T. L. STURTEVANT.

Breech-Loading Fire-Arm.

No. 60,592. Patented Dec. 18. 1866.

Fig. 1.

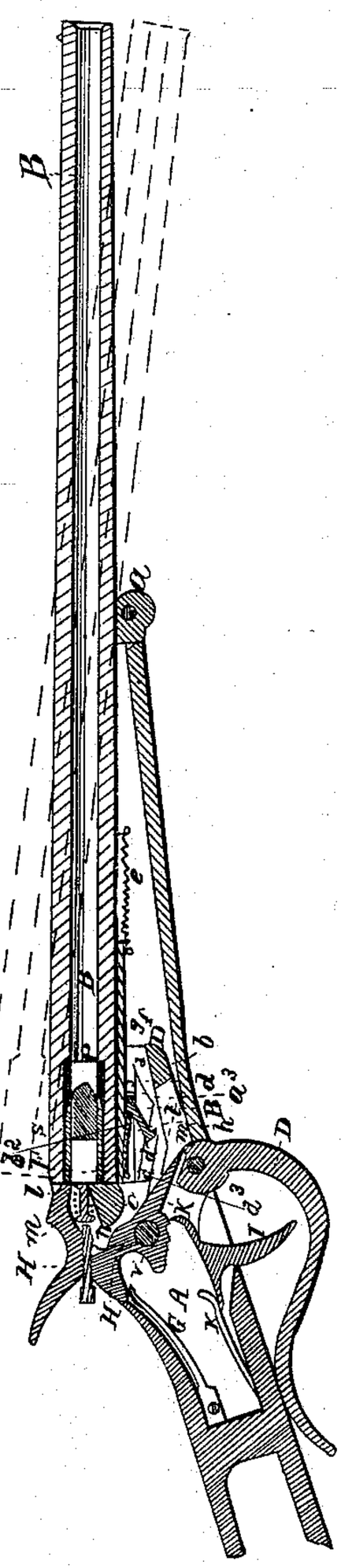

Fig. 2.

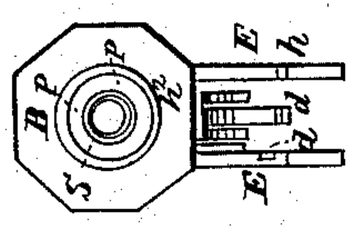

Fig. 3.

Witnesses

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IMPROVEMENT IN BREECH-LOADING FIRE-ARMS.

THOMAS L. STURTEVANT, OF BOSTON, MASSACHUSETTS.

Letters Patent No. 60,592, *dated December* 18, 1866.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL PERSONS TO WHOM THESE PRESENTS SHALL COME:

Be it known that I, THOMAS L. STURTEVANT, of Boston, in the county of Suffolk, and State of Massachusetts, have made a new and useful invention, having reference to Breech-Loading Fire-Arms; and I do hereby declare the same to be fully described in the following specification, and represented in the accompanying drawings, of which—

Figure 1 denotes a longitudinal section of a breech-loading fire-arm provided with my invention.

Figure 2, a rear-end view of the barrel and the grooved lifter plates thereof.

Figure 3 is a rear view of the trigger guard lever.

In the drawings, A denotes the stock and B the barrel, the two being hinged together at the front end of the stock, and at or near the middle of the barrel, as shown at *a*, in fig. 1, and so that the barrel may be moved from the position shown by the black lines up to that exhibited at B′ by the red lines in such figure. This upward movement of the breech end of the barrel, as well as the movement for its return to its place in the stock, and directly in front of the stationary breech, C, is effected by a trigger-guard lever, D, from whose shorter arm, *b*, a pin, *c*, projects in opposite directions and into two grooves, *d d*, made in two plates, E E, projecting down from the barrel, each of such grooves being open at its rear end, as shown in figs. 1 and 2, and being formed as exhibited in fig. 1. By having each of the grooves, *d d*, open at its rear end, I am enabled to readily engage the trigger-guard lever with the plates E E, or disengage it from them, provided the fulcrum-pin of the barrel be first withdrawn from its joint or the barrel be disconnected from the stock. A cartridge-shell ejector, F, is applied to the under side of the barrel, or arranged therewith, as shown in fig. 1. A helical spring, *e*, fastened to the barrel and to the front end of the ejector, serves to draw the ejector forward, it being moved backward by the action of the trigger-guard lever, D, whose upper arm is hooked, as shown at *f*, and is provided with a "cast-off" or cam, as shown at *g*, in fig. 1. This hook and cast-off are to operate with a latch, *h*, which, formed as represented in such figure, and being hinged to the ejector, F, is pressed downward by a spring, h^2, projecting from the ejector. The hammer of the lock is shown at H, as supported by and so as to be capable of turning on a screw-pin, *i*, the main-spring of the hammer being exhibited at G. The trigger is represented at I, and its spring at K. From the lower part of the said hammer there projects an arm, *k*, which is extended into a slot, *l*, made through the upper arm of the trigger-guard lever. The lower part, *m*, of the said slot is to be so formed that at the commencement of a rearward movement of the said arm, it, the said part, (which may be termed the cam *m*,) in order to effect the elevation of the breech end of the barrel high enough above the breech for a cartridge to be inserted into the barrel at its rear end, shall so act against the arm *k* as to raise the hammer up to "half cock." The cam may also be formed so as to raise the hammer up to "cock," if desirable. This raising of the hammer is to take place before the barrel may commence to move upward, the same being in order to free an exploded cartridge-shell in the barrel from the hammer to such an extent as to enable the barrel to be moved upward. During the movement of the trigger-guard lever necessary to effect such elevation of the hammer to "half-cock," the pin, *c*, moves in a portion, d^1, of each groove, *d*, such portion, d^1, being formed to the arc of a circle, whose radius has its centre in the fulcrum of the said guard lever. An auxiliary hammer, l^1, is arranged in the breech, C, and so as to be capable of sliding freely back and forth therein, it being retracted by a spring, m^1, suitably applied to it. When back to its rearmost position, the auxiliary hammer rests against a stop, *n*, and its front end is flush, or about so, with the front face of the breech, C. During a descent of the main hammer the auxiliary hammer is intended to be struck on its rear end by the said hammer, or by an adjustable projection. In fig. 1 of the drawings this projection is shown as a screw, *o*, which is arranged in and screwed through the main hammer in manner as represented, and moves with such main hammer. The front end of the auxiliary hammer is arranged in, or about in, the axis of the barrel produced. It is sometimes the case that the cartridges are made with their fulminate arranged at, or about at, the centre of their head or rear ends. It is also frequently the case that the fulminate is placed in the flange at the rear end of the cartridge. The main hammer is calculated to explode the fulminate when placed within the flange, but when it is at the centre of the head, the auxiliary hammer may be used to explode it, which it will do by the blow imparted to it by the screw or adjustable projection of the main hammer during a descent of the said hammer. If the hammer is to explode the fulminate of the cartridge by striking in the flange of the shell, the screw should be adjusted

so as not to operate the auxiliary hammer during the descent of the main hammer. It often occurs that the cartridge-receiving chamber of a breech-loading fire-arm is either too short or too long for the reception of a cartridge and to allow the front end of the shell thereof to abut against the front end of the chamber. In my improved fire-arm I construct the rear part of the bore of the barrel with a chamber, *p*, of sufficient size to receive a movable tube, *r*, formed with a chamber, *s*, of the proper diameter and length for holding a cartridge and allowing the front end of its shell to abut against the front end of such chamber when the flange of the cartridge is against the rear end of the tube. With the tube-receiving chamber I can use a tube calculated for any particular size of cartridge, and thus, by having a series of tubes made for cartridges of different sizes, I can, out of the series, find one which will adapt the fire-arm to any size of metallic cartridge which may be found in the market. In order that the tube may be easily extracted from the barrel, I construct such tube with a recess, *u*, arranged in it, as shown in fig. 1, the said hole being to receive a hook, which, on being introduced into the tube, may be used to withdraw it from the barrel whenever occasion may require. Instead of the chamber being made so as to receive a tube to extend throughout its length, it may be so made as to receive a cartridge and a tube placed in advance of the cartridge, and of a length to cause its rear end to answer as a shoulder or bearing for the front end of a cartridge shell. With this latter arrangement of the tube, the cartridge would rest directly in the barrel or the chamber thereof. In this way a cartridge-receiving chamber, to support a cartridge at the front end of its shell, may be formed to suit a cartridge of any ordinary length. After the barrel may have been raised to the height proper for the ejection of a spent cartridge-shell from it, the ejector is to be put in operation so as to expel the shell. During the movement of the ejector for such purpose and back to place, the barrel should be at rest, which it will be in consequence of the pin, *c*, being moved in the part, d^2, of each groove, *d*, such part, d^2, being curved to an arc of a circle, whose centre is in the fulcrum of the trigger-guard lever. The inclined part, d^3, of each groove, *d*, is a cam for raising the barrel, which it will do by its action against the pin, *c*, during a movement of the trigger-guard lever.

My invention has reference to a fire-arm provided with a breech, C, stationary, as respects the stock, and also with a barrel hinged or so applied to the stock as to be capable of being raised so as to carry its rear end above and from a position in front of and against the stationary breech. Therefore I lay no claim to the fire-arm, or any part thereof, represented in the United States Patent No. 33,631, granted November 5, 1861. Nor do I claim for operating a cartridge-retractor, the means or mechanism represented in the Patent No. 48,966, dated July 25, 1865, in which the retractor is operated in either direction by an "offset" or projection extending from a bent lever hinged to a trigger-guard lever, for I draw forward my cartridge-ejector by a spring entirely separate from the mechanism for moving it in an opposite direction. Nor do I claim the invention described in the United States Patent No. 37,004, in which the hammer has a rotary head so combined with it as to move with it and be capable of being revolved in order that it may be adjusted or adapted to different kinds of cartridges. Nor do I claim the combination of an auxiliary hammer with the main hammer, and as arranged so as to pass laterally out of the stock and be actuated by the body part of the main hammer, the same being as represented in the United States Patent No. 40,884, dated December 8, 1863.

1. I claim, in combination with the hammer, trigger-guard lever, and the barrel applied to the stock, and so as to operate with a stationary breech *c*, as described, mechanism substantially as hereinbefore specified, whereby by one movement of the trigger-guard lever the barrel may be caused to be raised to receive a cartridge, the hammer be set at half or full cock, and the spent cartridge-shell be expelled from the barrel.

2. I also claim the combination and arrangement of the main and auxiliary hammers and a screw, whereby the main hammer may be either caused to actuate the auxiliary hammer or be thrown out of action therewith, as occasion may require, and for the purpose hereinbefore explained.

3. I also claim the construction of each of the grooves *d*, with its rear end open, when such groove is combined with the barrel and the trigger-guard lever, and is to operate therewith, as and for the purpose described.

T. L. STURTEVANT.

Witnesses:
R. H. EDDY,
F. P. HALE, Jr.