

(No Model.)

C. M. SPENCER.

SAFETY LOCK FOR MAGAZINE GUNS.

No. 386,614.

Patented July 24, 1888.

Fig. 7.

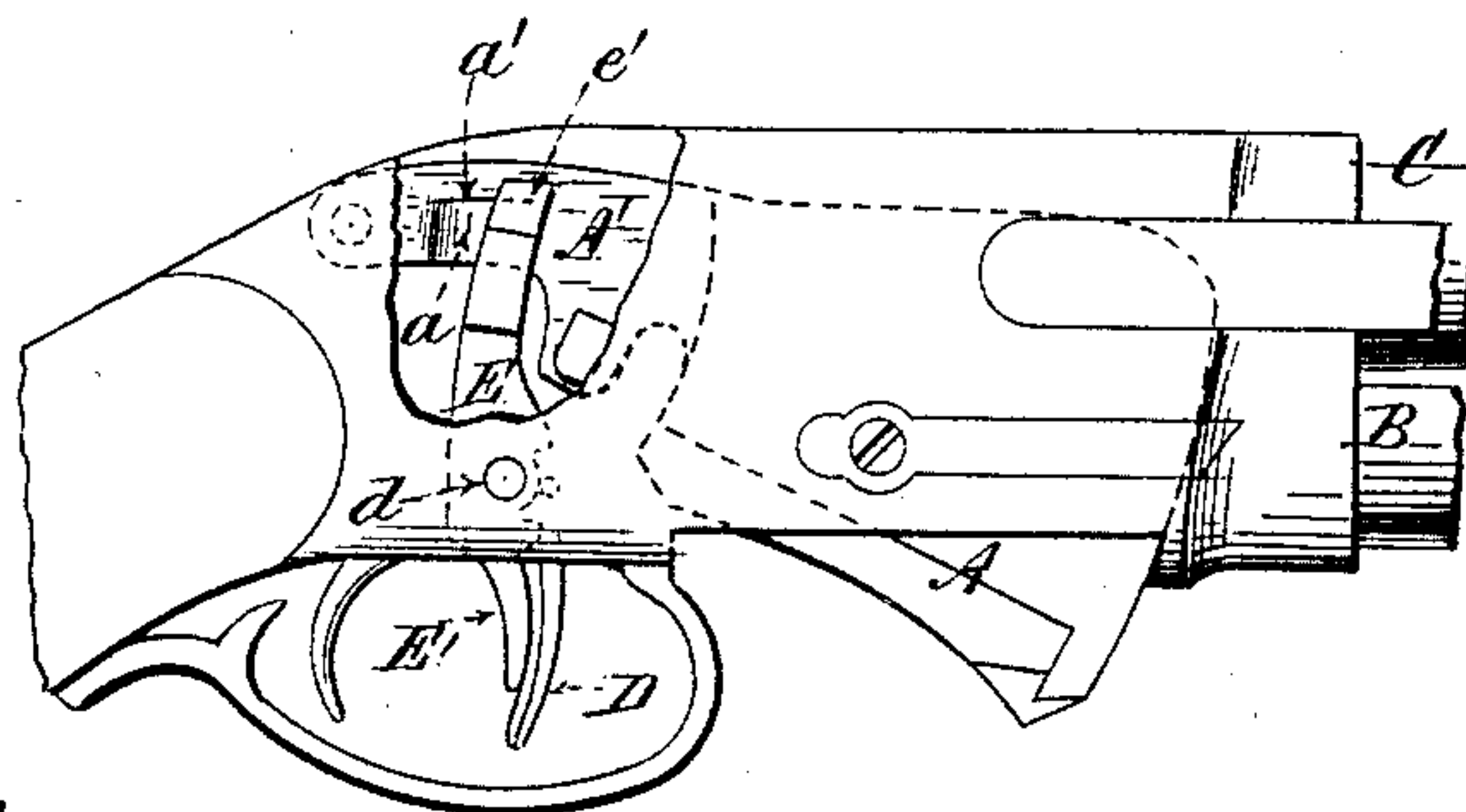


Fig. 8.

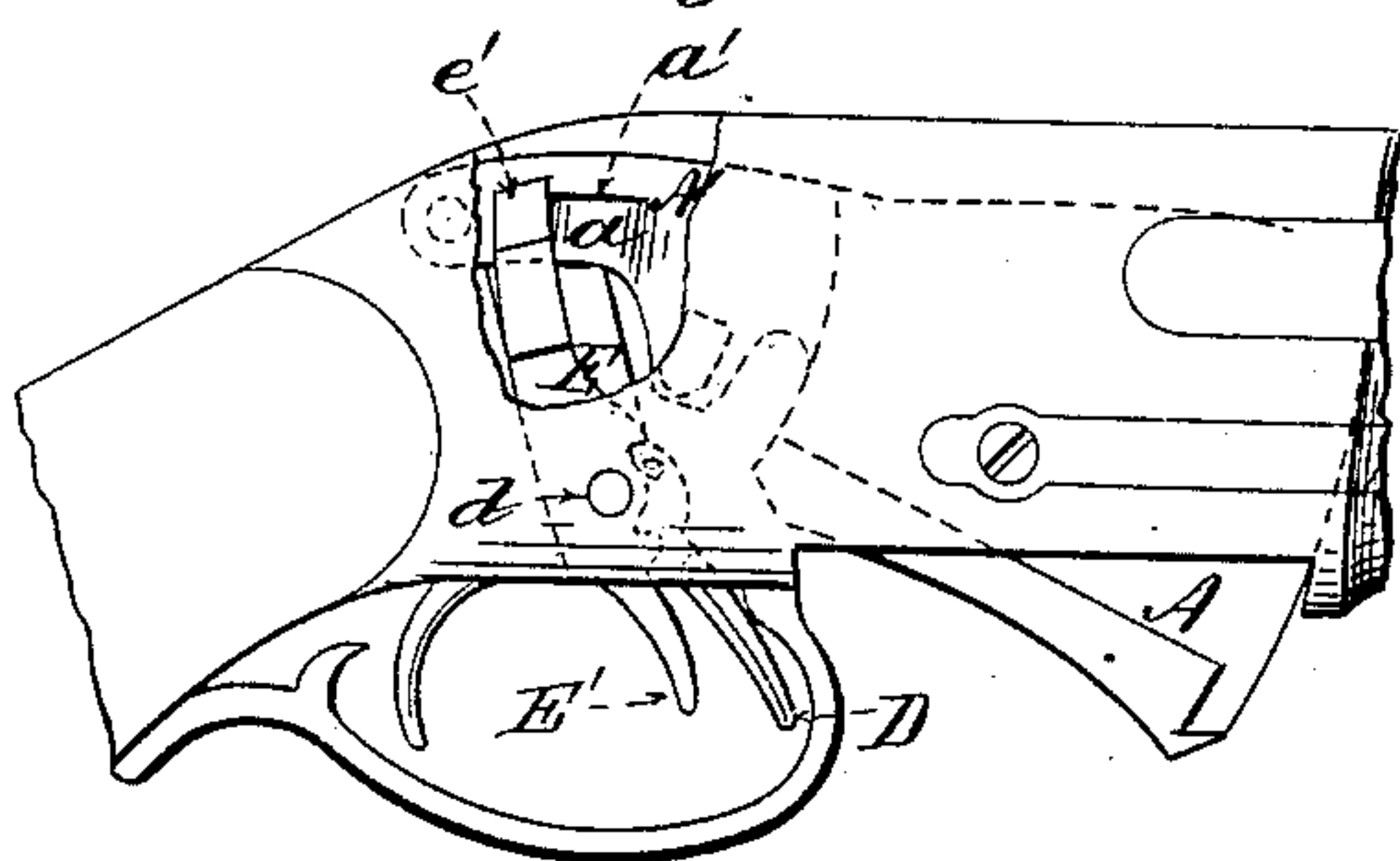


Fig. 2.

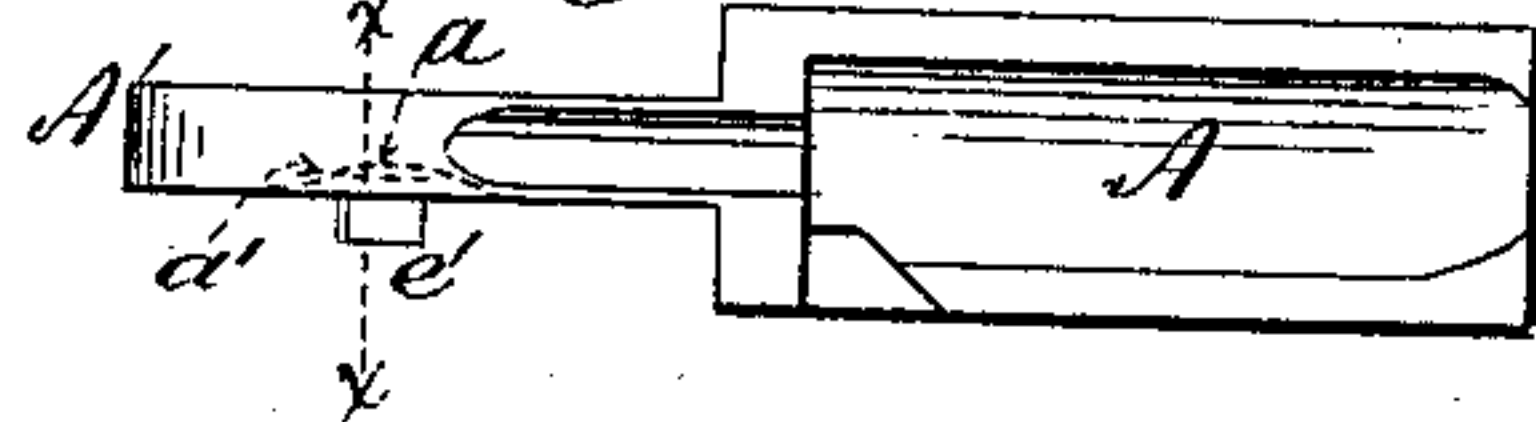


Fig. 1.

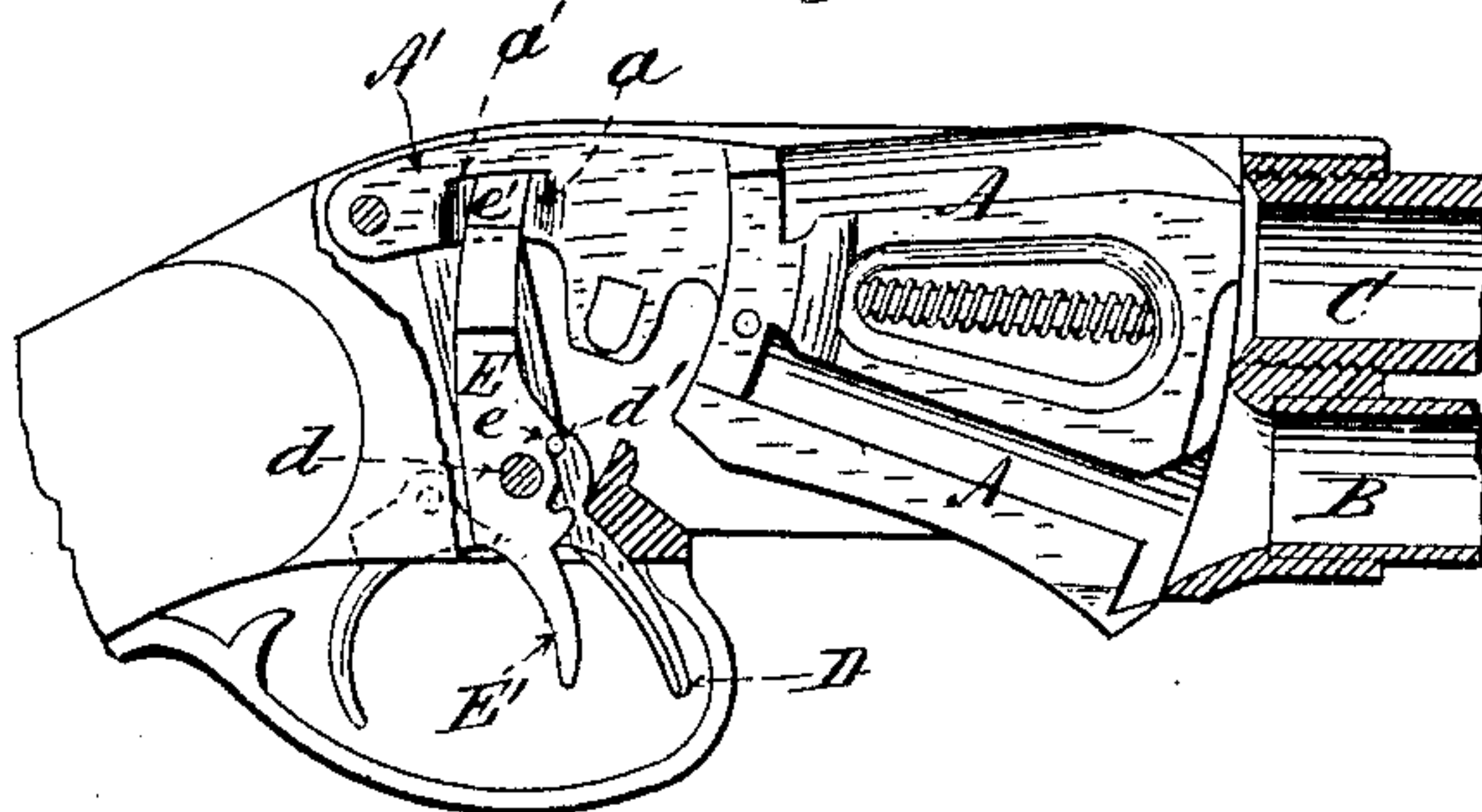


Fig. 3.

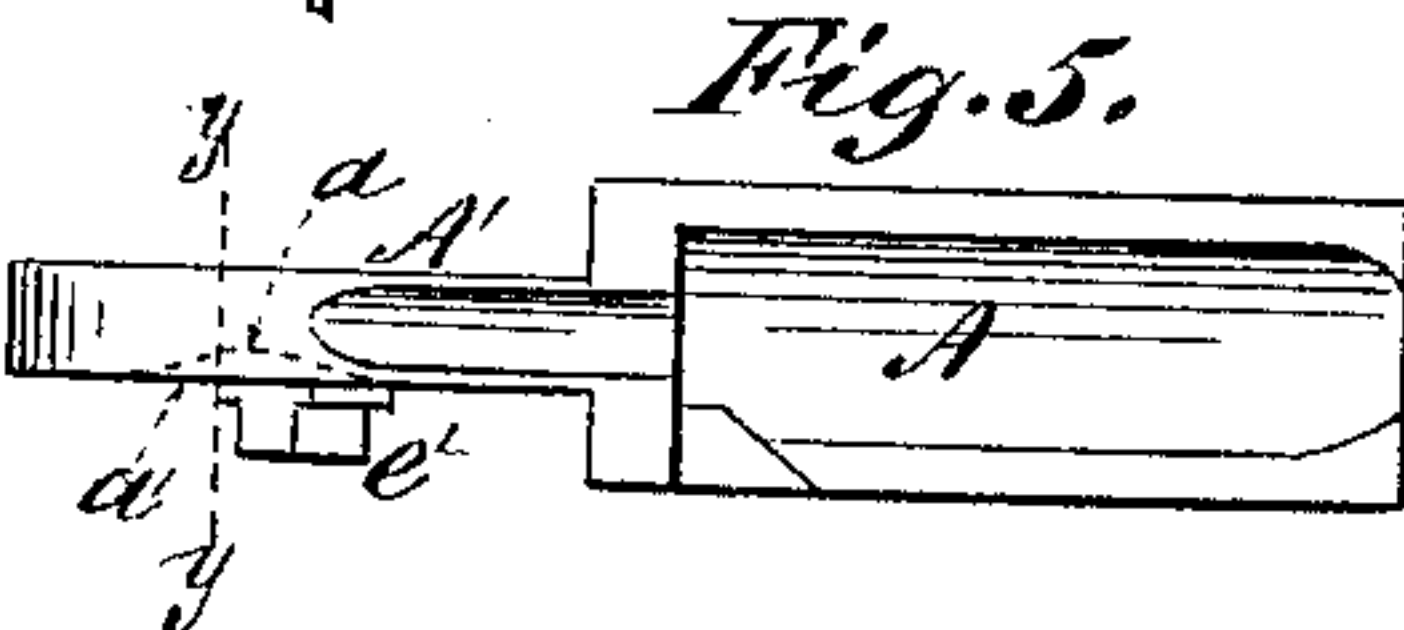


Fig. 4.

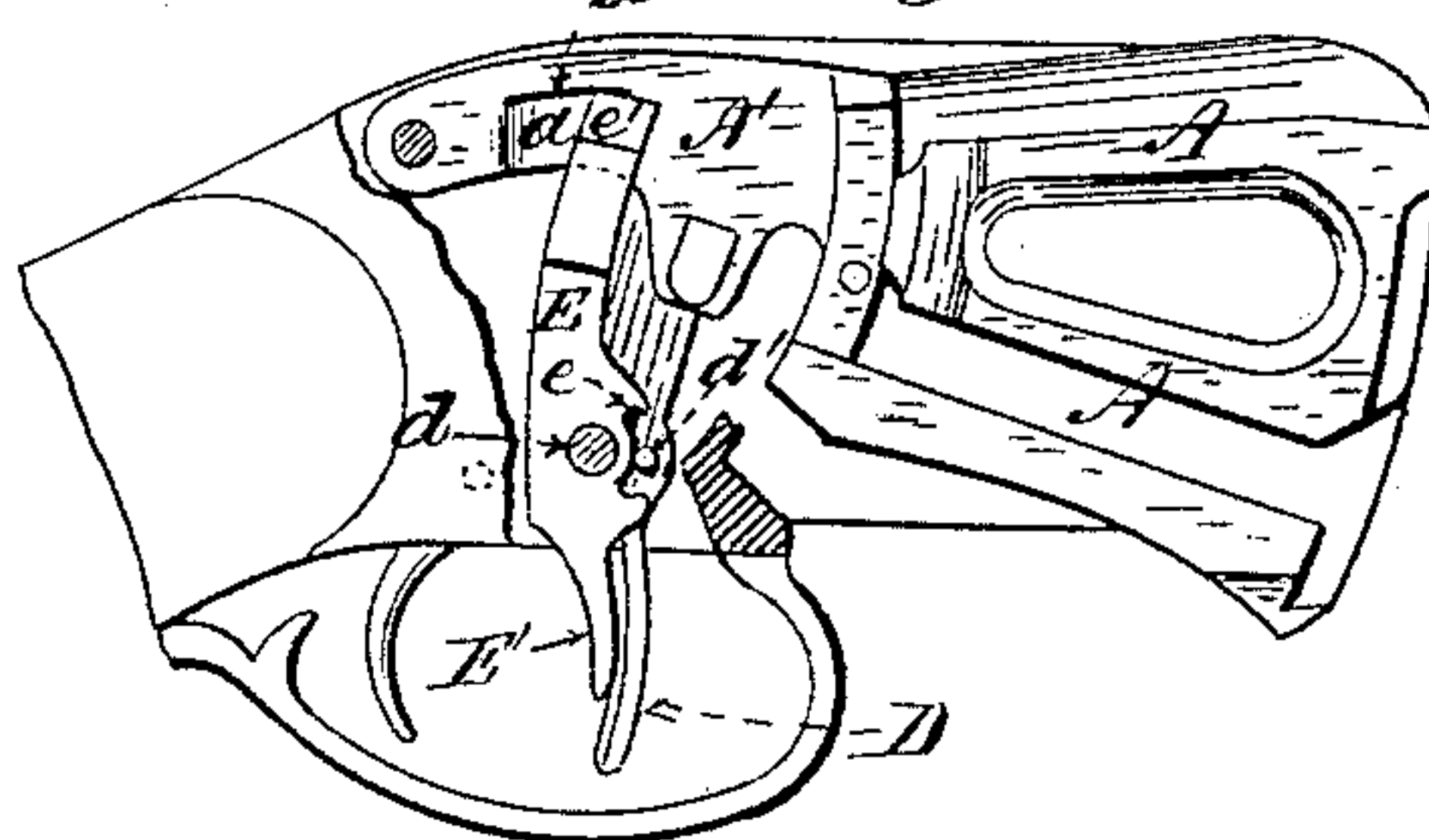
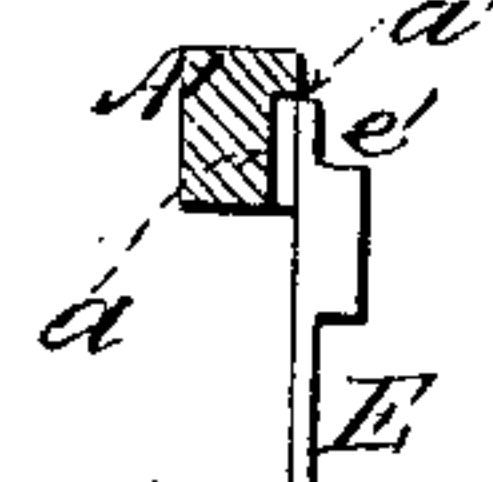


Fig. 6.



Witnesses:

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UNITED STATES PATENT OFFICE.

CHRISTOPHER M. SPENCER, OF WINDSOR, CONNECTICUT.

SAFETY-LOCK FOR MAGAZINE-GUNS.

SPECIFICATION forming part of Letters Patent No. 386,614, dated July 24, 1888.

Application filed April 21, 1887. Serial No. 235,652. (No model.)

To all whom it may concern:

Be it known that I, CHRISTOPHER M. SPENCER, of Windsor, Connecticut, have invented a certain Improvement in Automatic Safety-Locks for Repeating Fire-Arms, of which the following is a specification.

The object of this improvement is to do away with a source of danger arising from the occasional use of cartridges which hang fire in repeating fire-arms as heretofore constructed. The reloading mechanism of such fire-arms is purposely and necessarily made capable of quick operation to facilitate the rapid firing of successive charges; hence if a cartridge hangs fire injury may ensue from its explosion after the breech has been opened or partially opened by the operation of the reloading mechanism.

The present invention, which is applicable to all repeating fire arms, consists, broadly, in the combination of the reloading mechanism in a repeating fire-arm with means for automatically locking such mechanism every time it is operated, and for automatically unlocking it by the recoil when the cartridge explodes. For convenience the locking device is also made capable of manual operation to either lock or unlock the reloading mechanism.

The accompanying drawings exhibit a convenient method of applying the invention to magazine-guns of the type in which a swinging breech-block is employed, the particular form which is selected for illustration being that shown and described in Letters Patent of the United States, No. 255,894, dated April 4, 1882, granted to Christopher M. Spencer and Sylvester H. Roper for an improvement in magazine-shotguns.

The drawings are as follows: Figure 1 is a view of portions of the barrel and stock immediately adjoining the receiver, with the side wall of the receiver removed, showing the breech-block in the position in which it closes the breech, and the safety-lock for preventing the movement of the breech-block in the position into which it is thrown by the act of operating the reloading mechanism. Fig. 2 is a top view of the breech-block and a view of a portion of the upper end of the safety-lock in the position in which it prevents the downward movement of the breech-block by catch-

ing under the shoulder formed in the side thereof. Fig. 3 is a transverse section, taken through the line *xx* on Fig. 2, showing the safety-lock caught under the shoulder formed in the arm of the breech-block. Fig. 4 is a side elevation, similar to Fig. 1, showing the upper end of the safety-lock in the position to which it is thrown by the recoil, in which it is disengaged from the shoulder in the arm of the breech-block. Fig. 5 is a top view of the breech-block, similar to Fig. 2, affording a top view of the safety-lock in the position into which it has been thrown by the recoil. Fig. 6 is a section, through the line *yy* on Fig. 5, showing the safety-lock disengaged from the shoulder in the arm of the breech-block. Fig. 7 is a side elevation, similar to Figs. 1 and 4, showing the breech-block dropped down into the position which it assumes at the end of the first stage of the reloading movement.

The position into which the breech-block A is moved by the first part of the action of the reloading mechanism is that indicated in Fig. 7. In this position a cell in the lower part of the breech-block receives a cartridge from the magazine B.

The breech-block remains in the position in which it is represented in Fig. 7 until the shell is extracted from the chamber C, and then swings upward and carries the cell in the breech-block into line with the chamber. While in this position the cartridge is, by the further operation of the reloading mechanism, thrust forward into the chamber, and the breech-block is then dropped down into the firing position, which is that represented in Fig. 1. The movement of the breech-block into its highest position is accompanied by the movement backward of the hammer a sufficient distance to cock it, and the hammer-arm D is by the cocking movement thrown forward into the position in which it is represented in Fig. 1. The safety-lock E is a lever which is pivoted upon the axis *d* of the hammer, and which at its upper end bears with elastic pressure against the side of the arm A' of the breech-block. As the hammer is rocked backward in the act of cocking the gun, a pin, *d'*, affixed to the hub of the hammer, strikes against a shoulder, *e*, in the hub of the lever E and rocks the end *e'* of the lever E backward from the position in which it is repre-

sented in Fig. 7 into the position in which it is represented in Fig. 1. During this backward movement the upper end, e' , of the lever E springs into a recess, a , in the lower part of the side of the arm A' , and is thus carried under the shoulder a' , which forms the upper wall of the recess a . The lever E, being thus projected into the path through which the arm of the breech-block must move at the commencement of the reloading movement, effectually obstructs such movement and prevents the operation of the reloading mechanism. When the gun is fired, the hammer flies forward and the hammer-arm D rocks backward, carrying the pin d' clear of the shoulder e , and thus frees the lever E to the influence of the recoil. By the effect of the recoil the upper end of the lever E, which is suitably heavy, is made to swing forward into the position in which it is represented in Figs. 4 and 7. By this forward movement the upper end, e' , is carried out of the recess a and made to bear simply upon the unrecessed adjoining portion of the arm A' of the breech-block, as shown in Fig. 6, in which position the lever E no longer obstructs the downward movement of the arm A' of the breech-block, and thus ceases to prevent the operation of the reloading mechanism.

It will be seen that the lever E is provided with a curved trigger arm, E' , which projects into the space within the guard and affords a means for manually operating the lever if there should be occasion for such operation.

In case it be desired to so operate the safety-lock as to remove the end e' from the recess a when the hammer is cocked, the trigger-arm E' may be pushed forward, in which case the upper end, e' , of the lever E will be rocked backward out of the recess a and onto the unre-

cessed adjoining portion of the side arm, A' , immediately in the rear of the recess a .

If the hammer is uncocked, the upper end, e' , of the lever E may be rocked out of the recess a in either direction by appropriately moving the trigger-arm E' in the direction desired.

In view of its functions and the manner in which it is operated, the lever E is designated as an "automatic safety-lock."

There are, of course, a variety of ways in which automatic safety-locks may be applied to repeating fire-arms, so that by the operation of the reloading mechanism the safety-lock will be automatically moved into a position in which it prevents a repetition of the reloading movement, and so that the plane of the movement of the safety-lock will be substantially parallel with the axis of the arm, whereby it will be made to move out of its locking position by the effect upon it of the recoil when the arm is fired. The method of construction exhibited in the drawings is, however, deemed sufficient to illustrate the principles governing the application of the automatic safety-lock to repeating fire-arms generally.

What is claimed as the invention is—

The combination, in a repeating fire-arm, of the breech-block A, provided with the laterally-projecting shoulder a' , and the pivoted lever or safety-lock E, provided with the shoulder e , in combination with the pin d' , affixed to the hammer-arm for imparting motion to the said safety-lock, and thereby carrying its end e' into engagement with the said shoulder a' , as and for the purposes set forth.

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Witnesses:

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