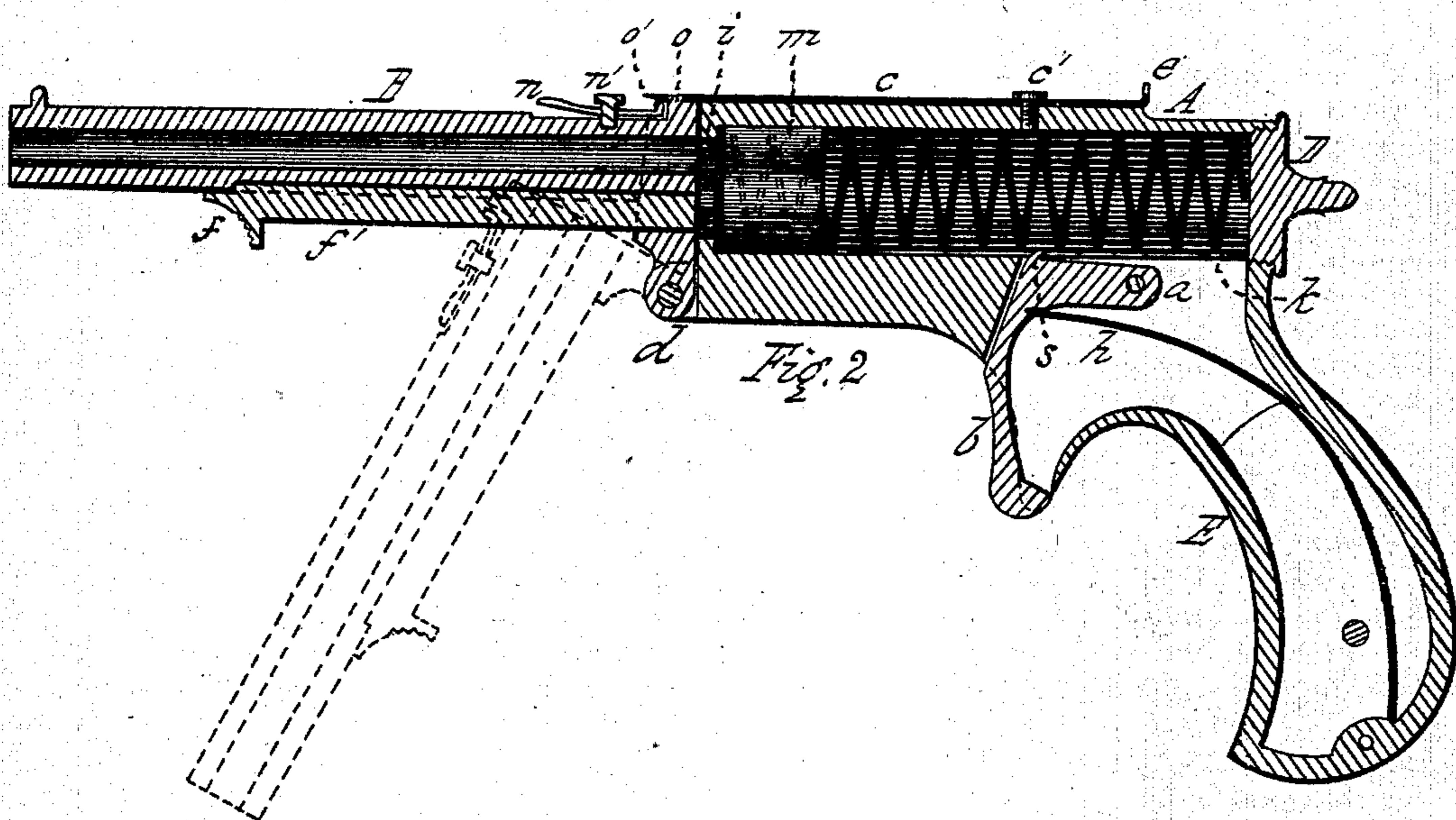
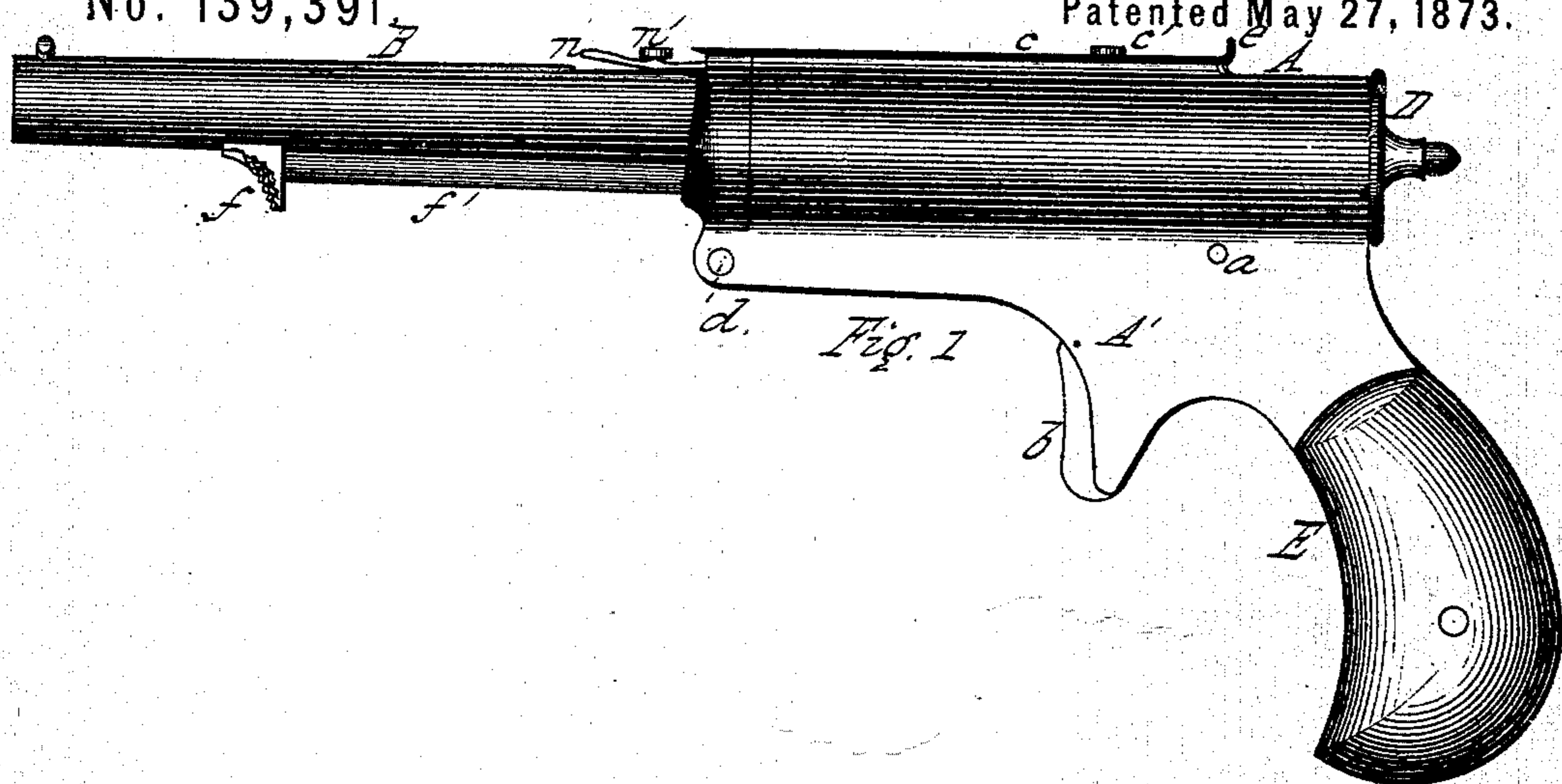


O. W. HERR.  
Toy-Pistols.

No. 139,391

Patented May 27, 1873.



Witnesses,

C. Eugene Buckland.  
S. W. Doherty

Inventor,

Otis W. Herr.  
By J. A. Curtis  
his atty.

# UNITED STATES PATENT OFFICE.

OTIS W. HERR, OF CHICOPEE FALLS, MASSACHUSETTS.

## IMPROVEMENT IN TOY PISTOLS.

Specification forming part of Letters Patent No. **139,391**, dated May 27, 1873; application filed March 19, 1873.

*To all whom it may concern:*

Be it known that I, OTIS W. HERR, of Chicopee Falls, in the county of Hampden and State of Massachusetts, have invented a new and useful Improved Air-Gun; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings making a part of this specification, and to the letters of reference marked thereon, in which—

Figure 1 is a side view of my invention, and Fig. 2 is a longitudinal vertical section through the center of the arm.

My invention relates to a gun or pistol in which air is used immediately as the force to throw the projectile from the barrel; and it consists of a cylinder attached to the upper part of the stock or handle, in which operates a piston with a spring placed in its rear. A barrel is hinged to the lower forward part of the stock, and when closed the bore of the barrel communicates with and is directly in front of the bore of the cylinder, and a rod is attached to the lower part of the barrel, which extends through a hole in the rear part of the barrel, so that when the barrel is closed up in place in front of the cylinder said rod may be forced back into the cylinder, forcing with it the piston into the rear part of the cylinder, and when forced back into that position it is held there by a small projection upon the trigger, pivoted just beneath the cylinder, which projection protrudes up a little into the cylinder, and which the piston forces down as it passes back, but which springs up in front of the piston when it has passed. The rear end of the barrel is provided on top with a small projection, and a spring is attached to the top of the cylinder, the forward end of which projects a little over the rear end of the barrel, and is provided with a small hole into which the projection upon the barrel springs when the barrel is closed up against the front end of the cylinder. A ring of leather or similar material cemented to the rear end of the barrel serves to make an air-tight joint between the barrel and cylinder, and a small bent lever pivoted to the rear end of the barrel on top serves to unlock the barrel by raising the locking-spring, so that the barrel may be moved down upon its hinge.

That others skilled in the art may be able to make and use my invention I will proceed to describe its construction and operation.

In the drawings, A' represents the stock or handle of the gun, upon the upper part of which is made the cylinder A, the bore of which is of uniform diameter throughout except at the forward end, which is of slightly-reduced diameter, to stop the piston in its further movement forward, and a screw-thread is made in the rear end of the cylinder, into which is fitted the threaded nut D. The trigger *b* is pivoted at *a*, and is provided with a point, *s*, beveled on its front side, and which is kept projecting up into the cylinder by the action of the spring *h*, as shown clearly in Fig. 2. The piston *m* is made cup-shaped, or recessed at its rear end, into which is inserted the front end of the spring *k*, its rear end bearing against the breech-nut D, the spring thus operating to force the piston forward to the front end of the cylinder. A spring, *c*, is secured to the top of the cylinder by the screw or pin *c'*, and the front end of said spring projects a little beyond the forward end of the cylinder, and has a small hole therein, and the spring is slightly beveled at the end, and is turned up at the rear end to form the back sight *e*. The lower rear end of the barrel is pivoted to the stock at *d*, and a hole is made through the lower rear part of the barrel, through which is inserted a rod, *f'*, provided with a finger-piece, *f*, at the forward end, and a small projection, *o*, is made upon the top of the barrel at the rear end which snaps into the hole made in the spring to receive it, when the barrel is closed up in place at the forward end of the cylinder; and a small lever, *n*, is pivoted to the top of the barrel at *n'*, the rear end of said lever being just beneath the forward end of the spring *c*. A leather or similar suitable packing-ring is cemented to the rear end of the barrel to make the joint between the barrel and cylinder air-tight.

The operation of my invention is as follows: The rod *f'* is forced back, its rear end passing into the cylinder against the piston *m*, and forcing that back, which, in its passage, strikes against the projection *s*, pressing it down. When the piston has passed the projection the latter is forced up again by the action of the

spring *h* in front of the piston, and the latter is held in that position by the projection *s*, while the rod *f'* is drawn entirely back to its place again beneath the barrel. The forward end of the lever *n* is then pressed down, its rear end raising the spring *c* off the projection *o*, when the barrel is depressed to the position shown in dotted lines in Fig. 2. A dart or other suitable projectile is then inserted in the rear end of the barrel, which is then brought up with a quick movement against the forward end of the cylinder, the projection *o* snapping into the hole in the forward end of the spring *c*, and the barrel is then held firmly in place. By pulling the trigger *b* the point *s* is drawn down, and the piston *m*, being released, is forced quickly forward by the spring *k*, and the air in front of the piston forces out the projectile.

The small lever *n* is only attached as a convenience to facilitate the unlocking of the barrel from the cylinder to load it, and is not a necessary adjunct, as the gun is quite operative without it, the spring *c* being quite easily raised off the projection *o* by the finger.

It is evident that any other arrangement of spring that would operate to keep the point *s* projecting up into the cylinder would be an equivalent to that shown at *h*.

I am aware that air-guns and pistols have been heretofore made and used, wherein a piston moving within a cylinder was the propelling power, and I do not claim such, nor any part thereof, irrespective of my construction and arrangement of the same; but

Having thus described my invention, what I do claim as new, and desire to secure by Letters Patent, is—

The cylinder *A* provided with the spring *c*, and with the piston *m* and spring *k* operating therein, in combination with the trigger *b* provided with the point *s* and its operating spring, and the hinged barrel *B* having the projection *o* thereon, and provided with the sliding rod *f'*, all constructed and operating substantially as described.

OTIS W. HERR.

Witnesses:

T. A. CURTIS,

C. EUGENE BUCKLAND.