(No Model.)

W. H. ELLIOT.

MAGAZINE FIRE ARM.

No. 250,652. Patented Dec. 13, 1881.

Fig. 1.

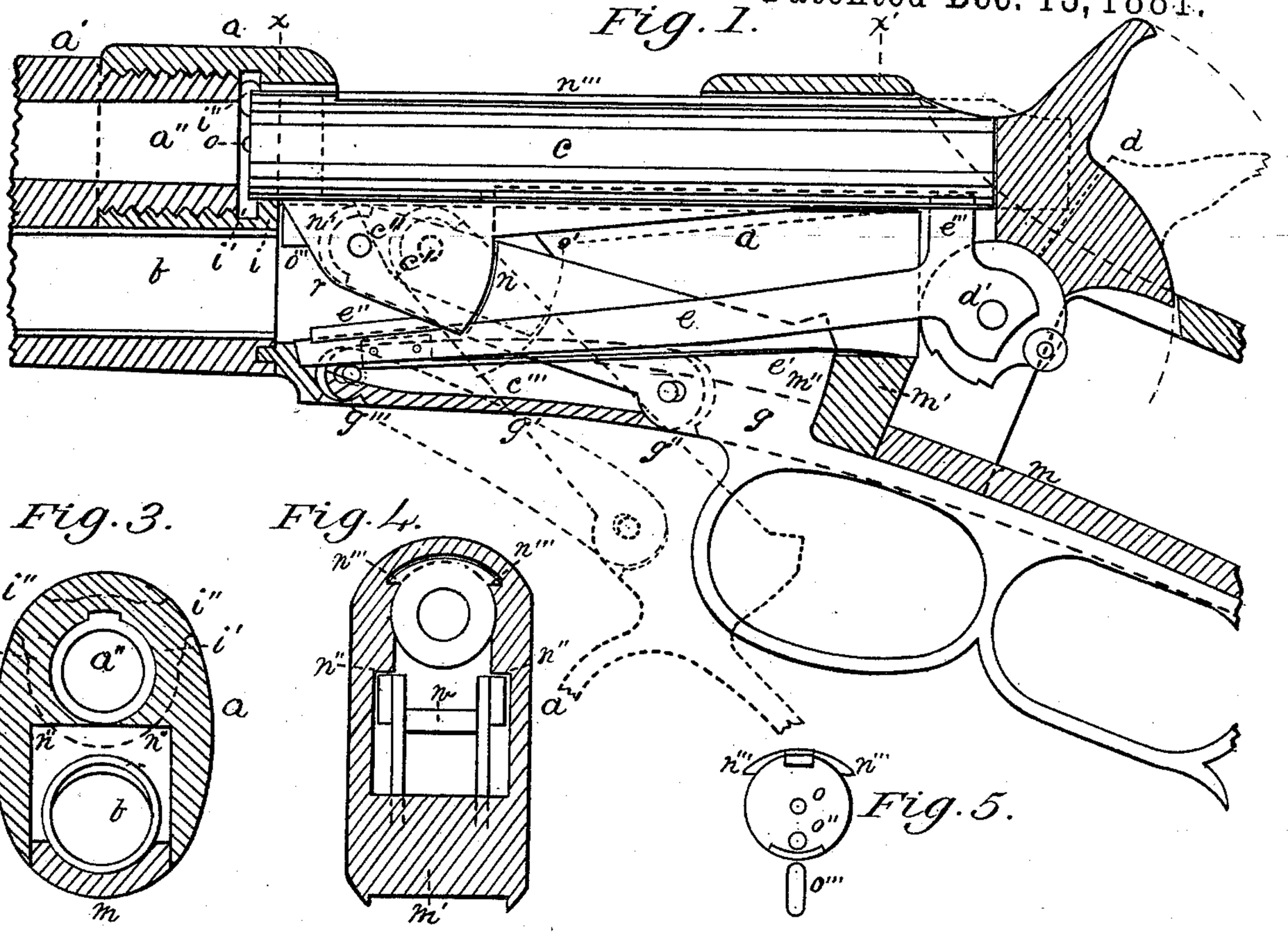

Fig. 3.

Fig. 4.

Fig. 5.

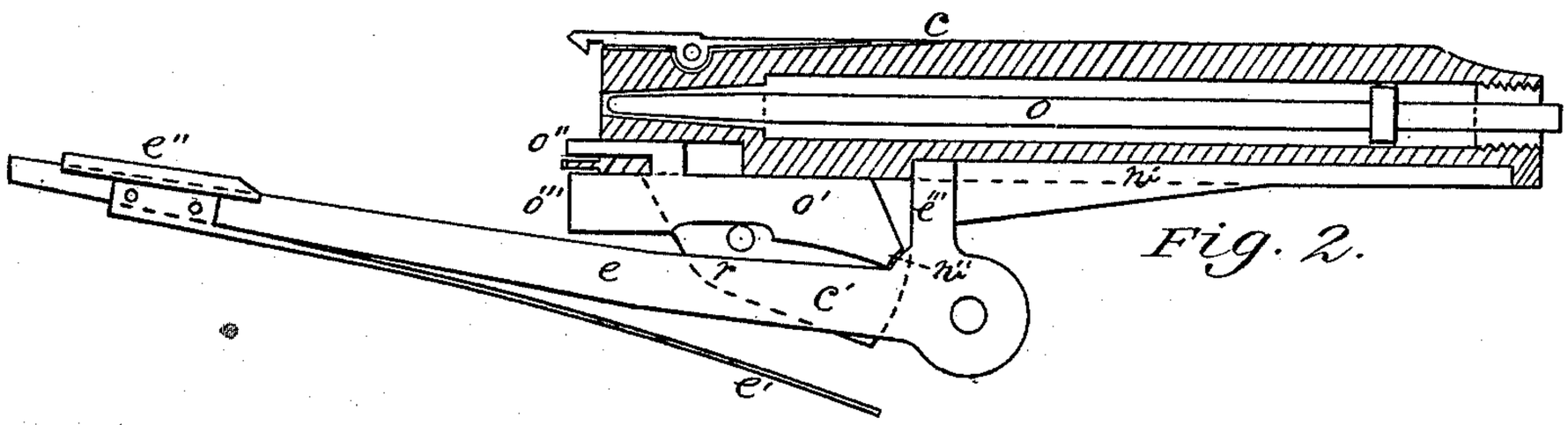

Fig. 2.

Fig. 6.

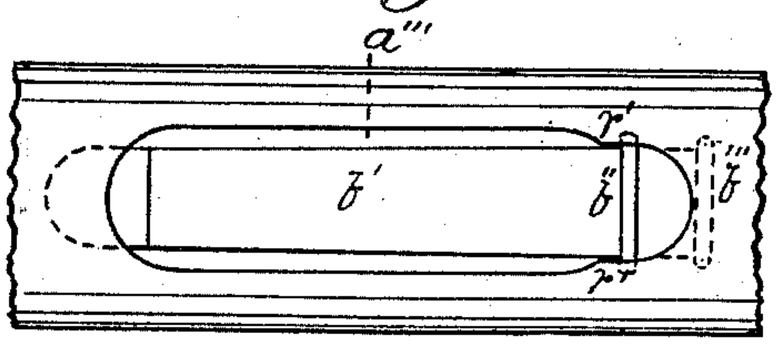

Fig. 7.

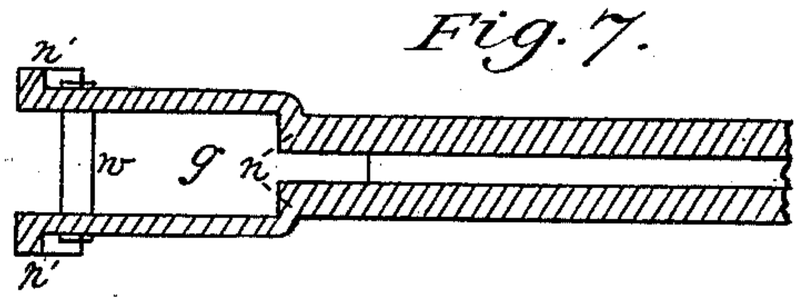

Fig. 8.

Witnesses:

M. L. Elliot

S. L. Elliot

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. 250,652, dated December 13, 1881.

Application filed September 15, 1881. (No model.)

To all whom it may concern:

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

The object of my invention is to provide a more convenient, simpler, and more practical magazine 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 is a vertical longitudinal section of the arm, showing the bolt and carrier in elevation. Fig. 2 is a vertical section of the bolt and an elevation of the carrier and cartridge-stop, showing the parts in their relative positions at the moment the cartridge is carried into the receiving-chamber. Fig. 3 is a vertical cross-section of the same at broken line *x*, Fig. 1. Fig. 4 is the same at broken line *x'*, Fig. 1. Fig. 5 is an elevation of the forward end of the bolt and cartridge-stop. Fig. 6 is a plan of a portion of the receiver. Fig. 7 is a longitudinal section of a portion of the guard-lever. Fig. 8 is a vertical section of a portion of the arm, showing the link-connection between the operating-lever and receiver.

The invention herein described refers to that kind of magazine-arm in which the breech-block has a reciprocal movement in a line with the barrel for opening and closing the chamber, and in which said movement is given to the breech-block by means of a toggle-connection, which has its upper or lever link extended rearward under the wrist of the arm to form a lever, and is an improvement upon the arm patented to me April 26, 1881.

The arm in its closed position is shown in Fig. 1, in which the devices are represented in the act of firing the charge; and in Fig. 2 the bolt, carrier, and cartridge-stop are shown in their relative positions when the arm is open.

For a magazine I employ a single tube provided with the usual cartridge-propelling devices, and located under the barrel.

The receiver of the arm has the barrel *a'* screwed into its forward end, and is also provided with the bar or recoil-shoulder *m'*, cut in the solid material of the receiver, which connects the two sides of the receiver together, as shown in Fig. 4.

The operating-lever of the arm is pivoted at its forward end to the dependent portion of the breech-block at *c''*. The forward or short arm of the lever forms one link of the toggle-connection, and when the arm is closed it fits in between the dependent portion of the breech-block at *n* and the recoil-shoulder *m'*, whereby it resists the recoil of the charge. The lever also extends to the rear of the recoil-shoulder *m'*, and has upon the part so extended rearward the trigger-guard, as shown in Fig. 1. The lower or connecting link of the toggle-connection is pivoted at its rear end to the lever or upper link at *g''*, and at its forward end to a fixed point upon the receiver, near the mouth of the magazine. The two joints of the lower link are loose, so as to allow a slight longitudinal movement in each, to provide for the varying distance while the arm is being closed, between the shoulder *m''* and the point upon the receiver, to which the lower link is pivoted.

The carrier is pivoted to the receiver, at *d'*, upon the same pivot with the hammer, as shown in Fig. 1. It has an arm, *e'''*, which extends upward into the groove *w'* in the under side of the breech-block. It has also a widened portion, *e''*, at its forward end, for keeping the cartridge in a central position. This widened portion is acted upon by the bevel *r* to force the carrier slowly down below the mouth of the magazine as the breech-block moves forward in closing the arm. The last portion of this forward movement releases the first cartridge in the magazine from the feed-pawl, which passes upon the carrier when the breech-block makes its backward movement. As the breech-block is moved backward in opening the arm the carrier, by the action of spring *e'*, is raised, carrying the cartridge with it up to the receiving-chamber before the breech-block. If, from any cause, the action of the spring should not bring up the cartridge in time, the movement of the carrier is made positive by the shoulder at the forward end of the groove *w'* coming in contact with the arm *e'''* as the breech-block is completing its backward movement.

The cartridge-stop *o'*, as seen in Fig. 2, is

attached to and moves back and forth with the bolt, and also has a parallel movement in the bolt. It is provided at its forward end with two points, *o''* and *o'''*. The former ejects the empty shell. The latter arrests the backward movement of the cartridge as it follows the bolt back on leaving the magazine. It is also provided at its rear end with the point *w''*, which arrests the backward movement of the stop at the proper place. The point *w''* rests upon a portion of the carrier which is cut in the form of a segment, having its center in the pivot of the carrier, so that, although the carrier is in motion when it arrests the stop, it imparts no movement to that device. When a cartridge is released from the magazine by the feed-pawl it first comes in contact with the point *o'''* of the stop while the arm is yet closed. The position of the point *o'''* now being considerably to the rear of the forward end of the bolt, as seen in Fig. 1, the head of the cartridge is lodged under the bolt, where it remains until, by the backward movement of the bolt, the stop is brought against the carrier at *w''*, which arrests the backward movement of the stop and lower side of the head of the shell which is being extracted; but the backward movement of the bolt and extractor being continued releases the head of the advancing cartridge from its position under the bolt, so that it can be raised by the carrier, and at the same time the extractor carries the upper side of the head of the empty shell back, which ejects it from the receiver.

In the forward end of the receiver, between that portion of it which contains the breech mechanism and the chamber of the barrel, there is a solid partition, *i*, provided with a circular opening, which allows the forward end of the bolt to pass through it when the arm is closed. In front of this partition there is an annular recess, *i'*, surrounding the forward end of the bolt and head of the cartridge, which is provided with gas-escapes *i''*. (Shown in Fig. 1 and in Fig. 3 by broken lines.) For the purpose of making a cheap and perfect fit of the forward end of the bolt in the partition, I make it cylindrical and the hole through the partition round, except a small recess on the upper side for the extractor, and I divide the forward end of stop *o'* into two parts, that which serves as an ejector coming out of the forward part of the bolt within the circumference of its cylindrical end, and the other, which serves to stop the cartridge, projecting below the cylindrical end. By this construction of the parts an escape of a large quantity of gas from a defective cartridge is controlled, as it must first pass into the annular recess *i'*, and then through the escape *i''* to the open air. Any escape through the extractor-recess would also be to the open air, and none would pass into the receiver. By dividing the forward end of the stop into two points, as above stated, the cylindrical surface of the forward end of the bolt, and the surface of the opening through the solid partition are left unbroken, which makes the escape of gas into the receiver impossible, as the opening in the end of the bolt for the ejector-point is completely covered by the head of the cartridge, while at the same time both the cartridge stop and ejector are constructed in one piece of mechanism, the arrangement of the two points being such that while the lower point pushes the advancing cartridge out from under the end of the bolt the upper point ejects the empty shell from the receiver.

By reference to Fig. 6 it may be seen that the opening to the receiving-chamber *a' '* on the top of the receiver is narrowed for a short distance at its rear end by the projections *r'*. The location of the opening *a'''* in relation to the rest of the breech mechanism is such that when the cartridge is raised by the carrier its head comes up under the narrow portion of the opening, as seen at *b''*, which is too narrow to allow the head to be thrown out of the receiving-chamber by the carrier, while the upward movement of the forward end of the cartridge is arrested by an overhanging portion of the receiver. After the cartridge has been fired the shell is drawn back by the extractor to the position represented by broken lines *b'''*, from whence it is ejected from the receiver in the manner already described. As the backward movement of the lower edge of the cartridge-head is arrested by the ejector the extractor gives to the forward end of the cartridge-shell an upward-and-backward movement in a vertical plane, which imparts to the head of the shell a forward movement, causing it to swing forward from under the narrow part of the opening into the wide part, from whence it readily escapes from the receiver, turning upon a horizontal axis located about half an inch from the head of the shell.

By reference to Figs. 1, 4, and 7 it may be seen that the lever *g* has upon its forward end a segmental projection, *n'*, having its center in the axis of the pivot *c''*, which, when the arm is manipulated, moves along upon the ledges *n''* within the receiver, and that the bolt is provided with parallel projections *n'''* upon its upper side, which extend from a point within half an inch of its forward end to its rear end, and these projections serve as a cover to the receiving-chamber, the top of the receiver being cut as shown in Fig. 4, so as to furnish a surface for the projections *n'''* to slide upon. As the lever moves back and forth in manipulating the arm the segmental projections have a partial rotation around the pivot *c''*, having at all times a bearing upon the ledges *n''*, to prevent any upward movement of the forward end of the bolt. The object of this construction of parts is to provide guides for the forward end of the bolt, to prevent unusual friction while the arm is being manipulated.

The ejector *o''* may be made independent of the stop *o'* and operated by a spring, as shown in my patent before mentioned. By this con-

struction a cartridge-shell would be ejected a little earlier in the backward movement of the bolt. In that case the device *o'* would act as a cartridge-stop only.

By reference to Figs. 1 and 7 it may be seen that both links of the toggle-connection are recessed to make room for the carrier, which occupies a central position.

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 having a breech-block for closing the chamber, which moves in a line with the barrel, a centrally-arranged carrier for raising the cartridge, provided with the segmental bearing for the point *w''*, and in combination therewith a centrally-arranged cartridge-stop, which is attached to and moved with the bolt, and has its rearward movement arrested by the carrier, substantially as specified.

2. In a magazine fire-arm having a breech-block for closing the chamber, which moves in a line with the barrel, a carrier for raising the cartridge, which is provided with the segmental surface for the point *w''*, and in combination therewith a cartridge-stop which is provided at its forward end with two points, one projecting from within the cylindrical end of the bolt to eject the empty shell, the other acting below the bolt to arrest the backward movement of the cartridge and push it out from under the bolt, said stop having its rearward movement arrested by the carrier, substantially as specified.

3. In a breech-loading fire-arm having a breech-block for closing the chamber, which moves in a line with the barrel, and a receiver provided with the ledges *n''*, and in combination therewith a bolt provided with the cover or projections *n'''* to slide upon the top of the receiver, and a lever which is pivoted to said bolt, and is provided with the segmental projections *n'* to run upon the ledges *n''*, substantially as and for the purpose specified.

WM. H. ELLIOT.

Witnesses:
BENJAMIN PAGE,
M. L. ELLIOT.