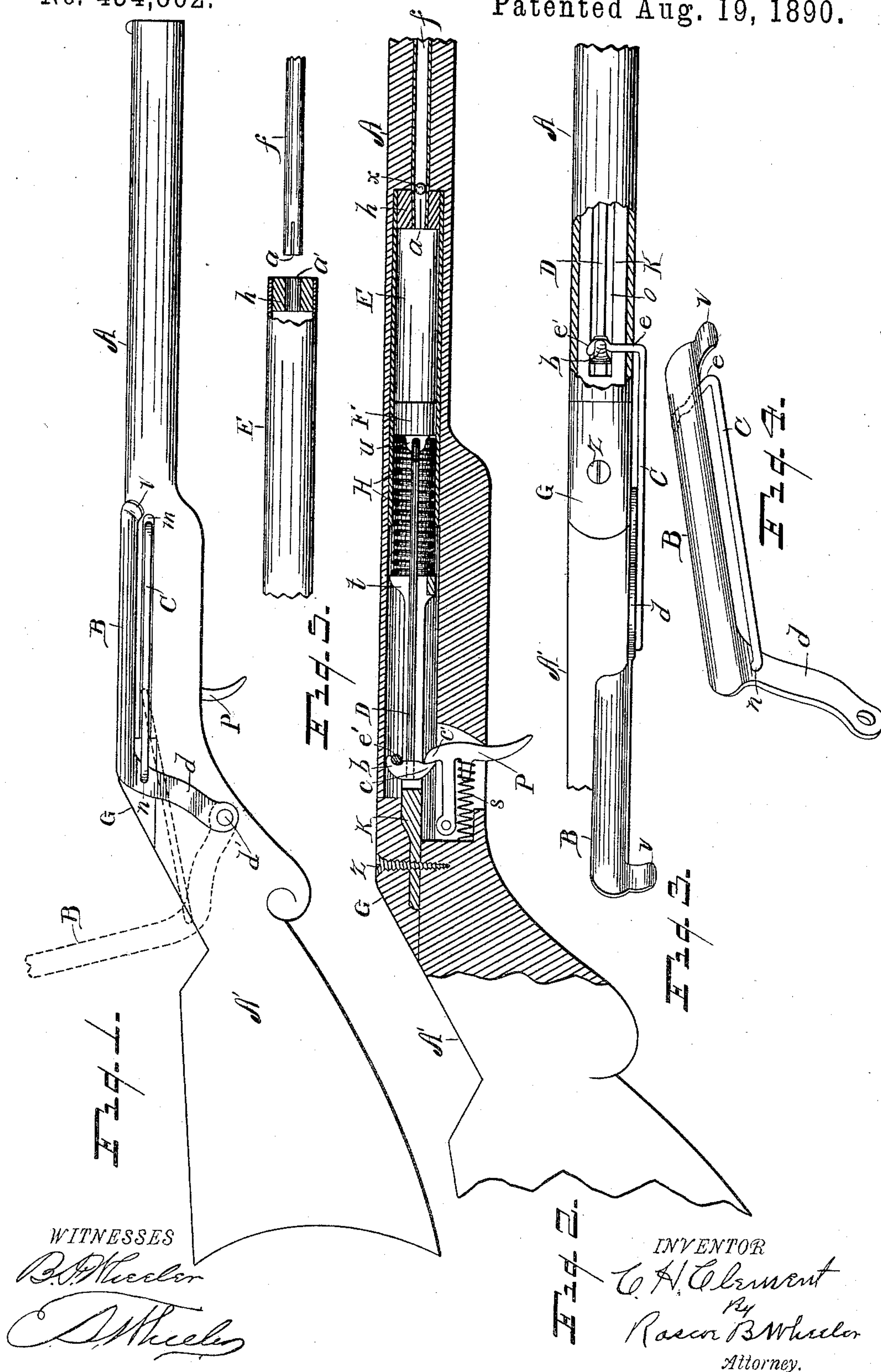


(No Model.)

C. H. CLEMENT.
- SPRING AIR GUN.

No. 434,862.

Patented Aug. 19, 1890.



UNITED STATES PATENT OFFICE.

CHARLES H. CLEMENT, OF NORTHVILLE, MICHIGAN, ASSIGNOR OF ONE-HALF TO JAMES B. HOAR, OF SAME PLACE.

SPRING AIR-GUN.

SPECIFICATION forming part of Letters Patent No. 434,862, dated August 19, 1890.

Application filed April 5, 1890. Serial No. 346,773. (No model.)

To all whom it may concern:

Be it known that I, CHARLES H. CLEMENT, 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; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to new and useful improvements in air-guns; and it consists in a certain combination of parts, producing an air-gun of simple construction and one of great durability and efficiency, as will be hereinafter more fully set forth, and the essential features of the invention pointed out particularly in the claims.

In the accompanying drawings, forming a part of the specification, Figure 1 is a side elevation of my improved gun, showing by dotted lines the spring-compressing lever thrown back. Fig. 2 is a central horizontal section through the gun-barrel and a portion of the stock, showing the interior arrangement of parts, the end of the barrel and stock being broken away. Fig. 3 is a plan view in detail of the gun-barrel and stock, a portion of the barrel being broken away, showing the arm of the compressing-lever in engagement with the head of the piston-rod and said lever thrown back as when compressing the spring of the gun. Fig. 4 is an isometrical view of the lever. Fig. 5 is a detail of the air chamber or cylinder and the tube that conveys the shot from the gun, a portion of the cylinder being broken away, showing the opening in the end thereof, in which the inner or rear end of the tube is secured.

Referring to the letters of reference, A indicates the barrel of the gun, and A' the stock thereof; B, the spring-compressing lever; C, the connecting-arm of said lever that engages with the head of the piston-rod; D, the piston-rod; E, the cylinder, in which is located the piston-head F.

G indicates the breech-plug, and H the actuating-spring, of the gun.

The lever B is adapted to lie upon the upper face of the gun-barrel, and is pivotally secured to the stock of the gun by means of the bolt or screw *d'*, that passes through the lower end of the leg *d* of said lever, as shown in Fig. 1, said lever being provided at its forward end with the extending lip *v*, by means of which said lever may be raised. The connecting-arm C of the lever B is pivotally coupled to the leg *d* thereof, as shown at *n*, the forward end of said arm having the right-angled bent portion *e*, that extends through the elongated slot *m* (see Fig. 1) in the side of the barrel, and is provided with the hook *e'*, that is adapted to engage with the head *b* of the piston-rod D, as shown in Figs. 1 and 2. Said head *b* travels in the slot *o* (see Fig. 3) of the base-plate K, that is anchored in the barrel of the gun, and, extending through said slot, the lower point *c* of said head is adapted to engage with the nose *c'* of the trigger P when the head *b* has been drawn back by the action of the lever B, as shown in Fig. 2.

The cylinder E lies within the barrel of the gun and receives the piston-head or plunger F, which is fitted snugly therein, said head F being formed of a solid piece of metal turned to closely fill the diameter of said cylinder. This form of piston-head obviates the employment of packing, will move in the cylinder with but little friction, and is very effective. Said head is pivotally coupled to the forward end of the piston-rod D, as shown at *u* in Fig. 2, thereby permitting a slight lateral play to the rod D and preventing the breaking of said rod close to the head F, as is often the case where said head and rod have rigid contact. The coiled spring H encircles the rod D and is confined between the head F and the annular shoulder *t* of the base-plate K, the rod D lying in a groove passing through said shoulder.

The forward end of the cylinder E is provided with a plug *h*, having the hole *a'* through the center thereof. The tube *f* extends through the gun-barrel from the end of the cylinder E to the muzzle of the gun. The rear end of said tube is provided with the slot *a*, that permits of the contracting of said end when placed in the hole *a'* of the plug *h* of the cylinder E. This reduction of the rear

end of the tube *f* arrests and retains the shot *x*, which is dropped into said tube from the muzzle of the gun, as shown in Fig. 2, thus rendering the gun equally effective with varying sizes of shot, and as the shot *x* when dropped into the tube *f* becomes slightly wedged in the reduced end thereof it is therefore retained in said tube until the full force of the air is exerted thereon, when it is discharged from the tube with greater force and effect.

From the drawings and foregoing description it will now be apparent that by a backward throw of the lever B, as shown by dotted lines in Fig. 1, the arm C of said lever having engagement with the head *b* of the piston-rod D, said rod will be drawn rearward, carrying with it the plunger F and compressing the spring H between said plunger and the shoulder *t* of the base-plate K. The point *c* of the head *b*, as said head is drawn back to the breech of the gun, engages with the nose *c'* of the trigger P, which is held in contact therewith by the spring *s*, as clearly shown in Fig. 2. The lever B is then thrown forward, carrying the hooked end *e'* of the arm C from contact with the head *b*, which is held by the trigger P. The shot *x* is then dropped into the muzzle of the tube *f*, and falling to the contracted end of said tube wedges therein, as shown in Fig. 2. The gun is then loaded and ready to be discharged, and by a pressure on the trigger the nose *c'* thereof is drawn from contact with the head *b*, when the spring H will drive the plunger F forward in the cylinder E, compressing the air therein and forcing it out through the tube *f*, discharging the shot *x* therefrom.

The breech-plug G is secured to the stock of the gun by means of the screw *z*, and by removing said plug access is afforded to the interior of the gun-barrel for the purpose of placing or removing the operating parts of the gun.

Having thus fully set forth my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In combination with the barrel A, the cylinder having the perforated head in one end thereof and the tube having the slit *a* in one end, said slitted end being compressed in the head of the cylinder, for the purposes specified.

2. In combination with the barrel A, cylinder and tube leading from said cylinder, the plate K, the piston-head, the piston-rod pivotally coupled to the piston-head at one end and having on its opposite end the head *b*, the trigger engaging with said head, and the coiled spring located between the piston-head and the base-plate K, substantially as specified.

3. In combination with the barrel A, the cylinder and tube leading from said cylinder, the base-plate, the piston-rod, the piston-head flexibly coupled thereto, the coiled spring engaging with the piston-head, the head *b* at the rear end of the piston-rod, the trigger engaging with said head, and means for forcing the head *b* into engagement with said trigger.

4. In combination with the gun-barrel, the cylinder, the piston-head in said cylinder, the piston-rod swiveled to the piston-head, the spring engaging with the piston-head, the head *b*, the trigger engaging therewith, the spring-compressing lever having its rear end pivoted to the side of the gunstock, its body portion adapted to swing forward onto the barrel, and the connecting-arm pivoted to the compressing-lever at one end, its opposite end adapted to engage with the head *b* of the piston-rod, substantially as set forth.

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

CHARLES H. CLEMENT.

Witnesses:

WM. H. AMBLER,
D. B. NORTHROP.