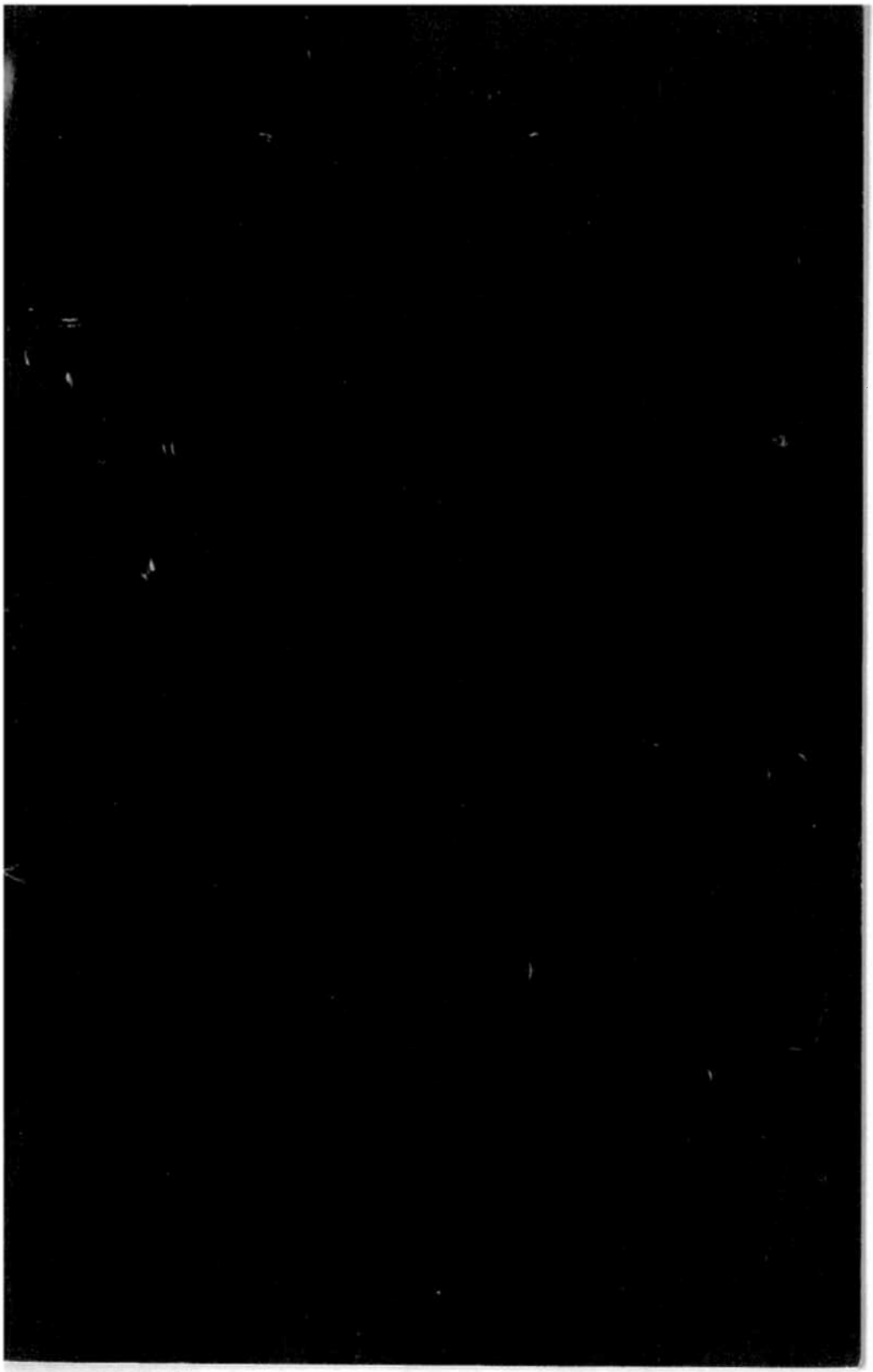


Deutsche

Waffen- und Munitionsfabriken.

BERLIN S.W.

AUTOMATIC REPEATING PISTOL

BORCHARDT PATENT.

PATENTED IN ALL THE PRINCIPAL COUNTRIES.

Introductory Remarks.

Automatic firearms are divided into two distinct classes: In the first all the functions of opening and reloading are caused by the recoil, **after the projectile has left the barrel.** In the second a portion of the propelling gases is utilized to operate the mechanism, **before the projectile has left the muzzle of the barrel.**

The disadvantage of the latter class, in comparison with the former, shows itself in a lack of precision in shooting and a greater amount of fouling of the breechmechanism.

Recoil is the motion of a firearm opposite to that of the projectile, it takes place as soon as the gases of the ignited powder begin to act upon the projectile in front and upon the breech of the arm in the rear. The motion of the projectile takes place simultaneously with the recoil of the arm in the reversed ratio of the masses of these two bodies.

The momentum which is imparted to the projectile carries it to the mark after leaving the barrel, and the force, which continues to act in the recoil of the arm, may be utilized for working the breechmechanism.

The automatic pistol, Borchardt Patent

belongs to the class of recoil firearms. **No gases escape, while the bullet is forced through the barrel.**

The barrel combined with the breechmechanism form a complete system of a single loader, which could be fired without the grip. This complete single loader is fitted into a grip in such a way, that it slides therein parallel to the bore of the barrel; the grip may thus be compared to a gunrest. The breech of this complete firing system remains perfectly closed during its first part of the recoil in the grip. During the last of the recoil, after the bullet has left the barrel and after the propelling gases have lost their pressure upon the breech, the opening of the breech-mechanism takes place.

Plate I—III will serve to illustrate the Borchardt-Pistol.

The cuts represent:

Plate I.

Fig. A. & B. The firing system proper, in a closed and opened position, consisting of barrel, receiver, locking mechanism, connecting pin and sear.

Fig. C. The grip (gunrest) in which the complete firing system slides. The grip serves by means of the curve in the rear as buttpiece for opening the breech. The spring-box, ejector, trigger, safety and magazine rae shown attached to the grip.

Fig. D. A complete locking mechanism consisting of breechblock, extractor, firing bolt, firing-bolt spring and links.

Fig. E. A pistol without buttstock.

Fig. F. A pistol with attached buttstock left view.

Fig. G. A pistol with attached buttstock right view.

Fig. H. Side view and section of a filled magazine.

Fig. K. & L. Vertical sections of the pistol.

Plate II.

Numbered parts of the pistol, magazine, buttstock and implements.

Plate III.

Manipulations, as described, for taking apart and assembling etc.

Automatic functions of the Borchardt-Pistol.

The firing system Fig. A is driven back in the grip Fig. C by the recoil; the frictionrolls on the projecting arm of the rear link of the togglejoint are forced downward by striking against the stationary curve in the grip, raising thereby the central joint of the links and drawing back the breechblock, which carries with it the empty shell by means of the extractor, until it is thrown out by the ejector. The momentum, which is imparted to the moving system

is sufficient to overcome the tension of a double spring, which, acting upon the togglejoint, closes the breech again. During the forward movement of the breech-block the top cartridge is carried from the magazine into the chamber, and the firing bolt is cocked. All the functions except the pulling of the trigger are therefore automatic.

Properties and advantages of the Borchardt-Automatic Repeating Pistol.

The pistol possesses all the qualities that are demanded in most modern firearms.

It is absolutely safe, its parts are comparatively stronger than those of modern military rifles.

The firing bolt is positively drawn back at each opening of the breechmechanism.

In case of a punctured primer, the gases pass out forward of the firingbolt-body.

The safety locks the sear directly over the cocking notch.

The loaded magazine can be inserted and withdrawn, while the mechanism is locked by the safety.

The remaining number of cartridges may at once be ascertained by means of the holes in the side of the withdrawn magazine.

The loading and unloading, locking and unlocking of the safety is performed, while retaining the pistol in the right hand.

The recoil is greatly reduced, being counteracted and distributed by springs.

With the attached buttstock a target-range of 500 meters is obtained with a penetration of from 5 to 6 centimeters of pine.

The automatic functions of loading the chamber and closing the breech are performed with absolute certainty by means of the toggle-joint mechanism. The latter seems especially adapted for automatic firearms, inasmuch as the last straightening of the toggles exerts an infinite power in closing the breech.

The functions of the mechanism for one single shot do not exceed one twentyfifth part of a second. The greatest rapidity of pulling the trigger by hand is therefore anticipated by the automatic action of the mechanism.

Of great advantage is the boxshaped magazine which encloses the 8 cartridges; it is quickly handled in loading and permits the use of greased ammunition.

The mechanism does not foul, because the breech is not opened before the bullet has left the barrel, and before the propelling gases have lost their pressure upon the breech.

An excellent precision in shooting is attained by the long distance between sights (315 mm) and the uniform resistance to the recoil.

The central grip has proved a great advantage in changing aim quickly, also in shooting on horseback.

The attaching of the buttstock to the pistol requires but a few seconds.

List of parts and implements of the Borchardt Repeating Pistol.

Pistol:

1. Extractor.
2. Breechblock with togglejoint, pins, stirrup, friction rolls and catchlever.

3. Firing bolt.
4. Firing bolt spring with pin.
5. Breechblockscrew.
6. Connecting pin.
7. Sear with rollerpin and spring.
8. Sear screw.
9. Sear spring.
10. Coverplates right and left.
11. Springbox with double closing spring, pin, springroll and boxbushing.
12. Springboxscrew.
13. Magazine holder.
14. Trigger with Spring and pin.
15. Barrel, front sight and receiver.
16. Grip, with rear sight, ejector and double recoil spring.
17. Safety.
18. Safety spring.
19. Trigger cover.
20. Trigger cover screw.
21. Cheekpiece right and left.
22. Cheekpiece screw.

Magazine.

23. Magazine box.
24. Magazine cover.
25. Magazine springs with caps.
26. Magazine bottompiece with pin.

Buttstock.

27. Wooden stock with ferrule and pin.
28. Connecting bolt with nut.
29. Connecting bolt pin.
30. Strap staple with screw.

31. Hook staple with screw.
32. Cheekpiece with bolt, spring, and plate.

Implements.

33. Barring block with jointed cleaningrod and oilbox.
34. Lengthening piece for cleaning rod.
35. Screwdriver handle.
36. Screwdriver blades.
37. Drifts.
38. Leather cover for pistol laced to buttstock (see Plate I Fig. G).
39. Strap with carbine hook and button (see Plate I Fig. F. & G.

Directions for the manipulation of the Borchardt Repeating Pistol.

Loading of the magazine.

Take the magazine into the left hand and slide the cartridges with the right under the inward bent lips, assisting with a downward pressure of the indexfinger of the left upon the previously inserted cartridge. A full charge consists of 8 cartridges.

Inserting of the magazine.

Push the magazine into the opening at the bottom of the pistolgrip until it is caught by the selfacting magazineholder. A slight blow with the left against the bottom of the magazine will help to secure it.

Charging the chamber of the barrel.

Place the indexfinger of the left over the knob of the togglejoint, and the thumb behind the springbox at the rear end of the pistol: than draw

the knob backward until the breech is fully opened (Plate III, Fig. X). This allows the top cartridge to rise in front of the breechblock. After releasing the knob, the breech closes instantly and the cartridge is pushed out of the magazine into the chamber of the barrel.

Firing.

In firing it is only necessary to pull the trigger; **the pistol remains loaded and cocked after each shot. Whenever the firing is discontinued the safety should be pushed up without fail.**

Removing the magazine.

Press upon the magazine holder with the thumb of the right hand and pull the magazine out of the pistol grip with the left. The magazine can also be taken out, when all parts of the mechanism are locked by the safety.

Discharging the chamber of the barrel.

After removing the magazine open the breech slowly and the cartridge will fall through the grip into the hand.

Cleaning the barrel.

Remove the magazine and replace it by the wooden barring block, open the breech fully and push the bar up in front of the breechblock, the latter will now rest against the bar and is held back, while the barrel is being cleaned.

Taking apart for cleaning.

Pull the trigger to release the firing bolt. Loosen the springbox-screw (see Fig. I). Grasp the pistol with the right hand (see Fig. II) and press with the thumb against the spring-box, while the screw is being taken out with the left, now release the pressure slowly and the springbox will follow the thumb (see Fig. III) together with the closing pin. The latter is then unhooked from the stirrup.

The right and the left coverplate are now raised sufficiently at the lower end to free them and are then turned sideways against their stobs (see Fig. IV) so that the connecting pin can be pushed out towards the facing side of the pistol.

Remove the trigger-cover-screw (see Fig. V) and by means of a slight push upward the trigger-cover (see Fig. VI).

After the removal of the trigger, the barrel and forked receiver with lock-mechanism can be pulled out of the guides and casing of the grip (see Fig. VII).

The lock-mechanism is then separated in the same manner from the receiver (see Fig. VIII).

The firing-bolt is taken out by unscrewing the breechblock screw with the special screw-driver having a central stud.

The extractor must be pressed upward in order to be pulled out of the breech-block.

A further separation of parts is seldom required.

When it becomes necessary, all pins and bushings should be driven out toward the facing-side, from the right to the left.

The sear can be taken out after removing the searscrew.

The sear spring is pushed out of its seat with a screwdriver.

The closing spring and its bushing are freed by first removing the small holding pin and then pressing out the springbox-bushing; this is done by inserting the springbox-screw and using it as driver.

The ejector and its spring fall out after the removal of the ejector pin.

The cover plates will be released when they are raised over and turned beyond their stops.

The recoil-spring at the bottom in the rear part of the receiver casing of the grip can be pulled out forward after the recoil-spring-pin has been driven out.

The cheek-pieces are removed by pressing against their inner face after the screws are withdrawn.

By pushing the safety downward after the removal of the left cheekpiece, it falls out, the safety spring is then taken out and the magazine-holder can be pushed through the grip from the left to the opposite side.

The breechblock, the toggles, the friction-rolls and the catch-lever remain assembled as much as possible, they can be separated, however, by carefully driving out the connecting pins.

The magazine springs and cover can be taken out, after the bottompiece has been released by pressing out the pin.

Assembling

is done in the reversed order from the above.

One has to observe that the sear-screw is turned so, that the flat face on the lower cylindrical part will correspond with the groove in the receiver.

When the receiver and the assembled mechanism

is being pushed into the guides of the grip, the rear end of the ejector has to be lifted, so that the breechblock can pass freely over its forward end; this is done by passing a screw driver through the springbox-opening in the grip and pressing up against the under side of the projecting rear-end of the ejector (see Fig. IX).

Attaching the buttstock.

Insert the small tenon at the back of the springbox into the slot of the small end of stock and turn the projecting roughed nut until the pistol is firmly seated.

Dates
referring to the Borchardt-Repeating Pistol.

Weight of Pistol	1275	gramm
„ of buttstock leather bag and strap	425	„
„ of magazine	55	„
„ of loaded cartridge	10,55	„
„ of cartridge case	4,60	„
„ of steelcovered bullet	5,50	„
„ of powder	0,45	„
Length of cartridge	35	Millimeter
„ of barrel	190	„
Caliber of barrel	7,65	„
Twist of rifling (4 grooves)	250	„
Distance between sights	315	„
Initial velocity of bullet	400	Meters.

At the official test the finished mechanism is proved with a charge of 5,6 gramm black powder and a soft-lead slug weighing 16,1 gramm.

The barrel and parts of the lock bear the official stamp.

K.S. HERMANN, BERLIN.

PLATE I.

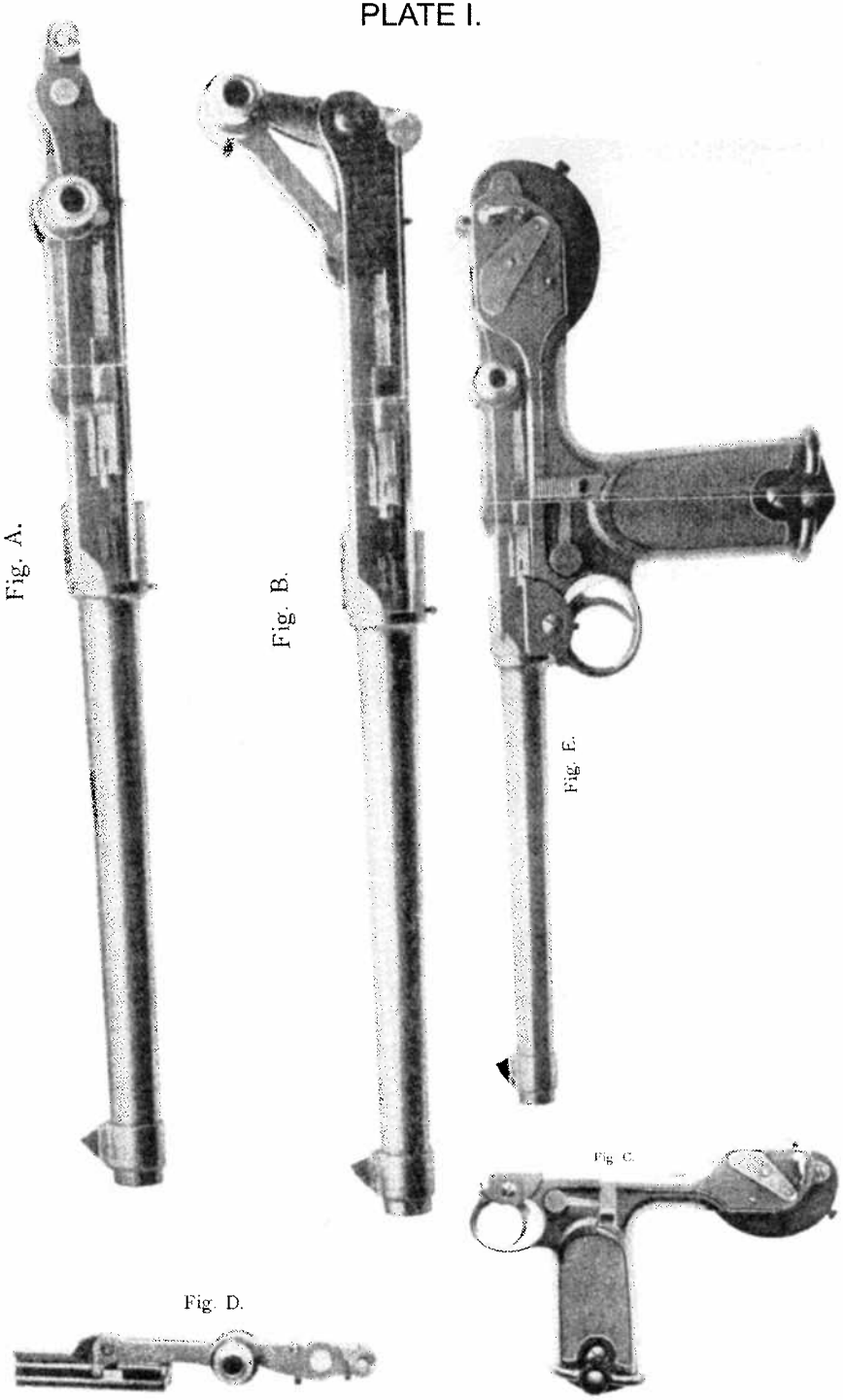


Fig. A.

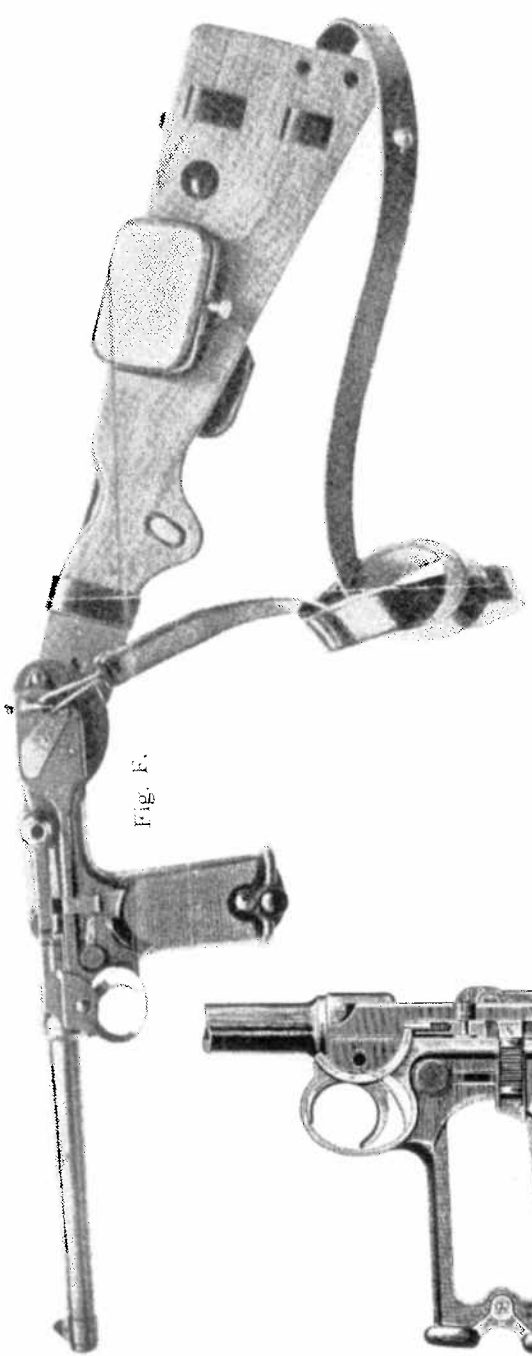
Fig. B.

Fig. E.

Fig. C.

Fig. D.

PLATE I. continued



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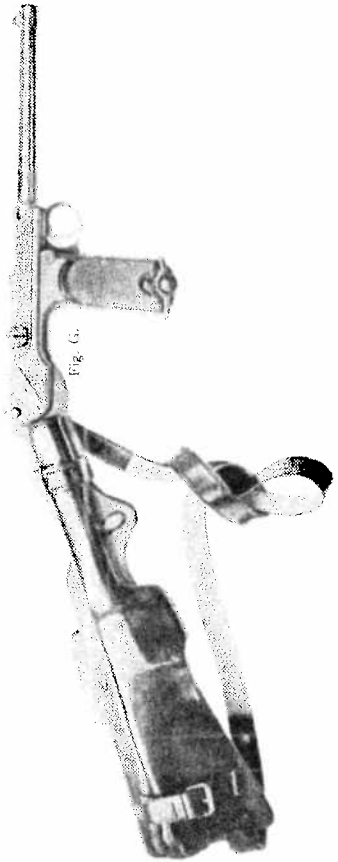

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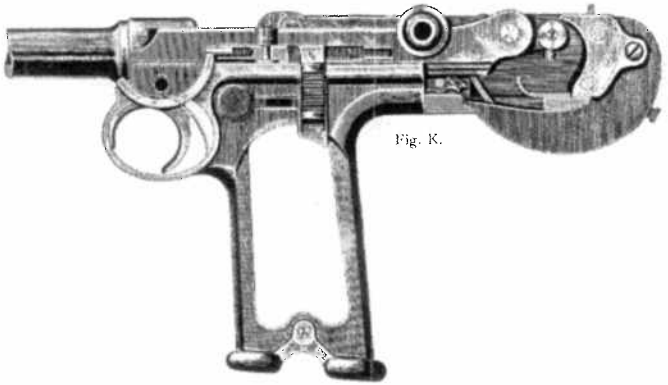

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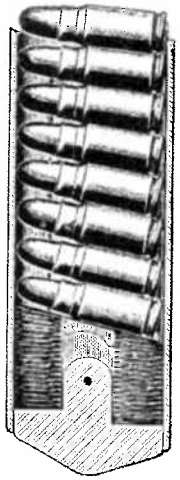

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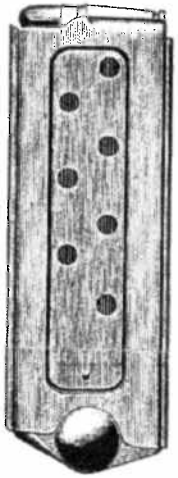

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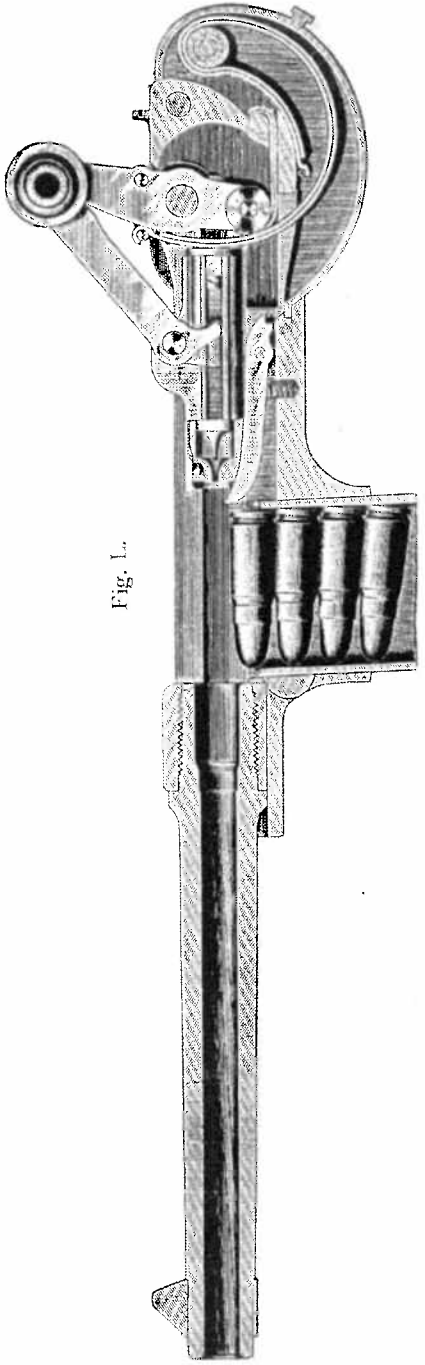
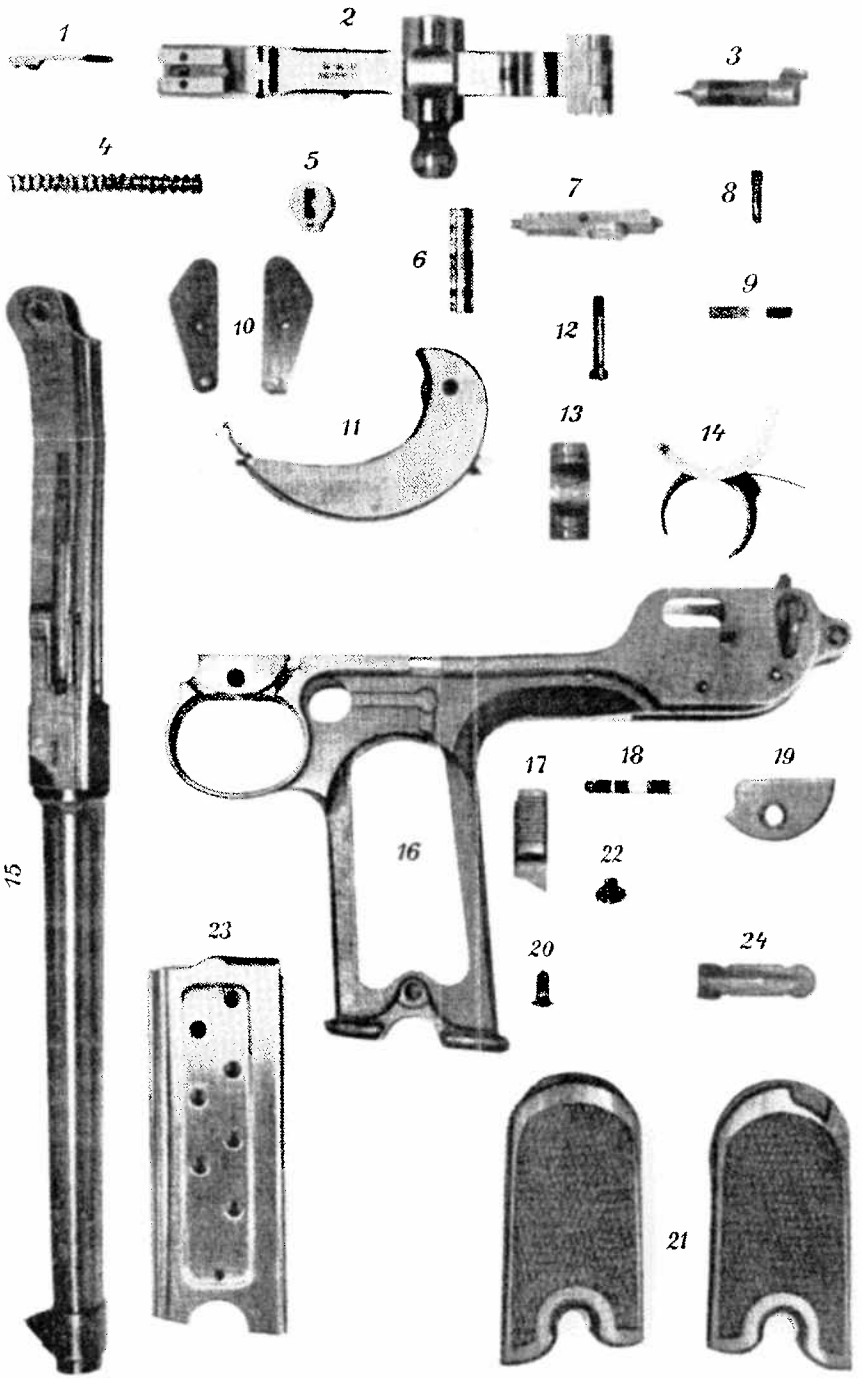


Fig. L.

PLATE II.



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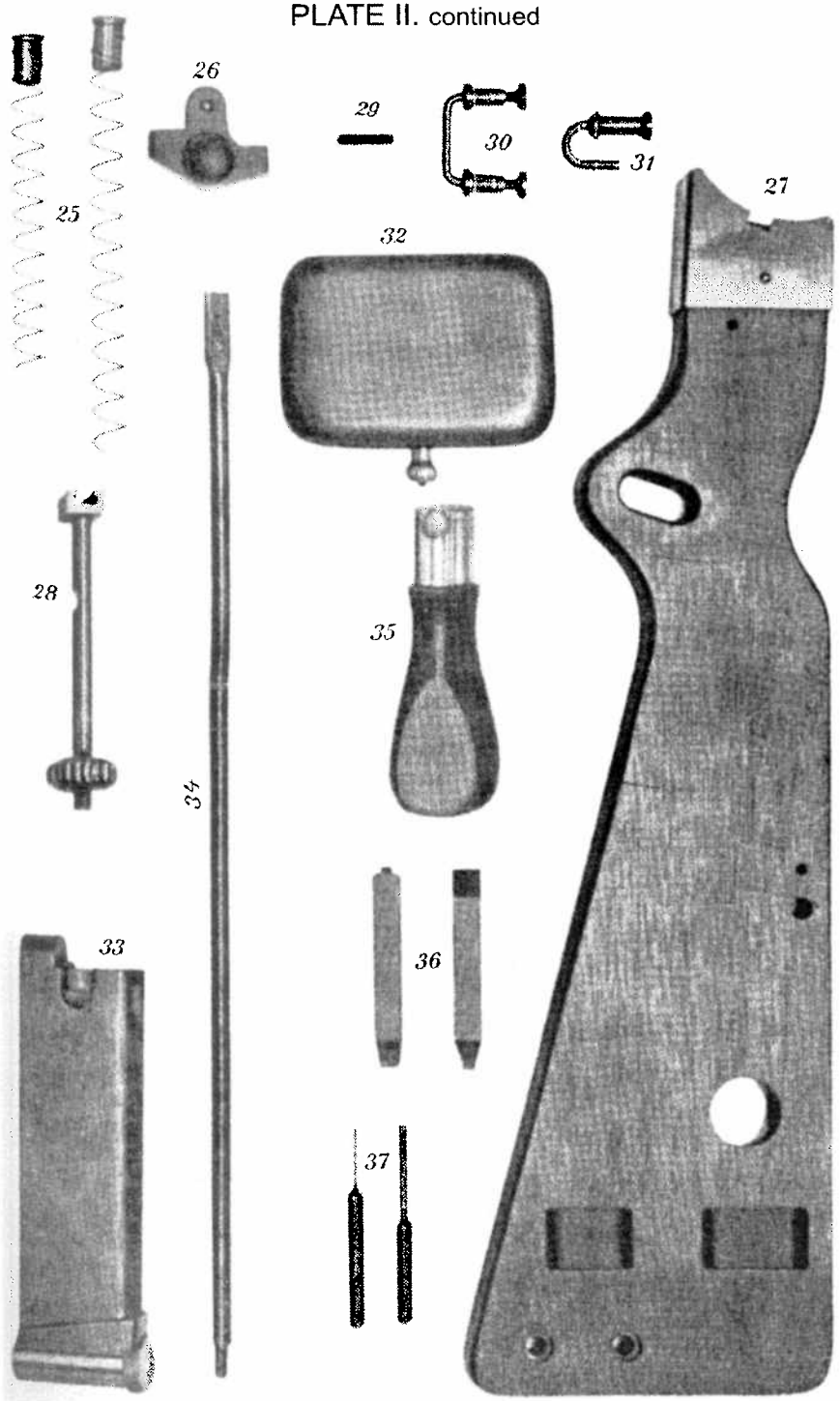

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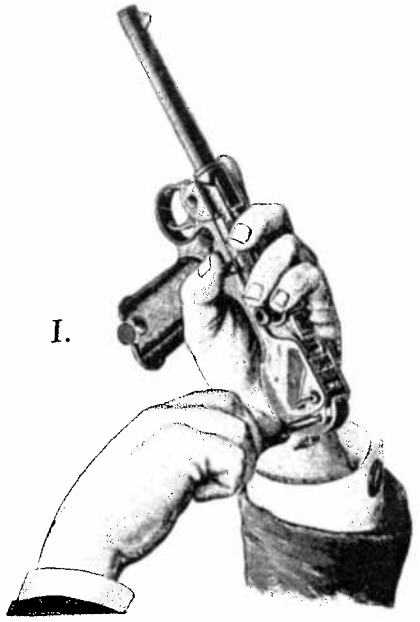

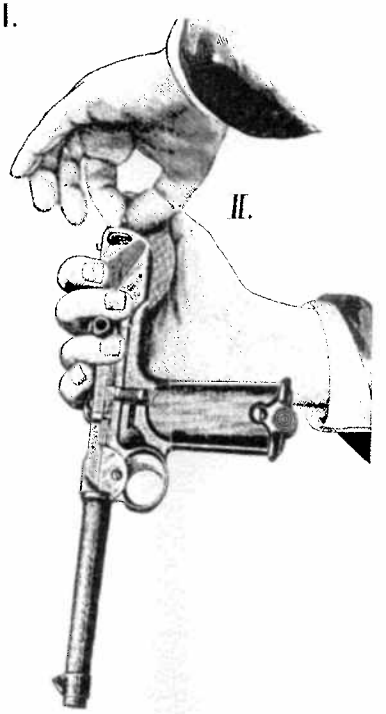

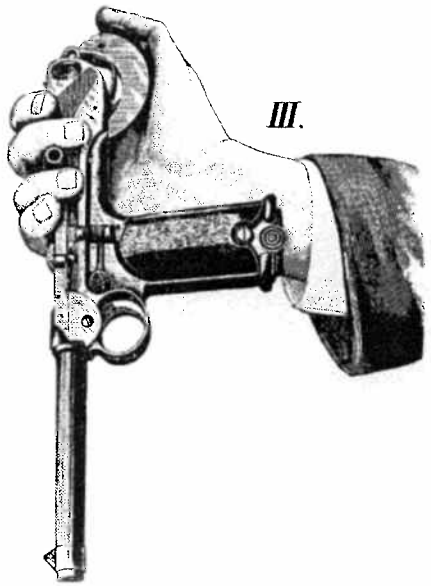

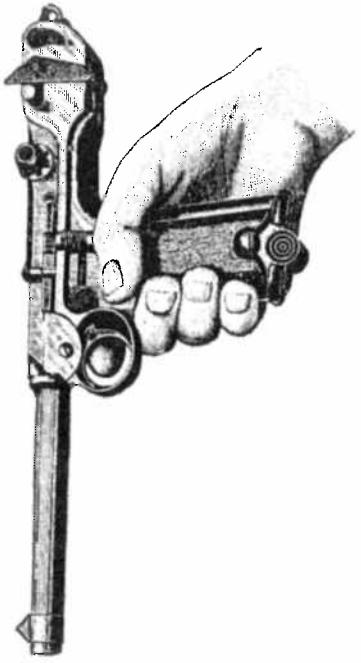

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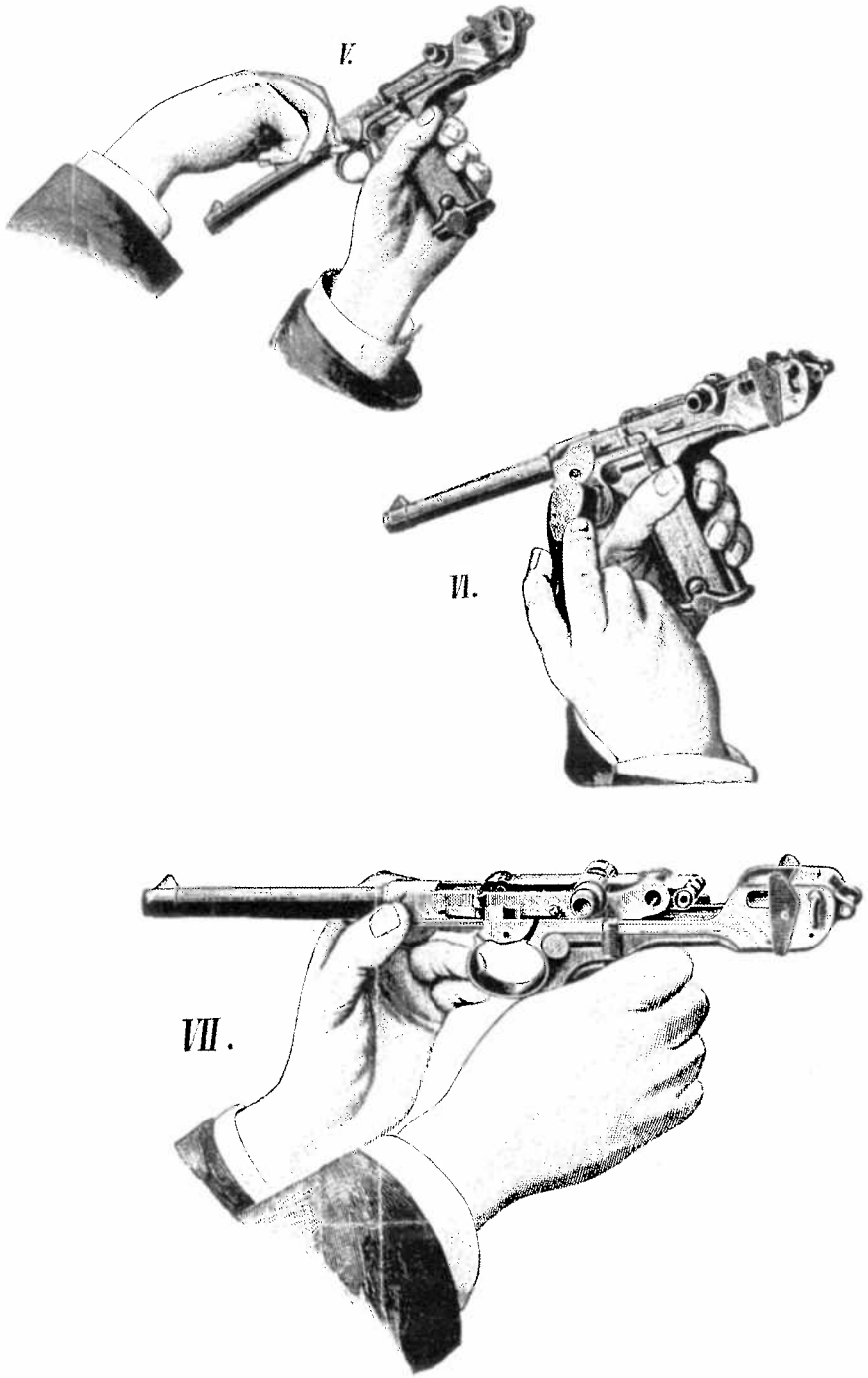

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