

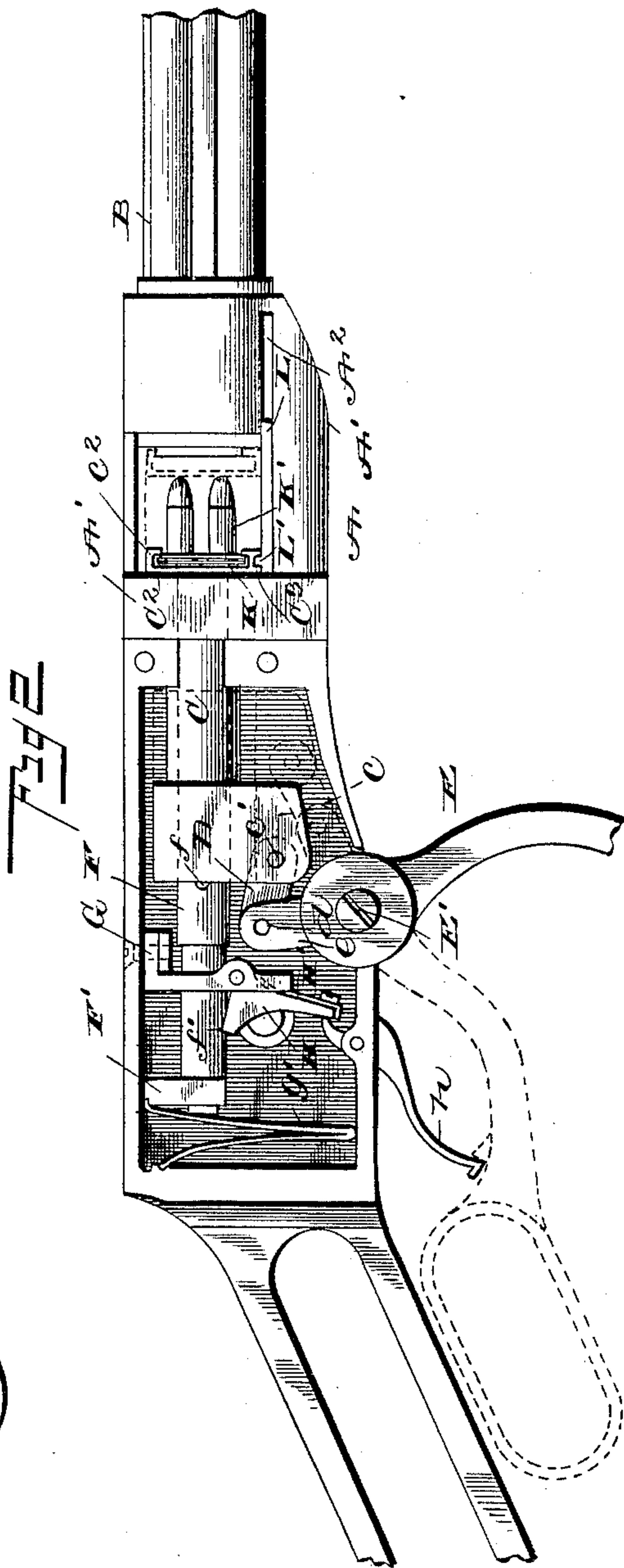
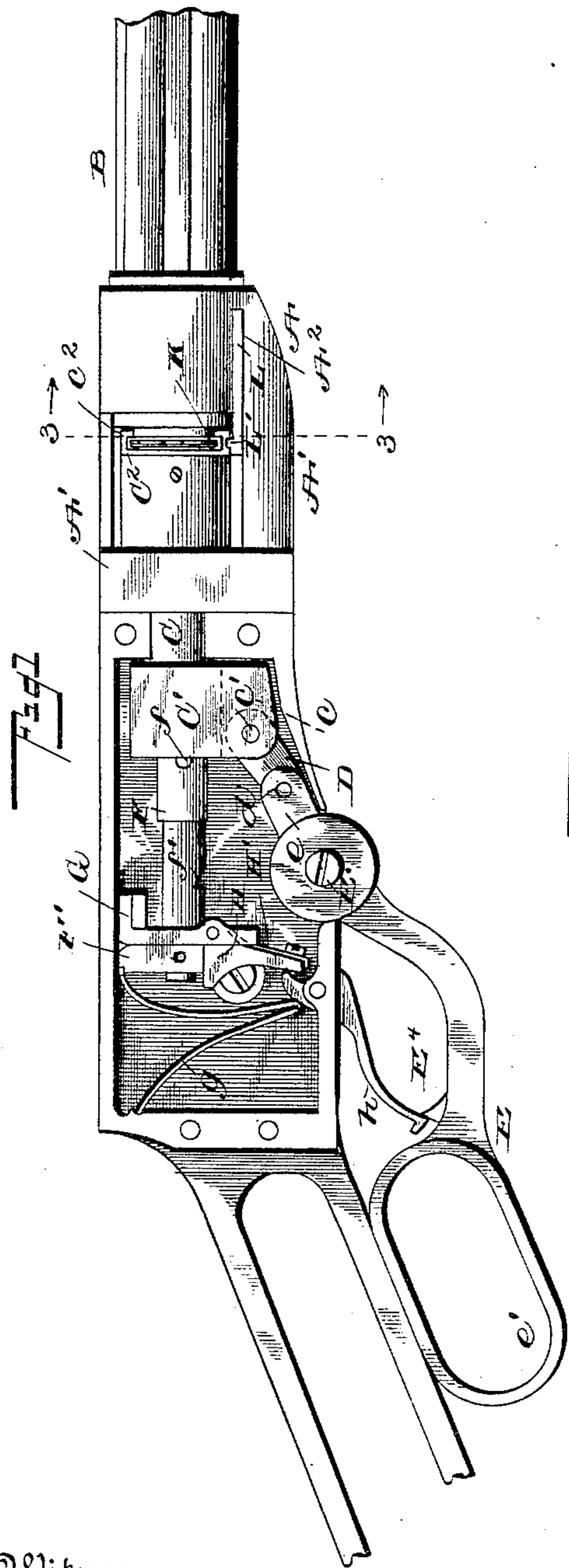
(No Model.)

2 Sheets—Sheet 1.

A. MERCER.
MAGAZINE GUN.

No. 477,764.

Patented June 28, 1892.



Witnesses

John D. Irvine
Arthur E. Swell

Inventor

Alfonso Mercer

By his Attorney W. Alexander

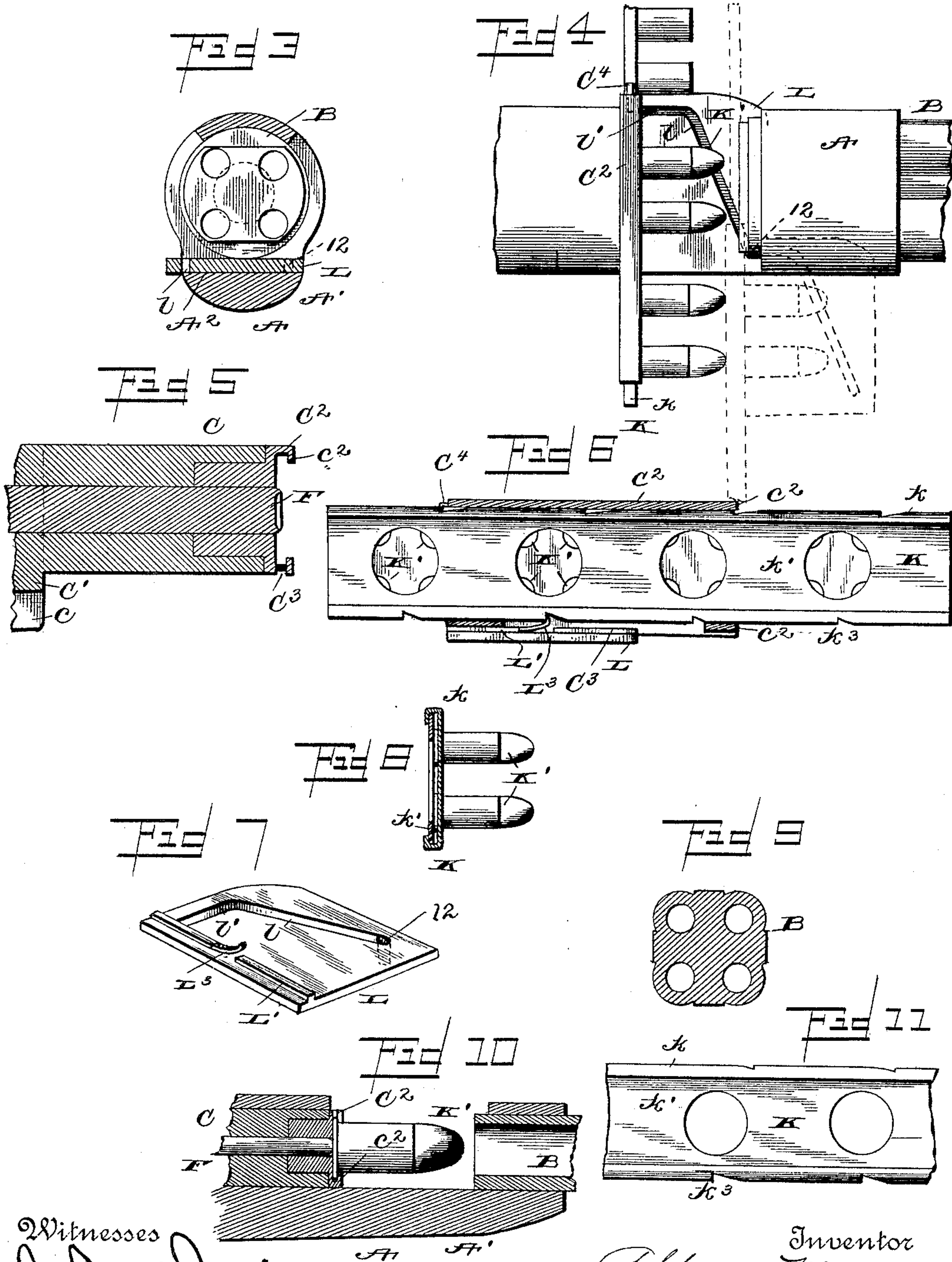
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John D. Mire
Arthur E. Soull.

Inventor
Alfonso Mercer

By his Attorney *W. H. Alexander*

UNITED STATES PATENT OFFICE.

ALFONSO MERCER, OF NORFOLK, VIRGINIA.

MAGAZINE-GUN.

SPECIFICATION forming part of Letters Patent No. 477,764, dated June 28, 1892.

Application filed October 6, 1891. Serial No. 407,925. (No model.)

To all whom it may concern:

Be it known that I, ALFONSO MERCER, of Norfolk, in the county of Norfolk and State of Virginia, have invented certain new and useful Improvements in Magazine-Guns; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form part of this specification, in which—

Figure 1 is a side view of my improved fire-arm, the barrel and stock being broken away and the side piece removed to show the working parts, which are in the position assumed when a cartridge has just been exploded. Fig. 2 is a similar view showing the parts in position when the cartridge has been withdrawn by full lines and by the aid of dotted lines showing the cartridge in position for exploding and the firing-pin or hammer "cocked." Fig. 3 is a transverse sectional view on line 3 3, Fig. 1, looking in the direction of the arrows. Fig. 4 is a detail top plan view of the cartridge-holding strip and feeding devices. Fig. 5 is a detail longitudinal sectional view of the cartridge inserter and remover. Fig. 6 is a rear view of the cartridge-holding strip. Figs. 7, 8, and 9 are details. Fig. 10 is a detail sectional view illustrating a breech-loading sporting-gun. Fig. 11 is a detail.

This invention is an improvement in fire-arms, and may be fitly called a "self-acting, breech-loading, and hammerless gun."

Its objects are to make a simple rapid-action weapon which can fire one or more shots simultaneously and can be employed as a hand or machine gun and in which the operations of feeding, loading, and firing the cartridges and of removing the empty shells may be automatically and rapidly performed by simple mechanism; and it consists, first, in a novel single mechanism for introducing the cartridge or cartridges into the barrel and after they have been exploded withdrawing the same therefrom; second, in an improved concealed hammer for exploding the cartridges at the proper time; third, in novel devices for feeding the cartridges into position and removing the shells after firing; fourth, in the means for mounting the cartridges, so that a "round"

of charges or cartridges are handled as a unit, and, fifth, in making a single lever operate the cartridge placer and extractor, (and the trigger, if desired,) so that handling of but one movable lever is necessary in firing the gun rapidly.

The invention further consists in the novel construction and arrangements of these several devices, as will be clearly understood from the following description and claims.

Referring to the drawings by letters, A designates the metallic portion of a gunstock, to the front end of which the barrel B is rigidly secured. The stock is chambered at the breech to accommodate the working parts.

C designates a movable block which forms the abutment and the cartridge extracting and loading device. As shown, it is longitudinally movable toward or from the breech of the barrel and in line with or in the same plane as the barrel, being firmly guided in its reciprocatory movements by a vertical partition A' in stock A, as shown, which stands in rear of the barrel sufficiently to allow a cartridge to be placed between the front end of block C and the barrel when the block is retracted. As shown, the block is cylindrical; but it may be angular in cross-section, if desired, and on its inner end is a head-piece C', having a slot c in its lower edge, in which is pivotally secured (by a pin c') the end of a link D, the other end of which is similarly connected (by a pin d) to the short arm e of an oscillating hand-lever E, which is pivoted on a transverse pin E' at the lower edge of the stock and depends therefrom, as shown, and has a hand-hold e' on its outer end, by which it can be readily shifted back and forth. The link D and short arm e' constitute a pivoted toggle connection between the fixed pin E' and the movable block C, so that when the lever E is oscillated the said block is retracted or projected from or toward the barrel. When the hand-piece e' is drawn back and up against the stock, the block C is projected and abuts closely against the breech of the barrel and at the same time pin d swings past the center or out of line with pins e' E' and locks the block in its forward position, as shown in Fig. 1.

F designates the firing-pin or "hammer" of the gun, the front end of which plays longi-

tudinally through an opening in block C, as shown, and its rear end is supported in a hanger G, attached to the stock A.

F' is an upstanding finger on the rear end of the firing-pin, and g' is a stout spring (as shown, it is a V-shaped leaf-spring) interposed between finger F' and the end wall of part A. The firing-pin has a stud f, which abuts against the rear end of block C and serves to stop the forward movement of the firing-pin, and at the same time causes the block when moved backward to shift the firing-pin backward also and tension the spring. When so shifted the pin is locked by a dog H, (pivoted to the lower end of hanger G or other suitable support and controlled by a spring H',) which dog engages a notch f' in the edge of the firing-pin. It can be released by a finger-trigger h, pivoted in part A just below the dog and depending therefrom in such position that it can be easily operated by the index-finger of the hand which operates lever E.

From the foregoing it will be understood that by pushing the hand-hold e' of lever E down and forward block C is retracted and the firing-pin or hammer cocked. A cartridge can then be inserted by hand into the breech of the barrel and then the lever E retracted, throwing block C forward, and the latter firmly holds the cartridge in place, forming the abutment for receiving the shock of the explosion. Then by pulling trigger h the firing-pin is released and forcibly driven forward by the spring until its forward end strikes and explodes the cartridge.

C² is a plate on the front end of the block C and having L flanges or guides c² on its top and bottom edges to receive the flange of a cartridge-holder feed-strip K. This cartridge-holder is formed of two strips k k', preferably of sheet metal. Strip k is perforated at regular intervals for the insertion of cartridges K', and strip k' is laid over the cap ends of the cartridges and attached to plate k by flanging, soldering, or other suitable means, so that the cap ends of the cartridges are held between the strips, as shown in Figs. 4 and 8, while the shell and ball project. Plate k' is perforated so as to permit the hammer or firing-pin to strike the edge of the cap of the cartridge when properly adjusted. The strip, as shown, is introduced between guides c² of the block C and moved laterally so as to bring a cartridge directly opposite the bore of the barrel. Then when block C is moved forward the cartridge is introduced into the barrel and may be exploded, and as block C is moved backward the exploded shell is drawn from the barrel, and by moving the feed-strip another cartridge can be brought opposite the barrel ready for use. It will be observed that the cartridges united to the strip move together, and the movement imparted to the strip to introduce a fresh cartridge into position or to remove an exploded shell simultaneously removes a previously-exploded shell or brings a

new cartridge into position. By the use of these cartridge-holding strips a number of rounds can be handled as a unit, and thereby great saving of time is effected in loading and unloading the weapon. The cartridge-strips can be readily packed, and may be arranged for single or multiple firing, as indicated in the drawings, according to the number of barrels in the gun. I have shown a four-barrel gun and a holding-strip carrying four rounds of four cartridges, so that four shots will be discharged at each fire. The multiple-barrel gun can also be used as a single-fire gun by properly arranging the cartridges on the strips. It will also be observed that without the strips the cartridges could be introduced by hand into the guides c², and in Fig. 10 I have illustrated a detail of a sporting-gun where the cartridges are dropped into and removed from lips on the front end of block C by hand, thus constituting a simple and easily-operated hand-feed, immovable-barrel, breech-loading gun in which the cartridge is automatically put into and removed from the barrel.

When the rounds feed strips are used, I propose to employ an automatic device for shifting the strips longitudinally, so that the action of the gun will be entirely automatic upon the shifting of lever E. In the drawings I have illustrated one means of feeding the strip. This, as shown, is accomplished by laterally-extending plate C² at one side of the block and employing a movable horizontal feed-plate L, which lies between the barrel and block C, and has a tongue L' on its rear edge, which engages a groove C³ in the lower edge of plate C², so that plate L is reciprocated with the block and can also move transversely thereto. The gunstock is cut out beneath the breech, as at A², to accommodate plate L when the block C is thrown forward to introduce a cartridge into the barrel, as indicated in Figs. 1, 2, and 4. Plate L has a diagonal slot l in it extending from its right-hand front corner toward its left-hand rear corner, but terminating in a prolongation l' of the slot parallel with the barrels or block C. This slot engages a pin l², fixed to the stock A' in such position that when block C is retracted plate L is drawn back with it and at the same time is laterally moved to one side, and when the block moves forward the feed-plate moves forward and also laterally and projects from the opposite side of the gun. The plate has a spring-dog L³, which is adapted to engage notches k³ in the lower edge of the holder and feed-strip K, so that as the block and plate move backward the strip K is drawn inward sufficiently to bring the unexploded cartridge in position and simultaneously move the exploded cap out of the way. The straight portion l' of the slot permits the plate L to move backward with the block for a sufficient distance to entirely withdraw the exploded cap from the barrel before the plate L begins to move laterally

and feed the strip. A spring-detent C^4 may be connected to the plate C^2 to prevent backward movement of the strip K. Lever E may have a cam E^4 formed on it in such position
 5 that it will engage trigger h and release the firing-pin just after the block C has reached the limit of its forward movement and been locked with the cartridge in the barrel, as indicated in Fig. 1.

10 From the foregoing description it will be observed that I introduce the cartridges into and remove the shells from the barrel by the same holder, that the cartridges can be fed to and removed from the holder by hand or au-
 15 tomatically, that a single cartridge can be fired or a number of cartridges or rounds handled as a unit can be successively discharged, and that I can adapt the gun for firing one or more cartridges at each discharge; also that the
 20 several operations of firing, loading, and unloading may be performed by the movement of a single lever and the firing be independently accomplished by a trigger. The adaptability of the machine for light rapid-firing
 25 machine-guns is apparent and I contemplate using it for such purposes.

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

30 1. The combination of a breech-loading gun having a longitudinally-movable abutment cartridge-holding block, with a feed-plate loosely connected to said abutment-block and movable therewith, and means, substantially
 35 as described, for causing said plate to move laterally in relation to the said block during its forward and backward movement therewith, substantially as described.

2. The combination of a breech-loading gun
 40 having a longitudinally-movable abutment cartridge holding and carrying block, with a slotted feed-plate loosely connected to said abutment-block and movable therewith, and a fixed pin, substantially as described, for
 45 causing said plate to reciprocate laterally in relation to the said block during its forward and backward movement therewith, substantially as specified.

3. In a breech-loading firearm, the combi-
 50 nation of the barrel, a longitudinally-movable

block lying in rear thereof and movable toward or from the breech and having guides or flanges on its front end adapted to receive a cartridge-holding strip and to introduce a
 55 cartridge on the same into the barrel and hold it until exploded, and to then withdraw it, and means for shifting said block and exploding the cartridge, and laterally-reciprocating mechanism for laterally feeding the cartridge-
 60 holding strip through the guides on said block, substantially as specified.

4. In a breech-loading firearm, the combination of the barrel, a longitudinally-movable block lying in rear thereof and movable
 65 toward or from the breech, having cartridge-holding strip-guides on its front end, the lever and link for operating said block, the spring-controlled firing-pin playing in said
 70 block and cocked by the backward movement thereof, and the trigger devices for releasing said firing-pin after the block has been moved forward, and a laterally-reciprocating
 75 feed mechanism for directing the cartridge-holding strip through the guides on the block, substantially as described.

5. The combination of the barrel, the stock, the movable breech-block C, having cartridge-
 80 holding flanges c^2 on its front end, the spring-controlled firing-pin F, playing through said block, having its pin f and notch f' , the cocking-dog H, the trigger engaging said dog, and the lever and links for reciprocating said
 breech-block, substantially as set forth.

6. The combination of the barrel, the breech-
 85 block C, having flanges c^2 on its front end, and head-piece C' on its inner end, the pivoted lever E, having short arm e , the link D, pivotally connected to arm e and head C' , the
 90 firing-pin F, playing through the breech-block, having pin f and notch f' , the pivoted dog H, spring H' and g' , and the trigger, all substantially as described.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

ALFONSO MERCER.

Witnesses:

T. H. ALEXANDER,
 ARTHUR E. DOWELL.