

Self-Loading Arms

By L. A. DANSE

PART IX.

THE LUGER ARMS

THIS name—Luger—is applied to a line of guns which are the outcome of tests and designs which originated with the old Borchardt-Luger pistol. The trade name applied to these arms in the old country is "Parabellum," which is literally "for war;" the name being used by the makers, the Deutsche Waffen & Munitionsfabriken, of Berlin, Germany. In this country the arms are simply known by the name of the designer, Luger.

There are four styles of guns of this name; the 7.65 mm. pistol, 9 mm. pistol, 9 mm. navy pistol, and the 7.65 mm. carbine. The actions of all are identical in principle, there being differences in bore and length of barrel; also in sights, and the addition of the butt-stock and fore-end on the carbine. They are of the recoil operated type, with locked breech.

In the Swiss army, Bulgaria, Holland, Portugal and Chile, the 7.65 mm. pistol is the service weapon. The German army uses the 9 mm. pistol with 4-inch barrel (model I) and the navy the 9 mm. (model II) pistol with 6-inch barrel. The model II navy pistol is fitted with a holster stock, made of leather and wood, which has a sling strap attached.

General features:

Length of barrel, 7.65 mm. pistol, 4½ inches; length of barrel, 9 mm. pistol, model I, 4 inches; length of barrel, 6 mm. pistol, model II, 6 inches; length of barrel, carbine, 11½ inches. Length over all, 7.65 mm. pistol, 9 inches; length over all, 9 mm. pistol, model I, 8½ inches; length over all, 9 mm. pistol, model II, 10½ inches; length over all carbine [including buttstock] 29 inches. Weight, 7.65 mm. and 9 mm. I pistols, 29 ounces; weight 9 mm. II pistol [not including holster], 31 ounces; weight, carbine [including buttstock], 65 ounces; weight, holster-stock for 9 mm. II, 15 ounces. Sighting radius, 7.65 mm. pistol, 8½ inches; sighting radius, 9 mm. I pistol, 7½ inches; sighting radius, 9 mm. II pistol, 9½ inches; sighting radius, carbine, 11 inches. Capacity magazine, 8 cartridges; with one in chamber, 9 shots.

Weight cartridge, 7.65 mm., 162 grains; weight cartridge, 9 mm., 193 grains; weight cartridge, carbine special, 163 grains. Weight, powder, 7.65 mm., 5.2 grains; weight powder, 9 mm., 5.4 grains; weight powder, carbine special, 6 grains. Weight bullet, 7.65 mm., 93 grains; weight bullet, 9 mm., 124 grains. Length cartridge, 7.65 mm., 1.17 inch; length cartridge, 9 mm., 1.14 inch. Initial velocity, 7.65 mm., 1150 foot seconds; initial velocity, 9 mm. I, 1020 foot seconds; initial velocity, 9 mm. II, 1100 foot seconds; initial velocity, carbine, 1500 foot seconds. Initial energy, 7.65 mm., 271 foot pounds; initial energy, 9 mm., 283 foot pounds; initial energy, 9 mm. II, 310 foot pounds; initial energy, carbine, 465 foot pounds. Penetration in pine at 50 yards, 7.65 mm.,

6½ inches; 9 mm., I, 5½ inches; 9 mm. II, 6 inches; carbine, 8½ inches. Deviation at 50 yards, approximately: 7.65 mm., radius 2 inches; 9 mm. I, radius 2½ inches; 9 mm. II, radius 2 inches; carbine, radius 1 inch. Action: recoil operated, locked breech, enclosed striker, top ejection. Magazine: single column, detachable, inserted in grip. Safety: automatic grip, locks sear and action; positive thumb latch, holds grip safety in engagement. Sights: front, square bar, dovetailed in socket block on barrel; rear, 7.65 and 9 I, V-notched in top of rear toggle link; 9 II, 200 yard adjustable V-notch fastened to rear toggle link; carbine, 300 yard adjustable V-notch on breech end of barrel. Finish: blued, hardened action parts. Stocks: checkered walnut, 9 II holster-stock of leather and walnut; carbine butt and fore-end are of checkered walnut and detachable from pistol by means of catches. Price: 7.65 mm. and 9 mm. I, \$25.00; 9 mm. II, and carbine, \$30.00.

The following description of the working mechanism is copied in part from the hand book issued by the makers of the Luger arms:

LIST OF CONSTITUENT PARTS

Part A or movable part:

1—Barrel, with front sight [1'] and bifurcated receiver [1 1/2"]. 2—Breech block. 3—Front link. 4—Rear link, with recoil spring coupler 4' and its pin 4". 5—Breech block link pin. 6—Link connecting pin. 7—Rear link pin. 8—Link connecting pin rivet. 11—See stationary part. 12—Firing pin. 13—Firing pin spring. 14—Main spring abutment. 15—Extractor, with spring 15' and pin 15". 16—Ejector. 17—See stationary part. 18—Sear, with spring stud 18', spring 18" and rivet 18". 19—Sear spring.

B, the stationary part:

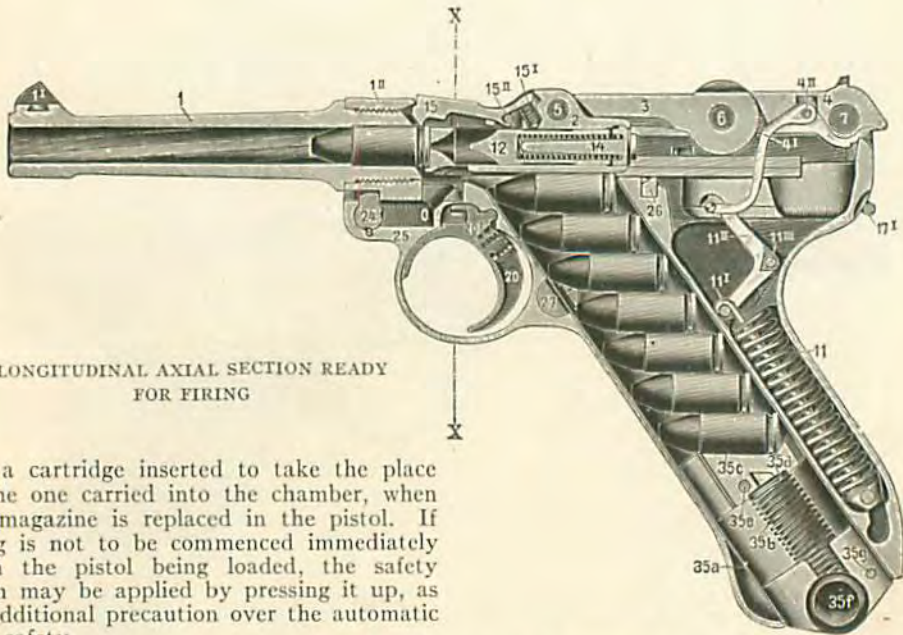
11—Recoil spring with pull rod 11', rocker 11" and pin 11". 17—Stock with slung ring 17' and breech block catch link rivet 17". 18—See movable part. 19—See movable part. 20—Trigger with spring 20'. 21—Trigger plate. 22—Trigger lever. 23—Trigger lever pin. 24—Locking bolt. 25—Locking bolt spring. 26—Breech block catch link with spring 26'. 27—Magazine catch. 28—Magazine catch spring. 29—Grip safety. 30—Grip safety spring. 31—Thumb safety. 32—Thumb safety pin. 33—Stocks, right and left. 34—Stock screws. 35—Magazine.

Magazine parts:

a—Case. b—Spring. c—Carrier. d—Spring guide. e—Carrier knob. f—Bottom. g—Bottom pin.

The magazine being loaded and inserted in the pistol, the chamber is loaded by pulling the knurled checks of the toggle upward and then backward to their limit of travel and then allowing the links to spring forward and down abruptly. This carries the upmost cartridge from the magazine into the chamber and leaves the pistol cocked and ready for use. Before the toggle can be opened, the safety catch must be disengaged by pressing it down.

If it is desired to carry the pistol with nine cartridges in it, the magazine is withdrawn

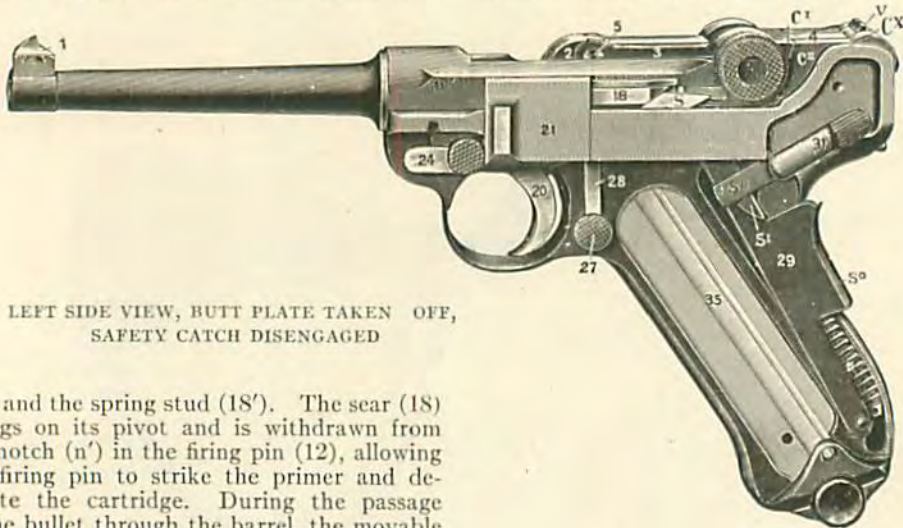


LONGITUDINAL AXIAL SECTION READY FOR FIRING

and a cartridge inserted to take the place of the one carried into the chamber, when the magazine is replaced in the pistol. If firing is not to be commenced immediately upon the pistol being loaded, the safety catch may be applied by pressing it up, as an additional precaution over the automatic grip safety.

The pistol being loaded and the safety off, the action in firing is as follows: A firm grip is taken on the stock, (17) so as to depress the grip safety (29) and the trigger (20) is pulled. The pressure is communicated to the sear (18) by means of the trigger lever

meet the cam surfaces (Cx) of the frame and the link pin (6) rises, contracting the toggle and opening the breech block (2). As the toggle rises and the breech block opens, the recoil spring (11) is compressed by the action of the coupler (4'), the rocker (11')



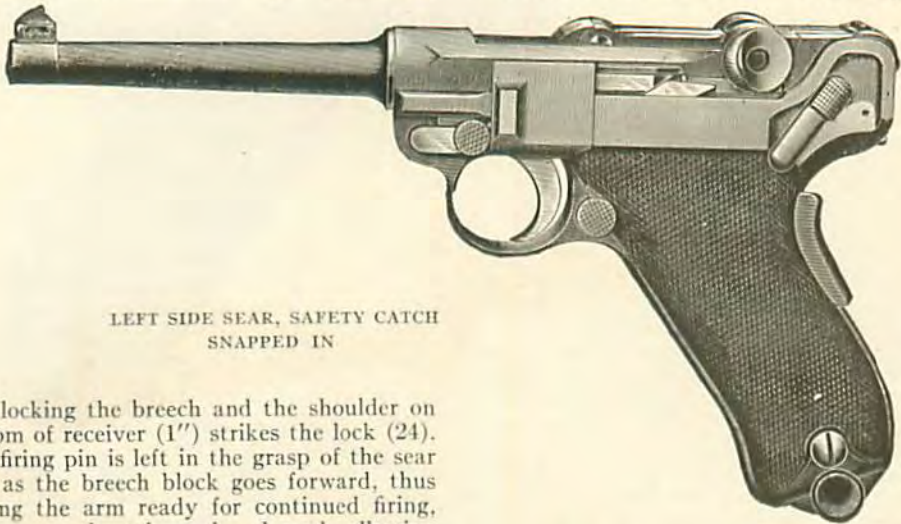
LEFT SIDE VIEW, BUTT PLATE TAKEN OFF, SAFETY CATCH DISENGAGED

(22) and the spring stud (18'). The sear (18) swings on its pivot and is withdrawn from the notch (n') in the firing pin (12), allowing the firing pin to strike the primer and detonate the cartridge. During the passage of the bullet through the barrel, the movable part A of the mechanism is held forward by the frictional contact of the bullet with the barrel. It is not held solidly forward, but its recoil is retarded so that the breech remains closed until the bullet leaves the barrel. As soon as the bullet leaves the barrel, the movable part A recoils in the ways on top of frame (17), the toggle cheeks (cx)

and the pull rod (11'). The firing pin spring (13) is also compressed by the toe of the forward link (3) pushing the firing pin back and the sear (18) is withdrawn from the trigger lever (22). As the breech block (2) nears its limit of rearward motion, the empty shell is ejected by (16). The breech block

passes behind the top cartridge in the magazine and as it goes forward, carries shell into chamber. The recoil spring forces the breech block forward, seats the cartridge and pushes the movable part A ahead on the frame (17), until the toggle straightens

The grip safety blocks the sear by rising automatically beside the rear end of sear (18), with its point (S), which acts from the frame (17) to the sear (18). The safety catch holds the grip safety by means of its hook (S'') engaging the hook of the grip safety (S').

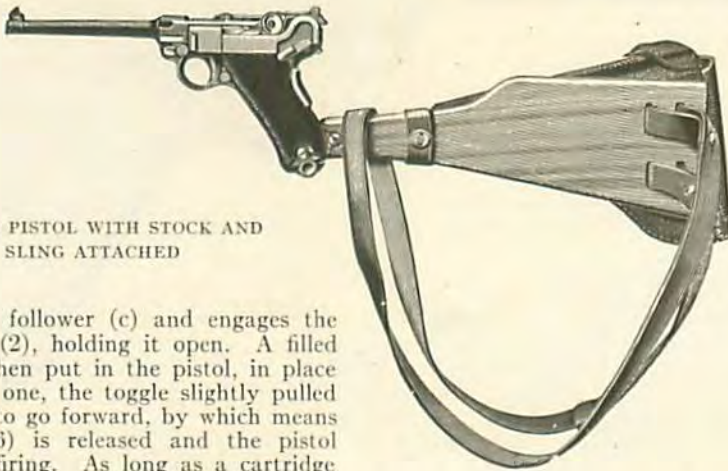


LEFT SIDE SEAR, SAFETY CATCH
SNAPPED IN

out, locking the breech and the shoulder on bottom of receiver (1'') strikes the lock (24). The firing pin is left in the grasp of the sear (18) as the breech block goes forward, thus leaving the arm ready for continued firing, as soon as the trigger is released, allowing the spring stud (18') to resume contact with the trigger lever (22).

Firing may be kept up by pulling and releasing the trigger as long as cartridges remain in the magazine. When the pistol is emptied the catch (26) is pushed up by

To dismount the mechanism: first take out the magazine (35) and empty the barrel (1), then release the firing pin by pulling the trigger. Depress the grip safety (29), draw the movable part A back until the link checks meet the cam surfaces, turn down



LUGER PISTOL WITH STOCK AND
SLING ATTACHED

the magazine follower (c) and engages the breech block (2), holding it open. A filled magazine is then put in the pistol, in place of the empty one, the toggle slightly pulled and allowed to go forward, by which means the catch (26) is released and the pistol prepared for firing. As long as a cartridge is left in the chamber, the extractor (15) projects above the surface of the breech bolt (2), thus acting as an indicator. The number of shells in the magazine can be seen or, in the dark felt, by means of the carrier knob (35e).

the locking bolt handle (24), let the movable part slide forward off the frame (17), at the same time removing the trigger plate (21).

Press the pin (7) out from right to left, after releasing the sear (18), lift toggle joint

checks and withdraw the breech bolt with toggle attached.

Hold the breech block firmly with the toggle straight, take a small screw driver and press the main spring abutment (14) inward (so as to compress the main spring), turn abutment to the left to get its shoulder out of groove in breech bolt and let the abutment out of breech block slowly, when the firing pin (12) can be removed.

To assemble the mechanism: put firing pin and spring (12 and 13) in position, place abutment (14) with its shoulder in slot in breech block and while compressing main spring turn abutment to right until the slot stands vertically.

worked several times to make sure that the mechanism is properly joined.

To complete dismounting while movable part and breech block are dissembled: hold movable part in left hand, lift rear end of ejector (16) with screw driver until its round shoulder leaves socket and lodges against edge, press from inside receiver, against nose of ejector, which will cause ejector to jump out of receiver. Lift sear spring (19) and slide it straight forward, while pressing in on front of sear (18), which will allow sear to drop out. Drive out extractor pin (15'') until rear end of extractor is raised by its spring and remove extractor and spring (15 and 15'). Raise rear end of breech bolt



THE LUGER CARBINE

Insert the breech block with toggle links in the receiver and while holding in the front of the sear (18), insert the pin (7) from the left, thus joining the mechanism into the movable part.

Hold the movable part upside down, the firing pin uncocked and slide the stationary part on carefully; turn pistol over, bring movable part back until coupling link (4') can fall into its place in front of hooks of recoil spring lever (11''); depress grip safety (29), push movable part back until toggle cheeks engage cam surfaces (Cx) of frame, insert the trigger plate (21) and turn lock (24) into place. The toggle should now be

catch (26) and slide it to rear. Hold back slightly on trigger and lift it out of frame. Press up on locking lever (24) and lift it out of frame in a straight line. Take off stocks (33), depress grip safety (29), lift out its lower end with the stud and pull the whole down out of frame. Push out pin (32) and remove the safety catch (31). Take out pin (35g), pull bottom (35f) out of magazine when other parts will fall out.

Assembling is accomplished in the reverse manner to the above. Force should never be used to dismount or assemble the mechanism, as it may result in injury to the parts.

A New Lyman Sight

We are pleased to announce to the rifle shooting fraternity that the Lyman Gun Sight Corporation of Middleford, Conn., is now ready to furnish their new micrometer windgauge receiver sight for the New Springfield rifles, models 1903 and 1906. They can also supply receiver sights No. 33, adapted to Krag rifles and carbines. They are now working on a new supply of their excellent Krag sight No. 34, which will

soon be ready for delivery. The new micrometer Springfield receiver sight is the most perfect and accurately adjusted rear sight ever developed. It was suggested and the specifications supplied by the foremost gun men and most practical and successful rifle men in America. You only need this sight to make your sporting or military Springfield a perfect arm, for any line of game or target work.