T. CONSENTINO.

FIREARM.

APPLICATION FILED JAN. 5, 1909.

947,481.

Patented Jan. 25, 1910.

4 SHEETS—SHEET 1.

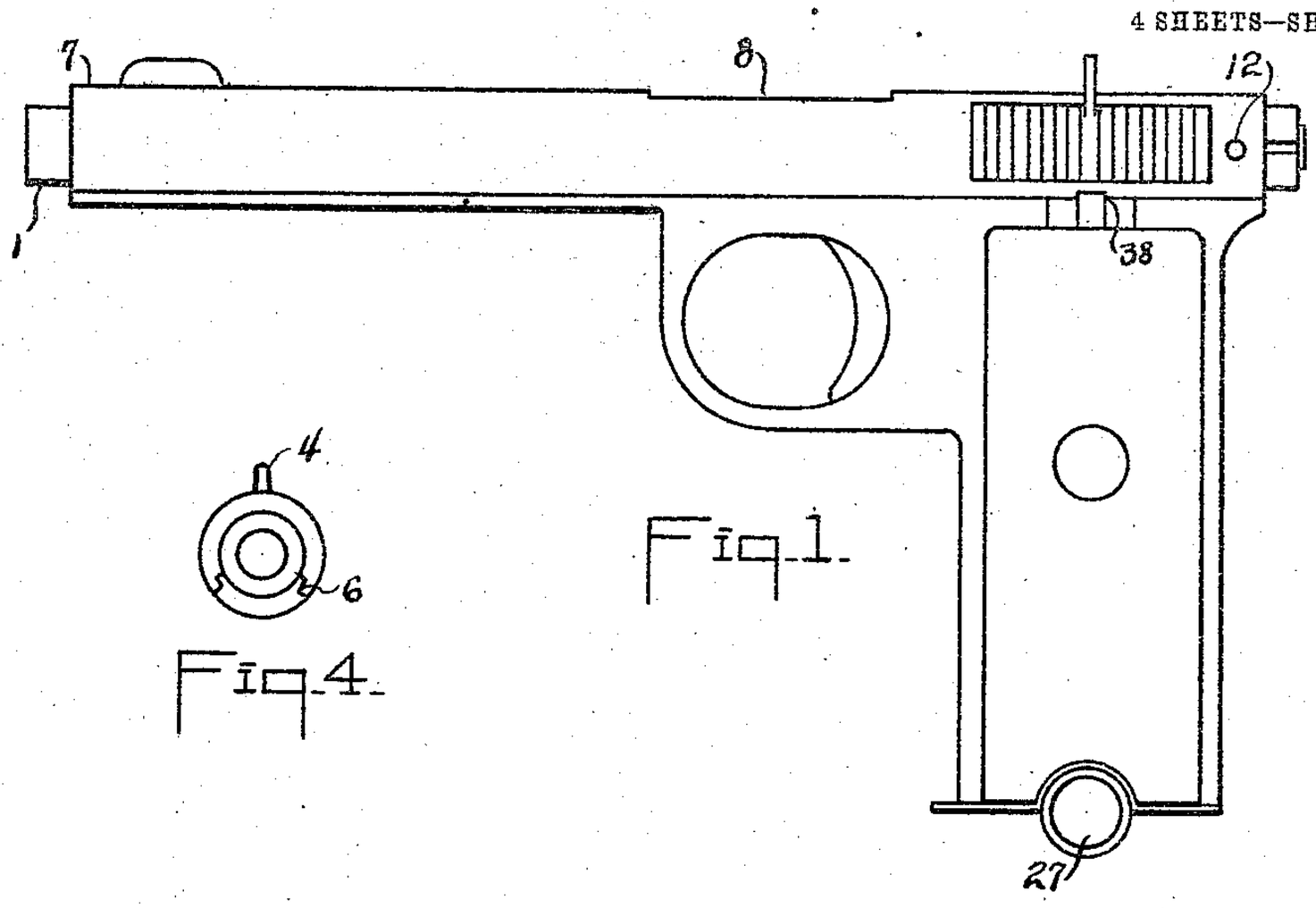

Fig. 1.

Fig. 4.

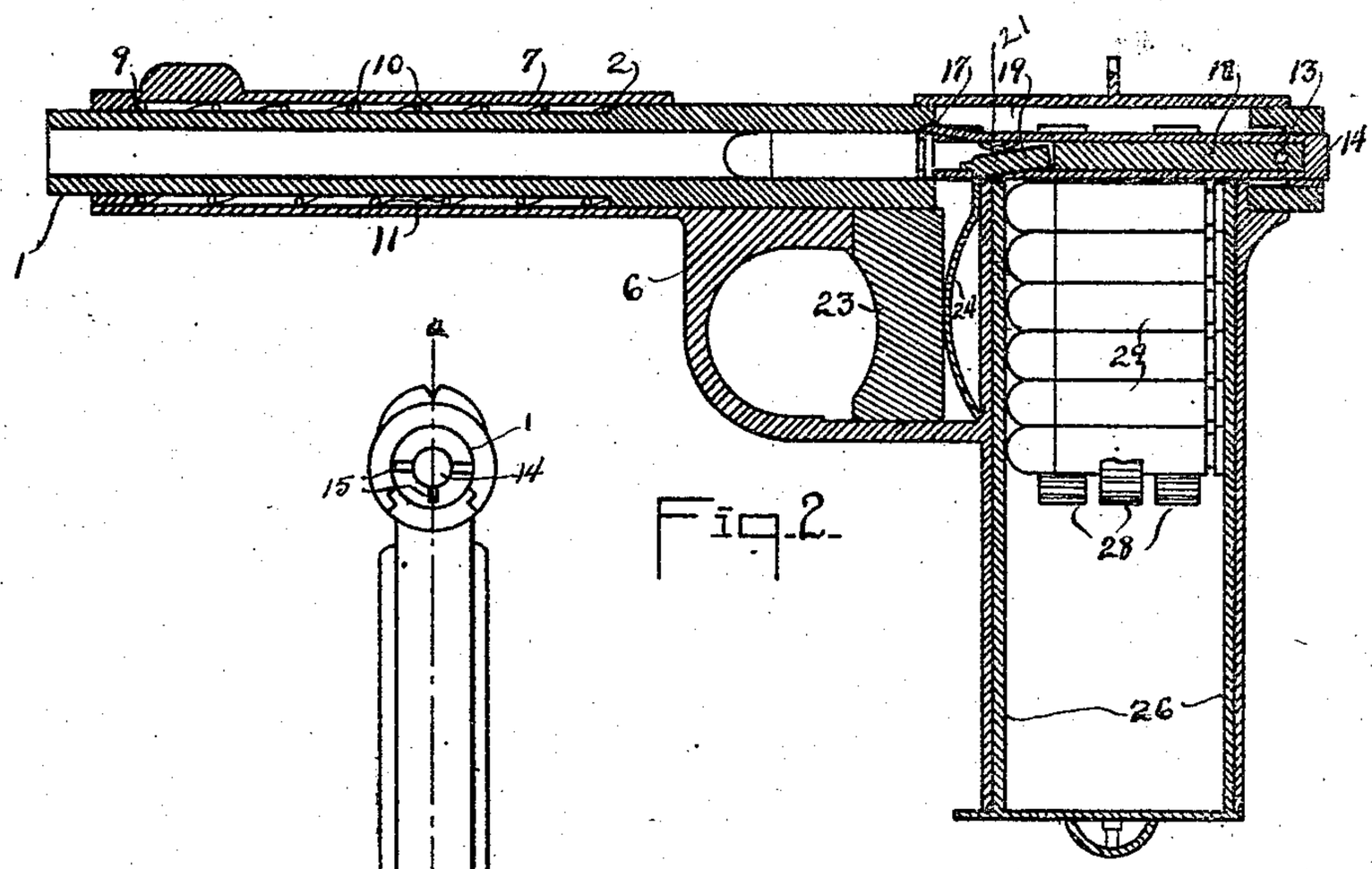

Fig. 2.

Fig. 3.

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4 SHEETS—SHEET 2.

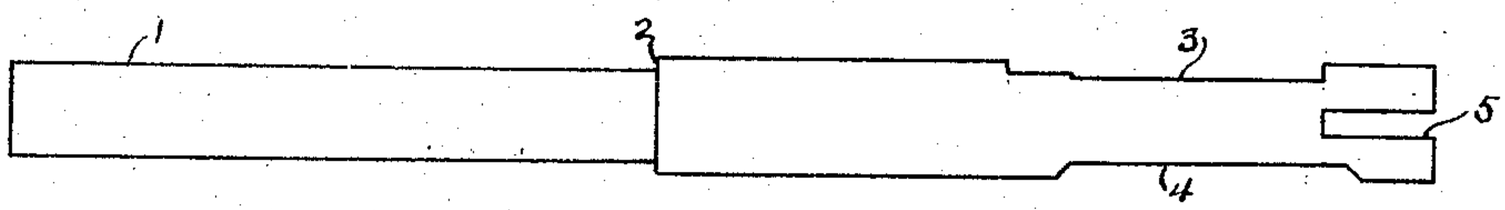

Fig. 5.

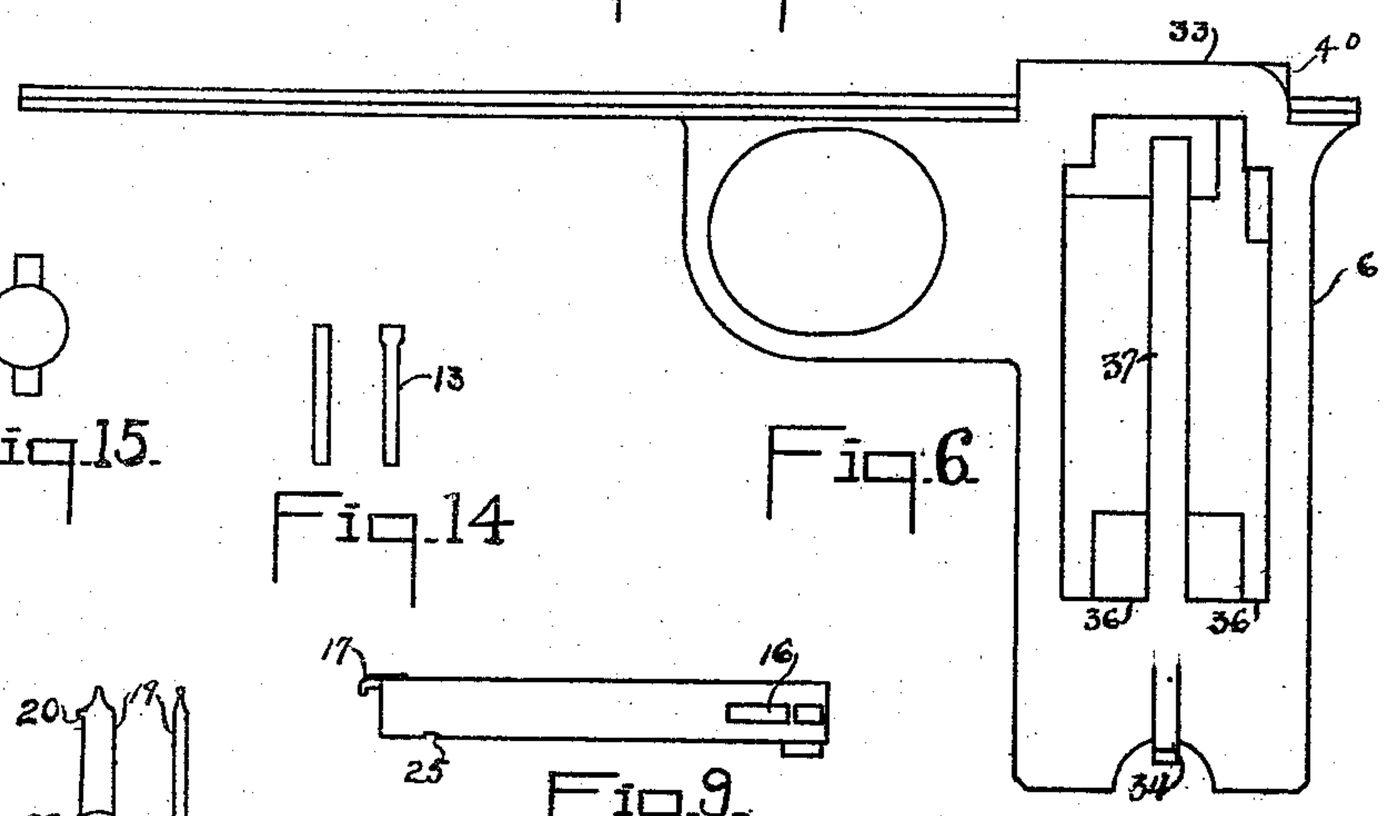

Fig. 6.

Fig. 15.

Fig. 14.

Fig. 9.

Fig. 10.

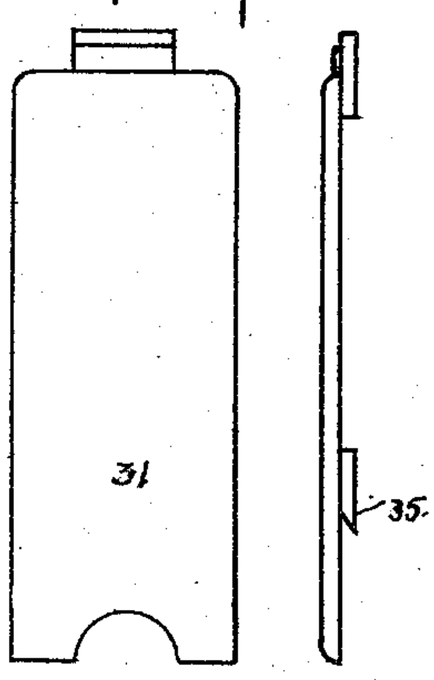

Fig. 8.

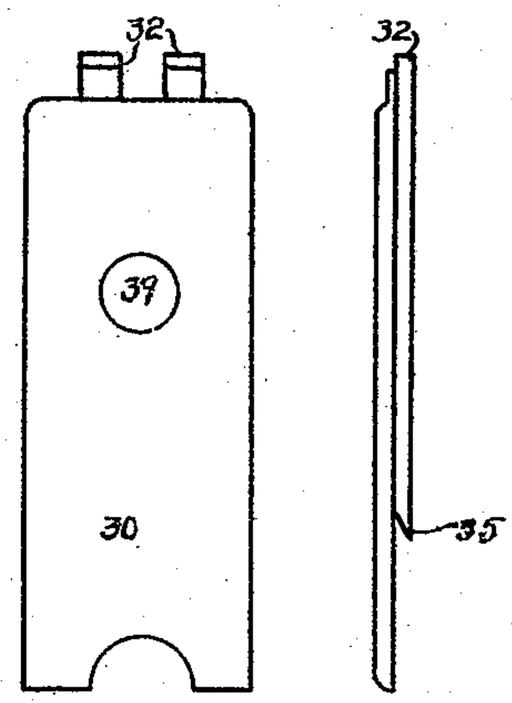

Fig. 7.

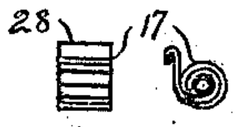

Fig. 11.

Fig. 12.

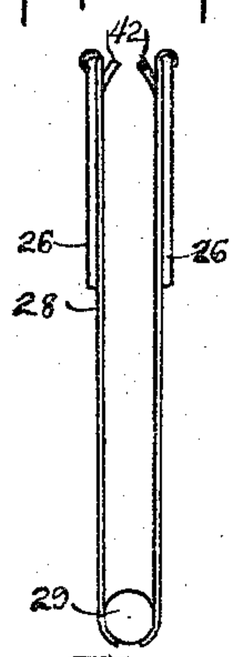

Fig. 13.

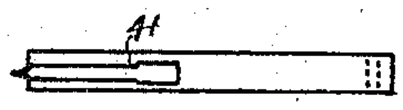

Fig. 16.

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4 SHEETS—SHEET 3.

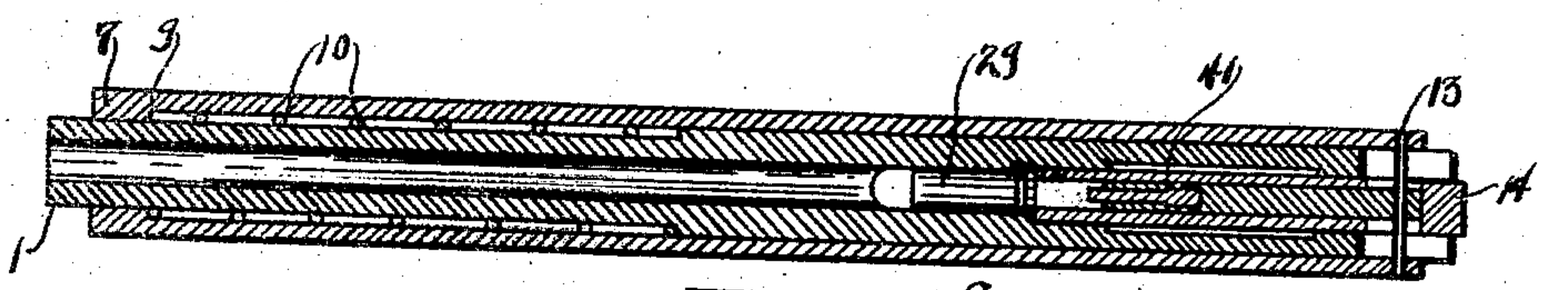

Fig. 16a

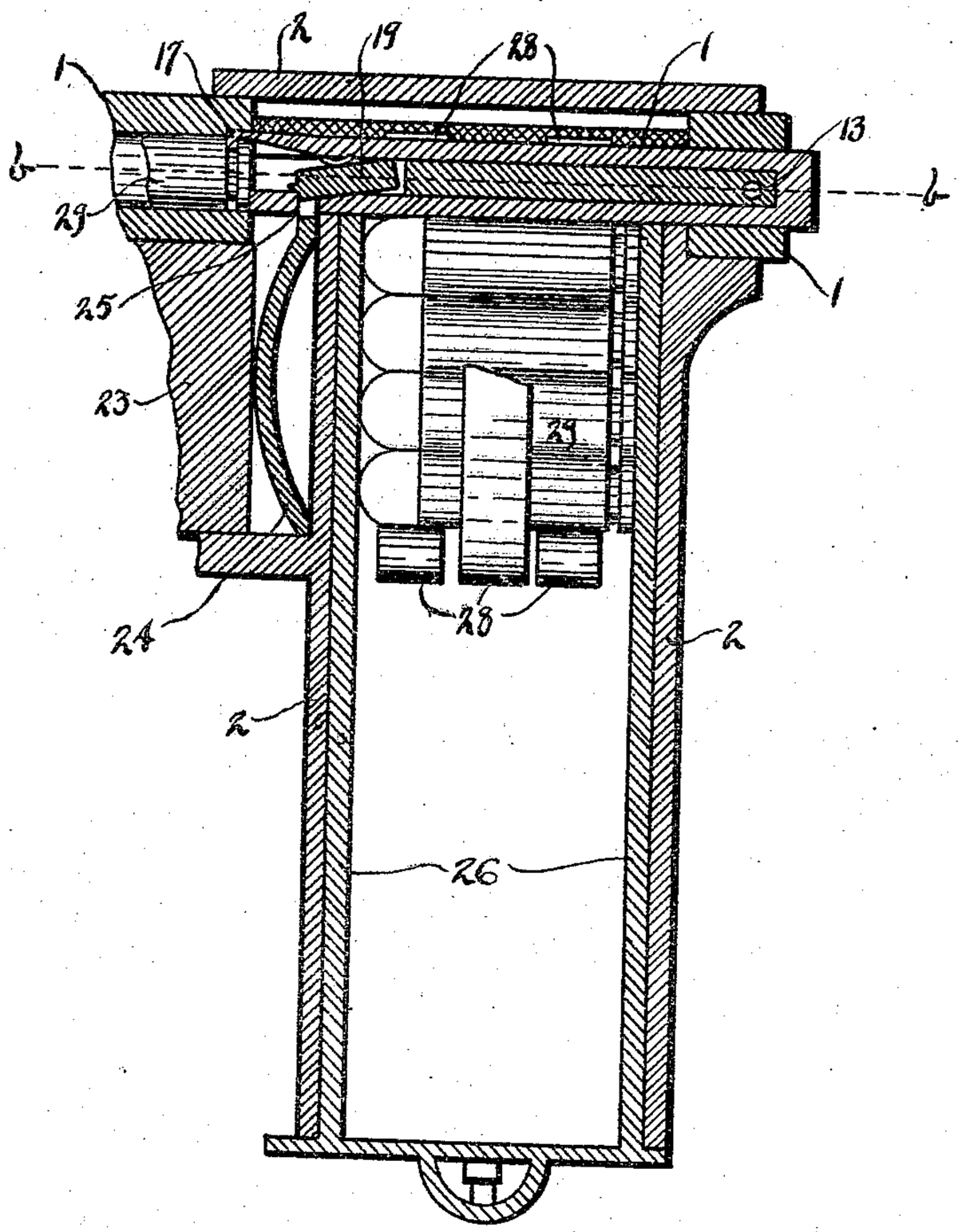

Fig. 17.

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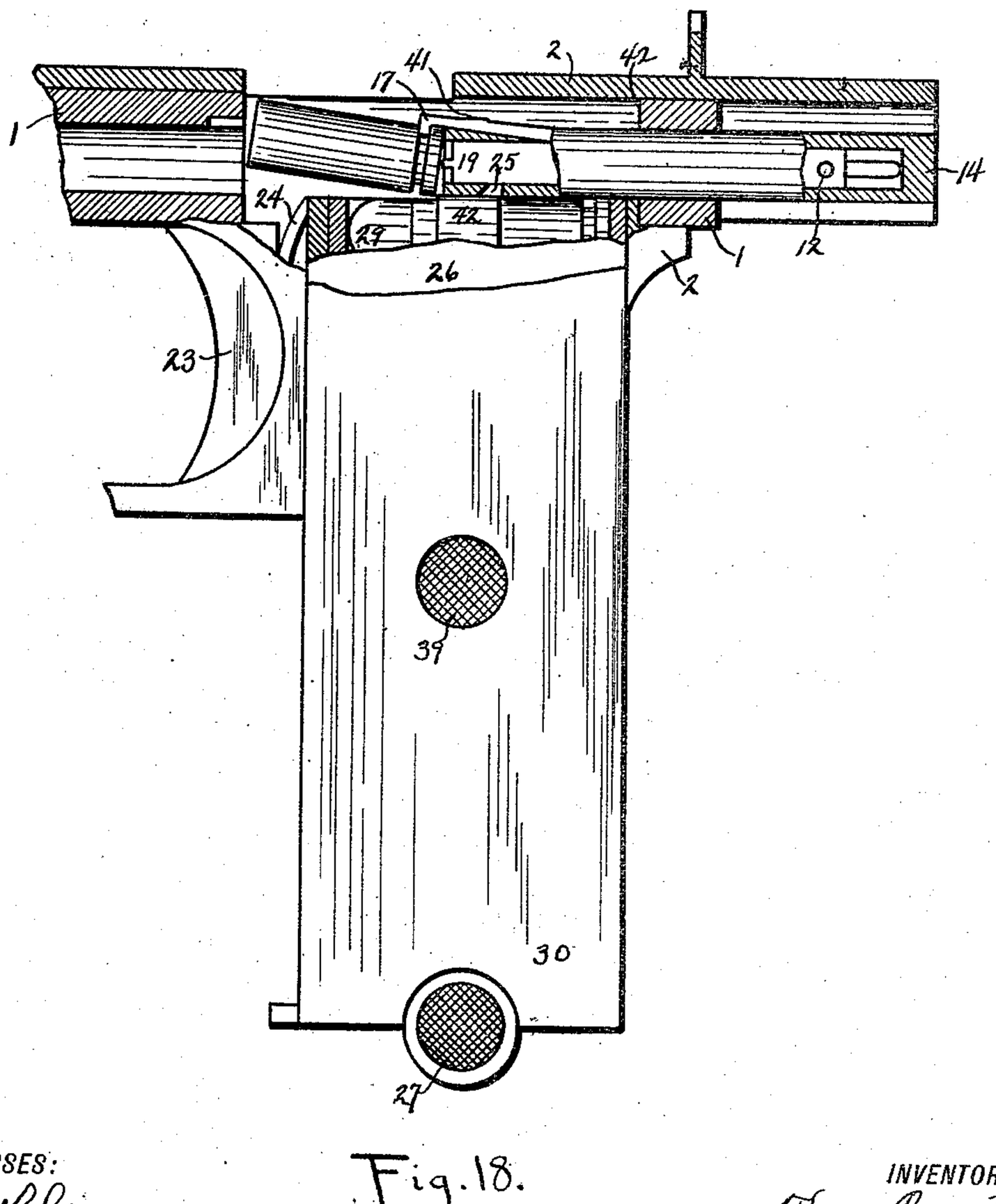

Fig. 18.

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UNITED STATES PATENT OFFICE.

THOMAS CONSENTINO, OF HOUSTON, TEXAS, ASSIGNOR OF ONE-HALF TO C. J. SUHM AND ONE-FOURTH TO JOHN P. DE PHILLIPPI, OF HOUSTON, TEXAS.

FIREARM.

947,481. Specification of Letters Patent. Patented Jan. 25, 1910.

Application filed January 5, 1909. Serial No. 470,749.

To all whom it may concern:

Be it known that I, THOMAS CONSENTINO, a citizen of Italy, residing at Houston, in the county of Harris and State of Texas, have invented certain new and useful Improvements in Firearms, of which the following is a specification.

My invention relates to new and useful improvements in firearms, and more particularly to that class of such devices as automatically eject the empty cartridge shell and place the cartridge to be "fired" in position for discharge.

The object of the invention is to provide a device of the character described that may be readily taken apart and put together, without injury to any of the parts. As is well known, the devices of this character, now in common use, are held together by means of screws, pins etc., which must be removed whenever it becomes necessary to take the same apart, for cleaning or other purposes, and the delicate parts of the mechanism thus soon become battered and worn so that the several parts will not fit closely and be held firmly together. My invention is intended to obviate this defect.

Another object of the invention resides in the provision of means for locking the arm against accidental discharge, and of means for locking the guard back when the magazine is empty, or removed.

A still further feature resides in the provision of a novelly constructed magazine, which holds more cartridges than magazines of equal size and which holds the cartridges compactly together and automatically brings each cartridge in its turn, into position for being acted upon by the mechanism, designed to bring the same into position for discharge.

A still further feature of my invention consists of means for discharging the cartridge shell.

Finally the object of the invention is to provide a device of the character described, that will be compact, practical, and one that can be readily taken apart and readily put together and one in which the several parts will not be likely to get out of working order.

With the above and other objects in view, my invention has particular relation to certain novel features of construction and operation, an example of which is given in this specification, which I do declare to be a clear, exact and complete description of my invention, reference being had to the accompanying drawings, and characters of designation marked thereon, which are made a part hereof and wherein,

Figure 1 is a side elevation of the firearm complete. Fig. 2 is a sectional view, thereof taken on the line *a—a* of Fig. 3. Fig. 3 is a rear elevation view. Fig. 4 is an end view of the muzzle. Fig. 5 is a side elevation of the barrel. Fig. 6 is a side elevation of the frame of my invention. Fig. 7 shows side elevation and edge views of one of the grips. Fig. 8 shows side elevation and edge views of the other grip. Fig. 9 shows a side elevation of the plunger. Fig. 10 shows side elevation and plan view of the firing pin. Figs. 11, 12, and 13 show forms and method of operation of pull springs which are designed to be placed in the magazine to hold the cartridges in position. Fig. 14 shows a key-pin designed to secure the parts together. Fig. 15 shows a plan view of the release button, and firing pin. Fig. 16, shows a plan view of the hammer and firing pin. Fig. 16[a] is a sectional view of the arm taken on the line *b—b* of Fig. 17, and Fig. 17 is an enlarged, partial, sectional view of the operative mechanism taken on the line *a—a* of Fig. 3. Fig. 18 is an enlarged partial sectional view showing the operative relation of the co-acting parts and with the arm in the act of ejecting the cartridge hull.

Referring now more particularly to the drawings, wherein like numerals of reference designate similar parts, in each of the figures, the numeral 1 refers to the barrel, which is shown in complete detail in Fig. 5. This barrel extends the full length of the arm and is provided near its rear portion with a shoulder 2. It is also provided with oppositely disposed slots 3 and 4 near its rear end, the former of which is in its upper side and provided for the ejection of the shell therethrough and the other of which is designed to permit the entrance of the loaded cartridge therein. The barrel is also provided with a transverse open ended slot 5 in its rear end for a purpose hereinafter set forth.

The numeral 6 refers to the frame which is preferably composed of sheet metal and comprises, in general, the magazine chamber, trigger guard, and barrel support, and is shown dismembered and in detail in Fig. 6.

The numeral 7 designates the barrel casing which carries the usual sight and bead, located as in an ordinary firearm; this casing is of a shape and size to fit snugly over the barrel and is substantially semi-cylindrical in shape, a complete longitudinal section of the cylinder having been removed. The edges of this casing are tongued and grooved in any suitable manner so as to dove-tail with the similarly constructed edges of the barrel support of the frame 6, as shown in Figs. 3 and 4, and is further provided with a discharge opening 8 of a size and shape to permit of the passage of the shell therethrough. This casing is designed to slide back and forth on its support, and carries an inward shoulder 9 near its muzzle end and the breech thereof rests upon the shouldered portion 2 of the barrel, as shown in Fig. 2, thus providing an annular space 10 between the casing and barrel, in which the main spring 11 operates. This spring is made preferably of elastic wire suitably coiled and operates against both shoulder 2 of the barrel and shoulder 9 of the casing, thus holding the casing in the position, in regard to the barrel shown in Fig. 2, which may be called its normal position. Near its end the casing 7 is provided with two diametrically opposed transverse openings 12 alined with the slot 5 of the barrel 1 designed to receive key-pin 13 shown in Fig. 14. This pin 13 plays also through slot 5 and while permitting free rearward movement of the casing 7 limits the forward movement thereof. This pin is flat on two sides and slightly wedge shaped so that it will bind enough to be held firmly in position.

Within the rear portion of the barrel 1, a cylindrical breech-bolt 14 operates. This breech-bolt is shown more in detail in Fig. 9 and is provided with suitable lugs 15 which radiate therefrom and protrude into oblong slots 5 in the rear end of the barrel and close the same against dust, etc. The breech-bolt 14 is further provided with an oblong longitudinal slot 16 through which key-pin 13 passes and by which the forward and rearward movement of the breech-bolt is limited relative to the casing 7. This breech-bolt carries at its forward end an extractor 17 designed to engage over the rim of the cartridge as shown in Fig. 2 and extracts the cartridge when the said cartridge fails to fire and the casing is pulled back by the hand. The breech-bolt 14 is tubular and within it a hammer 18 plays. The back of extractor 20 is provided with a shoulder 41. This hammer is oblong in shape and designed to fit snugly within the breech-bolt and is secured therein by means of key-pin 13 passing therethrough. It is obvious that the play of the hammer relative to the breech-bolt will be equal to the length of slot 16 and as key pin 13 passes snugly through the openings 12 in the casing and also through a similar opening in the hammer, the hammer has no movement independent of the casing but moves back and forth therewith. The fore end of the hammer 18 has a longitudinal slot for carrying a firing pin 19. This firing pin carries a projecting shoulder 20 on its underside and near its front end designed to engage in a transverse slot 25 in the under side of breech-bolt 14, which engagement is normally secured by means of a downward pressure of spring 21, against said firing pin. This spring is carried by said firing pin and is preferably made of spring steel. The hammer and firing pin are jointly of such a length that when the hammer is driven in a manner hereinafter described the pin will strike the cap or primer of the cartridge and cause the same to be discharged. This firing pin has free vertical play in the hammer but its rearward motion is limited by the hammer 18 and it carries shoulder 22 on its sides which limit its forward motion by coming into contact with opposing shoulder 41 carried by the hammer 18 and thus it is prevented from falling out of the hammer and plunger.

Within the trigger guard of Fig. 2 I have provided a trigger 23. This trigger rests against a flat curved spring 24 whose convex side rests against said trigger. This spring is secured to the trigger guard at its lower end by a hook carried by said spring and its upper end is alined with slot 25 and, when in its normal position is barely withdrawn therefrom. A pull on the trigger will thus elevate the free end of the spring 24 and carry the shoulder 20 of the firing pin 19 out of engagement with the side of slot 25 and leaves the firing pin free to be driven forward by the action of hammer 18.

The downwardly extending portion of frame 6 which is preferably made of sheet steel, constitutes, also, the frame work of the handle of my invention. This handle is designed to contain magazine 26 of the arm. This magazine is held in place by means of catch springs 34 in the usual manner. These catch springs may be released by pressure upon the thumb buttons 27 and the magazine removed for loading or for any other purpose. This magazine is provided with a plurality of pull springs 28 within the same, preferably three in number, two of which are located on one side thereof, and one of which is located on the other side. These pull springs engage at their upper ends over the upper edges of the magazine and are designed to embrace the cartridges 29 as shown in Figs. 2 and 13 and to keep them elevated so as to be engaged by the breech-bolt when in its forward thrust and thus brought in position for discharge. These springs are

flat, ribbon-like springs and coil at their bottom end under the lower cartridge in the manner of a watch spring, and thus keep the cartridges elevated; in this manner the cartridges are held at the upper part of the magazine, each ready to be brought into position for discharge as the preceding shell is ejected. This magazine may be made of any size, but preferably, should be made of sufficient depth to contain twelve cartridges. Its upper and rearward end is provided with inwardly extending flanges to prevent the release of cartridges except by forward thrust of the breech-bolt; and in front of these flanges it carries two wings 42, one on either side, which stop the shell that is to be ejected.

In Figs. 7 and 8 I have shown my preferred form of grips designated respectively, by the numerals 30 and 31. These grips are made of rubber or other suitable material and are secured to the frame 6 by projecting lugs 35, carried by said grips, which are engaged over the edges 36 of the frame work and then forced downward until said engagement is secured. The grips should be placed in position before the casing 7 is placed on the weapon, and when the casing is placed in position it will engage over the upwardly extending lugs 32 and secure the grips, against upward movement; and thus prevent the disengagement of the inwardly projecting lugs. Thus the grips will be securely held in place.

Frame 6 carries an oblong sheet-steel spring 37, integral therewith at its lower end but whose upper end is free. This spring, as is obvious is capable of limited transverse movement, and its upper or free end normally rests in notch 38 of casing 7.

A release button 39, shown also in Fig. 15, is carried by grip 30. This button rests against spring 37 and protrudes through said grip. It is held in proper position by means of said spring and lugs extending laterally therefrom limit its outward protrusion. The engagement of this spring 37 with notch 38 of casing 7 holds said casing against forward or backward movement; but by a pressure on release button 39 this spring may be carried out of engagement with notch 38 of said casing, and, if, at the same time, the shoulder 20 of the firing pin 19 is released from its engagement in slot 25, by a pull on trigger 23, the casing will be carried forward, by the action of main spring 10, carrying with it hammer 18 and firing pin 19 and the cartridges will be discharged. It will thus be seen that, the pull on the trigger, and the pressure upon the release button 39 must be simultaneous, or the weapon will not be discharged, and thus a safety weapon is provided.

It will be readily observed that by the removal of key-pin 13, the casing 7 may be removed and when the same is removed the barrel and grips are left free to be taken off and all the other parts may then in turn be dismembered, and this process may be reversed and all of the parts will be secured together and held in proper position by means of key-pin 13. Thus I have dispensed with the necessity of screws, keys, etc., with the single exception of pin 13.

The weapon herein described, operates as follows:—When the weapon is loaded as shown in Fig. 2 and shoulder 20 of firing pin 19 is engaged in slot 25 of breech-bolt 14 and the free end of spring 37 is engaged in notch 38 of casing 7, a pull upon trigger 23 and a simultaneous pressure upon release button 39, will release casing 7 to the action of main spring 10 and the forward thrust of said casing will operate to discharge the weapon as above set forth. The recoil will carry said breech-bolt back entirely in the rear of the magazine but the extractor 17 will firmly hold the shell of the discharged cartridge until it comes in contact with the wings 42 carried by the magazine. It is to be observed that the upper end of spring 24 is to be made very elastic so as to readily yield to the rearward movement of the breech bolt, in case said spring is not entirely withdrawn from the slot 25 at the instant of recoil, and thus a locking of the breech bolt against recoil is avoided. The upper end of this spring may also be rearwardly beveled, and that portion of the breech bolt contacting therewith, in the recoil movement, correspondingly beveled, as shown in Fig. 18, as a further precaution against the locking of the mechanism at the instant of recoil. At the time the shell comes into contact with said wings, the discharge opening 8 of casing 7 coincides with slot 3 of the barrel 1 and by reason of the rearward jerk of extractor 17 exerted on said shell, the shell is ejected from the weapon and at the same time the next cartridge is pulled upward by its pull springs 28 through slot 4 of the barrel as far as the inwardly extending flanges of the magazine will permit it and the breech-bolt continues its rearward course until the shoulder 41 of extractor 17 touches the rear end of the barrel at the point 42 Fig. 18, by which it is stopped, but the guard and hammer, by reason of the momentum imparted to them from the force of the explosion, are carried farther back until the key pin 13 touches the rear end of the slot of the breech bolt, when the shoulders of the firing pin engage in the slot carried on the underside of the breech-bolt, and the force of the recoil then having been spent the action of main spring 10 operates to again carry the casing 7 and its breech-bolt forward. As the breech bolt moves forward it engages with the rear end of the next succeeding cartridge which is

shoved forward into the chamber of the barrel, extractor 17 at the same time engaging with the cartridge rim.

An inwardly extending spring 40 carried by frame 6 and integral therewith extends up within the barrel 1 and is disposed to press against the magazine. When the magazine is removed the spring 40 meets with no resistance from within and, consequently projects into the path of the plunger and engages with the front end thereof; and the guard and plunger are thus locked back and the weapon is left open. When the magazine is in place, but empty, its rear pull spring projects into the path of the plunger and locks it back as above described and notice is thereby given that the cartridges have been exhausted from the magazine.

A weapon constructed as above described will not only be a safety and automatic weapon but will be found compact, practical and readily taken apart and secured together.

While I have shown this particular form and described this specific method of operation it is to be understood that the invention is not limited thereby but may be varied so long as the principle of the invention is not departed from.

What I claim is:—

1. A fire arm, as described, comprising a frame, a barrel adapted to be supported thereby, a casing fitting over said barrel and being secured to said frame in such a manner as to allow said casing longitudinal play on said frame, resilient means operating in resistance to said casing for holding the same in its normal position with relation to the barrel and for restoring said normal position when the same is disturbed, a breech bolt disposed to operate longitudinally in said barrel and having connection with said casing in such a manner as to be operated thereby, a hammer carried by said breech bolt, means for ejecting the shell through coinciding apertures provided in said barrel and casing, a firing pin provided with a means for engaging with the breech bolt and thereby holding the casing withdrawn from its normal position and means for releasing said engagement.

2. A fire arm, as described, comprising a frame, a barrel adapted to be supported thereby, a casing fitting over said barrel, means for securing said casing and frame together in such a manner as to allow said casing longitudinal play on said frame, resilient means operating in resistance to said casing for holding the same in its normal position with relation to the barrel and for restoring said normal position when the same is disturbed, a breech bolt carried by said casing and having a limited longitudinal play, a hammer carried by said breech bolt, means for ejecting the shell through apertures provided in said barrel and casing, and adapted to register with each other, a firing pin provided with a shoulder for engaging with a corresponding shoulder carried by the breech bolt and thereby holding the casing withdrawn from its normal position and means for releasing said engagement.

3. A fire arm, composed of a frame, a barrel adapted to be supported thereby, said barrel carrying a shoulder intermediate the ends thereof and being provided with upper and under apertures and a transverse slot at its rear end; a casing adapted to fit over said barrel, the edges of which are grooved to receive corresponding tongues carried by said frame, said casing being provided also with a discharge aperture therein; a magazine carried by said frame adapted to receive and retain cartridges, pull springs carried by said magazine for elevating said cartridges therein, means for securing said magazine in said frame means for releasing said engagement, grips embracing said magazine and carrying lugs for securing them to the frame; a spring carried by said frame adapted to engage with a notch in said casing, a release button carried by one of said grips for releasing the engagement of said spring from said guard, a plunger connected with said casing by means of a pin carried by said casing and passing through an oblong slot in said breech bolt; said breech bolt carrying also a forwardly projecting extractor at its front end and radiating lugs at its rear end; a hammer operating in said breech bolt and secured to said casing by means of said pin and moving as a unit therewith; a firing pin actuated by said hammer said firing pin being provided with a catch for engaging with the breech bolt and thereby holding the casing withdrawn from its normal position and means for releasing said engagement.

4. In a fire arm, the combination of the frame, the detachable barrel, the casing, the resilient means interposed between the barrel and casing and the magazine carried by the frame, with the breech-bolt actuated by said casing, the catch carried thereby, the hammer and firing pin within said breech-bolt, the means for effecting the engagement of the firing pin with the breech-bolt, the means for releasing said engagement, and means for locking said casing against longitudinal movement.

5. A fire arm, as described, comprising a frame, a barrel supported thereby, a casing fitting over said barrel and being secured to said frame in such a manner as to allow said casing longitudinal play on the frame, resilient means operating in resistance to said casing for holding the same in its normal position with relation to the barrel and for restoring said normal position when the

same is disturbed, a breech bolt operated within the barrel and actuated by the casing, a hammer actuated by the casing, a means for ejecting the shell from the arm, a magazine carried by the frame adapted to receive and retain cartridges, a means for transferring said cartridges from said magazine to the path of said breech bolt whereby they are forced into the barrel of said arm, and a means carried by the hammer whereby the hammer is locked in a retracted position relative to said breech bolt.

6. In a fire arm, a breech bolt provided with an extractor at the forward end thereof, a hammer within said breech bolt and connected thereto in such a manner as to have a limited longitudinal play therein, and a means carried by said hammer for engaging with said breech bolt whereby the hammer may be locked in a retracted position relative to the breech bolt.

7. A fire arm, as described, comprising a frame, a barrel supported thereby, a casing fitting over said barrel and being secured to said frame in such a manner as to allow said casing longitudinal play on the frame, resilient means operating in resistance to said casing for holding the same in its normal position with relation to the barrel and for restoring said normal position when the same is disturbed, a breech bolt operated within the barrel and actuated by the casing, a hammer actuated by the casing, a means for ejecting the shell from the arm, a magazine carried by the frame adapted to receive and retain cartridges, and means for transferring said cartridges to the path of said breech bolt whereby they are forced into the barrel of said arm, and means whereby the hammer is locked in a retracted position relative to said breech bolt.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

THOMAS CONSENTINO.

Witnesses:
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C. J. SUHM.