

(No Model.)

J. H. BULLARD.
MAGAZINE GUN.

No. 287,229.

Patented Oct. 23, 1883.

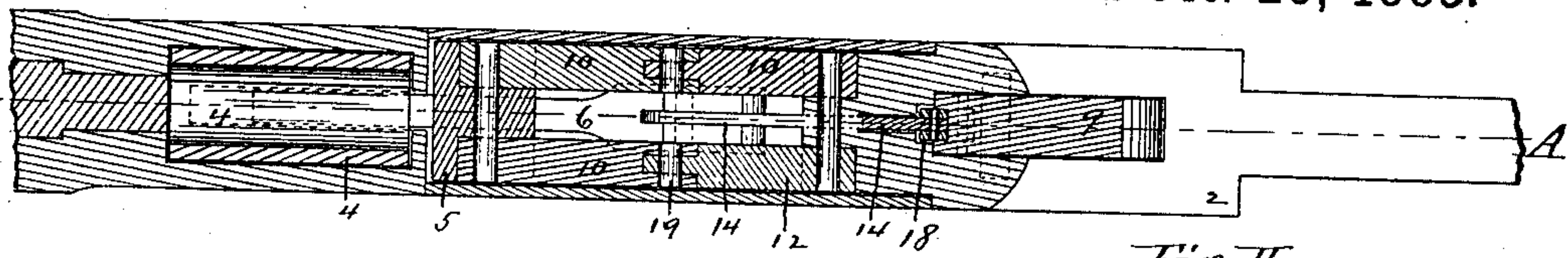


Fig. II

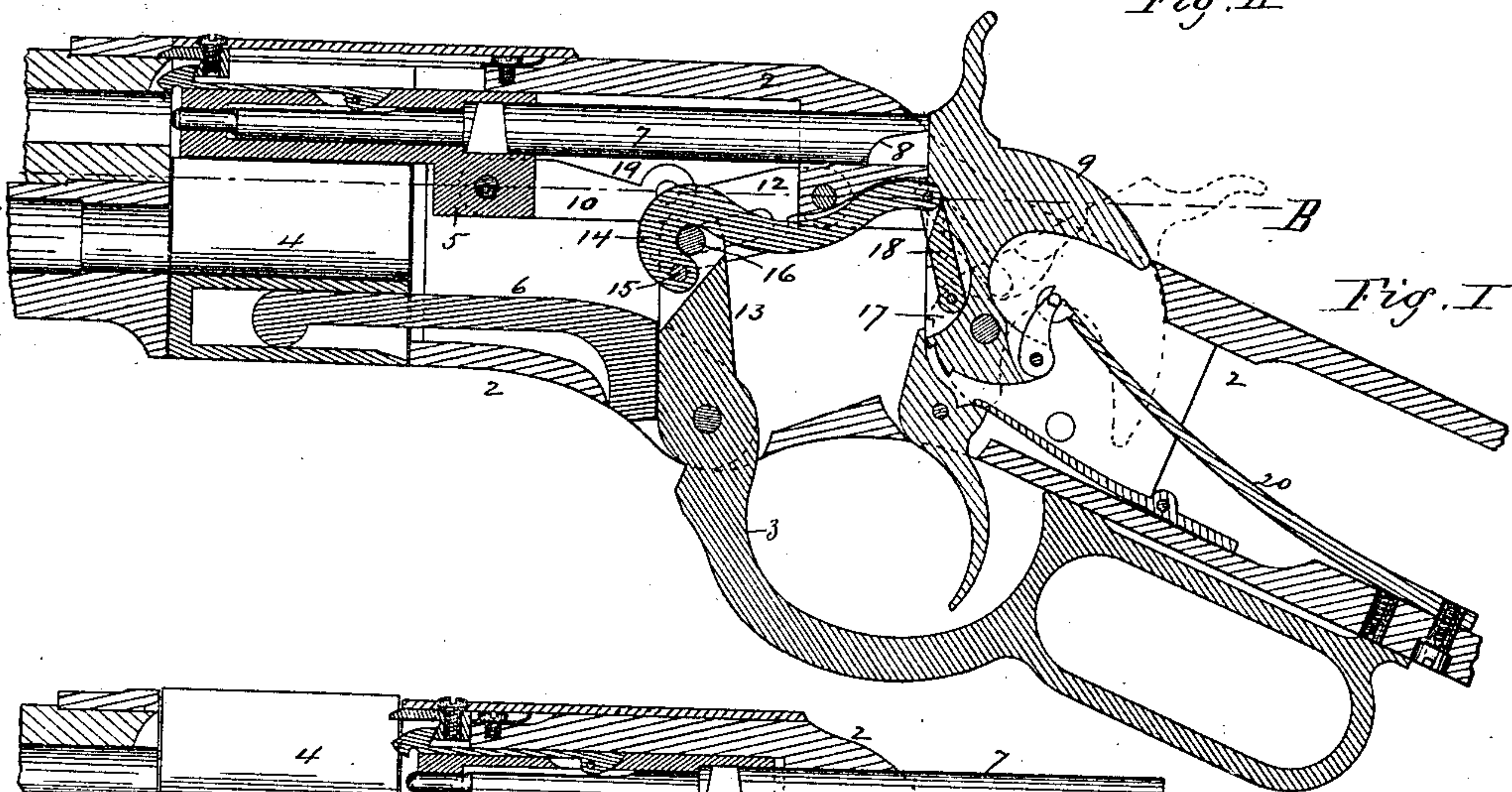


Fig. I

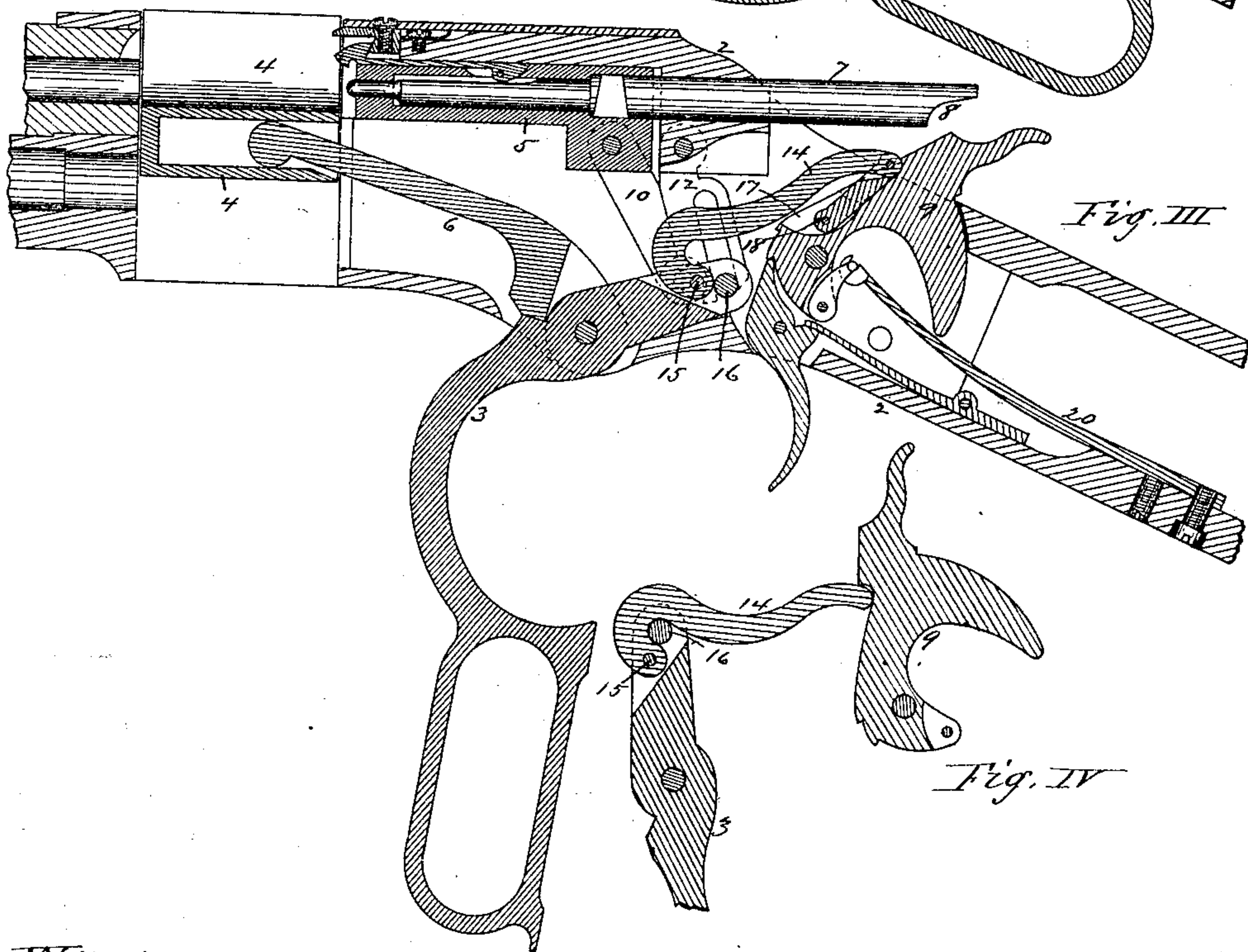


Fig. III

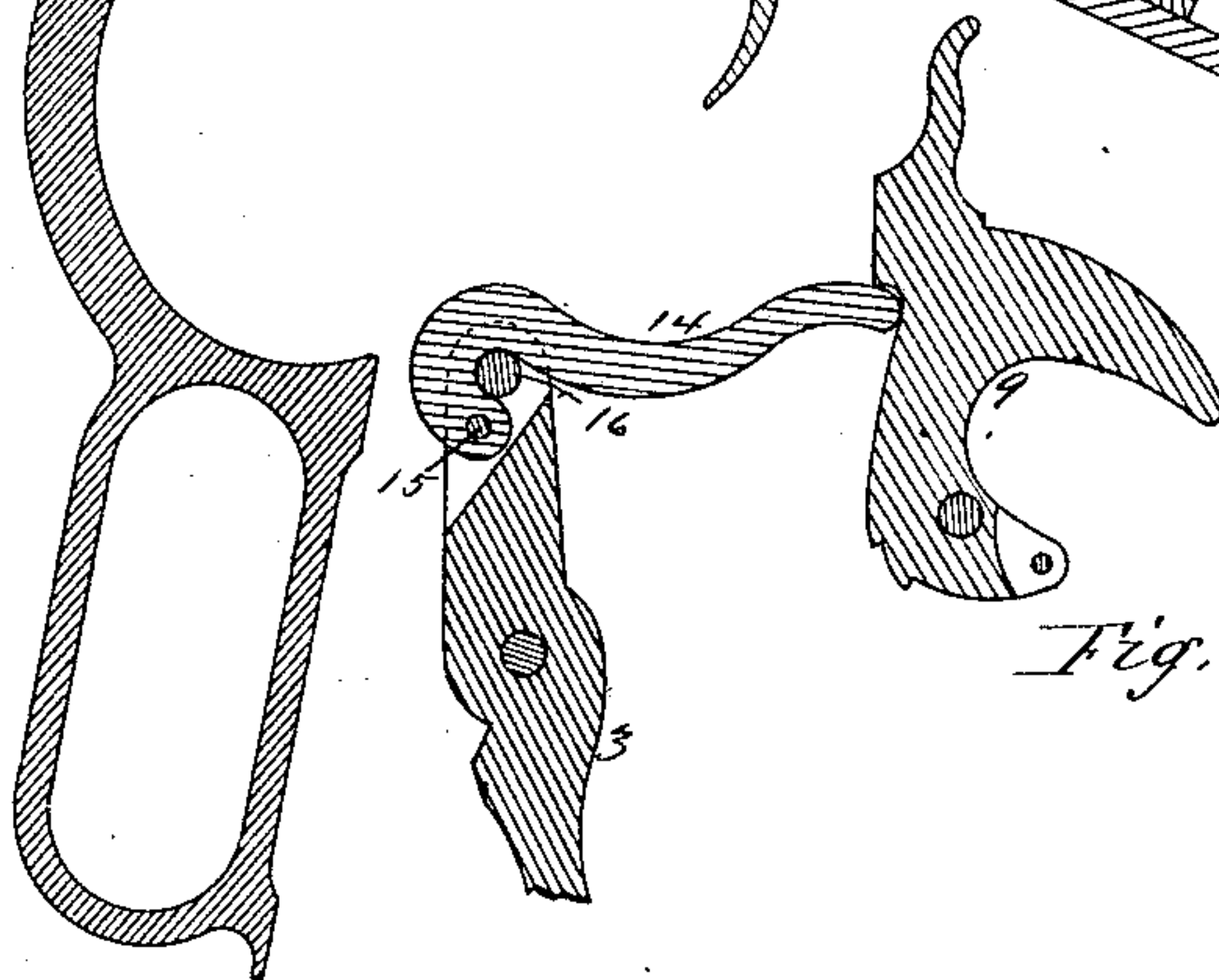


Fig. IV

Witnesses.

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MAGAZINE-GUN.

SPECIFICATION forming part of Letters Patent No. 287,229, dated October 23, 1883.

Application filed June 14, 1883. (No model.)

To all whom it may concern:

Be it known that I, JAMES H. BULLARD, of Springfield, in the county of Hampden and State of Massachusetts, have invented a new and useful Improvement in Fire-Arms, of which the following is a description and specification.

My invention is an improvement upon the device shown in the patent to B. F. Henry, of October 16, 1860; and its object is to remove much of the friction in the operation of cocking the hammer, in moving the operating-lever forward; and thereby moving back the breech-pin and piston, and to render the movement of the operating-lever more uniform as to the power required to operate it and the mechanism connected therewith; and I accomplish this by the mechanism substantially as hereinafter described, and illustrated in the accompanying drawings, in which—

Figure I is a longitudinal vertical section of so much of the arm as is required to show my invention as applied thereto at line A. Fig. II is a horizontal section of the same at line B; both these illustrations showing the operating mechanism in position with the hammer thrown forward. Fig. III is a longitudinal section with the operating mechanism in position, with the hammer thrown back or in position of full-cock; and Fig. IV is a modification of the invention.

In the drawings, 2 represents the frame of the arm; 3, the operating-lever; 4, the carrier-block; 6, the arm operating the carrier; 5, the hollow breech-pin; 7, the piston with the firing-pin forward; 10, the link, pivoted at its forward end to the breech-pin; 12, the brace, pivoted at its forward end to the rear end of the link, and at its rear end to the frame, and which is also provided with a slot which engages with a pin, 16, in the upper end of the operating-lever 3, this link, slotted brace, and pin in the upper end of the operating-lever, combined, operating to move back the hollow breech-pin and piston, and, as heretofore constructed, to cock the hammer by forcing back the piston against its nose. All these parts before mentioned, as ordinarily constructed, are well known, and are shown in the patent to B. F. Henry, before mentioned; in that to O. F. Winchester, of September 4,

1866, and others, and require no further description, as the accompanying illustration, with the exception of my invention applied thereto, as hereinafter described, shows the operating mechanism of the arm as ordinarily and heretofore constructed.

It will be evident upon inspection that as the link 10 and brace 12 are drawn downward by the upper end of the operating-lever 3, and as the upper end of the latter moves down into the position shown in Fig. III, a very great increase of force or power is required to be exerted against the operating-lever to bring the hammer into the position shown in Fig. III. This will be obvious upon examination of the parts shown in Fig. III, in which the upper end of the operating-lever 3 is in a position, during the latter portion of the movement of the parts in cocking the hammer by moving forward the lower end of the operating-lever and drawing down the link 10 and brace 12, to force the piston backward against the nose of the hammer. In this position it will be seen that the upper end of the operating-lever extends substantially at right angles to the length of the link 10—the medium through which the breech-pin is drawn back by the upper end of the operating-lever, and consequently the medium through which the piston 7 is forced back against the nose of the hammer to cock it, as ordinarily constructed. Of course, under that construction, the power is applied to the operating-lever to cock the hammer under the greatest disadvantage, and more especially is this the case when it is considered that as the lower part of the lever is being moved forward and the hammer commences its backward movement, the mainspring becomes more and more rigid and stiff as the backward movement of the hammer straightens it. The consequence is that the operating-lever moves forward with a very great increase of friction and difficulty of movement as the hammer begins and continues its backward movement.

My invention obviates all this objection and difficulty, and renders the whole forward movement of the operating-lever even and uniform in the amount of power required to be exerted, and with my invention applied the friction of the working parts, together with

the force required to move the hammer backward, seems to have very little effect upon the forward movement of the lever.

In the upper end of the operating-lever 3, I pivot at 15 an arm, 14, which curves around the pin 16, which engages in the slot of the brace 12, to operate the latter with the link 10, and the rear end of this arm 14, I pivot to a link, 18, which is pivoted to the hammer in the recess 17, in the front side thereof. This link 18, however, is not essential to the successful operation of the invention, and is only for the purpose of holding up the rear end of the arm 14 in certain positions of the operating-lever 3, as when the hammer is at full-cock and the operating-lever is thrown only partially forward. In such case, if no link 18 were used, the rear end of the arm 14 would drop a little, although it would be held partially up to its place by resting on the pin 16, and if the hammer were let forward the rear end of the arm 14 would strike the front side of the hammer and would slide up along the front side of the hammer as the latter was moved forward until it reached and abutted against the top of the recess 17 in the hammer.

When constructed in this manner, as shown in Fig. IV, and without the link, if the parts should be operated very fast, this falling of the rear end of the arm 14 and striking against the front side of the hammer and sliding up against the shoulder 17, as shown in Fig. IV, into position to again force back the hammer to the position of full-cock, would be accompanied with more or less noise, and I prefer to pivot the rear end of the arm 14 to the link 18, which serves the purpose of a guide to hold up the rear end of said arm and guide it directly to its position against the hammer without first striking the latter lower down and sliding up to position, and preventing the noise resulting from the action of those parts. As the mainspring is weakest when the hammer is thrown forward, a certain amount of power is required to be exerted against the lever 3 in moving it forward, and as the hammer continues to move back the mainspring becomes more and more rigid and stiff; but as the upper end of the operating-lever continues to move back, the pivot 15, which secures the arm 14 to the upper end of the operating-lever, is brought nearer and nearer into line with the pivot upon which the operating-lever moves, and the point of pressure of the rear end of the arm 14 against the hammer until the latter is brought back into a position of full-cock, where the position of the lever 3 and arm 14 and hammer is shown in Fig. III. Inasmuch as the power is applied directly from the lever 3 to and against the hammer, through the medium of the arm 14, in the operation

of cocking the hammer, no pressure of the piston against the nose of the hammer is required or can occur, because with my invention applied the hammer commences its backward movement in advance of the backward movement of the piston 7, and owing to the direct backward movement of the arm 14 the hammer moves backward, even after it starts, much faster than the piston moves, and arrives at its position of full-cock slightly in advance of the piston, the rear end of the latter being cut away at 8 on the under side, so that it may not strike against the nose of the hammer as the piston arrives at its backward position. In this construction the nose of the hammer and the rear end of the piston are not worn or injured, as no contact of the two occurs except when the arm is discharged.

Having thus described my invention, what I claim as new is—

1. The combination, with the frame of a fire-arm, of the sliding breech-pin 5, containing the firing-pin, the operating-lever 3, pivoted in said frame, the brace 12, pivoted at its rear end to the frame and toggled to the upper end of said operating-lever, the link 10, pivoted at its rear end to the forward part of said brace, and at its forward end to said sliding breech-pin, the hammer 9, and the arm 14, pivoted at its forward end to the upper end of said operating-lever, and with its rear part bearing against the hammer, whereby the sliding breech-pin and firing-pin are moved back by said brace and link, and the hammer is cocked by said arm when the operating-lever is moved forward, substantially as described.

2. The combination, with the frame of a fire-arm, of the sliding breech-pin 5, the operating-lever 3, pivoted in said frame, the brace 12, pivoted at its rear end to the frame, and toggled to the upper end of said operating-lever, the link 10, pivoted at its rear end to the forward part of said brace, and at its forward end to said sliding breech-pin, the hammer 9, and the arm 14, pivoted at its forward end to the upper part of said operating-lever, and with its rear end bearing against the hammer, whereby the sliding breech-pin and firing-pin are moved back by said brace and link, and the hammer is cocked by said arm when the operating-lever is moved forward, and a guide-piece, 18, pivoted at one end to said hammer and connected at its other end with said arm, to guide the rear end of said arm always into the same position and prevent noise in the working of the parts, substantially as described.

JAMES H. BULLARD.

Witnesses:

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CHAS. H. WOOD.