

M. J. CHAMBERLIN.  
Improvement in Breech-Loading Fire-Arms.  
No. 129,393. Patented July 16, 1872.

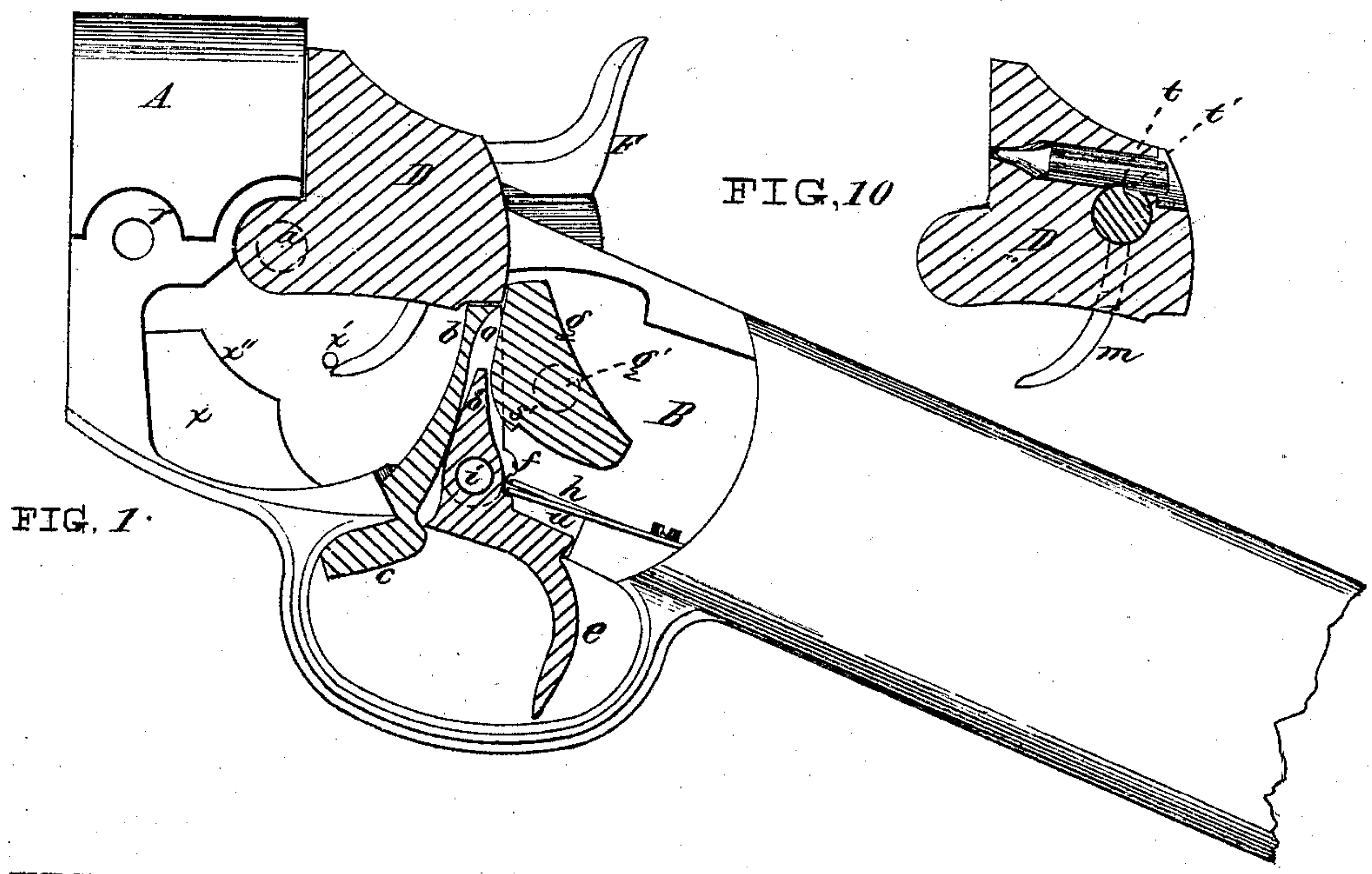


FIG. 1.

FIG. 10

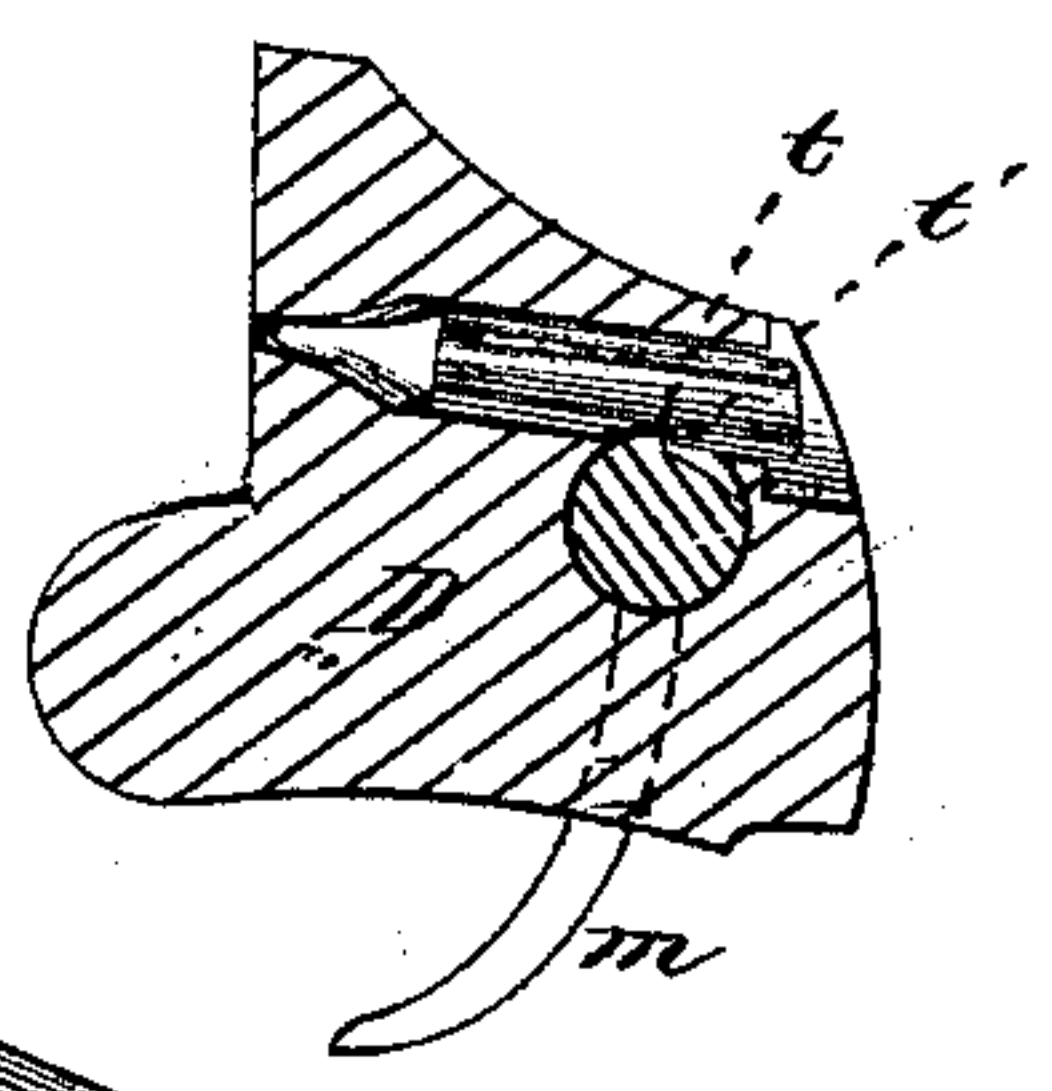


FIG. 2

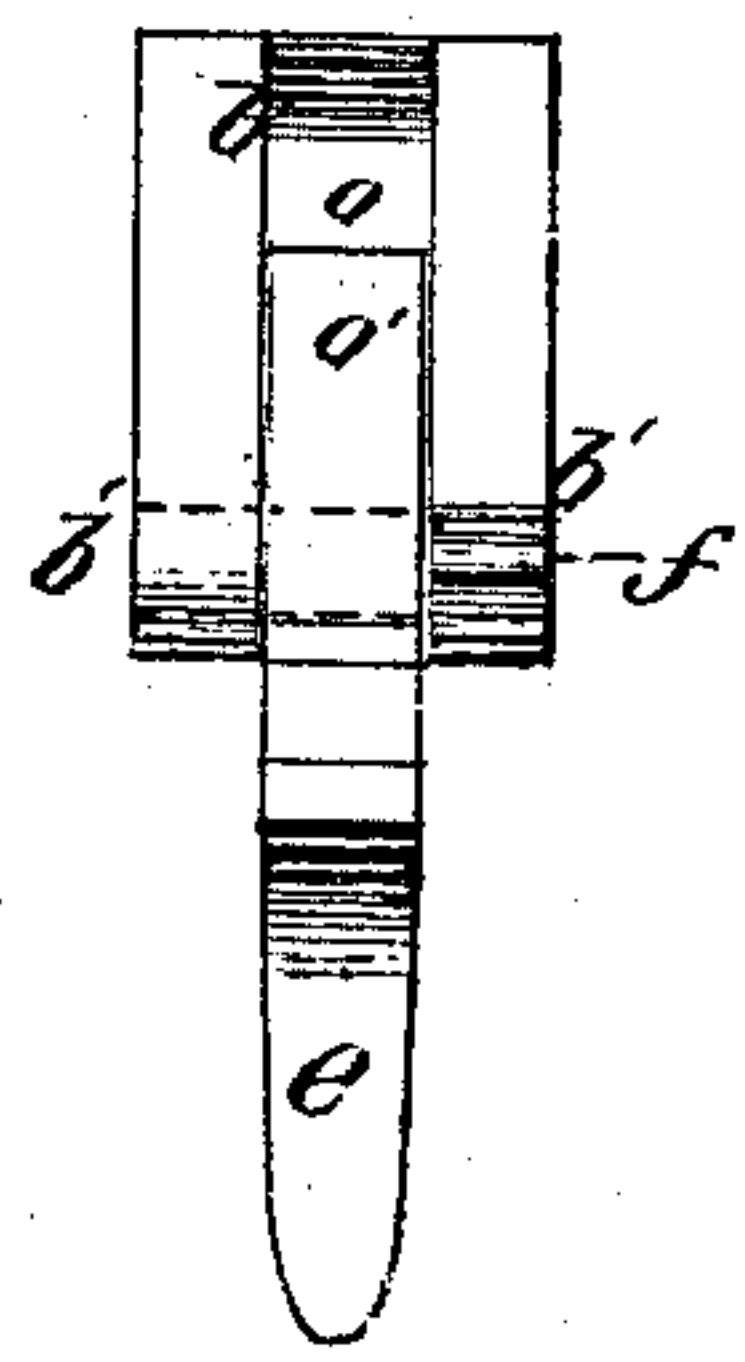


FIG. 3

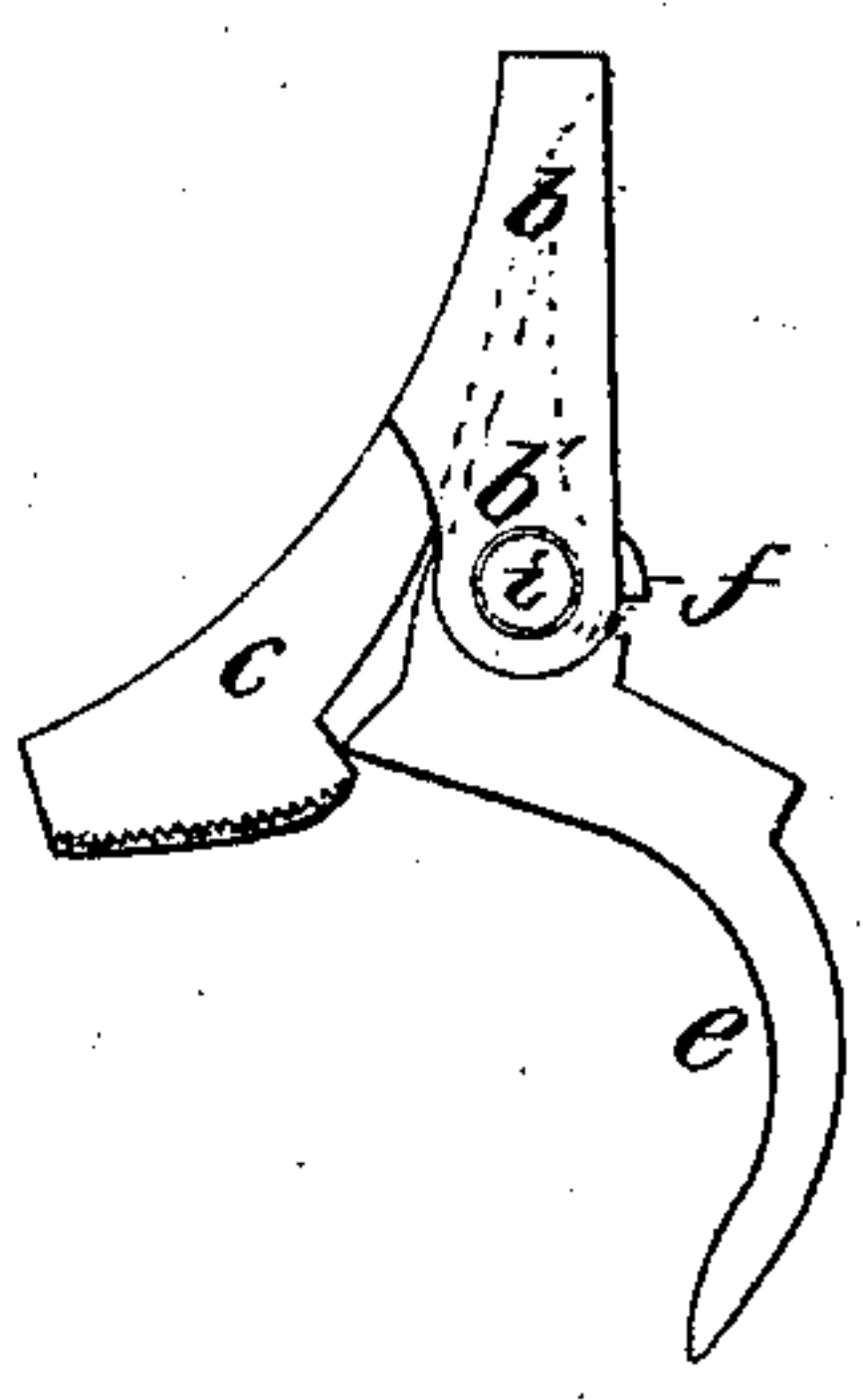


FIG. 4

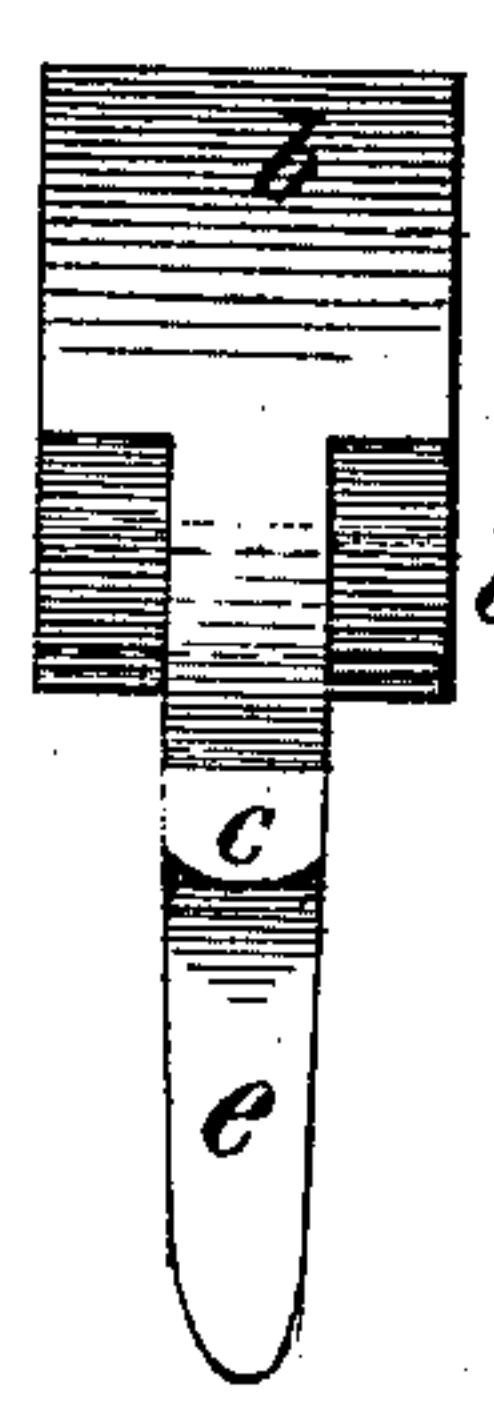


FIG. 11

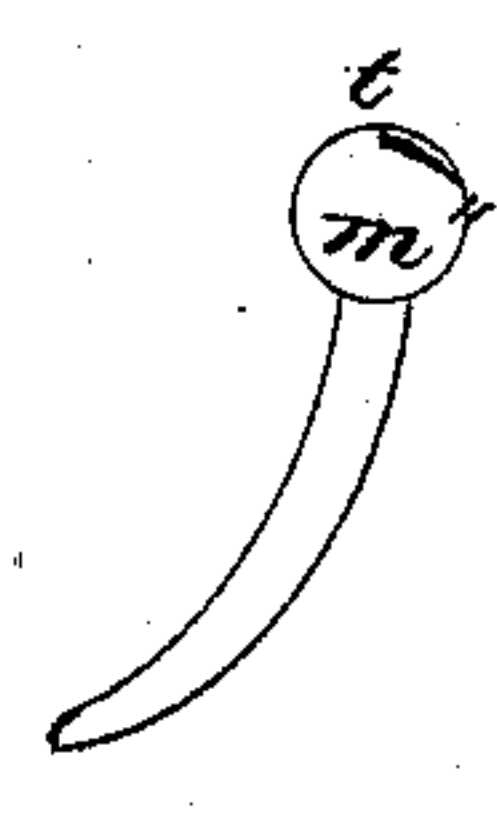
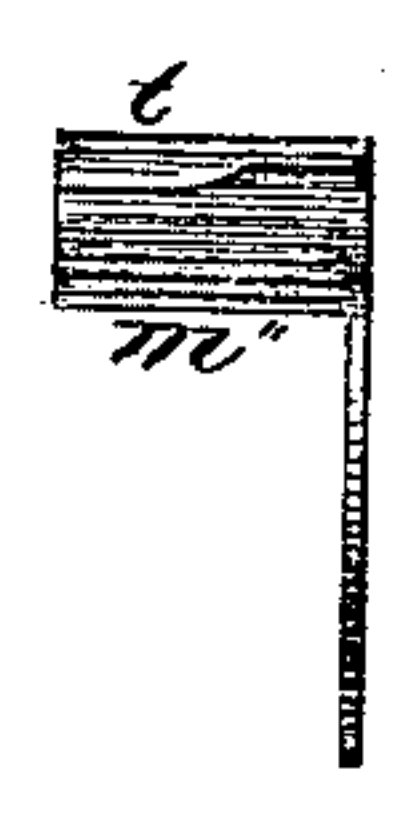


FIG. 12



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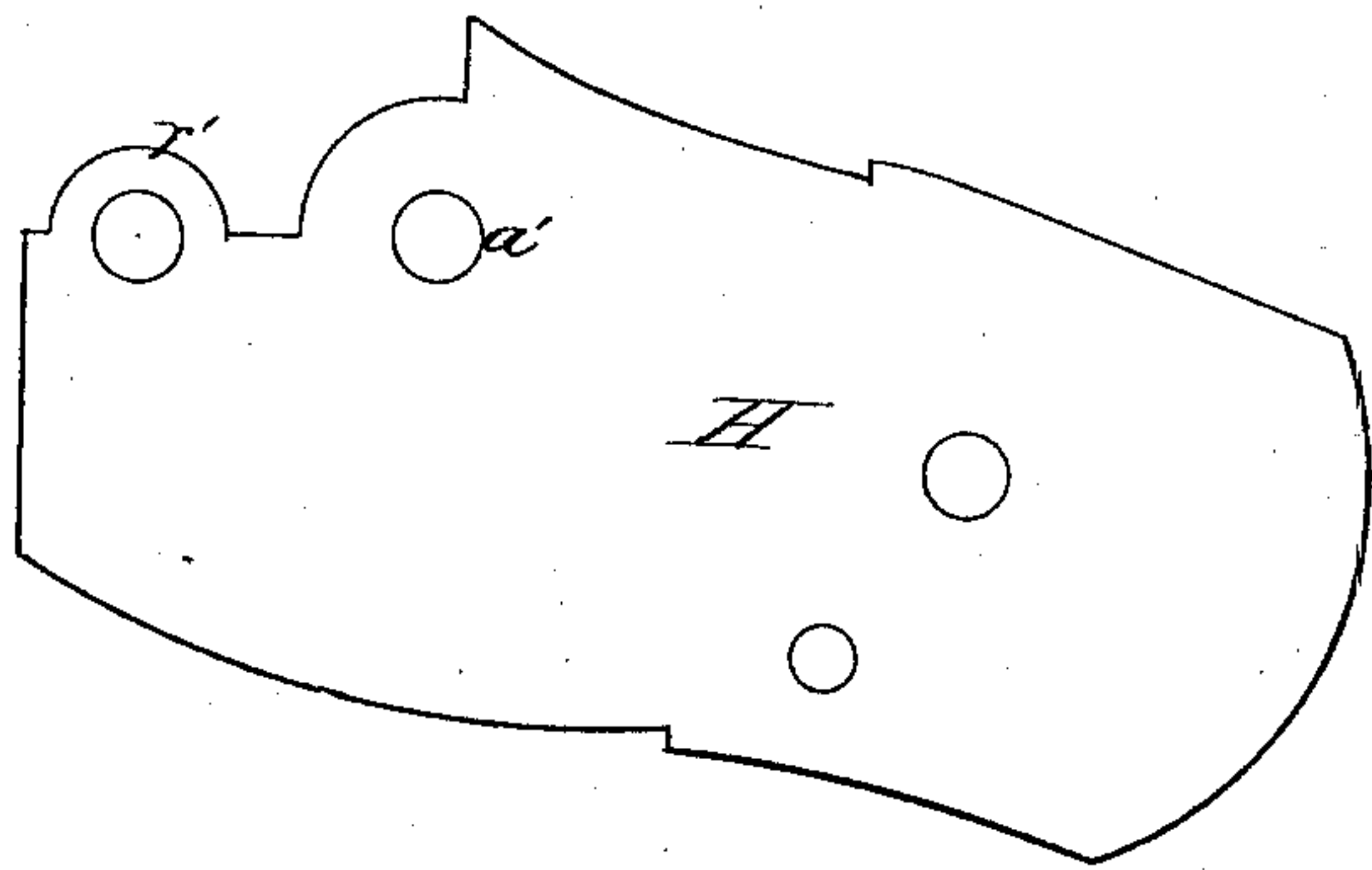
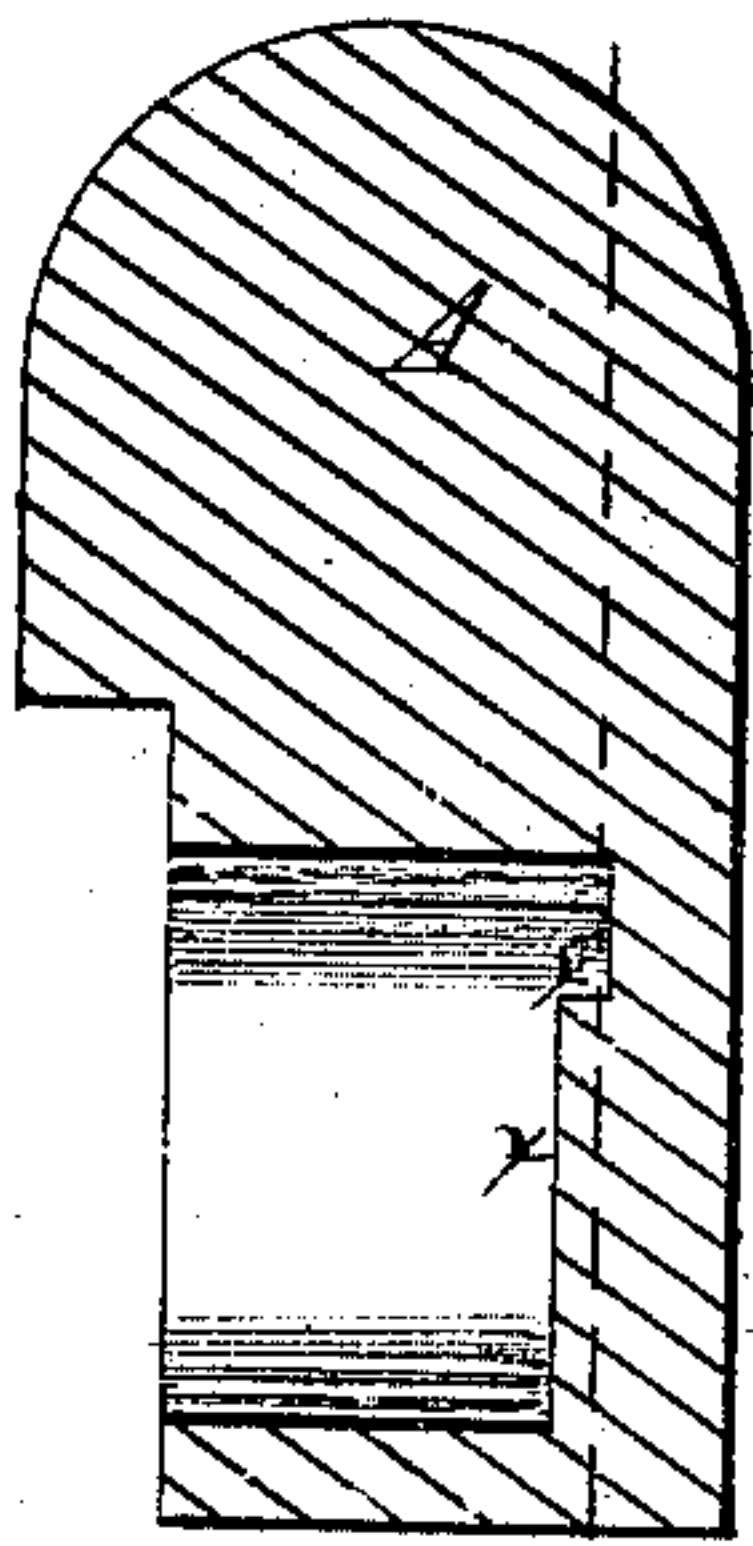
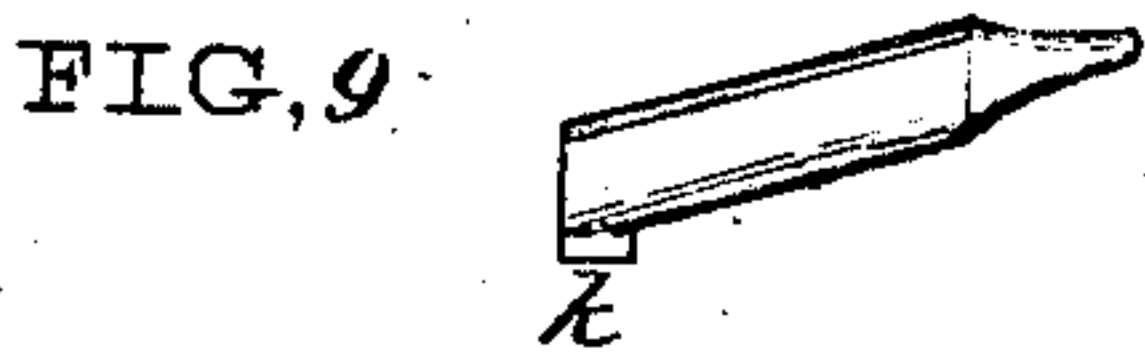
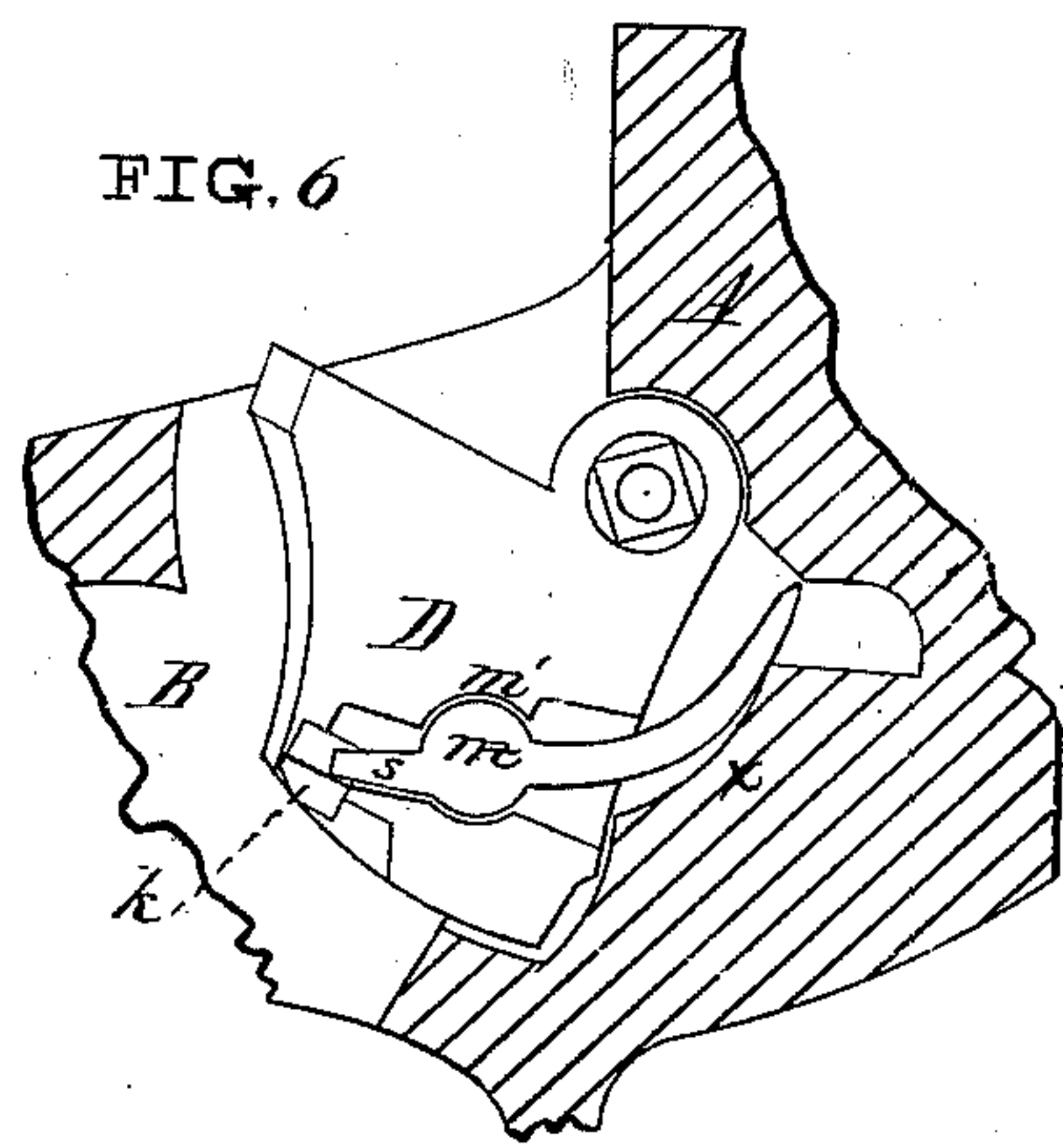
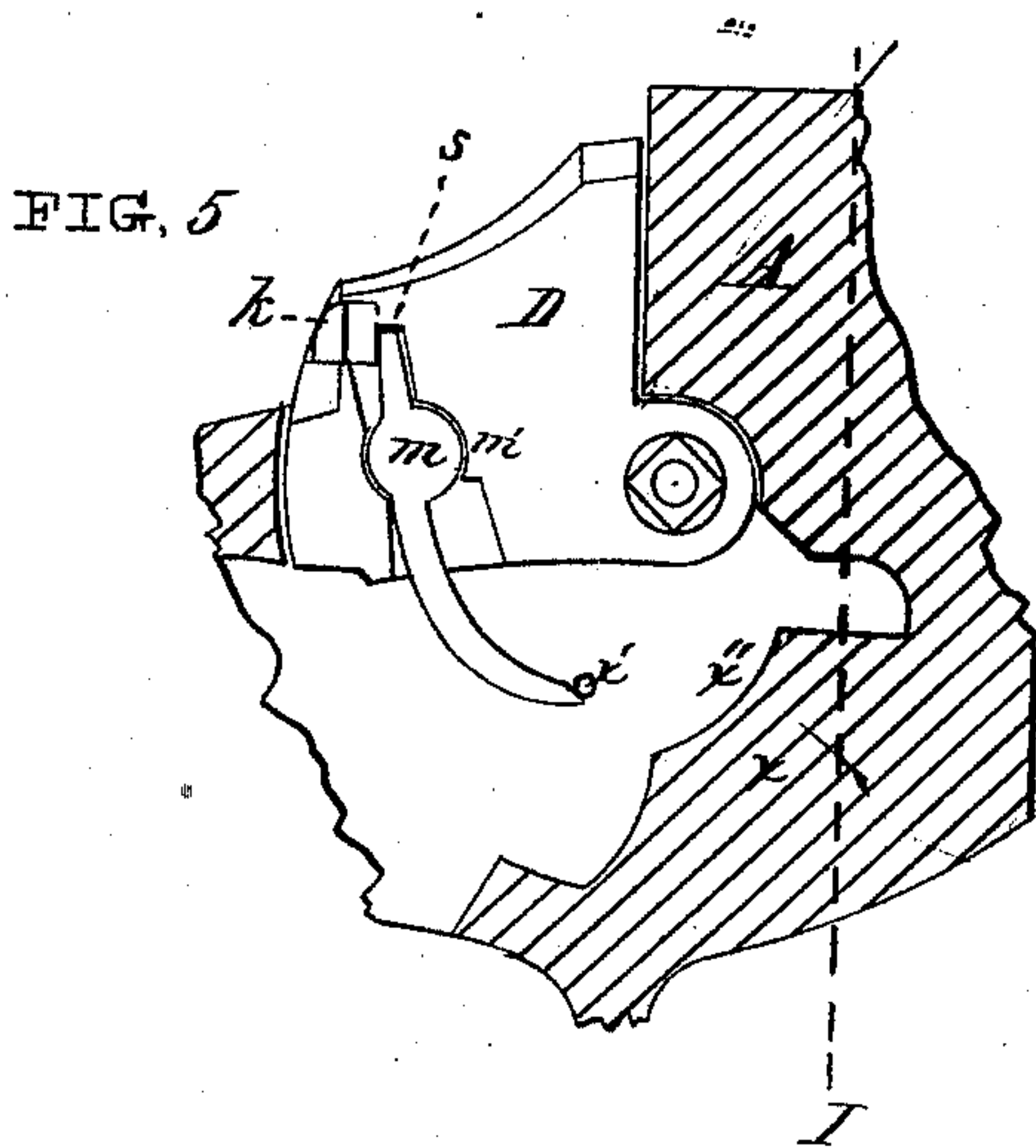
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Improvement in Breech-Loading Fire-Arms.

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# UNITED STATES PATENT OFFICE.

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## IMPROVEMENT IN BREECH-LOADING FIRE-ARMS.

Specification forming part of Letters Patent No. 129,393, dated July 16, 1872.

*To all whom it may concern:*

Be it known that I, MARTIN J. CHAMBERLIN, of Springfield, in the county of Hampden and State of Massachusetts, have invented a new and useful Improvement in Breech-Loading Fire-Arms; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing making a part of this specification and to the letters of reference marked thereon, in which—

Figure 1 is a side view of that portion of the gun which contains the lock mechanism, and with the several parts of the lock in vertical longitudinal section. Fig. 2 is a rear view of the brace which locks the breech-block in place, and also the trigger and sear, all of which operate upon the same pivot. Fig. 3 is a side view of the same. Fig. 4 is a front view of the same. Fig. 5 is a side view of the breech-block, showing the mechanism for throwing out the firing-pin, and with the breech-block up in place. Fig. 6 is a side view of the breech-block with the same thrown down, and showing also the firing-pin mechanism, both these last figures having a small portion of the gun shown in section through line L. Fig. 7 is a transverse section of the gun through line I of Fig. 5. Fig. 8 is a side view of the lock-plate. Fig. 9 is a top view of the firing-pin. Fig. 10 is a longitudinal vertical section through the breech-block, showing the same together with its firing-pin as adapted to a gun having an inside hammer. Figs. 11 and 12 show the device for drawing the firing-pin as adapted to the block shown in Fig. 10.

My invention relates to that class of breech-loading fire-arms in which a breech-block is used which swings upon its pivot backward and downward in opening; and it consists, first, of a locking-brace, which is pivoted to the frame below the hammer-pin, preferably to the trigger-pin, and when thus pivoted stands in nearly an upright position beneath the rear part of the breech-block, and, when said block is up in place, is designed to prevent said block from swinging back out of its place. The lower end projects through the lower part of the lock-frame, but within the trigger-guard, and forms at its lower end the thumb-piece by which it is operated. The rear

part of the bolt has an opening or vertical recess therein, and the trigger being pivoted to the same pin as the bolt, the sear, which is made upon the upper end of the trigger and in one piece with it, operates within said recess, and when in place the tumbler is just behind the sear and locking-brace. The breech-block is provided with a firing-pin having a shoulder or projection near the outer end, and a lever is pivoted to the side of the breech-block, the lower and longer arm of which is curved or bent forward toward the barrel, and the upper and shorter arm stands at a little distance in front of the projection upon the firing-pin, so that when the breech-block is thrown down, the lower curved arm of the lever comes in contact with a projecting part of the frame, and said arm is thereby moved forward, and the upper arm backward, drawing out the firing-pin. When the breech-block is moved up again, the lower curved arm of the lever moves against a small projection upon the inside of the frame, and the lever is thereby moved to its original position, with the short arm at a little distance in front of the shoulder of the firing-pin, leaving said pin in position to be struck by the hammer.

That others skilled in the art may be able to make and use my invention, I will proceed to describe its construction and operation.

In the drawing, A represents the rear of the barrel of the arm, beneath which, at *a*, is pivoted the breech-block D, which swings in a vertical direction. The tumbler *g* is pivoted to the frame by a bearing at *g'*, which extends through the side of the frame, and the hammer F is secured thereto outside the frame, in the usual manner. The trigger *e* is pivoted to the pin *i*; and the sear is made at *o'*, upon the upper part of the trigger and in one piece with it. The locking-brace *b* is pivoted to the same pin *i* as is the trigger, said pin passing through holes in the sides *b'* at the lower end of said brace, a recess, *o*, being made in said bolt of sufficient size to admit the sear *o'*, and the upper part of the trigger. The brace is elongated at the lower end, and passes down through a hole in the lower side of the frame, terminating in a thumb-piece, *c*, located just forward of the trigger and inside the trigger-guard. A spring, *u*, pressing down upon the trigger serves to keep the sear always in con-



tact with the tumbler, and another spring, *h*, bearing up against the shoulder *f* upon the brace *b*, serves to keep the latter thrown forward beneath the breech-block, except when forced back by pressing up against the thumb-piece *c*. In the lower and forward part of the recess in which the breech-block swings, is a projection, *x*, and pivoted to the side of the breech-block is the lever *m*, its long arm *n* extending down into the recess below the breech-block, and close to the side of the frame; and this arm is curved or bent forward toward the barrel. The position of this lever *m* is shown clearly in Fig. 5, its short arm *s* being just in front of the projection *k* upon the rear end of the firing-pin. The lock-plate *H* has a curved projection thereon at *r'*, which fits a correspondingly-shaped recess, *r*, made in the side of the gun; and the plate is secured to the gun by screws, with one of the journals or pivots *a* of the breech-block having its bearing in the hole *a'*. This construction and attachment of the plate to the gun removes much of the recoil of the discharge from the block, as it furnishes a brace for the same.

The operation of my invention is as follows: The block being up in place behind the barrel, the locking-brace is in position beneath the breech-block, and is held there by the upper forward part of the tumbler, which is wider than the lower part, pressing against the sear *o'*, and that against the brace. If the hammer be pulled back, the narrower part of the tumbler is brought up to the rear of the sear, and the sear drops into the notch *s'* in the tumbler. When the hammer is thus "cocked" the locking-brace may be forced back from beneath the breech-block by pressing up against the thumb-piece *c*, and the breech-block may then be swung backward and downward, and, as it passes down, the convex part of the long arm of the lever *m* comes in contact with the top of the projection *x*, and the arm is thereby forced forward, which moves the upper and shorter arm *s* backward against the shoulder *k* of the firing-pin, and said pin is forced out. As the block is raised to its position again behind the barrel the concave edge of the lever *m* strikes against a small pin or projection, *x*, and the lever is thrown back again to its original position, with the short arm *s* thrown forward away from the shoulder *k* of the firing-pin, and said pin, being thrown out, will not strike the cartridge when the block is thrown up quickly, and it is in position to receive the blow from the hammer.

The arm, as hereinbefore described, is adapted and arranged for use as a military gun, having a hammer placed upon the outside of the lock-frame; but it is equally well adapted for use as a sporting gun by merely changing

the position of the hammer, as many prefer a hammer placed within the lock-frame; and this is easily done by making the hammer upon the top or upper part of the tumbler *g*, and in one piece with it, the tumbler or lower part of the hammer remaining in the same form, as shown in Fig. 1. In this case the firing-pin, instead of projecting through the rear of the block, near the side, as above described, would then extend through the middle of the breech-block, as shown in Fig. 10; and, instead of using the short arm *s* of the lever *m* to draw the firing-pin, a small drum or cylinder, *m''*, would be made upon the upper end of the long arm *n* of the lever *m*, as shown in Figs. 11 and 12; and in this cylinder is a notch or shoulder, *t*, which, when the breech-block is thrown downward, would impinge against a notch in the firing-pin, and the firing-pin would then be thrown out, as before. The mainspring is attached to the lower end of the tumbler by means of the stirrup, in the usual manner.

The locking-brace *b* might be pivoted at any other convenient point below the hammer-pivot *g*, or below the tumbler *g*; but the trigger-pin *i* makes a convenient pivot for it, and the labor of making another is saved thereby.

It will be seen that when the hammer is at full cock and the breech-block down the locking-brace is thrown back behind the block, and the sear occupies all the space between the tumbler and the brace, so that the sear cannot be pulled out of the notch, this arrangement of the sear, tumbler, and brace forming a safety device to prevent the hammer from being let down.

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

1. The locking-brace *b*, constructed substantially as described, when pivoted to the frame at a point below the tumbler-pivot, and having thereon the finger-piece *c*, protruding through the bottom of the frame within the trigger-guard, for the purpose of conveniently unlocking the breech-block, substantially as described.

2. I claim the combination of the means, substantially as herein described, whereby the lever *m* is operated in both directions, to withdraw the firing-pin and release the same, by fixed points, as set forth.

3. I claim a breech-loading fire-arm wherein the sear, by its impingement against the locking-brace, is prevented from being pulled out of the tumbler-notch when the breech-block is moved down from its position in rear of the barrel, substantially as described.

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Witnesses:

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