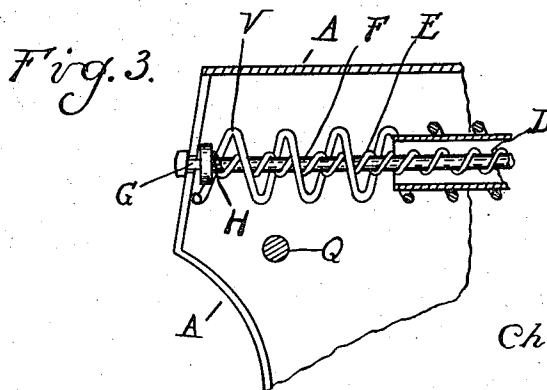
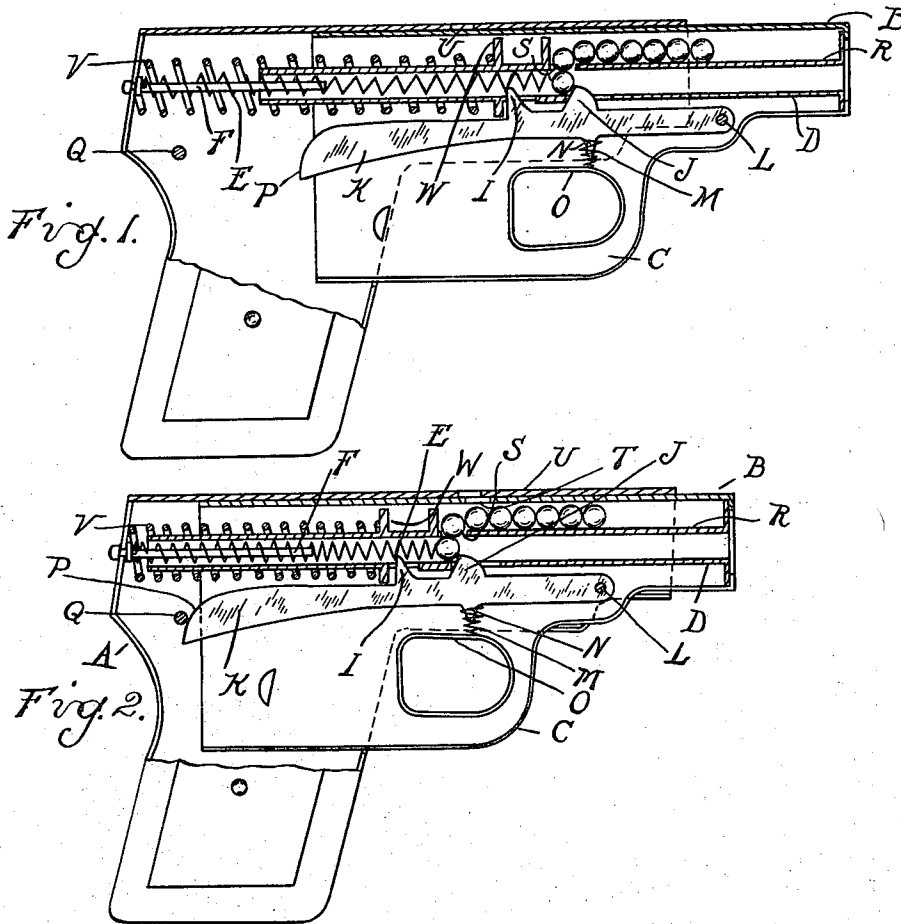


C. F. LEFEVER.
 SPRING GUN.
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1,240,987.

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SPRING-GUN.

1,240,987.

Specification of Letters Patent. Patented Sept. 25, 1917.

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To all whom it may concern:

Be it known that I, CHARLES F. LEFEVER, a citizen of the United States of America, residing at Plymouth, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Spring-Guns, of which the following is a specification, reference being had therein to the accompanying drawings.

The invention relates to guns of that type in which the projectile is directly propelled by a spring, and the invention comprises the novel construction as hereinafter set forth.

In the drawings:

Figure 1 is a longitudinal section through the gun before the tensioning of the spring;

Fig. 2 is a similar view showing the spring under tension and about to be released; and

Fig. 3 is a transverse section showing the manner of anchoring the projectile spring.

The specific construction shown is that of a pistol, but it is obvious that it is equally applicable to other types of gun. As shown, A is the frame and handle of the pistol, preferably formed of a sheet-metal stamping, and B is a false barrel telescopically engaging said frame and having formed integral therewith a trigger section. Within the barrel B is the true barrel D, which is mounted for movement therewith and with the trigger section C. E is a spring with the true barrel, which projects beyond the rearward end thereof and is anchored to the frame. As shown, said spring E is sleeved upon a guide-rod F which extends into the barrel D and which is notched at its rear end at G to engage the complementary halves of the sheet-metal frame to be anchored thereto. This guide is also notched at H for anchoring engagement with the end of the spring E. I is a detent or sear mounted on the trigger section C and engaging the spring E near the forward end thereof, the arrangement being such that when the trigger section is pulled rearward to produce the telescopic movement of the barrel B the forward end of the spring E will be carried backward while the rear end remains stationary upon the frame A, so that the spring is placed under tension.

The projectile directly engages the forward end of the spring and is propelled by

the recoil of said spring upon the release of the detent or sear I. It is, however, necessary to maintain the projectile in contact with the spring until the latter is released and to this end I have provided a second detent or retainer J, which is released simultaneously with the release of the sear I. As shown, the detents I and J are both formed upon a lever K pivoted at L and extending rearward in the space between the parallel sides of the trigger section. This lever is yieldably pressed upward to project the detents I and J into the barrel D by a spring M engaging a pin N on the lever abutting against the flange O of the trigger section. The rear end of the lever K is cammed at P and is adapted in the rearward movement of the telescopic barrel and trigger section to strike against a cross-pin Q, which at the completion of the rearward movement deflects the lever downward so as to release the detents I and J. This permits the spring E to recoil and to eject the projectile from the barrel.

I preferably provide the gun with a magazine for the shot or projectiles which is adapted to automatically feed the same successively into the firing barrel. As shown, this magazine is formed by a trough-shaped member R above the barrel D having an aperture S at its rear end opening into the barrel D and loading aperture T preferably slightly in advance of the aperture S. The aperture T is normally closed by the portion of the frame A with which the barrel D is telescoped, but when the trigger is drawn rearward this aperture T comes into registration with an aperture U in the frame so as to permit of loading. Thus to load the gun the operator draws back the trigger, fills the trough R with the shot, and upon the forward movement of the trigger and false barrel the loading aperture is closed so as to prevent loss of the shot.

The spring E is employed solely for the propulsion of the projectile and as it is released by the sear when the trigger and false barrel are in rearward position it cannot operate to return these parts to normal position. I have therefore provided a second spring V which is preferably sleeved about the barrel D and spring E, its rear end bearing against the frame and its forward end bearing against an abutment W in the

false barrel B. This spring will be placed under compression by the rearward movement of the barrel B, and upon the release of the trigger will carry the same and the barrel B forward to normal position.

With my improved construction the bullet or projectile being directly seated on the end of the propelling spring dispenses with the necessity of a piston and other cooperating parts which are usually employed. This not only simplifies and cheapens the construction but cuts out frictional loss and increases the force with which the projectile is propelled.

What I claim as my invention is:—

1. In a spring gun the combination with a barrel, of a spring therein having its forward end forming a seat for the projectile, a detent or sear for engaging said spring adjacent to said seat, means for compressing the spring while engaged by said detent or sear, and means for releasing the sear.

2. In a gun, the combination with a barrel, of a spring therein having its forward end forming a seat for the projectile, a detent or sear for engaging said spring adjacent to said seat, a second detent for engaging the projectile to retain the same seated upon said spring, means for compressing said spring while retained by said sear, and means for simultaneously releasing said sear and projectile-retaining detent.

3. In a gun, the combination with a telescopic barrel having a true or firing barrel in the forward section thereof, of a spring in said true barrel having its rear end projecting and anchored in the rear section of the telescopic barrel, a sear mounted on the forward section for engaging the forward end of said spring, and means for automatically disengaging said sear at the completion of the rearward telescopic movement.

4. In a gun, telescopically engaged, sections, a true barrel mounted on the forward section, a spring engaging said true barrel forming a seat for the projectile at its forward end, the rear end of said spring projecting from said barrel and anchored to the rear telescopic member, a sear mounted on the forward telescopic member engaging the forward end of said spring, a trigger for telescopically collapsing said sections to tension said spring, and means for tripping said sear at the completion of said telescopic collapsing movement.

5. In a gun, the combination with two telescopically-engaged members, one constituting the frame and handle and the other the barrel and trigger section, of a true barrel carried by said false barrel and trigger section, a spring engaging said true barrel forming at its forward end a seat for the projectile, its rear end projecting from said true barrel and anchored to said frame, a sear mounted on said false barrel and

trigger section, and engaging the forward end of said spring, and means for tripping said sear upon the completion of the rearward movement of said trigger section to release said spring.

6. In a gun, the combination with telescopically-engaged members, of a true barrel carried by the forward member, a spring engaging said true barrel forming at its forward end a seat for the projectile and its rear end portion projecting beyond said true barrel, a guide for the rearward projecting portion of said spring extending into said true barrel, the rear end of said spring being attached to said guide and the latter being anchored in the rear telescopic member, a sear mounted on the forward telescopic member engaging the forward end of said spring, and a trip on said rear member for engaging said sear at the completion of the rearward movement to release said spring.

7. In a gun, the combination with telescopically-engaged members, one constituting a frame and handle and the other a false barrel and trigger section, of a true barrel mounted in said false barrel and trigger section, a spring in said true barrel having its rear end anchored to said frame, a sear mounted on said trigger section for engaging the forward end of said spring, a trip for releasing said sear at the completion of the rearward movement, and a second spring for extending said telescopically-engaged members.

8. In a gun, the combination with a frame, of a false barrel and trigger section telescopically engaging said frame, a true barrel carried by said false barrel, a spring in said true barrel projecting rearward therefrom, and a guide for said spring anchored to said frame and extending within the spring into said true barrel, said guide having a notch therein for anchoring attachment of the rear end of said spring thereto.

9. In a gun, the combination with a frame member, of a false barrel and trigger member telescopically engaging the same, a true barrel carried by said false barrel, a spring in said true barrel extending rearward therefrom, a guide anchored to said frame extending within said spring into said true barrel and having an anchoring attachment to the rear end of said spring, and a spring surrounding said first-mentioned spring and true barrel having its opposite ends abutting respectively against said frame and false barrel.

10. In a gun, the combination with a frame member and a false barrel and trigger section telescopically engaging the same, of a true barrel carried by said false barrel, a spring in said true barrel extending rearward therefrom and anchored to said frame,

a second spring surrounding said first spring and true barrel and abutting at its opposite ends against said frame and false barrel, a sear carried by said trigger section engaging the forward end of said first-mentioned spring, and a trip for disengaging said sear on the rearward movement of said trigger section and false barrel.

11. In a gun, the combination with telescopically engaged members, of a true barrel carried by the forward member, a magazine above said true barrel having an aperture at its rear end opening therein and a load aperture normally closed by said telescopic member, said telescopic member having a co-operating aperture for registration with said loading aperture when said members are telescopically collapsed.

12. In a gun, the combination with a frame member, of a false barrel and trigger member telescopically engaging the same, a true barrel in said false barrel, a magazine adjacent to said true barrel having an aperture communicating therewith and a loading aperture normally sealed by said frame, said frame being provided with a coöperating aperture adapted for registration with said loading aperture upon the rearward movement of said false barrel.

13. The combination with a frame, of a false barrel and trigger section telescopically engaging the same, a true barrel carried by said false barrel, a spring in said false barrel forming at its forward end a seat for the projectile, the rear end of said spring projecting and anchored to said frame, a sear for engaging the forward end of said spring, a detent for retaining the projectile seated against said spring, a lever carrying said sear and detent mounted in said trigger section, and a trip on said frame for deflecting said lever to release said sear and detent.

14. In a gun, the combination with a frame and handle member, of a false barrel and trigger member telescopically engaging

the same, a true barrel mounted in said false barrel and trigger member, a spring in said true barrel and anchored to said frame and handle member, means for compressing said spring upon the collapsing movement of said members, and means for automatically releasing said compressing means upon the nearing of the completion of the collapsing movement.

15. In a gun, the combination with a barrel, of a spring therein having its forward end forming a seat for the projectile, a detent or sear for maintaining the projectile in engagement with its seat, means for compressing said spring, while said detent or sear is maintaining the projectile in engagement with its seat, and means for releasing said detent or sear, near the end of the spring compressing operation.

16. In a gun, the combination with a frame and handle member, of a false barrel and trigger member telescopically engaging the same, a true barrel mounted in said false barrel and trigger member, a spring in said true barrel and anchored to said frame and handle member, a sear for holding the projectile in contact with said spring, and a trip for releasing said sear at the completion of the collapsing movement of said collapsible members.

17. In a gun, the combination with a frame and handle member, of a barrel and trigger member telescopically engaging the same, a spring in said barrel and anchored to said frame and handle member, means for compressing said spring upon the collapsing movement of said members, and means for automatically releasing said compressing means upon the nearing of the completion of the collapsing movement.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES F. LEFEVER.

Witnesses:

W. B. LOMBARD,
E. C. HOUGH.