

L. W. LANGDON.
Magazine Fire-Arms.

No. 155,318.

Patented Sept. 22, 1874.

Fig. 1.

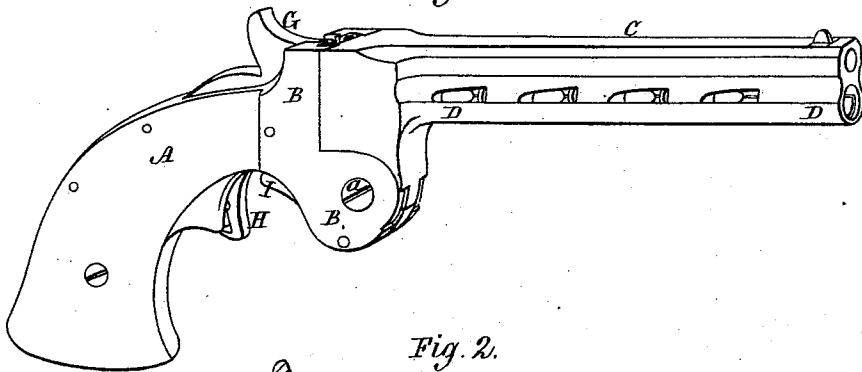


Fig. 2.

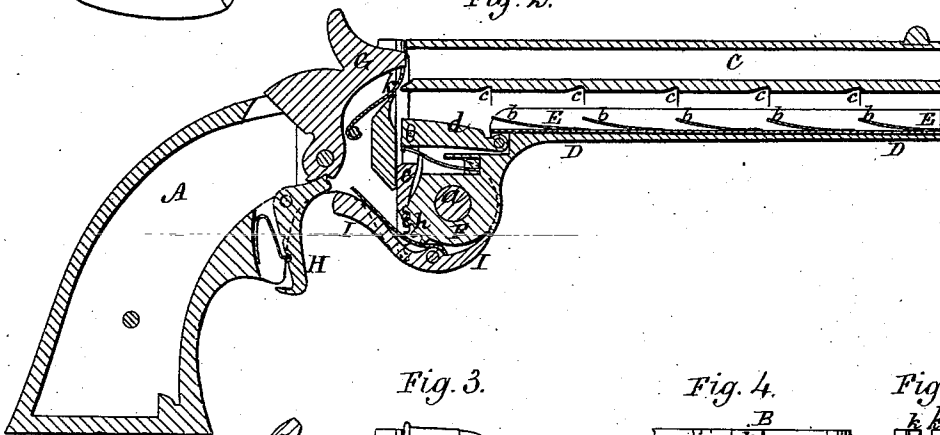


Fig. 3.

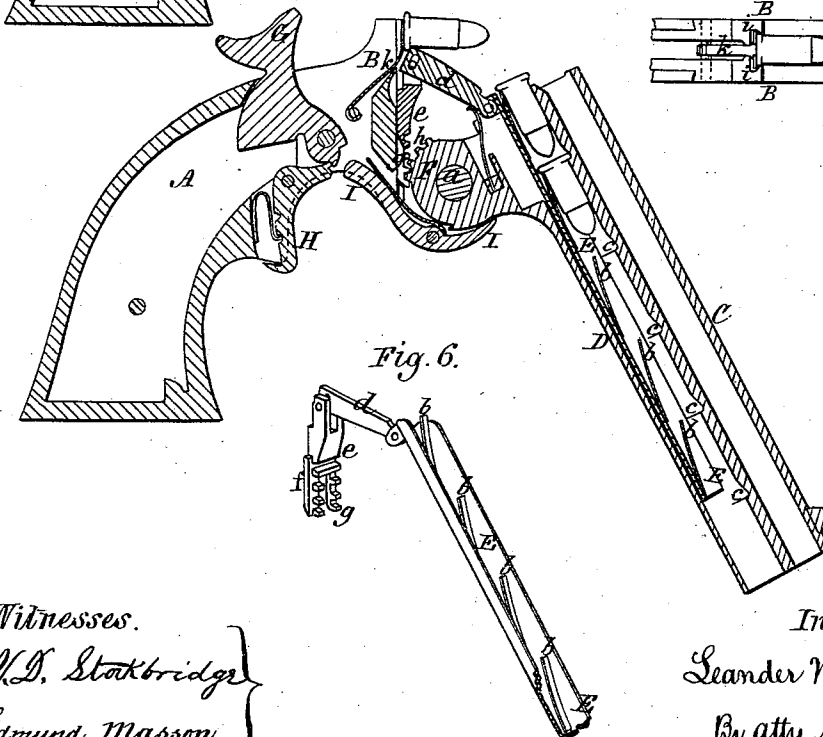


Fig. 4.

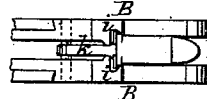


Fig. 5.

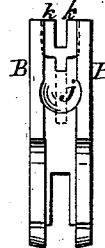
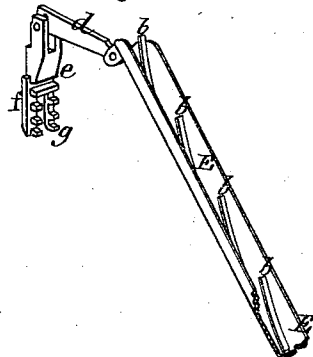


Fig. 6.



Witnesses.
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UNITED STATES PATENT OFFICE.

LEANDER W. LANGDON, OF FLORENCE, MASSACHUSETTS.

IMPROVEMENT IN MAGAZINE FIRE-ARMS.

Specification forming part of Letters Patent No. **155,318**, dated September 22, 1874; application filed October 13, 1873.

To all whom it may concern:

Be it known that I, LEANDER W. LANGDON, of Florence, in the county of Hampshire and State of Massachusetts, have invented certain new and useful Improvements in Repeating Magazine Fire-Arms; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 represents an exterior view of the fire-arm as it appears when in position or condition for firing. Fig. 2 represents a longitudinal and vertical section through the same. Fig. 3 represents a similar section through the arm as it would appear when the barrel and magazine are swung down preparatory to bringing up a fresh cartridge and ejecting the empty shell. Figs. 4, 5, and 6 represent detached portions or details of the arm, which will be hereafter more particularly referred to.

Similar letters of reference, where they occur in the several separate figures, denote like parts of the fire-arm in all of the drawings.

My invention relates, first, to the manner of feeding the cartridges through the magazine by mechanism that works positively with every swinging motion of the barrel and magazine.

My invention further relates to the manner of extracting the cartridge from the magazine and carrying or placing it in position to enter the barrel, through the instrumentality of the grooved breech and a raising mechanism, as will be explained; and my invention further consists in the manner of steadying the cartridge while it is being carried up and entered in the barrel by means of a yielding plate in rear of the cartridge.

To enable others skilled in the art to make and use my invention, I will proceed to describe the same with reference to the drawings.

The stock of the fire-arm is represented at A, to the frame or cheek-plates B of which the barrel C is hinged, as at *a*. Underneath the barrel there is a tube, D, in which a trough-shaped cartridge holder and feeder, E, is caused to reciprocate by a positive mechanism, as will be hereafter explained, whenever the barrel C is swung on its hinged connection to place it in a firing condition, or to open up the bore

for the ejection of the empty shell and to receive a fresh cartridge. In the cartridge holder and feeder there is a series of springs, *b*, which are fast to the holder at one of their ends, and the opposite ends are free and so arranged and spaced as to catch against the flange of a cartridge as the cartridges are successively fed in past them in the tube or feeder; and immediately above the free ends of the springs are arranged a series of recesses, *c*, into which the diametrically-opposite part of the flanges from those against which the points of the springs take are forced by said springs, so that the cartridges are held or sustained at two opposite points. The cartridge-feeder E is connected, by a link, *d*, with a sliding piece, *e*, distinctly seen at Fig. 6, which has tongues *f* upon each side of it that take into grooves or ways in the frame B to guide it in its movement. Upon the lower end of this sliding piece *e* there is a toothed rack, *g*, into which a cogged segment, *h*, on the hub F of the barrel, takes, so that as the barrel is swung open or closed the sliding piece *e* is moved up and down through said segment and rack. In the frame B, and opposite to where the end of the barrel and magazine, when brought up, meet it, there is formed a groove, *i*, which takes the flange of the cartridge, there being at *j*, Fig. 5, a round opening through which the head of the cartridge can pass; and when the sliding piece *e* moves up it carries the cartridge up with its flanges in the groove *i*, and to steady and hold the cartridge in proper position to enter the bore of the arm when the barrel is brought up, a yielding plate or spring, *k*, bears against the head of the cartridge, and holds it in the position shown in Fig. 3.

It will be observed that the barrel, magazine, and the cartridge carrier and feeder in the magazine, move around the pivot-pin *a* as a common center; but while the barrel and the magazine or tube, which may be made on and as a part of the barrel, has no other movement than that around the pin *a*, the feeder E has an additional motion, viz., one back and forth in the magazine, by means of the sliding piece *e* and its linked connection thereto by the link *d*, so that when the barrel is swung open, as at Fig. 3, the feeder E is drawn to and a little beyond the rear end of the tube or

magazine, so that the head of the cartridge, as there shown, shall project far enough to enter the opening *j*, Fig. 5, and thence be carried up in the groove *i*, above described. And when the barrel *C* is brought up into a firing position, as seen in Figs. 1 and 2, the feeder *E*, as seen in Fig. 2, is moved forward in the magazine a distance equal to the length of one of the cartridges, or thereabout. The cartridges in the magazine are held, as before stated, by the point of the spring *b*, below, taking against the flange of the cartridge at that point, and pressing the opposite part of the flange into a recess, *c*, immediately over said point, so that the cartridges are held in part by the springs which have a traversing movement in the magazine, and in part by the notches in the under side of the barrel or top of the magazine, which notches have but a single movement, viz., around the center-pin *a*, while the springs have that movement in addition to the reciprocating one in the magazine. The cartridges are restrained from moving toward the front of the magazine by the notches *c*, which are square-shouldered at their front, and behind the shoulder an inclined plane past which they can be moved rearward. As the carrier and feeder *E* is moved forward by the opening or downward-swinging of the barrel, the points of the springs *b* slip along on the cartridges until each successive one springs against the flange of the cartridge in advance of the one it had just previously held against, and when the barrel is swung up to be closed for firing, the series of cartridges are, by their springs *b* and by the backward movement of the carrier and feeder through the sliding piece *e*, drawn back one step each toward the rear of the magazine, where they are entered into the groove *i*, through the opening *j*, and thence moved up and entered in the bore or chamber of the arm. The cartridge which is to be taken up and entered in the barrel projects, as seen in Fig. 3, slightly from the magazine, and is held there until it fairly enters the groove *i*, to be carried up. The cartridge is held and remains in the groove *i* while and even after it

is fired, and when the barrel is swung down to recharge the chamber the empty shell is drawn out, and the next cartridge, coming up against it, pushes it up and out of the groove *i* and clear of the arm. The cartridges are moved through the magazine by a positive movement and are not dependent upon the reactionary operation of a spring which may work and may fail to work. In my construction the cartridges must move rearward every time the barrel is opened and closed, for, by every such movement, the feeder reciprocates and forces back the cartridges with itself.

The hammer *G*, trigger *H*, locking-lever *I*, and their several appliances, need not be specially described. They are clearly shown in the drawings and do not constitute any part of the devices or operation claimed.

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

1. In combination with the mechanism substantially such as herein described, a swinging barrel and magazine, and the feeder and holder swinging with, but having a reciprocating motion independent of, said barrel and magazine, as and for the purpose described and represented.

2. In combination with the magazine and feeder, the recoil-block, provided with an opening, *j*, and grooves *i*, for receiving the head of the cartridge, and with the sliding piece *e*, for moving the cartridge up to where it enters the bore or chamber of the arm, substantially as described.

3. In combination with the recoil-block provided with the opening and grooves for receiving the head of the cartridge, and sliding piece for moving the cartridge up through the grooves, the yielding plate or spring *k*, bearing upon the head of the cartridge for steadying and holding it in true position to enter the bore of the arm, substantially as described.

LEANDER W. LANGDON.

Witnesses:

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CHAS. H. CLARKE.