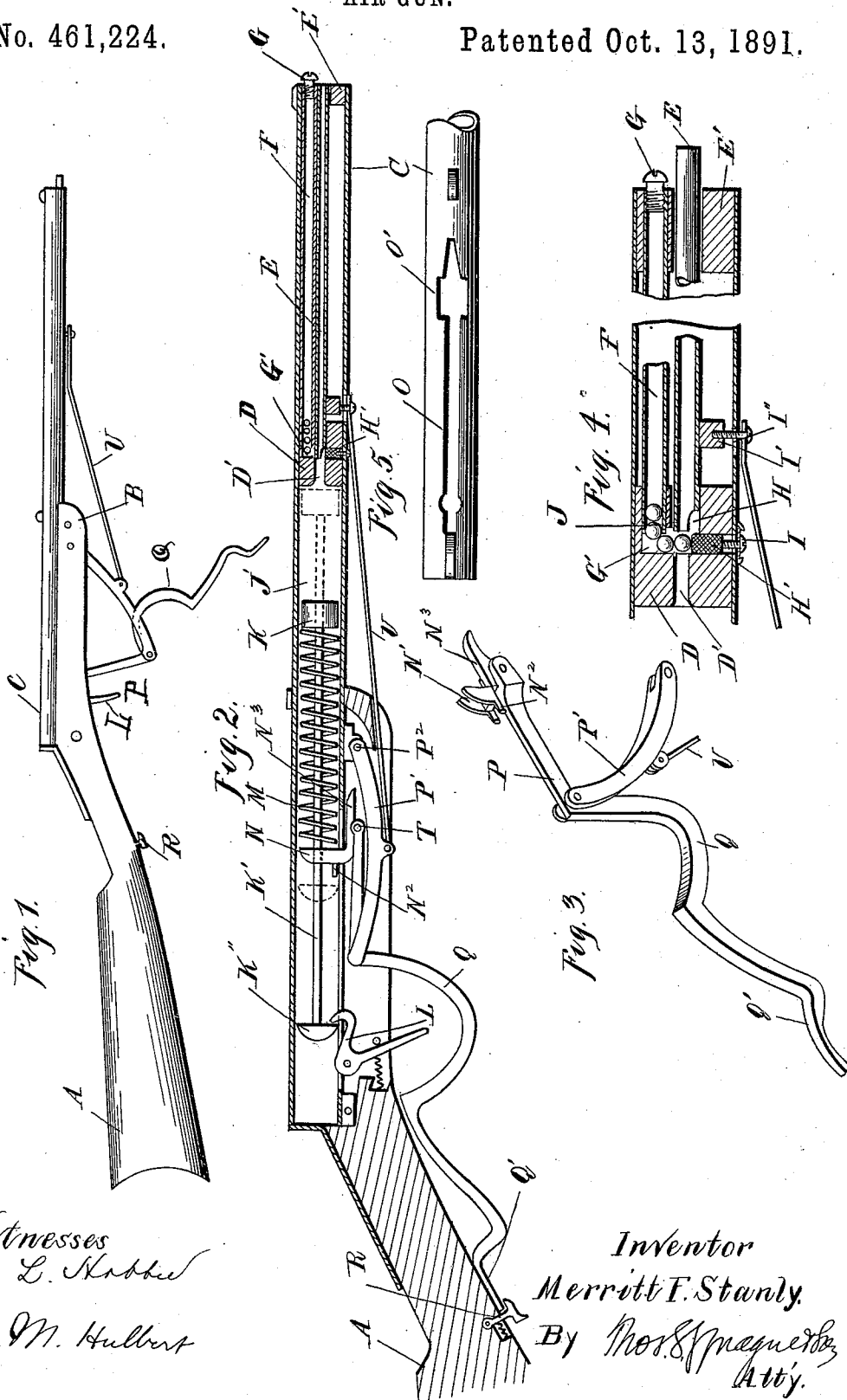


(No Model.)

M. F. STANLY.
AIR GUN.

No. 461,224.

Patented Oct. 13, 1891.



Witnesses
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UNITED STATES PATENT OFFICE.

MERRITT F. STANLY, OF NORTHVILLE, MICHIGAN.

AIR-GUN.

SPECIFICATION forming part of Letters Patent No. 461,224, dated October 13, 1891.

Application filed November 6, 1890. Serial No. 370,582. (No model.)

To all whom it may concern:

Be it known that I, MERRITT F. STANLY, a citizen of the United States, residing at Northville, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in 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 of the spring-compressing mechanism; further, in the peculiar construction of the magazine and the means for delivering the projectile from the magazine to the breech of the true barrel; further, in the peculiar construction of the mechanism whereby the loading of the gun is simultaneously accomplished with the compressing of the spring, and, further, in the peculiar arrangement, construction, and combination of the various parts, all as more fully hereinafter described.

In the drawings, Figure 1 is a side elevation of my improved gun, showing the spring-compressing lever in its forward position. Fig. 2 is a vertical central longitudinal section of the gun, showing the spring compressed. Fig. 3 is a detached perspective view of the spring-compressing lever. Fig. 4 is an enlarged section through the magazine and true barrel, showing the means of feeding the projectile. Fig. 5 is a bottom plan view of the butt of the false barrel detached.

A is the stock, which has the fore-arm B, in which is secured the false barrel C, preferably of metal. Centrally of this false barrel is formed a block D, having an aperture D', formed therethrough from front to rear.

E is the true barrel, the breech of which registers with the forward end of the aperture D', and is guided by suitable bearings formed in the block D, while the forward end of the true barrel is guided in a block E', formed at the forward end of the false barrel.

F is the magazine, which may preferably consist of a tube stationarily secured at its ends in the blocks D and E' and extending parallel with the true barrel directly above the same. Its forward end is closed in any suitable manner. I have shown a screw G,

screw-threaded therein, while the rear end is provided on its lower side with an aperture G', directly above the rear of the true barrel. 55

The true barrel is cut away on its lower side at H, this cut-away portion extending over a yielding bearing H', having vertical adjustment by means of the set-screw I, this bearing being directly in line with the aperture G' in the magazine-chamber. 60

I' is a lug or screw secured on the under side of the true barrel, passing through a slot I'' in the under side of the false barrel to the outside thereof, by means of which the true barrel may be horizontally reciprocated. 65

The magazine-chamber being filled with shot, as shown, the operator can move forward the true barrel by means of the screw I', thereby opening the aperture G', which, when the barrel is in its normal position, is closed by the rearward extension J on the true barrel. As soon as the aperture is open the shot in the rear of the magazine-chamber are free to fall by gravity (the gun being held in the proper position) upon the yielding bearing H', when the operator can withdraw the true barrel to have a firm seat upon the block. This motion will separate the lower shot from those above it and compress the projectile tightly upon the yielding seat directly in front of the aperture D' and in the breech of the true barrel. This same motion closes tightly all connection between the true barrel and the magazine-chamber and prevents the escape of any of the compressed air through such chamber. By forming a tight seat against the block D all escape of the compressed air around the true barrel is also prevented, so that the full force of the compressed air is directed against the projectile, which will be held for an instant or until air has accumulated considerable force to move it from its compressed position upon the yielding bearing H'. 95

I have thus far described the action and construction of the magazine and true barrel when operated independently from the spring-compressing mechanism, and it is evident that they may be so operated; but I have shown in this application the true barrel reciprocated by the spring-compressing mechanism, which I will describe farther on. 100

J' is the air-compressing cylinder in the

rear of the block D, in which is slidingly secured the piston K and piston-rod K'. The rear end of the piston-rod is provided with the cross head or bar K'', adapted to engage
5 with the detent on the trigger L.

M is the spring sleeved upon the piston-rod K', bearing with its forward end against the piston K and at its rear end against the sliding abutment N, which is provided on its upper face with the slot N', in which the piston-rod K engages, and with bearing-faces N'' on its lower edge resting against the inner face of the barrel, being guided in its forward movement by the extension N³, which passes
10 through a slot O in the under side of the barrel. This slot is widened at its forward end at O' to engage the abutment therethrough, its normal position being in the rear thereof, so that except by compressing the spring forwardly it cannot be disengaged; but when the spring is compressed slightly forward of its normal position the abutment may be taken out through the aperture O'. To the extension N³ of the abutment N is pivotally
15 secured the spring-compressing lever P, which is fulcrumed upon the swinging link P', which link in turn is pivoted at P'' to the under side of the barrel. The lever in its rearward extension is provided with the curved portion Q, forming the trigger-guard, and with the end portion Q', adapted to be secured in its rearward position by the spring-catch R, engaging over the rear end thereof.

To compress the spring, the parts being in the position shown in dotted lines in Fig. 2, the operator disengaging the spring-catch R moves the lever P to the forward position shown in Fig. 1, in which position the link carrying the fulcrum of the lever is lowered, so that the lever extends at substantially right angles to the spring. In this rearward movement the cross-head K'' engages with the detent on the trigger, which locks it in that position. The operator now draws the spring backward to the position shown in Fig. 2, which carries forward the sliding abutment N, compressing the spring against the piston K until the lever has reached the position shown in Fig. 2, where it is locked in position, not only by the spring-catch R, but automatically by arranging the fulcrum of the lever at a higher point than the pivot T. It will be seen that as the lever is moved from the position shown in Fig. 1 to the position shown in Fig. 2, as the compression of the spring increases the application of the power is greater at all times.

In order to connect the loading mechanism with the spring-compressing mechanism to make the two operations simultaneous, I employ the connecting-rod U, pivotally connected to the link P' at one end and at the other end connected to the screw I'', by means of which the true barrel is reciprocated, so
60 arranged that as the lever is thrown forward to engage the cross-head with the detent on the trigger the barrel will be moved to its

forward position, and as the lever is moved to the position shown in Fig. 2 the barrel will be moved backward for the purpose of cutting off the shot and loading the barrel in the manner previously described.

What I claim as my invention is—

1. In a spring air-gun, the combination, with a false barrel having a magazine therein, of a reciprocating true barrel, a passage in the magazine at a point back of the true barrel, and a slide actuated by the movement of the true barrel to open and close the passage, substantially as described.

2. In an air-gun, the combination, with the magazine-chamber, the true barrel, and a connecting-passage between the two at the breech of the true barrel, of an elastic bearing below the connecting-passage, and means for reciprocating the barrel across said passage, substantially as described.

3. In an air-gun, the combination, with a false barrel and cylinder, of a spring-actuated piston in the cylinder, a reciprocating true barrel in the forward end of the false barrel, a magazine above the true barrel having a passage at its inner end over which the true barrel passes, and levers for simultaneously drawing the piston and true barrel back, substantially as described.

4. In an air-gun, the combination, with the air-compressing cylinder and false barrel, of a magazine and true barrel having a passage connection between their inner ends, a spring-propelled piston in the cylinder, a shut-off for the passage between the barrel and magazine, and a hand-piece for simultaneously moving the shut-off and piston, substantially as described.

5. In a spring air-gun, the combination, with a cylinder and spring-compressing lever, of a spring-actuated piston in the cylinder, a cross-head on the rear end of the piston, a trigger for engaging the cross-head, and an abutment on the spring-compressing lever extending into the cylinder between the cross-head and spring for engaging the same, substantially as described.

6. In a spring air-gun, the combination, with the cylinder, of a spring-actuated piston in the cylinder, a cross-head on the rear end of the piston, a trigger for engaging the cross-head, a sliding abutment entering the cylinder between the cross-head and spring, and means for reciprocating the abutment to carry the cross-head back and to compress the spring, substantially as described.

7. In a spring air-gun, the combination, with the air-compressing cylinder and the spring and piston, of the sliding abutment N, the lever P, pivoted thereto, and the link P', in which said lever is fulcrumed, substantially as described.

8. In a spring air-gun, the combination, with the barrel, the piston, and its actuating-spring, of the sliding abutment N, having the forward-extending arm N''', projecting beneath the barrel and guided therein, the lever P,

pivotally connected with said arm, the link P', in which said lever is fulcrumed, and a latch R upon the stock, adapted to hold said lever in its rearward position, substantially as described.

9. In a spring air-gun, the combination, with a barrel, the piston, and its actuating-spring, of spring-compressing mechanism consisting of the sliding block N, the lever P, fulcrumed to the link P', the rod U, pivotally connected with said link at its rear end, the true barrel E, slidingly secured in the forward end of the false barrel, the block I', to which the connecting-rod U is secured at its forward end, and the slot I'', the parts being arranged to operate substantially as and for the purpose described.

10. In an air-gun, the combination, with a

false barrel, of a magazine having a passage through its rear end, a reciprocating shut-off below the passage through which the projectile passes, and an elastic bearing below the passage, substantially as described.

11. In an air-gun, the combination, with the magazine having a passage in its rear end, of a reciprocating true barrel having an extension on its end acting as a slide to open and close the passage, substantially as described.

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

MERRITT F. STANLY.

Witnesses:

JAMES WHITEMORE,
N. L. LINDOP.