

A. E. WHITMORE.
Breech-Loading Fire-Arms.

No. 153,509.

Patented July 28, 1874.

Fig. 1

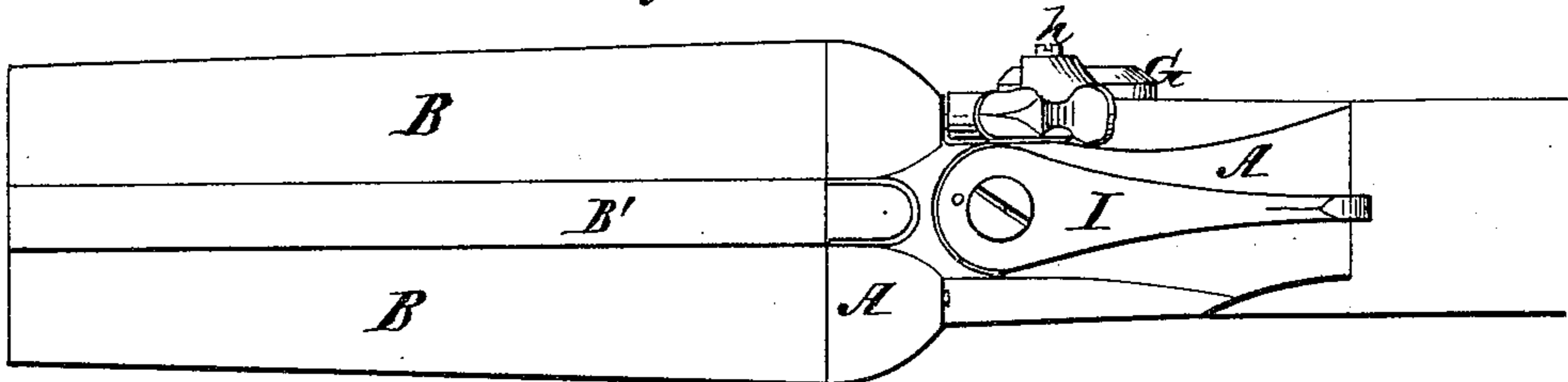


Fig. 2

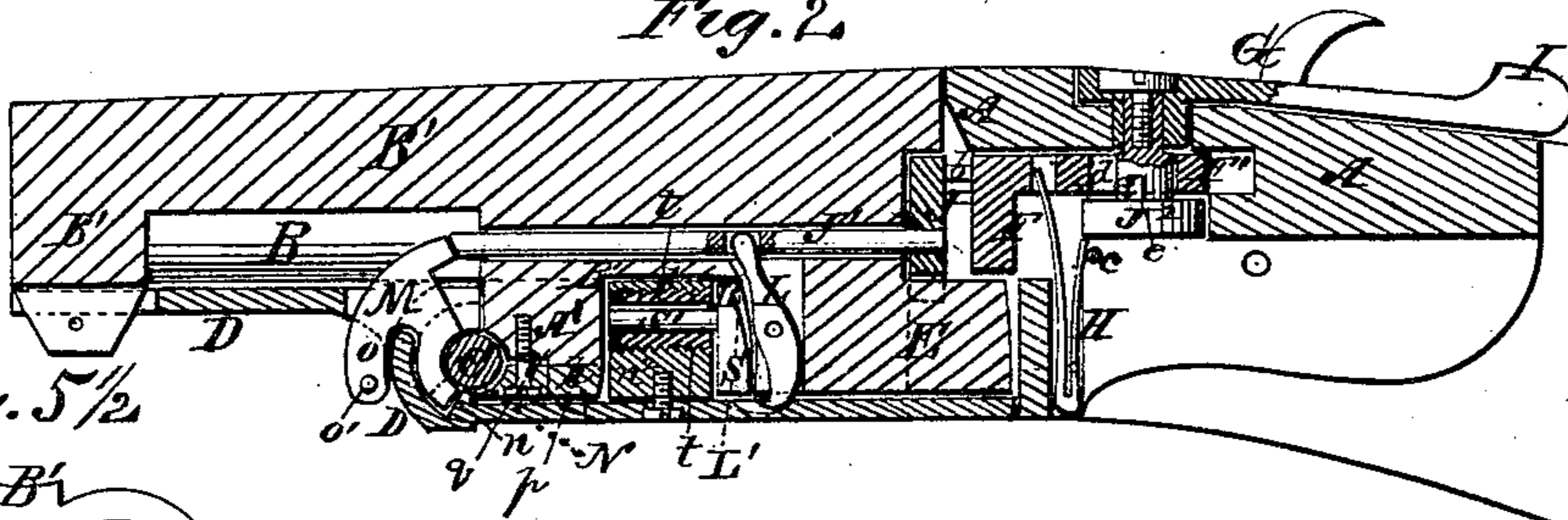


Fig. 5 1/2

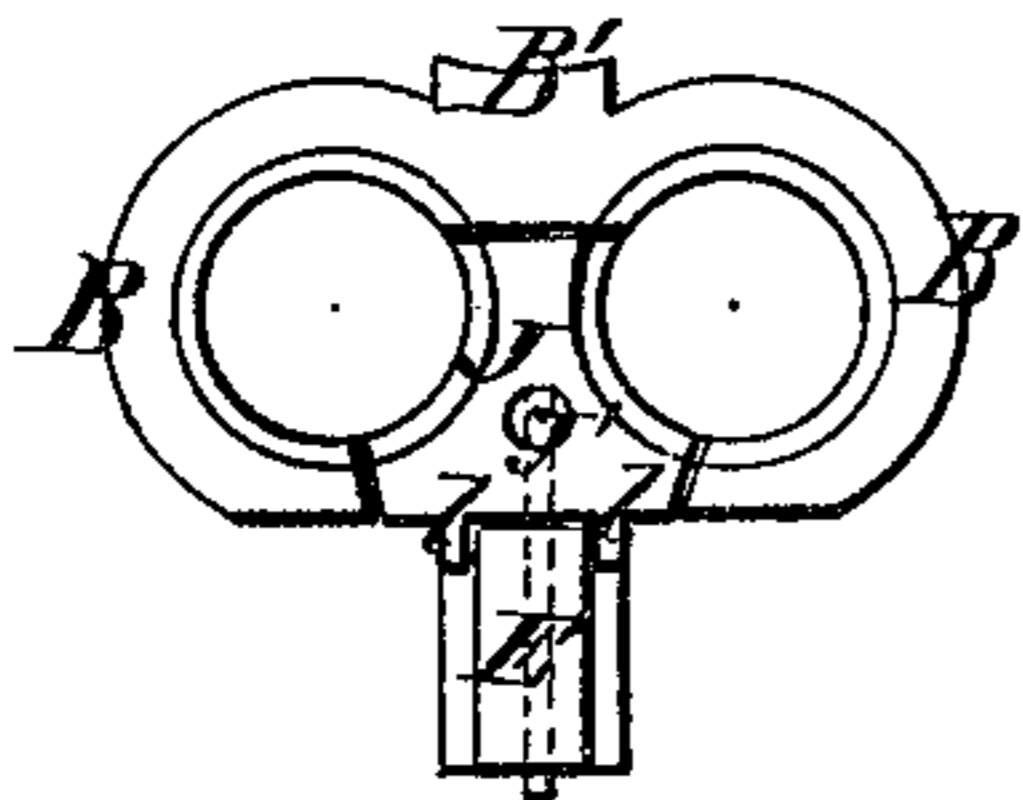


Fig. 3

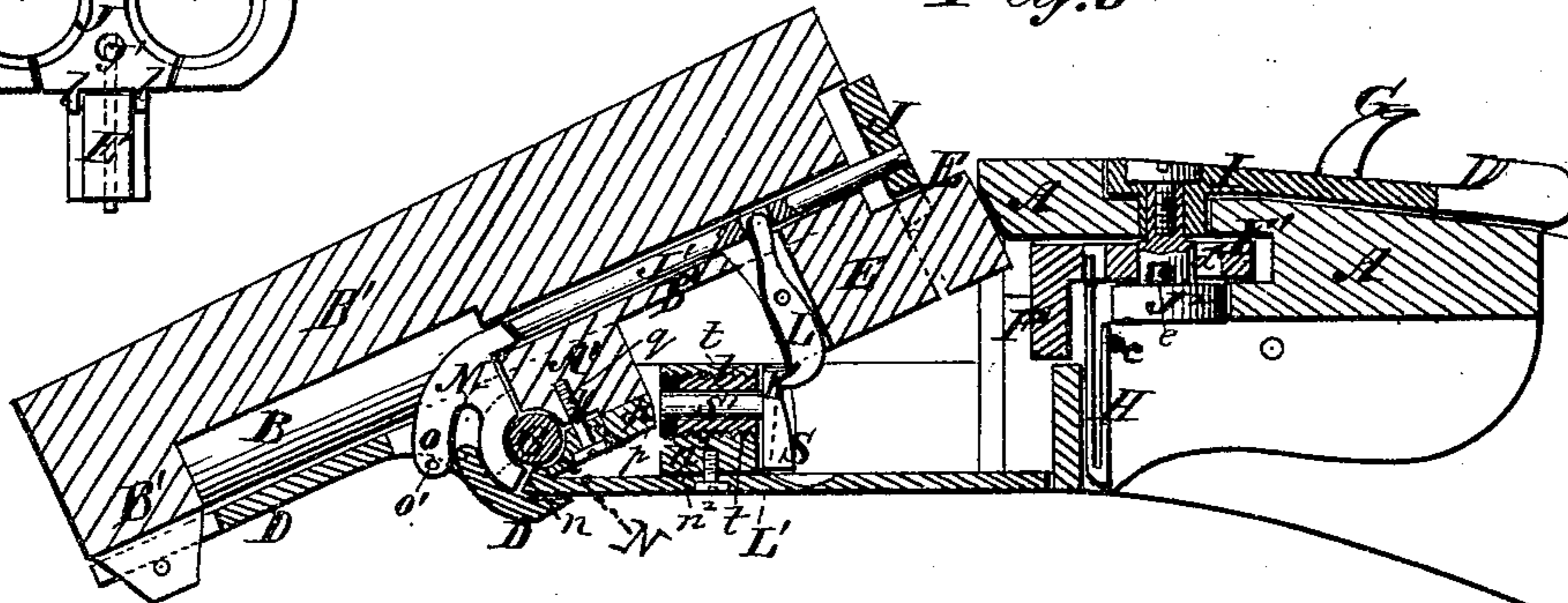


Fig. 4

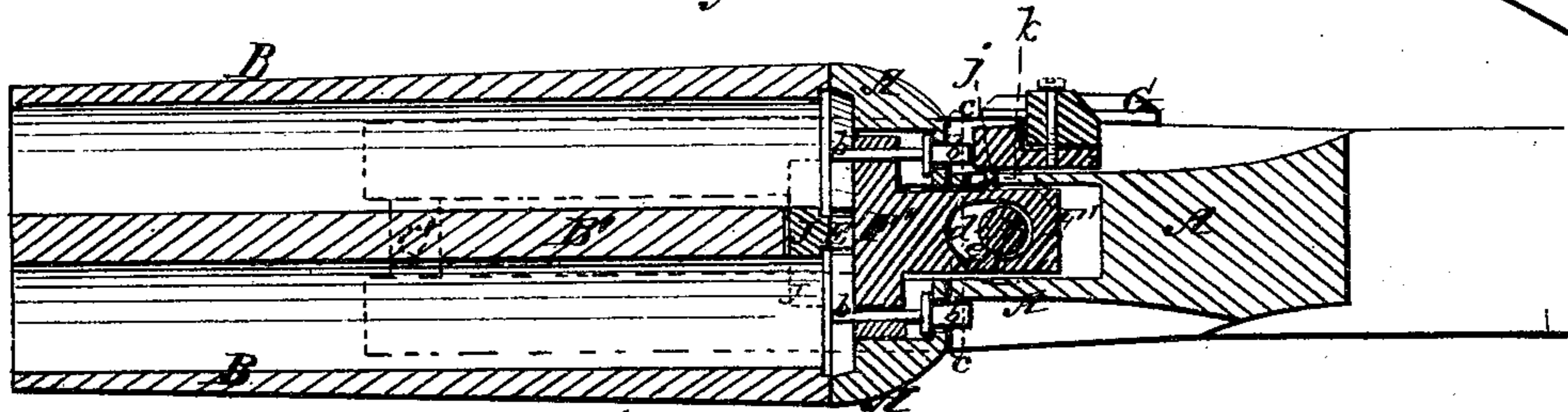
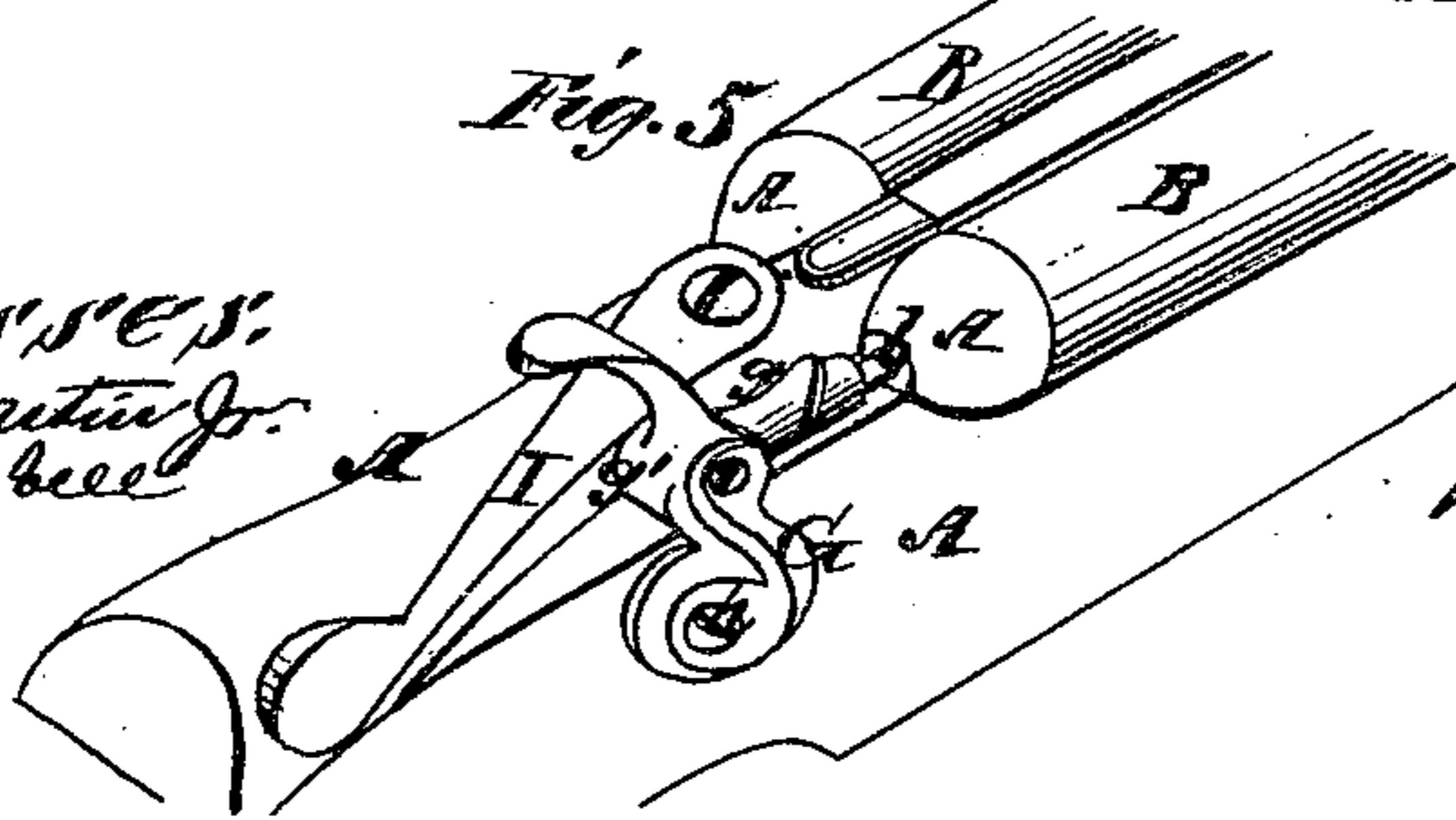


Fig. 5



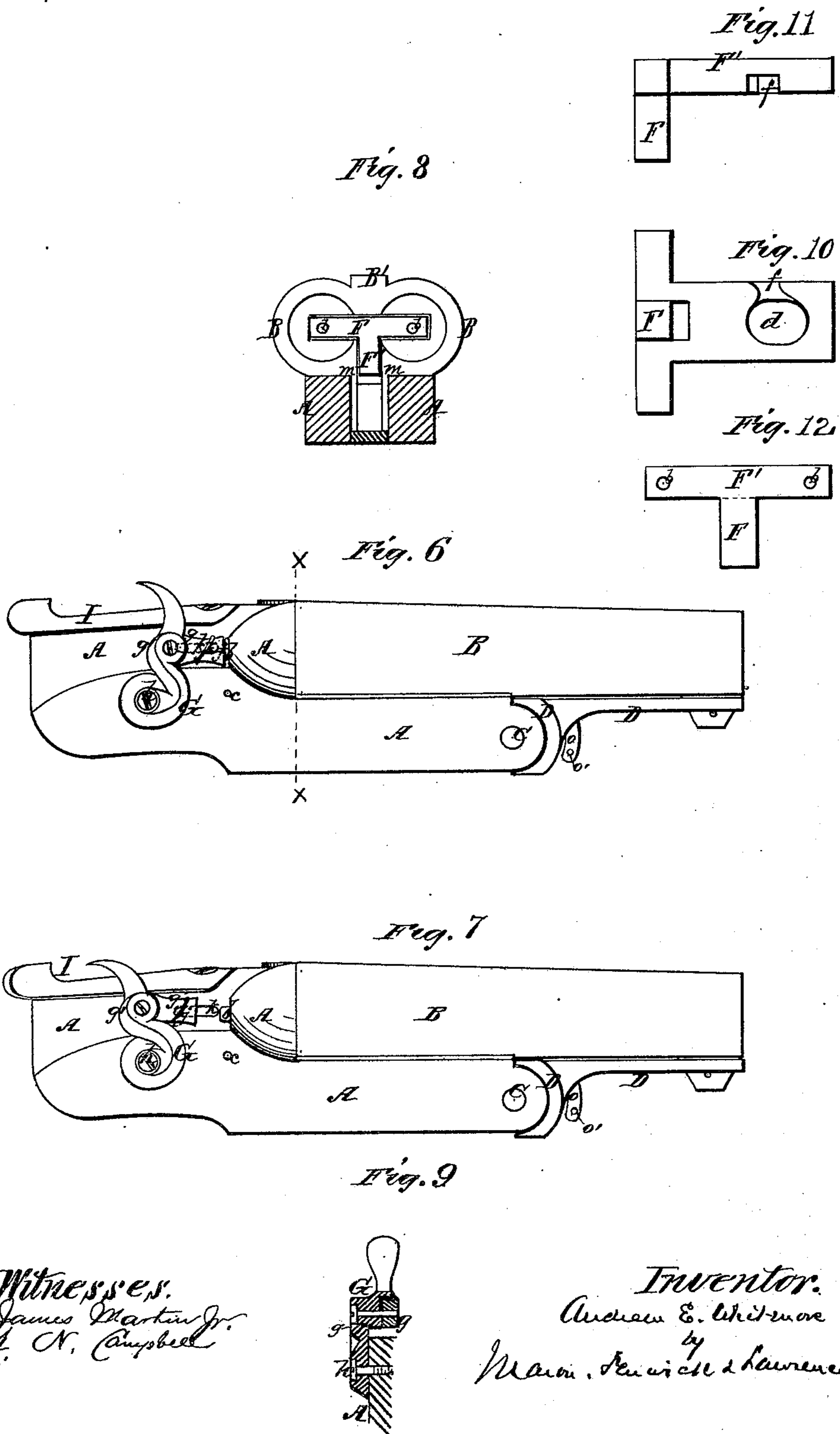
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UNITED STATES PATENT OFFICE.

ANDREW E. WHITMORE, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN BREECH-LOADING FIRE-ARMS.

Specification forming part of Letters Patent No. **153,509**, dated July 28, 1874; application filed May 19, 1874.

To all whom it may concern:

Be it known that I, ANDREW E. WHITMORE, of Boston, county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in Double-Barrel Breech-Loading Shot-Guns; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings making part of this specification, in which—

Figure 1 is a top view of the gun as it appears after being fired. Fig. 2 is a vertical central section of the same, in the same condition. Fig. 3 is a similar section to Fig. 2, the parts being adjusted for reloading. Fig. 4 is a horizontal section of the gun, the hammer being half-cocked, the firing-pins drawn back, and the bolt returned to its locking position. Fig. 5 is a perspective view of a portion of the arm, showing the hammer half-cocked, and the firing-pin drawn out ready for being struck by the hammer, and the lever in the position which it occupies when the bolt is drawn back out of locking position. Fig. 5½ is an end view of the barrels and extractor. Fig. 6 is a side view of the gun, showing the hammer in the position shown in Fig. 1. Fig. 7 is a side view of the gun, showing the hammer cocked. Fig. 8 is a cross-section of the gun in the line *x x*, looking toward the breech of the gun. Fig. 9 is a vertical section of the hammer. Figs. 10, 11, and 12 show an inverted plan, a side, and an end view, of the combined locking bolt and pin, with drawing-slide.

The nature of my invention consists, first, in a lever-hammer having the nose thereof jointed to it and furnished with a guide-pin, whereby the nose may be fitted to a guide on the breech, and caused to move in a straight line, while the lever portion of the hammer swings in a circle. By this feature of my invention, I am enabled to strike firing-pins which are separated from the hammer with a straight percussive action, and thus produce a more direct and powerful blow than is possible with the hammer and pin united by a hinged joint. Second, in the combination of a locking-bolt, a firing-pin separated from the hammer, the lever-hammer, having its nose piv-

oted to it and guided, and a lever which withdraws the bolt, whereby the hammer is half-cocked, the locking-bolt withdrawn, and the firing-pin moved back by the one movement of the lever. Third, in a locking-bolt connected to the plate which withdraws the firing-pin, and is extended down to the locking-lug, whereby a long vertical bearing during the act of closing the barrel is secured, and thus a too sudden passage of the lug under the bolt is prevented. Fourth, in a stop, which is applied upon the joint-pin of the barrels, and permits the barrels to swing about it in an arc of a circle, in combination with an extractor, a breech or frame, and a sustaining-check for the joint on which the barrels swing, said joint-check being in rear of the said joint, whereby the cartridge-shell is extracted in the act of swinging down the barrels, and also a very effective and perfect joint-check is secured, and a large portion of the leverage afforded by the barrels upon the joint of the barrels is transferred to the joint-check near the breech, and thus the liability of the joint being strained and broken after short use of the gun is avoided. Fifth, it consists in the joint-check, composed of a lever-hook and a catch, the lever-hook being attached to the lug of the barrel and coupled to the extractor, and the catch to the breech-block, whereby a joint-check which is active or in an operative condition when the up-strap is in position upon the gun, and becomes inoperative when said strap is removed from the gun is secured, and thus the barrels can be removed without any further adjustment of the joint-check.

Sixth, it consists in a sliding head-piece, having a guiding-stem in combination with a tubular screw, which works in a nut of the breech-block, whereby the wear between the breech ends of the barrels and the breech can be compensated for by simply setting up the tubular screw.

To enable others skilled in the art to make and use my invention, I will proceed to describe it.

In the drawings I have shown my improvements applied to a double-barrel gun, but in practice I shall use them on both double and single barrel guns. The following description

will be of the gun represented, as one mode of employing my improvements.

A is the breech-block of the gun; B B, the barrels, hooked to the joint-pin C of the breech-block and confined upon the said pin by a removable tip-strap, D, in the usual manner. E is the locking-lug of the barrels; F, the locking-bolt, which passes over the lug E when the barrels are in firing position. The locking-bolt F is formed on a horizontally-sliding plate, F', of T form, which is fitted in a horizontal T slot of greater depth than the length of the plate, and cut into the breech in rear of the barrels, as shown in Fig. 8. The plate is perforated in line with the axis of the barrels, and in these perforations firing-pins *b b*, having large heads, are inserted from the rear of the plate. The plate pulls the pins back by their heads and leaves them back, to be struck by the hammers of the gun. H is an upright double spring, fitted behind the combined plate and bolt F F', so as to bear with one end against the cross-pin *c* and against the plate with its other end. This spring, by its form, possesses great volume and yet occupies a very small space. The office of the spring is to move the bolt to and hold it in its locking position over the lug of the barrels. I is a lever, set on top of the breech-block. To the under side of this lever an eccentric, J², is fastened, the stem of the eccentric passing up through an oblong slot, *d*, in the plate F', and its pin *e* fitting in a lateral notch, *f*, cut in the under side of said plate and intersecting the slot *d*, as shown in Figs. 10 and 11. By moving the lever to the position shown in Fig. 5, the locking-bolt and firing-pins are drawn back to the position shown in Fig. 2, this being effected by the pin of the eccentric pulling against the back side of the notch or slot *f*. G is one of the hammers. It is made of two parts, *g g'*, the part *g* being the lever and *g'* the nose, which is pivoted or hinged to the lever, as shown. This hammer is pivoted at *h*, as usual, to the breech-block or lock-plate, while its nose portion is connected to the same block by means of a sliding pin, *j*, fitted in a straight longitudinal groove, *k*, which is in a plane or nearly so with the joint, by which it is hung to the lever portion of the hammer. The hammer, by being jointed and its nose arranged to move in a plane with the firing-pins, will be half-cocked when the lever is moved to the position shown in Fig. 5, for as the pins are forced back by the plate F they will strike the noses of the hammers and cause them to slide back until the lever parts of the hammers are half-cocked. Thus I effect the automatic half-cocking of the hammers by the same lever that withdraws the firing-pins and locking-bolt, this construction enabling me to use pins which are separate from the hammers and to produce a percussive action or striking blow upon the firing-pins. J is a cartridge-extractor, of usual construction, except that it has two short

guiding-lugs, *l l*, formed on it at its base on each side. These lugs strike against a stop or shoulder, *m*, of the breech-block. The stem J¹ of the extractor is fitted to slide in the lug B' of the barrels, as shown. L is a lever-hook passed up through a slot in the lug and pivoted to the lug, as shown. The upper end of the lever is connected with the stem of the extractor by passing through a slot therein. L' is a stationary catch attached to the head-block. The hook L hooks under the latch L', and thus acts as a check to the barrels as they swing on the joint. M is a stop, of segment form, fitted upon the tip-strap D, and against the front side of the joint-pin C, as shown. The rear of this stop is provided with a projecting nose, which bears against the end of the stem of the extractor, and its lower end bears against the beveled end *n* of the breech-block when the barrels are swung down, as shown in Fig. 3. The stop M is shown as connected to the tip-strap by passing a guide-extension, *o*, formed on it through a slot in the tip-strap, and inserting a stop-pin, *o'*, through this extension; but it is plain that a slot in the stop, and a stationary pin passed through the slot, would answer the same purpose.

By means of the stop, acted upon by the beveled end of the breech-block, the extractor is forced out with the empty cartridge-shells when the barrels are tilted, and at the same time the stem of the extractor throws the lever-hook in checking connection with the latch. Thus the shells are extracted, and the joint of the gun-barrels saved from undue strain by the action of the stop. Further, when the barrels are moved back, the extractor, in moving inward from contact with the breech of the gun, throws the lever-hook out of contact with the latch, and thus leaves the barrels in a condition to be removed by simply taking off the tip-strap and drawing them out of their place in the usual manner.

N is a removable hook, on which the joint C is hung. It is made of hardened metal, and fastened to the under side of lug A' by a pin, *p*, and an adjusting-screw, *q*. By this construction the wear of the joint can be compensated for by simply setting up the hook by the screw *q*.

It will be observed that the latch L' is formed on a sliding piece, S, and that this piece has a stem, S', and that this stem is passed through a tubular screw, *t*, which is fitted to turn in a nut, *n*², cut longitudinally through the breech-block, as shown. The tubular screw at its front end has a wrench or key-notches cut into it; and by applying a key or wrench to these, and giving the screw a slight turn, it will cause the barrels to move tight against the breech, and thus any wear between the breech and ends of the barrels will be compensated for, and a tight joint produced.

What I claim as new is—

1. The lever-hammer G for a fire arm, having its nose *g*, which strikes the firing-pin *b*, hinged and provided with a guiding-pin, *j*, substantially in the manner and for the purpose described.

2. The combination of a locking-bolt, F, a firing-pin made and applied separate from the hammer, a hammer arranged to be half-cocked when the firing-pin is drawn back, and a lever, I, which withdraws the locking-bolt and the firing-pin, substantially as and for the purpose set forth.

3. The locking-bolt F, constructed with a side extension, F', in combination with a firing pin or pins, *b*, connected loosely to it by means of heads or collars of the pin or pins, whereby the firing pin or pins are carried back by the locking-bolt when the bolt is moved back to release the barrels, and left in that position when the bolt is moved forward to lock the barrels, substantially as herein described, and for the purpose set forth.

4. The stop M, applied upon the joint C of the barrels, and constructed to permit the barrels to swing round in an arc of a circle, in combination with a cartridge-shell extractor, a breech or frame, and a check and support for the joint C, substantially as and for the purpose described.

5. The joint-check L and L', constructed and applied, whereby the barrels, by simply removing the tip, can be readily disconnected from the breech with one part of the check attached to them, while the other part remains attached to the breech or frame, substantially as and for the purpose described.

6. The sliding piece or head S of the stem S', in combination with the tubular screw *t* and nut *n*² of the breech-block, substantially as and for the purpose herein described.

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Witnesses:

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