

(No Model.)

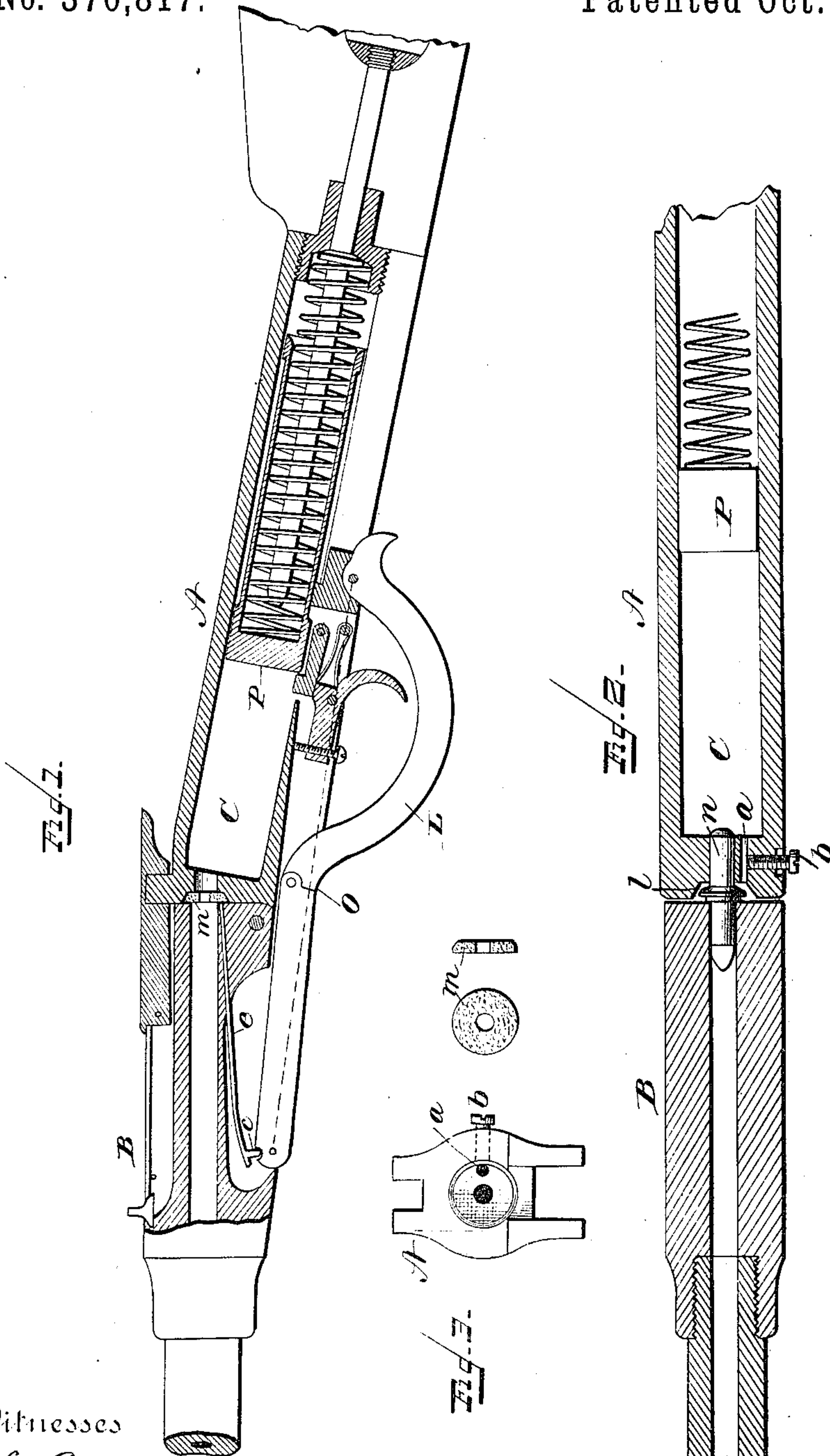
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H. M. QUACKENBUSH.

AIR GUN.

No. 370,817.

Patented Oct. 4, 1887.



Witnesses  
F. L. Ourand  
James P. Duffhamel

By

Inventor  
H. M. Quackenbush  
D. S. Gordon  
Atty.

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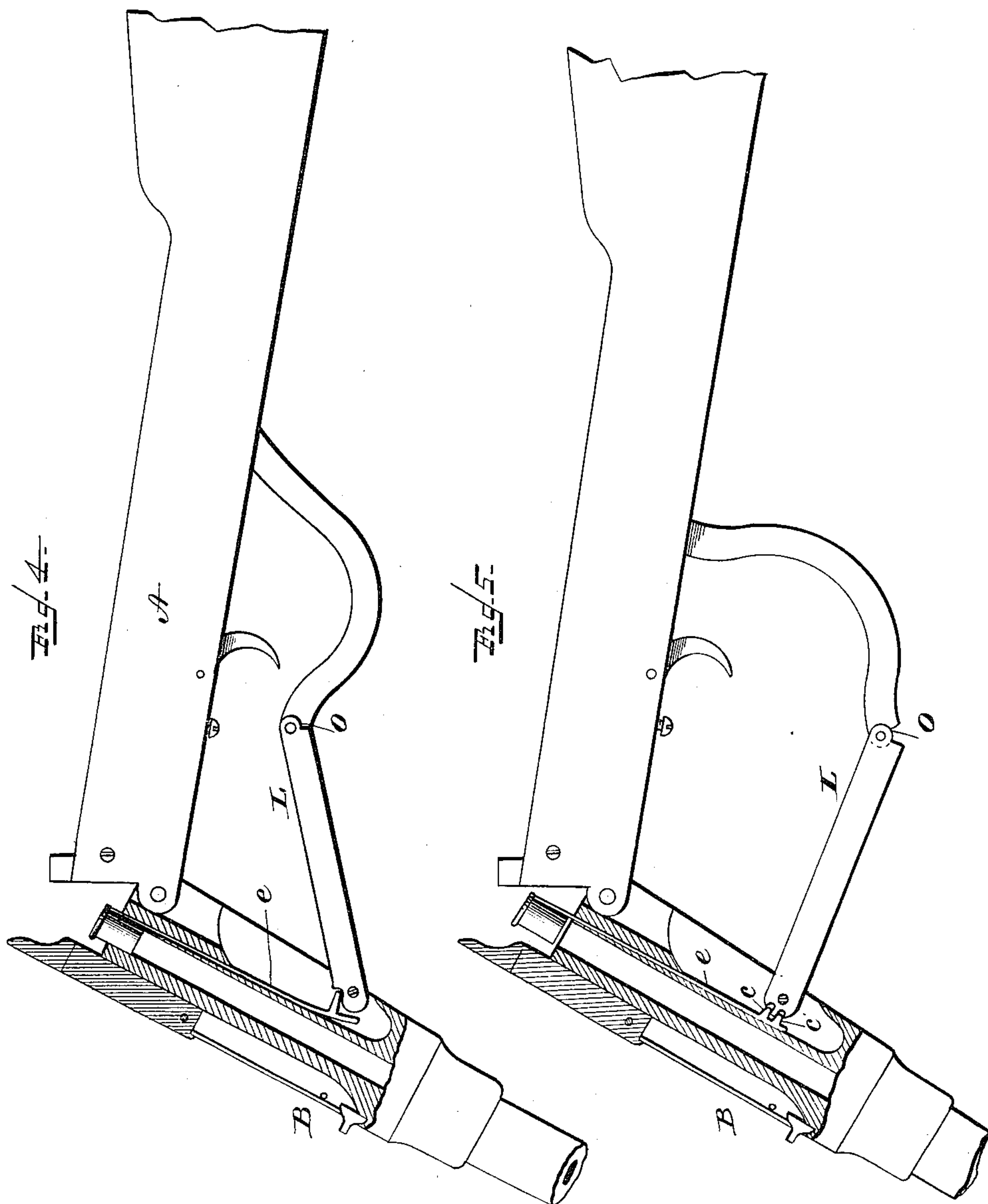
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# UNITED STATES PATENT OFFICE.

HENRY MARCUS QUACKENBUSH, OF HERKIMER, NEW YORK.

## AIR-GUN.

SPECIFICATION forming part of Letters Patent No. 370,817, dated October 4, 1887.

Application filed March 10, 1887. Serial No. 230,380 (No model.)

*To all whom it may concern:*

Be it known that I, HENRY MARCUS QUACKENBUSH, of Herkimer, in the county of Herkimer and State of New York, have invented certain new and useful Improvements in Air-Guns, of which the following is a specification.

My present invention relates to air-guns; and the invention consists in certain improvements hereinafter more fully described.

Figure 1 is a side elevation partly in section to show the working parts. Fig. 2 is a transverse longitudinal section. Fig. 3 is a front end view of the stock portion, shown detached; and Figs. 4 and 5 are side elevations partly in section to illustrate the operation of the parts.

The general construction of this gun, being well known, need not be described further than to say that the stock A, with its air-chamber C, piston P, with its spring and trigger, and the hinged barrel are all as heretofore made.

In the gun as formerly constructed the lever or link L, which served to shove back the piston and compress the spring, was made in a single rigid piece, and as, when the barrel was swung up into position to close the breach, the front portion of the lever was drawn into the recess formed for it in the under side of the receiver and stock, as shown in Fig. 1, there was a possibility that the fingers might be caught between the lever and the barrel or stock, and thus be injured, especially as persons not infrequently take hold of the receiver or rear portion of the barrel with the left hand while inserting a slug, dart, or cartridge with the right hand. To prevent this I now construct the lever L with a knuckle-joint, O, at or near its center, as shown in Figs. 1, 4, and 5. As it is necessary that this lever should be rigid when opening the gun, in order to push back the piston and compress the spring, the pivot of the joint O must be above a right line passing through the two end pivots, as shown by the dotted line in Fig. 1, so that when the barrel is swung down and begins to push on the lever L the shoulders of the knuckle-joint locking or abutting one against the other prevent the lever from flexing or bending inward toward the gun, as it would otherwise tend to, thus keeping it rigid while compressing the spring. As, however, the

pivot of this joint O is but a little out of line with the end pivots, but little force will be required to flex or bend the lever outward, as shown in Fig. 5, and as there is no force bearing on the lever at its rear end when the gun is being closed it will readily be seen that if the fingers or finger happens to be struck by the lever the latter will open outward, and thus prevent crushing or injuring the fingers, and even if by accident the trigger should chance to be hit and release the piston while the gun is open, thus permitting the spring to exert its force on the lever while the barrel is being swung back into position, the joint O would permit the lever to open outward the instant it came in contact with the finger or any obstruction; but such a contingency as accidentally releasing the piston by hitting the trigger seldom if ever occurs.

As this gun is made to shoot metallic cartridges as well as slugs or darts, it is desirable to have some means for ejecting the shell after being fired, and to accomplish this I provide an ejector, e, which consists of a small rod or piece of steel wire, the rear portion of which is made cylindrical and of uniform diameter, so as to fit and slide in a hole bored diagonally in the metal under the chamber or bore of the gun, as shown in Figs. 1, 4, and 5, this hole coming out at the rear end of the barrel close enough to the chamber to cause the end of the rod e to engage against the flange of the shell, so that when the rod e is shoved back it will push the shell out, as represented in Figs. 4 and 5. In order to operate this ejector automatically in opening the gun, its front end is provided with one or more teeth or projections, c, arranged to engage in a corresponding recess or recesses made in the front end of lever L, as shown, so that as the barrel is swung down to open the gun the ejector e will be shoved backward, as represented in Fig. 4. If, as shown in Fig. 4, there be but a single tooth or projection c on the ejector, it will be moved only far enough to push the shell part way out, as represented in Fig. 4; but by increasing the number of the teeth c and of the recesses for them to engage in, as shown in Fig. 5, then, after the gun has been opened, as shown in Fig. 4, by simply applying the thumb to the lever L and opening it



outward, as shown in Fig. 5, the ejector will be given an additional movement sufficient to push the shell entirely out, as shown in Fig. 5.

As when firing slugs or darts it is necessary or desirable that there shall be no escape of the air, except through the bore of the gun, and in which case the striker or firing-pin *n* is removed and a perforated leather washer, *m*, is placed in the front recess of the stock to pack the joint and render it air-tight, the ejector *e* is made to fill the hole at the rear end, so that no air can enter or escape at that point. By this construction of the ejector it will be seen also that it has no lip at its rear end, and consequently nothing on or behind which the particles of felt, &c., used on the slugs and darts can engage and prevent the ejector from sliding back into its hole or be held in the joint when closing the gun.

As long use tends to weaken the spring by causing it to set more or less, and as the air in front of the piston cannot readily escape when the striker *n* is in place, it results that occasionally the blow on the striker *n* is not sufficient to ignite the cartridge. To remedy this objection, and at the same time prevent the escape of the air when shooting slugs or darts, I make a hole, *a*, through the front wall of the air-chamber *C*, as shown in Figs. 2 and 3, and then at right angles to this hole *a* insert a screw or plug, *b*, of the proper size to close the hole *a* when screwed into its seat. By this arrangement the screw *b* can be adjusted to allow for the escape of more or less of the air from the chamber *C*, according to the condition or requirements of the spring, or the escape of the air through this hole can be prevented entirely when it is to be used as the propelling force for darts or slugs. So, too, if it be found that the blow from a new and very stiff spring is too great, as may sometimes be the case when firing cartridges, this affords means for reducing or graduating the force of the blow to any desired extent, for by closing the hole *a*, so as to confine more or less of the air in the chamber, it can be made to act as a buffer to the piston, which will be compelled to compress the air in front of it as it moves forward, and thus the force of the blow can be adjusted or tempered as may be desired.

By making the hole *a* in the end instead of

through the side of the air-cylinder the hole is covered when the gun is closed, and there is no chance for dust, dirt, or grit of any kind to enter the air-chamber through it, and which would soon cause the piston and walls of the air-chamber to cut and wear, so as to permit the air to escape past the piston, whereby the efficiency of the arm as an air-gun would be destroyed or greatly lessened.

I am aware that a patent has been granted for an air-gun in which there is described a vent-hole through the side of the cylinder with a slide for closing or opening the same, and also that there has been described an air-gun having a striker for firing metallic cartridges and a vent through the side of the cylinder or air-chamber, and therefore I do not claim either of these; but,

Having thus fully described my invention, what I claim is—

1. In combination with the stock *A* and the barrel *B*, hinged thereto, the guard-lever *L*, pivoted at one end to the barrel *B* and at its opposite end to a slide in the stock, said lever being provided with a knuckle-joint, *O*, substantially as and for the purpose set forth.

2. The combination of the stock *A* and the barrel *B*, hinged thereto, with the lever-guard *L*, provided with a knuckle-joint, *O*, and the sliding ejector *e*, the said parts being constructed and arranged substantially as shown and described, whereby the cartridge-shell is automatically pushed part way out of the chamber by the act of opening of the gun and can be pushed entirely out by flexing the lever after the gun has been opened, as herein set forth.

3. The combination, in an air-gun, of an air-cylinder, *C*, a spring-propelled piston, *P*, arranged to work therein, said air-chamber having a vent-hole, *a*, extending through its end wall, and a screw-plug, *b*, inserted at right angles to said vent-hole, substantially as shown and described.

In witness whereof I hereunto set my hand in the presence of two witnesses.

HENRY MARCUS QUACKENBUSH.

Witnesses:

JOHN KERSHAW,

CHAS. H. BURRILL.