J. F. APPLEBY.

Magazine Fire-Arm.

No. 45,466 **Patented** Dec. 20, 1864.

Fig. 1.

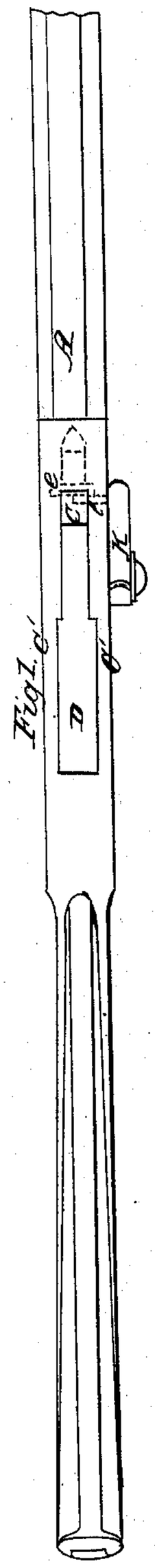


Fig. 2.

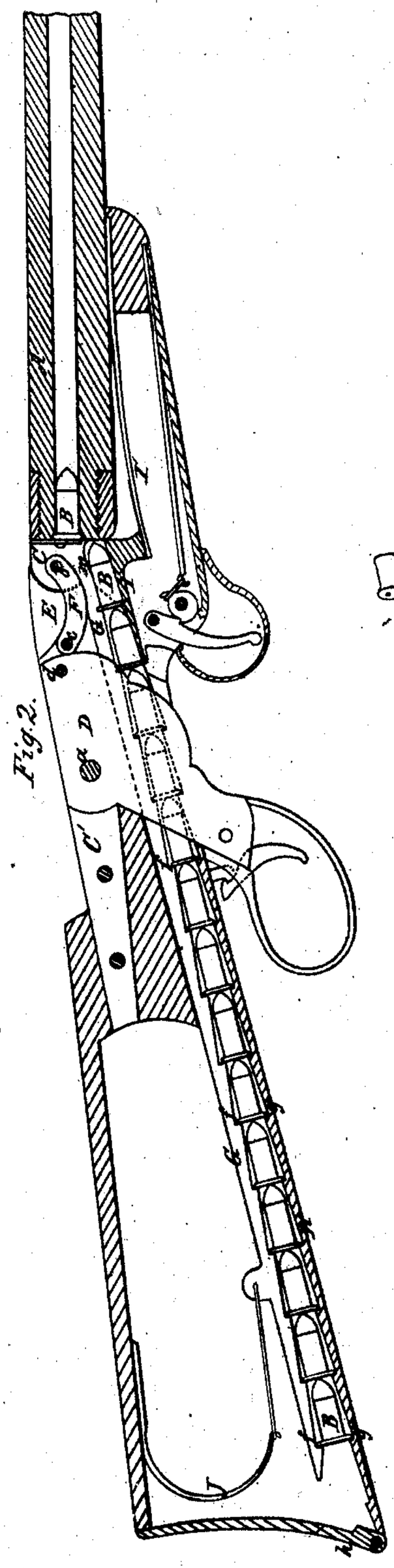
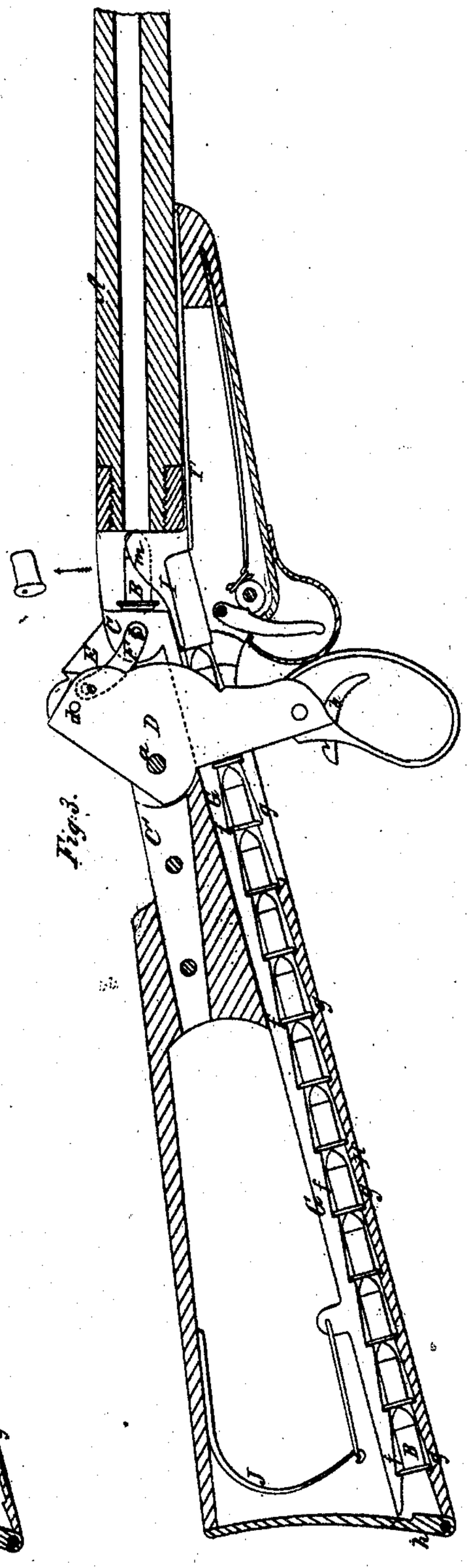


Fig. 3.



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UNITED STATES PATENT OFFICE.

JOHN F. APPLEBY, OF MAZOMANIE, WISCONSIN.

IMPROVEMENT IN MAGAZINE OR SELF-LOADING FIRE-ARM.

Specification forming part of Letters Patent No. **45,466,** dated December 20, 1864.

To all whom it may concern:

Be it known that I, JOHN F. APPLEBY, of Mazomanie, in the county of Dane and State of Wisconsin, have invented a new and useful Improvement in Fire-Arms; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a plan view of my improvement. Figs. 2 and 3 are side sectional elevations thereof, showing the moving parts in different positions.

Similar letters of reference indicate like parts.

This invention pertains to that variety of breech-loading fire-arms known as "magazine-guns," in which a considerable number of cartridges are carried in the stock, and are so connected with and operated upon by the mechanism of the arm that the cartridges are successively seized and deposited within the barrel ready for firing.

Various kinds of cartridges may be employed for firing; but I shall describe only one example, showing the use in connection with my improvement of what is known as "fixed ammunition," or cartridges composed of a metallic case charged with a fulminate, powder, and ball in the usual manner.

My invention has for its chief object the facilitation of the charging or depositing of the said cartridges within the gun-barrel or charge-chamber, and the removal therefrom and discharge of the cartridge case or shell after firing.

A represents the barrel, which is open at the rear, where it has a chamber or formation made in it capable of receiving the flanged cartridge B in the common manner, as shown.

C is the movable breech-piece, which slides back and forth between the breech-frame C′. Said breech-piece C abuts against the rear end of the barrel and cartridge when the gun is in readiness to be fired.

The breech-piece C is operated by a pivoted hand-lever, D, which passes from below the breech-frame, being held therein and caused to swing upon a pivot, *a*, as shown.

The upper end of the lever D is connected with the rear of the breech-piece C by means of two pivoted links, E F, which constitute a toggle-joint, the link F being of curved form, connected at one end by pivot *b* to the breech-piece C, and at the other end by pivot *c* to the link F, which latter is pivoted at *d* to the lever D. The upper end of the latter is made in shell form, so as to receive and allow the link F to work partially therein, and thus guide and keep said link F in proper place, as shown in the drawings.

When the lever D is drawn up toward the stock, as shown in Fig. 2, the toggle-links E F are thereby straightened into horizontal position and they push the breech-piece C forward and lock it firmly against the rear of the gun, closing the breech thereof.

When the lever D is thrown down, as in Fig. 3, the links E F fold up and draw back the breech-piece C, so as to open the breech of the barrel, as shown.

Attached to one side of the breech-piece, and projecting a little in front thereof, is a small cartridge-hook, *e*. (See Fig. 1.) The hook or front part thereof extends just far enough over the face of the breech-piece C to catch and hold the flange of the cartridge-case.

When a cartridge is introduced in front of the breech-piece C, (as will be hereafter described,) the flange of the cartridge upon one side comes between the hook *e* and the face of the breech-piece C, in which position the cartridge-case is held during the advance and return of the breech-piece.

One side of the rear of the barrel, near the charge-chamber, is made with a recess to allow the end of the hook *e* to advance with the the cartridge and hold the flange thereof. The hook *e* holds or acts upon the cartridge in a longitudinal direction only, and presents no obstacle to the free vertical movement of the cartridge.

Attached to the rear and bottom part of the breech-piece C is a ratchet-rod, G, which extends obliquely nearly through the whole length of the stock, as shown. The lower face of the rod G has pockets or teeth *f*, separated to correspond with the length of each cartridge. The bottom plate, H, of the stock is also provided with similar teeth or pockets *g*. The rear lower corner of the stock is provided with a pivoted cover, *h*, which, when opened, permits the introduction of the cartridges, one after the other, between the bottom plate, H,

and the rod G, and when the stock is filled with cartridges they occupy the position shown in the drawings.

When the breech-piece C moves backward or forward, the rod G will have a corresponding movement. If the rod G advances, it will also carry forward with it all the cartridges below it, because the teeth *f* will catch and take hold of the flanges of the cartridges, as shown. The length of the stock, or distance over which the breech-piece C advances, is just equal to the length of one of the cartridges. Therefore at every full stroke of the breech-piece C and its attached ratchet-rod G all the cartridges will be carried forward to a distance equal to the length of one cartridge. The teeth *g* prevent any retrograding of the cartridges. The retrograde movement of the rod G is assisted by the spring J, which is arranged, as shown, within the stock.

The object of this advancement of the cartridges is to bring them, one by one, up to the rear of the barrel, so that they may be then introduced into the charge-chamber. This is accomplished in the following manner:

I is the cartridge-lifter, composed of a plate made flat at one end to fit under the bottom of the breech-piece C, said lifter I having flanges *m* upon its sides, which are beveled or sloped down toward the flat end, as shown. This lifter I is attached at its bottom to a spring, I′, extending under the barrel, as shown. The lifter and spring may be made in one piece, if desired.

When the breech-piece C is withdrawn for loading, the spring I′ pushes the lifter I upward, bringing up the flanges *m* between the rear of the barrel and the front of the breech-piece C, as shown in Fig. 3.

When the breech-piece C advances its bottom strikes the beveled flanges *m* of the lifter I and presses the latter down into the position shown in Fig. 2, the bottom of the lifter being brought into line with the bottom plate, H. The forward movement of the breech-piece C, just described, also advances the ratchet-rod G and carries forward the row of cartridges in the manner before described, so that the cartridge which occupies the head of the row is advanced or carried forward upon the lifter I between the flanges *m*, and when the breech-piece C withdraws the lifter I rises between the breech-piece and barrel, carrying upon it the cartridge which it has just received. This cartridge is thus elevated to a level with the bore of the barrel, and by the next forward movement of the breech-piece is driven into the breech of the barrel, and then fired by the descent of the hammer in the common manner. When the breech-piece C withdraws it brings with it from the barrel the shell of the discharged cartridge hereinbefore described, and when the lifter I rises it throws or pushes said shell up and out of the flanges *m*, and the rear cartridge takes its place, the flange of the cartridge, as it rises, catching behind the hook *e*, as before described.

Thus by every advance of the breech-piece C a cartridge is driven into the barrel and a new cartridge is placed upon the lifter I, and by every return of the breech-piece the shell of the discharged cartridge is withdrawn from the barrel and thrown out and a new cartridge is brought up into line with the barrel of the gun.

The lever D may be locked into contact with the under side of the plate H by a spring-catch, *k*, of the usual construction.

The hammer K may be cocked, ready for firing, by any convenient connection with the breech-piece C, such as a pin, *e*, (see Fig. 1,) passing laterally from the hammer to the breech-piece C.

It is unnecessary here to describe the particular operation of the lock and hammer or other parts of a fire-arm not already mentioned, for they are not essentially connected with my improvement, and their arrangement and application will be readily understood by every mechanic skilled in the art.

I do not confine myself to the exact proportions or forms of the parts here shown, nor to the application of my invention to any particular species or form of fire-arms. These particulars may be varied to suit the preference of the maker of the gun.

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

1. The combination of the cartridge ratchet-rod G with the breech-piece C, substantially in the manner and for the purpose herein shown and described.

2. I also claim the combination of the spring cartridge-lifter I with the breech-piece C and ratchet-rod G, substantially in the manner and for the purpose herein shown and described.

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Witnesses:
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