

A. BEDFORD.  
 SPRING AIR-PISTOL.

No. 172,376.

Patented Jan. 18, 1876.

Fig. 1.

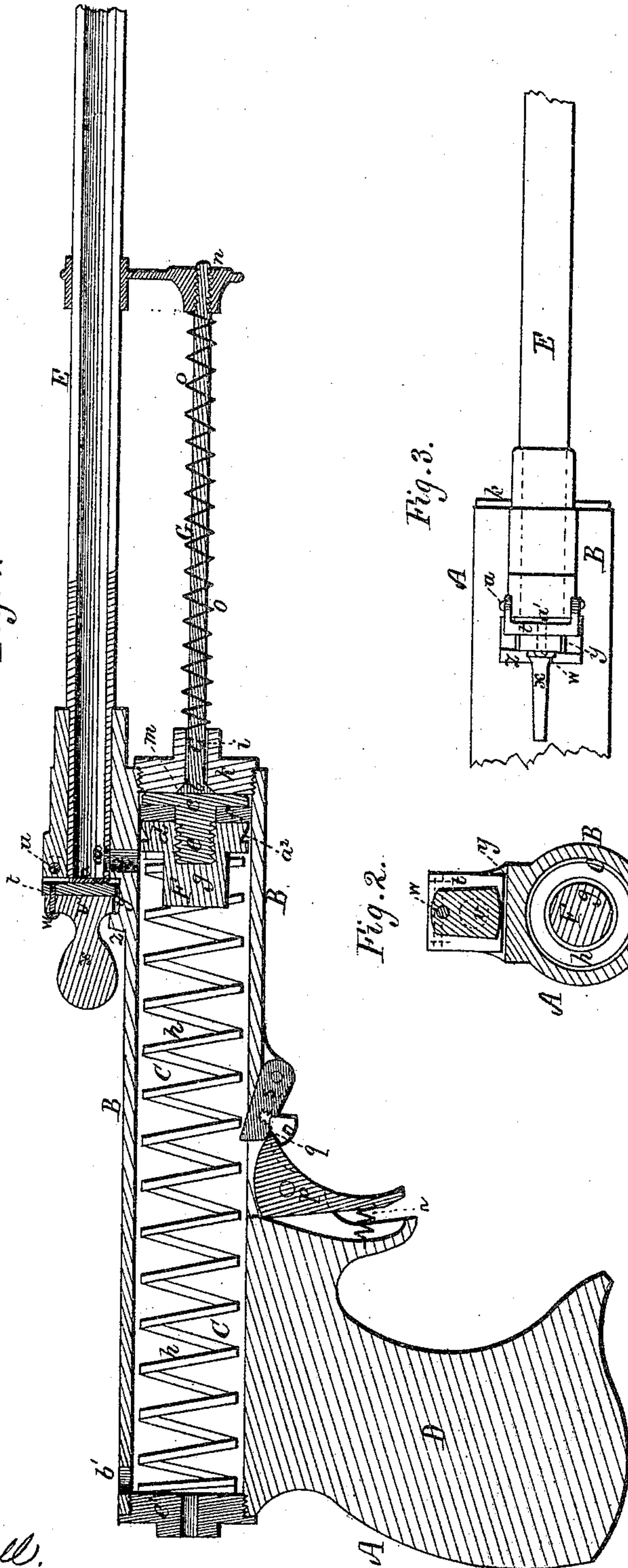


Fig. 3.

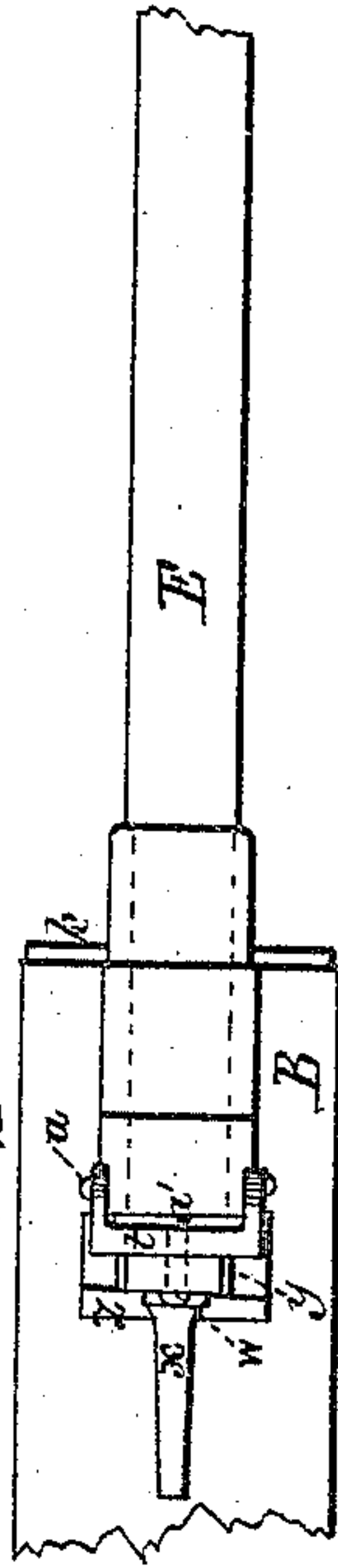
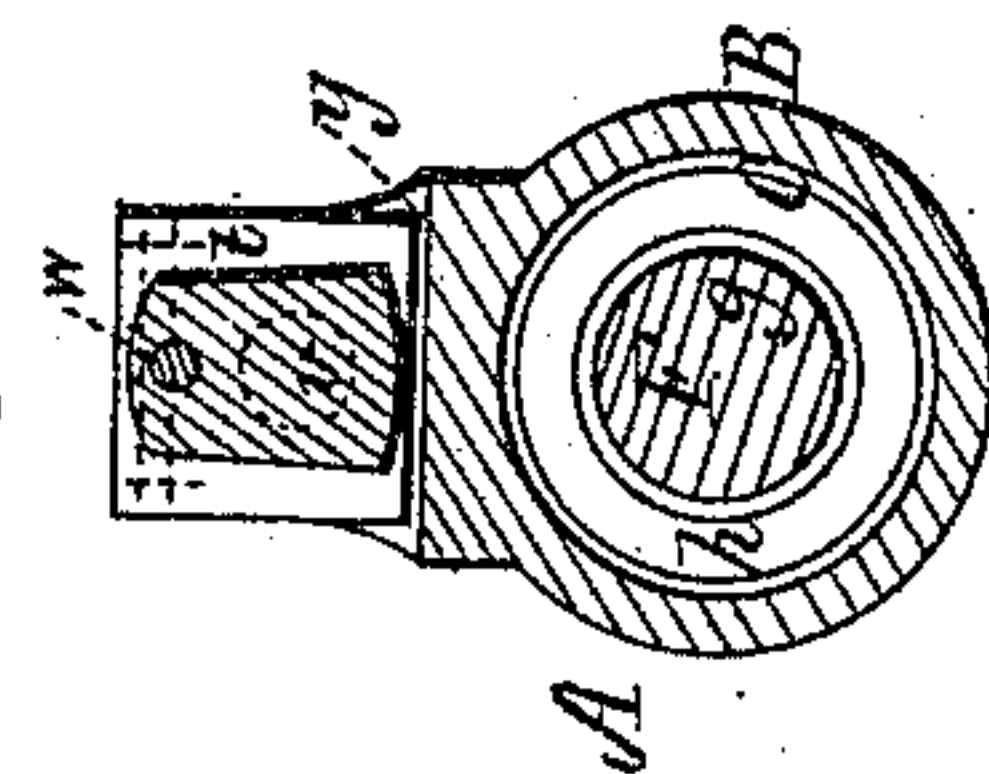


Fig. 2.



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# UNITED STATES PATENT OFFICE.

AUGUSTUS BEDFORD, OF BOSTON, MASSACHUSETTS.

## IMPROVEMENT IN SPRING AIR-PISTOLS.

Specification forming part of Letters Patent No. 172,376, dated January 18, 1876; application filed December 9, 1875.

*To all whom it may concern:*

Be it known that I, AUGUSTUS BEDFORD, of Boston, Suffolk county, Massachusetts, have invented certain Improvements in Air-Pistols, of which the following is a specification:

The drawings accompanying this specification represent, in Figure 1 a central and longitudinal section, and in Fig. 2 a transverse section, of a pistol embodying my improvements, and in Fig. 3 a plan of the breech-closing mechanism.

In these drawings, A represents the frame of the pistol, of which B is the portion in which the air-magazine C is located, and D the stock or handle. The barrel of the pistol is shown at E, as secured to the upper forward part of the frame B, and formed at its rear part with an air-passage, *a*, which coincides with a similar passage, *b*, created in the stock below, the conjoint passage *a b* serving to open communication between the forward end of the air-magazine and the rear end of the barrel.

The plunger of the pistol is shown at F as composed of two circular disks, *c d*, the former or outer one of which screws into the other by means of a screw-tenon, *e*, while a washer or ring, *f*, of leather or other proper expansible or semi-elastic material is interposed between the two portions *c d*, the diameter of the washer being somewhat greater than that of the rest of the plunger, to prevent injury to the interior of the air-magazine. A peripheral channel, *a'*, is cut in the circumference of the part *d* to receive the trigger, as hereinafter explained.

Should the periphery of the plunger become worn to such an extent that air passes between it and the wall of the air-magazine, the portion *c* is screwed up to a slight extent, the result being that the washer is expanded diametrically, and its circumference increased to the desired extent.

An axial tenon, *g*, is formed upon the inner end of the portion *d* of the piston, to receive and steady the end of the spring *h*, which impels the plunger to the outer end of the air-chamber and against the head of a rod, G, which is shown in the accompanying drawings as passing loosely through an aperture,

*i*, created in the cap or bolt *k*, which closes the outer end of the air-magazine, the inner end or head of this rod being converted into a conical valve, *l*, which fits a valve-seat, *m*, formed in the inner face of the cap and about the orifice *i*, while the outer end of the rod is provided with a head, *n*, which incloses and slides upon the barrel E, a coiled spring, *o*, encircling the rod G, and interposed between the cap *k* and head *u*, serving to force the rod outward, and maintain its valve *l* in close contact with the seat *m*, and thus prevent escape of air at this point.

The trigger of this pistol is a double one, and acts with a reverse movement—that is to say, it is composed, first, of a vertical lever, *p*, which is pivoted to the under side of the frame A, and whose nose *q* is pressed upward by a spring, *r*; and, secondly, of a horizontal latch, *s*, also pivoted at its forward end to the under side of the frame A, and in advance of the trigger or lever *p*, the nose *q* of said lever engaging the free end of the latch in such manner that when the trigger is pulled the latch is lowered and the plunger released. I do not, however, claim this trigger as my invention.

The device for closing the rear end of the barrel consists of a vertical gate or plate, *t*, covering the open end of the barrel, and pivoted at its upper edge to the upper rear corner of the barrel, as shown at *u* in the drawings, while in addition to this gate or movable breech-block, I employ a locking device, consisting of a turn-button, *v*, pivoted at its upper end to the upper part of the gate *t* by a pivot, *w*, and formed with a handle or knob, *x*, for convenience in turning it upon such pivot, while in the frame A below the button I cast a transverse channel, *y*, whose rear boundary or wall *z* is disposed obliquely to the axis of the barrel and the plane of the gate and button, in order that when the button is swung into the position which locks the breech, it shall at the same time be crowded powerfully forward by the sloping wall *z*, and force the gate or movable breech *t* tightly up against the rear end of the barrel, a suitable packing, *a'*, being interposed between the breech and barrel to insure an air-tight joint.

I do not in any sense restrict myself to this



method of closing the rear end of the barrel, but intend to avail myself of any practical method by which the result may be brought about. The present one I represent as an efficient and practical method.

The method of using this pistol is as follows: The stock is grasped in the left hand and the head *n* of the rod *G* seized by the right, or such head may be placed against the edge of a table or other object, and the rod, and with it the plunger, pushed inward, and the spring *h* contracted until the channel *a*<sup>2</sup> of the plunger *F* coincides with the free end of the latch *s*, when the latter enters such channel, and the pistol is cocked and the plunger set, the air-chamber being filled by air entering it through the aperture *i* as the rod is pushed inward, and the air prevented from escaping by this aperture by the valve *l*, which closes when the rod returns to its normal position by the action of its spring *o*. The button *v* is now turned upon its pivot from out the channel *y*, and the gate or breech-block *t* turned upward, so as to expose the rear end of the barrel, the dart or other projectile being next inserted within the barrel, and the movable breech returned to place. The pistol is now loaded, and is discharged by pulling upon the trigger-lever *p*, the effect of which is to remove the latch *s* from its hold upon the plunger, and the latter is released and suddenly shot forward by the stress of its spring, in its flight expelling the air from the air-chamber upward through the passage *a b*, intercepting the projectile in the barrel, and expelling it from the latter. The head or button *v* of the rod *G*, in addition to constituting a means whereby the rod is readily pushed inward, also serves, in connection with the barrel, as a guide to steady the movements of such rod. The spring

*o* serves, after the cocking or setting of the plunger, to return the rod *G* to its normal position, and close the aperture *i* against escape of air at this point when the plunger advances. But for the employment of this spring or its substitute the rod would often be left within the air-chamber after the plunger was set, the result of which would be that the rod would be driven back with great violence, to the injuring of the parts, and the air within the air-magazine would escape by the aperture *i*, in lieu of being driven upward through the barrel. To break the vacuity which would otherwise exist in the air-magazine on advance of the plunger, I create an aperture, *b'*, in the wall of such air-magazine at its extreme rear part, or through the center of the bolt or head *c*<sup>1</sup>, which closes the rearend of such magazine.

Having thus explained the nature, purposes, and advantages of my improvement, what I claim as my invention, and desire to secure by Letters Patent of the United States, is as follows:

1. The movable breech-closing device herein explained, consisting of the gate *t* and button *v*, the former being pivoted to the barrel and the latter to the gate, essentially as and for purposes stated.

2. The rod *G*, provided with the spring *o*, or its equivalent, in combination with the plunger *F* and cap *k*, under such an arrangement that the rod serves to set or cock the plunger, and to prevent escape of air from the air-magazine on return of such plunger, substantially as and for purposes stated.

AUGUSTUS BEDFORD.

Witnesses:

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