

No. 685,233.

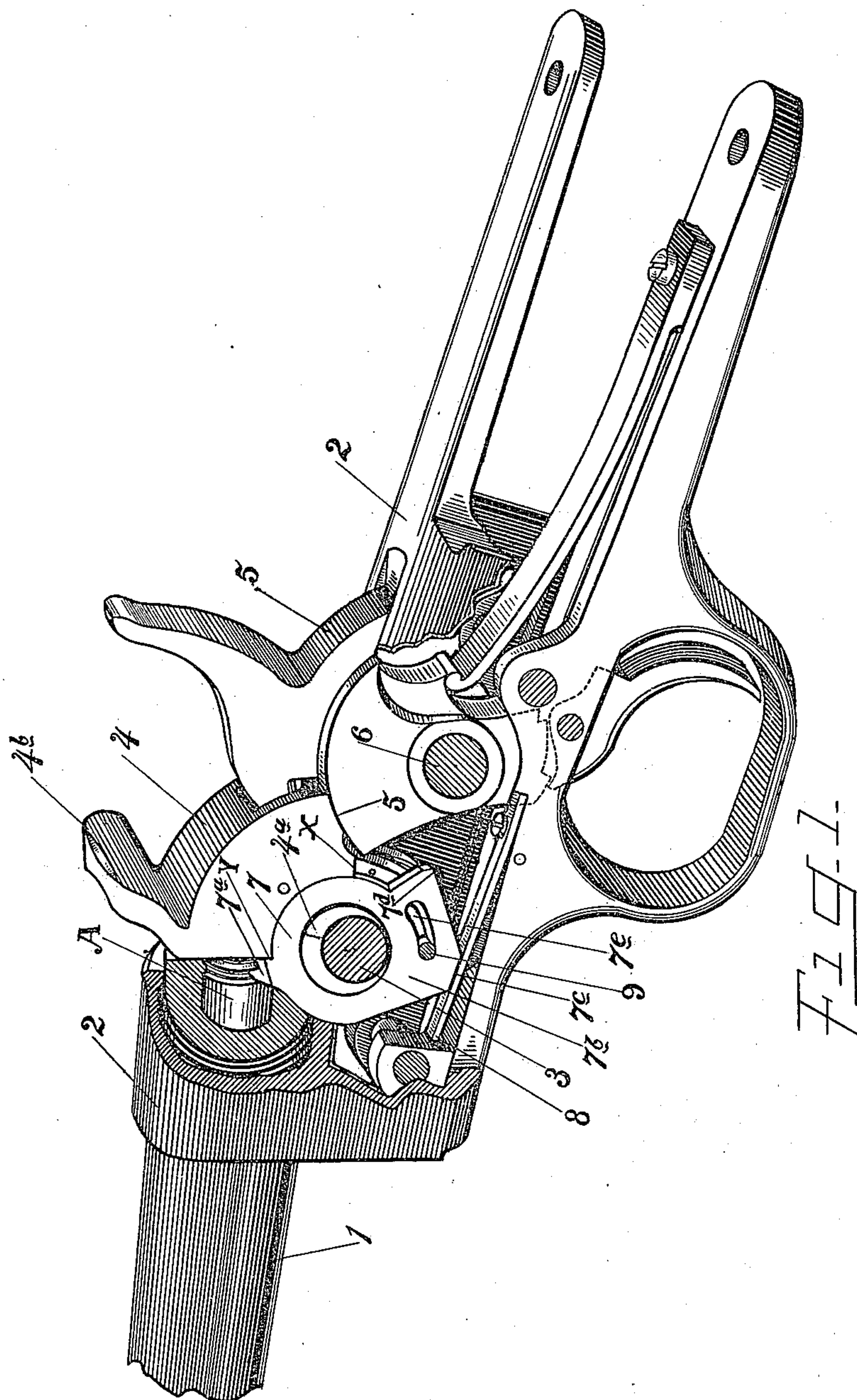
Patented Oct. 22, 1901.

A. H. DAY.
EJECTOR FOR FIREARMS.

(Application filed May 16, 1901.)

(No Model.)

3 Sheets—Sheet 1.



Witnesses

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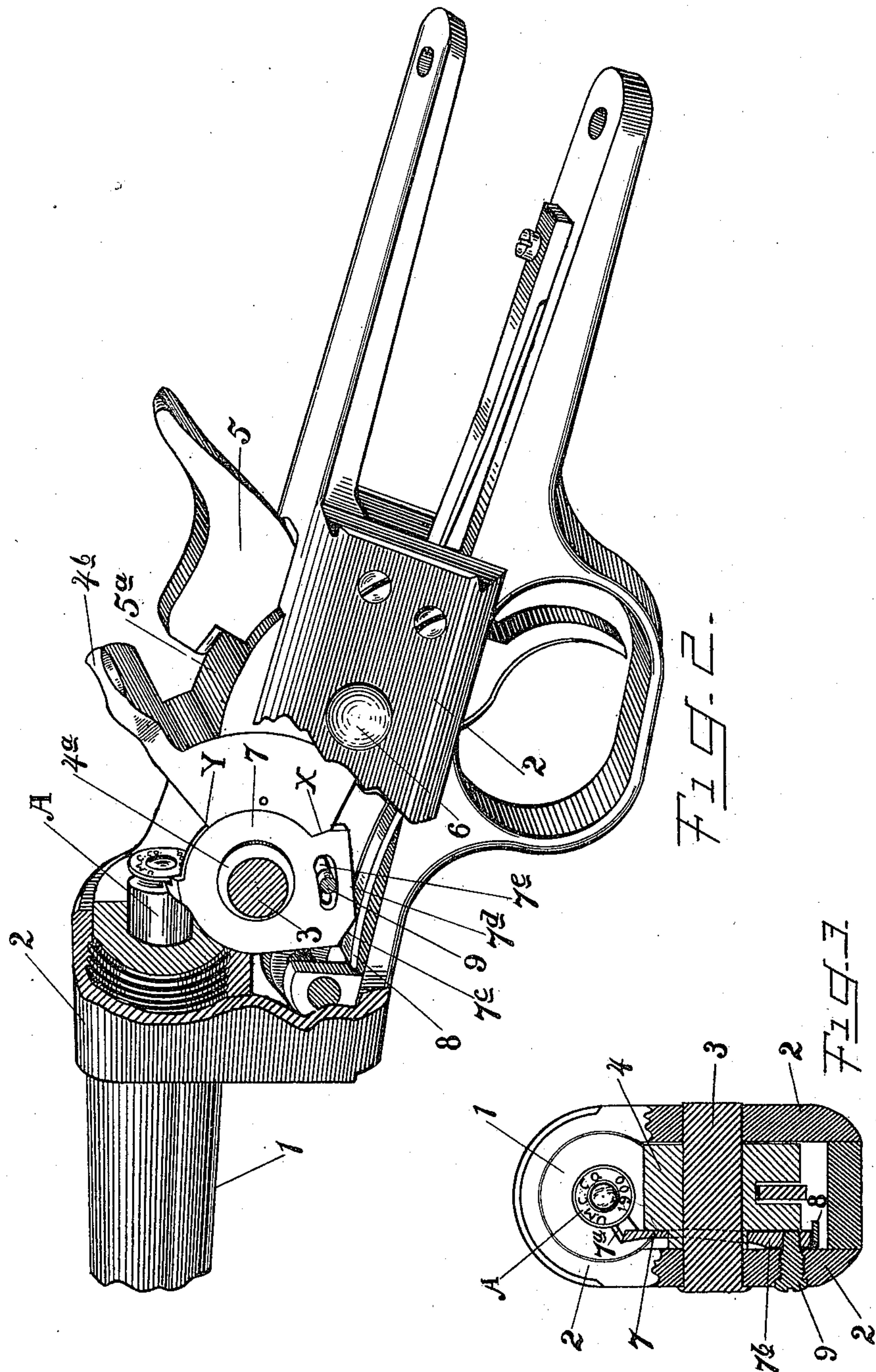
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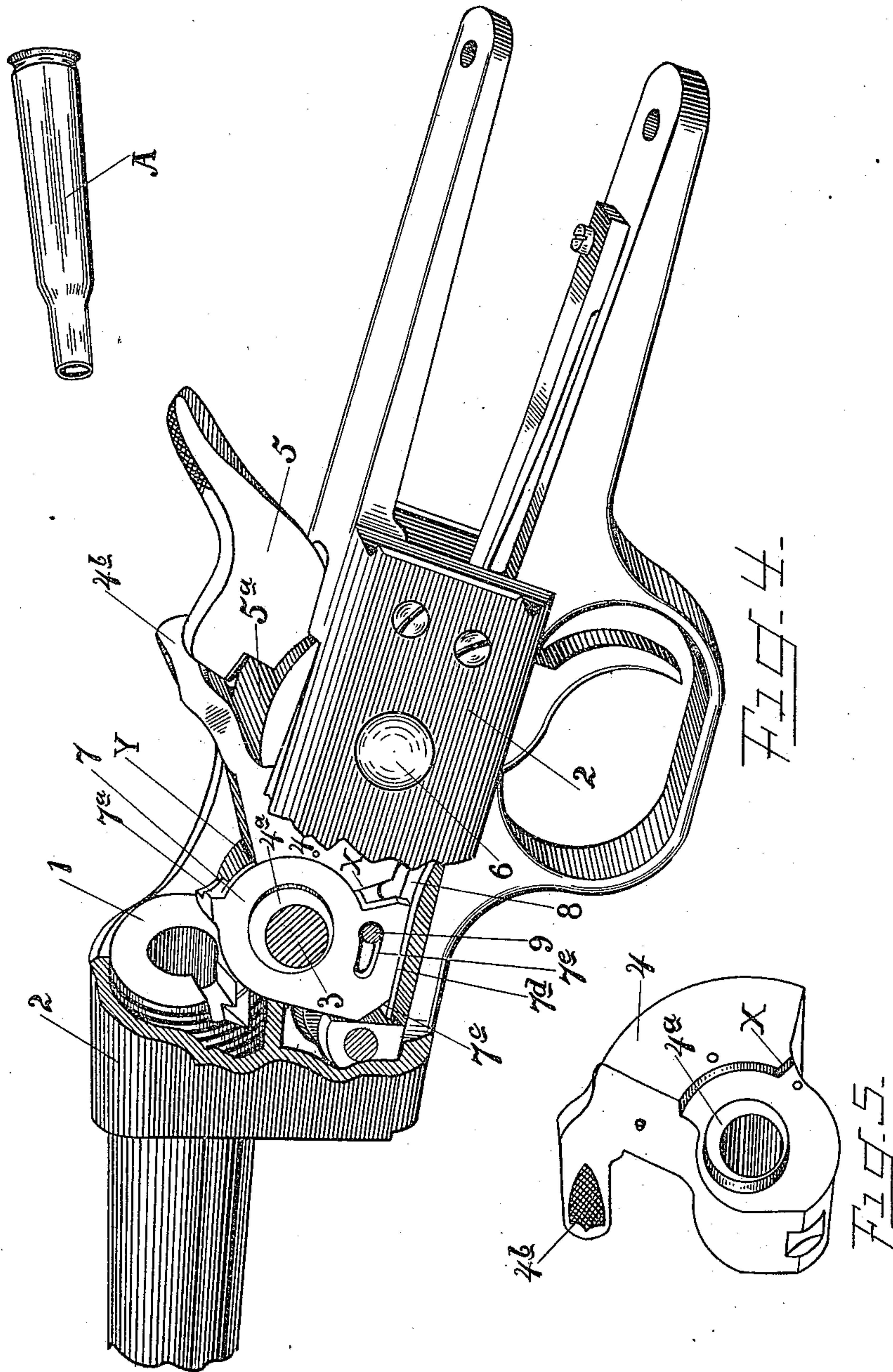
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UNITED STATES PATENT OFFICE.

ALBERT H. DAY, OF MOHAWK, NEW YORK, ASSIGNOR TO REMINGTON ARMS COMPANY, OF ILION, NEW YORK.

EJECTOR FOR FIREARMS.

SPECIFICATION forming part of Letters Patent No. 685,233, dated October 22, 1901.

Application filed May 16, 1901. Serial No. 60,483. (No model.)

To all whom it may concern:

Be it known that I, ALBERT H. DAY, of Mohawk, in the county of Herkimer and State of New York, have invented certain new and useful Improvements in Firearms; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the characters of reference marked thereon, which form part of this specification.

The object of my present invention is to provide a new combination extracting and ejecting mechanism for firearms.

Figure 1 of the drawings shows a perspective view of the operative parts of a firearm, including my extractor-ejector, certain parts being broken out to expose the mechanism. The parts are shown in the position immediately following the firing of the arm. Fig. 2 shows in a similar manner the same mechanism substantially at the end of what may be termed the "first" stage or portion of the extracting and ejecting movement. Fig. 3 shows a cross-section of the mechanism, including the frame of the arm, substantially at the rear end of the barrel. Fig. 4 shows in perspective in a similar manner to Figs. 1 and 2 the same mechanism in its final position after extracting and ejecting the shell. Fig. 5 shows a perspective view of the breech-block removed from the arm.

Referring to the reference characters in a more particular description of the device, 1 indicates the barrel, and 2 the receiver or frame, to which the barrel is attached. Pivotaly mounted on a transverse pin 3, passing through the frame, is the breech-block 4, adapted to move or swing from the position shown in Fig. 1 to that shown in Fig. 4. The hammer 5 is mounted on a pivot-pin 6, also passing transversely through the frame. The hammer 5 is provided with a shoulder 5^a, adapted to engage the rear of the breech-block and secure the same in firing position.

The extractor and ejector, which is the feature of my present invention, is a washer-like

piece 7, having a comparatively large central opening and mounted on the cam or eccentric hub or boss 4^a of the breech-block. The hub or boss 4^a is arranged with reference to the breech-block so that the throw position of the eccentric is over or above the pivot 3 when the breech-block is closed, as shown in Fig. 1. The piece 7 is provided with a hook or shoulder on a projection 7^a, adapted to engage with the cartridge A, and is also provided with a wing-like portion 7^b, having two straight faces 7^c and 7^d arranged at an obtuse angle with reference to each other, substantially as shown. Secured in the lower portion of the frame there is provided a spring 8, adapted to engage with the faces 7^c and 7^d of the extractor-ejector. The wing portion of the extractor-ejector is also provided with a slotted opening 7^e, which has a peculiar arrangement with reference to the rest of the parts, as will hereinafter appear. This opening 7^e is adapted to receive the inwardly-projecting end of a screw 9, secured in the frame. The lower wing-like portion 7^b of the extractor-ejector is thicker than the upper portion of the same, as appears from Fig. 3 of the drawings, whereby the lower wing-like portion is confined against lateral movement between the wall of the frame and the side of the lower portion of the breech-block 4. The upper portion of the part 7 acts as a spring and has a limited amount of lateral play on the hub or boss 4^a, as is also apparent from Fig. 3 of the drawings.

The operation of the device—that is to say, the extractor-ejector more particularly—is as follows: Starting with the parts in the position in which they are shown in Fig. 1 immediately following the firing, the catch 7^a of the part 7 is found engaged with the cartridge—that is to say, in the groove of the end when a so-called "headless" shell is employed and with the head when a headed shell is used. The hammer 5 is first thrown back to its cocked position, (shown in Figs. 2 and 4,) disengaging the shoulders 5^a from the rear of the breech-block 4. The breech-block is then opened by the operator taking hold of or

pressing upon the thumb portion 4^b thereof. In the first portion of the opening movement of the breech-block the cam or eccentric 4^a tends to swing the part 7 toward the rear of the firearm. The lower end of the part 7 is held from movement by the lower wall of the slot 7^c engaging on the screw or pin 9 and also by the operation of the spring 8 on the flat face 7^c. In the first stage of the opening of the breech-block the full power of the eccentric or cam 4^a is exerted on the cartridge to start it from the chamber in the barrel, and the first portion of the movement of the extractor is a comparatively slow one. After the first starting movement the relative arrangement of the slot 7^c and the pin or screw 9 is shifted so as to allow the extractor-ejector to turn on the cam. When this stage is reached, the shoulder *x* on the breech-block engages with the rear side of the wing of the extractor-ejector, and the continued movement of the breech-block results in throwing the face 7^c out of engagement with the spring 8, and the spring rests only on the corner between the faces 7^c and 7^d. This is the final stage of the slow or what may be termed "extracting" movement, and the position of the parts at this stage are shown in Fig. 2. Immediately following this stage the pressure of the spring 8 on the lower end of the wing of the ejector operates it rapidly from the position shown in Fig. 2 to that shown in Fig. 4, when the face 7^d comes into full contact with the spring 8. This movement is very rapid and results in ejecting the shell with force. In this movement the extractor-ejector swings on the hub 4^a as a pivot.

After the shell has been ejected a new cartridge can be inserted in the barrel either with its head or end in rear of the back of the catch projection 7^a or in front of it. When inserted at the back, say—that is to say, completely or almost completely home in the chamber of the barrel—the closing of the breech-block brings the shoulder *y* thereof into engagement with the projection 7^a, moving the extractor-ejector in the reversed movement from that heretofore described. As the back of the projection 7^a comes into engagement with the head of the shell it is thrown outwardly toward the side—that is to say, toward the left as the parts are shown in Fig. 3—allowing the shoulder to pass the head or rim at the head of the shell. The spring of the washer portion 7 of the extractor-ejector allows this movement and immediately causes the shoulder of the projection 7^a to engage back of the head or in the groove when it has attained the proper position.

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

1. A rocking cartridge-extractor having a shoulder to engage the cartridge, in combination with a pivoted breech-block having an eccentric on which the extractor is mounted

operating to move the extractor rearwardly from the end of the barrel, and means for temporarily holding the portion of the extractor below the eccentric and opposite said shoulder, substantially as set forth.

2. The combination with the working parts of a firearm of the pivoted breech-block having a cam-hub or eccentric-boss, a washer-like extractor mounted upon said hub or boss having a shoulder to engage the cartridge and the boss and extractor being arranged so that the cam or eccentric tends to move the extractor rearwardly with reference to the barrel, and means for temporarily securing the portion of the extractor opposite said cartridge-engaging shoulder during the first movement of the cam or eccentric, and a spring for rapidly operating said extractor in the final movement, substantially as set forth.

3. The combination in a firearm of the pivoted breech-block having an eccentric or cam hub arranged to throw toward the rear, the washer-like extractor-ejector mounted on said hub having means for engaging with the cartridge, means for temporarily securing the portion of the extractor-ejector on the opposite side of the hub from the point of engagement with the cartridge during the first stage of the operation, a shoulder on the breech-block for engaging and moving the extractor-ejector in a succeeding stage of the operation and a spring for giving a quick, final movement to the extractor-ejector, substantially as set forth.

4. The combination of a pivoted breech-block having an eccentric-hub arranged to rock and throw from a point directly over the breech-block pivot toward the rear, a washer-like extractor-ejector mounted on said eccentric-hub and having means for engaging the cartridge and means for temporarily securing the portion of said extractor-ejector opposite said means for engaging the cartridge while said eccentric-hub is operating, a shoulder on the breech-block for engaging the extractor-ejector before the ejecting movement and a spring for giving a quick, final movement to the extractor-ejector, substantially as set forth.

5. The combination in a firearm of the pivoted breech-block having the eccentric hub or boss arranged to throw toward the rear with reference to the barrel, the washer-like extractor-ejector mounted on said boss and having means for engaging with the cartridge on one side and slotted opening on the opposite side, the stationary pin arranged to engage with the side of said slotted opening and a spring mounted on the frame and adapted to engage successively with two adjacent flat faces on the extractor-ejector, substantially as set forth.

6. The combination in a firearm of the pivoted breech-block having an eccentric operating-hub, a washer-like extractor-ejector

mounted on said hub having means for engaging the cartridge at one side of the hub and confined against lateral movement at the opposite side of the hub and arranged to spring
5 laterally to permit the means of engaging the cartridge to pass the cartridge-head, substantially as set forth.

In witness whereof I have affixed my signature, in presence of two witnesses, this 6th day of May, 1901.

ALBERT H. DAY.

Witnesses:

H. W. BRADLEY,
E. D. RIVERS.