

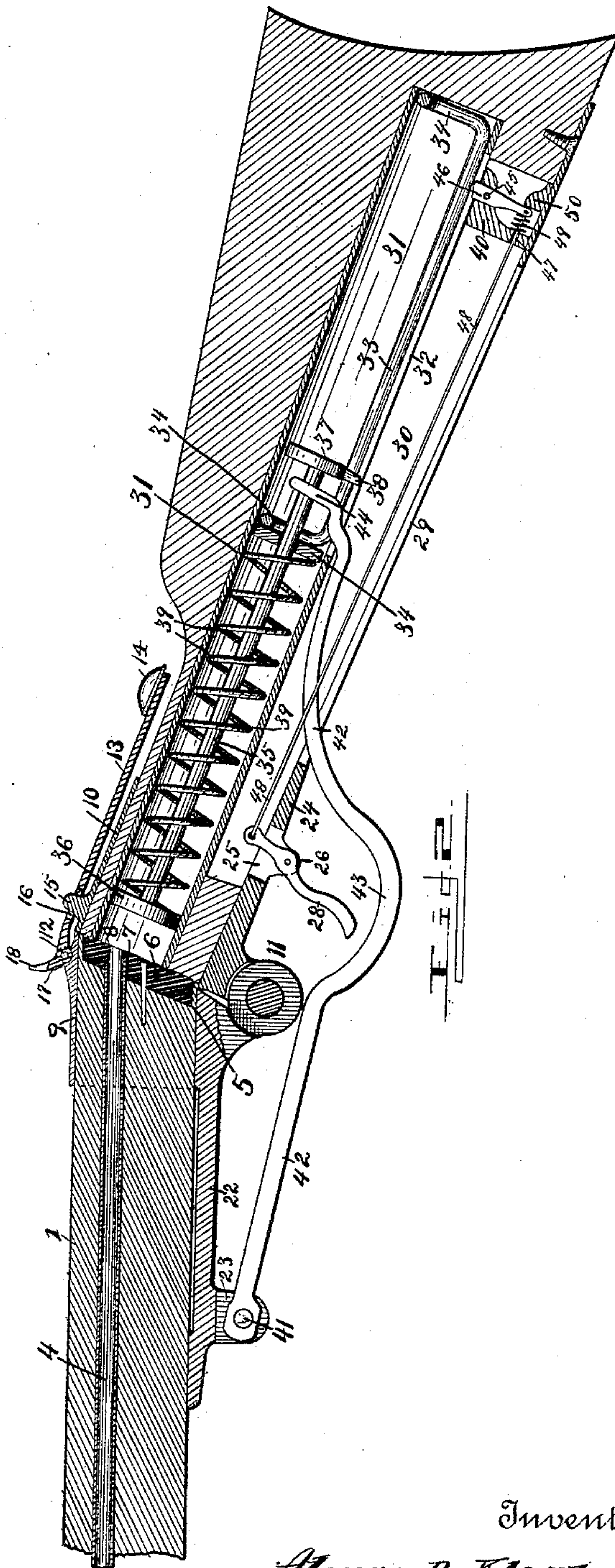
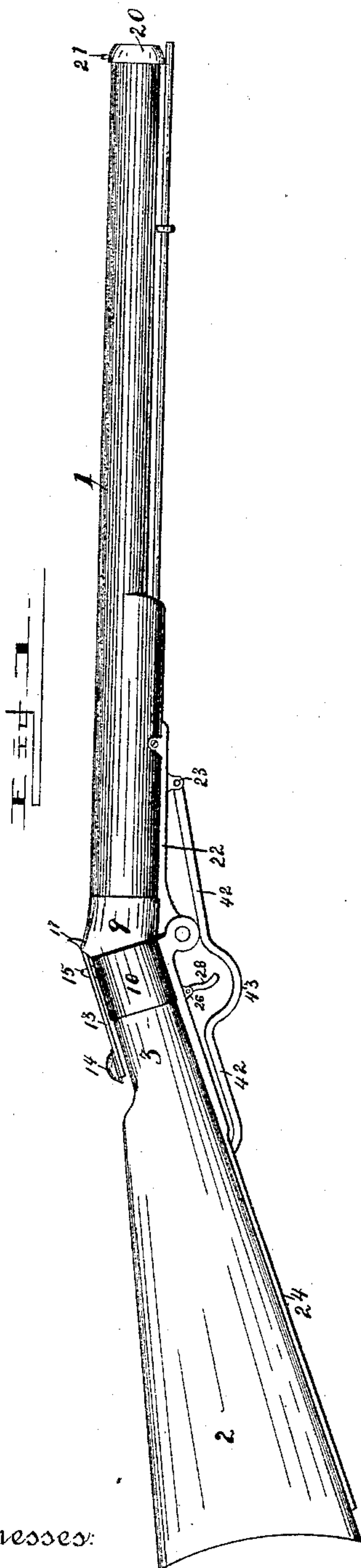
(No Model.)

2 Sheets—Sheet 1.

A. B. KLEABER.  
SPRING AIR GUN.

No. 440,638.

Patented Nov. 18, 1890.



Witnesses:

Percy L. Brooks.

W. F. Duwall.

Inventor:

Alonzo B. Kleaber.

By his Attorneys

C. B. Shover & Co.

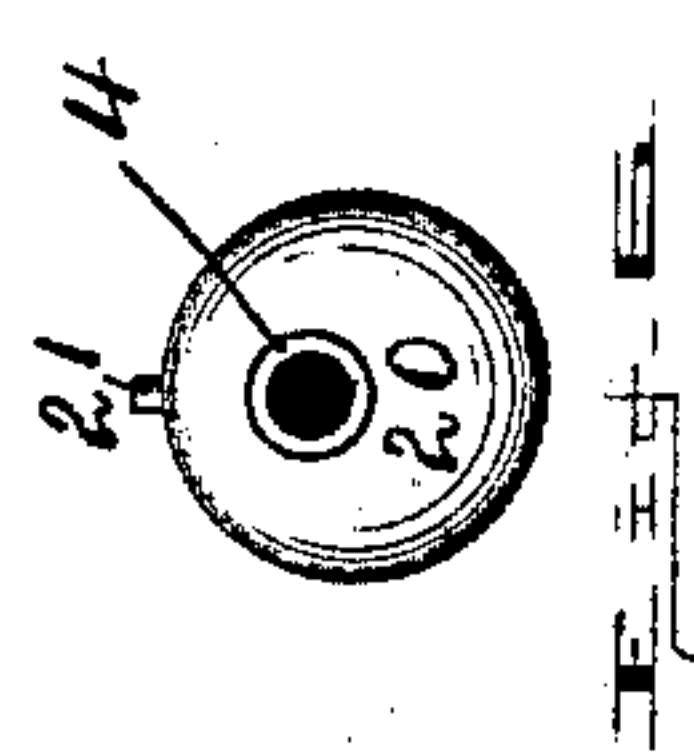
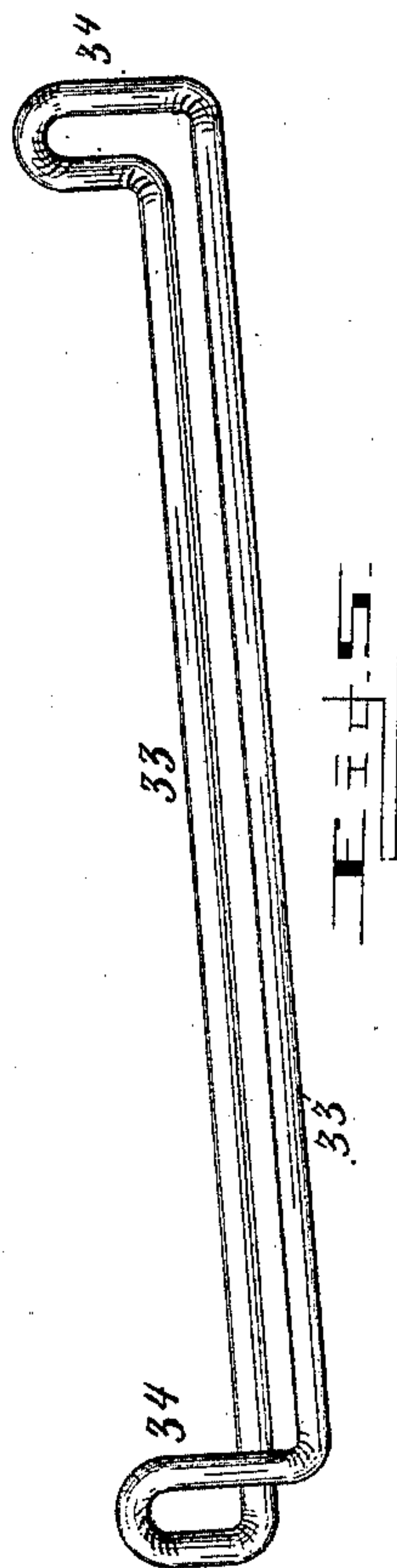
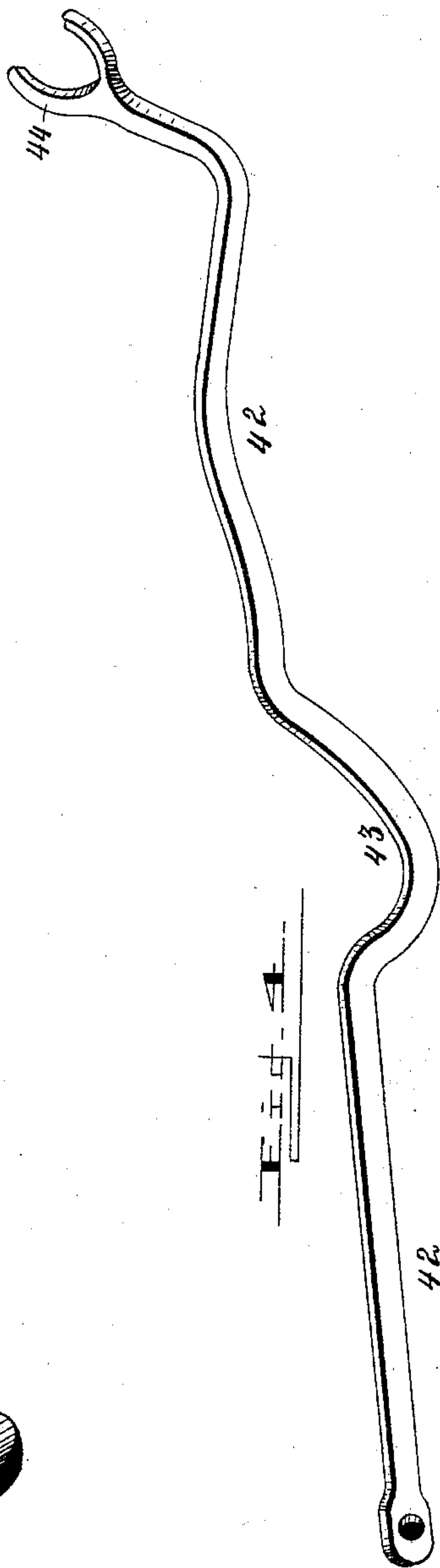
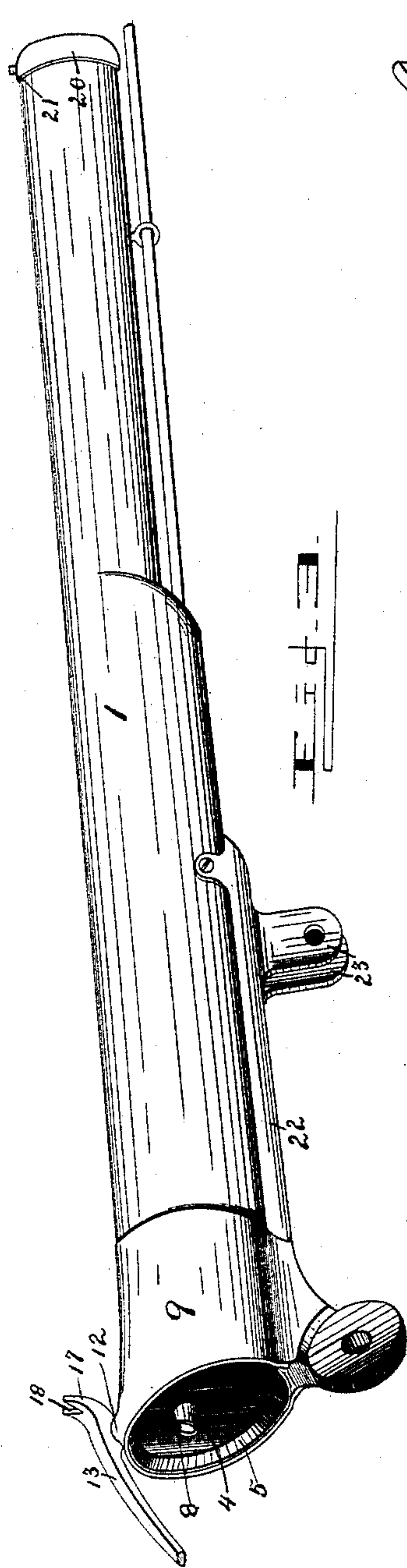
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Inventor

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By his Attorneys

Chas. Snow & Co.



# UNITED STATES PATENT OFFICE.

ALONZO B. KLEABER, OF WAYNE, MICHIGAN, ASSIGNOR OF ONE-HALF TO  
HENRY LOSS, OF SAME PLACE.

## SPRING AIR-GUN.

SPECIFICATION forming part of Letters Patent No. 440,638, dated November 18, 1890.

Application filed April 12, 1890. Serial No. 347,691. (No model.)

*To all whom it may concern:*

Be it known that I, ALONZO B. KLEABER, a citizen of the United States, residing at Wayne, in the county of Wayne and State of Michigan, have invented a new and useful Air-Gun, of which the following is a specification.

This invention has relation to air-guns; and the objects and advantages of the invention, together with the novel features thereof, will hereinafter appear, and be particularly pointed out in the accompanying claims.

Referring to the drawings, Figure 1 is a side elevation. Fig. 2 is a longitudinal vertical section of an air-gun constructed in accordance with my invention. Fig. 3 is a detail in perspective of the barrel. Fig. 4 is a detail in perspective of the combined setting-lever and trigger-guard. Fig. 5 is a detail in perspective of the brace for supporting the plunger and spring. Fig. 6 is a detail view of the front sight.

Like numerals of reference indicate like parts in all the figures of the drawings.

1 represents the barrel of the piece, and 2 the stock, which latter has the usual grip portion 3.

The barrel 1 may be made of either wood or metal, and in either construction is provided with a bore 4, extending throughout the length of the same, the bore being formed by a brass tube of a sufficient gage to accommodate small slugs or darts.

The rear end of the barrel is provided with an annular recess 5, through which projects the rear end of the tube 4. The recess 5 is occupied by a rubber filling or disk 6, provided near its center with a small perforation 7, adapted to snugly fit over the rear end of the tube or bore, which tube is slightly cut away, as at 8, the cut-away portion being covered by the upper portion of the perforation 7 of the rubber disk, so that the rear end of the bore is slightly contracted, and is adapted to receive and hold a dart or small shot or slug, and the piece may be raised and lowered or carried without the danger of the slug or dart rolling from the bore. The rear end of the barrel-section is encircled by a band 9, the rear edge of which overlaps the end of the barrel-section, if the latter be of wood, and serves to prevent any injury to the same.

10 represents a band which encircles the stock at the front portion of its grip, and the same has its front edge unguarded or bent so that it will take somewhat into the rubber disk at the rear end of the barrel-section. The adjacent ends of the two bands are hinged together, as at 11, and the rear end of the band upon the barrel-section is slightly beveled, so that a proper relative disposition is given the barrel-section and the stock.

The upper portion of the band 9 is provided with a transverse bearing-bar 12, on which is pivotally mounted the front end of a locking-lever 13, the rear end of which extends rearwardly to a point over the grip 3 of the stock, and is there provided with a thumb-plate or button 14. The front end of the band 10 is provided with a cam-shaped lug 15, the upper end of which is rounded, and the lever 13, above said lug, is provided with a slot 16, adapted to take over the lug, and by reason of its location to bind thereupon, so that the two sections—the barrel-section and stock-section—are drawn toward each other and a perfect air-tight joint formed between the two sections. In front of its pivot the lever 13 may be upwardly bent, as at 17, and provided with a notch 18, and thus said lever be adapted to perform the function of a rear sight. The front end of the barrel is braced by a thimble 20, which serves to prevent the wood from marring, and upon said thimble is mounted the front sight 21.

Projecting forwardly from the band 9, and preferably integral therewith, is a metal arm 22, secured to the under side of the barrel or arm of the piece and provided with a pair of perforated lugs 23.

Projecting rearwardly from the band 10 is a metal plate 24, which at its junction with the band is slotted, as at 25, and provided at opposite sides of the slot with bearing-lugs 26, in which is pivoted a trigger 28. The plate is securely connected to the inclined face of the stock near the toe of the same, and is provided with a longitudinal slot 29, which registers with a slot 30, formed in the inclined face of the stock and communicating with a cylindrical chamber formed by a cylindrical tube 31, located in the stock, the wall of said tube being slotted for a portion of its length,



as shown at 32, and extending from the front end of the stock-section to near the rear end thereof.

Located in the rear end of the cylinder or air-chamber is a brace 33, which brace is formed of a loop of wire having opposite parallel sides and its opposite ends bent at a right angle to the sides, as at 34. The rear end of the brace rests against the butt or heel-plate of the piece, and the front end occurs at about the middle of the air-chamber and extends across the same.

35 represents the plunger, provided at its front end with a head 36, snugly fitting and mounted for movement in the cylindrical tube 31. The rear end of the rod or plunger extends through the upturned eye 34 at the front end of the brace and beyond said eye, and is provided with a trip 37, provided at its lower edge with a T-shaped trip-lug 38, the shank of which is embraced at opposite sides by the parallel sides 33 of the brace, between which terminals said lug is adapted for movement. Coiled upon the plunger 35, between the rear face of the head 36 and the front upturned eye 34 of the brace, is a coiled spring 39, the same exerting a tendency to separate the head from the eye; or, in other words, press the plunger to the front, so that its head 36 is normally maintained at the front end of the air-chamber of the stock.

The arm 11 is provided near its front end with a pair of depending perforated ears 23, between which there is pivoted, as at 41, a lever 42, said lever extending to the rear and curved around the trigger to form a trigger-guard 43, and passed through the longitudinally-slotted plate of the stock and the slot of the air-tube and between the terminals of the brace 33, at which point said lever terminates in a bifurcation or yoke 44, located between the front eye of the brace and the trip-disk 37.

In rear of the longitudinal slot formed in the metal plate 24, and located within the hollow stock, is a pair of perforated lugs 40, in which is pivoted, as at 45, a latch 46, in front of which is located a guide-eye 47, through which passes a wire 48, one end being connected with the lower end of the latch and the opposite end with the trigger 28. Coiled upon the wire between the trigger and wire is a light spring 49, the tendency of which is to maintain the free end of the latch disposed toward the rear.

To operate the gun, the sections are separated or their extremities swung toward each other, which is permissible by reason of their pivotal connection, and in such movement it will be noticed that the yoke 44 of the lever 42 will press the trip-disk 37 to the rear, which withdraws the plunger and the head 36 to the rear end of the chamber, the T-shaped lug traveling between the terminals of the wire brace 33. In this manner the spring 39 is compressed, and the air-chamber in front of the head 36 becomes filled with air. When the trip-disk 37 has reached a certain point

in its travel, the trip-lug 38 rides over and takes behind the spring-latch 46, said latch yielding to the passage of the lug thereover. It will now be apparent that the spring is prevented from returning the plunger by reason of the engagement of the trip with the latch. The lower end of the latch is forced by the trip against a stop 50. The slug or dart is now inserted or pressed through the perforation 7 of the rubber disk 6 into the tube or bore 4, after which the barrel and stock are swung toward each other, and the rocking lever swung down at its free end, so that its slot receives the locking-lug, the rear edge of the slot riding over the curved face or end of said locking-lug and serving to bind the parts snugly together, and by reason of the rubber disk or gasket and the binding action of the parts a perfectly air-tight joint is effected. The piece is now ready for firing, which is readily accomplished by a slight pressure upon the trigger, which pressure exerts tension upon the trigger-wire, withdrawing the latch from the path of the T-shaped lug 38, and the plunger-rod being thus released is thrown suddenly forward to the front of the air-chamber. The chamber being filled with air, the movement of the head 36 tends to compress the same, and said air exerts its pressure upon the slug or dart, which by the rubber disk is maintained in position under sufficient tension to insure a thorough compression of the air before being released and ejected through the barrel or tube by said compressed air.

From the above it will be observed that I have provided an air-gun which may be charged with compressed air with very little exertion, and one so constructed as to possess all the advantages of small rifles or toy guns, the construction being both cheap and simple.

It will be apparent that the brace 33 may be omitted and a small slotted tube adapted to serve as a guide substituted therefor, said tube being located in rear of the air-tube. The air-chamber, it will be observed, projects at its front end slightly beyond the end of the stock-section, so that it takes slightly into or impinges upon the rubber packing-disk, thus making an air-tight joint between the bore of the gun and the air-chamber.

Having thus described my invention, what I claim is—

1. In an air-gun, the combination, with a stock and barrel section hinged at their adjacent ends, the said stock-section being provided with an air-chamber communicating with the barrel, of a plunger-rod terminating in a piston-head, a spring for actuating said rod and encircling the same, and a lever 42, having its front end pivoted to the barrel-section, its rear end entering a slot in the stock and extending into the air-chamber and loosely embracing the plunger and terminating against a stop located at the rear end of the rod, said lever being curved around the trigger to form the guard 43, substantially as specified.



2. In an air-gun, the combination, with the stock-section having an air-chamber, and a barrel-section having a bore communicating therewith, of the brace 33, terminating in the opposite eyes 34, mounted in the rear end of the chamber, the plunger-rod 35, having the head 36 at its front end, having its rear end passing through the front eye 34 and beyond the same, the disk 37, having the T-shaped clip 38, the shank of which is embraced by the terminals of the brace, the lever 42, pivoted to the barrel-section and terminating at its rear end in a yoke embracing the plunger-rod and bearing against the disk, and between its ends bent to form a trigger-guard, the trigger pivoted in the stock-section, the pivoted latch located in the rear end of the stock, the wire-pull connecting the lower free end of the latch with the upper end of the trigger, a spring for pressing the latch, and a stop for arresting the same, the upper end of the latch being located in the path of the T-shaped tripping-lug and adapted to engage the same, substantially as specified.

3. In an air-gun, a stock provided with an air-chamber, in combination with the double-wire brace 33, the terminals of which are parallel and form an intermediate way or guide, and the ends of the brace being upturned to form eyes, and the plunger-rod 35, having the head 36, the spring 39, arranged between the head and the eye of the brace, the tripping-disk arranged at the rear end of the rod and provided with a T-shaped lug mounted for travel between the parallel sides of the brace, and means for reciprocating the rod, substantially as specified.

4. In an air-gun, the combination, with the stock and barrel sections independent of each other, of the metallic bands mounted on the adjacent ends of the same and terminating at one side in opposite members of a hinged joint, substantially as specified.

5. In an air-gun, the combination, with the stock and barrel sections pivoted together, of a lever hinged upon one of said sections and provided with a slot and a lug, the rear face of which is curved and adapted to bind against the rear edge of the slot, substantially as specified.

6. In an air-gun, the combination, with the stock and barrel sections hinged together and

an interposed rubber disk, of a lever hinged upon one of said sections and provided at its free end with a slot, and a lug mounted upon the opposite section and having an outer curved face adapted to receive and bind against the outer edge of the slot, substantially as specified.

7. In an air-gun, a barrel-section, in combination with a disk formed of rubber and secured over the breech of the bore of the section and provided with a perforation slightly smaller than the bore, substantially as specified.

8. In an air-gun, a barrel-section having a tube serving as a bore and mounted therein, the rear end of the tube projecting slightly beyond the end of the section and slightly cut away at one side, said section being provided with a circular recess surrounding the tube, of a rubber disk seated in the recess and having a perforation snugly fitting the end of the tube at its cut-away portion, substantially as specified.

9. In an air-gun, the combination, with the independent barrel and stock sections, of metallic bands encircling the adjacent ends of the sections, the end of the barrel-section having a recess adapted to receive the end of the opposite band, a rubber disk mounted in said recess, and a pivoted lever mounted upon one of the sections and having a slot adapted to ride over a cam-lug and bind said sections together, substantially as specified.

10. In an air-gun, the combination, with the stock and barrel sections, of the opposite metallic bands encircling the ends of the sections and provided with opposite members of a hinged joint and oppositely-extending plates secured to the barrel and stock sections, respectively, an air-chamber formed in the stock, a spring-actuated plunger, and a lever pivoted to the plate of the barrel-section band and passing through a slot in the stock-section band and adapted to retract the plunger against the spring, substantially as specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

ALONZO B. KLEABER.

Witnesses:

WM. BLAIN,  
J. F. CULLEN.