H. B. SPERRY.

MAGAZINE SPRING GUN OR PISTOL.

APPLICATION FILED OCT. 14, 1914.

1,183,133.

Patented May 16, 1916.

2 SHEETS—SHEET 1.

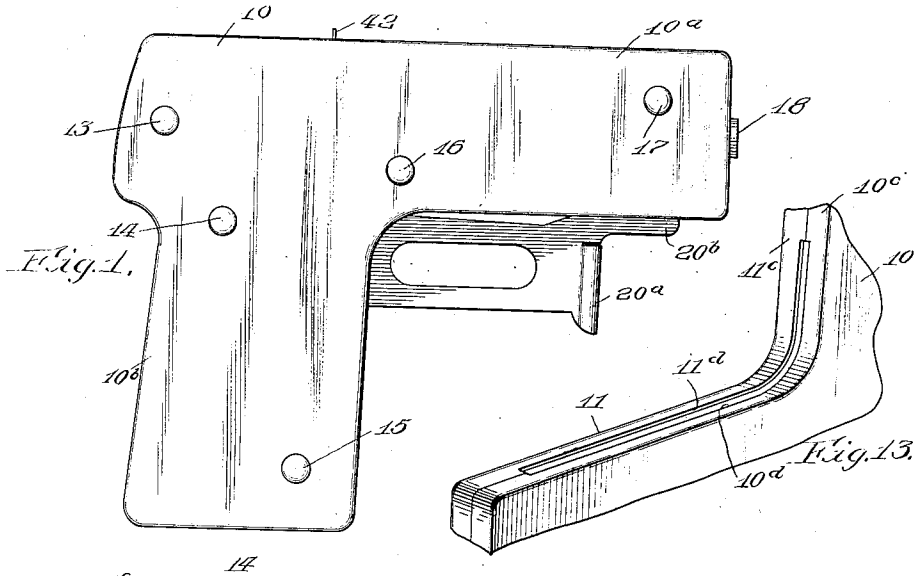


Fig. 1.

Fig. 13.

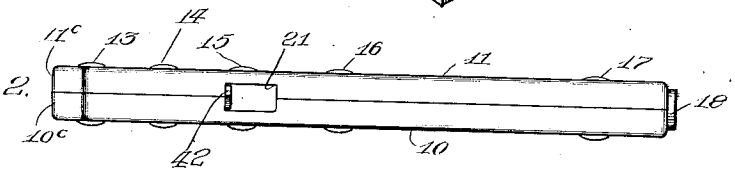


Fig. 2.

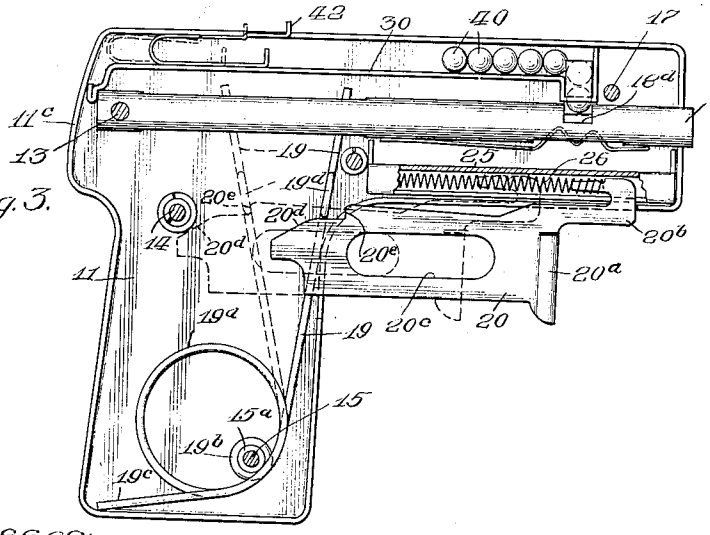
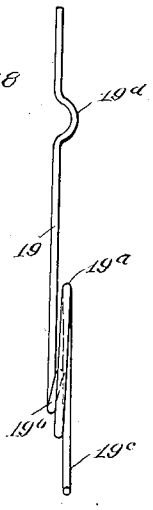


Fig. 3.

Fig. 12.



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2 SHEETS—SHEET 2.

Fig. 4.

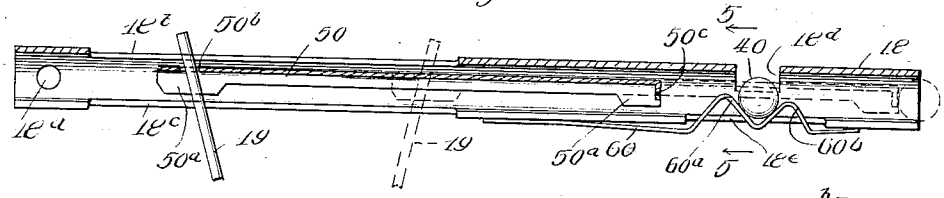


Fig. 5.

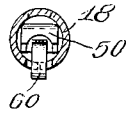


Fig. 6

Fig. 7.

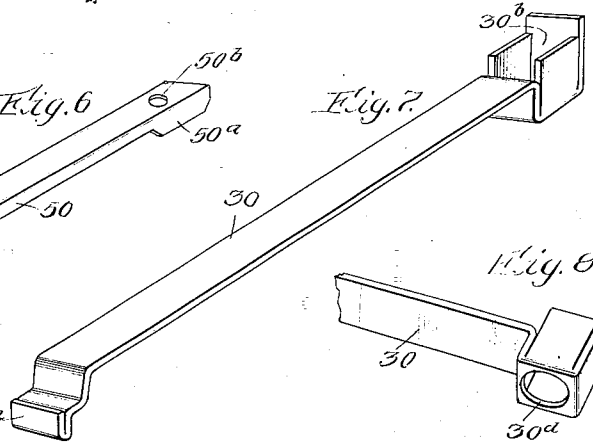


Fig. 8.

Fig. 9.

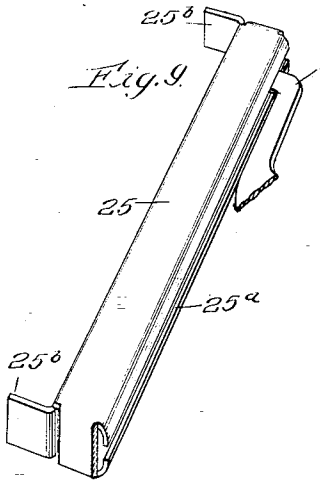


Fig. 10.

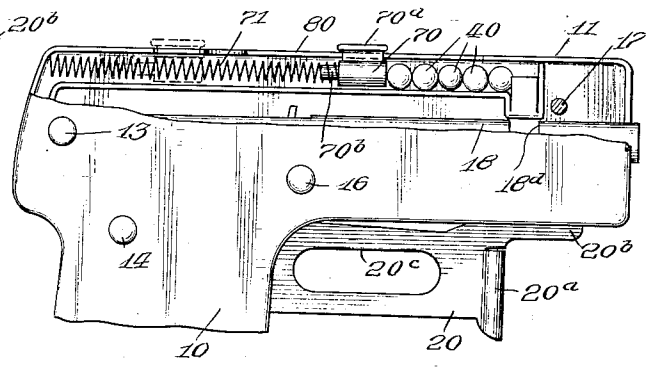
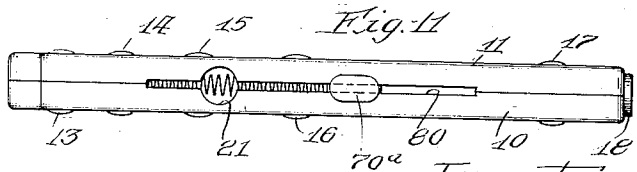


Fig. 11.



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UNITED STATES PATENT OFFICE.

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MAGAZINE SPRING GUN OR PISTOL.

1,183,133. Specification of Letters Patent. Patented May 16, 1916.

Application filed October 14, 1914. Serial No. 866,585.

To all whom it may concern:

Be it known that I, HERBERT B. SPERRY, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Magazine Spring Guns or Pistols, of which the following is a specification.

The invention relates to a magazine spring gun or pistol, and has for its primary object to provide certain improvements in the construction and mode of operation of a magazine spring gun or pistol, by which the same is enabled to operate more effectively in propelling or shooting therefrom various small objects, such as shot and small marbles or bullets of suitable materials and construction.

It is a further object of the invention to provide an automatic spring gun or pistol of the described character, which shall contain certain improvements hereinafter set forth in the appearance of the gun, and also structural improvements to enable the same to be manufactured more accurately and economically than some of the devices heretofore made.

It is a further object to provide certain improvements in a magazine spring gun, by which the shot, bullets, or other objects to be propelled from the gun shall be introduced into the barrel of the same near the end remote from the breech or adjacent the muzzle of the barrel, thus obviating the necessity of the projectile traversing for any considerable distance the length of the barrel, thereby decreasing to the minimum the friction between the projectile and the walls of the barrel.

It is a further object of the invention to provide an improved construction of combined barrel support and grip or stock of stamped sheet metal construction for supporting the various operative parts of the device.

It is a further object of the invention to provide an improved construction of sheet metal plunger for propelling the projectile, the same being adapted to be operated by spring means.

It is a further object of the invention to provide an improved form of projectile magazine, and means for feeding the projectiles therefrom into the barrel or propelling chamber of the device.

Further objects of the invention will appear from the following description of the preferred form of the invention which is also shown in the drawings, and pointed out more particularly in the appended claims.

In the said drawings, Figure 1 is a side elevation of a pistol embodying the invention in its preferred form. Fig. 2 is a top plan view of the device shown in Fig. 1. Fig. 3 is a view on the interior of the casing of the device of Figs. 1 and 2, showing one-half the casing removed and parts on the interior broken away or in section, to disclose the details of construction thereof. Fig. 4 is a longitudinal sectional view through the barrel of the device, somewhat enlarged. Fig. 5 is a sectional view through the barrel on the line 5—5 of Fig. 4, looking in the direction indicated by the arrows. Fig. 6 is a detail perspective view of the spring actuated plunger within the barrel. Fig. 7 is a perspective view of a specially constructed sheet metal member for forming the bottom of the magazine. Fig. 8 is an enlarged broken detail view of a portion thereof. Fig. 9 is a perspective view of a sheet metal casing or housing for the spring controlling the return movement of the trigger. Fig. 10 is a broken side elevation view of a modification of the device showing a special form of spring controlled magazine for feeding the projectiles to the barrel, differing in this respect from the gravity feed magazine shown in Fig. 3. Fig. 11 is a top plan view of my spring gun or pistol, provided with the modified form of spring controlled magazine of Fig. 10. Fig. 12 is a detail view of the motor spring, and Fig. 13 is a detail perspective view showing a broken portion of the under side of the assembled casing surrounding the slot for the trigger mechanism.

In the construction of the outer casing of my improved spring gun or pistol, I utilize two plates of the general form shown in Figs. 1 and 2, and designated by the reference characters 10 and 11. These plates may be

formed of any desired material, but for purposes of economy and lightness, it is preferred that they be formed of sheet metal, of the general contour shown in Fig. 1, having a relatively wide barrel portion, as indicated at 10^a, and a stock or grip portion 10^b. In order to provide an interior chamber, the outer peripheral edges of the plates 10, which are formed right and left, are flanged as indicated at 10^c and 11^c, and these flanges coöperate, when the halves 10 and 11 of the casing are brought together, in the manner shown in Fig. 2, to form an interior closure or chamber for supporting not only the barrel but the principal operative parts of the device. The parts of the casing 10 and 11 may be conveniently secured together by a plurality of rivets as indicated by the reference characters 13 to 17 inclusive passing through registering openings in the walls of the casing and up-set or riveted as illustrated most clearly in Fig. 2. Openings in the peripheral walls of the casing may be formed by cuts or serrations on the median or joining line to accommodate the protruding forward or muzzle end of the barrel, which is indicated generally by the reference character 18. In the same manner, suitable openings in the peripheral wall are made to accommodate the trigger, which is indicated generally by the reference character 20, and a suitable opening indicated by the reference character 21 (see Fig. 2), for the magazine.

The barrel 18 (Figs. 3, 4 and 10), is of tubular form, and preferably, although not necessarily, formed of sheet metal. Since it is not necessary that the barrel shall be fluid or gas-tight, it may be formed as indicated in the sectional view of Fig. 4, of a single flat sheet of metal rolled into tubular form, with the longitudinal free edges brought into contiguous or adjacent relation, (Fig. 5) but without being necessarily secured together, the strength of the material holding the barrel in its proper tubular shape. The barrel is provided with a number of slots and perforations for attachment and other purposes, and the sheet metal construction illustrated in the drawings is very advantageous, on account of the rapidity and economy with which it is manufactured by a simple stamping and bending process. To support the tubular barrel 18 at its muzzle or forward extremity, where it projects slightly through the muzzle end of the casing, semi-circumferential openings are cut in the flanges 10^c and 11^c, which closely encircle the barrel 18 when the members of the casing 10 and 11 are assembled. At the breech end the barrel 18 is supported on the interior of the casing by the body of the rivet 13, which passes through the transverse openings indicated at 18^a, which are formed through the walls of the barrel in register with each other (Figs. 3 and 4).

The motor spring (see Figs. 3 and 12) is preferably formed of a single length of round spring wire formed with one or more circular coils or helices, as indicated at 19^a, the spring itself being generally indicated by the reference character 19 throughout the drawings. Within the enlarged helix 19^a I prefer to form a second and smaller coil 19^b in the body of the spring adjacent the end leaving the coil to form the long tangential branch of the spring. The large coil 19^a which terminates at its opposite extremity in the tail-piece 19^c, is for the purpose of giving the spring the necessary elasticity and resiliency, but the small coil 19^b is for the purpose of affixing the spring in relation to the casing, which is accomplished by passing through the coil 19^b the shank or body of the rivet 15. To enable the coil or helix 19^b to be made larger than the normal size of the rivet 15, I preferably insert a tubular bushing 15^a over the rivet 15, the same being of a suitable length to act as a spacing member between the plates 10 and 11 of the casing. The long branch of the spring 19 is provided intermediate its outer extremity and the helix 19^a, with an off-set portion, as indicated at 19^d, and the extremity thereof beyond the off-set 19^d, is designed to pass through the opposite longitudinal slots 18^b and 18^c of the barrel. (Fig. 4).

The motor spring 19 is adapted to be actuated by the trigger member 20, which is preferably formed of sheet metal (Figs. 1 and 3). The trigger 20 is preferably provided with a thickened finger portion, as indicated at 20^a and a hooked branch portion 20^b, which extends toward the muzzle of the casing and has an upwardly and rearwardly extending hooked portion designed to pass through a longitudinal opening formed in the flanges of the casings 10 and 11 on the under side of the barrel. In Fig. 13 is shown the longitudinal opening or slot for the trigger 20, which is formed by cutting away the material of the flanges 10^c and 11^c for a considerable distance on the under side of the casing in the manner indicated by the reference characters 10^d and 11^d, Fig. 13. The material of the sheet metal trigger 20 may be cut away in the body portion thereof to lighten it, as indicated at 20^c, and the body portion thereof is extended to pass through the slot on the under side of the pistol, and into the stock or grip portion thereof, where it is provided with an off-set, as indicated at 20^e adapted normally to engage the off-set or sinus 19^d of the motor spring 19. The hooked projection 20^b on the trigger 20 is provided at its extremity with a reduced portion adapted to enter a longitudinal slot along the lower edge of a metallic housing or casing located within the casing and underneath the muzzle end of the barrel 18 (see Fig. 9). This spring casing referred

to is designated generally by the reference character 25, and is preferably formed of sheet metal having a closed body portion except for the longitudinal slot on the under side thereof, already referred to, adapted to accommodate the portion 20^b of the trigger. This slot is indicated in Fig. 9 by the reference character 25^a, and the coil spring within the casing by the reference character 26, Fig. 3. The extremities of the casing 25 are preferably closed by the bending over the ends thereof of suitable tongues or projections formed integrally with the body of the casing, as illustrated in Fig. 9, and other projections at the extremities thereof are bent angularly outward and upward, as indicated at 25^b to contact with the under side of the barrel to retain the casing 25 in position on the under side of the casing beneath the barrel. A convenient means of preventing longitudinal movement of the casing 25 is to position the rivet 16 with its bushing as indicated in Figs. 1 and 3, so that one end of the casing 25 will bear against this rivet, thus dispensing with the necessity of using any special means to secure the spring casing 25 in position. The effect of the coil spring 26 on the hooked projection 20^b of the trigger 20 is to hold the same in the longitudinal position shown in Fig. 3, with its extremity on the interior of the casing within the grip or butt of the pistol upwardly against the off-set or sinus 19^d of the power spring. This tendency of the trigger 20 to rise at its extremity within the butt or grip of the casing is further accentuated by the fact that the operator in moving the trigger will press his finger upon the thickened portion 20^a and the leverage exerted thereon will also tend to cause the opposite extremity of the trigger to rise, bringing the off-set or ledge 20^e into forcible contact with the spring 19. If sufficient pressure is exerted upon the portion 20^a of the trigger, it will be apparent that the motor spring 19 may be brought to the position it occupies as illustrated by dotted lines in Fig. 3, which will place the same under considerable tension until the angular rear portion of the trigger, as indicated at 20^d, is brought into forcible contact with the bushing which surrounds the body of the pin or rivet 14. If the rearward movement of the trigger be continued, it will be apparent that the contact of the angular portion 20^d with the pin or rivet 14 will depress the rear end of the same, and thus cause the notch or off-set 20^e to be disengaged from the sinus 19^d of the spring, which will release the motor spring, and cause it to forcibly traverse the slotted portion 18^b, 18^c of the barrel. It will be further apparent that as often as the operator desires he may press upon the grip portion 20^a of the trigger 20, and bring the motor spring to the position indicated in dotted lines in Fig. 3, whereupon it will be released to exert the power stored therein upon whatever objects may be in the barrel for discharge therefrom.

In the preferred form of the invention shown in Fig. 3 a magazine is formed in the upper portion of the casing parallel with the barrel, by a magazine partition, which is indicated generally by the reference character 30, and is shown in detail in Fig. 7. The partition 30 is formed of a strip of sheet metal having its end formed with a reinforced off-set, as indicated at 30^a, adapted to engage with the breech end of the barrel 18, and at its opposite extremity it is provided with a housing opening inwardly, indicated generally by the reference character 30^b, and having a perforation in the bottom thereof, as indicated at 30^d, adapted to register with an opening 18^d on the upper side of the barrel located relatively near the muzzle end thereof, preferably about two-thirds of the distance measuring from the forward limit of the slots 18^b and 18^c to the muzzle of the barrel. This location of the projectile feed to the barrel adjacent the muzzle end thereof is an important feature of the invention, as it eliminates friction that would result between the barrel and the projectile to be fired when a considerable portion of the barrel must be traversed by the projectile. In the form of the invention shown in Fig. 3, the magazine which is formed between the upper side of the casing and the magazine partition 30 is of the gravity feed type, in that no special means is provided for positively feeding the balls or projectiles to be fired into the barrel. The device is particularly adapted to shoot shot of the larger sizes, or spherical balls of lead or relatively heavy material, such as indicated by the reference character 40, (Figs. 3, 4, and 10.) With the form of magazine as shown in Fig. 3 the ball 40 may be fed by gravity through the discharge openings 30^d and 18^d into the barrel, the operator before firing simply inclining the muzzle end of the device downwardly, and the opening 21 through the exterior of the casing into the magazine is preferably closed by the sliding spring member 42 which protrudes a sufficient distance above the upper surface of the casing to enable the operator to conveniently grasp it. A convenient method of constructing the closure member 42 is to make it of sheet steel of a convenient width for the interior of the casing, in order that it may completely close the magazine opening 21, and it may be given the general form of the capital letter U as illustrated in Fig. 3, with one branch thereof bearing against the upper side of the magazine partition 30 to hold the downwardly extending branch 30^a thereof in position between the end of

the barrel and the flange of the casing. (Fig. 3.)

A plunger indicated by the reference character 50, (Figs. 4 to 6, inclusive), preferably constructed of very light sheet metal, is provided within the barrel, and may be of the general channel form as shown in Fig. 6, with short downwardly extending projections 50^a at the extreme ends of the flanges for the purpose of supporting the same in relation to the bottom of the barrel as it slides along the same. The plunger 50 is preferably connected with the motor spring 19 by passing the upper extremity of the spring through a circular opening 50^b in the breech end of the plunger, the forward end thereof having a tongue portion bent downwardly over the ends of the flanged projections 50^a to provide a suitable contact portion for engaging the projectiles to be fired from the barrel. This portion is indicated generally by the reference character 50^c (Fig. 6), and is cut away a sufficient distance as shown most clearly in Fig. 6, to enable the plunger in reciprocating throughout the length of the barrel to escape contact with the retaining spring 60 which is secured preferably to the exterior of the barrel on the under side thereof, and has irregular projections formed in the body thereof near the free end, as indicated at 60^a and 60^b, to project through a suitable slotted opening 18^e in the bottom of the barrel beneath the loading opening 18^d. This spring is relatively narrow, as will be seen from sectional view, Fig. 5, and will therefore permit the channeled plunger 50 to pass over it without contact with it, but the projecting portions 60^a and 60^b thereon will be effective to hold the projectiles 40 as they are passed through the feed opening 18^d into the barrel until the plunger actuated by the power spring 19 forcibly engages the projectiles and discharges them from the barrel.

By the construction just described, it will be seen that the operator having placed projectiles to be fired within the magazine constructed according to the form of the invention shown in Figs. 1 to 3 inclusive, and having tilted the pistol so that a projectile will be fed into the barrel, it will only be necessary for him to press forcibly upon the finger portion 20^a of the trigger 20, which will result in operating the power spring until it is released in the manner described, with the result that its power will be exerted upon the plunger 50, which will cause the forward extremity of the latter to contact forcibly with the projectile held in firing position by the spring 60, whereupon the projectile will be forcibly discharged from the muzzle of the pistol, and it will be seen that this operation of firing the pistol may be repeated as often as the operator will feed the projectiles into the barrel, and will operate the trigger 20 in the manner described.

In Figs. 10 and 11 a modification of the invention is shown in which the magazine for the projectiles to be fired is provided with a spring feed to insure that projectiles within the magazine will be fed toward the muzzle end thereof and into firing position in the barrel through the loading slot 18^d. This device consists of a follower 70 having a projection 70^a extending through a suitable slot designated by the reference character 80 (Figs. 10 and 11), extending along the top of the barrel casing. 71 is a coil spring interposed in the magazine between the rear wall thereof and the follower, there being a reduced trunnion 70^b on the follower 70 to which said spring is secured. The operation of the piston with this magazine modification differs in no-wise from that already described, except in loading it will be observed that the operator will grasp the projecting portion 70^a of the follower and bring it rearwardly beyond the feed opening 21 for the projectiles, which will place the magazine in condition to be filled, after which the release of the follower will cause it and the spring to close the opening, dispensing with the closure member 42 shown in Figs. 1 to 3 inclusive.

It will be apparent from the above description of the construction of my improved spring gun or pistol, that the same may be manufactured of sheet metal construction almost entirely by employing the ordinary punching and stamping operations used in working sheet metal, and for this reason the device may be manufactured very economically for commercial purposes, in addition to being very efficient in operation for the purposes described.

While I have shown and specifically described the form of the invention preferred by me, it is not desired to be limited to the exact details, as persons skilled in this art may vary the details without departing from the purpose and spirit of the invention.

I claim:

1. A spring gun comprising a barrel, means for driving projectiles from the barrel; a trigger for tripping said means; a tube adjacent the barrel and having a longitudinal slot therein; a coil spring in said tube; and a projection on the trigger, extending into said tube and secured to the spring for supporting the trigger.

2. A spring gun comprising a barrel; spring means for driving projectiles from the barrel; a slotted tube substantially parallel with the barrel; a coil spring in said slotted tube; a trigger member having a portion extending into the slotted tube and secured to

the spring providing a mounting for the trigger; and a stop adapted to be engaged by the trigger for moving the latter laterally to trip the projectile driving means.

3. In a magazine spring gun, the combination with a casing formed of two cooperating flanged pieces riveted together, a barrel having its forward extremity protruding through the muzzle end of the casing and being supported thereby, means for supporting the breech end of the barrel within the casing, said barrel being provided with a feed opening adjacent the muzzle end thereof, a magazine within said casing communicating with the said feed opening in the barrel, a plunger within the barrel adapted to traverse the barrel from the feed opening to the muzzle thereof, and a motor spring for actuating the plunger.

4. In a magazine spring gun, the combination with a casing formed of two flanged coöperating plates riveted together, a barrel having its muzzle end protruding through the muzzle of the casing and supported thereby, means for supporting the breech end of the barrel on the interior of the casing, there being a longitudinal slot in the walls of the barrel adjacent the breech end thereof, a feed opening in the wall of the barrel adjacent the muzzle thereof, a plunger in the barrel adapted to extend from the feed opening to the said longitudinal slot, and a motor spring extending into the said slot of the barrel and adapted to coöperate with the plunger.

5. A spring gun comprising a casing having a slot therein; a barrel in the casing; spring projectile driving means in the casing; a tube in the casing having a longitudinal slot therein registering with the slot in said casing; a coil spring slidably mounted in the tube; a trigger member for tripping the projectile driving means and having a portion disposed in the slot of the casing; and a projection on said trigger extending through the slot in the tube and secured to the spring, said spring being adapted to support and said slots being adapted to guide the trigger member.

6. In a magazine spring gun, the combination with a barrel being provided with a feed opening adjacent the muzzle thereof, a magazine for supplying projectiles to said feed opening, an elastic device protruding into the barrel adjacent the said feed opening for temporarily holding projectiles fed into the barrel through the feed opening, a plunger provided with a groove to pass on each side of the said elastic projectile retaining member, and elastic means for operating the plunger.

7. The combination with a barrel of an air-gun or pistol being provided with a longitudinal slot, and a feed opening for projectiles adjacent the muzzle thereof, of an elastic device projecting into the barrel for retaining a projectile adjacent the feed opening, a slotted plunger adapted to move from a point in advance of the feed opening in the barrel to a point adjacent the muzzle thereof and being grooved to pass freely on each side of the said elastic retaining means for the projectile, a motor spring operatively connected with the plunger, and means for controlling the operation of the motor spring.

8. In a magazine spring gun, the combination with a casing formed of sheet metal and being provided with a barrel portion and a grip portion, a motor spring secured to the casing, a trigger adapted to operate said motor spring comprising a longitudinal movable body portion having a portion thereof projecting through the wall of the casing into normal contact with the spring member, and being provided with a hook-shaped projection adapted to extend through a longitudinal opening in the under side of the barrel portion of the casing, and elastic means on the interior of the barrel portion of the casing for coöperating with the said projection of the trigger and controlling the return movement thereof.

9. The combination in a spring gun or pistol of a metallic casing comprising a barrel portion and a grip portion integrally joined, and being provided on the under side of the barrel portion and the adjacent grip portion with a longitudinal slot adapted to accommodate a trigger device, a trigger device in said slot and casing, elastic means secured to the interior of the barrel portion of the casing for controlling the return movement of the trigger device, and a motor spring on the interior of the grip portion of the casing operatively connected with the trigger device.

10. In a magazine spring gun, a casing formed of sheet metal consisting of a pair of flanged sheet metal plates riveted together to form an integral barrel and grip casing, a barrel protruding through the peripheral flanged portions of the casing and rigidly secured therein, and being rigidly secured at its opposite extremity to the interior of the casing, there being a magazine opening for feeding projectiles through the upper flanged wall of the casing, a member adapted to form in conjunction with the walls of the casing a magazine, and comprising a longitudinal strip of sheet metal formed with angular legs or projections at its extremities adapted to rest upon the barrel, and a passageway formed integral with said member for feeding projectiles from the magazine to the barrel and being adapted to coöperate with a feed opening in said barrel.

11. The combination in a magazine spring gun of a slotted barrel, a motor spring having a free end thereof projecting into the slotted portion of the barrel, a trigger device having a portion thereof adapted to bear against said motor spring to operate the same, and elastic means for returning said trigger device to normal position after operating said motor spring.

12. In a magazine spring gun, the combination with a metallic casing, of a helical motor spring comprising a relatively small helix or coil, and a second and larger helix or coil, the material of the last said helix or coil comprising the smaller said helix or coil, the material of the said spring beyond the coil being extended to form two free arms, and the longer of said arms being provided with a sinus or off-set portion adapted for engagement with a trigger mechanism, means for securing the small helix or coil of the spring to the casing with the shorter of the said arms in engagment with the casing, and a slotted barrel supported by the said casing and having that portion of the free end of the spring beyond the sinus or off-set portion therein in operative relation with the interior of the barrel through the said slotted portion therein.

13. In a magazine spring gun, the combination of a casing comprising a plurality of plates secured together forming a barrel portion and a grip portion, a tubular barrel rigidly secured on the interior of the barrel portion of said casing, and inclosed thereby with only the muzzle thereof protruding through the muzzle of the casing wall, a motor spring within the casing and a longitudinally movable trigger device adapted to coöperate with the motor spring and being provided with an upwardly extending arm or projection, there being a longitudinal slot in the wall of the grip and barrel portions of said casing through which said arm and said trigger device is adapted to extend into the interior of said casing, a carrying spring on the interior of the barrel portion of the casing to which said arm on the trigger device is secured, and a housing supported within the barrel portion of the casing adjacent the said slot therein for containing the said carrying spring.

14. In a spring gun, the combination with a barrel of a casing therefor having a grip portion and a portion surrounding said barrel, a spring motor within the grip portion of the casing and coöperating with the barrel, a longitudinally movable trigger device adapted to coöperate with said spring motor for operating the same, and means for supporting and positioning said trigger device comprising a coil spring secured within the casing beneath the barrel therein.

15. In a spring gun, the combination with a casing consisting of a grip portion and a barrel portion, a barrel secured to said casing and on the interior thereof, with the muzzle portion protruding through the wall of the barrel portion, a motor spring within the grip portion of the casing, a longitudinally movable trigger device adapted to coöperate with said motor spring, and a carrying device for said trigger device comprising a coil spring secured in a metallic housing in said casing beneath the barrel therein.

16. As an article of manufacture, a plunger for a spring gun comprising a channeled portion formed of sheet metal, the bottom of the channeled portion being perforated adjacent one end for engagement with a motor spring, and the sides of the channeled portion extended at each end thereof to form guides for the plunger, there being a portion of the material of the channeled bottom extending beyond one end of the extended channeled portions, bent at right angles, and over and upon the ends of said channeled portions to form a driving end for contact with projectiles.

17. In a spring gun, the combination of a barrel, a motor spring coöperating with the barrel, and a plunger in said barrel adapted to be operated by said motor spring and comprising a strip of sheet metal of channel form and having the channel portions thereof adjacent the extremities extended to form bearing portions for the plunger wider than the intermediate portions of the flanges whereby the plunger may be guided in relation to the interior of the barrel.

18. In a spring gun, the combination with a barrel, a motor spring coöperating with the barrel, a projectile holder extending into the barrel, and a plunger in the barrel adapted to be actuated by the motor spring and comprising a strip of sheet metal in channel form, the channel form of the plunger permitting the latter to pass by the projectile holder.

19. In a spring gun, the combination with a barrel, of a motor spring coöperating with the barrel for driving a plunger therein, and a plunger in said barrel comprising a strip of sheet metal curved or bent into channel form, the legs or sides of said channel adjacent the ends thereof being lengthened to form bearing portions for coöperating with the interior of the gun barrel, and the bottom of the channel at one end having an integral tongue of metal convexly curved on its forward extremity and bent at right angles to the channel to form a peen for striking a projectile within the gun barrel.

20. In a magazine spring gun, the combination with a barrel of a casing for supporting said barrel, a motor spring for firing projectiles from said barrel, there being a

feed opening extending through the walls of said barrel adjacent the muzzle of the barrel, and a magazine within the casing being provided with means for delivering projectiles to the barrel through said feed opening, the body of said magazine being elongated and extending from adjacent the breech end of the barrel within the casing to the feed opening.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 10th day of October, A. D. 1914.

HERBERT B. SPERRY.

Witnesses:
CHARLES H. SEEM,
A. L. SPRINKLE.