

No. 606,972.

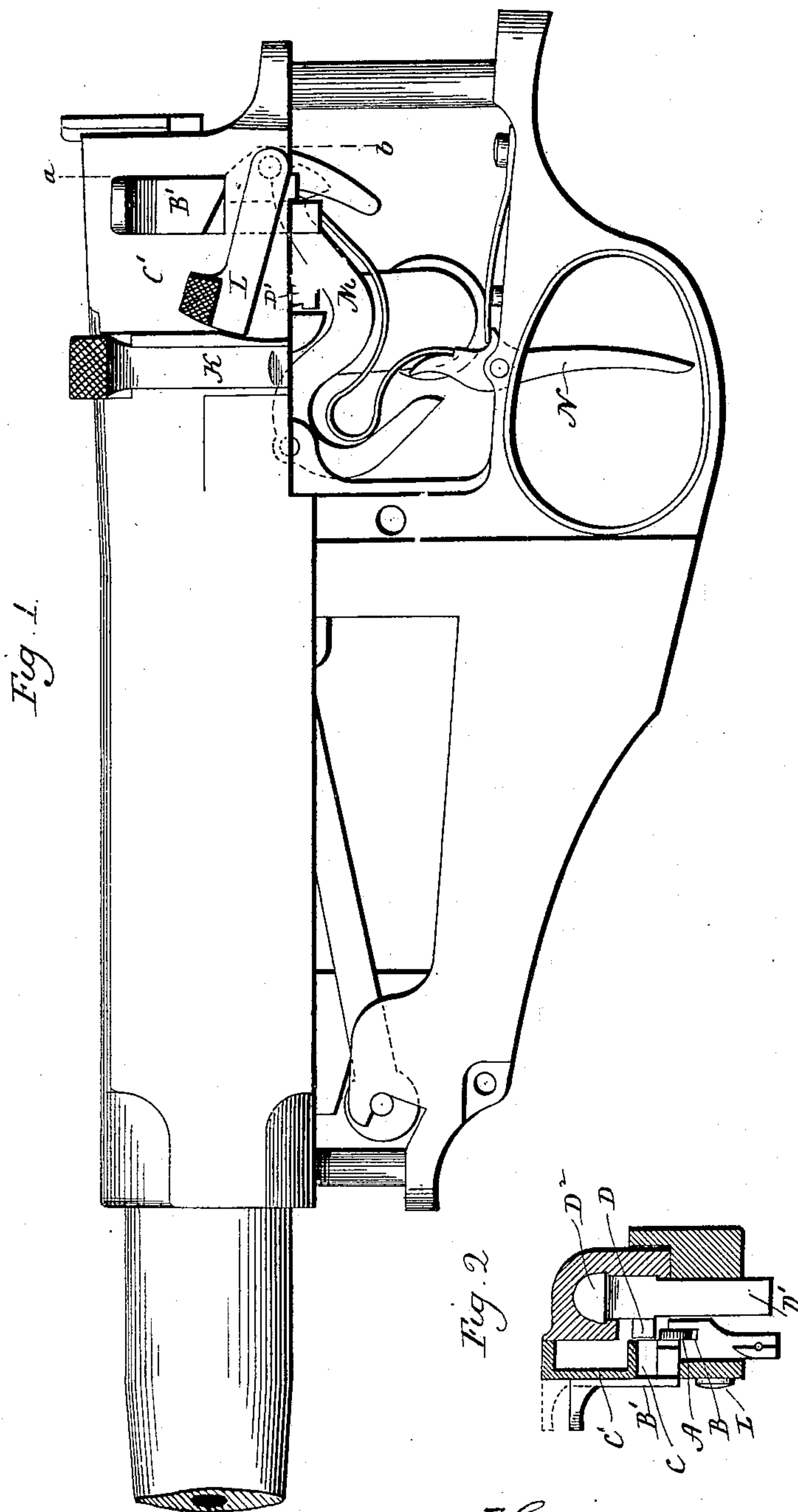
Patented July 5, 1898.

T. C. JOHNSON.
SAFETY DEVICE FOR BOLT GUNS.

(Application filed Dec. 27, 1897.)

(No Model.)

3 Sheets—Sheet 1.



Witnesses.
J. H. Murray.
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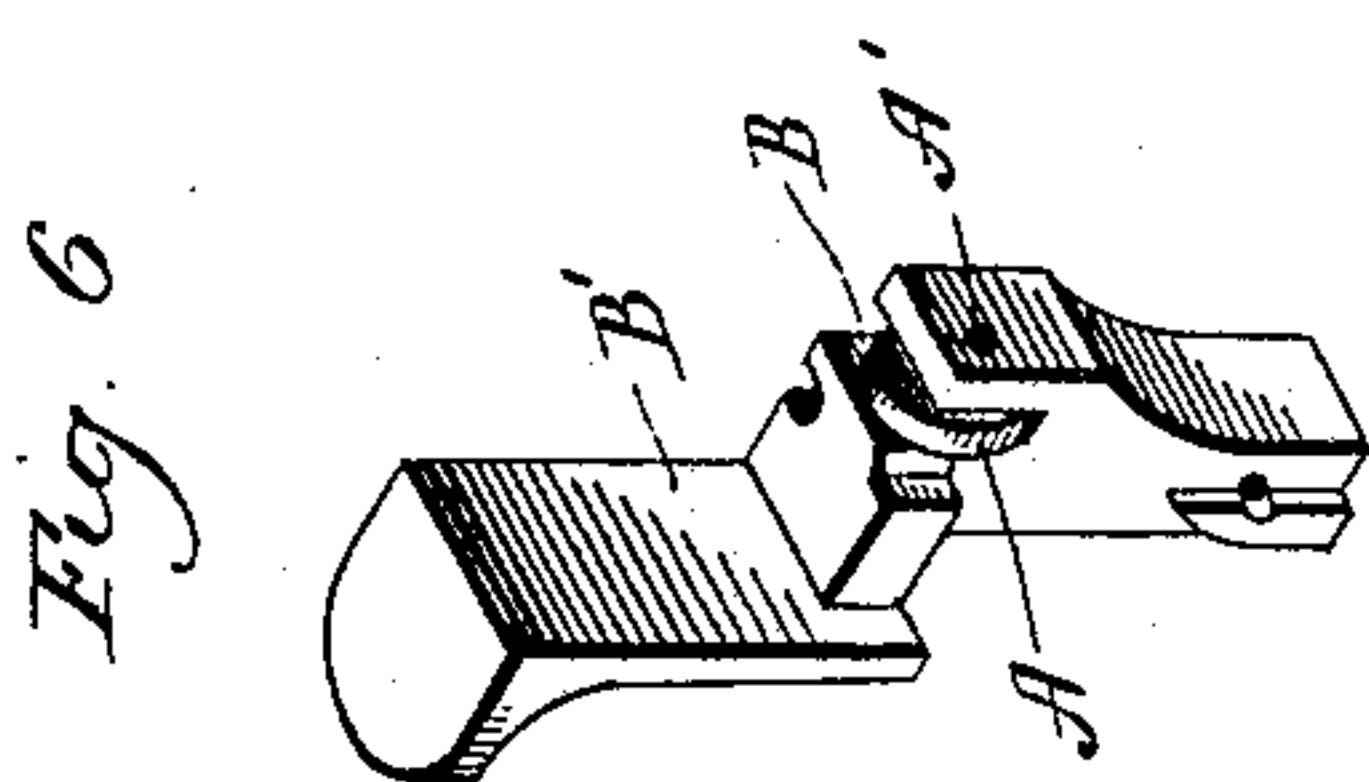
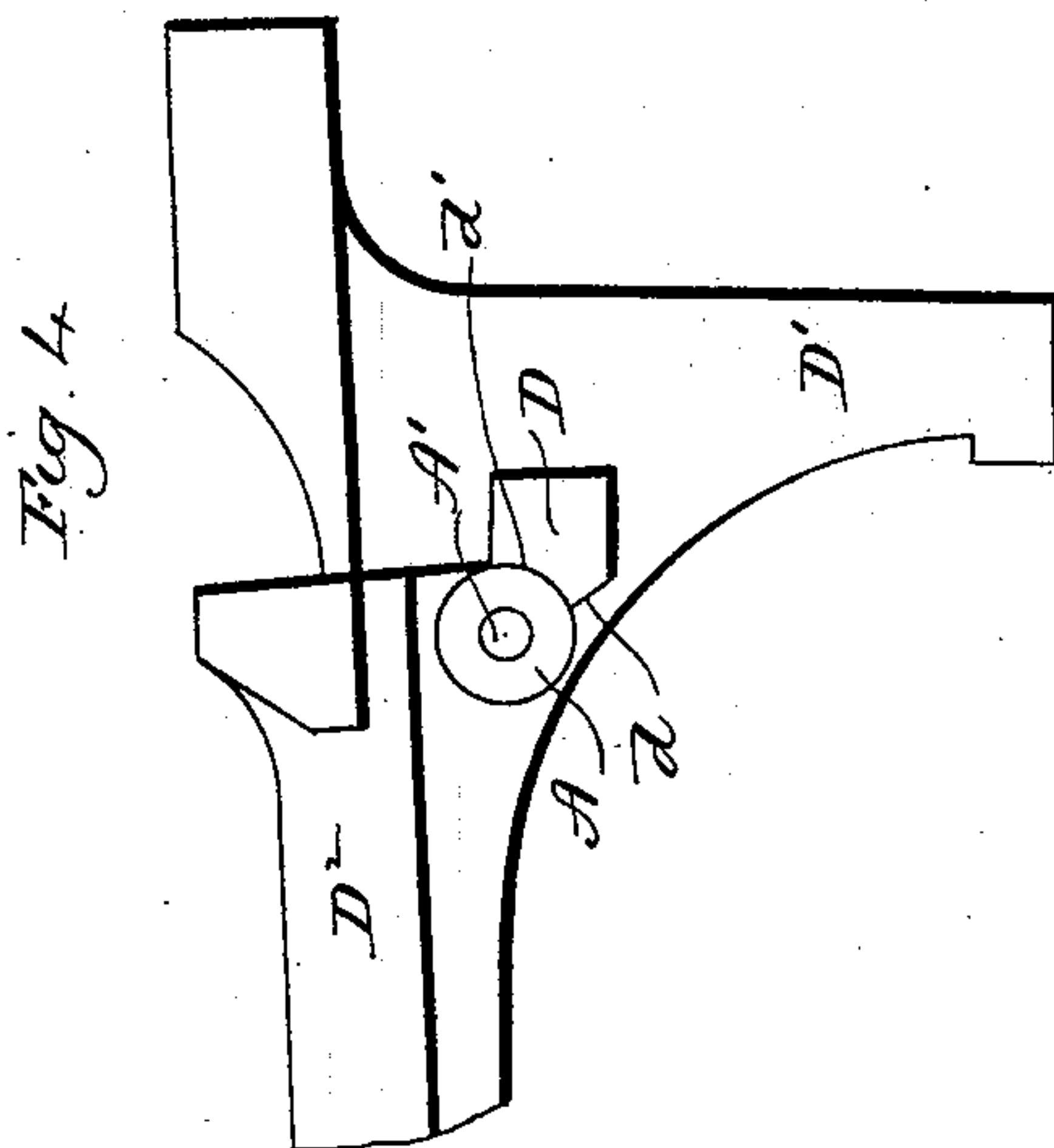
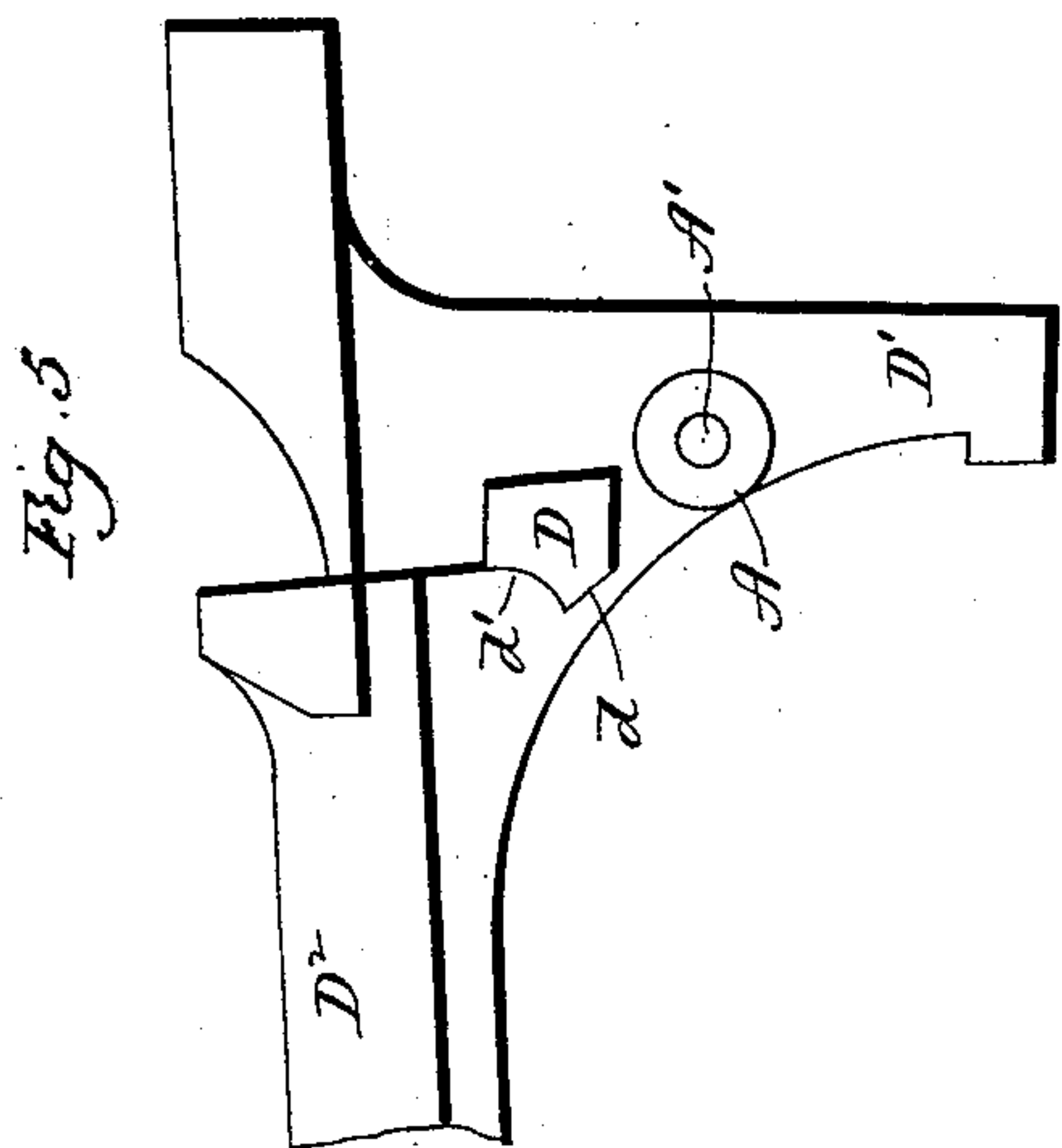
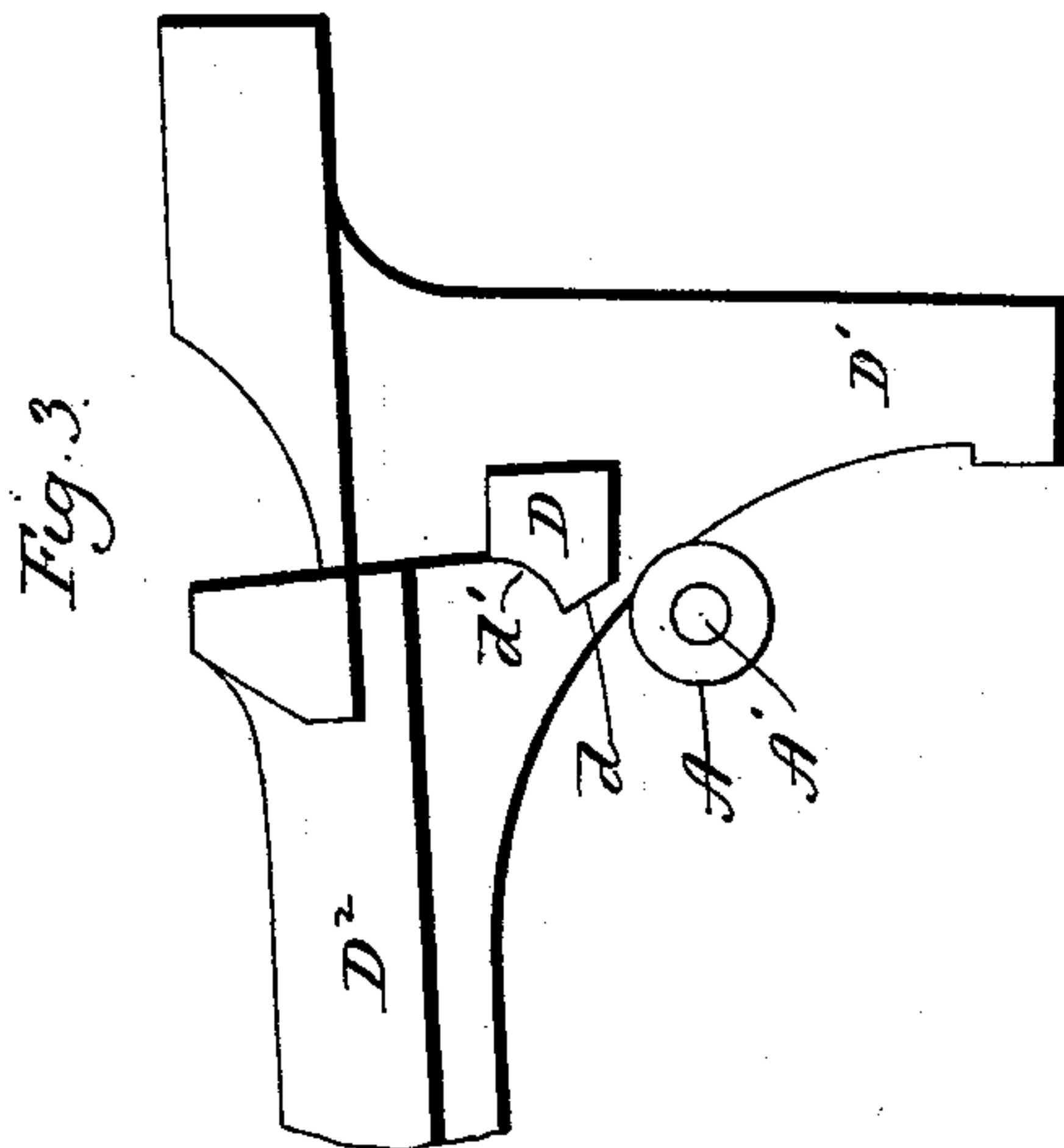
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3 Sheets—Sheet 2.



Witnesses.
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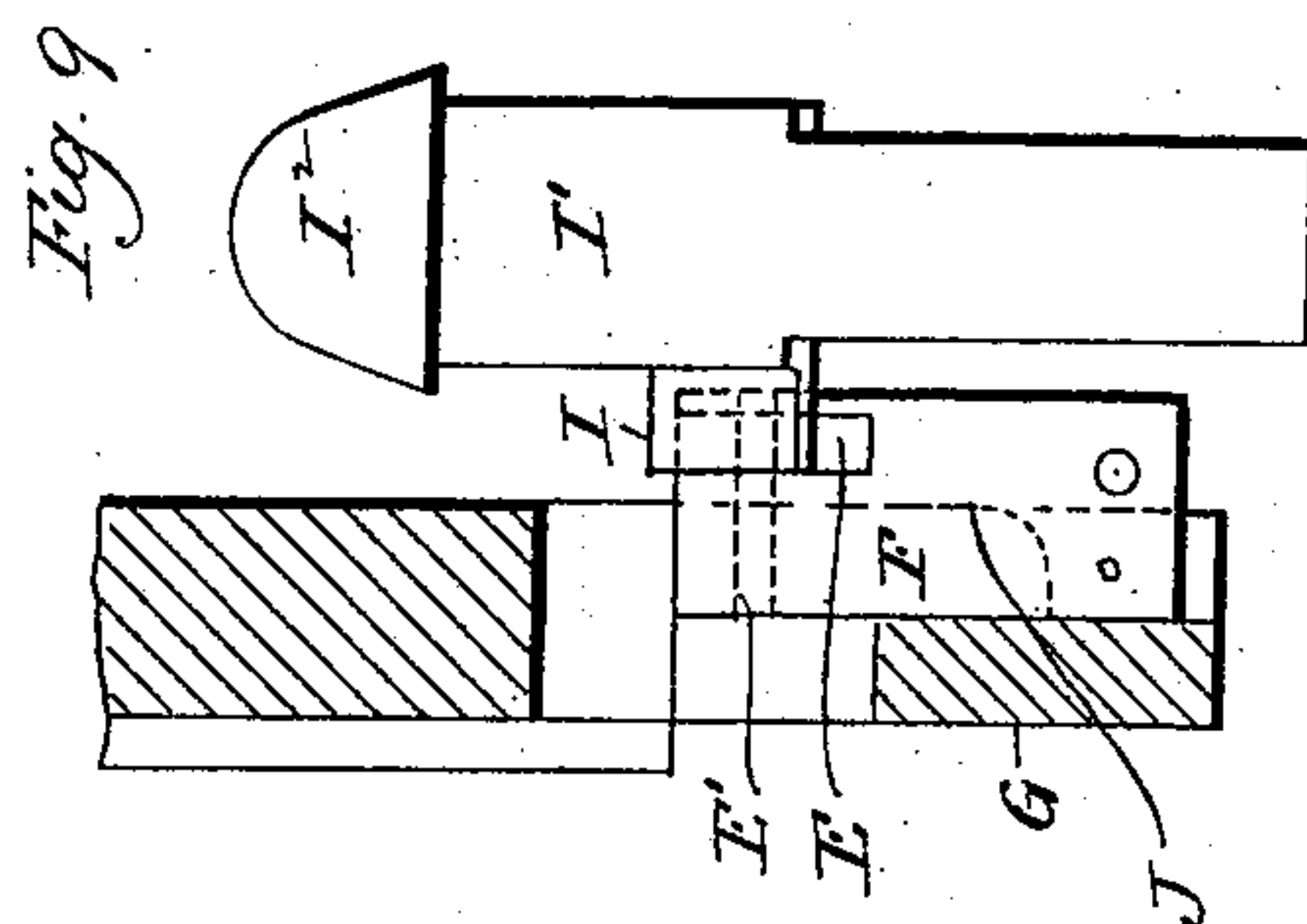
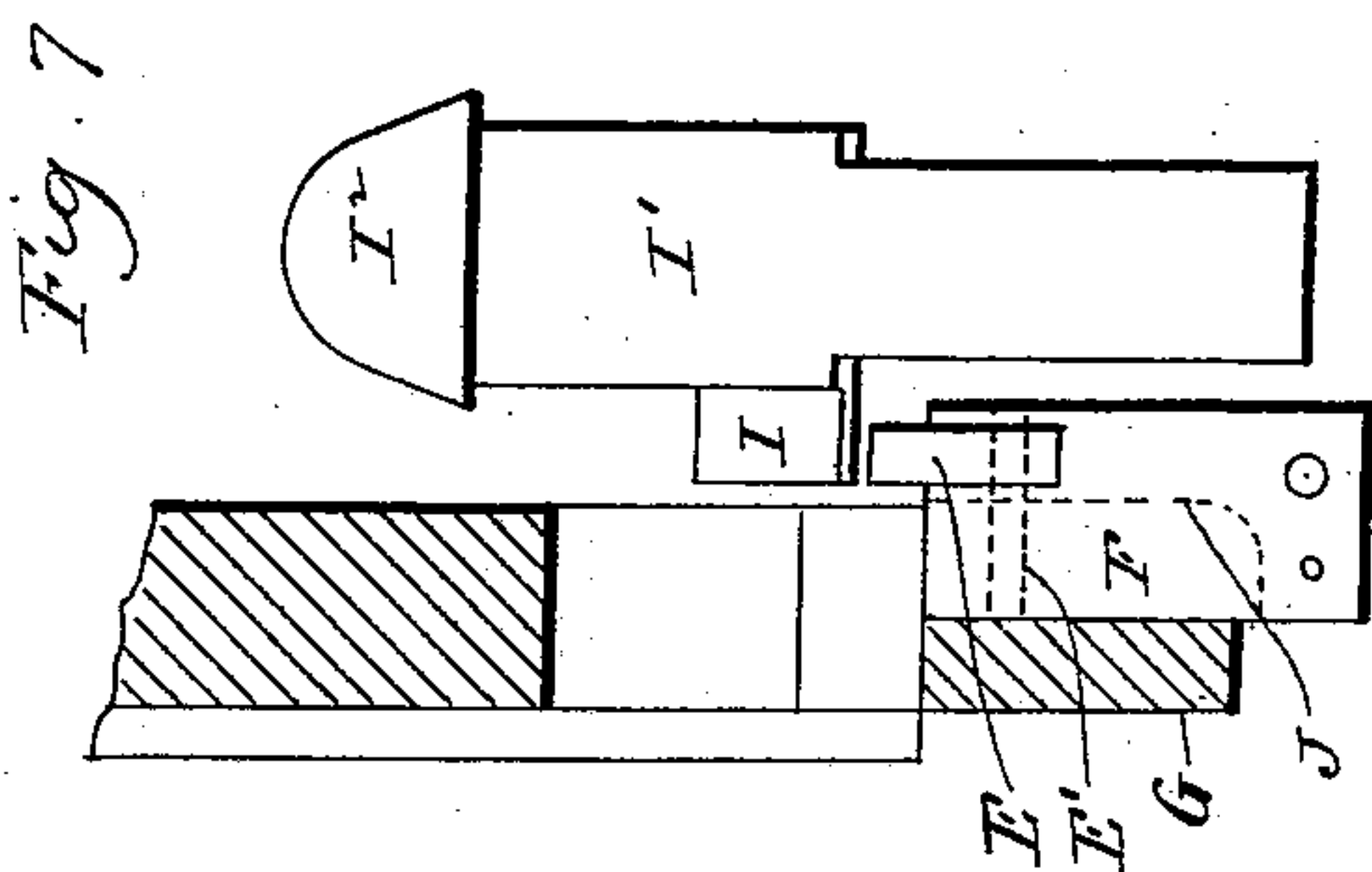
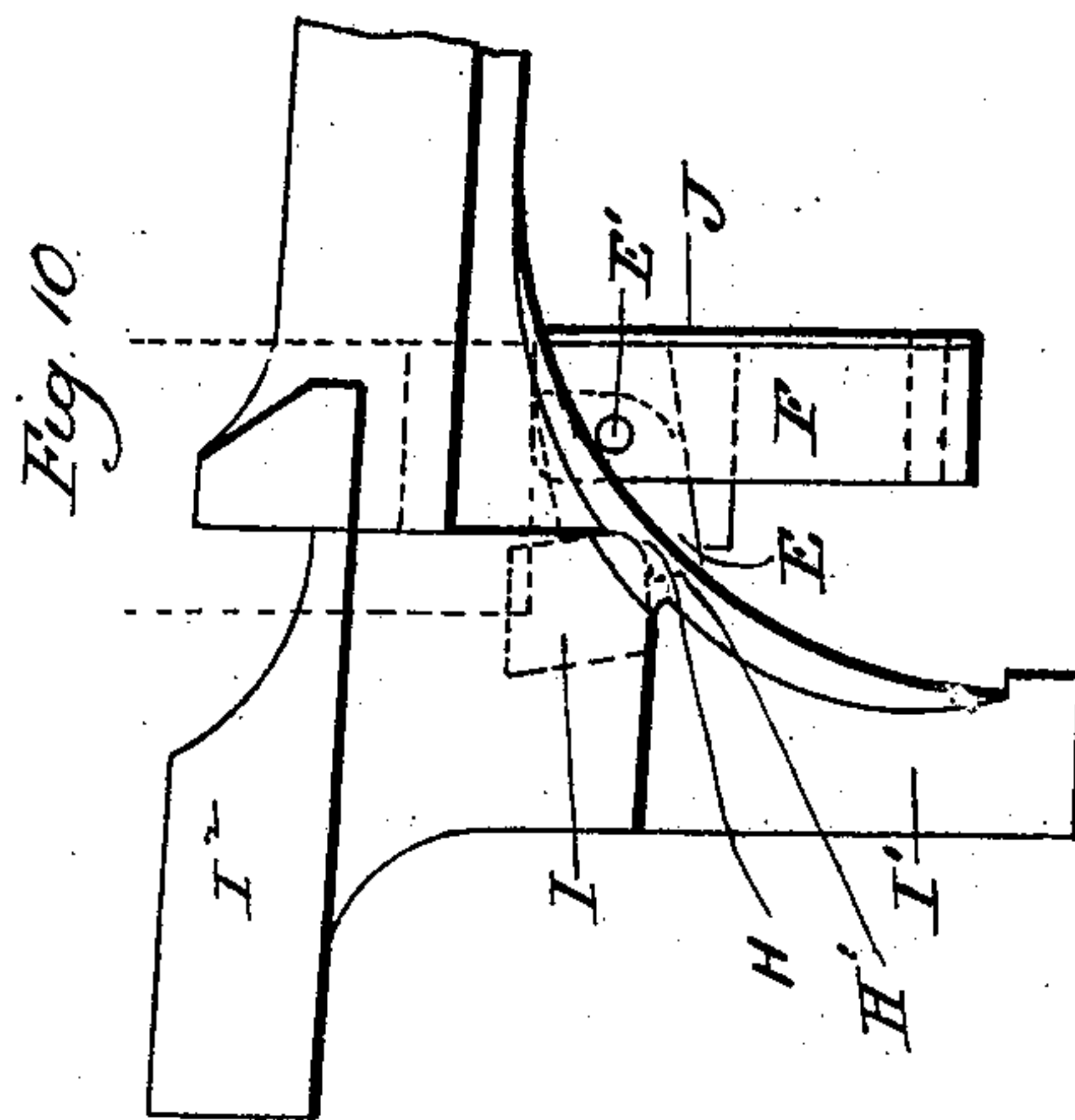
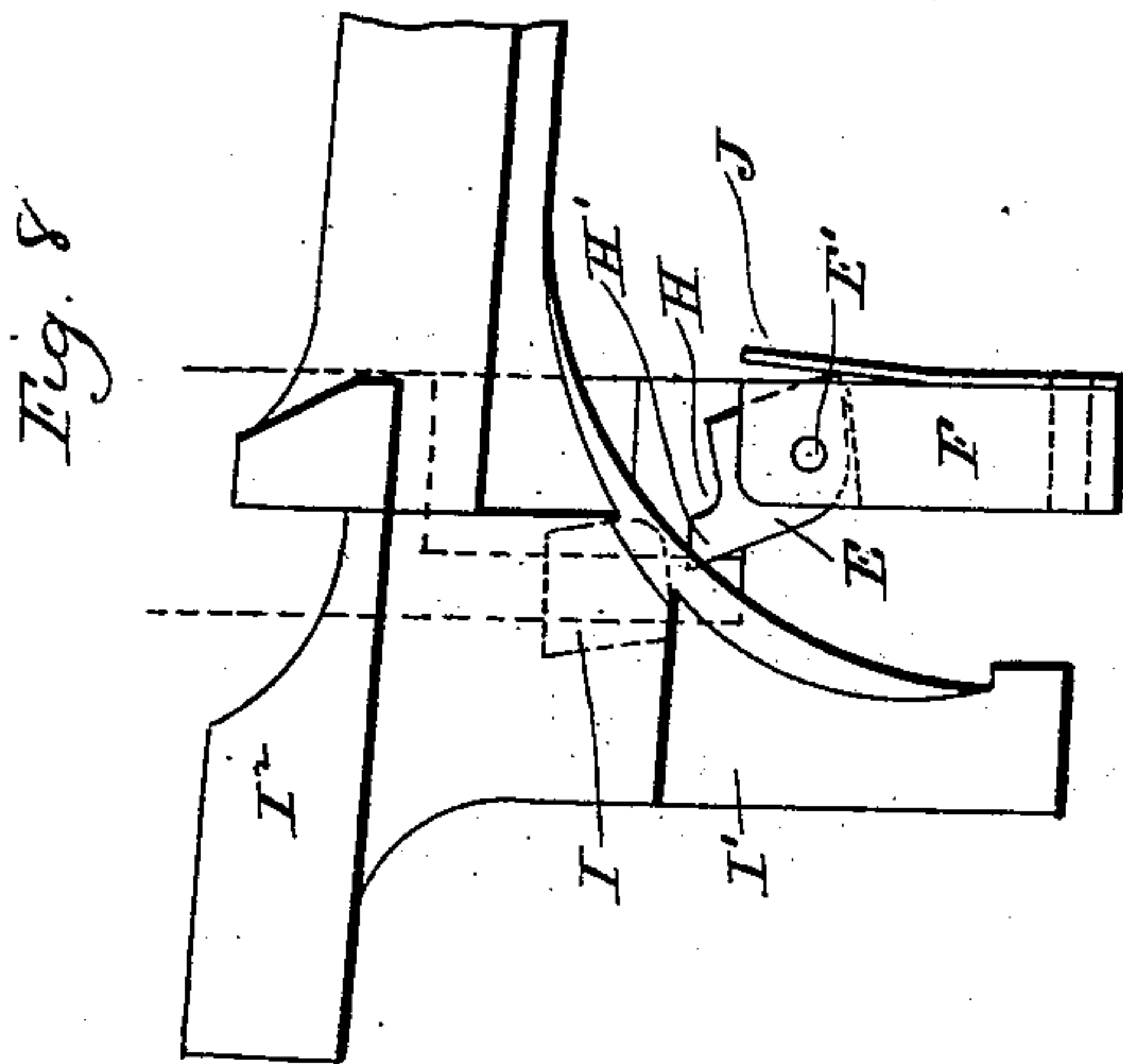
T. C. JOHNSON.
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Patented July 5, 1898.

(No Model.)

(Application filed Dec. 27, 1897.)

3 Sheets—Sheet 3.



Witnesses:
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UNITED STATES PATENT OFFICE.

THOMAS C. JOHNSON, OF NEW HAVEN, CONNECTICUT, ASSIGNOR TO THE
WINCHESTER REPEATING ARMS COMPANY, OF SAME PLACE.

SAFETY DEVICE FOR BOLT-GUNS.

SPECIFICATION forming part of Letters Patent No. 606,972, dated July 5, 1898.

Application filed December 27, 1897. Serial No. 663,497. (No model.)

To all whom it may concern:

Be it known that I, THOMAS C. JOHNSON, of New Haven, in the county of New Haven and State of Connecticut, have invented a new Improvement in Magazine-Firearms; 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 broken view, in side elevation, of a gun containing my invention; Fig. 2, a broken view, in vertical section, on the line *a b* of Fig. 1; Fig. 3, an enlarged broken view, in side elevation, showing the rear end of the firing-pin and the operating-roll of the locker in the positions due to them when the gun is cocked and ready for firing; Fig. 4, a view showing the position of the roll with respect to the locking-lug of the firing-pin when the same is locked; Fig. 5, a similar view showing the relative positions of the lug and roll after the gun has been fired; Fig. 6, a detached perspective view of the locker; Fig. 7, a broken view, partly in section and partly in rear elevation, showing one of the modified forms which my improvement may assume; Fig. 8, a view in side elevation, showing the same construction when the gun is cocked; Fig. 9, a view, partly in vertical section and partly in rear elevation, showing the same construction when the firing-pin is retracted and locked; Fig. 10, a view in side elevation of the same construction in the same position.

This invention relates to an improved firing-pin retractor and lock for guns of the class shown and described in United States Patent No. 547,583, dated October 8, 1895, and granted to James P. Lee, for an improved magazine bolt-gun, the object being to provide such a gun with a firing-pin retracting and locking device which shall be simple, convenient, and effective and constructed with particular reference to indicating to the user of the arm whether the device is in its locked or unlocked position and to preventing the stopping of the device in any intermediate and therefore dangerous position.

With these ends in view my invention con-

sists in providing the firing-pin retracting and locking device with a movable operating member which coacts with the firing-pin to retract it with the minimum expenditure of power and to positively lock it in its retracted position.

My invention further consists in certain details of construction and combinations of parts, as will be hereinafter described, and pointed out in the claims.

In carrying out my invention, as shown in Figs. 1 to 6 of the drawings, the operating member which I employ has the form of a roll *A*, which is mounted upon a horizontal pin *A'* and located in a vertically-arranged slot *B*, formed in the vertically-movable firing-pin retracting and locking device *B'*, which for convenience I shall hereinafter refer to as the "firing-pin locker," in conformity with the term employed to designate the same part in the patent referred to. The said firing-pin locker is located in a vertical slot *C*, formed to receive it in the left-hand wall *C'* of the gun-frame. The said frame and locker are constructed and arranged so that when the locker is in its elevated position, which is also, as may be said, its up and locked position, its upper end will be flush with the upper edge of the gun-frame, as shown by broken lines in Fig. 2, and so that when it is in its depressed and therefore, as may be said, its unlocked position it will be considerably below the upper edge of the frame, as shown by full lines in the same figure. This construction and arrangement utilize the upper edge of the gun-frame as a gage for the sense of touch and as an indicator to the eye for readily showing the user of the arm what the particular position of the locker is at any time. The said roll *A* coacts with a retracting and locking lug *D*, formed upon the left-hand side or outer face of the depending arm *D'* of the firing-pin *D²*. The forward lower corner of the said lug is formed with a rearwardly-inclined retracting-bevel *d*, above which is located a curved locking-recess *d'*, which substantially conforms in curvature to the roll *A*. It will be understood that the said lug is located in such position upon the face of the arm *D'* of the firing-pin *D²* that when the locker is in its de-

pressed and therefore unlocked position the lug will be sufficiently above the upper surface of the roller to permit the lug to move forward over the roll as the firing-pin leaps into its fired position, as shown in Fig. 5. It will also be understood that the firing-pin is provided with such a spring as is shown in the said patent for exerting a constant effort to throw it forward. However, as the firing-pin and all of the parts which coact with it are shown in the said patent, it is thought to be unnecessary to detail its construction or their construction here.

Assuming now that a cartridge has been introduced into the barrel of the gun and it is desired to insure the safe handling and carriage of the gun without removing the cartridge, the locker is grasped and lifted from its depressed or unlocked position, as shown by full lines in Fig. 2, to its elevated and locked position, as shown in broken lines in the same figure. At the beginning of the upward movement of the locker the roll A engages with the retracting-bevel d of the retracting and locking lug D, whereby the firing-pin, which is at this time in its normal or retracted position, is slightly retracted beyond its said normal or retracted position against the tension of its spring. Then when the roll passes above the extreme upper end of the bevel d the firing-pin spring reasserts itself and moves the firing-pin sufficiently forward to seat the locking-recess d' of the lug D against the roll, whereby the locker is locked against either upward or downward movement by the tension of the firing-pin spring, the power of which is more than sufficient to prevent any accidental dislodgment of the locker from its said locked position. The gun may now be handled and carried with perfect safety notwithstanding the presence of a cartridge in the gun-barrel. When now it is desired to unlock the firing-pin, the locker is pushed down from its elevated into its depressed position. At the beginning of the downward movement of the locker the firing-pin spring is placed under tension, as the firing-pin must be moved rearward slightly in order to enable the roll to ride out of the locking-recess d' in the locking-lug D; but when the center of the roll has passed the upper end of the retracting-bevel d the firing-pin spring reasserts itself and by a "snappy" action draws or throws the locker into its depressed position, as shown in Fig. 3. I particularly wish to emphasize the fact that in addition to the easing of the action of the locker owing to the antifriction operation of the roll the final upward movement of the locker and the final downward movement thereof are made abrupt or snappy and conveyed to the user of the arm by the sense of touch as well as that of sound and sight and that there are no dangerous intermediate hanging positions of the locker, and hence the firing-pin. This last point is particularly important for the reason that when the extreme positions of the

locker are not emphasized mistakes are liable to occur.

In the modified construction shown by Figs. 7 to 10, inclusive, the operating member of the locker part is made in the form of a tilting dog E, hung upon a horizontally-arranged pin E', mounted in the lower end of the vertically-movable locker F, which is located in a slot formed to receive it in the gun-frame G. The upper edge of the tilting dog is shaped to form a slightly-undercut notch H and a nose H', the said notch and nose coacting with the beveled forward edge of a retracting-lug I, projecting outward from the left hand or outer face of the depending arm I' of the firing-pin I², which with its adjuncts is like the firing-pin and adjuncts shown by the said patent. A spring J, secured to the lower end of the locker, is arranged to engage with the forward lower corner of the dog, as best shown in Fig. 8. When the locker is in its depressed position, the nose H' of the tilting dog clears the lower edge of the retracting-lug I, so as to permit the lug to clear it in passing over it when the firing-pin shoots forward to do its work. When, however, it is desired to retract the firing-pin and lock it in a retracted position, the locker is lifted, with the immediate effect of engaging the nose H' of the tilting dog E with the lower edge of the lug, whereby the same is caused to turn on the pin E' as the locker is lifted. As the upward movement of the locker continues the dog is gradually turned and its notch H brought into engagement with the beveled forward edge of the lug, upon which the dog then exerts sufficient direct rearward pressure to retract the firing-pin, the parts finally assuming the positions shown in Fig. 10, the tilting dog being held in its locked position by the action of the firing-pin spring itself, the lower corner of the retracting-lug I acting in the bottom of the notch H on a line which falls below the pin E', on which the dog is hung. To unlock the firing-pin, the locker is pressed down, carrying the tilting dog with it, which before it frees itself from the lug retracts the firing-pin slightly and then allows the same to move into its cocked position. In this modified construction I shall arrange to have the upper end of the locker flush with the upper edge of the gun-frame when the locker is in its elevated position and below the edge of the frame when it is in its depressed position; but in this construction the movement of the locker up and down is not characterized by that abruptness or snappiness which is an attribute of the construction first described.

I deem it unnecessary to describe the gun in further detail, though I may mention that the bolt-stop K, bolt-release or back-lock actuator L, sear M, and trigger N are substantially the same in construction and arrangement as shown and described in said patent.

In view of the modification described and of others which may be made I would have it

understood that I do not limit myself to the exact details shown, but hold myself at liberty to make such alterations as fairly fall within the spirit and scope of my invention.

5 Thus, with reference to the construction shown by Figs. 1 to 6, inclusive, I might apply the roll A to the depending arm D' of the firing-pin instead of to the locker B and the combined retracting and locking lug D to
10 the locker instead of to the said arm of the firing-pin, in which case the said lug would be reversed in position. Furthermore, with reference to the construction shown by Figs. 7 to 10, inclusive, instead of applying the tilt-
15 ing dog E to the locker F, I might apply it to the depending arm I' of the firing-pin, and instead of locating the retracting-lug I upon the said arm of the firing-pin I might locate it upon the locker F, reversing it in position,
20 as already described. Inasmuch as the modifications just described are merely reversals of the constructions fully shown and described it is thought quite unnecessary to illustrate them in the drawings.

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

1. A firearm having a firing-pin, a firing-pin retracting and locking device or locker, a
30 movable operating member, and a combined locking and retracting lug, the said movable operating member and lug being applied to the pin and locker, and coacting to retract the pin and positively lock it in its retracted
35 position, and the said operating member insuring the movement of the locker into its full locked or unlocked positions, whereby it is prevented from hanging in any intermediate position.

40 2. A firearm having a firing-pin provided with a retracting and locking lug, and a vertically-movable firing-pin retracting and locking device or locker mounted in the frame of

the arm, and provided with a movable operating member coacting with the said lug to
45 retract and lock the firing-pin and to insure the movement of the locker into its full locked or unlocked positions, whereby it is prevented from hanging in any intermediate position.

3. A firearm having a firing-pin provided
50 with a depending arm furnished with a retracting and locking lug having a retracting-surface and a locking-recess, and a vertically-movable firing-pin retracting and locking device or locker mounted in the frame of the
55 arm and provided with an operating member in the form of a roll which coacts with the said bevel and recess of the said lug for retracting the firing-pin and locking it in its retracted position and for insuring the move-
60 ment of the locker into its full locked or unlocked positions, whereby the hanging of the locker in any intermediate position is avoided.

4. In a firearm, the combination with the frame thereof, of a firing-pin, a firing-pin re-
65 tracting and locking device or locker mounted in the said frame for vertical movement therein and adapted in length and located so that when it is lifted into its full-locked position its upper end will be flush with the upper
70 edge of the frame which constitutes a gage of its position, a movable operating member, and a combined locking and retracting lug, the said movable operating member and lug being applied to the firing-pin and locker, and
75 coacting to insure the movement of the locker into its full locked and unlocked positions, whereby the locker is prevented from hanging in any intermediate position.

In testimony whereof I have signed this
80 specification in the presence of two subscribing witnesses.

THOMAS C. JOHNSON.

Witnesses:

DANIEL H. VEADER,
W. S. BALDWIN.