

W. H. ELLIOT.
Breech-Loading Fire-Arm.

No. 47,372.

Patented Apr. 18, 1865.

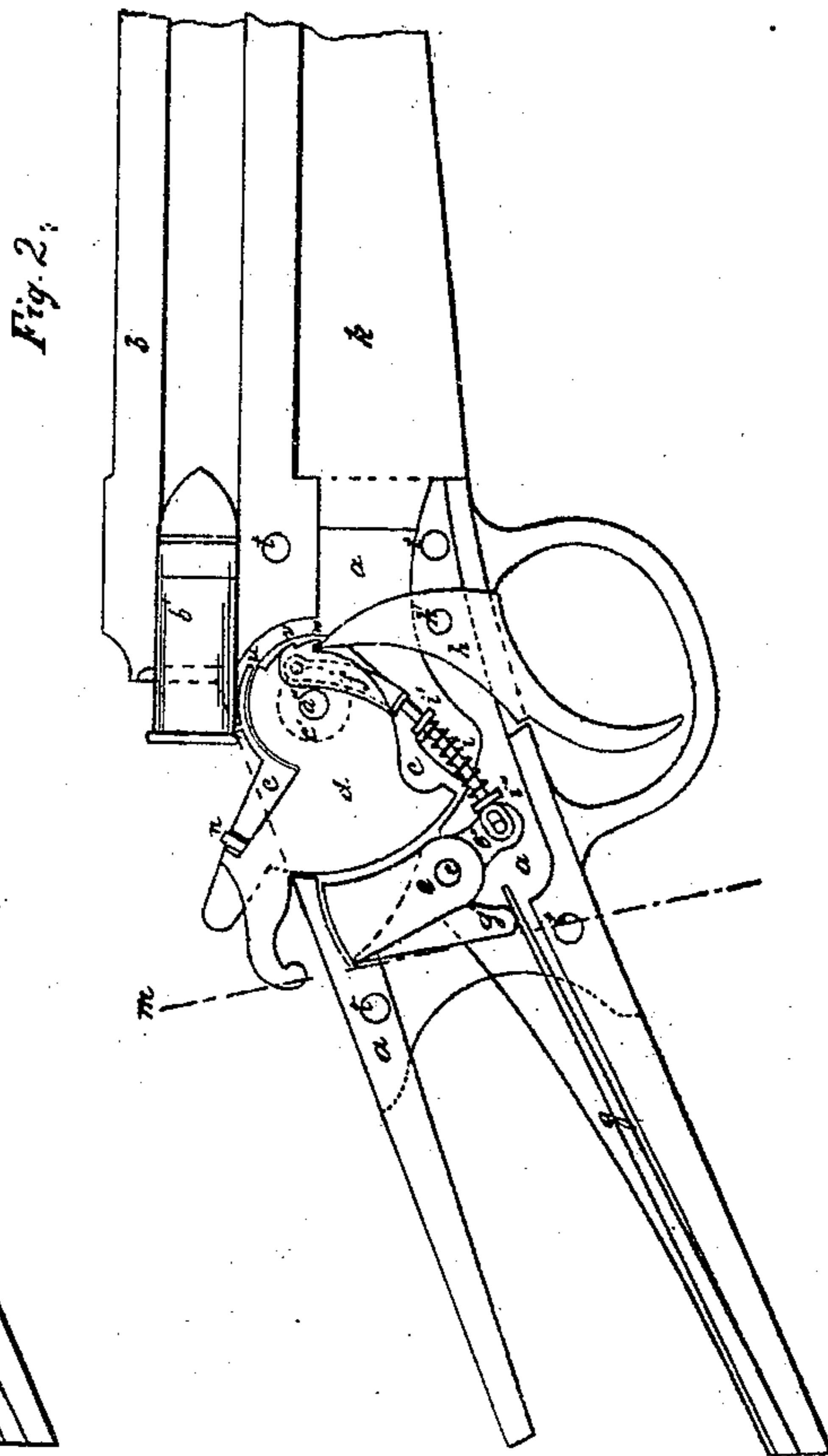
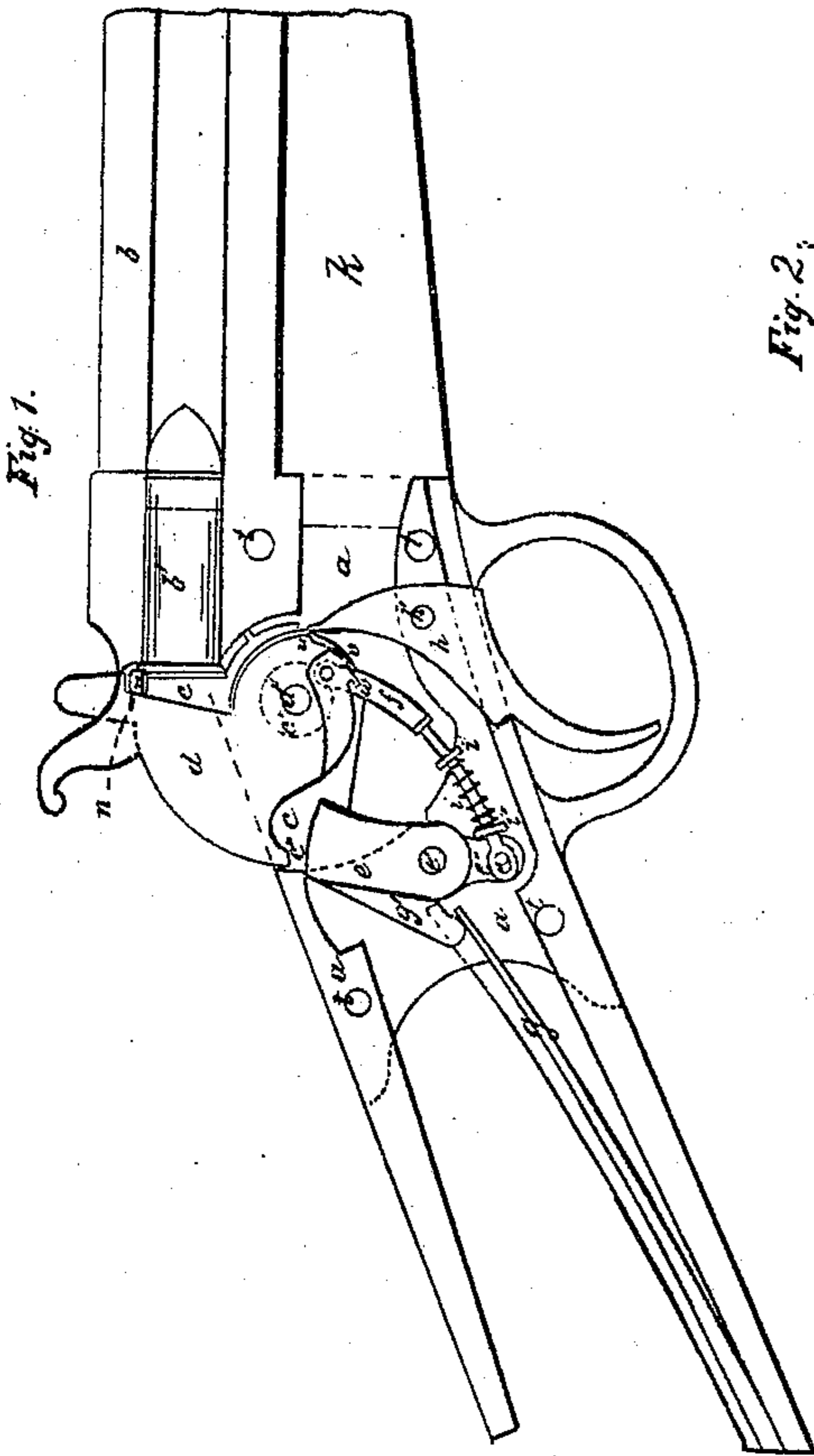
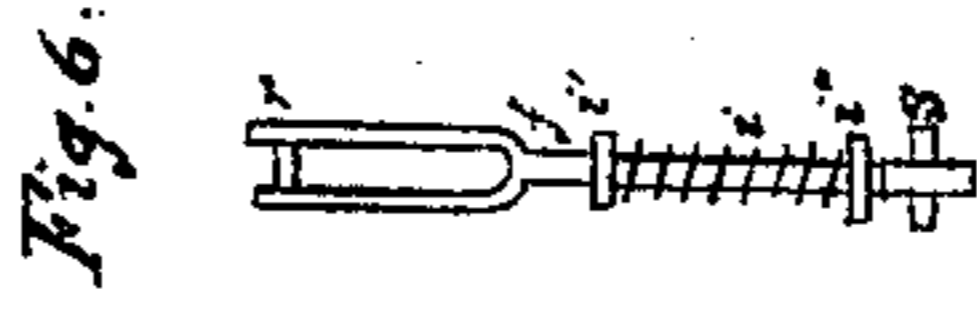
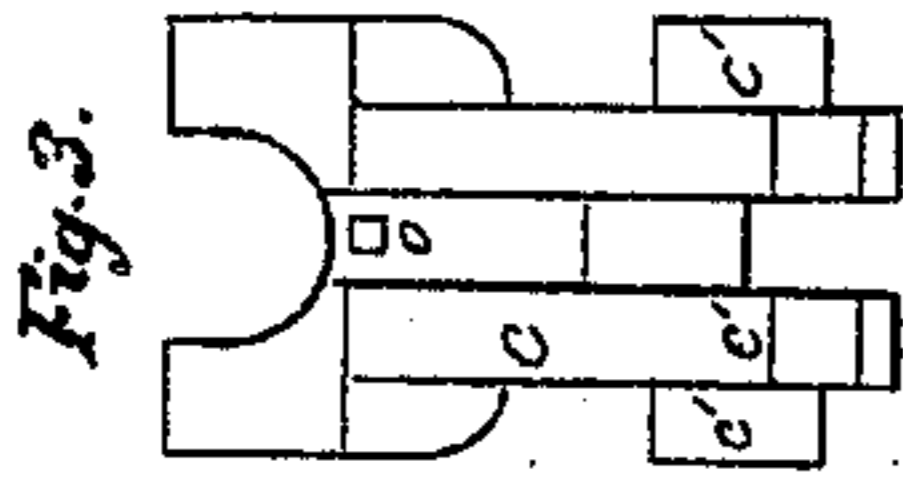


Fig. 4.

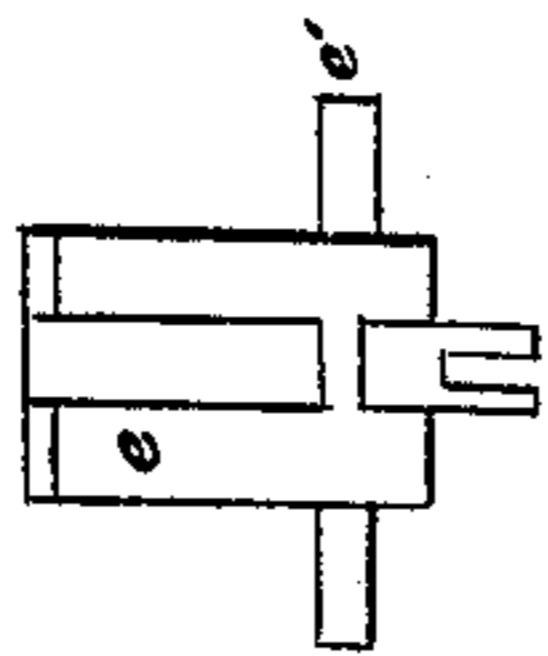
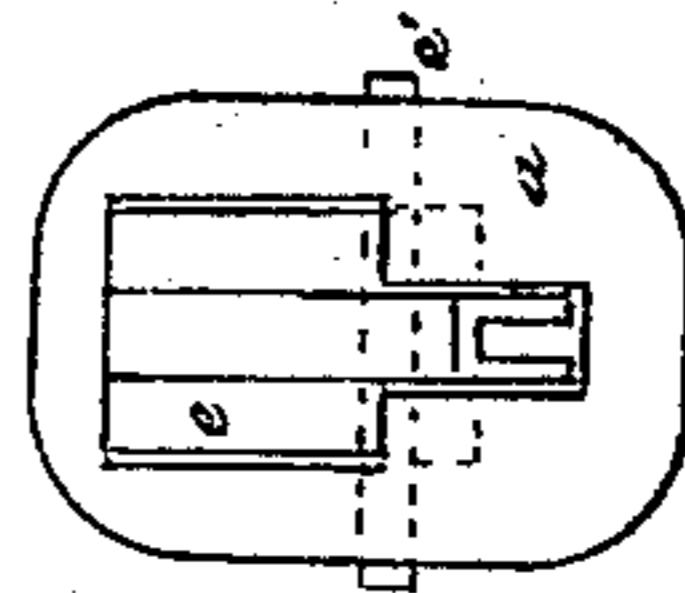


Fig. 5.



Witnesses:
Thos. Richardson
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UNITED STATES PATENT OFFICE.

WM. H. ELLIOT, OF PLATTSBURG, NEW YORK.

IMPROVEMENT IN BREECH-LOADING FIRE-ARMS.

Specification forming part of Letters Patent No. 47,372, dated April 18, 1865.

To all whom it may concern:

Be it known that I, WM. H. ELLIOT, of Plattsburg, in the county of Clinton and State of New York, have invented a new and Improved Breech-Loading Arm; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

Similar letters of reference indicate the same devices in all the figures.

To enable others skilled in the art to comprehend, make, and use my invention, I will proceed to describe its nature, construction, and operation.

The nature of my invention consists in operating the brace of a swinging breech-plate in breech-loading fire-arms by means of the hammer and mainspring, when said brace receives the recoil of the charge from the breech-plate and communicates it to the frame of the arm independently of the pivot or bearing of the hammer or tumblers; in arranging the brace between the hammer and mainspring, so that in firing the arm the mainspring first communicates its power to the brace and then through the stirrup to the hammer; in pivoting a hammer which is so operated upon by the mainspring to the breech-plate; in the employment of a lock-notch for the hammer and brace, which locks these devices in such a position that the breech-plate may be turned away from the chamber for the purpose of loading and turned back again to close the chamber without danger of firing the arm by accident; in arranging the full-cock notch on the hammer in such relation to the breech-plate and brace that when the hammer is brought to a full-cock the brace will not be entirely out from under the shoulder of the breech-plate; and in passing the rivet of the hammer through the hubs of the breech-plate; also, in the employment of an auxiliary spring for throwing the hammer into the half-cock notch after the mainspring has ceased to act upon it.

Figure 1 is a vertical section of my improved arm as the parts appear at the moment of the discharge. Fig. 2 is the same showing the positions of the parts during the act of inserting the cartridge. Fig. 3 is a rear elevation

of the breech-plate. Fig. 4 is a front elevation of the brace. Fig. 5 is a section of my improved arm at dotted line *m*. Fig. 6 is a plan of the stirrup.

a is the frame; *b*, barrel; *b'*, chamber containing a cartridge; *c*, breech-plate; *c'*, hubs or bearings of the same; *c''*, shoulder on the same, against which the brace acts; *d*, hammer; *d'*, pivot or bearing of the same; *e*, brace; *e'*, pivot or bearing of the same; *e''*, loose joint which joins the stirrup to the brace; *f*, stirrup; *g*, mainspring; *g'*, projection on the brace against which the mainspring acts; *h*, trigger; *h'*, pivot or bearing of the same; *i*, auxiliary spring on the stirrup; *i'*, washer fastened to the stirrup; *i''*, loose washer on the same; *k*, stock; *n*, firing-point; *o*, opening in the breech-plate for the same; *r*, pivot which joins the hammer and stirrup; *S*, pivot which joins the brace and stirrup, working in the loose joint *e''*; *t*, holes for the screws which hold on the side plate of the frame; *u*, half-cock notch; *v*, full-cock notch; *w*, lock-notch.

My invention relates to that kind of breech-loading arm in which a swinging breech-plate is employed to open and close the chamber; and it is designed to produce an arm which shall be simpler and more durable, safer, and more convenient than any arm now in use, in which the hammer is employed as a lever for unlocking a breech-plate.

To load my improved arm, bring the hammer back till its thumb-piece nearly or quite touches the wrist of the arm, when the sear or trigger will fall into the lock-notch on the hammer, in which position the breech-plate may be drawn back, as the brace is then entirely out from under the shoulder *c''*. As represented in Fig. 2, the cartridge may now be inserted, the breech-plate returned to its position against the end of the barrel, the hammer unlocked, and let down to the full-cock notch, bringing the brace partly under the shoulder *c''* on the breech-plate. It is now ready to fire, which is done in the usual way. After the discharge, the spring *i* throws the hammer back till the trigger falls into the half-cock notch, so that it can never be left, by accident or otherwise, resting upon the cartridge or in a condition in which it may be driven forward by accident, so as to fire the

charge. As the hammer falls, the front side of the brace strikes against the breech-plate, which discontinues the action of the mainspring upon the hammer; and as the hammer continues its motion by the momentum it has already acquired, the elongated joint *e''* on the rear end of the stirrup slides upon the pivot *s* and depresses spring *i*. As soon as the motion of the hammer is discontinued, by striking the cartridge it is thrown back by the power of spring *i* acting between washer *i'*, which is attached to the stirrup, and washer *i''*, which rests against the lower end of the brace.

The following are some of the advantages gained by the peculiar combination and arrangement of the several devices in my improved arm: The brace *e*, which supports the breech-plate, receives the recoil from the breech-plate and communicates it to the frame of the arm independently of the lock, so that whatever force there may be applied to the brace by the recoil of the charge the lock is in no way deranged or affected by it, while at the same time the hammer is made to serve as a bow for operating the brace. By the peculiar arrangement of the brace between the hammer and mainspring, the power of the mainspring is first communicated to the brace, and through it, by means of the stirrup, to the hammer, so that the falling of the hammer upon the cartridge, though independent of the brace, and hung on a separate pivot, must depend entirely upon the motions of the brace, and in no case can hammer be made to strike the cartridge till the brace is in its proper place to receive the recoil, by which arrangement I obtain safety, and at the same time avoid the bad effect of receiving the recoil upon the pivot or bearing of the hammer or tumbler.

A hammer pivoted to the breech-plate and combined with a brace which is independent of the lock, so as to operate the same, as above stated, has the advantage not only of being free from the effects of the recoil upon its bearings, but also of being entirely out of the way while loading the arm, as it drops into the wrist of the arm with the breech-plate during the process of loading, which could not be the case if the hammer and brace were hung on the same pivot. The employment of a lock-notch, *w*, for locking the hammer and brace out of the way of the breech-plate while loading, makes it impossible to fire the arm by accident at the moment of closing the chamber or to leave it carelessly after loading in a position in which it may be fired by accident. By arranging the full-cock notch on the hammer in such relation to the breech-plate and brace that the brace is not entirely away from under the breech-plate when the arm is cocked for firing, the danger of displacing the breech-plate after cocking and before firing

is avoided. By the employment of solid or permanently-fixed hubs on the breech-plate and passing the pivot of the hammer through them, I obtain large and strong bearings for the breech-plate and small and delicate bearings for the hammer, while at the same time the hammer swings upon the same or nearly the same center with the breech-plate. The employment of the auxiliary spring *i* in combination with a half-cock notch upon the hammer, which is so arranged in relation to the trigger that the said spring will give the hammer sufficient backward motion to allow the trigger to fall into the half-cock notch, secures the arm at all times against accidental firing by driving the hammer forward against the charge. This auxiliary spring need not necessarily be upon the stirrup; placed in any position in which it may act directly or indirectly upon the hammer it would be the same thing.

I make no claim to the employment of a tumbler or any elongated portion of the same for bracing the brace of a swinging breech-plate when said tumbler acts directly upon such a brace to support or brace it, as such an invention was first brought to my knowledge by Colonel H. Berdan; but

What I do claim as my invention, and desire to have secured to me by Letters Patent of the United States, is—

1. A brace which receives the recoil of the breech-plate and communicates it to the frame or other portion of the arm independently of the pivots or bearings of the hammer when said brace is operated by the hammer, substantially as herein specified.

2. The arrangement of the brace *e* between a hammer and mainspring when said hammer and brace swing upon separate pivots, substantially as herein described.

3. Operating the brace *e* by means of a hammer which is pivoted to a breech-plate, substantially as herein shown.

4. The employment of lock-notch *w*, for locking the brace out of the way of the breech-plate, substantially as set forth.

5. So arranging the full-cock notch *v* upon the hammer that the brace *e* will still support the breech-plate when the hammer is cocked for firing, substantially as herein shown and described.

6. Passing the pivot of the hammer through the hubs of the breech-plate, substantially as and for the purpose described.

7. The combination and arrangement of the auxiliary spring *i*, the half-cock notch *u*, and trigger *h*, substantially as and for the purpose set forth.

W. H. ELLIOT.

Witnesses:

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