

(Model.)

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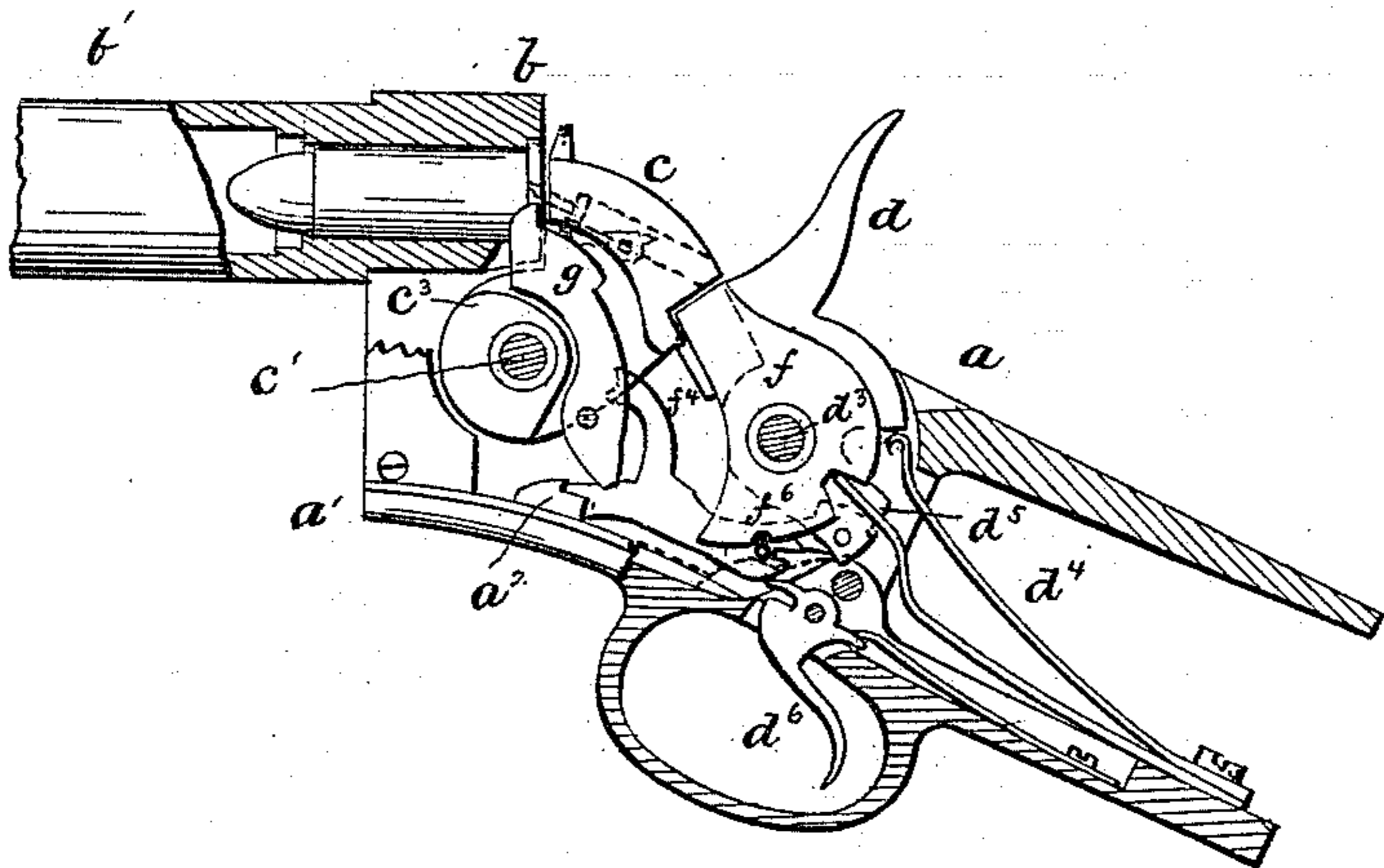
H. UPDEGRAFF.

BREECH LOADING FIRE ARM.

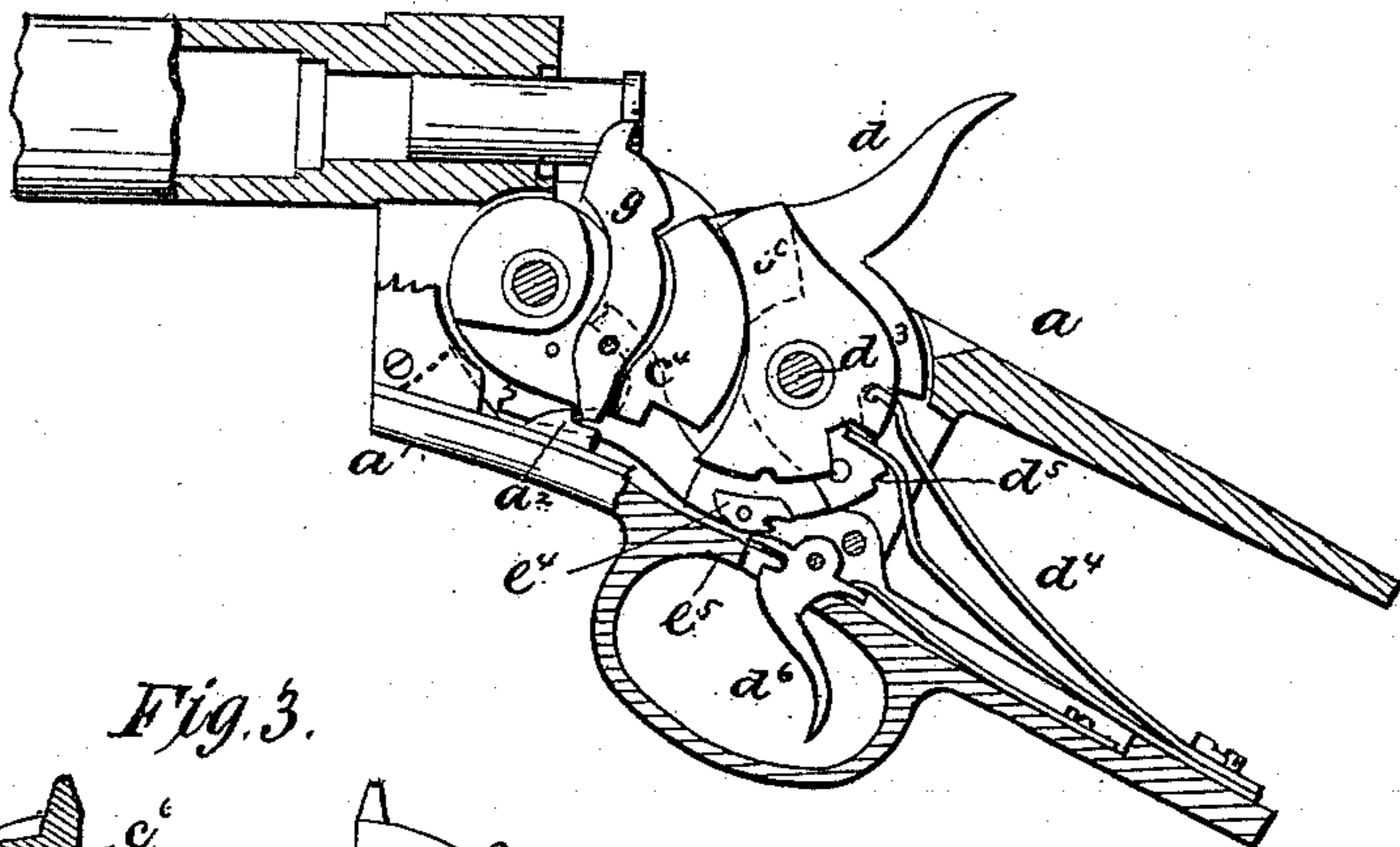
No. 291,111.

Patented Jan. 1, 1884.

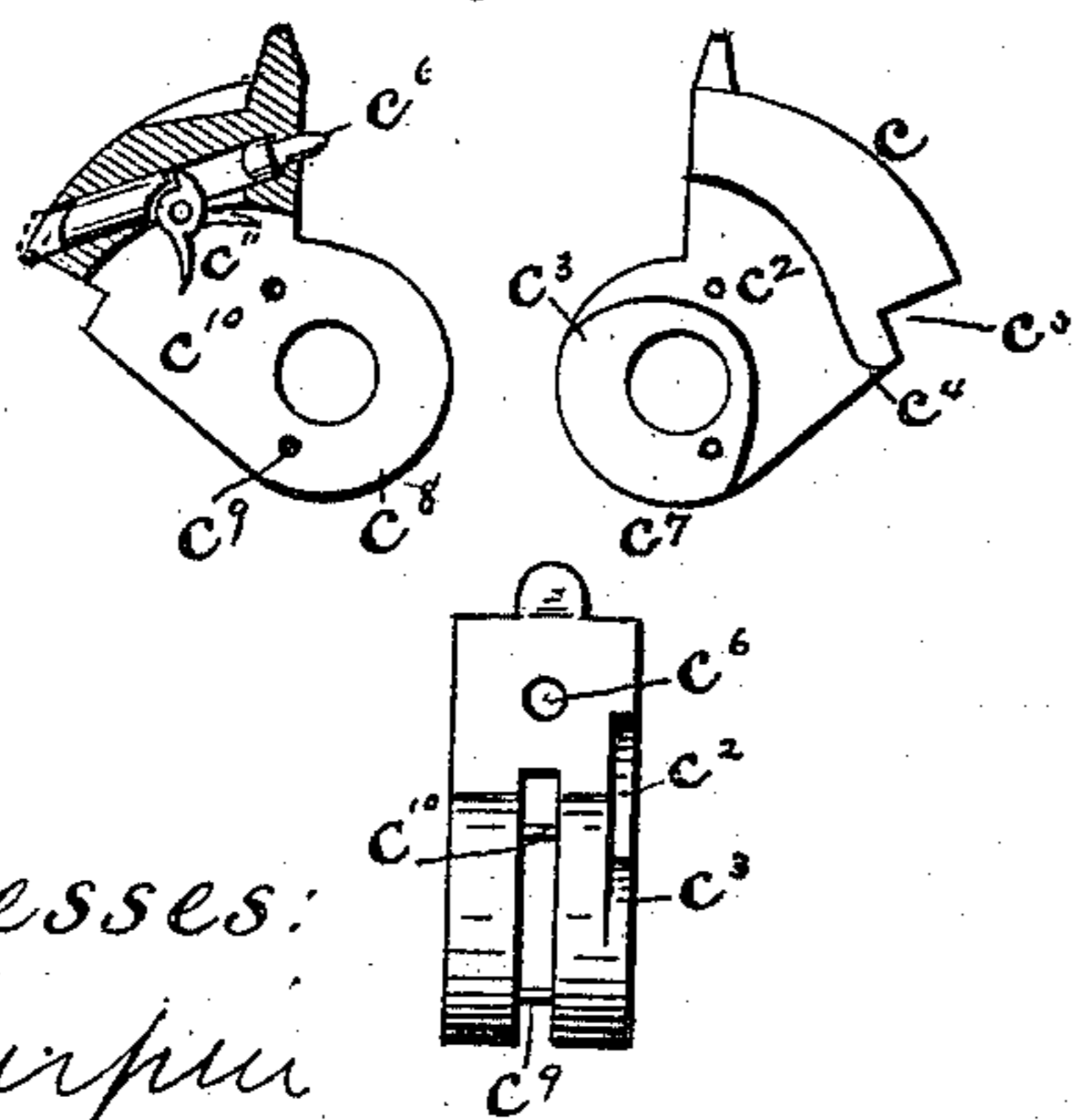
*Fig. 1.*



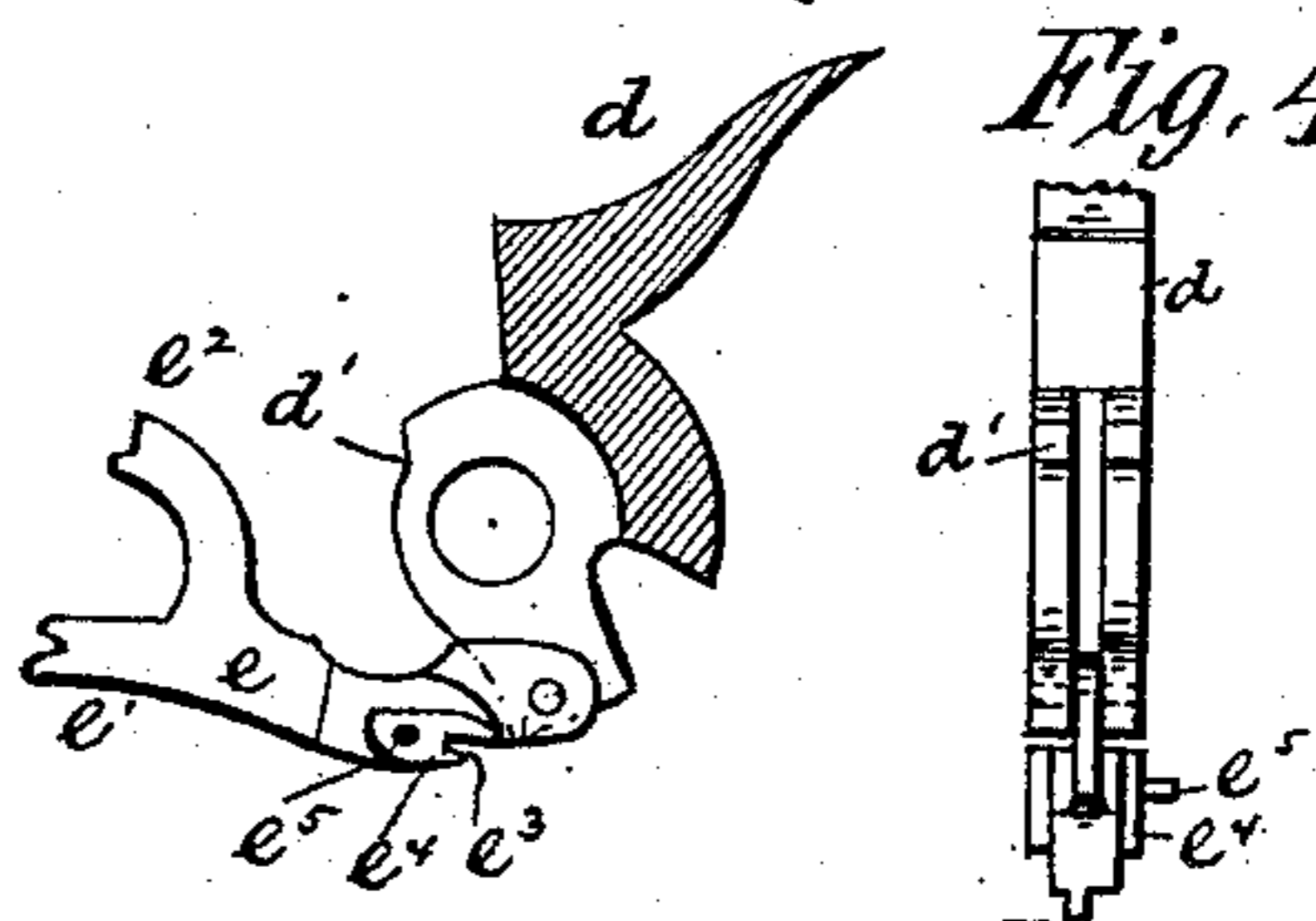
*Fig. 2.*



*Fig. 3.*



*Fig. 4.*



Witnesses:  
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Inventor  
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(Model.)

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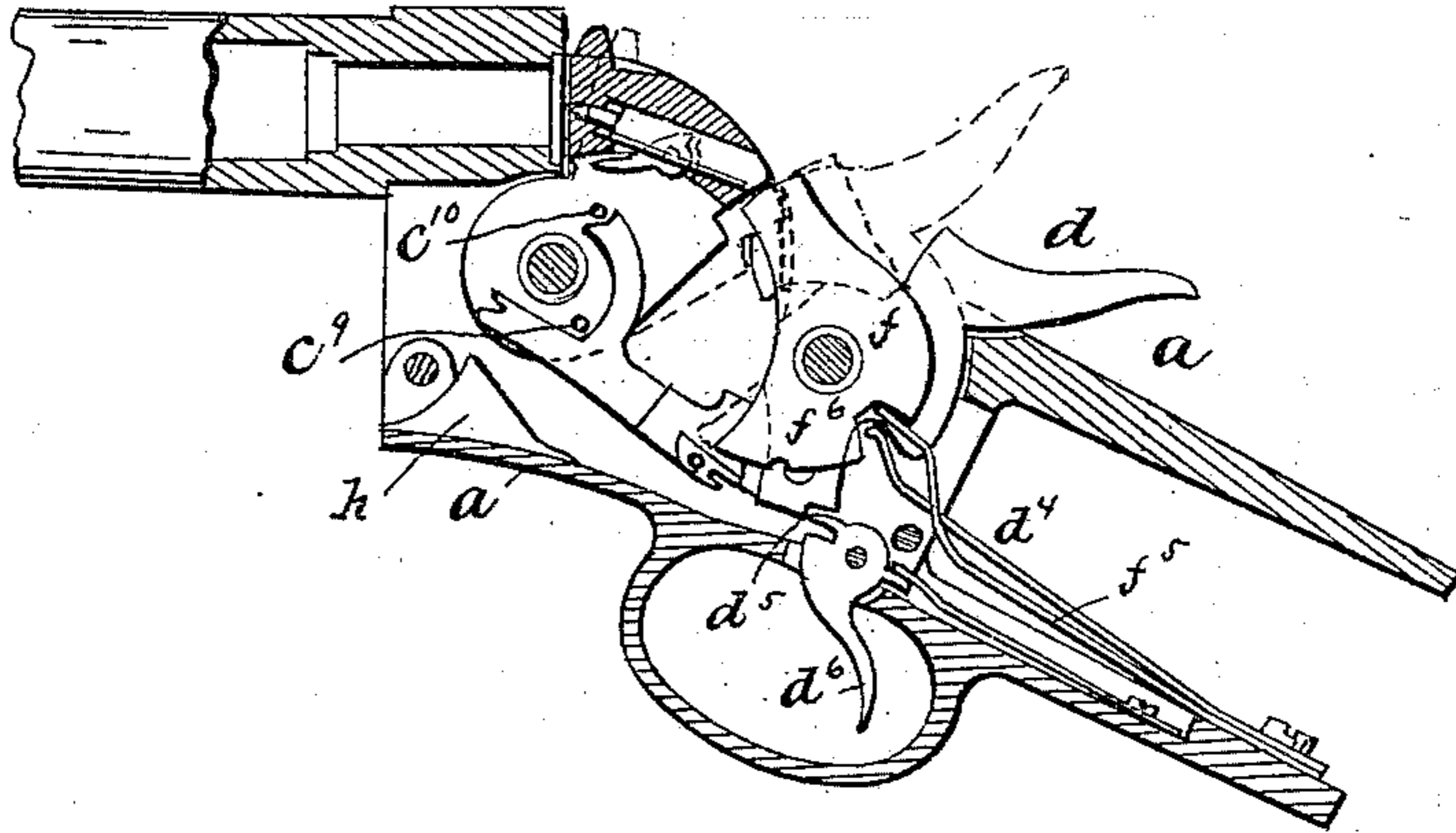
2 Sheets—Sheet 2.

BREECH LOADING FIRE ARM.

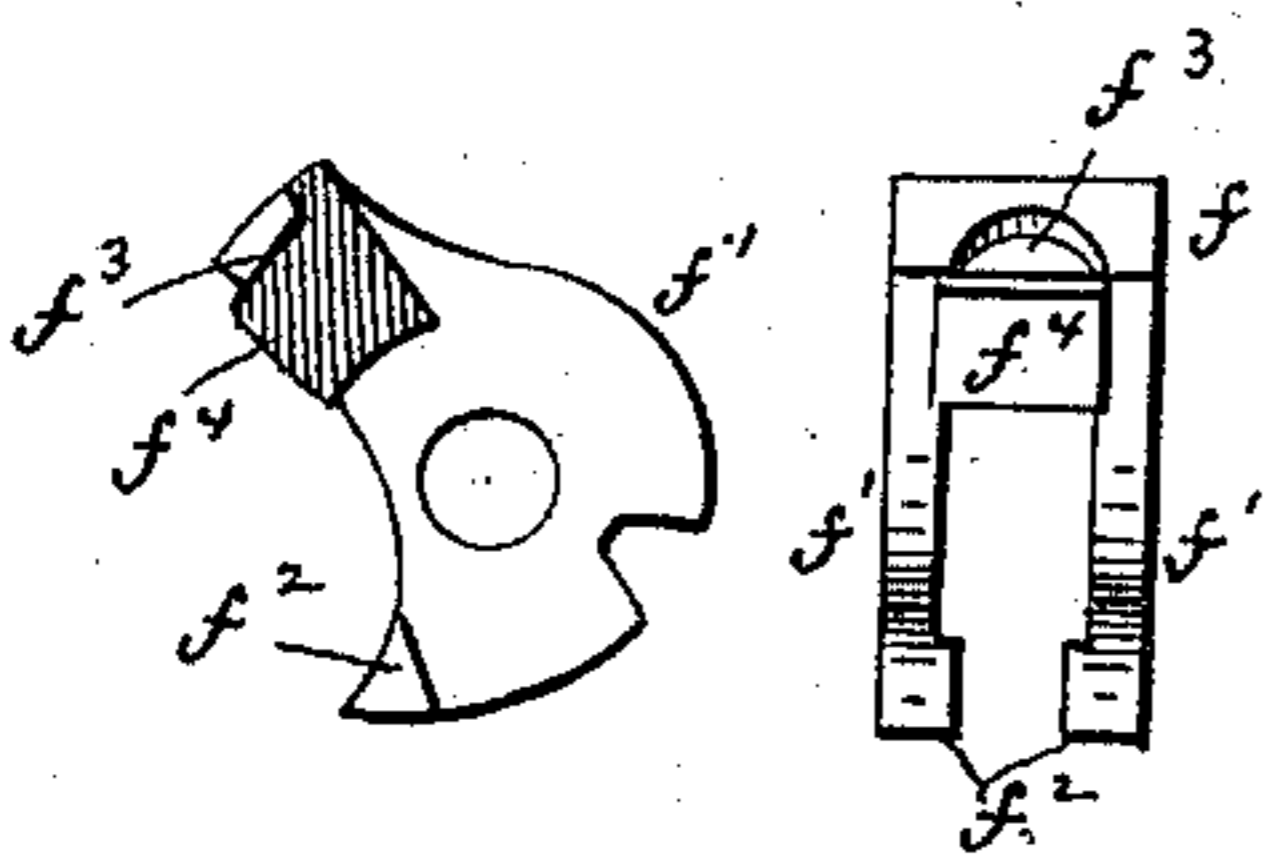
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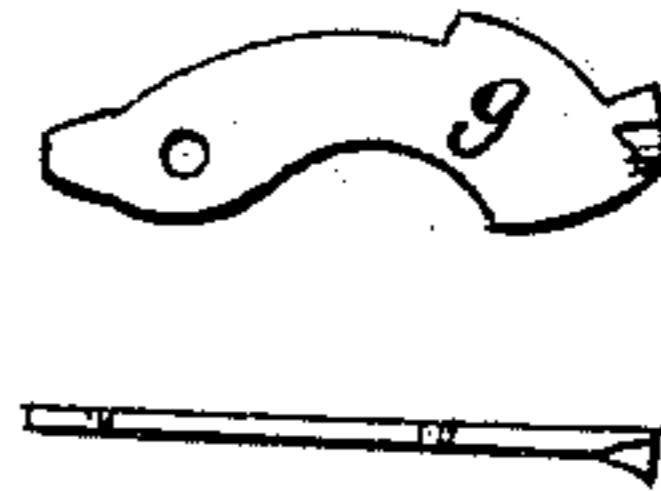
*Fig. 5.*



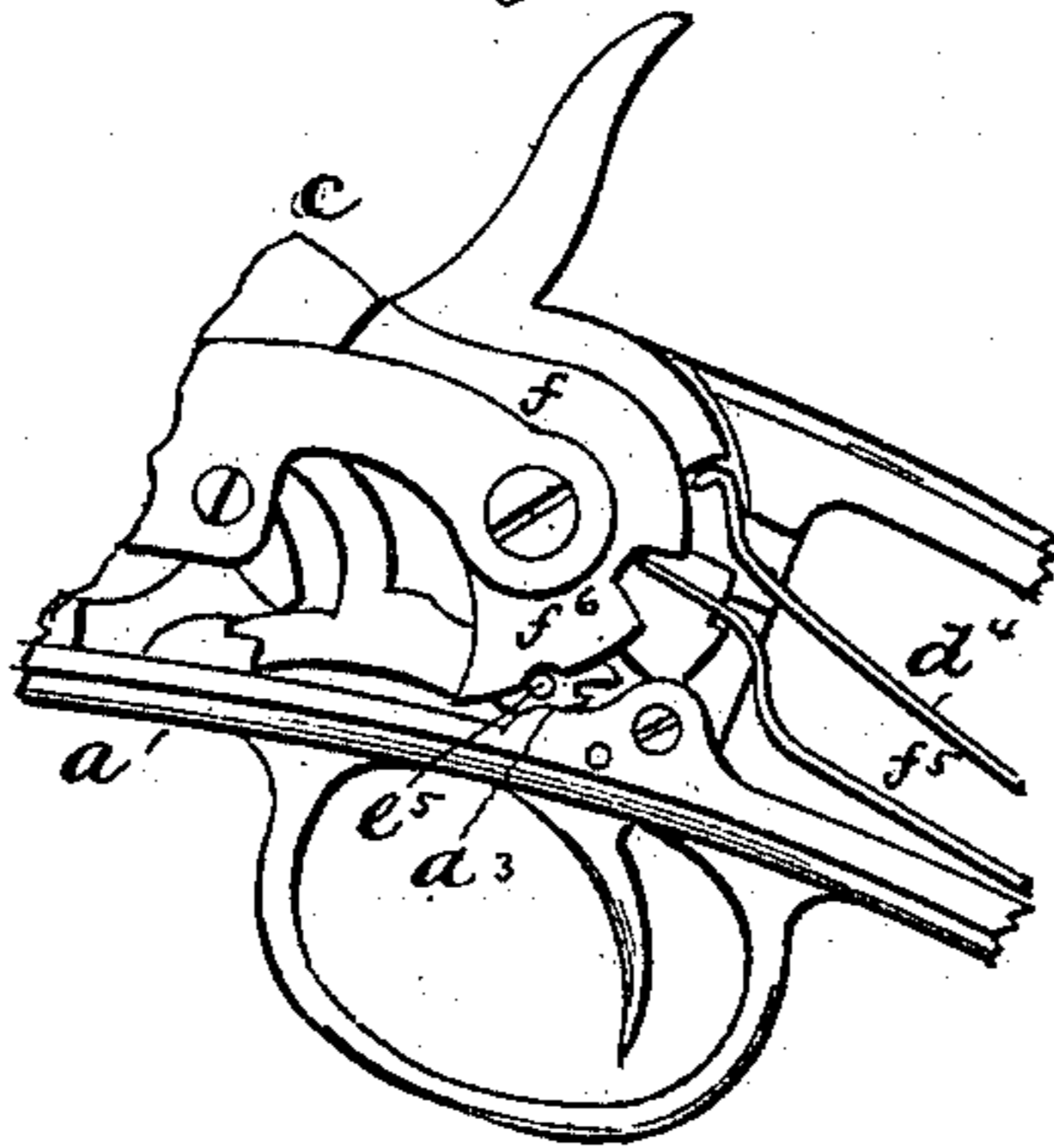
*Fig. 6.*



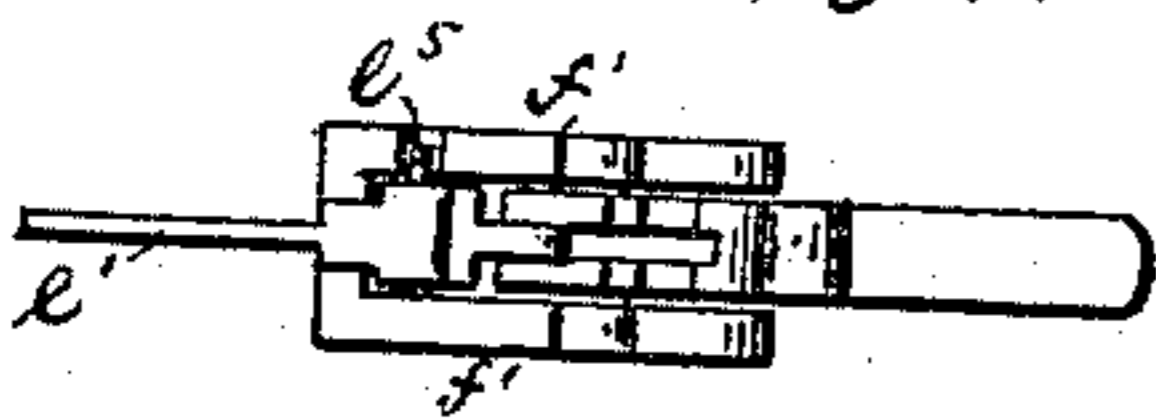
*Fig. 7.*



*Fig. 8.*



*Fig. 9.*



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# UNITED STATES PATENT OFFICE.

HORACE UPDEGRAFF, OF HAMPTON, KANSAS.

## BREECH-LOADING FIRE-ARM.

SPECIFICATION forming part of Letters Patent No. 291,111, dated January 1, 1884.

Application filed October 5, 1882. (Model.)

*To all whom it may concern:*

Be it known that I, HORACE UPDEGRAFF, a citizen of the United States, residing at Hampton, in the county of Rush and State of Kansas, have invented certain new and useful Improvements in Breech-Loading Fire-Arms; and I do declare the following to be a full, clear, and exact description of the invention, such as 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 letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to improvements in breech-loading fire-arms; and it consists in the construction, combination, and arrangement of the several parts, as will be hereinafter more fully described, and specifically pointed out in the claims.

In the drawings, Figures 1, 2, and 5 are longitudinal vertical sections of the frame, showing the firing mechanism in different relative positions. Fig. 3 shows a side elevation, a vertical section, and an edge view of the breech-block. Fig. 4 is a vertical section and a front edge view of the hammer and the sear pivoted thereto. Fig. 6 shows an end elevation and a section of the intermediate hammer and breech-block support. Fig. 7 shows a side view and an edge view of the extractor. Fig. 8 is a partial side elevation of the frame with the side plate broken away, and Fig. 9 shows an under end view of the intermediate and main hammers and sear.

$a$  is the frame, in which are secured the several parts of the breech or firing mechanism, and to which is attached the breech  $b$  of the barrel  $b'$ .

$c$  is the breech-block, pivoted to the frame  $a$  by the pin  $c'$  just below the breech  $b$ . It has formed in its side a recess,  $c^2$ , in which the extractor is placed. The form of the recess is such that there are provided on its opposite sides the cams or bearing-surfaces  $c^3 c^4$ . It has formed across its rear face a notch,  $c^5$ , and is provided with a suitable opening, in which is placed the firing-pin  $c^6$ . The breech-block has its under end bifurcated or formed in the two parallel wings  $c^7 c^8$ , between which are

placed the two cross-pins  $c^9 c^{10}$ , arranged as shown. The firing-pin has its rear end beveled, as shown, so that it projects slightly out of its opening, as shown in Fig. 3. The firing-pin is held by a small pivoted lever,  $c^{11}$ , hanging down into the space between the wings of the block.

$d$  is the hammer, having its lower end slotted, so as to form the two parallel wings  $d' d^2$ , and it turns on the pin  $d^3$ , and it is held by the mainspring  $d^4$ . It has the small notch  $d^5$ , to engage the trigger  $d^6$  when at a whole cock.

$e$  is the sear, which has its forward end provided with the arms  $e' e^2$ . The under arm,  $e'$ , engages and opens the breech-block, and upper arm,  $e^2$ , closes the said block. The rear end of the sear is pivoted between the wings of the hammer, and it has provided in it a notch or catch,  $e^3$ , which engages the beak of the trigger  $d^6$  and holds the hammer at half-cock. By this arrangement of having the half-cock notch in the sear the latter is held more accurately in place, and the hammer is permitted to drop farther forward, and the danger of premature discharge is thereby very much lessened.  $e^4 e^4$  are two side lugs, placed near the rear end of the sear, and are so formed that they fit snugly between the arms of the intermediate hammer, as will be hereinafter more fully explained.

$e^5$  is a small pin projecting laterally from one of the lugs  $e^4$ , and arranged to be engaged by a cam or inclined projection,  $a^3$ , on the trigger-bar  $a^2$  of the frame  $a$  and lift the sear into proper position when the gun has been fired.

$f$  is the intermediate hammer or breech-block support, having the two parallel wings  $f' f'$ , which extend backward on opposite sides of the shank of the hammer, and it is pivoted on the same pin,  $d^3$ , with the hammer  $d$ . At the lower front edges of the wings  $f'$  there are provided two small projections,  $f^2$ , which extend inwardly and bear against the front edge of the shank of the hammer when the latter is at full-cock, and they have other functions, which will be hereinafter described. In the head of this hammer there is formed a small recess,  $f^3$ , into which the end of the firing-pin will project when the main hammer is at a

full or half cock. On the under side of the head of the intermediate hammer a small projection,  $f^4$ , is provided, which serves to hold the breech-block steadier in its movements and firmer in its place. The intermediate hammer,  $f$ , is held by a spring,  $f^5$ , and on the under edge of one of the wings  $f^2$  a small half-round recess,  $f^6$ , is formed, which fits over the pin  $e^5$  when all the parts are down in the positions shown in Figs. 1 and 8. The hammer  $d$  works between the wings of the intermediate hammer,  $f$ . The intermediate hammer bears on the breech-block as the latter is thrown to or from the breech  $b$ . When the gun is fired, the intermediate hammer is in the position shown in Fig. 1. When the gun is being loaded, the several parts are as shown in Fig. 2. When the hammer is at a full or half cock, the intermediate hammer will be as shown in Fig. 5.

$g$  is the extractor. It is pivoted to the frame and lies in the recess  $c^2$  of the breech-block. Its lower end extends below the breech-block, and rests in a notch in the upper side of a projection,  $a^2$ , on the trigger-bar  $a'$ , and it is held firmly in position between the said notch and the bearing-surface  $c^4$  of the breech-block. The extractor is thrown back by the cam-surface  $c^3$  of the breech-block as the latter is drawn away from the breech  $b$ .

$h$  is a small inclined plane arranged under the breech-block to guide the end of the sear into its position against the pin.

The operation of the device is very simple. If the hammer  $d$  be drawn back from the position shown in Fig. 1, it will be brought into the position shown in Fig. 2, and the old cartridge-shell will be thrown out and a new cartridge can be inserted, as shown. If the hammer be now drawn to the full-cock, (shown in Fig. 5,) the breech-block will be closed and the cartridge forced into the barrel. In this position the intermediate hammer is held in the elevated position shown in Fig. 5 by the projections  $f^2$  bearing against the front edge of the lower end of the hammer  $d$ , and by the side lugs,  $e^4$ , on the sear. When the gun is fired, the hammer  $d$  does not strike the firing-pin. It strikes and forces down the upper end or head of the intermediate hammer, and the latter presses against the beveled head or end of the firing-pin and drives the latter forward into the end of the cartridge. When the gun has been fired, the two lugs  $e^4$  on the sear are drawn back and drop into the opening behind the projections  $f^2$ , and brace against the latter, and lift the intermediate hammer when the hammer  $d$  is drawn back.

It will be seen that the explosion of the cartridge is accomplished by a cam movement of the head of the breech-supporting block. The front face of the supporting-block is made inclined, or is so arranged that as the block falls there is a gradually-increasing force exerted against the end of the firing-pin. By this cam action on the firing-pin I am enabled to pro-

vide against the frequent misfires attending fire-arms of ordinary construction.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a breech-loading fire-arm, the combination of a breech-block, a firing-pin arranged within the breech-block, and having its rear end slightly projected therefrom, a pivoted breech-block support arranged to drop behind the breech-block and against the projected end of the firing-pin, and the hammer arranged to strike the breech-block support and force the latter downward against the end of the firing-pin and behind the breech-block, substantially as set forth.

2. In a breech-loading fire-arm, the combination, substantially as hereinbefore set forth, of the frame or casing, a stop,  $a^2$ , fixed upon the under plate of the frame, the breech-block having a side mortise or recess,  $c^2$ , formed in rear of its pivotal center, and cam  $c^4$ , and the extractor placed within the mortise  $c^2$  in the breech-block, and pivoted to the side plate of the frame, in position to be engaged by the cam  $c^4$  and forced against the stop  $a^2$ , as set forth.

3. In a breech-loading fire-arm, the combination, substantially as hereinbefore set forth, of a breech-block having notch or shoulder  $c^5$  on its rear sides, a firing-pin placed within the breech-block and having its rear end slightly projected therefrom, a breech-block support or cross-piece having head  $f^4$ , to receive the blow of the hammer, and provided with a recess,  $f^3$ , in its forward or upper end, to receive the projected end of the firing-pin, and pivoted and turning on the same pin with the hammer, and hammer arranged to fall upon the upper side of and force the breech-block support downward against the projected end of the firing-pin and behind the breech-block, as set forth.

4. The combination of the breech-block, the intermediate hammer, having its lower end constructed with the projections  $f^2$ , the main hammer  $d$ , the sear  $e$ , and the lugs  $e^4$ , secured on the sear  $e$ , and arranged in position to engage the projections  $f^2$  on the intermediate hammer,  $f$ , and lift the said hammer  $f$  when the hammer  $d$  is drawn back, substantially as and for the purposes set forth.

5. The combination, substantially as set forth, of the breech-block, the hammer  $d$ , the sear  $e$ , and a cam or inclined plate,  $a'$ , fixed on the framing  $a$ , and arranged in position to engage and lift the forward end of the sear in the operation of the device, substantially as and for the purposes set forth.

6. In a breech-loading fire-arm, the combination of the breech-block, the hammer  $d$ , the sear  $e$ , provided with the lug  $e^4$ , having pin  $e^5$  projected therefrom, and the cam or inclined projection  $a^3$ , formed on the framing  $a$ , and arranged in position to be engaged by the pin  $e^5$ , and raise the lug  $e^4$  clear of the trigger

when the gun has been fired, substantially as set forth.

7. In a breech-loading fire-arm, the hammer  $d$ , constructed with full-cock notch  $d^5$ , and  
5 these  $e$ , constructed with the half-cock notch  $e^3$ , in combination with the breech-block  $c$  and trigger  $d^6$ , all supported in a suitable framing, substantially as specified.

In testimony whereof I affix my signature in presence of two witnesses.

HORACE UPDEGRAFF.

Witnesses:

L. JUDD,

W. L. ANDERSON.