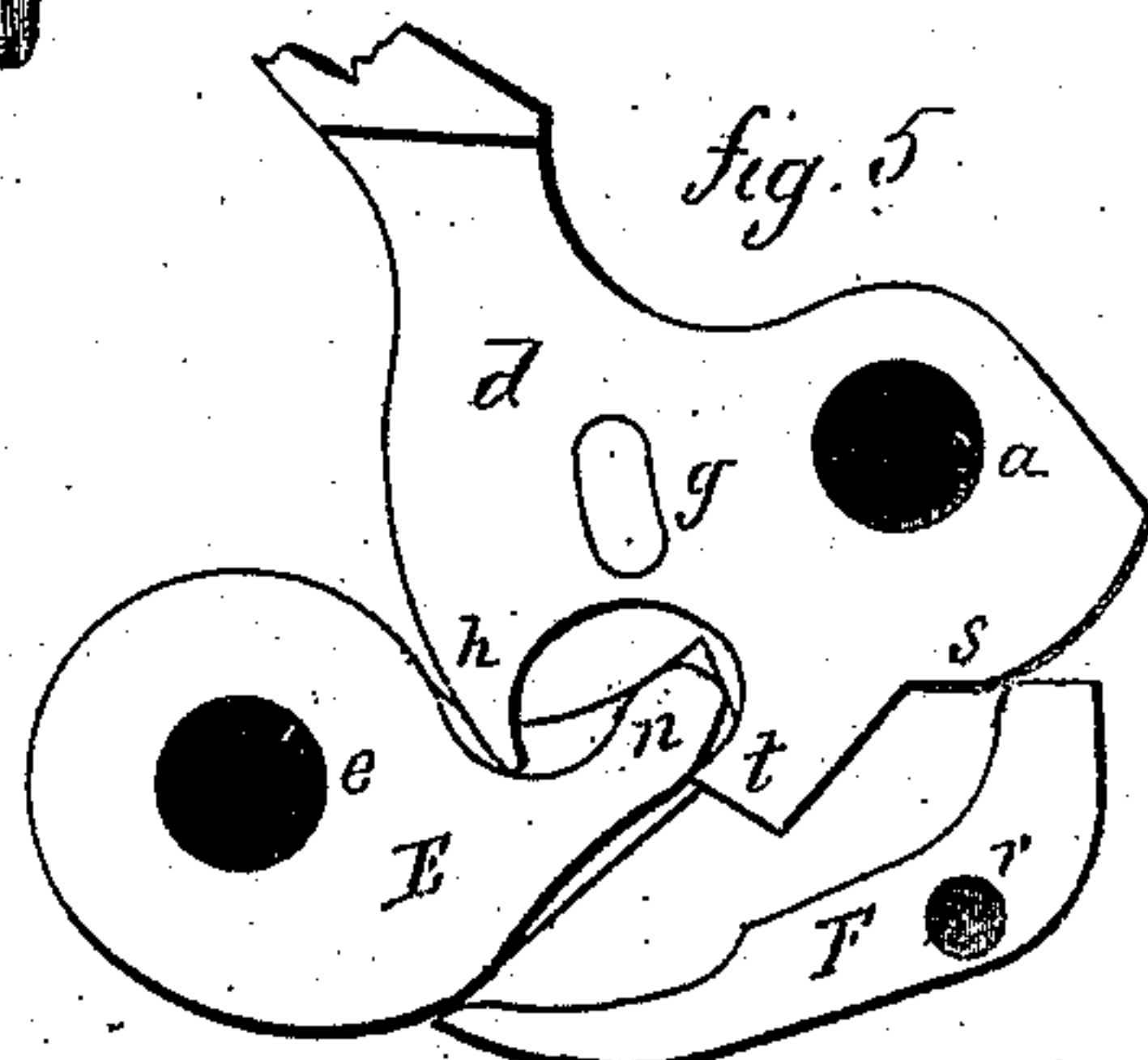
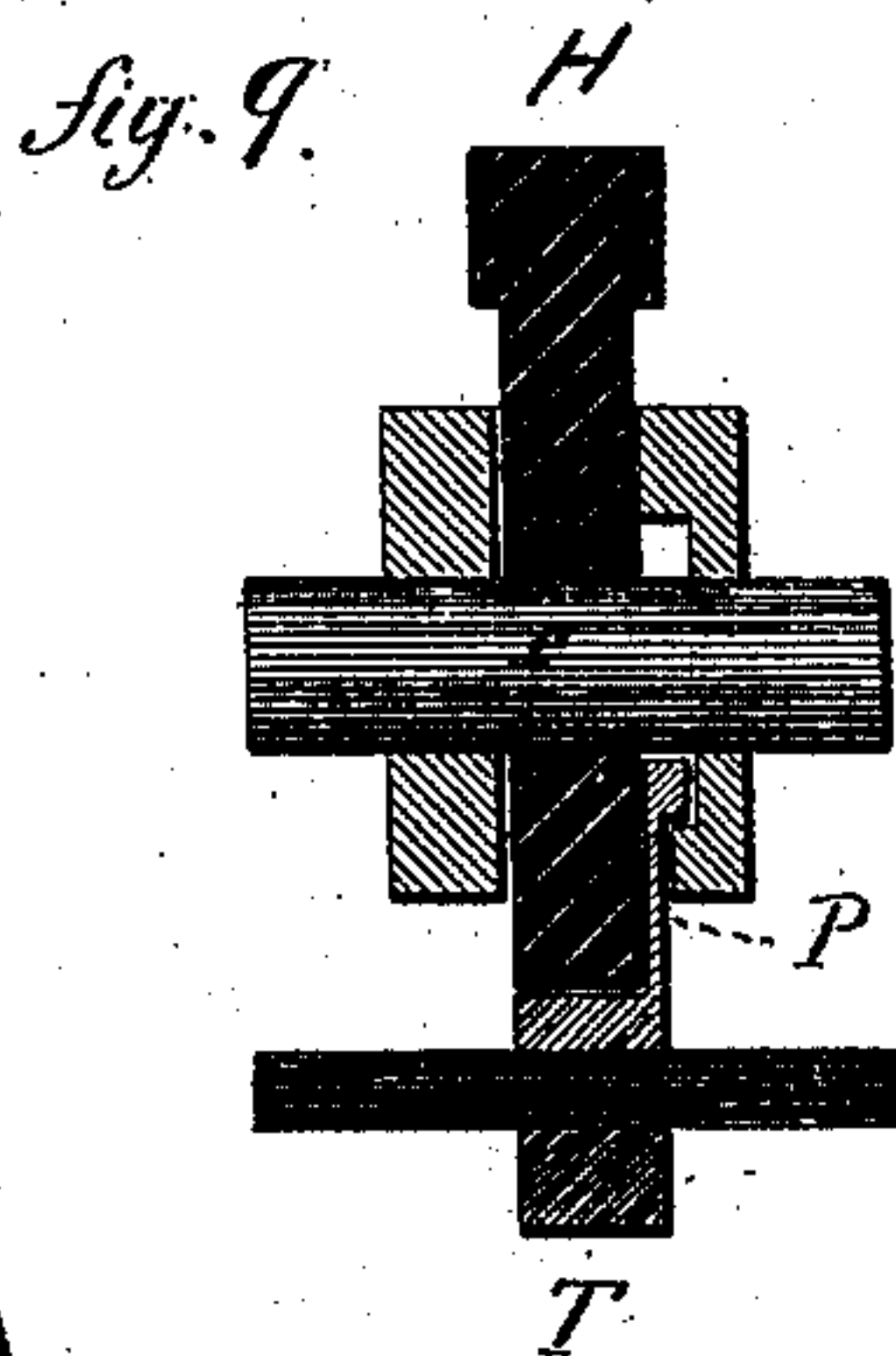
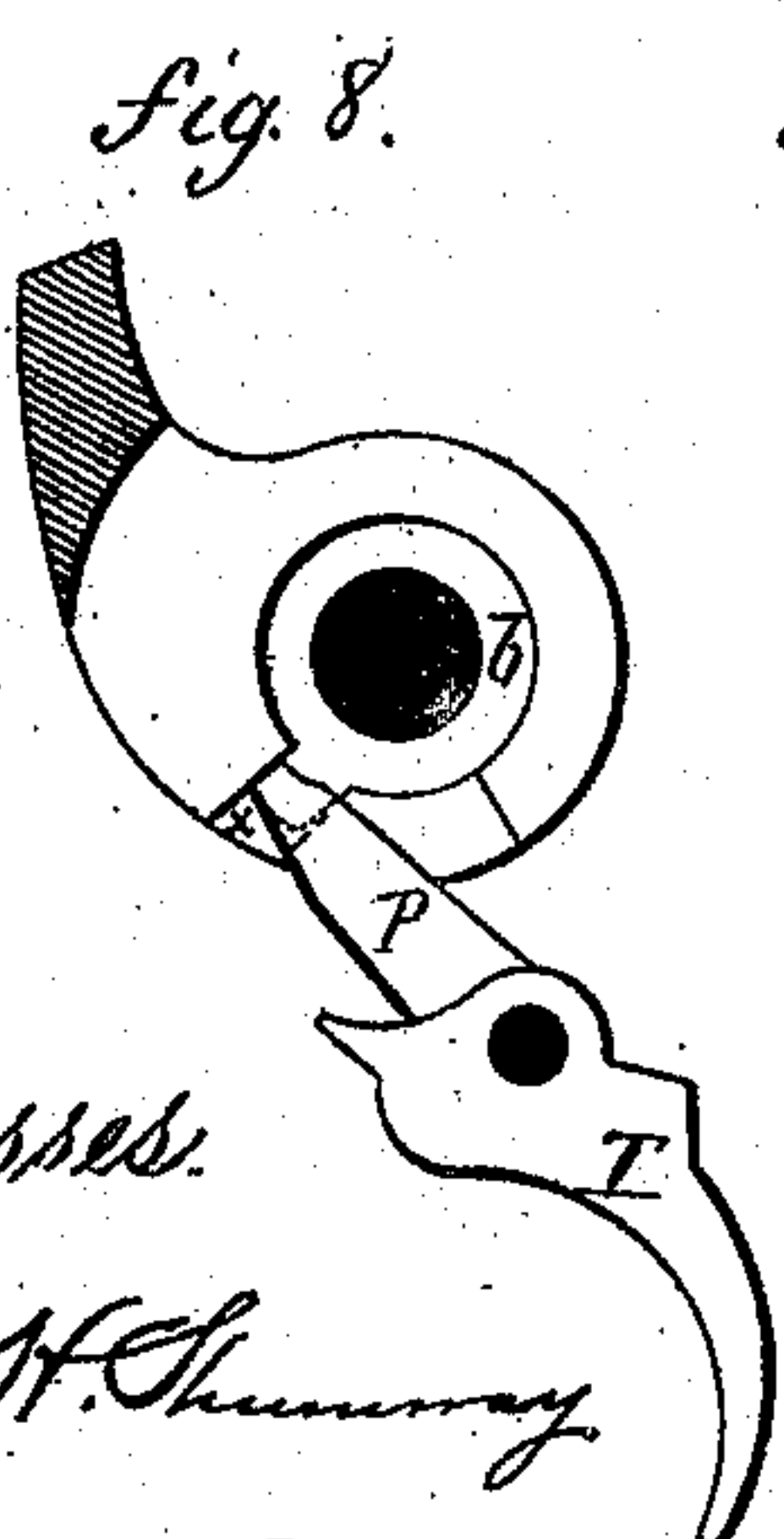
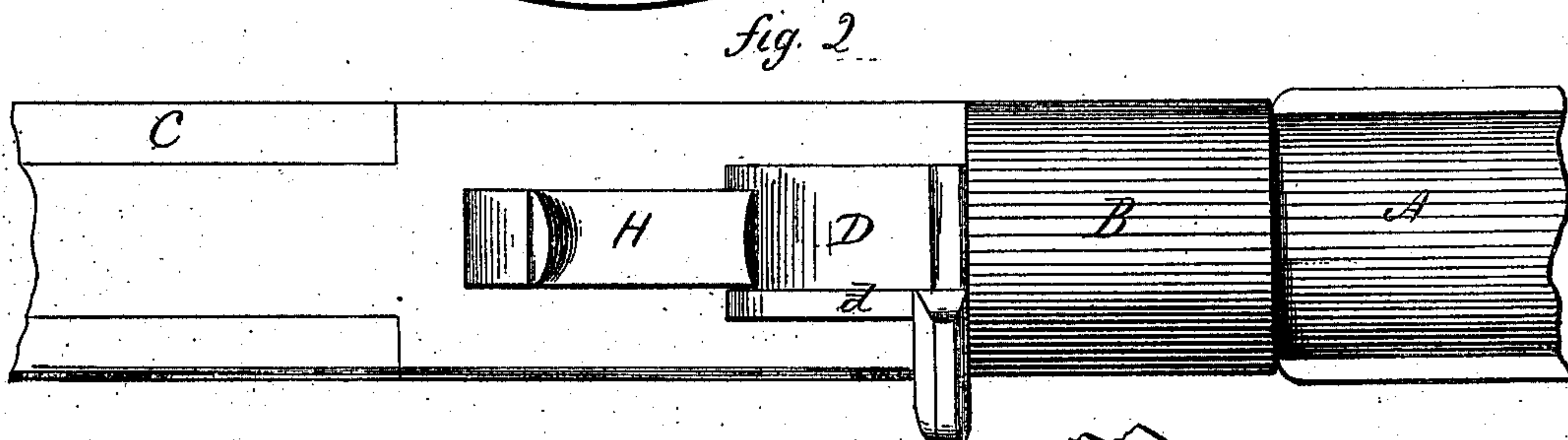
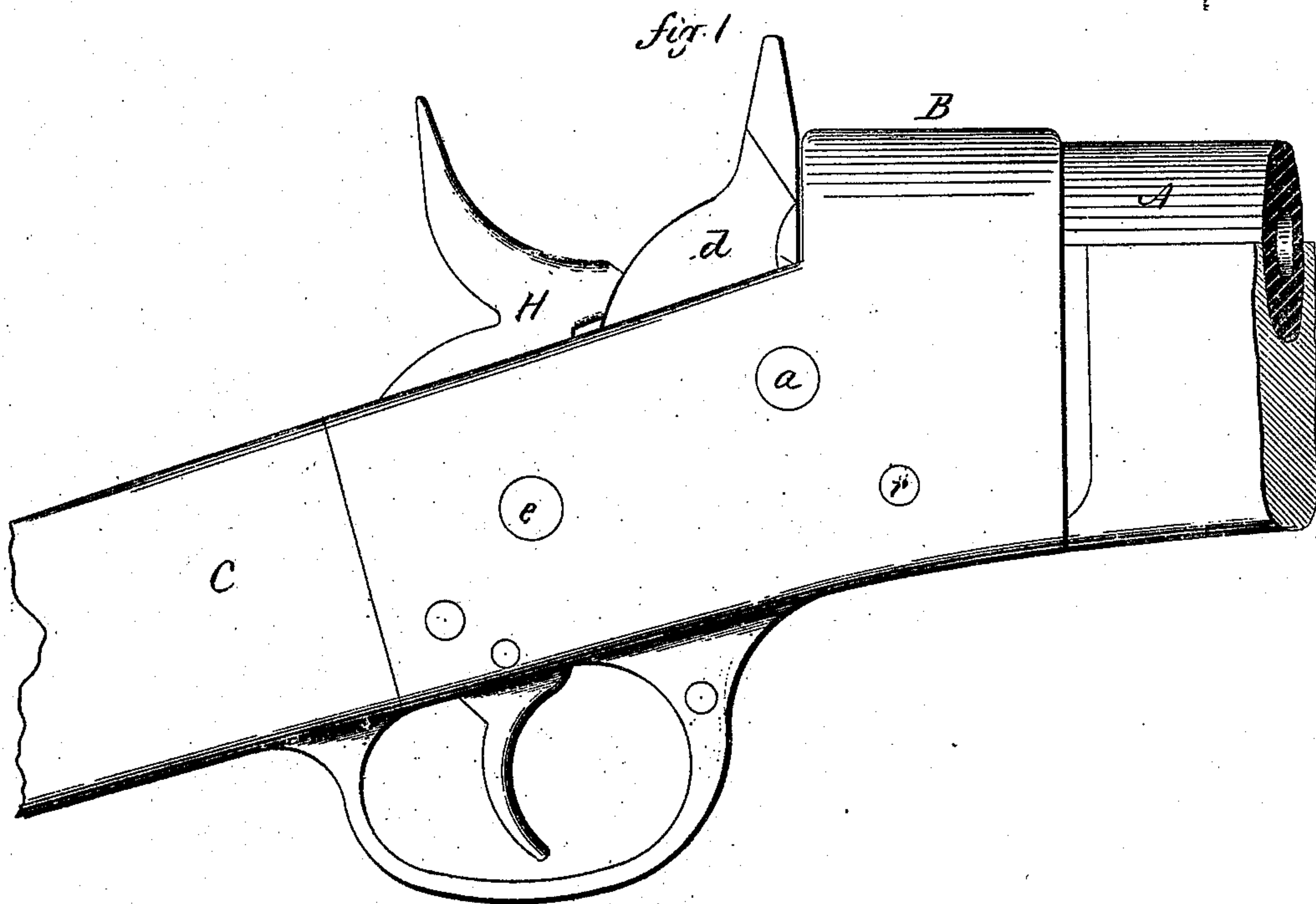


F. W. TIESING.
BREECH-LOADING FIRE-ARMS.

No. 191,197.

Patented May 22, 1877.



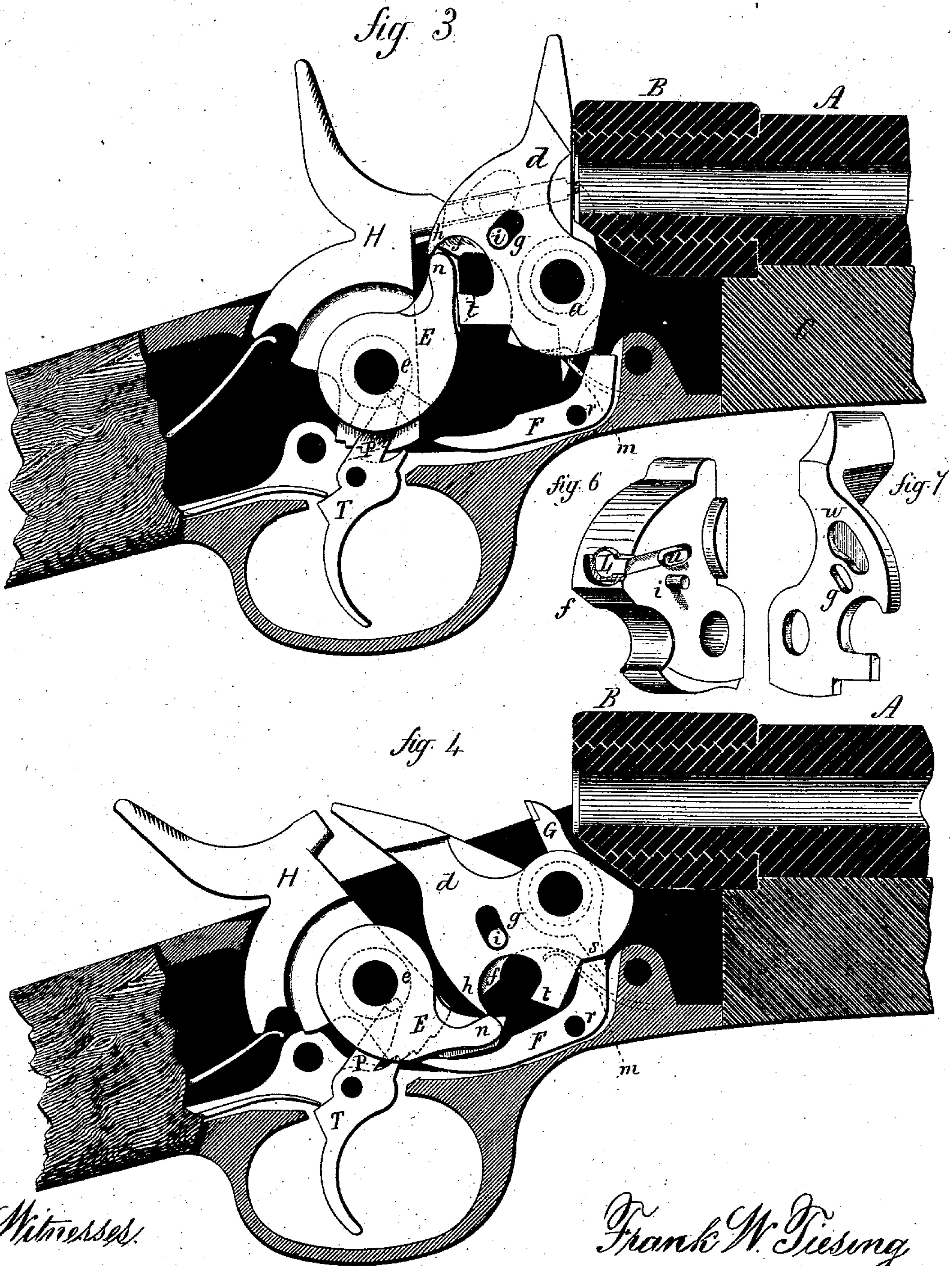
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UNITED STATES PATENT OFFICE.

FRANK W. TIESING, OF NEW HAVEN, CONNECTICUT, ASSIGNOR TO ELI WHITNEY, OF SAME PLACE.

IMPROVEMENT IN BREECH-LOADING FIRE-ARMS.

Specification forming part of Letters Patent No. 191,197, dated May 22, 1877; application filed January 16, 1877.

To all whom it may concern:

Be it known that I, FRANK W. TIESING, of New Haven, in the county of New Haven and State of Connecticut, have invented a new Improvement in Breech-Loading Fire-Arms; and I do hereby declare the following, when taken in connection with the accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a side view; Fig. 2, a top view; Fig. 3, a longitudinal section with the parts in their normal condition; Fig. 4, a longitudinal section with the parts set as for charging the arm; Figs. 5, 6, 7, 8, and 9, detached views.

This invention relates to an improvement in that class of fire-arms in which the breech-piece is arranged to swing backward and downward in opening.

The invention consists in the combinations of mechanism for operating the arm, as fully hereinafter described, and recited in the several clauses of claim.

A is the barrel, attached to the frame B and to the stock C, in the usual manner, the barrel being open at the breech, substantially as in other breech-loading fire-arms of this class. D is the breech-piece, hung upon a pivot, *a*, and so as to turn freely backward and downward, in the usual manner. On the side of the breech-piece, and upon the same pivot, a lever, *d*, is arranged for operating the breech-piece and locking-shoulder, and substantially such a lever as is found in the arm known as the "Laidley & Emery."

In rear of the breech-piece, and below it, upon a pivot, *e*, the locking-shoulder E is hung. The breech-piece is constructed with a bearing-surface, *f*, which, when the breech is closed, rests upon the nose or end of the locking-shoulder, as seen in Fig. 3; but when the locking-shoulder is turned forward and downward, as in Fig. 4, out of the way of the bearing *f* in the breech-piece, then the breech-piece may be opened, as seen in Fig. 4; but in the position seen in Fig. 3 the breech-piece is firmly held in its closed position. To thus move the locking-shoulder and breech-piece in opening and closing, the lever *d* is applied. Through the lever *d* a slot, *g*, is made, and

into which, from the breech-piece, a stud, *i*, extends, this slot being substantially concentric with the pivot on which the lever is hung, and the relative position of the stud *i* in the slot is such that when the breech-piece is closed the lever may be turned backward a short distance before the lever will come in contact with the stud to act upon the breech-piece; and during this movement of the lever independent of the breech-piece, a cam, *h*, on the lever engages a corresponding part, *n*, on the locking-shoulder, and turns that forward and downward until the end of the cam will pass below the bearing-surface *f* on the breech-piece. At that time the end of the slot in the lever will come in contact with the stud *i*, and from that time the lever, breech-piece, and locking-shoulder will move together, the cam *h* on the lever carrying the locking-shoulder always in advance of the breech-piece until fully opened, as seen in Fig. 4.

A spring, *m*, acts upon the under surface of the breech-piece when near its open position, which tends to throw the breech-piece down in advance of the lever, until the stud *i* will arrive at the opposite end of the slot *g*.

It will be understood that before the breech is to be opened the hammer should be turned back to full or partial cock.

A spring may be applied to the locking-shoulder, which will return it with the breech-piece when that is closed; but in order to make this movement of the locking-shoulder positive, a lever, F, is hung below the breech-piece and locking-shoulder upon a pivot, *r*, and as the locking-shoulder drops in opening, it presses down the longer arm of the lever F, and proportionately raises the shorter arm toward the lever *d*. Then, when the lever *d* begins its return, a cam, *s*, on the lever *d* below the pivot strikes the shorter arm of the lever F, and forces that downward, correspondingly raising the longer arm, which, in its turn, raises the locking-shoulder until the part *n* enters between the cam *h* and a projection, *t*, on the lever *d*, as seen in Fig. 5. From that time the projection *t* raises the locking-shoulder, and forces it upward beneath the bearing *f*, and rests beneath the forward surface of the locking-shoulder, as seen in Fig. 3, as a support for the locking-shoulder, to prevent its accidental turning.

The cartridge-extractor consists of a lever,

G, hung on the pivot of the breech-piece, and operating substantially as in the arm known as the "Whitney arm."

The hammer H is hung upon the same pivot as the locking-shoulder, the locking-shoulder being forked, as seen in Fig. 9, so that the hammer may hang upon the center of the pivot, or may be at one side, and is provided with the usual trigger, T, and a suitable main-spring.

In order to make the discharge of the arm impossible, except the lever and locking-shoulder should be in their places, a connection is made between the firing-pin and the lever d, as seen in Figs. 6 and 7.

The firing-pin L is arranged through the breech-piece for central or rim fire, as may be required, here shown as for central fire; and from the firing-pin a projection, u, extends through the side of the breech-piece into a corresponding cavity, w, in the lever, (see Figs. 6 and 7,) the relative position of the said recess w to the projection u being such that unless the lever be turned to its home position the projection u will strike the forward end of the cavity w before the point of the firing-pin will reach the primer, and therefore discharge would be impossible; but if it be very nearly closed, then the blow of the hammer on the firing-pin would tend to close the lever, and would usually do so; but in any case it insures the perfect locking of the breech-piece before explosion can take place.

As an auxiliary guard to secure the proper locking of the breech-piece, an arm, P, extends up from the trigger T, through a notch, x, in the locking-shoulder, into a recess, b. The spring holds this extension P in the recess x, as indicated in broken lines, Fig. 4; but when the trigger is pulled, as for discharging the arm, the locking-shoulder then being in place, the end of the arm P will be drawn down into the notch x, as seen in Fig. 8, thus forming a bearing upon which the locking-shoulder will rest, to prevent its being turned until the finger releases the trigger; then the end will turn up into the recess b, so that the locking-shoulder may be freely turned, and as the trigger cannot be pulled until the end of the arm P passes into the notch x, it follows that the discharge of the hammer cannot occur until the locking-shoulder be fully in its locking position, so that the end of the arm P will pass into the notch x.

I claim—

1. In a breech-loading fire-arm, the combination of the following elements: a breech-piece arranged to swing backward and downward in the arc of a circle in opening the breech; a locking-shoulder hung in rear of said breech-piece, and swinging forward and downward to release the breech-piece; a lever in connection with said breech-piece, and operating first to release the locking-shoulder, then to open the breech-piece, substantially as described.

2. In a breech-loading fire-arm, the combi-

nation of the following elements: a breech-piece arranged to swing backward and downward in the arc of a circle in opening the breech; a locking-shoulder hung in rear of said breech-piece, and swinging forward and downward to release the breech-piece; a lever in connection with said breech-piece, and operating first to release the locking-shoulder, then to open the breech-piece, and the said lever also constructed with a bearing-surface to support the said locking-shoulder when fully closed, substantially as described.

3. In a breech-loading fire-arm, the combination of the following elements: a breech-piece arranged to swing backward and downward in the arc of a circle in opening the breech; a locking-shoulder hung in rear of said breech-piece, and swinging forward and downward to release the breech-piece; a lever in connection with said breech-piece, and operating first to release the locking-shoulder, then to open the breech-piece, and the said lever also constructed with a bearing-surface to support the said locking-shoulder when fully closed, and an auxiliary lever working between the said lever and locking-shoulder, and operated by the said lever to bring the said lever and locking-shoulder into connection in the act of closing, substantially as described.

4. In a breech-loading fire-arm, the combination of the following elements: a breech-piece arranged to swing backward and downward in the arc of a circle in opening the breech; a locking-shoulder hung in rear of said breech-piece, and swinging forward and downward to release the breech-piece; a lever in connection with said breech-piece, and operating first to release the locking-shoulder, then to open the breech-piece, and the trigger extended into connection with the locking-shoulder, so as to form an auxiliary support for the locking-shoulder at the time of firing, substantially as described.

5. In a breech-loading fire-arm, the combination of the following elements: a breech-piece arranged to swing backward and downward in the arc of a circle in opening the breech; a locking-shoulder hung in rear of said breech-piece, and swinging forward and downward to release the breech-piece; a lever in connection with said breech-piece, and operating first to release the locking-shoulder, then to open the breech-piece; a hammer for the discharge of the arm, and the trigger extending into a recess in the locking-shoulder, and the locking-shoulder constructed with a notch opening into said recess, and so as to prevent the pulling of the trigger to release the hammer until the locking-shoulder is turned into the locking position, substantially as described.

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Witnesses:

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