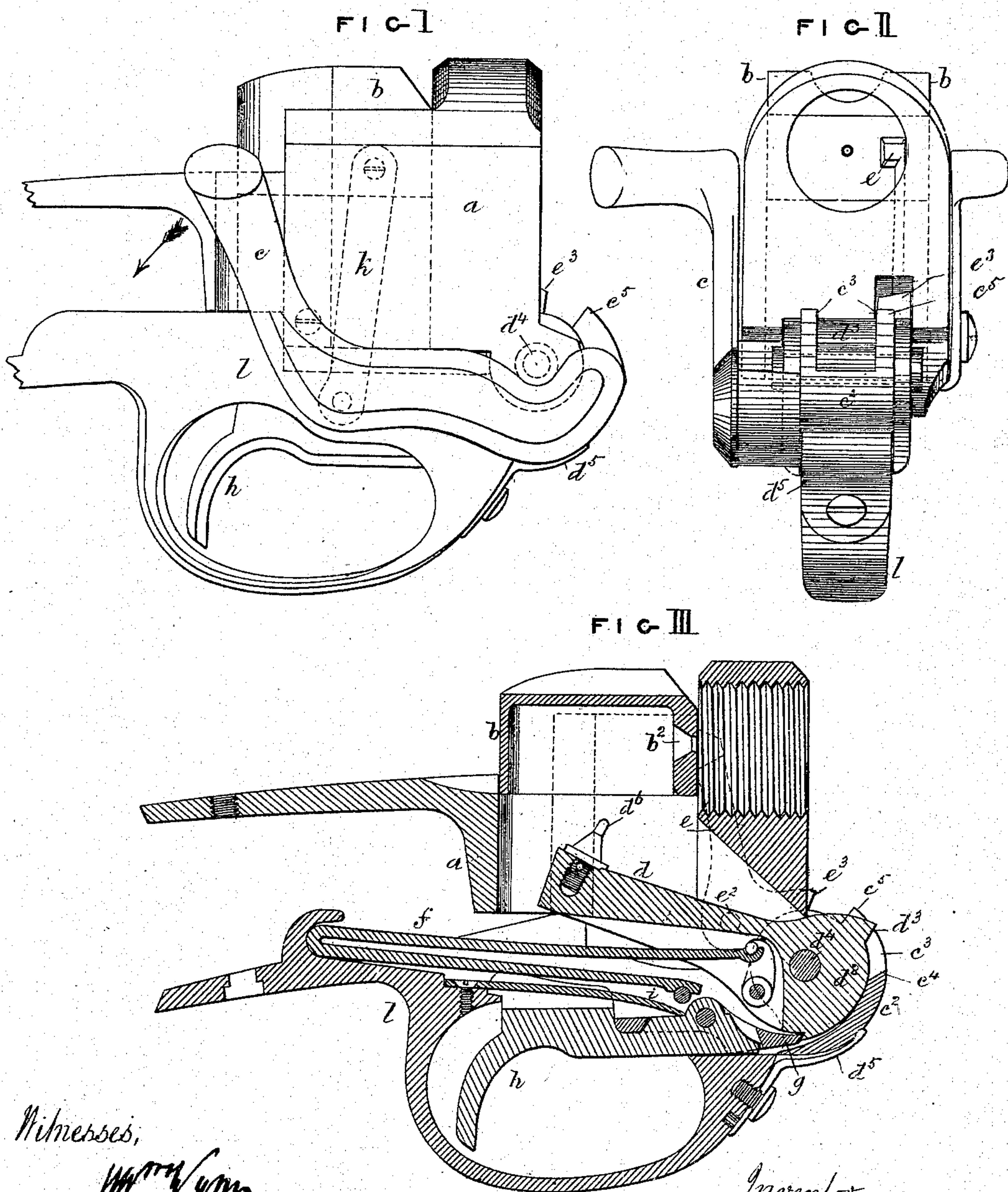


W. RICHARDS
Breech-Loading Fire-Arms.

No. 139,422.

Patented May 27, 1873.



Witnesses,

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Alfred Bryan

Inventor

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FIG IV

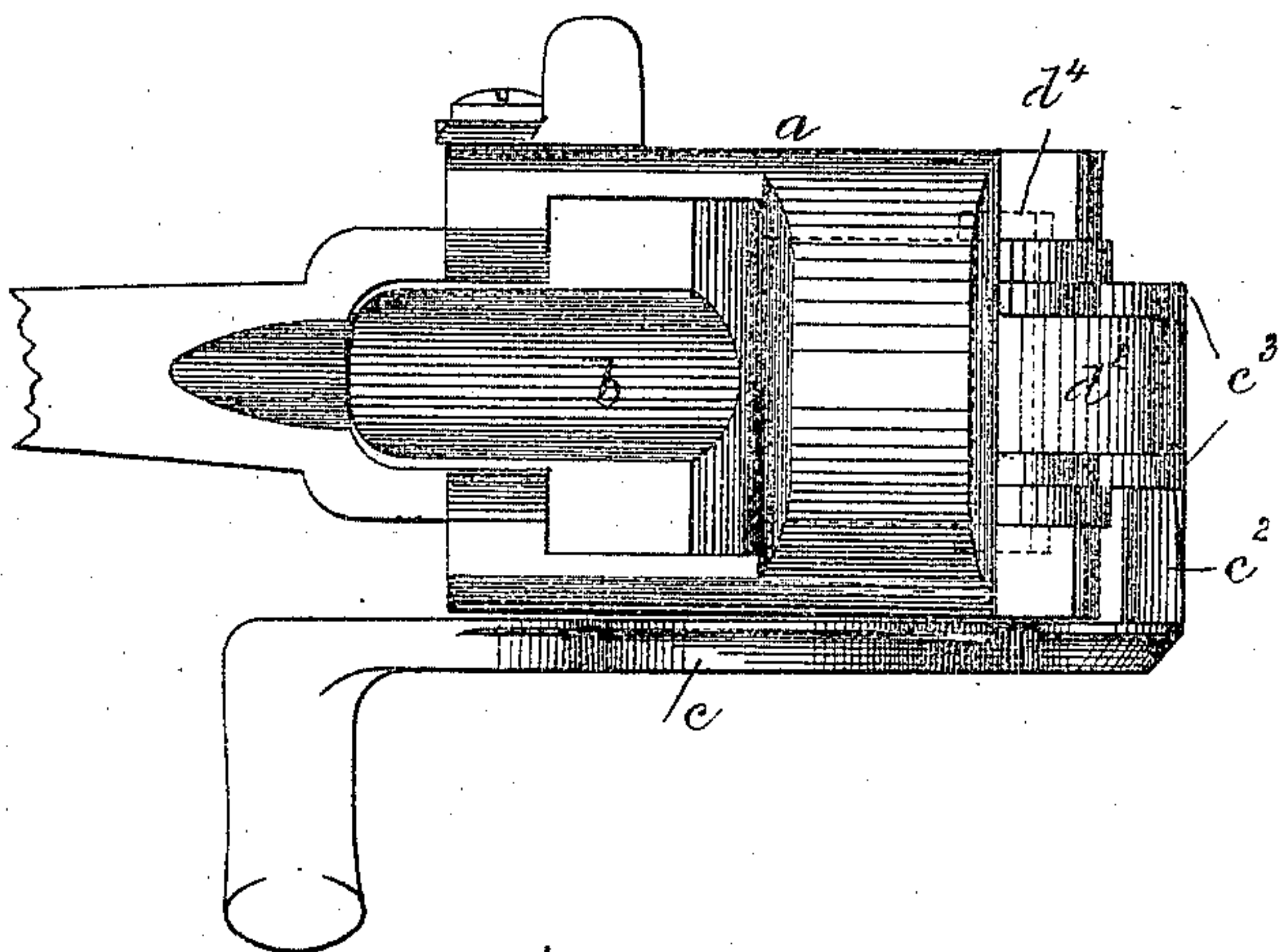


FIG VI

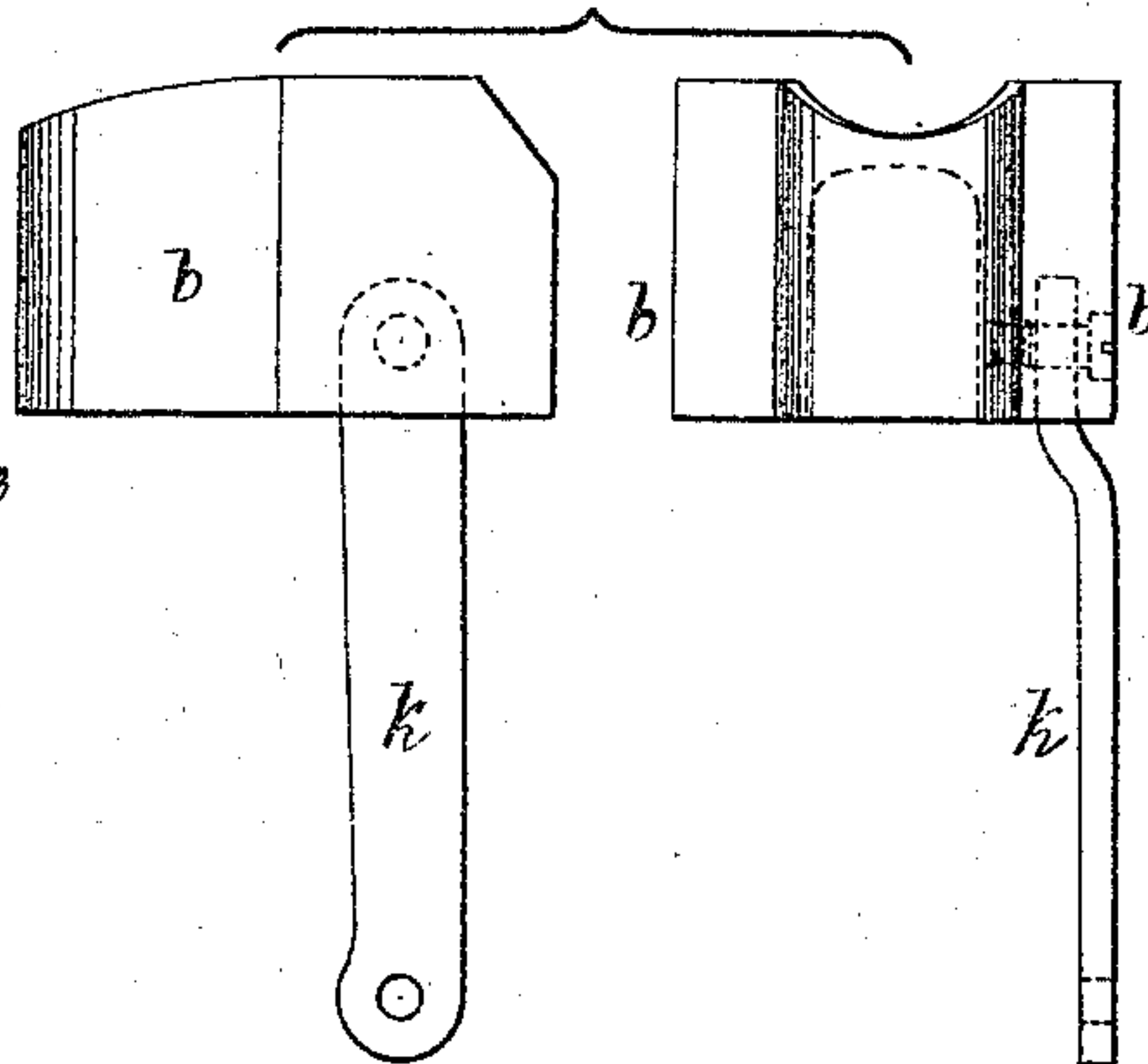


FIG V

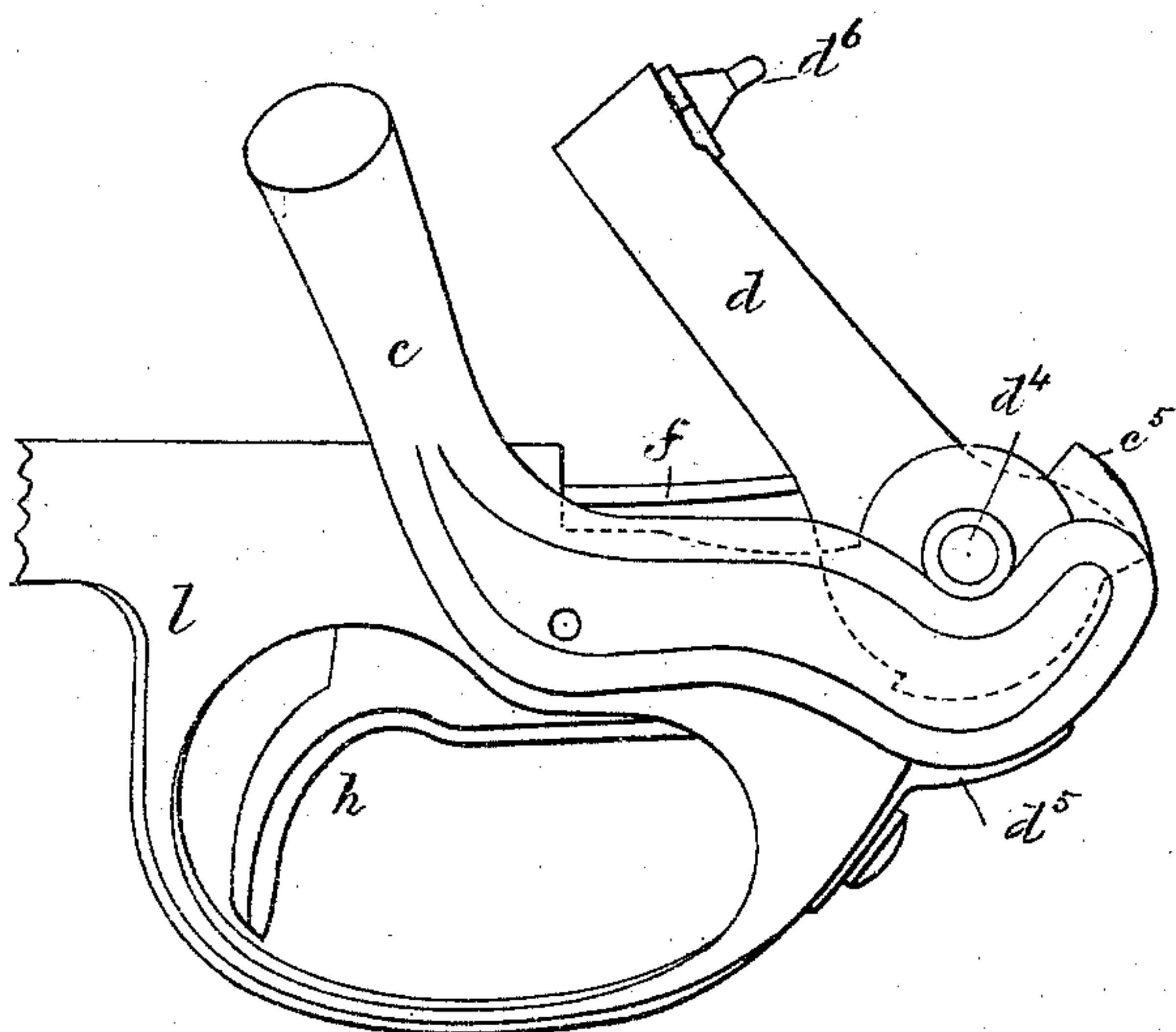
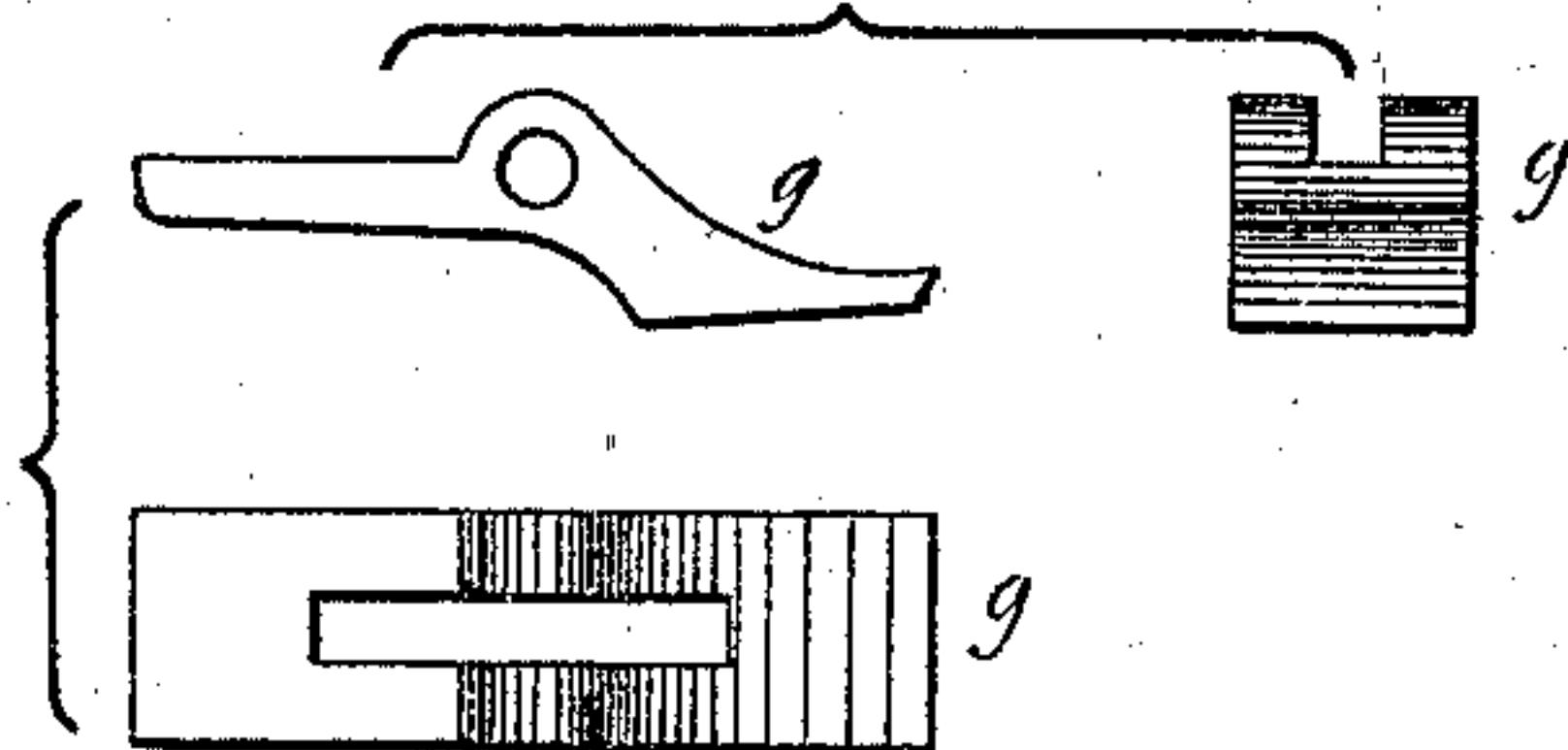


FIG VII



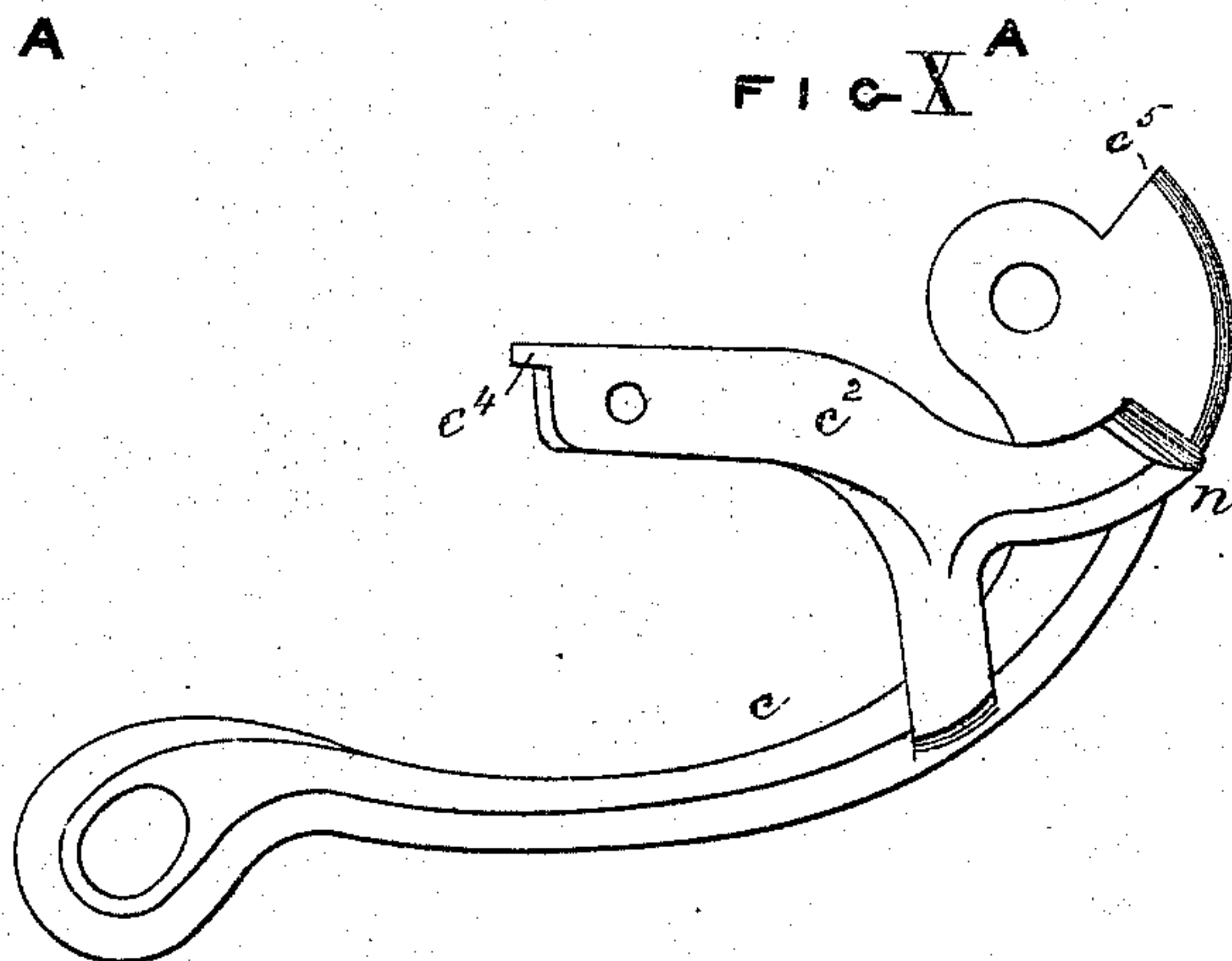
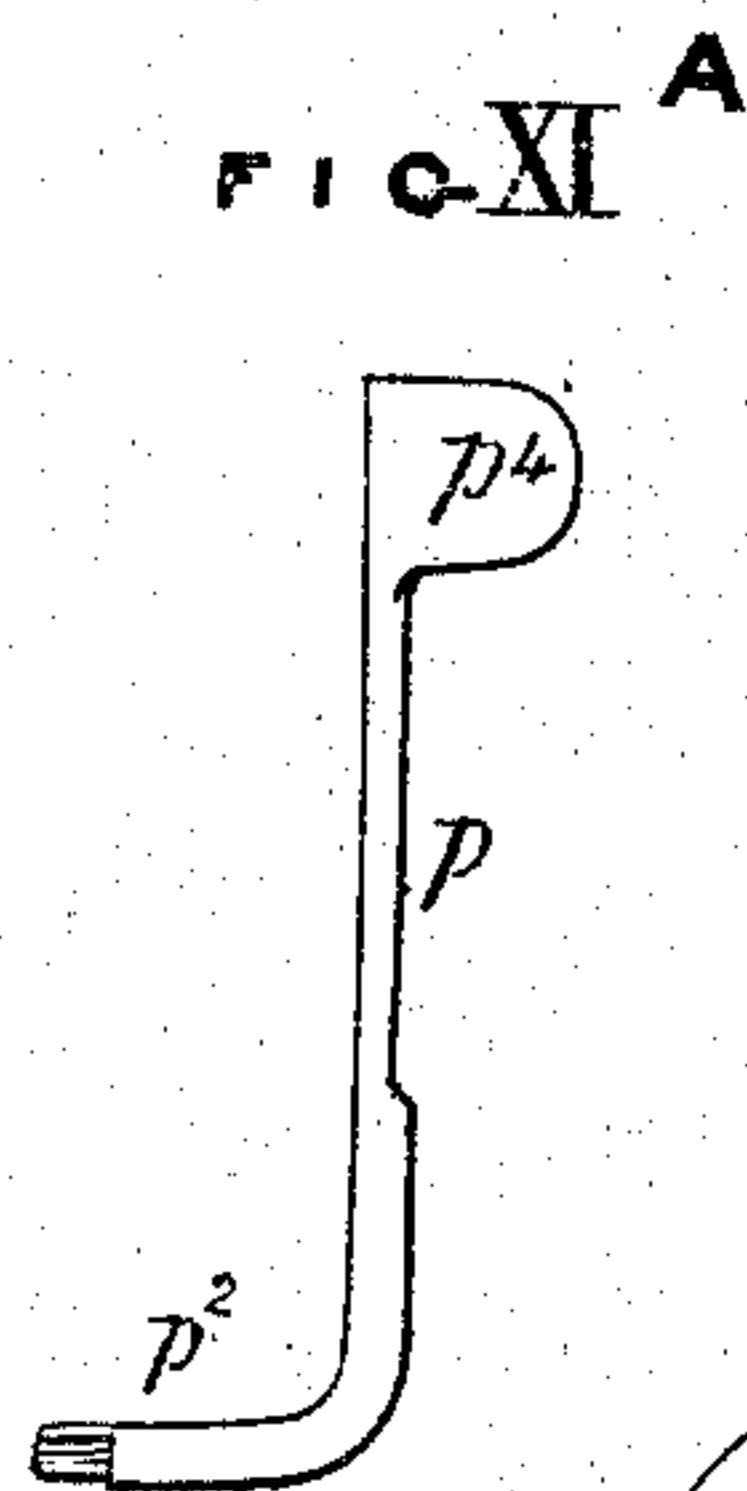
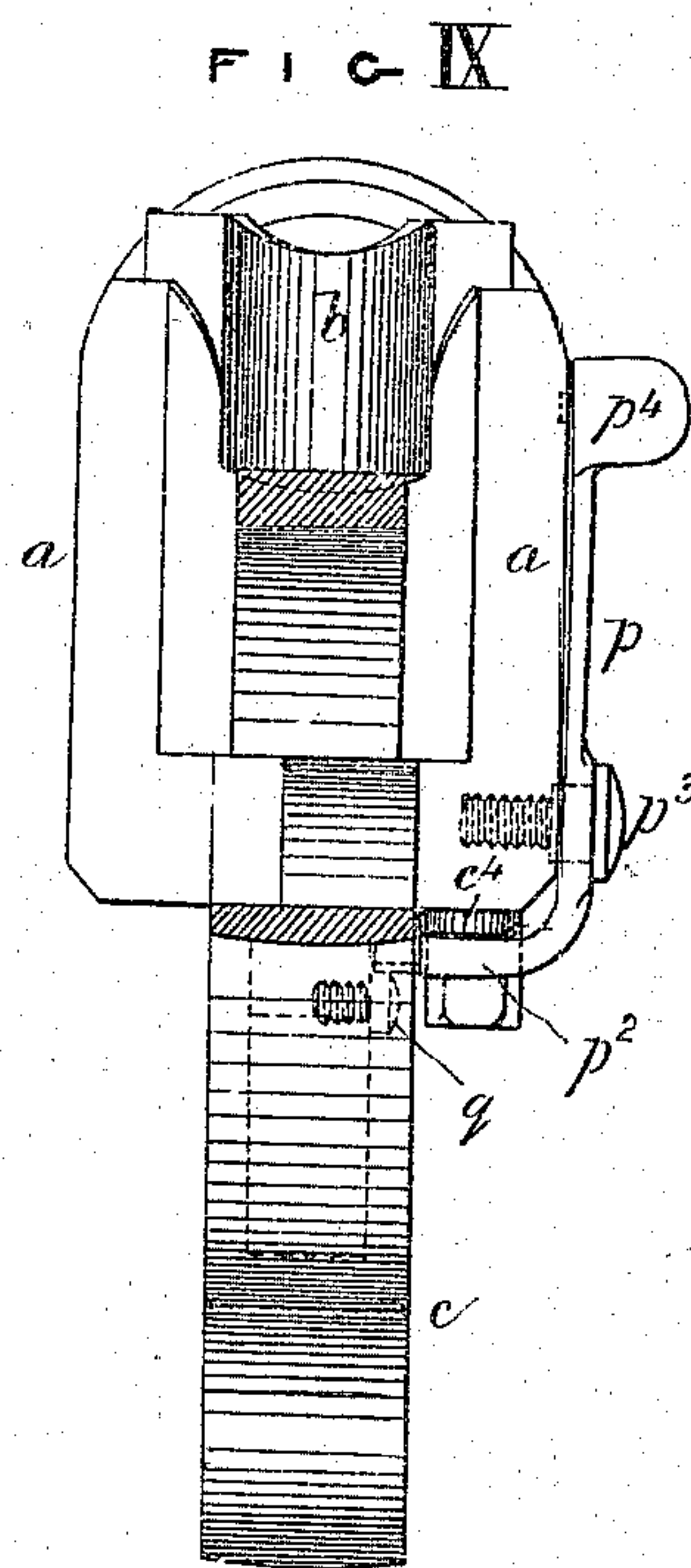
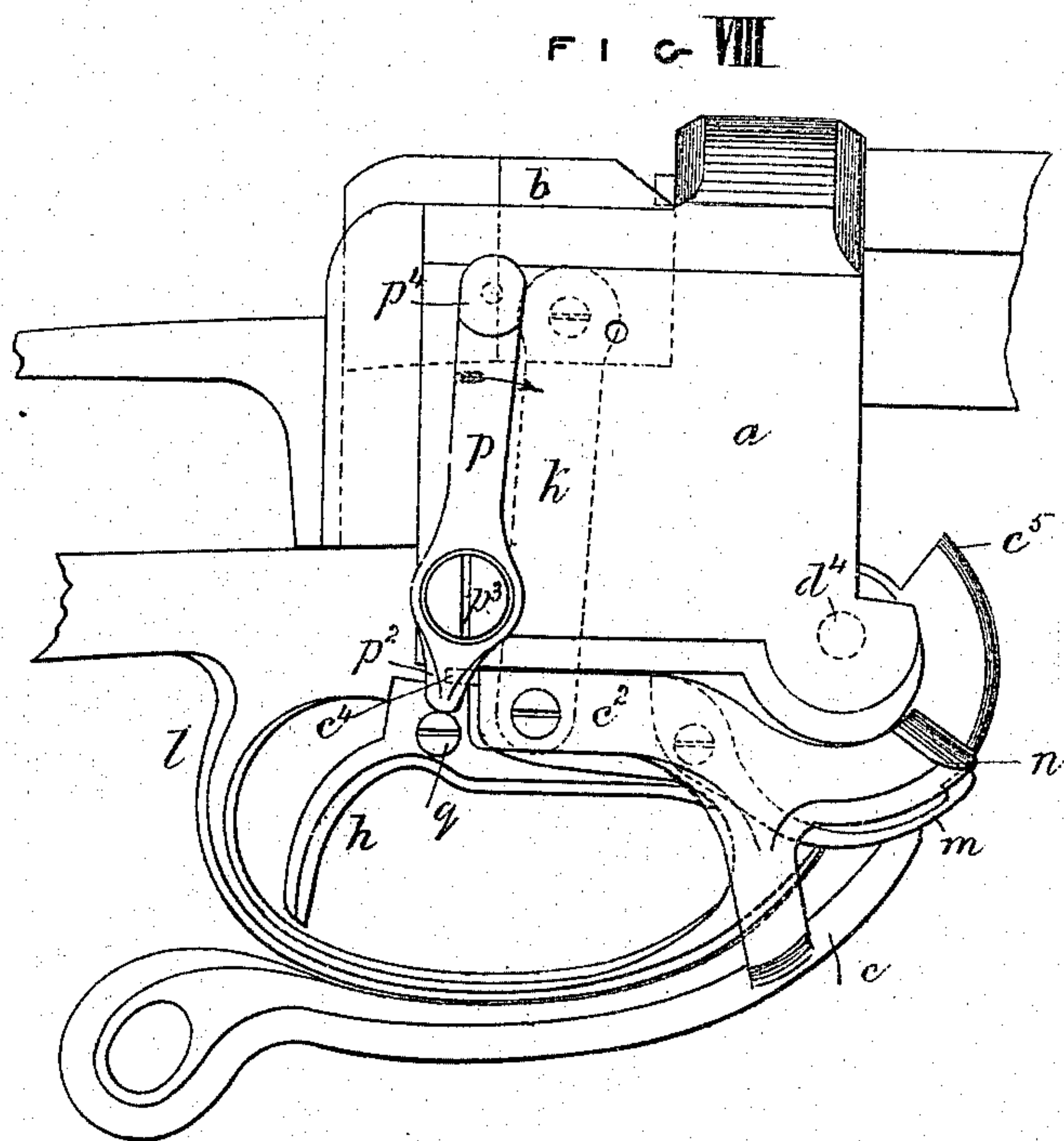
Witnesses,

Wm. J. Bryan
Alfred Bryan

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Westley Richards.

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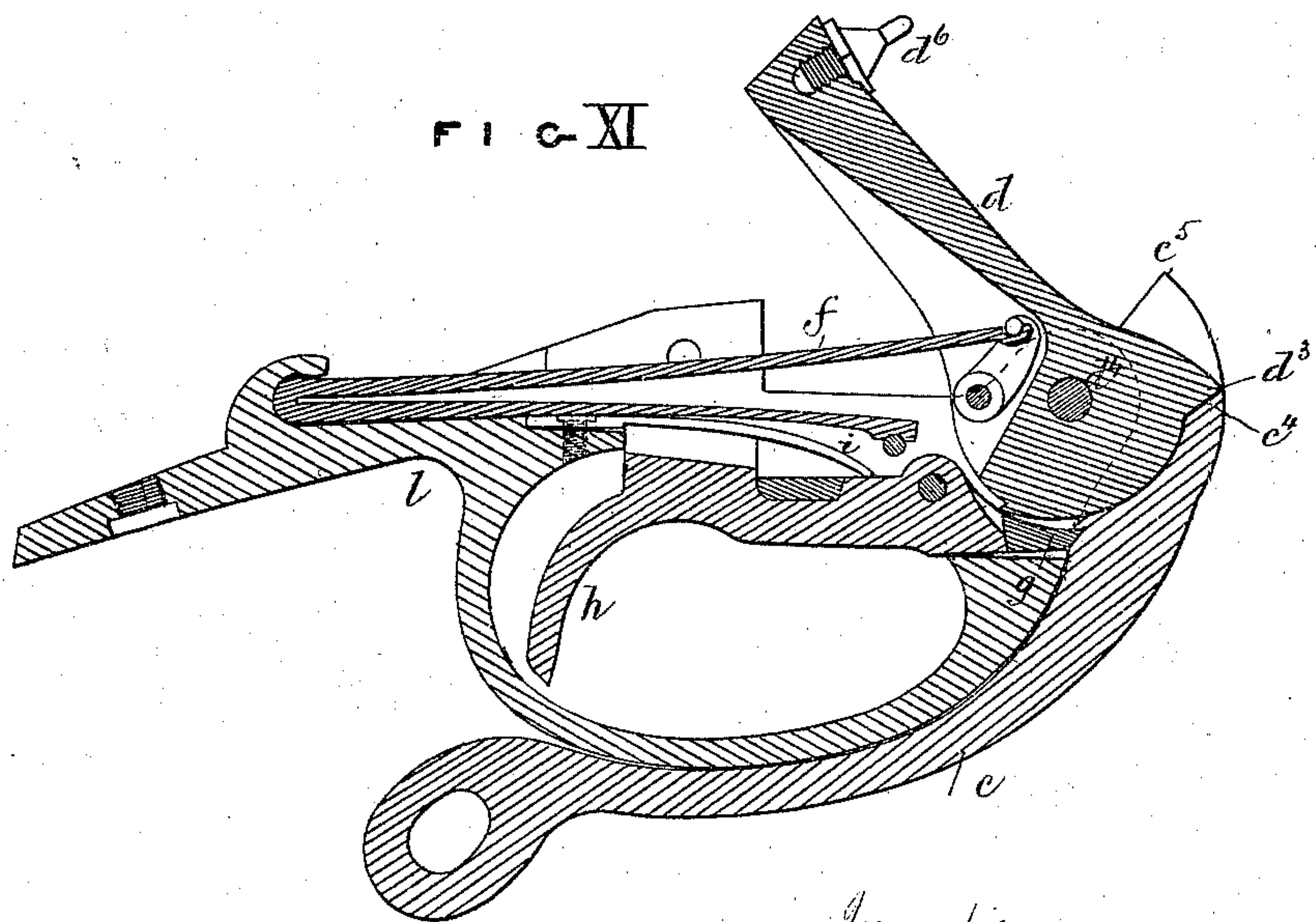
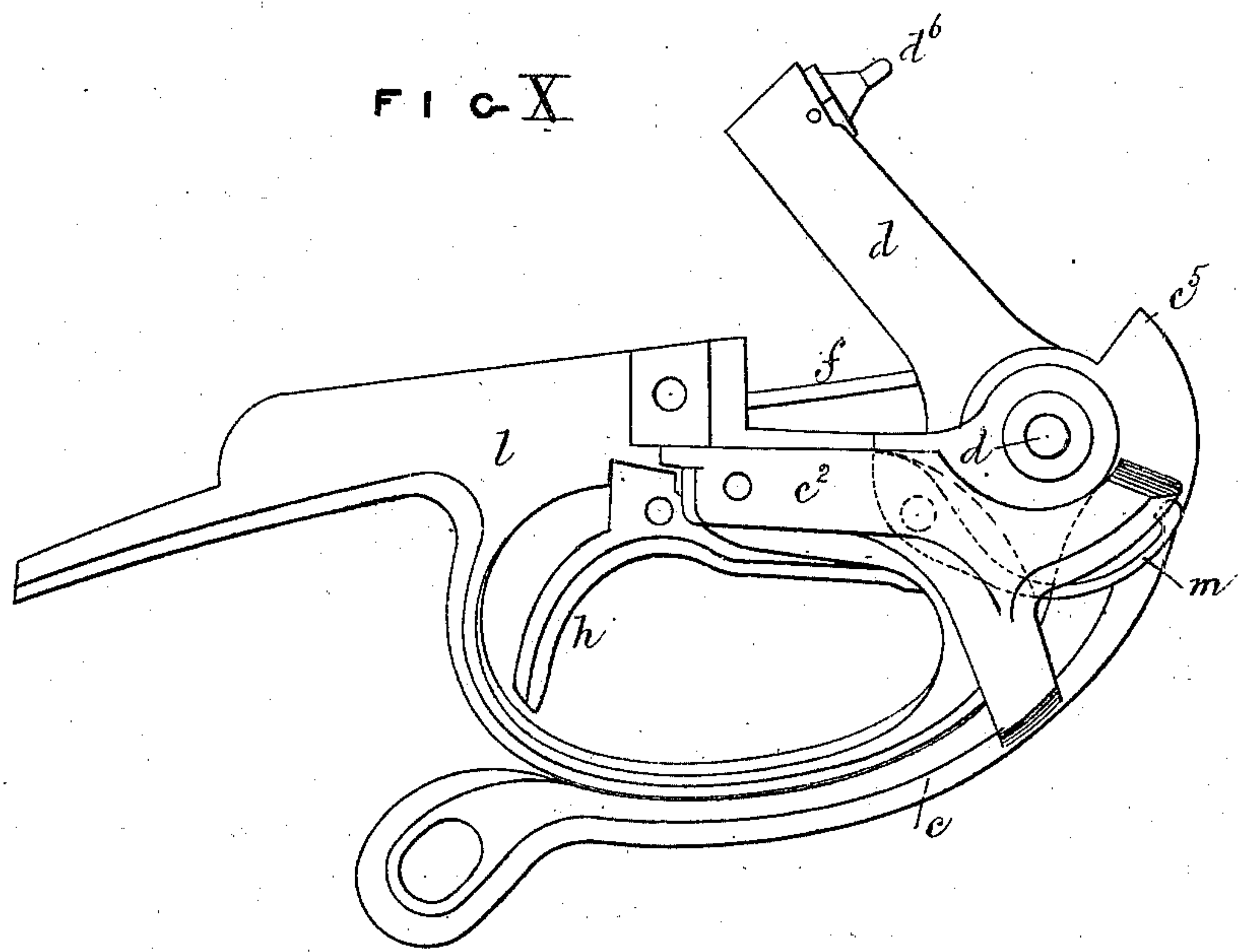
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Witnesses.

Alfred Bryan

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UNITED STATES PATENT OFFICE.

WESTLEY RICHARDS, OF BIRMINGHAM, ENGLAND.

IMPROVEMENT IN BREECH-LOADING FIRE-ARMS.

Specification forming part of Letters Patent No. **139,422**, dated May 27, 1873; application filed May 2, 1873.

To all whom it may concern:

Be it known that I, WESTLEY RICHARDS, of Birmingham, in the county of Warwick, England, gun manufacturer, have invented certain Improvements in Breech-Loading Fire-Arms, of which the following is a specification:

My invention consists of the improvements hereinafter described, and illustrated in the accompanying drawings, in breech-loading fire-arms, in which the breech is opened and closed by a vertical sliding block; and my said improvements principally consist in combining with the said sliding block the cocking, discharging, and ejecting mechanism, hereinafter described. A part of my improvements is also applicable to other breech-loading fire-arms.

Figure 1 represents in side elevation, Fig. 2 in end elevation, Fig. 3 in section, and Fig. 4 in plan, a vertical sliding-block gun, containing my improvements; Fig. 5 represents the trigger-guard and cocking and discharging mechanism carried by it, detached from the body of the gun; Fig. 6 represents the sliding block detached; and Fig. 7 represents the sear detached.

The same letters indicate the same parts in Figs. 1 to 7.

a is the body of the gun, in an opening or mortise in which the vertical sliding block *b* works, the raising of the said block into the position represented closing the breech, and the depressing of the said block opening the breech for loading. The said block *b* is hollow, and the hammer strikes through the hole *b*² in front of the block to ignite the cartridge. *c* *c*² is the hand-lever for actuating the sliding block *b*, for cocking the hammer *d*, and for operating the extractor *e*. The part *c*² of the hand-lever is cranked and is situated at the back of the body *a*, while the other part or handle end *c* is situated at the side of the body. The cranked part *c*² of the hand-lever is forked at *c*³, and between the forked part a shoulder, *d*³, on the tumbler *d*² of the hammer *d* works. *d*⁴ is the axis on which the hammer *d* and hand-lever *c* *c*² turn. By means of the strong spring *d*⁵, fixed on the trigger-guard *l*, the hand-lever is maintained in its raised and depressed positions. The main spring *f* is

connected to the tumbler of the hammer *d* by a swivel, as represented; *g* is the sear, engaging with the full cock, bent in the tumbler *d*² of the hammer *d*; *h* is the trigger, and *i* is the sear and trigger spring. The sear is fitted to the trigger by means of a rib thereon passing through a slot in the sear, the sear and trigger being connected together by the pin or axis on which they turn. The hammer *d* is cocked on the depression of the hand-lever to open the breech by means of the shoulder *c*⁴ on the cranked part *c*² of the hand-lever bearing against the shoulder *d*³ on the tumbler *d*². The hand-lever is connected to the vertical sliding block *b* by means of the link *k*. The block *b*, with its connecting-link, is represented in Fig. 6. The extractor *e*, which turns on the center *e*², is provided at back with a nearly horizontal arm, *e*³, against which, on the depressing of the hand-lever, the projecting part *c*⁵ of the cranked end of the said hand-lever strikes and thereby gives a forward motion to the said extractor. (See Figs. 2 and 3.) The hammer is furnished with a movable nose, *d*⁶, screwed into the head of the hammer. The hand-lever *c* *c*² and its spring *d*⁵, and the hammer *d* with its main-spring, sear, and trigger, are carried by the trigger-guard *l*, which is made of a box form to receive the said parts, so that the removal of the trigger-guard from the body of the gun also removes the cocking, discharging, and actuating mechanism of the gun, as represented in Fig. 5.

The action of the gun is as follows: The several parts being in the positions represented in Figs. 1, 2, and 3, the breech is closed and the gun is ready for discharge. On pulling the trigger *h* to discharge the gun the sear *g* is liberated from the bent-in tumbler *d*² of the hammer *d*, and the said hammer is raised in the hollow block *b* by the action of the main-spring *f*, and its nose *d*⁶, striking through the hole *b*² in the said block *b*, ignites the cartridge and discharges the gun. When the gun has been discharged the shoulder *d*³ on the tumbler is in contact with the shoulder *c*⁴ on the hand-lever.

In order to load the gun the thumb-plate end *c* of the hand-lever is pressed down in the direction of the arrow, Fig. 1. The vertical

sliding block b is thereby depressed in the body a and the breech opened, the cranked part c^2 of the hand-lever at the same time cocking the hammer d by the action of the shoulders $c^4 d^3$, the said hammer being held in its cocked position by the sear g taking into the bent in the tumbler of said hammer. As soon as the block b has been fully depressed to open the breech the projecting part c^5 of the cranked end c^2 of the hand-lever operates upon the arm e^3 of the extractor e , which is thereby urged forward and by its motion extracts the exploded cartridge-case from the barrel. After the introduction of a fresh cartridge into the barrel the hand-lever c is raised and fixed in its raised position under the guard by the spring d^5 ; the block b is thereby raised in the body a and the breech closed, leaving the hammer d cocked ready for discharge, the several parts occupying the respective positions represented in the drawings.

Instead of working the sliding block and the moving parts of the gun by means of a lever on the side of the shoe or body, as before described and illustrated, the same may be effected by means of a lever on the under side of the trigger-guard. In this arrangement the cranked part of the hand-lever is dispensed with and the said lever is furnished with a nearly horizontal arm to which the link of the sliding block is connected.

This modification of my invention is illustrated in side elevation, in Fig. 8, and end elevation, in Fig. 9. Fig. 10 represents, in side elevation, and Fig. 11, in section, the trigger-guard carrying the cocking and discharging mechanism, detached from the body of the gun. Fig. 10^a represents the hand-lever and horizontal arm detached from the gun. In the said Figs. 8, 9, 10, and 11 c is the hand-lever under the trigger-guard l , and c^2 is the horizontal arm on the said lever, to which the link k of the sliding block b is connected. The spring m , for holding the hand-lever in its raised and depressed positions, is situated on the side of the trigger-guard l , the free end of the said spring bearing upon the part u of the said arm c^2 .

The other parts of the gun are nearly the same as in the arrangement first described, and corresponding parts are marked with the same letters of reference.

In order to lock the hand-lever c in its raised position under the trigger-guard, I use the locking-bolt $p p^2$, shown separately in Fig. 11^a. The said locking-bolt consists of a cranked

lever turning on the center p^3 , the cranked end p^2 working under the body a of the gun. On the extreme end of the horizontal arm c^2 of the hand-lever c is a lip, c^4 , under which the cranked arm p^2 of the locking-bolt may be turned. When the locking-bolt $p p^2$ is turned into the position represented in Figs. 8 and 9, its cranked arm p^2 is engaged under the lip c^4 of the arm c^2 , and the hand-lever c is thereby locked in its raised position and the accidental opening of the gun prevented. By moving the locking-bolt in the direction of the arrow, by pressure on the head p^4 the cranked arm p^2 of the bolt is removed from under the lip c^4 of the horizontal arm c^2 . The hand-lever c is thereby released and may be depressed to open the gun. The locking-bolt $p p^2$ and arm $c^2 c^4$ may be applied to other guns in which a hand-lever under the guard is used for opening and closing the gun—such, for example, as hinged drop-block guns. The locking-bolt may also be employed to prevent the accidental pulling of the trigger. For this purpose a pin or stud, q , is fixed on the trigger h , opposite which stud the extreme end of the cranked arm c^2 of the locking-bolt is brought, when the said locking-bolt is turned into the position represented in Figs. 8 and 9, and the pulling of the trigger thereby prevented.

Having now described the nature of my invention, and the manner in which the same is to be performed, I wish it to be understood that I do not limit myself to the precise details herein described and illustrated, as the same may be varied without departing from the nature of my invention; but

I claim as my invention—

1. The combination herein described, with the vertically sliding breech-block and hand-lever linked to the same, of the vibrating hammer and tumbler mounted on the axis of the hand-lever, and the vibratory extractor, said parts being constructed and arranged together for operation substantially as shown and set forth.

2. In combination with the hand-lever provided with a lip on its horizontal arm, as described, the cranked lever-bolt for fastening said hand-lever under the trigger-guard, substantially as shown and set forth.

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Witnesses:

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HENRY SKERRETT,

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