:

1. Barrel group:
 - a. Barrel retaining nut on barrel.
 - b. Gas chamber on barrel.
 - c. Gas chamber gland.
 - d. Recoil check on barrel.
 - e. Gas cylinder and gas cylinder casing.
 - f. Locking piece on barrel and barrel retaining nut screwed in.
 - g. Gas regulator cup.
 - h. Gas regulator key.
2. Ejector.
3. Ejector cover.
4. Gear, gear casing and receiver locking pin.
 - a. Mainspring collet into mainspring.
 - b. Mainspring casing assembled into gear.
 - c. Gear into gear casing.
 - d. Collet pin turned in and gear wound up to hold it.
 - e. Gear casing hooked onto receiver and receiver locking pin slipped in to hold it.
5. Guard (merely slipping it on receiver and up against gear to act as handle).
6. Receiver and barrel (screw receiver onto barrel).
7. Feed operating arm (pressed fully over to left). Make sure front edge is engaged under projection in receiver.
8. Piston and rack with bolt on striker post. (In pushing bolt and rack into receiver, apply pressure on bolt only.)
9. Charging handle. Be sure it is fully inserted. To test, push it forward and then try to pull it out.

10. Feed cover.
11. Lock gear by raising gear casing and pushing guard forward to engage it.
12. Replace spade grip.

Care should be taken:

(1) To avoid damaging the threads of the threaded parts, especially the gas chamber gland, gas cylinder, recoil check and barrel retaining nut, or allowing sand, dust or grit to get into threads.

(2) To see that the gas chamber is correctly located on barrel. The barrel loop of the gas chamber is tapered and its smallest diameter must be toward the front end of the barrel. The hole in the gas chamber must be centered over the gas port in the barrel so that when the gas chamber gland is put in it will center properly in gas port in barrel.

(3) In replacing feed cover, that the feed operating arm is over to the right.

(4) That the feed operating stud is screwed into the bolt as far as it will go and that the cam slot in the bolt is slipped over the striker before putting piston and bolt in gun.

(5) That when replacing bolt the feed operating arm is over to the left so that the feed operating stud will engage its groove.

(6) That after inserting bolt, piston and charging handle, the charging handle is brought to the extreme forward end of its stroke before the gear casing is swung up into place and the gear engaged with the rack.

(7) That the tension of the mainspring is correct—from ten to fourteen pounds. If the tension is too low the rack will strike the spade grip tang too hard in opening and the action may fail to close or the gun may misfire. If it is too high the gun will fire too fast; if much too high the gun will not open far enough to feed the next cartridge.

TO ALTER MAINSPRING TENSION

Remove spade grip and draw guard back enough to disengage gear casing.

To increase tension hold up gear casing so as to keep gear engaged with rack and draw back charging handle. Draw down gear casing so that gear does not engage rack and push charging handle fully forward. Raise gear casing again, slide guard forward to engage it, and replace spade grip.

To decrease tension hold gear casing down so that gear is not engaged with rack and draw back charging handle. Then raise gear casing, engage gear with rack and slide guard forward to engage gear casing, which will cause the charging handle to snap forward and the action to close.

The average working tension of the mainspring of the Lewis Machine Gun, Airplane Type, is from ten to fourteen pounds. To weigh it, engage hook of spring balance (supplied with gun) with charging handle; hold back trigger; draw back charging handle by means of spring balance so that it is just started to the rear. Hold spring balance so as to keep charging handle at this point, and record reading. (If tension of spring is weighed when charging handle is at extreme rear and rear is engaged it should not exceed 22 pounds.)

When the gun is not about to be fired the mainspring should not be in tension. To obtain 12 pound spring tension in the dark or without weighing, manipulate gear stop and gear so that there is no tension on spring but spring is wound up just enough so that collet pin will stay in flush. Then push charging handle fully forward, hold up gear casing to engage gear with rack and draw charging handle fully to rear, so that rear end of feed operating stud is even with rear end of receiver. Drop gear casing, push charging handle fully forward, raise gear casing so gear engages rack, push guard forward to lock gear casing and replace spade grip.

OPERATION

TO FILL MAGAZINE WITH LOADING HANDLE

Turn magazine upside down.

Insert loading handle in socket in magazine center. This holds magazine latch out of engagement and permits rotating magazine center independently of the rest of the magazine.

Spin magazine on loading handle to see that it is not distorted. Inspection of magazine and cartridges should always precede filling of magazine.

Rotate the magazine center and at the same time place cartridges successively between the separator pins so that their bullet ends will pass into the spiral groove in the magazine center. Do not leave an empty space between cartridges, as in firing this would cause a stoppage. The magazine holds ninety-seven cartridges, and when it is filled remove loading handle and turn magazine center back until it snaps. This locks magazine.

TO FILL MAGAZINE WITH LOADING TOOL

Attach loading tool to table or other base.

Turn magazine upside down.

Slip hole in magazine center up over magazine post under loading tool until magazine latch engages post.

Spin magazine to see that it rotates freely.

Place a clip full of cartridges in top of chute and insert clip in clip ejector (at right), bullet ends to left (toward magazine center).

Press cartridges down, stripping them out of clips into chute by putting pressure close to heads of cartridges so not to depress points.

If cartridges have not been replaced in clips after inspection, drop cartridges, bullet ends to left (toward magazine center) into chute.

Repeat often enough to keep chute full of cartridges.

Rotate magazine from left to right (clockwise).

Cartridges will feed into magazine.

If a space in magazine is skipped, rotate magazine backward past vacant space and then rotate forward again.

When magazine is filled, unlatch and remove from post.

Turn back magazine center until it snaps. This locks magazine.

TO LOAD GUN

See that the charging handle is fully forward.

Pick up magazine by slipping the fingers of right hand, palm down, under the strap, the thumb on the thumb piece, place magazine on magazine post and press it down.

Rotate it very slightly in both directions, until the stop and rebound pawls engage serrations on magazine pan.

Draw back the charging handle fully so that it is engaged and held back. This draws back the piston and rack and performs by hand what the gas pressure of firing does. Drawing the rack teeth back over the gear teeth with which they are meshed rotates the gear and winds the mainspring during the entire opening movement. During the first 1 1/3 inches of rearward travel the striker post moves back through the longitudinal part of its cut in the bolt and merely draws back the point of the striker from the face of the bolt. The bolt itself remains in its locked position and does not move.

In the next two-thirds of an inch of rearward travel, the striker post, driven still further rearward in the bolt, strikes with its right side the cam surface in the right side of its slot in the bolt and causes the bolt to rotate from right to left, turning the locking lugs out of their recesses in the receiver.

As soon as the bolt is unlocked, the striker post

reaches the rear end of its cut in the bolt, and in its further travel carries the bolt directly back with it.

The top lug of the feed operating stud, traveling in the groove in the under side of the feed operating arm, cams the feed operating arm so that it swings across the top of the receiver from right to left.

The feed pawl, acting against one of the outer projections of the magazine pan, carries the magazine around sufficiently to drive the first cartridge down into the cartridge opening in the feed operating arm by the rotation of the magazine pan and separator pins around the stationary spirally grooved center.

At this point in the leftward travel of the feed operating arm, its cartridge opening (and in it the cartridge it has just received) commences to pass under the upward projecting arm of the feed cover which carries the cartridge guide, and this arm commences to control the cartridge as soon as it leaves the magazine.

Further leftward travel of the feed operating arm brings the cartridge under control of the cartridge guide and the downward pressure of its spring tension.

At this point the spring stud on the feed operating arm clears the stop pawl, which is then pressed forward by its spring and prevents further rotation of the magazine.

When the bolt strikes the rear end of the ejector it drives it into its slot, thus pivoting the ejector head out.

Toward the end of the rearward travel of the piston the lower surface of the rack at the rear of the cocking notch rides over the nose of the sear, temporarily depressing it against the tension of the sear spring, which immediately raises it again.

The rear end of the rack then strikes the spade grip tang, terminating the opening stroke.

The feed operating arm is now at the extreme left, the cartridge has been brought over the cartridge opening in the top of the receiver into which the cartridge

guide presses it, the rebound pawl presses against an exterior projection of the magazine so as to prevent backward rotation and the mainspring is fully wound up. Both pawls are now in.

The mainspring now rotates the gear, whose teeth, meshed with those of the rack, drive the rack forward a trifle till the nose of the sear engages with the cocking notch in the lower edge of the rack and suspends the operation.

The gun is now ready to fire.

TO FIRE

FULL AUTOMATIC FIRE

Press trigger and hold back. Gun will fire automatically as long as trigger is held back until magazine is empty. When trigger is released gun stops firing.

SEMI-AUTOMATIC FIRE

To fire single shots press trigger and release immediately. To release quickly enough for a single shot requires some practice. It is most easily done by alternately contracting and relaxing the whole hand, not merely the trigger finger. Bursts of any desired length may be fired by holding back the trigger the required period of time and releasing.

When the trigger is pressed the sear is drawn down out of engagement with the notch in the rack. The rack is driven forward by the pressure of the mainspring, which unwinds, and consequently rotates the gear, whose teeth are meshed with those of the rack. The striker post is at the rear end of the cam slot in the bolt. Its left side is pressing against the left side of the cam slot, but it now simply drives the bolt forward without rotating it because the bolt is prevented from rotation by the cruciform shape of the bolt-way in the receiver at this point.

The feed operating stud, carried forward with the bolt and traveling forward in its cut in the underside of the feed operating arm, cams the feed operating arm to the right.

The feed pawl slips over the projection on the rim of the magazine and engages behind it.

The spring stud on the feed operating arm presses the stop pawl back to prevent its intercepting a magazine projection.

The face of the bolt now strikes the base of the cartridge which is held ready for it in the loading ramps of

the receiver, and it drives the cartridge before it into the chamber.

The head of the bolt now reaches the head of the ejector, which it presses back into the ejector cut, causing the rear of the ejector to be pivoted out into the bolt-way behind the bolt.

The extractors spring over the rim as soon as the cartridge seats.

Just as the cartridge seats, the locking lugs of the bolt clear the front of the cruciform part of the bolt-way formed by their guide grooves and reach their locking recess.

Further forward movement of the bolt is not possible. The bolt face rests against the rear end of the barrel and the head of the cartridge. The pressure of the main-spring which still drives the striker post forward causes the striker post, which is pressing against the left side of the cam slot in the bolt, to rotate the bolt to the right. This turns the locking lugs fully into the locking recess of the receiver.

As the bolt locking is completed the striker post enters the longitudinal front part of its cut, carries the striker against the primer of the cartridge in the chamber, and fires the cartridge.

The firing of the cartridge now develops the power for another cycle of operation.

When the bullet passes the gas port near the muzzle of the barrel, gas under high pressure is driven through the gas port into the gas chamber and through the hole in the gas regulator cup onto the head of the piston.

This drives the piston back and produces the same operation of parts described above where the opening stroke was made by hand, except for the disposition of the fired shell.

The shell, in the grip of the extractors, is drawn back with the bolt, and is carried on the face of the bolt until the bolt strikes the rear end of the ejector, as previously

described. The pivoting of the head of the ejector, which swings sharply against the left side of the extracted shell, throws the shell out of the ejector port.

Whether the gun will fire again or will remain in the "ready to feed" position depends upon whether or not the trigger is still held back.

If the trigger is still held back, and the sear consequently depressed, at the beginning of the closing stroke of the action the gun will continue firing.

If the trigger has been released so that the sear engages the cocking notch in the rack, the gun is left "ready to feed."

The cycle of operation may be briefly summarized as follows:

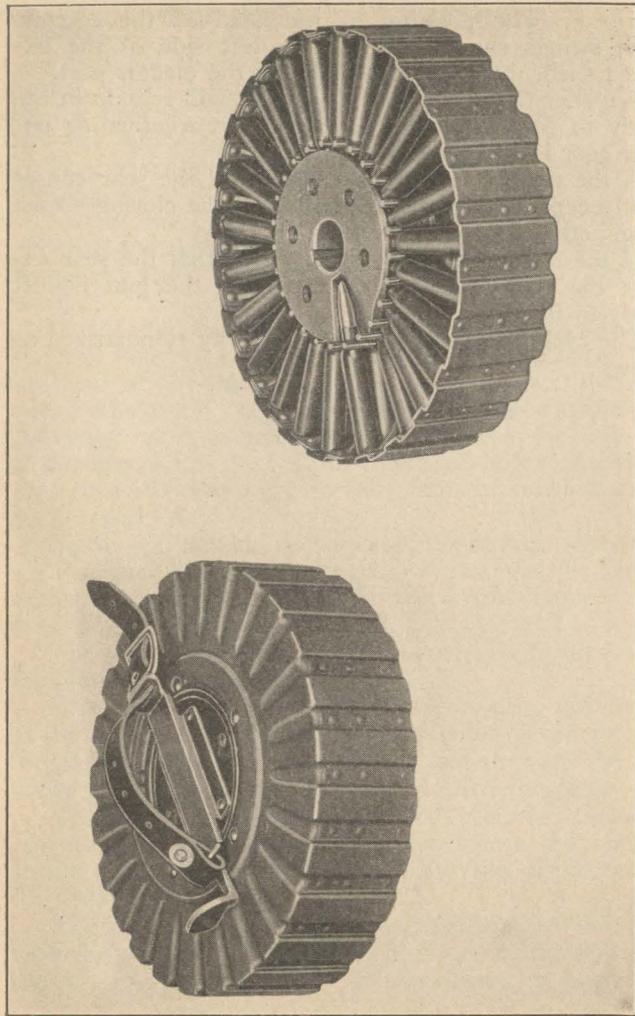


PLATE VI—MAGAZINE. TOP VIEW AND BOTTOM VIEW

PLATE VI

10-1A MAGAZINE
(ASSEMBLED)

The magazine holds ninety-seven cartridges. Instructions for loading are given on page 25.

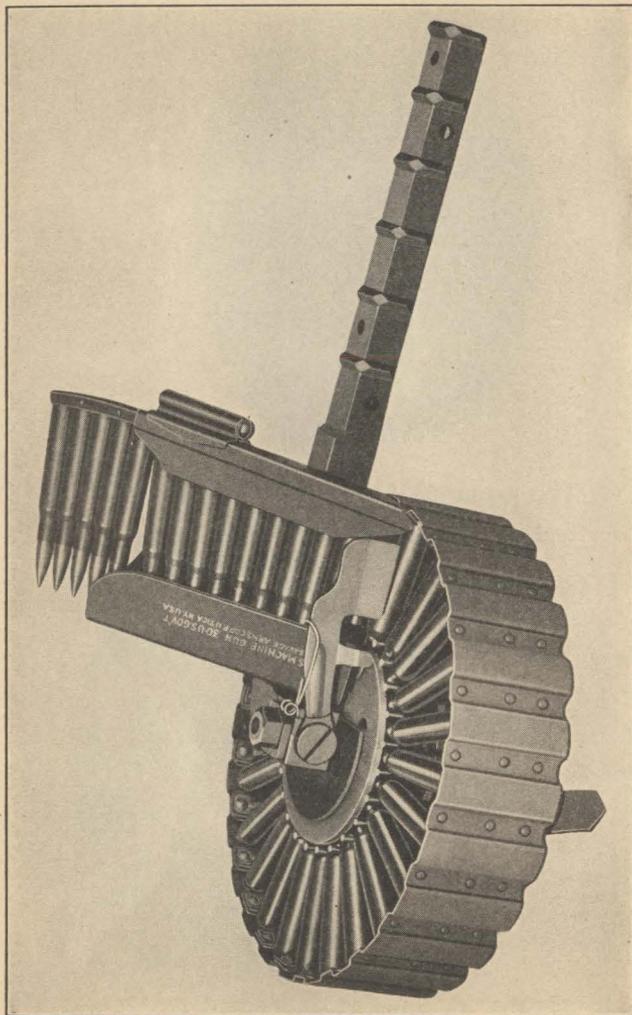


PLATE VII—LOADING TOOL WITH MAGAZINE IN POSITION

PLATE VII

12-30A LOADING TOOL
(ASSEMBLED)

Instructions for the use of loading tool
are given on pages 25 and 26.

ger. This will fire the cartridge which was in position in the loading ramps in the receiver.

When it is necessary to unload without firing cartridge in receiver, press over magazine latch and remove magazine, hold charging handle with left hand, press trigger with right hand and ease charging handle forward slowly so as to push cartridge from loading ramps into bolt-way in receiver.

Then pull back charging handle fully so that sear engages and raise safety. With point of bullet of another cartridge press down through loading slot in top of receiver against cartridge so that it can be removed through ejector port.

After unloading gun always snap (by drawing back charging handle to cock and pulling trigger), to make certain that gun is empty and that there is no cartridge in the receiver.

CARE and ADJUSTMENT

It is necessary to keep continually informed of the condition of each part of the gun. Adjustment by use of file, oil-stone or emery should be made only by an armorer. Examination should include the following points:

Barrel. Inspect the interior of barrel and chamber and the thread on the muzzle.

Gear, Casing and Mainspring. See that gear teeth, stop and spring are not damaged, that gear case hinge pin is secure and that mainspring is not broken.

Ejector. See that it is not damaged.

Feed Operating Arm. Observe that the feed pawl and feed pawl spring are properly assembled.

Feed Cover. Notice whether the pawls and spring are damaged and whether the cartridge guide is properly assembled.

Piston. See that the piston connecting pin is not loose, that the teeth and the cocking notch of the rack are not damaged, and that the working surfaces of the striker post are not burred or rough. Note whether the striker is damaged.

Bolt. The edges of the cam slot and the locking lugs of the bolt should be smooth. Any burrs or roughness should be removed by an armorer with oil-stone or fine emery cloth.

Examine lugs on feed operating stud for burrs or other injury.

Examine extractors carefully for breakage or any deformation.

Weigh each extractor by engaging hook of spring balance with extractor hook and pulling at right angles to bolt. Read balance when extractor moves. If under three pounds exchange extractor.

Guard. Inspect nose of sear for wear or breakage.

Safety. See that the charging handle is properly en-

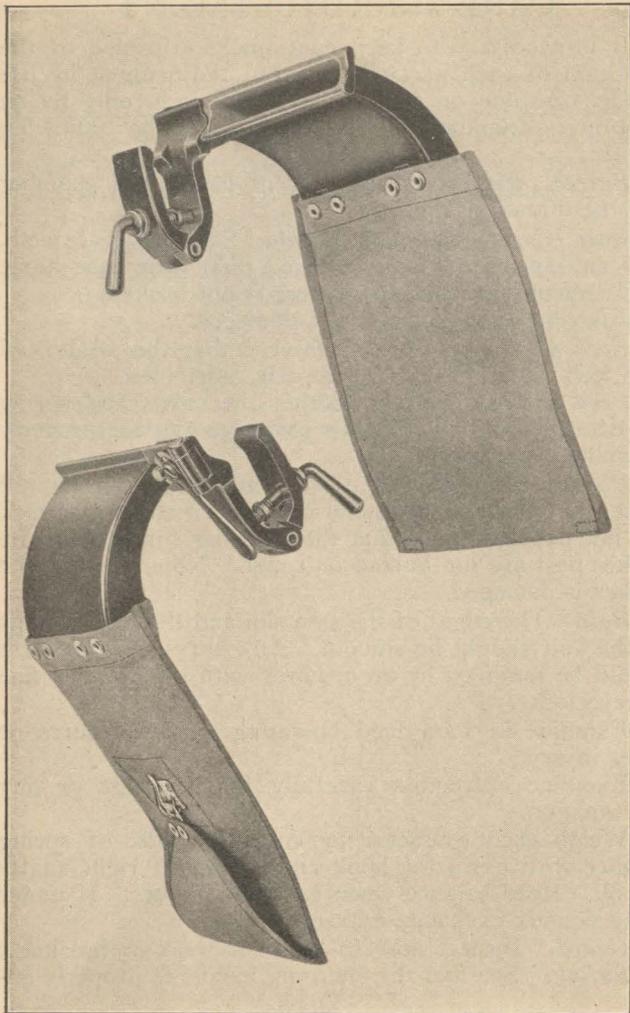


PLATE VIII—SHELL DEFLECTOR

gaged and held when the gun is at "Safe," and released when safety is depressed.

Sight Bases. Inspect for looseness or injury.

Gas Regulator Cup. See that it is not stuck. If it is, apply a little kerosene at the thread and allow it to soak in. Use No. 4 (the largest) port of the gas regulator cup. There is a projection on the bottom of the gas regulator cup which locates the No. 1 (smallest) hole. This permits any desired adjustment of the gas regulator cup in the dark.

Magazine. To see that the feed mechanism is working properly, place an empty magazine on the gun and work the charging handle. Before filling each magazine, take care that the separator pins are not bent or broken and spin each magazine on the loading handle to ascertain that it is not distorted. Fill magazine with care. If cartridges jam in filling, empty magazine to determine cause.

INSPECTION OF CARTRIDGES

Every cartridge for aviation use must be inspected. Where gauges are not supplied the following method will serve:

- (1) Weigh each cartridge to detect underloads. Reject those weighing less than 393 grains.
- (2) Inspect for low primer (primer seated too deeply) by laying straight-edge across head of shell. Reject cartridges having low primers.
- (3) Inspect dimensions of cartridges by removing striker (or putting in spare piston and rack without striker) in gun in which they are to be fired and working them through the action by hand. The chamber of the gun is used as a gauge. Do not allow ejected cartridges to be deformed by being thrown against a hard surface. Catch them in a hat or in shell deflector.

SHELL DEFLECTOR

To attach shell deflector to gun turn out shell deflector clamp screw and pull out shell deflector clip. Slide clip and bracket up around receiver in front of gear case, clip on left side of receiver, deflector and bracket on right, so that hole in arm of deflector covers ejector port. Turn in deflector clamp screw.

To get at ejector port, push deflector latch to rear and swing deflector out to side. To return swing deflector back against ejector port and push deflector latch forward to lock.

To remove shell deflector from gun turn out shell deflector clamp screw and pull deflector down.

POINTS BEFORE FLIGHT

Make sure that gun has been dismantled, all parts inspected and all oil removed (except light film in cam slot of bolt, in bolt-way of receiver, on striker post and on rack).

Mount and inspect sights.

See that bore is clear.

Make sure that all cartridges have been inspected and gauged before filling magazines.

Weigh mainspring and correct tension, if necessary.

See that all tools and spare parts are in place and that they and magazines are properly secured against loss or damage.

See that oil can is full.

Final Test: See that charging handle moves freely, that feed operating arm moves when it does. Weigh mainspring. Test ejection with dummy cartridge. Place

empty magazine on post. Hold it with right hand and work charging handle to prove that feed mechanism rotates magazine. If possible fire one or two single shots to make sure gun blows back far enough to engage sear.

POINTS DURING FLIGHT

Fire several rounds into ground at once after starting.

During temporary cessation of fire, raise safety. Weigh spring and adjust tension if necessary. Do not allow tension to drop under ten pounds.

If gun misfires, wait a few seconds before drawing back charging handle.

In cold weather fire a burst of 3 to 5 shots every fifteen minutes to make sure that gun is working properly.

Empty magazines should be replaced in container when removed from gun. Deformation of rim of magazine, entry of dirt or grit in the bullet groove in the magazine center or deformation of its lip should be carefully guarded against.

See that shell deflector does not become full of empty cartridge cases.

When possible between bursts raise safety.

POINTS AFTER FLIGHT

Unload (and snap).

Relax mainspring tension.

Remove sights.

Dismount, examine, clean and oil all parts of gun at once.

POINTS WHEN MACHINE GUN IS PLACED IN BOX

1. Bore oily.
2. Exterior and working parts oily.
3. Nothing in bore.
4. Sight down.
5. Spare parts in box.
6. Cleaning material and oil in box.
7. Mainspring released.
8. Charging handle forward and safety up.

NOTICE TO ARMORERS IN CHARGE OF LEWIS MACHINE GUNS

The efficient working of the Lewis machine gun largely depends upon the bearing surfaces between the sides of the striker post and the sides of the cam-shaped slot in the bolt being kept perfectly smooth. In most guns, the action of the gun itself continues to keep the surface of this sliding contact properly smooth, provided the parts are kept well oiled. Sometimes, however, in the case of new guns, slight "burring" may occur and prevent the smooth working of the gun. Any such roughness or "burring" caused by wear on either of the sides of the striker post (generally on the right-hand side) or on the bearing edges of the cam-shaped slot in the bolt (generally on the left-hand side) must at once be carefully smoothed as follows:

Use either a very fine oil-stone, or very fine emery cloth, and thus remove any roughness and secure perfectly smooth bearing surfaces between both sides of the striker post and both edges of the cam-shaped slot in the bolt.

Careful attention must, however, always regularly be given to these most important bearing surfaces; but after the sides of the striker post and cam slot edges have once been carefully smoothed this roughness seldom occurs.

If either too coarse materials or too much careless force is used to smooth these surfaces, the angle of sliding contact may become slightly altered and more roughness or "burring" may be caused.

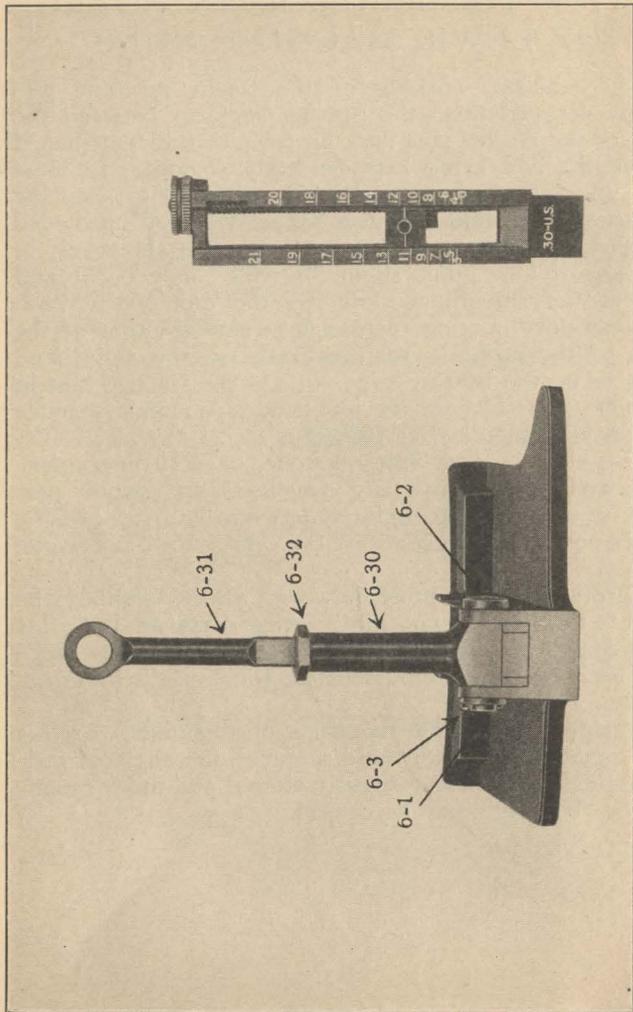


PLATE IX—BACK SIGHT

PLATE IX

BACK SIGHT

- 6-1 Back Sight Axis Pin
- 6-2 Back Sight Axis Pin Washer
- 6-3 Back Sight Axis Pin Split Keeper
- 6-30 Back Sight Body
- 6-31 Back Sight Stem
- 6-32 Back Sight Stem Nut

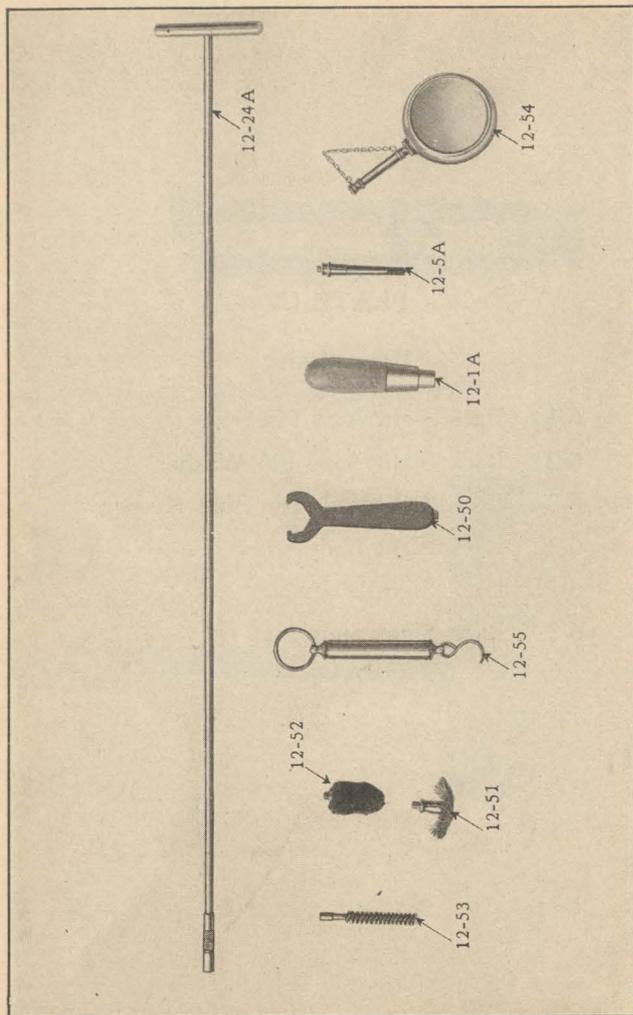


PLATE X—ACCESSORIES

PLATE X

ACCESSORIES

- 12-5A Shell Extractor (assembled)
- 12-1A Charging Handle Extension (assembled)
- 12-50 Barrel Mouthpiece Spanner
- 12-24A Barrel Cleaning Rod (assembled)
- 12-51 Cylinder Cleaning Brush (wire)
- 12-52 Cylinder Cleaning Mop
- 12-53 Barrel Cleaning Brush (bristle)
- 12-54 Oil Can
- 12-55 Spring Balance

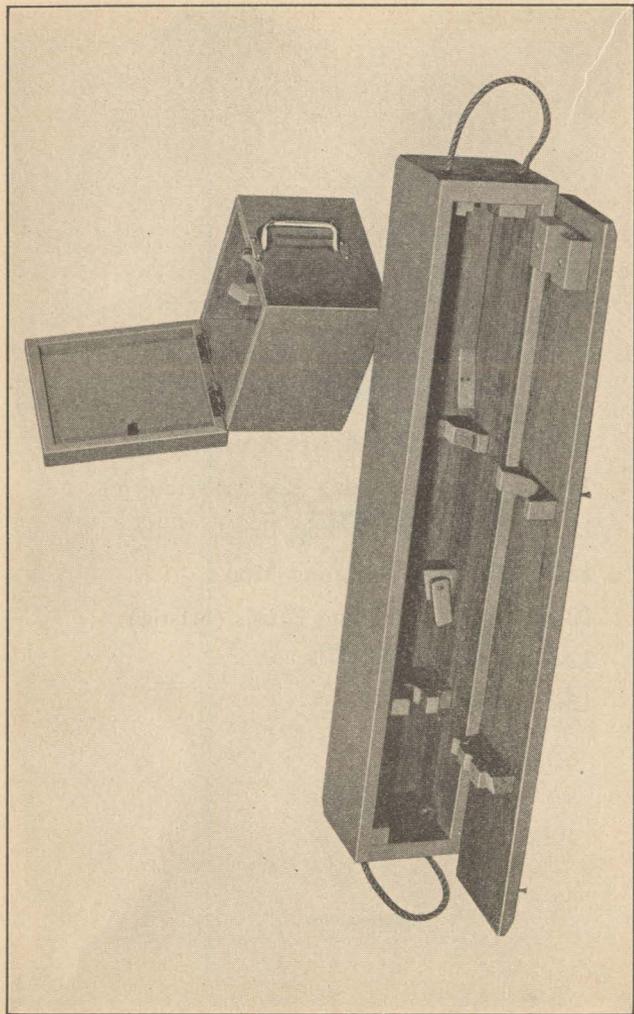


PLATE XI—GUN BOX AND MAGAZINE CONTAINER

CLEANING *and* OILING

The Lewis Machine Gun, Airplane Type, should be completely stripped after each flight.

Clean each part thoroughly with gasoline. Dry and inspect each part and bearing surface for breakage, burrs, wear or other injury.

To Clean Barrel. Follow the same methods prescribed and use the cleaning solutions issued for cleaning the U. S. magazine rifles, models of 1903 and 1917. Cleaning with nitro-solvent on patches of cloth does not require dismounting the gun. The charging handle may merely be drawn back until the sear engages the rack.

Cleaning the barrel should be repeated every day for several days after the gun has been fired and until the acids driven into the pores of the steel by the pressures of firing have been completely neutralized. The ammonia metal fouling solution neutralizes acid residue at one application.

To Clean Gas Cylinder. Clean first with wire brush and gasoline, then with mop and oil.

Special attention must be given to very thorough cleaning of the gas regulator cup.

Immediately after cleaning and inspection, oil each part liberally and assemble to prevent rust or loss of parts between flights.

Just before the next flight the gun should be stripped again, the oil wiped off each part and each part again inspected and the gun assembled.

No oil should be left on any part of the gun when ready for flight except the very thin film left by wiping with a lightly oiled cloth in the cam slot in the bolt, on striker post, in bolt-way in receiver and on teeth of rack.

STOPPAGES

POSITION OF CHARGING HANDLE	REMEDY	PROBABLE CAUSE	PREPARATION FOR INSTRUCTION
<p>52</p> <p>First Position— Charging Handle forward.</p>	<ol style="list-style-type: none"> 1. Try magazine. If it rotates freely to left, change it. 2. If magazine is fixed, pull back charging handle and continue firing. 3. If 2 fails, change magazine. 4. If stoppage recurs, examine feed pawl and stop and rebound pawls. If feed pawl is broken magazine will not rotate. 5. If 3 fails and trigger being pressed gun does not fire, examine mainspring. If light, tighten; if broken, change gear and casing. If mainspring all right, change piston and rack. 6. If charging handle will not come back, use charging handle extension. If stoppage recurs, examine chamber. 	<p>Empty magazine, no round in chamber.</p> <p>(a) Misfire. (b) Space in magazine. (c) Insufficient rotation of magazine.</p> <p>Damaged magazine.</p> <p>Damaged feed pawl or stop or rebound pawl.</p> <p>(a) Weak or broken mainspring. (b) Broken or damaged striker.</p> <p>Hard extraction. (a) Expansion of empty case. (b) Grit or rust in chamber.</p>	<p>Empty magazine on post.</p> <p>Charging handle forward on range. Leave space in magazine.</p> <p>Dummy. Live round. Dummy.</p> <p><i>On Range.</i> Put damaged dummy in chamber, pull trigger and put full magazine on post.</p>
<p>53</p> <p>Second Position— Less than a cartridge length from forward position.</p>	<p>Use charging handle extension or double pull through and pull back handle. Examine round ejected, if—</p> <p>(a) Damaged or too large round continue firing.</p> <p>(b) If correct, take off magazine, insert shell extractor into chamber and push home with bolt and withdraw with front portion of separated case.</p> <p>(c) If separation recurs shortly, change barrel.</p>	<p>Damaged round.</p> <p>Separated case in chamber.</p> <p>Separated case telescoped on to next cartridge.</p> <p>Too sharp extractors, which cut cartridge case at base.</p> <p>Bolt has not gone back far enough to get behind base of cartridge.</p> <p>(a) Friction in gas cylinder. (b) Hard extraction.</p>	<p>File a groove around cartridge case 1 inch from base.</p> <p>Ditto one inch from shoulder.</p>
<p>Third Position— More than 3 inches back.</p>	<ol style="list-style-type: none"> 1. Examine ejection opening; if there is no obstruction, pull back charging handle, continue firing. If recurs, take out gas regulator cup, remove magazine and fire one round; replace regulator cup large hole to rear. Clean out gas cylinder, oil working parts; if any roughness on striker post or cam slot in bolt change them. 	<p>Bolt has not gone back far enough to get behind base of cartridge.</p> <p>(a) Friction in gas cylinder. (b) Hard extraction.</p>	

STOPPAGES—Continued

POSITION OF CHARGING HANDLE	REMEDY	PROBABLE CAUSE	PREPARATION FOR INSTRUCTION
Third Position—Continued.	2. If on pulling back handle there is little or no resistance, if mainspring is light, tighten; if broken, change.	Weak or broken mainspring.	<i>On Range.</i> Weaken mainspring.
	3. If an empty case is in chamber or ejection opening, take off magazine, draw back charging handle, and unload without firing. If empty case is in chamber, force out with cleaning rod from muzzle end. If there are no signs of extractors, or only one extractor gripping it, change bolt; otherwise continue firing.	(a) Bad extractors. (b) Hard extraction. (c) If empty case is in receiver, weak extractors or broken ejectors.	<i>On Range.</i> Place empty case chamber. Magazine on post and pull trigger.
	4. If stoppage recurs, examine extractor, exchange whichever is faulty.		
	5. If charging handle cannot be moved, remove magazine. If charging handle flies forward, change magazine.	(a) Damaged magazine jammed. (b) Magazine not properly on magazine post.	<i>On Range.</i> Do not push magazine properly home.
		(c) Broken magazine catch spring. (d) Broken or damaged magazine spacer ring causing it to jam.	
	6. If on removing magazine, charging handle remains in position as before— (a) Help cartridge into correct position on feed way. (b) Test cartridge guide spring. (c) Test mainspring.	(a) Weak or broken cartridge guide spring. (b) Too weak mainspring. (c) Too much gas.	

(1) The tension of the mainspring can easily be told by pulling back the charging handle. If the mainspring is broken, the collet pin will usually be "out."

NOTE—If the gun continues to fire after the trigger is released, remove magazine.

This will be caused by broken or weak spring, or damaged sear.

If gun fails to eject, it usually means that the action is not being blown open fully. The remedy is to use a larger hole in the gas regulator cup. If already using the largest, then reduce spring tension.

Failures to extract may be caused by top extractor failing to hold shell until ejector hits it. Then if the gun does not blow back the forward stroke will drive the shell into the chamber again.

TROUBLE CHART

SEQUENCE OF IMMEDIATE ACTION

LEWIS MACHINE GUN—AIRPLANE TYPE

No. 1 POSITION

(Charging Handle Forward)

Try Magazine

56

IF FREE TO ROTATE

Change it
Reload, relay and fire

IF FIXED (will not rotate)

Pull charging handle

IF GUN DOES NOT
FIRE

Pull C. H. Watch ejection opening

IF GUN FIRES
SINGLE SHOTS

Examine gas regulator

IF CHARGING H.
WILL NOT GO BACK

Remove magazine

IF CARTRIDGE
IS EJECTED

Examine primer

IF NO CARTRIDGE IS
EJECTED

Examine feed mechanism
Repair if necessary

IF C. H. THEN
COMES EASILY

Put on new magazine
Reload, relay and fire

IF C. H.
STICKY

Relay and fire

IF STRUCK

Pull C. H., relay, fire

IF PRIMER NOT STRUCK

Change piston and rack, reload, relay and fire

No. 2 POSITION

(Charging Handle between thumb-piece of safety and forward position)

FORCE BACK CHARGING HANDLE

IF STOPPAGE RECURS

Take out gas regulator, fire a shot. Insert with large hole to rear. Clean and oil.

No. 3 POSITION

(Charging Handle behind thumb-piece of safety.) Examine ejection opening.

57

IF CLEAR

Pull C. H.

IF CASE IN
BOLT-WAY

Examine ejector
Replace if necessary

IF CHAMBER OBSTRUCTED

Pull C. H. Raise safety, remove magazine, clean and examine rim of cartridge

IF C. H. DOES
NOT COME BACK

Change magazine, reload, relay and fire

IF C. H. COMES
BACK

Relay and fire

IF RIM CUT IN
TWO PLACES

Reload, relay and fire

IF RIM NOT
CUT

Change bolt

IF C. H. DOES NOT
GO FORWARD

Change gear casing
(complete)

IF C. H. STARTS FORWARD
AND STICKS

Pull C. H. Raise safety
Remove magazine
Inspect cartridge guide
Replace if necessary

IMMEDIATE ACTION

IN REPLACING PARTS

□

TO CHANGE CARTRIDGE GUIDE

Remove magazine.

TO CHANGE MAGAZINE PAWLS

(STOP AND REBOUND)

Remove magazine, spade grip and feed cover.

TO CHANGE FEED PAWL

Remove magazine, spade grip and feed cover.

TO CHANGE EXTRACTORS

Remove magazine, spade grip; release gear, removing charging handle and bolt.

TO CHANGE GEAR COMPLETE

Remove magazine, spade grip; draw back guard. Pull gear casing down and forward; release gear stop; remove collet pin; lift out gear complete.

TO CHANGE RECEIVER LOCKING PIN

Remove magazine, spade grip; release gear; remove charging handle, bolt and piston and rack. Force back receiver locking pin and remove toward rear.

TO CHANGE CHARGING HANDLE

Remove magazine, spade grip; drop gear.

TO CHANGE EJECTOR

Remove magazine, spade grip; feed cover. Remove ejector cover, raise ejector, by inserting point of cartridge underneath, through hole in receiver. Slip ejector cover under ejector from left side. Press ejector down against ejector cover with finger and lift ejector out toward left.

PARTS FOR LEWIS MACHINE GUN

(AIRPLANE TYPE)

1-7 Spade Grip Tang	3-40 Front Sight Base
1-8 Spade Grip Tang Handle	3-41 Front Sight Base Screw
1-9 Spade Grip Tang Screw	3-42A Recoil Check (assembled)
1-10A Spade Grip (assembled)	3-43 Gas Cylinder Casing
2-1 Receiver	4-1 Feed Operating Stud
2-2 Ejector Cover	4-2 Bolt
2-3 Ejector	4-3 Extractor
2-4 Safety	4-4A Bolt (assembled)
2-5 Center Key	5-1 Guard
2-6 Receiver Locking Pin	5-2 Butt Latch
2-7 Gear Case Hinge Pin	5-3 Butt Latch Spring
3-1 Barrel	5-4 Butt Latch Pin
3-5 Gas Regulator Key	5-5 Guard Side Piece (right)
3-7 Gas Chamber Gland	5-6 Guard Side Piece (left)
3-8 Gas Regulator Cup	5-7 Guard Rivets
3-19 Gas Cylinder	5-8 Sear
3-32 Barrel Retaining Nut	5-9 Sear Spring
3-34 Gas Chamber	5-10 Sear Pin
3-35A Locking Piece (assembled)	5-11 Trigger
3-36 Rear Sight Base	5-10 Trigger Pin
3-37 Rear Sight Base Rivet	5-12A Guard (assembled)
3-38 Sight Retaining Spring	

PARTS FOR LEWIS MACHINE GUN

(AIRPLANE TYPE)

CONTINUED

6-1 Back Sight Axis Pin	8-1 Rack
6-2 Back Sight Axis Pin Washer	8-2 Striker
6-3 Back Sight Axis Pin Split Keeper	8-3 Striker Fixing Pin
6-4 Back Sight Bed Spring	8-4 Charging Handle
6-5 Feed Cover	8-5 Piston Connecting Pin
6-6 Pawls Spring (stop and rebound)	8-6 Piston
6-7 Stop Pawl	9-1 Gear Casing
6-8 Rebound Pawl	9-2 Gear Stop
6-24A Cartridge Guide (assembled)	9-3 Gear Stop Spring
6-30 Back Sight Body	9-4 Gear Stop Pin
6-31 Back Sight Stem	9-5 Gear Case Disc
6-32 Back Sight Stem Nut	9-6 (Mainspring) Collet Pin
7-1 Feed Operating Arm	9-7 Gear
7-2 Feed Pawl	9-8 Mainspring Casing
7-3 Feed Pawl Spring	9-9 Mainspring
7-4 Feed Pawl Retaining Pin	9-11 Mainspring Collet
7-5A Feed Operating Arm (assembled)	10-3 Magazine Top Plate Rivets
	10-12 Spacer Ring
	10-30 Magazine Pan
	10-31 Magazine Top Plate

PARTS FOR LEWIS MACHINE GUN (AIRPLANE TYPE)

CONTINUED

10-32 Magazine Latch	12-49 Magazine Filling Handle
10-33 Magazine Latch Spring	12-60A Mounting Yoke (assembled)
10-34 Cartridge Separator Pin	12-65 Mounting Yoke Clamp Key

PLATE XII

RECEIVER GROUP (2)	MAINSRING GROUP (9)
GUARD GROUP (5)	

2-1 Receiver	9-11 Mainspring Collet
2-2 Ejector Cover	5-1 Guard
2-3 Ejector	5-2 Butt Latch
2-4 Safety	5-3 Butt Latch Spring
2-6 Receiver Locking Pin	5-4 Butt Latch Pin
9-1 Gear Casing	5-5 Guard Side Piece (right)
9-2 Gear Stop	5-6 Guard Side Piece (left)
9-3 Gear Stop Spring	5-8 Sear
9-4 Gear Stop Pin	5-9 Sear Spring
9-6 Mainspring Collet Pin	5-10 Sear Pin (used also for Trigger Pin)
9-7 Gear	5-11 Trigger
9-8 Mainspring Casing	
9-9 Mainspring	

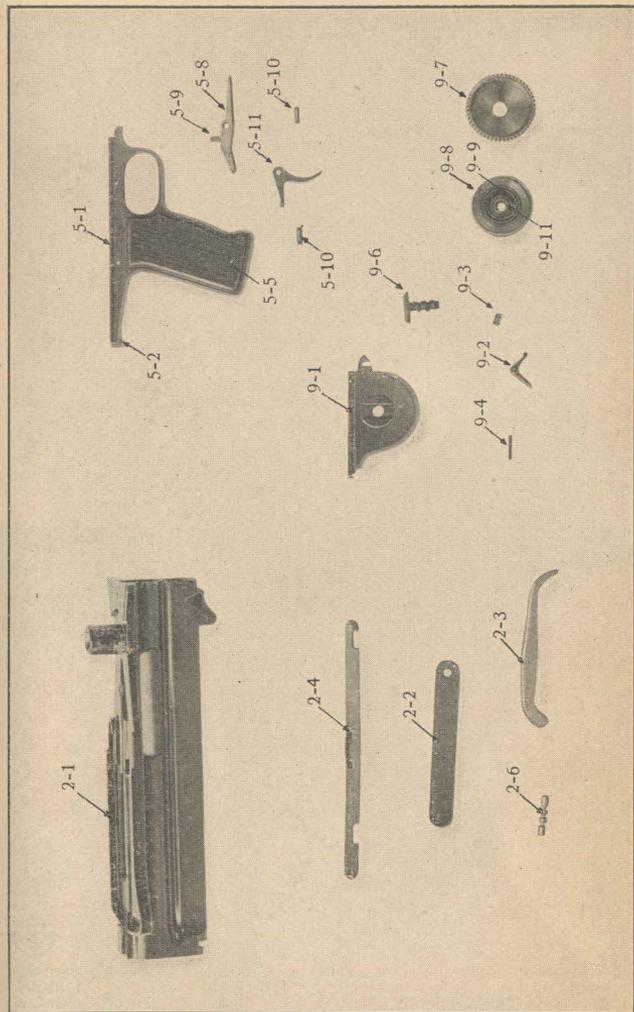
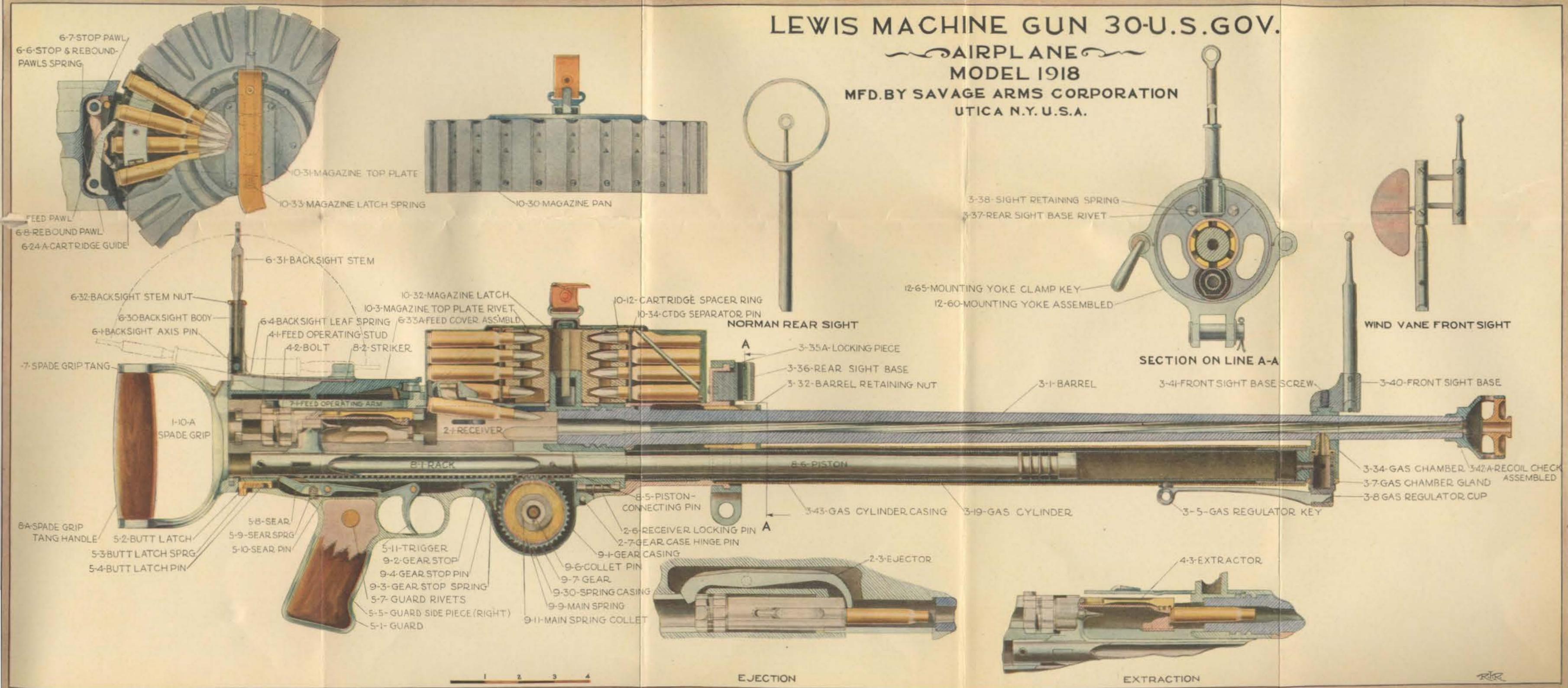


PLATE XII—GUN PARTS. RECEIVER GROUP, MAINSPRING AND TRIGGER MECHANISM

LEWIS MACHINE GUN 30-U.S.GOV.

AIRPLANE
MODEL 1918

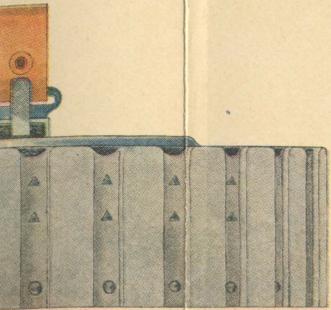
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UTICA N.Y. U.S.A.



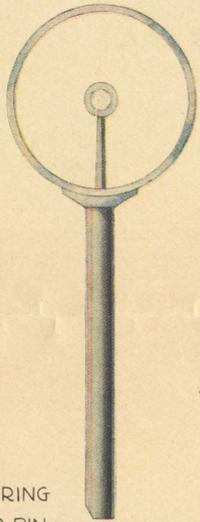
LEWIS MACHINE GUN 30-U.S.GOV.

AIRPLANE MODEL 1918

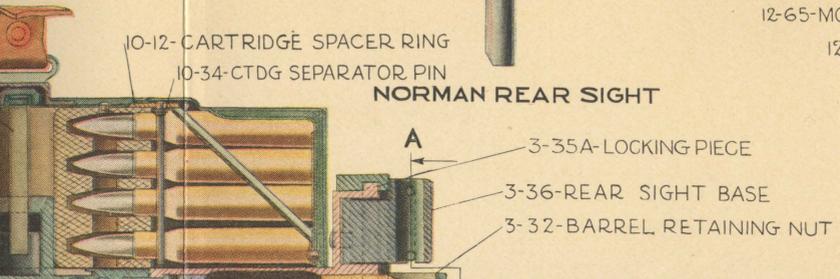
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UTICA N.Y. U.S.A.



MAGAZINE PAN



NORMAN REAR SIGHT

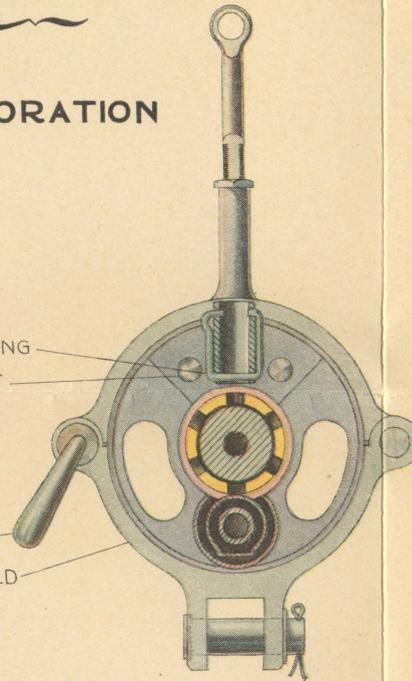


10-12-CARTRIDGE SPACER RING
10-34-CTDG SEPARATOR PIN

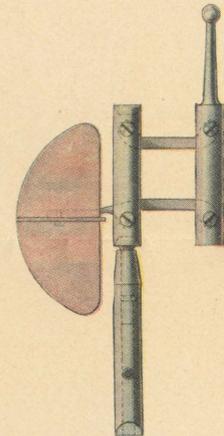
3-35A-LOCKING PIECE
3-36-REAR SIGHT BASE
3-32-BARREL RETAINING NUT

3-38-SIGHT RETAINING SPRING
3-37-REAR SIGHT BASE RIVET

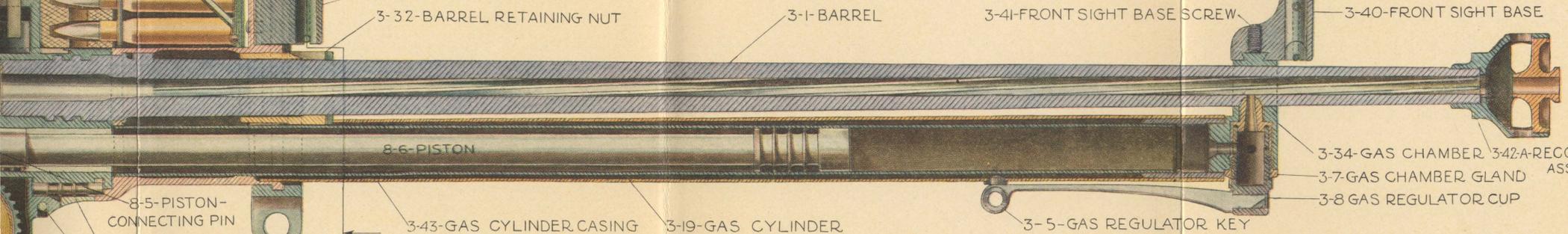
12-65-MOUNTING YOKE CLAMP KEY
12-60-MOUNTING YOKE ASSEMBLED



SECTION ON LINE A-A



WIND VANE FRONT SIGHT



8-6-PISTON

3-1-BARREL

3-4-FRONT SIGHT BASE SCREW

3-40-FRONT SIGHT BASE

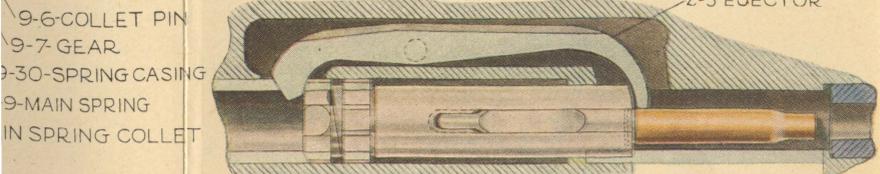
3-34-GAS CHAMBER
3-7-GAS CHAMBER GLAND
3-8-GAS REGULATOR CUP
3-42-A-RECOIL CHECK ASSEMBLED

3-5-GAS REGULATOR KEY

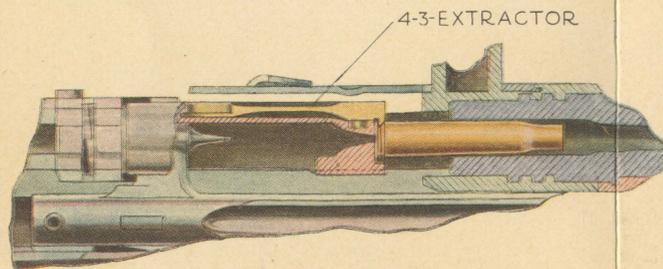
8-5-PISTON-CONNECTING PIN
2-6-RECEIVER LOCKING PIN
2-7-GEAR CASE HINGE PIN
9-1-GEAR CASING

3-43-GAS CYLINDER CASING

3-19-GAS CYLINDER



EJECTION



EXTRACTION

9-6-COLLET PIN
9-7-GEAR
9-30-SPRING CASING
9-MAIN SPRING
IN SPRING COLLET

2-3-EJECTOR

4-3-EXTRACTOR

LEWIS MACHINE GUN

AIRPLANE
MODEL

MFD. BY SAVAGE ARMS CO.
UTICA, N. Y.

6-7-STOP PAWL
6-6-STOP & REBOUND-
PAWLS SPRING

FEED PAWL
6-8-REBOUND PAWL
6-24-A-CARTRIDGE GUIDE

10-31-MAGAZINE TOP PLATE

10-33-MAGAZINE LATCH SPRING

10-30-MAGAZINE PAN

6-31-BACKSIGHT STEM

6-32-BACKSIGHT STEM NUT

6-30-BACKSIGHT BODY

6-1-BACKSIGHT AXIS PIN

7-SPADE GRIP TANG

1-10-A
SPADE GRIP

8-A-SPADE GRIP
TANG HANDLE

5-2-BUTT LATCH

5-3-BUTT LATCH SPRG.

5-4-BUTT LATCH PIN

5-8-SEAR

5-9-SEAR SPRG

5-10-SEAR PIN

5-11-TRIGGER

9-2-GEAR STOP

9-4-GEAR STOP PIN

9-3-GEAR STOP SPRING

5-7-GUARD RIVETS

5-5-GUARD SIDE PIECE (RIGHT)

5-1-GUARD

10-32-MAGAZINE LATCH

10-3-MAGAZINE TOP PLATE RIVET

6-33-A-FEED COVER ASSMBLD

6-4-BACKSIGHT LEAF SPRING

4-1-FEED OPERATING STUD

4-2-BOLT

8-2-STRIKER

7-1-FEED OPERATING ARM

2-1-RECEIVER

8-1-RACK

8-5-PISTON-
CONNECTING PIN

2-6-RECEIVER LOCKING PIN

2-7-GEAR CASE HINGE PIN

9-1-GEAR CASING

9-6-COLLET PIN

9-7-GEAR

9-30-SPRING CASING

9-9-MAIN SPRING

9-11-MAIN SPRING COLLET

10-12-CARTRIDGE SPACER RING

10-34-CTDG SEPARATOR PIN

NORMAN REAR SIGHT

3-35-A-LOCKING PIECE

3-36-REAR SIGHT BASE

3-32-BARREL RETAINING NUT

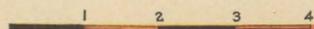
8-6-PISTON

3-43-GAS CYLINDER CASING

3-19-GAS C...

2-3-EJECTOR

EJECTION



3-38-SIGHT

3-37-REAR SIGHT

12-65-MOUNTING YOKE C...

12-60-MOUNTING Y...

LEWIS MACHINE

AIRPL
MODEL

MFD. BY SAVAGE ARM
UTICA N

6-7-STOP PAWL
6-6-STOP & REBOUND-
PAWLS SPRING

FEED PAWL
6-8-REBOUND PAWL
6-24-A-CARTRIDGE GUIDE

10-31-MAGAZINE TOP PLATE

10-33-MAGAZINE LATCH SPRING

10-30-MAGAZINE PAN

6-31-BACKSIGHT STEM

6-32-BACKSIGHT STEM NUT

6-30-BACKSIGHT BODY

6-1-BACKSIGHT AXIS PIN

10-32-MAGAZINE LATCH

10-3-MAGAZINE TOP PLATE RIVET

6-4-BACK SIGHT LEAF SPRING

4-1-FEED OPERATING STUD

8-2-STRIKER

6-33A-FEED COVER ASSEMBLY

10-12-CARTRIDGE SPACER RING

10-34-CTDG SEPARATOR PIN

NORMAN REAR SIGHT

3-35A-LOCKING PIECE

3-36-REAR SIGHT BASE

3-32-BARREL RETAINING NUT

7-SPADE GRIP TANG

1-10-A
SPADE GRIP

7-FEED OPERATING ARM

2-1-RECEIVER

8-1-RACK

8-6-PISTON

8-A-SPADE GRIP
TANG HANDLE

5-2-BUTT LATCH

5-3-BUTT LATCH SPRG

5-4-BUTT LATCH PIN

5-8-SEAR

5-9-SEAR SPRG

5-10-SEAR PIN

5-11-TRIGGER

9-2-GEAR STOP

9-4-GEAR STOP PIN

9-3-GEAR STOP SPRING

5-7-GUARD RIVETS

5-5-GUARD SIDE PIECE (RIGHT)

5-1-GUARD

8-5-PISTON-
CONNECTING PIN

2-6-RECEIVER LOCKING PIN

2-7-GEAR CASE HINGE PIN

9-1-GEAR CASING

9-6-COLLET PIN

9-7-GEAR

9-30-SPRING CASING

9-9-MAIN SPRING

9-11-MAIN SPRING COLLET

3-43-GAS CYLINDER CASING

3-19-GAS C

2-3-EJECTOR



EJECTION

3-38-SIGHT

3-37-REAR SIGHT

12-65-MOUNTING YOKE C

12-60-MOUNTING Y

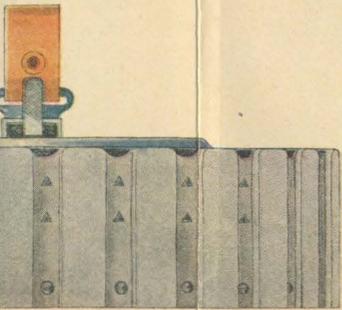
LEWIS MACHINE GUN 30-U.S.GOV.

AIRPLANE

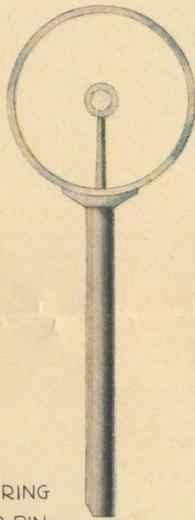
MODEL 1918

MFD. BY SAVAGE ARMS CORPORATION

UTICA N.Y. U.S.A.

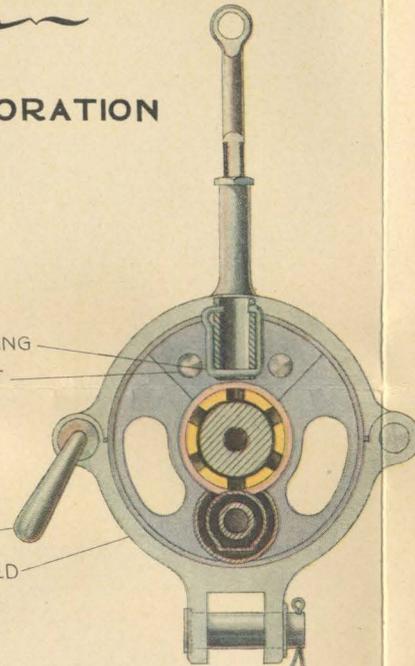


MAGAZINE PAN

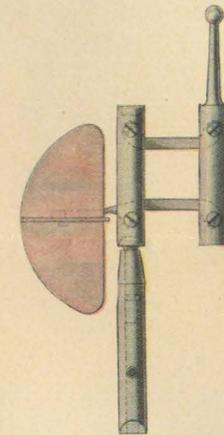


NORMAN REAR SIGHT

3-38-SIGHT RETAINING SPRING
3-37-REAR SIGHT BASE RIVET

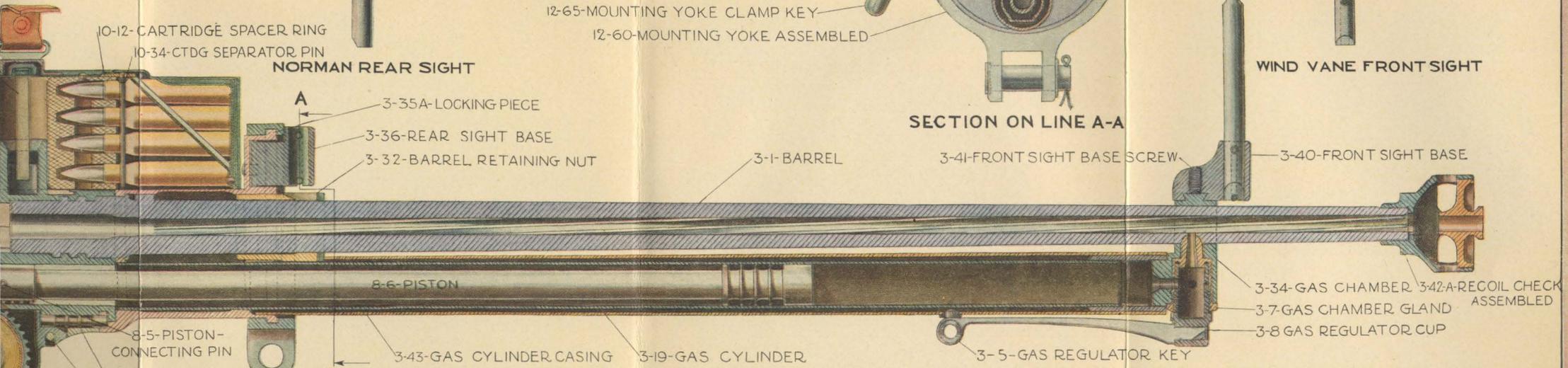


SECTION ON LINE A-A



WIND VANE FRONT SIGHT

12-65-MOUNTING YOKE CLAMP KEY
12-60-MOUNTING YOKE ASSEMBLED



10-12-CARTRIDGE SPACER RING
10-34-CTDG SEPARATOR PIN

NORMAN REAR SIGHT

3-35A-LOCKING PIECE
3-36-REAR SIGHT BASE
3-32-BARREL RETAINING NUT

3-1-BARREL

3-41-FRONT SIGHT BASE SCREW

3-40-FRONT SIGHT BASE

8-6-PISTON

3-34-GAS CHAMBER
3-42-A-RECOIL CHECK ASSEMBLED
3-7-GAS CHAMBER GLAND
3-8-GAS REGULATOR CUP

3-5-GAS REGULATOR KEY

8-5-PISTON-CONNECTING PIN

3-43-GAS CYLINDER CASING
3-19-GAS CYLINDER

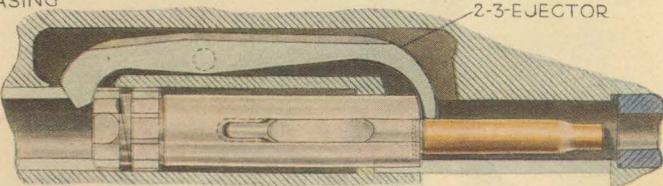
2-6-RECEIVER LOCKING PIN
2-7-GEAR CASE HINGE PIN

9-1-GEAR CASING

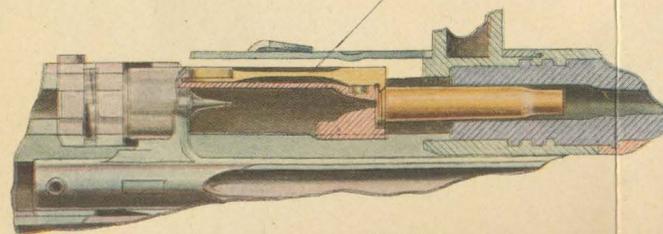
2-3-EJECTOR

4-3-EXTRACTOR

9-6-COLLET PIN
9-7-GEAR
9-30-SPRING CASING
9-9-MAIN SPRING
9-9-MAIN SPRING COLLET



EJECTION



EXTRACTION