

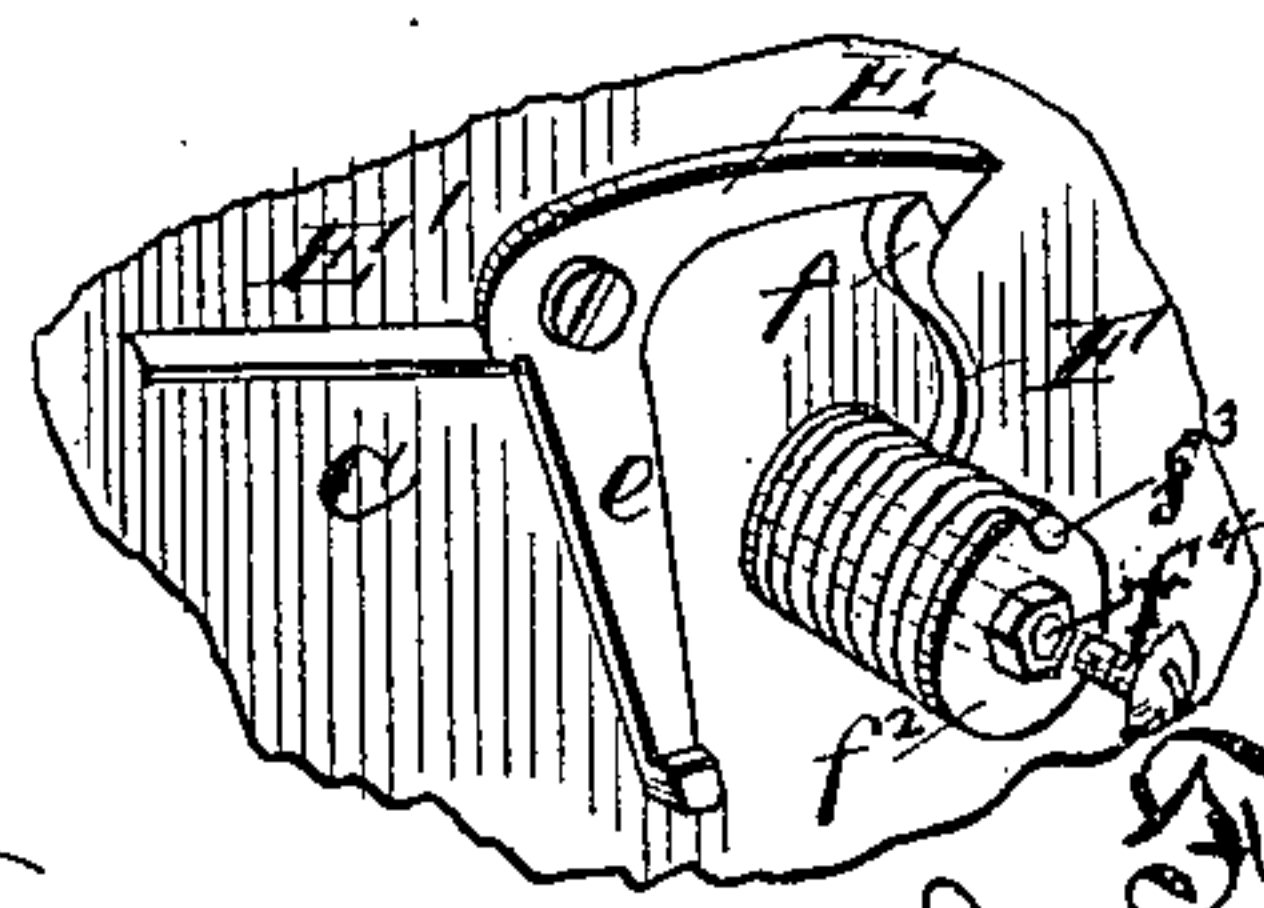
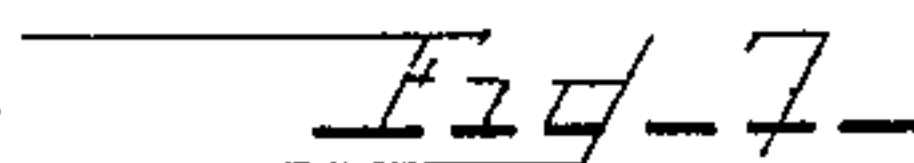
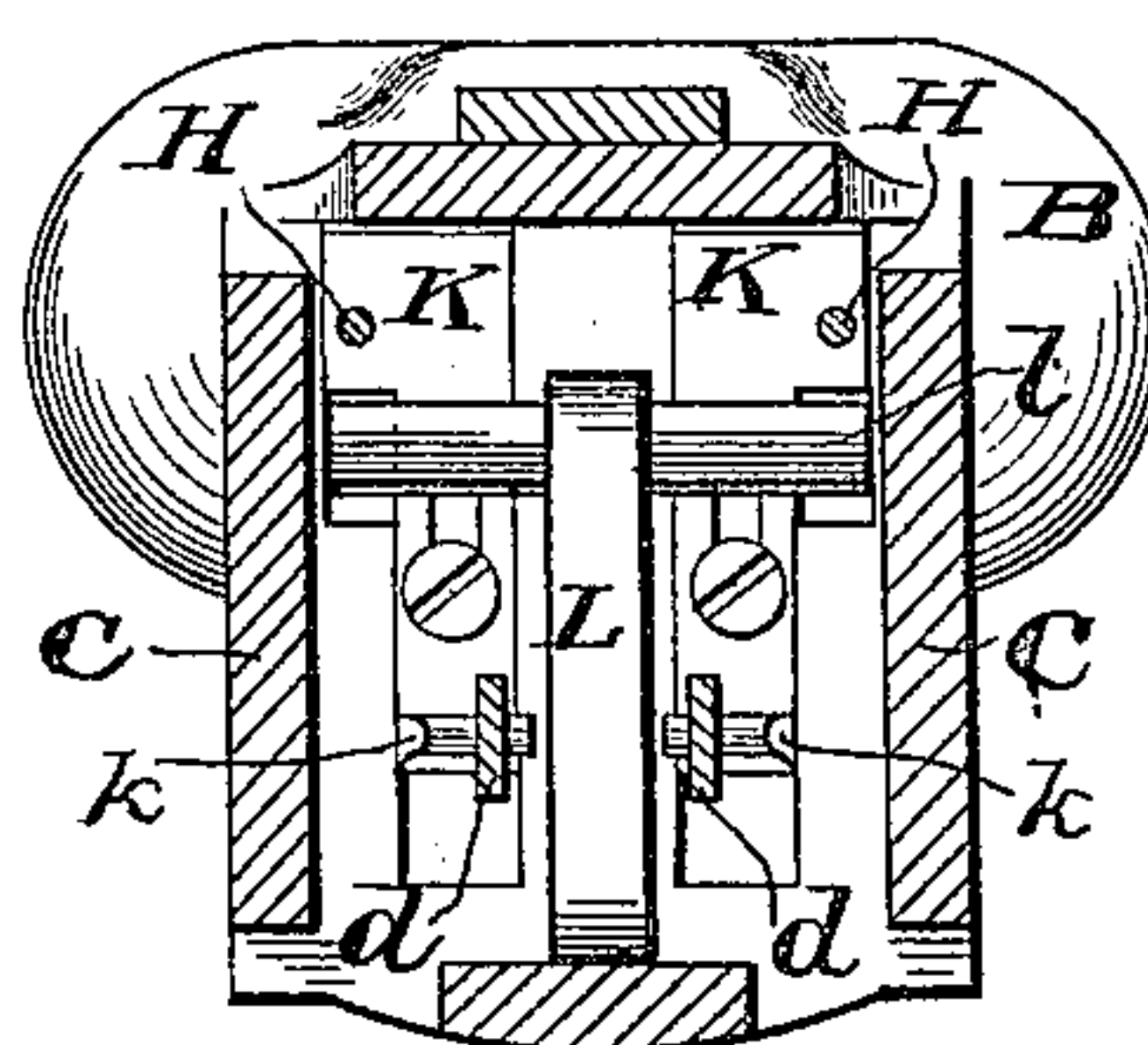
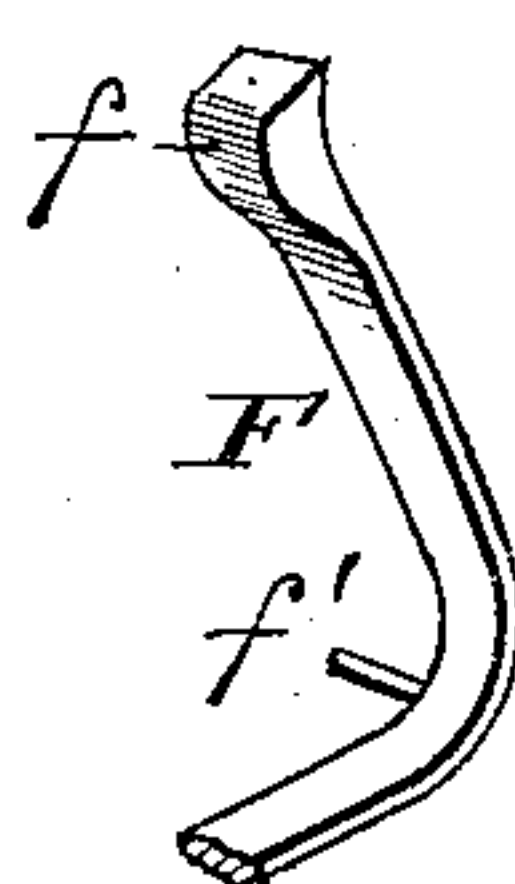
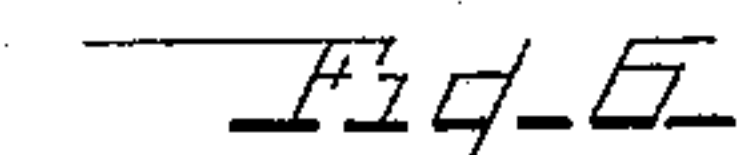
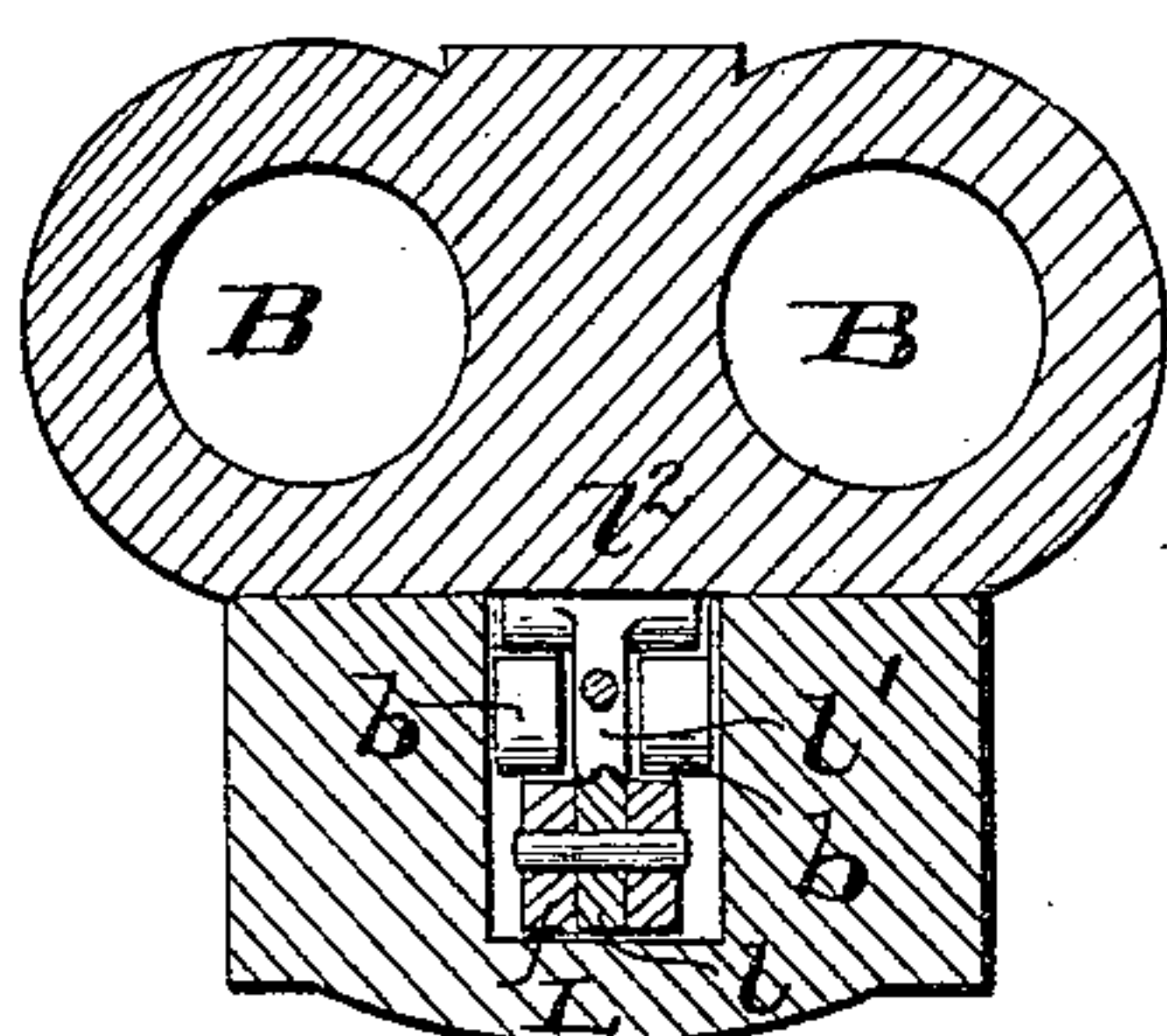
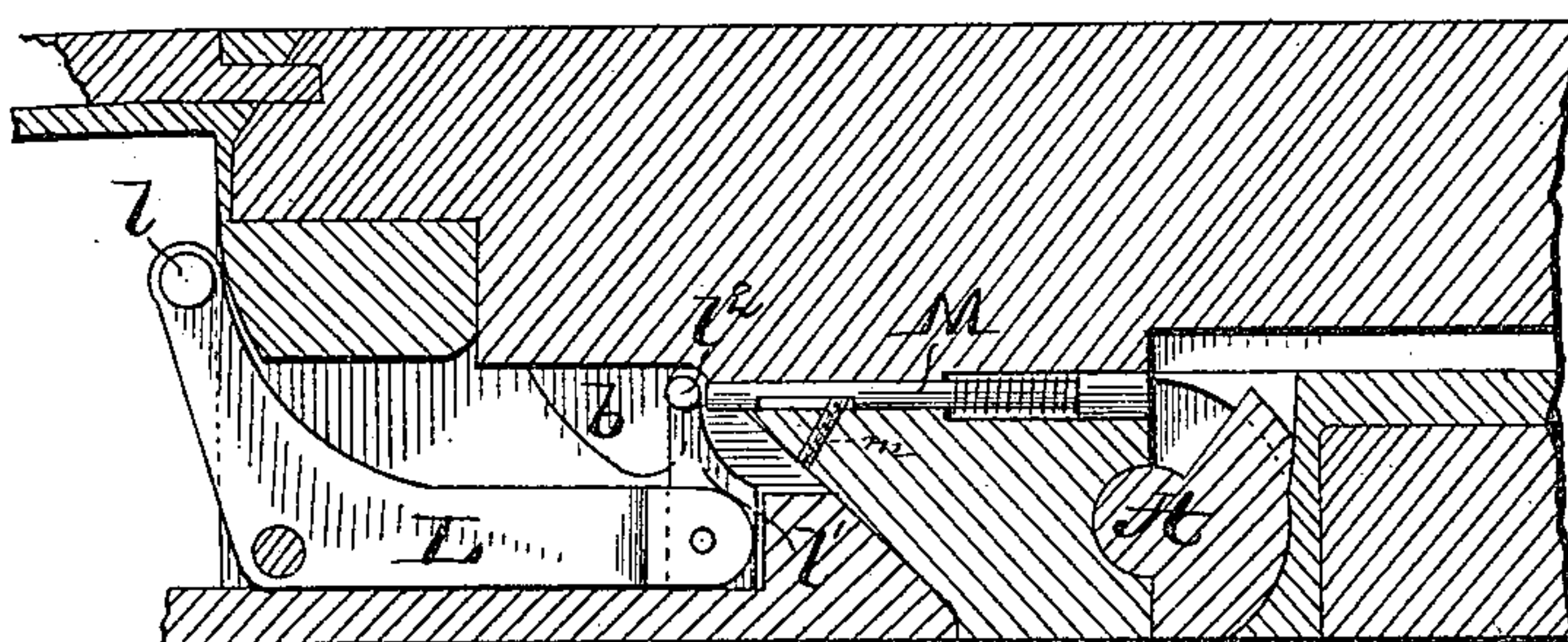
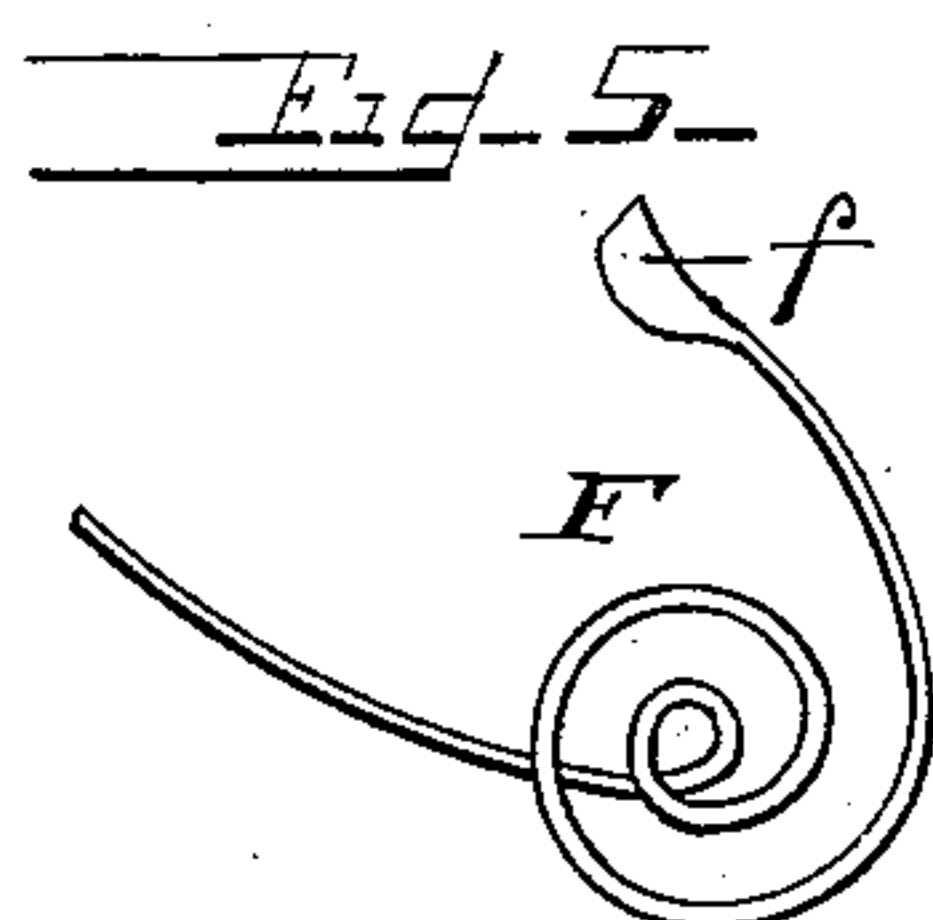
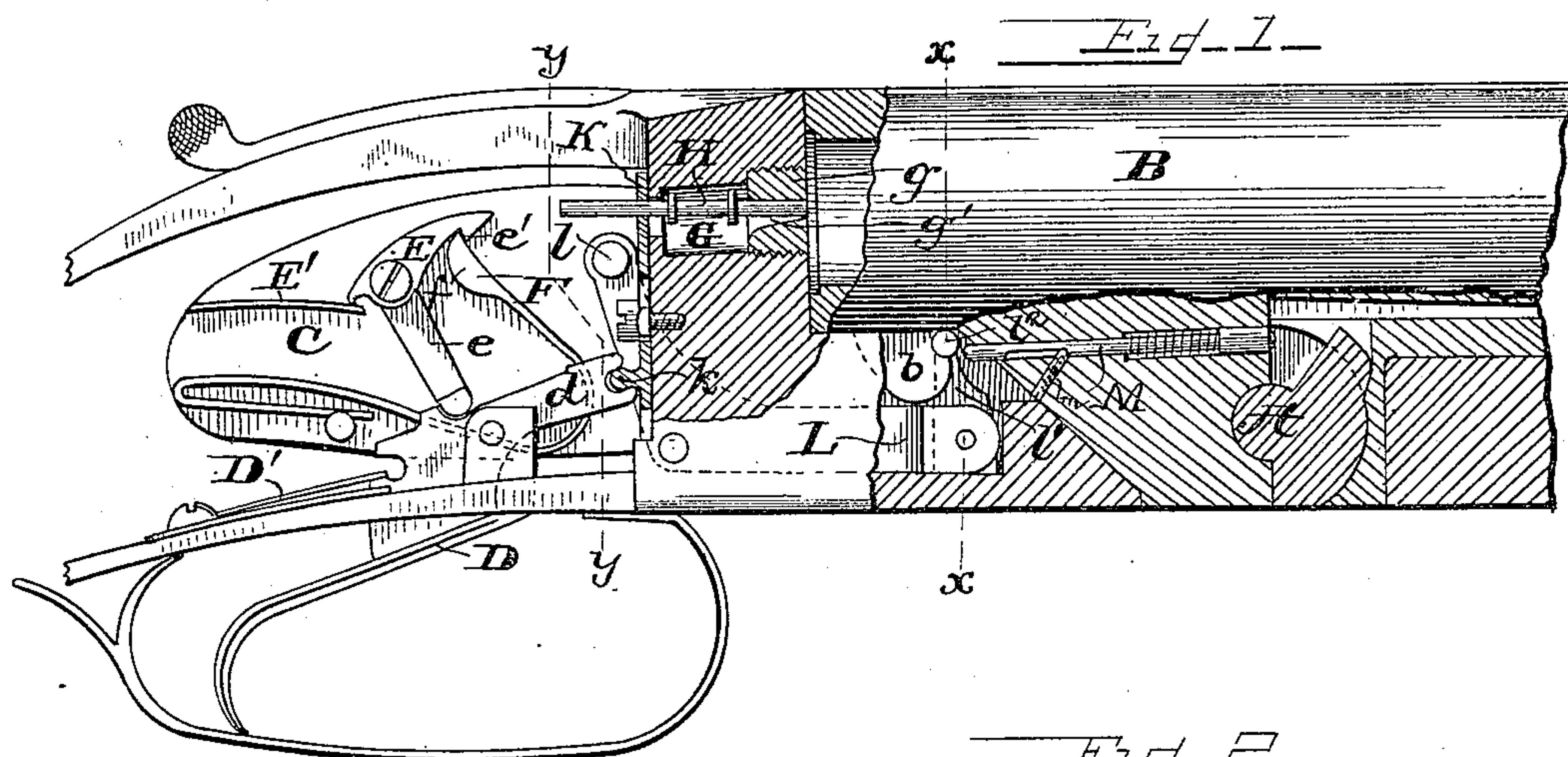
(No Model.)

F. A. HOLLENBECK.

SAFETY DEVICE FOR BREECH LOADING GUNS.

No. 446,166.

Patented Feb. 10, 1891.



Witnesses

G. A. Sanders

S. B. Whitaker.

Inventor

Frank A. Hollenbeck

By His Attorneys

Whitaker & Trewest.

UNITED STATES PATENT OFFICE.

FRANK A. HOLLENBECK, OF BATAVIA, NEW YORK.

SAFETY DEVICE FOR BREECH-LOADING GUNS.

SPECIFICATION forming part of Letters Patent No. 446,166, dated February 10, 1891.

Application filed June 18, 1890. Serial No. 355,854. (No model.)

To all whom it may concern:

Be it known that I, FRANK A. HOLLENBECK, a citizen of the United States, residing at Batavia, in the county of Genesee and State of New York, have invented certain new and useful Improvements in Fire-Arms; and I do hereby 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.

My invention is an improvement in fire-arms, especially in that class denominated "hammerless fire-arms;" and it consists in an improved discharging mechanism for the same which dispenses with the concealed hammers usually employed in such arms, and, further, contemplates a safety arrangement which prevents the hammer from discharging the cartridge by accidental jar, or any cause other than the direct action of the trigger, and prevents the accidental discharge of the piece caused by the parts becoming worn with use.

In the accompanying drawings I have illustrated one form in which I have contemplated embodying my invention, and the same is fully disclosed in the following description and claims.

Referring to the said drawings, Figure 1 is a partial section through a portion of a gun-lock, showing my improvement embodied therein. Fig. 2 is a partial sectional view through the center of the barrel portion of the gun, showing the arrangement for setting the mainsprings. Fig. 3 is a transverse section on line *x x*, Fig. 1. Fig. 4 is a similar section on line *y y*, Fig. 1. Figs. 5, 6, and 7 are views showing one of the mainsprings and modifications thereof.

In the drawings I have shown a double-barrel breech-loading fire-arm having a break-joint at A of the usual or any preferred construction.

B represents the barrels, and C C the side plates of the lock-case.

D is the trigger suitably mounted in the stock portion of the piece to engage one arm *e* of sear E and actuate the same. The sear is suitably pivoted to the lock-case, and is provided with a retaining-notch *e'*.

In my improved construction I dispense with concealed hammers and employ a main-

spring F of any desired construction, which is suitably secured in the lock-case, and has one end *f* adapted to be forced backward and made to engage the notch *e'* of the sear when the spring is set. In the drawings I have shown several forms of springs which may be employed and which give good and satisfactory results.

In the form shown in Fig. 1 the spring is composed of flat spring material engaging one or more pins secured to the gun-casing, and having a pin or lug *f'*, as shown in Fig. 6, formed integrally therewith or attached thereto which is adapted to engage a suitable aperture in one of the side plates C of the lock-case.

In Fig. 5 I have shown a form in which the body of the spring is given a number of spiral twists between its extremities, and in Fig. 7 I have shown still another modification in which said spring F is coiled spirally about a post *F'*, provided with a polygonal head. A washer *f²*, having a polygonal aperture to fit said head, is placed over the post, and this washer is further provided with an aperture which receives a bent projection *f³* from the spring and holds it from turning on the post. The post may be provided with a screw-threaded aperture to receive a headed screw *f⁴*, as shown, to hold the said washer *f²* in position, or the washer may be secured in place by any other suitable means.

The striking portion or head of the spring F may be thickened, if desired, as shown in the drawings; but this is not absolutely essential.

The stock of the gun is provided with a recess G in rear of each barrel, in which is located the firing-pin H of the usual or any preferred construction. I provide a construction by which this firing-pin is normally held out of range of the head *f* of the mainspring, so that if the latter should be jarred off or accidentally released from its engagement with the sear by the wear of the parts or otherwise the head of the spring will not strike the firing-pin, and hence will not discharge the cartridge, and I further provide a construction whereby when the trigger is pulled the said firing-pin is brought within range of the spring at the moment the sear releases the same.

The front end of the recess G is provided

with a plug or bearing *g*, which carries the front or cartridge-engaging end of firing-pin H. This plug may be tapped into the recess G or otherwise secured in place, and is provided with a tapering aperture *g'*, through which the stem of the firing-pin extends. This recess is of such shape as to permit a movement of the rear end of the firing-pin without permitting the forward end to move out of alignment with the cartridge, fulminate, or cap. This is accomplished by making the front end of the aperture *g'* of substantially the size of the firing-pin, and to increase the diameter of said aperture toward the rear end of the same in line with the transverse movement of the rear end of said pin. The rear end of the recess G is provided with a vertical slot to permit the movement of said pin, and the rear end of the firing-pin is mounted in a sliding plate K, which is secured to the front part of the lock-recess of the stock by means of a screw engaging a slot in said sliding plate or in any other desired manner.

The trigger D is provided with an arm *d*, which engages and operates the sliding plate K. In this instance I have shown the end of arm *d* provided with a notch which loosely engages a lug or projection *k* from the plate K. By this construction it will be seen that when the trigger is pulled to actuate the sear and release the head of the spring the rear end of the firing-pin will be drawn down into the range of said spring, and when the latter is released by the sear it will strike said firing-pin and discharge the cartridge. The trigger D is provided with a retracting-spring D', which after firing restores it to its normal position, and thereby raises the rear end of the firing-pin out of the range of the spring F, where it remains until the trigger is pulled. The sear E is also provided with a retracting-spring E' for returning it to its normal position.

It will be understood that when the devices above described are applied to a double-barrel gun they will be duplicated, so as to provide one set of devices for each barrel. I also provide means whereby the breaking of the gun to remove the old shells and reload forces the mainsprings back into engagement with their respective sears, thus cocking the piece without danger of an accidental discharge, as the firing-pins are held out of the range of the springs. To this end an L-shaped lever L, which I term the "cocking-lever," is pivoted in the stock of the piece, having one arm of the same extending forward toward the break-joint A and the other extending upwardly into the plane of the upper portions of the springs, where it is provided with a cross-bar *l*, extending transversely a short distance on either side of said arm sufficiently to enable it to engage both of the springs F.

The forward end of the horizontal arm of the cocking-lever is connected by a pivoted link *l'* with the barrels of the gun. This is

preferably accomplished by providing said link *l'* with a short cross-bar *l''*, which engages two hooked lugs *b b* on the lower part of the barrels B a short distance in rear of their pivotal connection A with the stock. (See Figs. 2 and 3.) The cross-bar *l''* is held in engagement with the hooked lugs *b b* by the sliding rod M, the forward end of which abuts against the fore end A', which serves to hold the rod securely in place. The rod M is provided with a coiled spring surrounding the same, so that when the fore end A' is removed the spring withdraws the rod, releasing the cross-bar from the hooked lugs and the cocking-lever from the barrels. The rod M is held against undue movement by the spring by a screw-pin *m*, which engages a groove or recess in the pin, but permits the necessary longitudinal movement of the rod M.

It will be seen that when the gun is broken to remove a shell or reload the rear portion of the barrels B B will be raised and the front end of the cocking-lever will be raised with it. This will force the cross-bar backward, carrying the springs F F back into engagement with the sears, thus cocking the piece.

It will be seen that, if desired, the firing-pin could be moved sidewise out of range with the spring F, instead of upward, and good results secured. It is also obvious that the devices for carrying the rear end of the firing-pin out of the range of the impelling devices, for the same can be used in pieces in which a concealed or other hammer is employed.

I do not desire to be limited to the exact constructions herein described, as variations may be made in the details of the same without departing from the spirit of my invention.

What I claim, and desire to secure by Letters Patent, is—

1. In a fire-arm, the combination, with the breech-block, of a firing-pin movably located therein, impelling devices therefor adapted to apply the force of the same to the rear end of the firing-pin, and a movable part connected with the trigger and located in a plane between the breech-block and said impelling devices for putting said impelling devices and firing-pin into and out of operative relation, substantially as described.

2. In a fire-arm, the combination, with the breech-block, of a firing-pin located in a recess therein, impelling devices therefor adapted to directly engage the rear end of said pin, and a movable part connected with the trigger, located in a plane between the breech-block and impelling devices for putting the impelling devices and firing-pin into and out of operative relations, substantially as described.

3. In a fire-arm, the combination, with the breech-block, of a firing-pin movably located therein, impelling devices therefor adapted to engage the rear end of the said pin, and a slide connected with the trigger and adapted to move in a fixed plane transversely of the

said pin, said slide being located at the rear of the breech-block and adapted to put the impelling devices and firing-pin into and out of operative relation, substantially as described.

4. In a fire-arm, the combination, with the breech-block, of a firing-pin located in a recess in said block, impelling devices therefor adapted to move the said pin by force applied to the rear end of the same, and a movable part connected with the trigger and adapted to move in a fixed plane over the recess, said movable part being located at the rear of the breech-block and adapted to put the impelling devices and the firing-pin into and out of operative relation, substantially as described.

5. In a fire-arm, the combination, with the breech-block, of a firing-pin located in a recess therein, impelling devices for said firing-pin adapted to move the same by applying the force thereof to the rear end of the said pin, and a slide connected with the trigger and firing-pin and adapted to throw the firing-pin into and out of operative relation with its impelling devices, said slide being located at the rear of the breech-block and moving over the rear end of the recess in the breech-block, substantially as described.

6. In a fire-arm, the combination, with a breech-block and a firing-pin located in a recess therein, of a movable part operatively connected with the trigger and engaging said firing-pin, but separate therefrom, for throwing the said firing-pin into and out of operative relation with its impelling devices, substantially as described.

7. In a fire-arm, the combination, with the breech-block and a firing-pin located in a recess therein, of impelling devices adapted to impel the firing-pin by applying force to the rear end of the same, a slide connected with the trigger and engaging the firing-pin, but separate therefrom, and a spring holding the firing-pin normally out of operative relation with its impelling devices, whereby move-

ment of the trigger to release the impelling devices brings the pin into operative relation to discharge the gun, substantially as described.

8. In a fire-arm, the combination, with the firing-pin, of the forward support for the same, consisting of a bearing having an aperture adjacent to the cartridge closely fitting said pin, said aperture being of increased area at the rear of said bearing, and a movable support for the firing-pin in rear of said bearing, substantially as described.

9. In a fire-arm, the combination, with the firing-pin, of a forward bearing for the same, holding the forward end of the firing-pin in a fixed transverse relation with the cartridge, but permitting a movement of the rear end of said firing-pin, a slide supporting said pin in rear of said bearing, and an operative connection between said slide and the trigger, substantially as described.

10. In a breech-loading fire-arm, the combination, with the stock and barrels pivoted thereto, having hooked lugs, of a single cocking-lever, a link pivoted to the forward end of the cocking-lever and having a cross-bar engaging the hooked lugs of the gun-barrels, the rod holding the cross-bar in engagement with the hooked lugs, and its retracting-spring, the retaining-screw, and fore-end, substantially as described.

11. In a fire-arm, the combination, with the firing-pins, of impelling devices therefor, consisting of springs adapted to directly engage the firing-pins, the pivoted barrels having the hooked lugs, a single cocking-lever directly engaging said springs, the link and its cross-bar, and means for holding the cross-bar in engagement with the hooked lugs, substantially as described.

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

FRANK A. HOLLENBECK.

Witnesses:

E. L. BAKER,

J. W. LE SEUR.