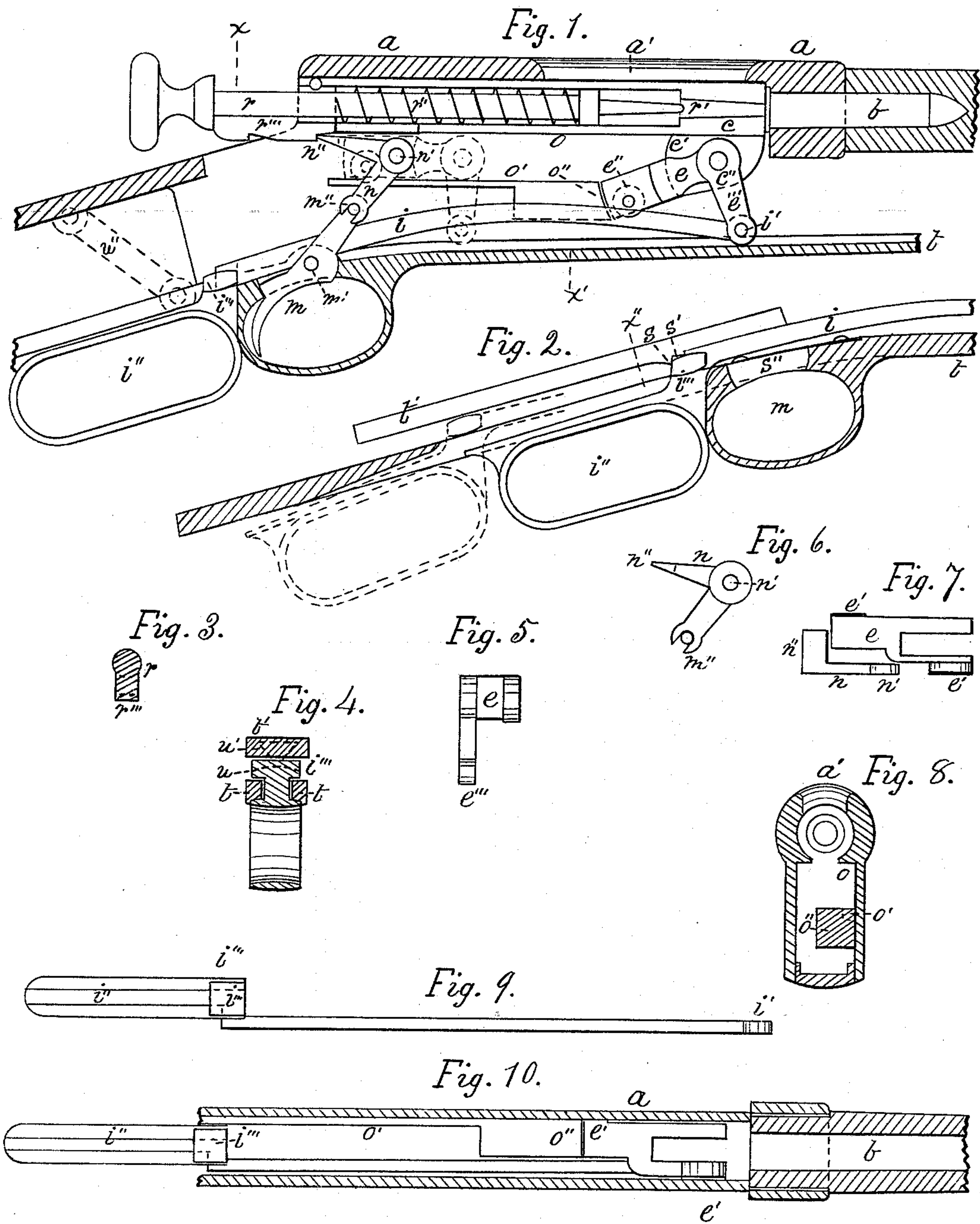


(No Model.)

W. H. ELLIOT.
BREECH LOADING FIRE ARM.

No. 309,834.

Patented Dec. 30, 1884.



WITNESSES:

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

BREECH-LOADING FIRE-ARM.

SPECIFICATION forming part of Letters Patent No. 309,834, dated December 30, 1884.

Application filed October 4, 1884. (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 Breech-Loading 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 procure a simple, cheap, and practical fire-arm that may be charged with equal facility from a detachable magazine arranged upon the top of the receiver or from the hand; and the nature of my invention consists in the novel assemblage of certain co-operative devices, which are fully set forth in the following specification and claims. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a vertical longitudinal section of the receiver of the arm, showing the limb-work in elevation. Fig. 2 is an elevation of the reciprocating strap and handle and the devices that support the same. Fig. 3 is a vertical cross-section of the hammer-rod. Fig. 4 is a vertical cross-section of the reciprocating handle, showing several methods of supporting and guiding it. Fig. 5 is a front elevation of the brace. Fig. 6 is a side elevation of the sear. Fig. 7 is a plan of the brace and sear. Fig. 8 is a vertical cross-section of the receiver. Fig. 9 is a plan of the reciprocating strap and handle. Fig. 10 is a horizontal section of the receiver, showing a plan of the brace, recoil-shoulder, and strap.

My invention refers to that class of arms having a bolt for closing the chamber, which moves in a line with the barrel, and is operated through the medium of a reciprocating strap and handle arranged under the wrist of the arm.

My improved arm may be charged from a magazine located on the top of the receiver, as shown in my patent of November 4, 1884, No. 307,531, or it may be charged by hand in the usual way through opening a' . The bolt c has a pendent portion, c' , at its forward end. To this pendent portion the brace e is pivoted at e' . The recoil-shoulder o'' , for supporting the brace, should be formed in one piece with and should project from the inner surface of the receiver, and extending to the rear form a re-

cess in which the brace may slide back and forth while manipulating the arm. It may, however, be made in a separate piece, and attached to the inner surface of the receiver, a portion of it projecting through the side of the receiver to prevent it being moved by the recoil. The reciprocating strap i slides in grooves, or has other guides within the receiver at its forward end, and, extending rearward under the wrist of the arm, has a handle, i'' , at its rear end, which is guided by suitable devices in the rear of the receiver, as shown in Figs. 1 and 2. The forward end of strap i is connected to the downward-projecting arm of the brace e''' at i' .

In operation, a rearward movement of the handle first raises the rear end of the brace above the recoil-shoulders and then draws the bolt and brace backward to the position shown in Fig. 1 by open lines. A reverse movement of the handle pushes the brace and bolt forward, and brings the brace down in front of the recoil-shoulders, as shown in full lines, Fig. 1. The brace e has a roller with a pivotal bearing on its rear end, which runs upon the ledge o' , so as to avoid friction while the arm is being closed. The roller may be increased in diameter so as to project both above and below the brace, in which case it would run upon the ledges o and o' , and so avoid friction both in opening and closing the arm. The rear end of the strap i and its handle i'' are guided by the ears i''' , which hold the handle to a movement substantially parallel with the wrist of the arm. These ears project into and are controlled by the recess formed by the upper side of the tang t and the lower side of the plate t' , as shown in Figs. 2 and 4. There are several ways of guiding the rear end of the strap. By removing the upper portion of the ears, as indicated by open line u , the strap would be guided by the tang alone. By removing the whole of the ears, and allowing the handle to project up into the dovetailed groove in plate t' , as indicated by open lines u' , the handle would then be guided entirely by the plate t' .

By reference to Fig. 2 it may be seen that the plate t' has a projecting shoulder, s , on its under side, and that the strap i has a corresponding shoulder, s' , on its upper side. These shoulders are held one upon the other by the action of spring s'' , which is screwed to the top

of the tang by the side of the trigger, and presses at its rear end upon the under side of the strap, which prevents the arm from being jarred open by bringing the butt down upon the ground, as in "order arms." To open the arm the handle has to be pressed downward a little to release the shoulders before it is drawn back. The forward end of the strap is held to a movement substantially parallel with the axis of the band by its connection with the bolt through the brace, while the rear end is held, as before stated, to a movement substantially parallel with the wrist of the arm. During the manipulation of the arm the brace swings a little in a vertical plane, at its forward end, upon pivot i' , and at its rear end upon the short rounded ears i'' , as it moves forward and back, thus avoiding the friction of long groove-bearings for the handle. This causes the handle to swing out a little from the wrist of the arm, as represented by open lines, Fig. 2, and thereby avoids cutting a long opening in or through the tang. The handle may, however, be provided with long groove-bearings parallel with the wrist. In that case it would have to be connected to the brace by means of a link, as shown in said patent. The recoil-shoulder and the face of the brace which bears upon it are located upon the left-hand side of the receiver, and the pendent portion of the bolt being arranged so as to act centrally the tendency of the strain when the arm is fired is to throw the rear end of the brace to the left and the forward end to the right. To avoid this result, I add to the two surfaces e' , as shown in Fig. 7, one on the forward end and the other on the rear end of the brace, so that it will rest at these points upon the inner surface of the receiver, and will not be thrown out of line with the band by the strain of the charge.

By reference to Figs. 5, 7, and 10 it may be seen that the brace and recoil-shoulder occupy one side of the receiver, while the arm e''' of the brace and the reciprocating slide i occupy the other side. By this arrangement I avoid weakening the recoil-shoulder by dividing it into two parts. The hammer-rod r is located centrally in the bolt, and is provided with the usual spiral mainspring. It is also provided with tumbler r''' , having the usual half and full cock notches. When the chamber is being closed, the point n'' of the sear n takes in the first notch and holds the hammer at full-cock. The sear n and trigger m have each an arm, which are joined together by pin-and-slot connection m'' .

Fig. 7 represents the sear arranged at one side of the receiver to make room for the brace, but has an offset at its rear end, which brings its point n'' before the tumbler. This arrangement serves to shorten the receiver and compact the arm. The trigger being actuated by a suitable spring, holds the point of the sear in the notches. The arm is fired in the usual way, and the empty shells may be extracted

and ejected by any of the devices in common use for bolt-guns.

Instead of controlling the handle and rear end of the reciprocating strap by grooves or other similar guides, an equivalent may be found in a link for connecting them with the upper tang, as indicated by open lines u'' , Fig. 1. All the points between the handle and bolt would then be pivotal, the result of which would be to reduce materially the friction of working the arm. In this case the handle would swing out from the wrist during the movement of the bolt, but would rest against the wrist at each extremity of its movement.

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

1. In a breech-loading fire-arm, the combination of devices substantially as follows: a bolt for closing the chamber, having a centrally-arranged hammer-rod, r , provided with the mainspring r'' and tumbler r''' , a brace pivoted at its forward end to the forward end of the bolt, and supported by a recoil-shoulder within the receiver, a reciprocating handle arranged underneath the wrist of the arm and controlled by guides substantially parallel therewith for manipulating the same through a suitable connection with the brace, which consists of an extension from said handle, connecting the same directly with the brace, whereby the arm is operated by a movement of the right hand.

2. In a breech-loading fire-arm having a bolt for closing the chamber, which moves in a line with the barrel, and a brace for locking the same, and in combination therewith a reciprocating strap and handle for operating the breech mechanism, said strap being an extension of said handle, which connects the same directly with the brace, being guided by suitable devices substantially parallel with the movement of the bolt at its forward end and substantially parallel with the axis of the wrist at its rear end, whereby the hand, having a movement parallel with the wrist, imparts to the bolt a movement parallel with the barrel, substantially as specified.

3. In a breech-loading fire-arm having a bolt for closing the chamber, which moves in a line with the barrel, a brace centrally joined at its forward end to the forward end of the bolt, and provided with a recoil-shoulder which is supported by the receiver at one side of the center of said receiver, and in combination therewith the raised surfaces e' on the brace, one at the rear end and one at the forward end, substantially as and for the purpose specified.

4. In a breech-loading fire-arm, the combination of devices substantially as follows: a bolt for closing the chamber, which moves in a line with the barrel, a brace pivoted at its forward end to the forward end of the bolt, which with its recoil-shoulder occupies one side of the receiver, an operating-arm of said

brace, and a reciprocating strap connected at one end to the said arm and at its other end provided with an operating-handle, said arm and said strap occupying the opposite side of the receiver, as shown.

5 5. In a breech-loading fire-arm, a receiver provided with a bolt for closing the chamber, which moves in a line with the barrel, a hammer and tumbler centrally arranged in said receiver, a brace pivoted to and moving back and forth with said bolt, and in combination therewith a sear pivoted to the receiver at n' , and provided with a downward-projecting arm which is joined to an upward-projecting arm of the trigger at m'' , the said sear being
10 arranged at one side of the receiver out of the path of the brace, and provided with an offset-

point, n'' , to meet the position of the tumbler, substantially as and for the purpose specified.

6. In a breech-loading fire-arm, a bolt for closing the chamber, which moves in a line with the barrel, a brace pivoted at its forward end to the forward end of the bolt, which when the arm is manipulated moves back and forth between the ledges o and o' , which project from the inner surface of the receiver, and in combination therewith the friction-roller e'' , which has a pivotal bearing on the rear end of said brace and runs upon ledge o' , substantially as
20 and for the purpose specified.

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Witnesses:

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GEO. D. RICHARDSON.