(No Model.)

2 Sheets—Sheet 1.

W. H. ELLIOT.

MAGAZINE FIRE ARM.

No. 278,324. Patented May 29, 1883.

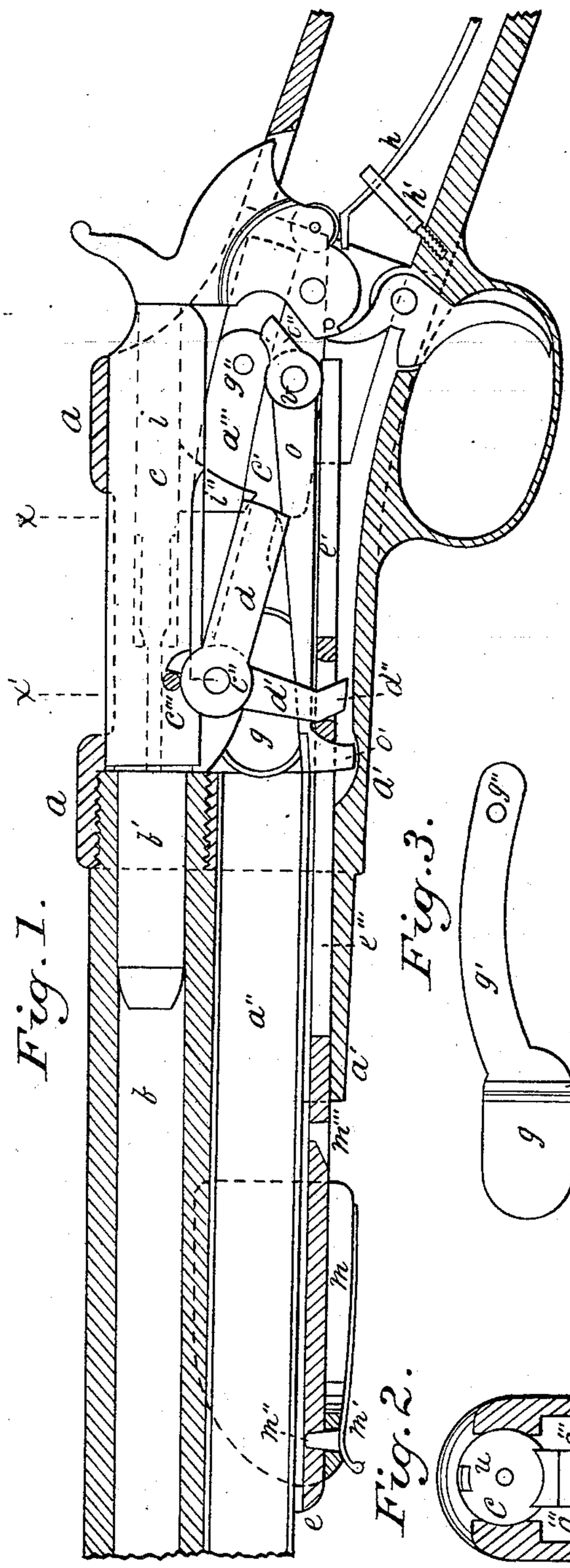

Fig. 1.

Fig. 3.

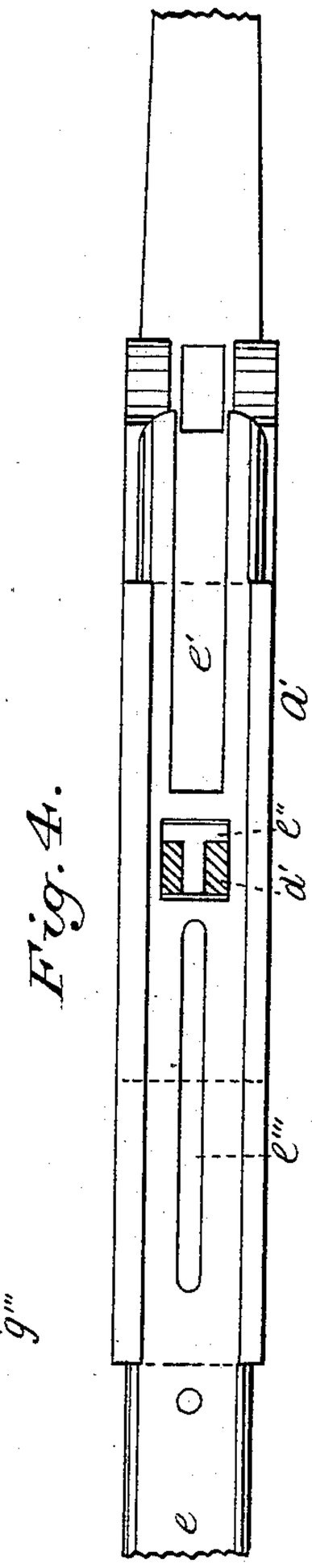

Fig. 4.

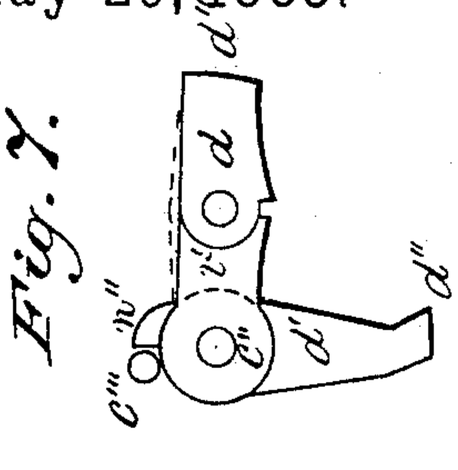

Fig. 7.

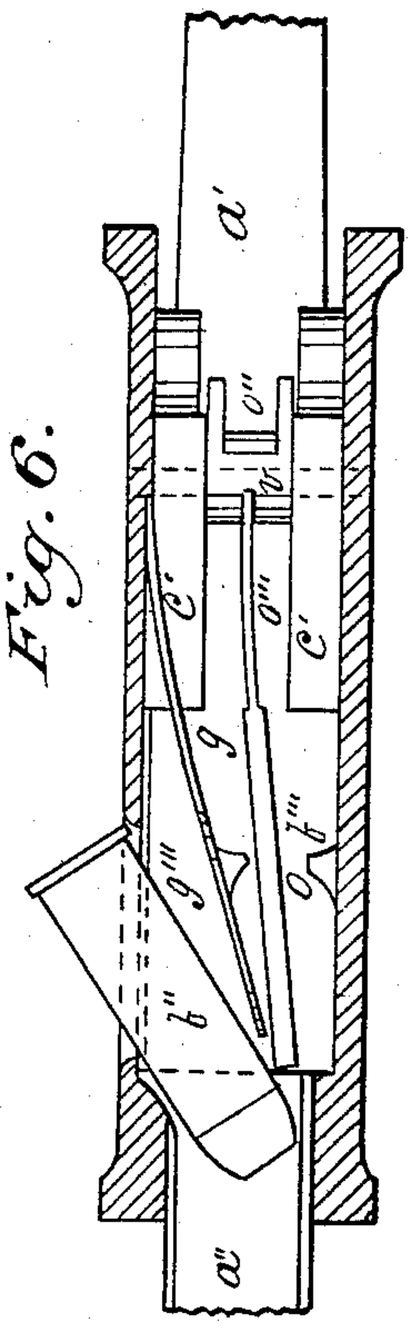

Fig. 6.

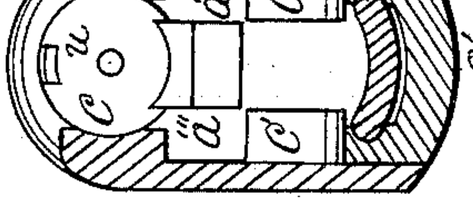

Fig. 2.

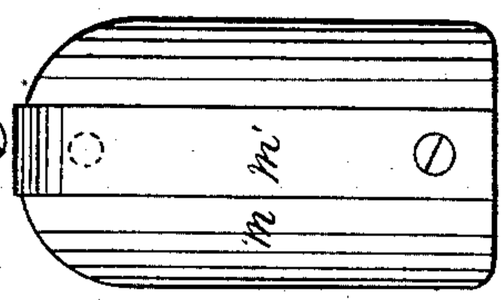

Fig. 5.

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Inventor:

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(No Model.)

2 Sheets—Sheet 2.

W. H. ELLIOT.

MAGAZINE FIRE ARM.

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Fig. 8.

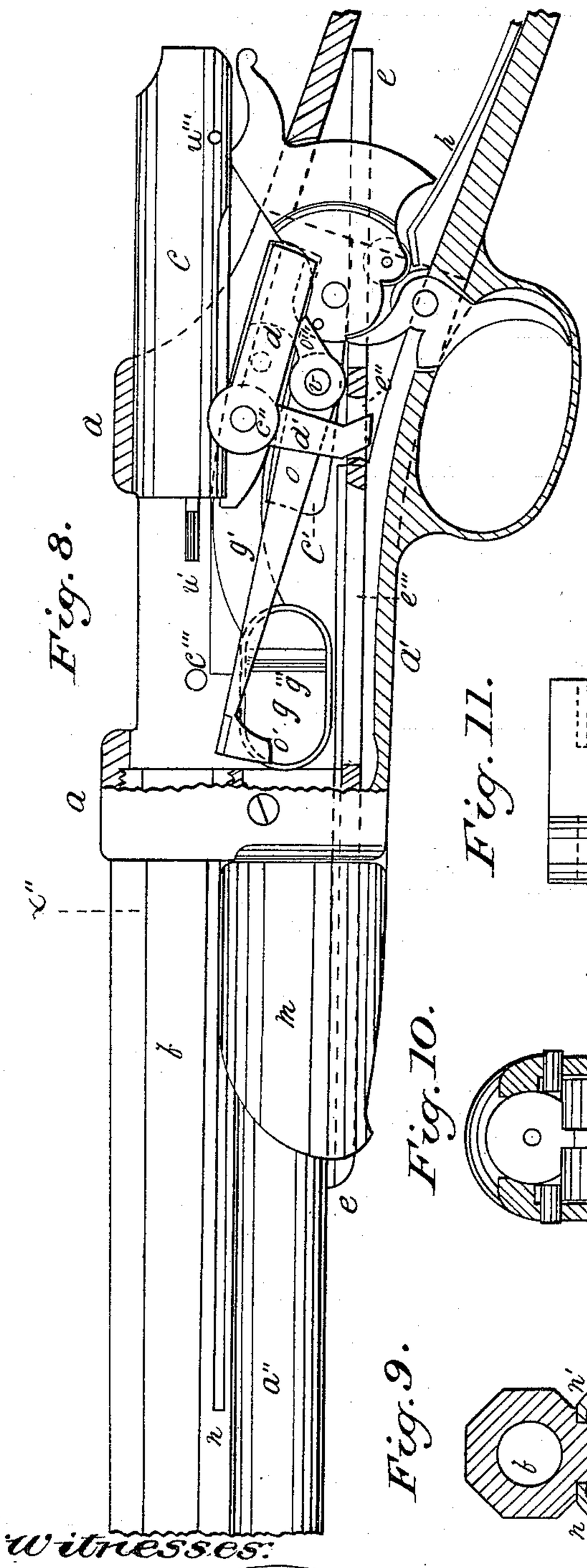


Fig. 12.

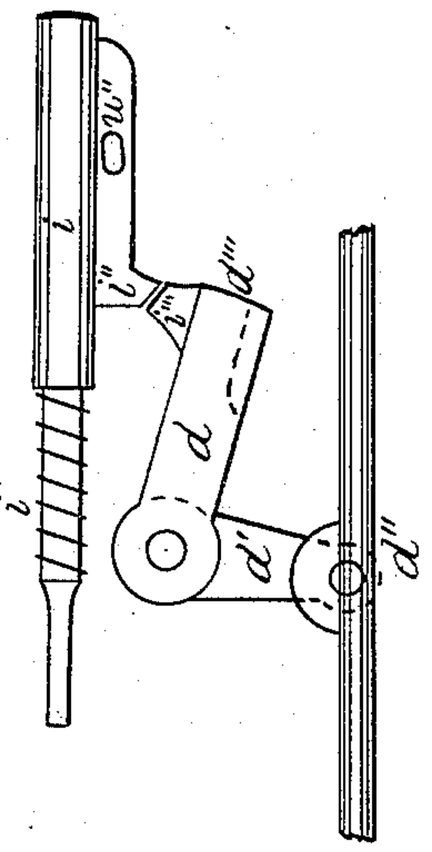


Fig. 13.

Fig. 11.

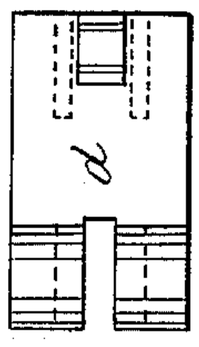


Fig. 10.

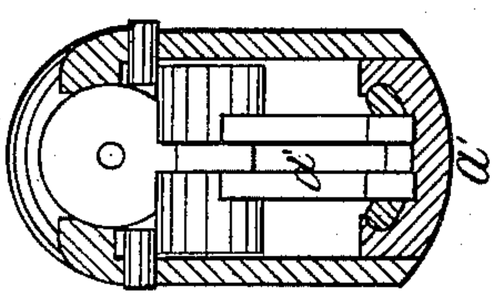


Fig. 9.

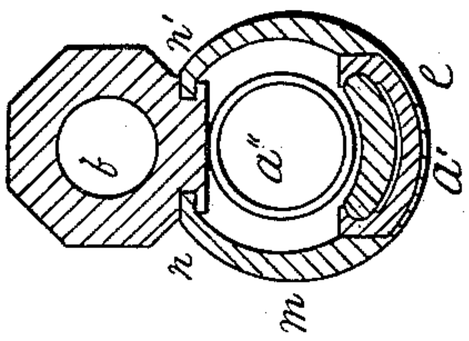
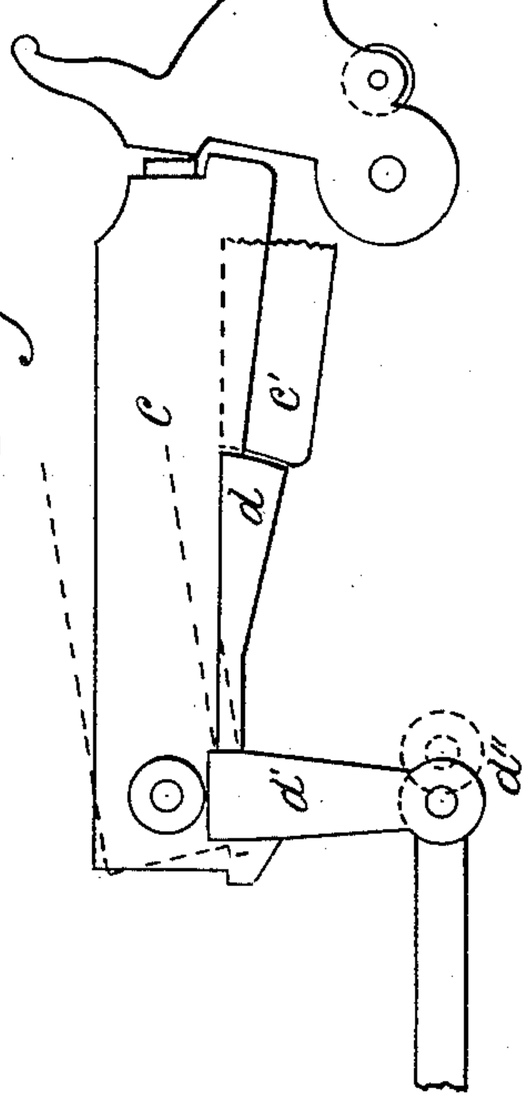


Fig. 14



Witnesses:

L. Lewis

Geo. C. Richardson

Inventor.

Wm. H. Elliot

UNITED STATES PATENT OFFICE.

WILLIAM H. ELLIOT, OF NEW YORK, N. Y.

MAGAZINE FIRE-ARM.

SPECIFICATION forming part of Letters Patent No. 278,324, dated May 29, 1883.

Application filed March 10, 1883. (No model.)

To all whom it may concern:

Be it known that I, WM. H. ELLIOT, of New York, county of New York, and State of New York, have invented a new and Improved Magazine Fire-Arm, of which the following is a specification.

The object and nature of my invention may be described as follows:

The object of my invention is to provide a simpler, cheaper, and more rapid fire-arm than any now in use; and the nature of my invention consists in the use of certain appliances and methods, which are fully set forth in the following specification and claims.

Figure 1 in Sheet 1 is a vertical longitudinal section of my improved arm in the closed position, showing the limb-work in elevation. Fig. 2 is a vertical cross-section of the arm at *x*, Fig. 1. Fig 3 is an elevation of the charge-opening cover. Fig. 4 is a plan of the guard-strap, showing the connecting-strap supported upon and sliding therein. Fig. 5 is a bottom view of the handle, with its locking-spring. Fig. 6 is a horizontal section of the receiver in the axis of the magazine. Fig. 7 is an elevation of the brace. Fig. 8 in Sheet 2 is a vertical section of the receiver, showing the barrel, magazine, and limb-work in elevation, the arm being in the open position. Fig. 9 is a vertical cross-section of the arm at *x''*, Fig. 8. Fig. 10 is the same at *x'*, Fig. 1. Fig. 11 is a top view of the brace. Fig. 12 is an elevation of the brace, firing-pin, and a portion of the connecting-strap. Fig. 13 is an elevation of an adjustable mainspring-stop. Fig. 14 is a modification of the invention, showing the breech-block and brace combined.

My invention refers to that kind of magazine fire-arm which has a tubular magazine arranged under the barrel, a bolt or breech-block for closing the chamber, which moves in a line with the barrel and is operated by means of a sliding handle, with its connecting-strap supported upon and sliding in the guard-strap or other device attached to the receiver. The receiver has the barrel screwed into its forward end in the usual way and is provided with the recoil-shoulders *c'*, which are formed in one piece with the receiver and project from the inner surface or sides of the same. The brace *d* is pivoted at *c''* to the breech-block, and at the moment of discharge the surface *d'''* of the brace rests upon the face of the recoil-shoulder *c'*. The brace has an arm, *d'*, which extends downward and passes through or is joined or pivoted to the connecting-strap *e* at *e'*. This strap slides back and forth in grooves in the upper side of the guard-strap, and at its forward end is provided with a handle, *m*, which may project into and be guided by grooves *n* in the barrel, as shown in Fig. 9. The guard-strap extends for some distance forward of the receiver, and has the grooves for the connecting-strap continued in the part so extended forward, whereby the handle is guided and supported forward of the receiver independently of the barrel or magazine-tube. The strap *e*, being bifurcated at its rear end, so as to pass by the hammer and trigger, as seen at *e'*, Fig. 4, by this means a long bearing is obtained for it in the guard-strap. The upper edges of the plate forming the handle may, if desired, run in grooves in the barrel, as shown at *n'*; but I prefer that the handle be guided and supported entirely by the guard-strap.

The handle has a spring-bolt, *m'*, which fastens it to the connecting-strap, the point of the bolt projecting into the strap, as shown at *m''*. By raising the bolt the handle may be moved back and fastened against the receiver, for convenience in handling and packing, by permitting the point *m''* to fall into the notch *m'''*. The handle, when so adjusted, occupies the position shown in Fig. 8, while all of the other parts occupy the position shown in Fig. 1. The carrier *o* is pivoted to the receiver at *v'*, and is bifurcated at its rear end to make room for the hammer, as shown at *o''*, Fig. 6, and for some distance forward of its pivot it is made thin, as seen at *o'''*, whereby it is adapted to spring laterally to make room for the cartridge *b''* and charge-opening cover *g* when the magazine is being charged with cartridges. As the cartridges are pushed into the magazine the carrier and cover both yield laterally, to let them pass, but assume their natural positions again on being released from pressure. The carrier is provided at its forward end with dependent portion *o'*, which serves as a stop to the cartridges in the magazine, the strap *e* having in it the opening *e'''* to make room for said dependent portion when the carrier is depressed

to its lowest position. The carrier is actuated in both directions by the brace, which strikes it in rear of its pivot to raise it and in front of its pivot to depress it below the mouth of the magazine, as shown in Figs. 1 and 8. The support of the charge-opening cover g' passes into one of the recesses a''' above the recoil-shoulders, and is fastened to the side of the receiver by screw g''. The cover has on its inner surface projecting rib g''', opposite to a corresponding projection, b''', from the side of the receiver or guard-strap, to hold the cartridges centrally in the receiver while they are being raised by the carrier. The brace d is provided with a projection, n'', on the upper side of the joint, as seen in Figs. 1 and 7. This projection, when the arm is closed, rests against the pin or shoulder c''' on the receiver. When the lower end of the arm d' is carried backward by the strap e in opening the chamber, the arm of the brace acts as a lever of the second order, to pry the breech-block away from the barrel, the face of the recoil-shoulder and the face d''' of the brace being cut sufficiently eccentric to the axis c'' to permit this slight movement in the breech-block while unlocking the same. By this lever-action the cartridge is started from the chamber.

An imperfect cartridge-head will sometimes swell out against the breech-block with so much force that it requires great effort to remove the brace away from the recoil-shoulders. To remedy this difficulty, I make a joint, v', midway in the brace, as shown in Fig. 7. When the lower end of the arm d' is carried back the brace first bends upward to the position shown by open lines. This shortens the brace sufficiently to relieve the pressure of the cartridge-head against the breech-block. In such case the projection n'' must not act upon the shoulder c''' until after the brace is bent upward.

By reference to Figs. 1 and 7 it may be seen that the surfaces on each side of the lower end of the arm d' at d'', which are borne upon by the strap e are inclined, so as to counteract the tendency of the force applied by said strap to raise and depress the forward end of the breech-block as it is moved back and forth in manipulating the arm.

I have shown in the drawings several methods of attaching or joining the arm d' to the strap e. In Figs. 1 and 4 the lower end of the arm is joined by merely passing through the strap. In Fig. 12 the arm at the lower end is pivoted to the strap e. This method avoids any tendency of the strap to raise or depress the forward end of the bolt as it runs in grooves in the upper side of the guard-strap, and holds the breech-block to nearly a parallel movement, and so prevents any binding of the bolt in the rear end of the receiver.

In Fig. 14 a modification of my invention is shown. In this case the breech-block with the brace and arm are made in one piece of metal, and when the brace is raised above the recoil-shoulder the breech-block assumes the position represented by open lines. To avoid friction the forward end of the breech-block is provided with a roller on each side, which run in grooves within the receiver, and the connecting-strap, being pivoted to the arm d', is provided with a bearing in the guard-strap only at its extreme forward end, the parts being forced to move in a parallel line by the friction-rollers in their grooves. The hammer and rear end of the bolt, it may be seen, are so formed that the hammer can strike the firing-pin only when the brace is fully seated upon the recoil-shoulders.

The firing-pin i, Fig. 12, has a downward projection, i'', and the brace also has an upward projection, i''', and these projections are so arranged that the firing-pin can move forward to explode the charge only when the breech-block is fully locked. The firing-pin has a spring, i', which throws both it and the hammer back to the safety position after the discharge, the mainspring h being stopped at the proper point by the adjustable screw-loop h', the backward movement of the firing-pin being limited by the pin u''' in the oblong opening in the flange u'', the lower surface of the projection i'' being cut diagonally, as shown in Fig. 12, whereby the firing-pin is cammed back or retracted by positive movement in case the spring i' fails to perform its function, or in case it be dispensed with in manufacturing the arm. The loop h', in which the mainspring works, is inserted in the lower tang, and is adjusted by turning it in or out, as occasion may require. It also serves the purpose of keeping the mainspring in a central position.

The operation of my improved arm is as follows: The breech-block being locked, the carrier down, and the first cartridge-head resting partly upon the carrier, the first backward movement of the handle swings the brace up above the recoil-shoulders, which unlocks the breech-block. The backward movement of the handle being continued carries the breech-block back over the hammer and the brace into the recesses a''', above the recoil-shoulders, as shown in Fig. 8. In this position a cartridge may be passed into the magazine through the charge-opening, as represented in Fig. 6. As the breech-block retires to the rear the first cartridge follows it back, and when the brace strikes the rear end of the carrier both the carrier and cartridge are raised into the receiving-chamber, as shown in Fig. 8. Reversing the movement of the handle carries the breech-block forward and the cartridge into the chamber of the barrel. When the breech-block ceases to move forward the forward movement of the handle being continued swings the brace down in front of the recoil-shoulders, and as the brace is depressed it strikes the carrier and carries that down below the mouth of the magazine, which liberates another cartridge.

It is obvious that the carrier may be bifurcated, and the dependent portion of the breech-block and the joint c'', which joins the brace to the breech-block, made to work through the carrier with the same result, as shown in my patent of September 14, 1880; also, that the recoil-shoulders may be formed upon guard-strap or upon any other device suitably supported by the receiver, and serve the same purpose, as shown in my patent of April 26, 1881.

Having described my invention, what I desire to have secured to me by Letters Patent of the United States is—

1. In a magazine fire-arm, the combination and arrangement of devices substantially as follows: a receiver provided with or supporting the recoil-shoulders c', a breech-block which moves in a line with the barrel to close the arm, carrying the brace d for locking the same, and the arm d', and a connecting-strap which is joined to the arm d' at d'' and slides in grooves in the guard-strap or other device supported by the receiver, simultaneously and substantially parallel with the movement of the breech-block, and is provided at its forward end with a handle for operating the same, whereby a continuous backward movement of the handle first raises the rear end of the brace above the recoil-shoulders to unlock the breech-block and then moves it back to open the arm, while a continuous forward movement of the handle first closes the arm and then brings the brace down in front of the recoil-shoulders to lock the breech-block, as set forth.

2. In a magazine fire-arm, the combination and arrangement of devices substantially as follows: a receiver provided with or supporting recoil-shoulders c', a breech-block which moves in a line with the barrel to close the arm, a brace for locking the same, which is provided with the downward-projecting arm d', and is jointed to the forward end of the breech-block at c'', and a connecting-strap which is joined to the arm d' at d'' and slides in grooves in the guard-strap or other device supported by the receiver, simultaneously and substantially parallel with the movement of the breech-block, and is provided at its forward end with a handle for operating the same, whereby a continuous backward movement of the handle first raises the rear end of the brace above the recoil-shoulders to unlock the breech-block and then moves it back to open the arm, while a continuous forward movement of the handle first closes the arm and then brings the brace down in front of the recoil-shoulders to lock the breech-block, as set forth.

3. In a magazine fire-arm, the combination and arrangement of devices substantially as follows: a receiver provided with or supporting recoil-shoulders c', a breech-block which moves in a line with the barrel to close the arm, a brace for locking the arm, which is provided with the downward-projecting arm d' and is jointed to the forward end of the breech-block at c'', the free end of said brace having both a horizontal and vertical movement, a connecting-strap which is joined to the arm d' at d'' and slides in grooves in the guard-strap or other device supported by the receiver, having a movement parallel with the movement of the breech-block and arranged below the carrier, and provided at its forward end with a handle for operating the same, and a carrier pivoted near its rear end to the receiver, and provided with an extension, o'', to the rear of its pivot, whereby the brace in its backward movement strikes the projection o'' and raises the carrier, and in its downward movement strikes the carrier forward of its pivot and depresses it, as set forth.

4. In a magazine fire-arm, a breech-block which moves in a line with the barrel to close the chamber, and a brace, d, for locking the arm, pivoted to the breech-block at c'', and provided with an arm, d', and projection n'', said brace being actuated by handle m through a suitable connection, and in combination therewith a fixed point or shoulder, c''', on the receiver, whereby the brace acts as a lever to start the cartridge-shell back, substantially as specified.

5. In a magazine fire-arm, the construction and arrangement of devices substantially as follows: a breech-block which moves in a line with the barrel to close the chamber, a brace, d, for locking the arm, which is pivoted to the forward end of the breech-block at c'', being jointed midway at v', and provided with the downward-projecting arm d', and a connecting-strap which is joined to the lower end of the arm d', and is adapted to slide in grooves in the upper side of the guard-strap, and is provided with handle m, whereby the breech-block is easily removed from under the pressure of the cartridge-head, substantially as specified.

6. In a magazine fire-arm, a handle which operates the breech mechanism through a sliding connecting-strap in the lower side of the receiver, and in combination therewith a locking-bolt, m', whereby the handle may be moved back to the receiver and fastened, while the strap remains in its forward position, substantially as and for the purpose specified.

7. In a magazine fire-arm, the combination of devices substantially as follows: a breech-block which moves in a line with the barrel for closing the chamber, a brace for locking the arm, which is provided with an arm, d', and is pivoted to the forward end of the breech-block, and a connecting-strap which is pivoted to the arm of the brace at d'' and slides in grooves in the upper side of the guard-strap in a direction substantially parallel with the movement of the bolt, and is provided with handle m for operating the same, whereby the forward end of the breech-block is held to a movement parallel with that of the connecting-strap, as specified.

8. In a magazine fire-arm, the combination and arrangement of devices substantially as

follows: a receiver provided with or supporting recoil-shoulders c', a breech-block which moves in a line with the barrel to close the arm, a brace for locking the arm, which is provided with the downward-projecting arm d' and is jointed to the forward end of the breech-block at c'', a connecting-strap which is joined to the arm d' at d'' and slides in grooves in the guard-strap or other device supported by the receiver, simultaneously and substantially parallel with the movement of the breech-block, and is provided at its forward end with a handle for operating the same, and a firing-pin in said breech-block, having the projection i'', which is arranged above said brace or a projection therefrom, said projection i'' having its lower surface cut diagonally, whereby when said brace is raised to unlock the arm the firing-pin is cammed back or retracted by positive movement, as shown and described.

9. In a fire-arm, the combination, with mainspring h, of the adjustable screw-loop h', consisting of a rectangular frame having a screw projecting from the middle of one end and inserted into the lower tang of the arm, whereby the mainspring is held in a central position and its action stopped at any desired point, as specified.

10. In a magazine fire-arm, a receiver having a charge-opening in its side through which to charge the magazine, and vertical rib b''' projecting inward from the side opposite the charge-opening, and, in combination therewith, the charge-opening cover g, provided with vertical rib g''', projecting inward from the inner surface of said cover, whereby a cartridge is held in a central position on the carrier, substantially as specified.

11. In a magazine fire-arm, a connecting-strap for operating the breech mechanism, which slides in suitable grooves in the upper side of the guard-strap, and is provided with a handle at its forward end for operating the same, and, in combination therewith, a guard-strap which is extended forward of the receiver and has the grooves for the connecting-strap continued in the part of the guard-strap so extended forward, whereby the forward end of the connecting-strap and its handle are guided and supported forward of the receiver independently of the magazine-tube, substantially as specified.

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Witnesses:
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GEO. D. RICHARDSON.