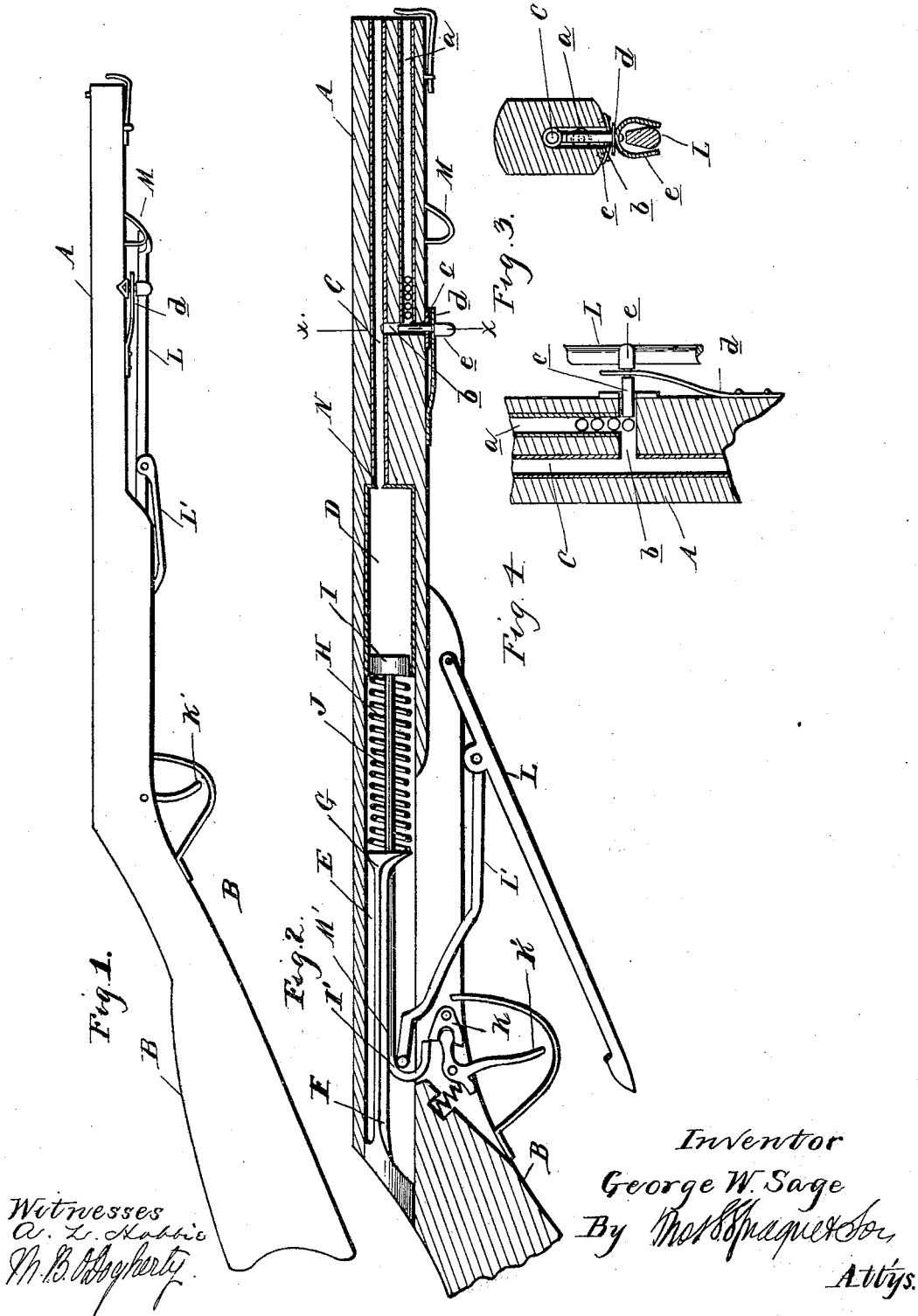


(No Model.)

G. W. SAGE.  
SPRING AIR GUN.

No. 477,385.

Patented June 21, 1892.



Witnesses  
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# UNITED STATES PATENT OFFICE.

GEORGE W. SAGE, OF PLYMOUTH, MICHIGAN.

## SPRING AIR-GUN.

SPECIFICATION forming part of Letters Patent No. 477,385, dated June 21, 1892.

Application filed April 23, 1891. Serial No. 390,196. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE W. SAGE, 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 it consists in the peculiar construction of the loading apparatus, whereby the projectile is carried from the magazine-chamber to the true barrel of the gun and whereby the connection between the true barrel and magazine-barrel does not interfere with the action of the compressed air in forcing the projectile.

The invention further consists in the peculiar construction of the spring-compressing mechanism, whereby the loading mechanism is actuated each time the spring is compressed, and, further, in the peculiar arrangement, construction, and combination of the various parts, as hereinafter described and shown.

In the drawings, Figure 1 is a side elevation of my improved gun, showing the spring-compressing lever in its normal position. Fig. 2 is a vertical central longitudinal section through the gun, showing the lever in the position when the spring is compressed. Fig. 3 is a cross-section on line *x x* in Fig. 2. Fig. 4 is an enlarged detail section of the loading mechanism, showing the parts in a different position from that shown in Fig. 2.

A is the false barrel, and B is the stock, preferably of wood and made in one piece.

C is the true barrel.

D is the air-compressing chamber, and E is the spring-compressing chamber.

F is a breech-block secured in the rear end of the spring-compressing chamber. G is the head thereof, against which the spring H is compressed.

I is the piston.

J is a rod connected to the piston and having formed at its rear end the hook I', adapted to engage with the detent K, operated by the trigger K'.

L is the spring-compressing lever, pivoted to the fore-arm of the barrel and having secured thereto a link L', which extends into the spring-

compressing chamber E in front of the hook. To compress the spring, the operator moves the lever (which is held normally parallel by means of the spring-catch M) to the position shown in Fig. 2, moving backward the cross-head M' of the link L', which carries with it the piston and piston-head, and compressing the spring. As soon as the hook I' is engaged with the detent K the lever is returned to its normal position. The operator, pulling on the trigger, releases the hook. The expansion of the spring causes the piston to compress the air in the air-compressing chamber and force out the projectile, which has been seated in the tapering or conical seat N in the rear end of the barrel.

The parts thus described I do not claim as my invention; but my invention is especially adapted to be applied to a gun of this construction, and consists of the magazine-chamber *a*, arranged in the false barrel A parallel with the true barrel and extending from the muzzle to a point located intermediate the ends of the true barrel, where it is connected by means of a transverse passage *b*, which is located some distance away from the breech or seat N of the true barrel.

In the prior state of the art magazine-guns have been constructed in which the true barrel and the magazine-barrel have been arranged side by side and having a connecting-passage and means for transferring the projectile from the magazine to the true barrel; but in all such constructions the connecting-passage has been arranged directly at the breech of the true barrel. Now in such constructions as the compressed air comes from the air-compressing chamber into the true barrel a good deal of it will pass into the magazine-chamber, because it has been found impossible to construct a closure for this connecting-passage which would prevent leakage, and thus the efficiency of the gun is greatly decreased.

The connecting-passage *b* shown in my construction is located so far in advance of the seat N at the end of the true barrel that the force of the compressed air has largely been communicated to the projectile before it reaches the passage *b*, and it is therefore of little importance what kind of a closure is arranged for this passage or the magazine, so

long as the projectiles are prevented from passing into the true barrel.

In the drawings I have shown a transverse plug *c* slidingly secured in the passage *b* and normally closing the magazine and extending in proximity to the true barrel. This plug is held normally in the position shown in Fig. 1 by means of the spring *d*.

In order to make the operation of my gun as nearly automatic as possible, I have attached to the plug *c* a U-shaped spring *e*, arranged in the path of the lever *L*, but of a size smaller than said lever, all so arranged that when the lever is in the position shown in Fig. 1 it will be tightly clasped by said spring, as plainly shown in Fig. 3.

To load the gun, the operator holds it in a vertical position, taking hold of the lever *L* and turning it into the position shown in Fig.

2. In withdrawing it from the spring-catch *M* the spring *e* will retain its hold on the lever until the plug is withdrawn, as shown in Fig. 4, a sufficient distance to allow the bullet or other projectile to fall in front of it into the passage *b*. The further movement of the lever releases the spring *e*, owing to the tension of the spring *d*, which will return to its position and carry the projectile into the true barrel, down which it will run to the seat *N*,

which is conical, and will hold the projectile in position until it is forced out by the compressed air. It is thus seen that each time the spring is compressed a projectile will be fed from the magazine to the true barrel ready for the next shot.

What I claim as my invention is—

1. In a spring air-gun, the combination, with the air-compressing cylinder and means for compressing the air, of a true barrel having a seat for the projectile formed at its rear end adjacent to the cylinder, a magazine having communication with the true barrel at a point in advance of the seat and between the seat and muzzle, and means for closing the communication, substantially as described.

2. In a spring air-gun, the combination of the true barrel, the magazine-chamber, connecting-passage *b*, the plug *c*, the actuating-spring *d*, the spring-clamp *e*, and the spring-compressing lever *L*, adapted to be engaged by said clamp, substantially as described.

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

GEORGE W. SAGE.

Witnesses:

M. B. O'DOGHERTY,  
N. L. LINDOP.