(No Model.) 2 Sheets—Sheet 1.

M. F. STANLEY.

SPRING AIR GUN.

No. 420,316. Patented Jan. 28, 1890.

Fig. 1.

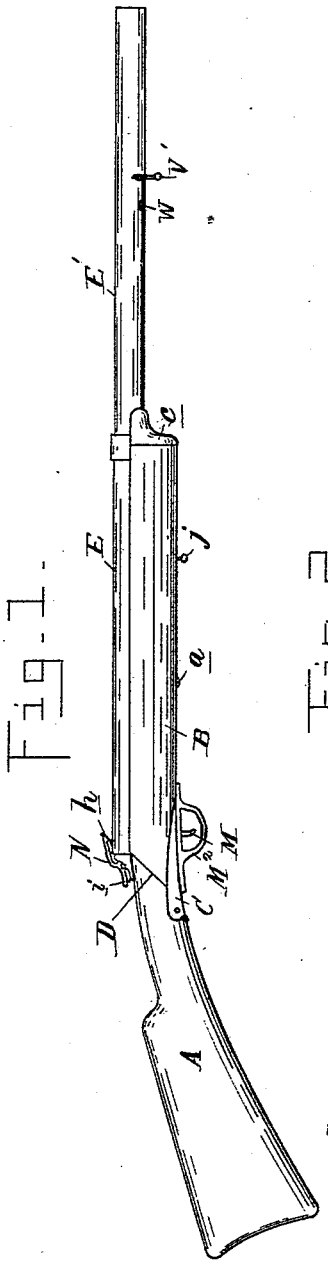


Fig. 2.

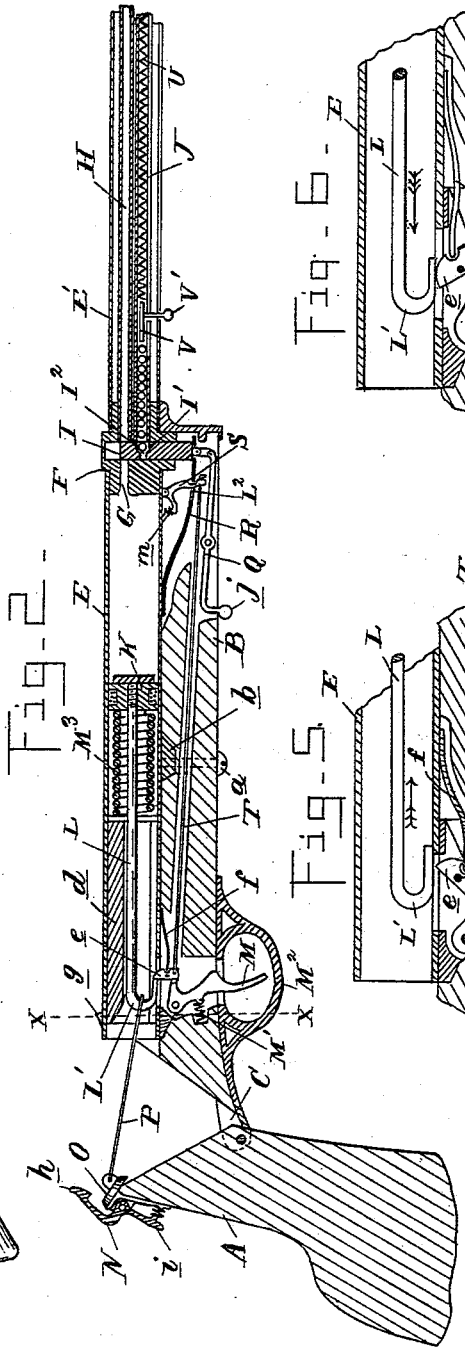


Fig. 6.

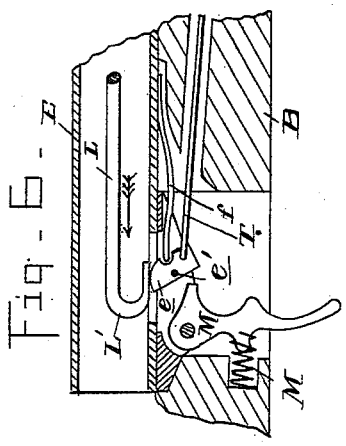
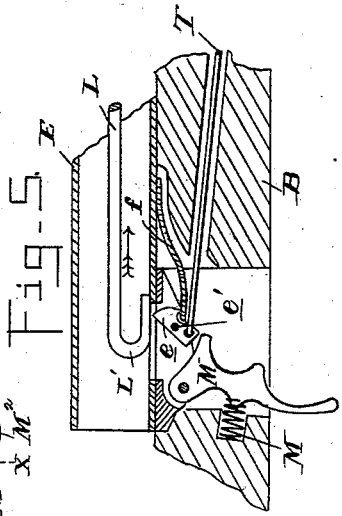


Fig. 5.



Witnesses:
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J. Paul Mayer

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By Thos. S. Sprague & Son
Atty.

(No Model.) 2 Sheets—Sheet 2.

M. F. STANLEY.

SPRING AIR GUN.

No. 420,316. Patented Jan. 28, 1890.

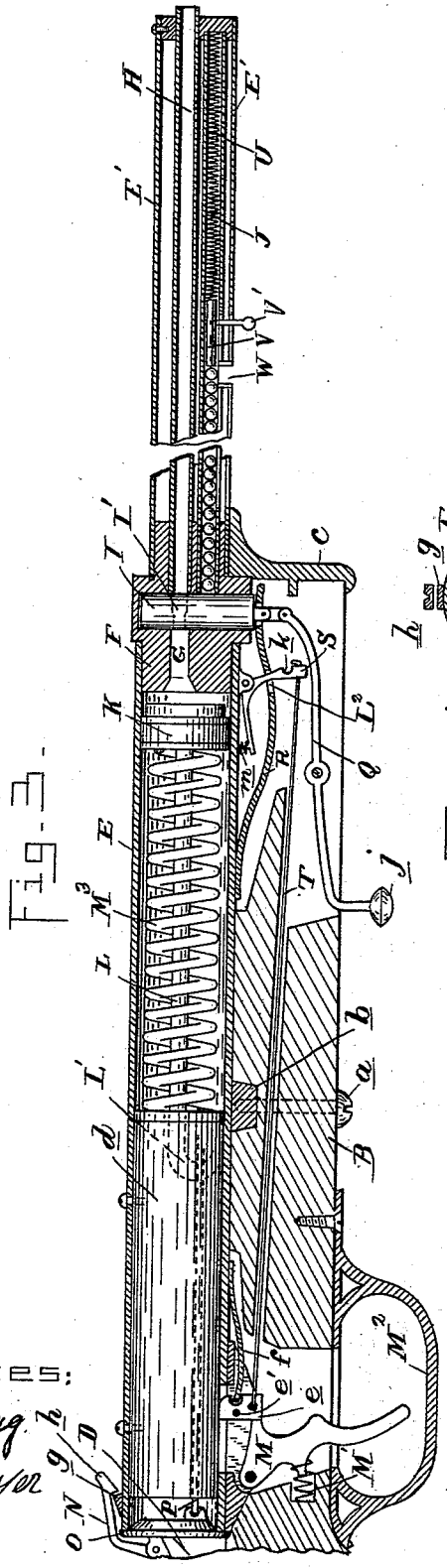

Fig. 3.

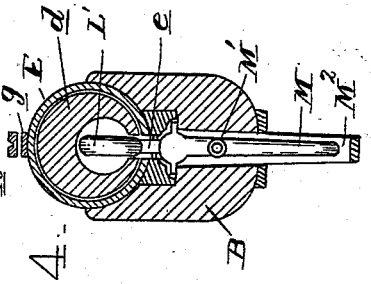

Fig. 4.

Witnesses:
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UNITED STATES PATENT OFFICE.

MERRITT F. STANLEY, OF PLYMOUTH, MICHIGAN, ASSIGNOR OF ONE-HALF TO HENRY C. ANDERSON AND FRANCIS C. ANDERSON, OF SAME PLACE.

SPRING AIR-GUN.

SPECIFICATION forming part of Letters Patent No. 420,316, dated January 28, 1890.

Application filed May 16, 1889. Serial No. 310,946. (No model.)

To all whom it may concern:

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

This invention relates to new and useful improvements in spring air-guns; and the invention consists in the peculiar construction, arrangement, and combination of different parts, all as more fully hereinafter described, and shown in the accompanying drawings, in which—

Figure 1 is a side elevation of my improved spring air-gun. Fig. 2 is a vertical central longitudinal section thereof, showing the parts as in the act of loading. Fig. 3 is a like section, on a larger scale, showing the parts in the position after discharging. Fig. 4 is a vertical cross-section on line X X of Fig. 2. Figs. 5 and 6 are details showing the construction and operation of the trigger and detent more plainly.

A is the stock of the gun, arranged to the fore-arm B by means of a suitable hinge C, whereby the stock may be "broken down," as shown in Fig. 2.

D is the line on which the fore-arm is separated.

E E′ is the false barrel, constructed in two parts, rigidly connected together by means of the breech-piece F.

G is a longitudinal aperture in the breech-piece.

H is the true barrel secured within the false barrel in axial line with the aperture G.

I is a vertically-sliding breech-block in the breech-piece, and J is a magazine-barrel secured below the true barrel.

The false barrel is detachably secured to the fore-arm by means of the screw *a*, passing through the fore-arm into a projection *b* on the under side of the false barrel, and a cap *c* is preferably secured to the under side of the false barrel to form a socket for the front end of the fore-arm and give an ornamental finish to the same. The rear end E of the false barrel forms an air-compressing cylinder and contains the air-compressing piston K, which is secured to the tension-rod L. In the rear end of the barrel is detachably secured the filling *d*, which forms a rear abutment for the compressor-spring M and a guide for the tension-rod L. The rear end of the tension-rod is provided with a hook L′, which is adapted to engage with a detent *e*, which is pivotally secured by a pin *e′* below the false barrel and projects through a slot into the same. The detent *e* is normally held by a spring *f* in the position shown in Fig. 3, and projects with its lower arm into the path of the short arm of the trigger M, which is provided with the trigger-spring M′ and the trigger-guard M^2, which preferably forms a member of the hinge C.

The gunstock is provided with a spring-latch N, which is adapted to engage on a catch *g* on the rear end of the false barrel to lock the parts together, and this latch is preferably provided with a suitable hind sight *h*, and with a thumb-piece *i*, for disengaging it readily from the catch. A cap O is secured to the gunstock, which is adapted to close the rear end of the false barrel when the stock is in the locked position.

P is a link connecting the gunstock with the hook of the tension-rod, whereby the "breaking down" of the gunstock compresses the spring M^3.

The vertically-sliding breech-block is preferably cylindrical and has an aperture I′, adapted to register with the aperture G and with the rear end of the true barrel and with the magazine-barrel. It is operated by a lever Q, which has a projecting thumb-piece *j* in convenient proximity to the hand which holds the gun, in the usual manner.

A spring R engages with its free end on the under side of the breech-block, and by its tension holds the same in its elevated position, except when forcibly drawn down by pressing on the thumb-piece of the lever Q, when the spring R will be engaged on the shoulder *k* of the detent S, which has the form of a bell-crank lever and engages with the arm on which the shoulder *k* is formed into a slot L^2 of the spring R, while the other

end is acted on by the spring *m*. A connecting-arm T connects the lower arm of the detent S with the detent *e*.

The magazine-barrel is closed at its forward end and contains a coil-spring U, which presses against a sliding abutment V, which is provided with a thumb-piece V′, projecting through a longitudinal slot on the under side of the false barrel. The magazine is charged with the ammunition through the hole W in the under side of the false barrel and leading into the magazine-barrel.

In practice, the parts being constructed and arranged as shown and described, they are intended to operate as follows: The magazine is charged by pushing the thumb-piece V′ toward the muzzle end of the gun until the opening W is disclosed, when the bullets may be inserted through said opening one by one until the barrel is filled up. Upon releasing the thumb-piece V′ the pressure of the spring U crowds the bullets toward the breech. To load the gun, the operator presses upon the thumb-piece *j*, which draws the breech-block down, so that its aperture I′ will receive a bullet from the magazine by the tension of the spring U, which forces the bullet onto the seat I^2, formed in the aperture I′. The breech-block remains in this lower position until the gun is discharged, on account of the spring R becoming locked in position by its engagement on the shoulder *k* of the detent S. The operator then proceeds to compress the spring M^3 by unlocking the latch N and breaking down the gun until the hook L′ of the tension-rod engages with the detent *e*, after which he brings the parts back again into normal position. Now the gun is ready to be discharged, which is done in the usual manner by pressing upon the trigger. This frees the detent *e* from its engagement with the short arm of the trigger, and consequently the tension of the spring M exerts itself and compresses the air in the cylinder E. The hook of the tension-rod in discharging actuates the detent *e* into the position shown in Fig. 5, causing thereby a pull on the link T, which disengages the detent S from the spring R, and thereby renders the latter free to carry the breech-block containing the bullet in its elevated position, in which its aperture I′ registers with the aperture G in the breech-piece and with the barrel H.

It will be seen that by this construction and arrangement of the parts the bullet, instead of being exposed to the very initial pressure of the air in the air-chamber, as in the ordinary construction, is only brought into position for discharging after the air has been compressed to a certain degree, and thus the bullet will be projected with much greater force. A further advantage arises from the upward movement of the bullet itself, which gives it a slight momentum and holds it, so to speak, suspended and free for the air-blast to seize it.

What I claim as my invention is—

1. In a spring air-gun, the combination of the sliding breech-block having an aperture to receive the bullet from the magazine, a spring adapted to slide the breech-block into its normal position opposite the barrel for discharging the bullet, and a detent adapted to hold the breech-block out of its normal position against the tension of the spring, substantially as described.

2. In a spring air-gun, the combination of the vertically-sliding breech-block having an aperture to receive the bullet from the magazine, the spring adapted to slide it into its normal position opposite the barrel for discharging the bullet, and the detent adapted to engage with said spring when the breech-block is depressed, substantially as described.

3. In a spring air-gun, the combination of the vertically-sliding apertured breech-block carrying the bullet, the spring which normally holds it in line with the barrel in position for discharging the bullet, the detent adapted to engage with said spring when the breech-block is depressed, and the lever for depressing the breech-block, substantially as described.

4. In a spring air-gun, the combination of the sliding apertured breech-block carrying the bullet, the spring which normally holds it in position in line with the barrel for discharging the bullet, the detent adapted to engage with said spring when the breech-block is depressed, and the connection of said detent with the detent of the trigger mechanism, substantially as described.

5. The combination, in a spring air-gun having an apertured breech-piece, a true barrel registering therewith, and a magazine-barrel, of an apertured breech-block slidingly secured, mechanism for registering it with the magazine-barrel to receive a bullet therefrom, and an automatically-operating mechanism for registering it with the true barrel, said mechanism being controlled by the trigger mechanism of the gun in the act of releasing the tension-rod of the air-compressing mechanism, substantially as described.

6. The combination, with the hook L′ of the air-compressing mechanism of the gun, of the trigger M, the detent *e*, controlled thereby, the breech-piece F, having the aperture G, the vertically-sliding breech-block I, having the aperture I′, the true barrel H of the magazine-barrel, having the spring U, the lever Q, the spring R, and the detent S, and the link T, connecting the detents S and *e*, substantially as described.

7. In a spring air-gun, the combination of the false barrel, constructed in two sections E and E′, the breech-piece F, securing the two parts together, the aperture G in the breech-piece, the true barrel inclosed in the false barrel and secured with its rear end in the breech-piece, and the apertured breech-

block I, slidingly secured in the breech-piece, substantially as described.

8. The combination of the breakdown gun-stock A, the fore-arm B, to which it is hinged, the false barrel secured to the fore-arm, the spring-latch N on the gunstock, and the cap O, adapted to close the rear end of the false barrel, substantially as described.

In testimony whereof I affix my signature, in presence of two witnesses, this 3d day of May, 1889.

MERRITT F. STANLEY.

Witnesses:
ELIAS H. BRIGGS,
JOHN KINNEY.