

H. BORCHARDT.
Breech-Loading Fire-Arms.

No. 206,217.

Patented July 23, 1878.

Fig. 1.

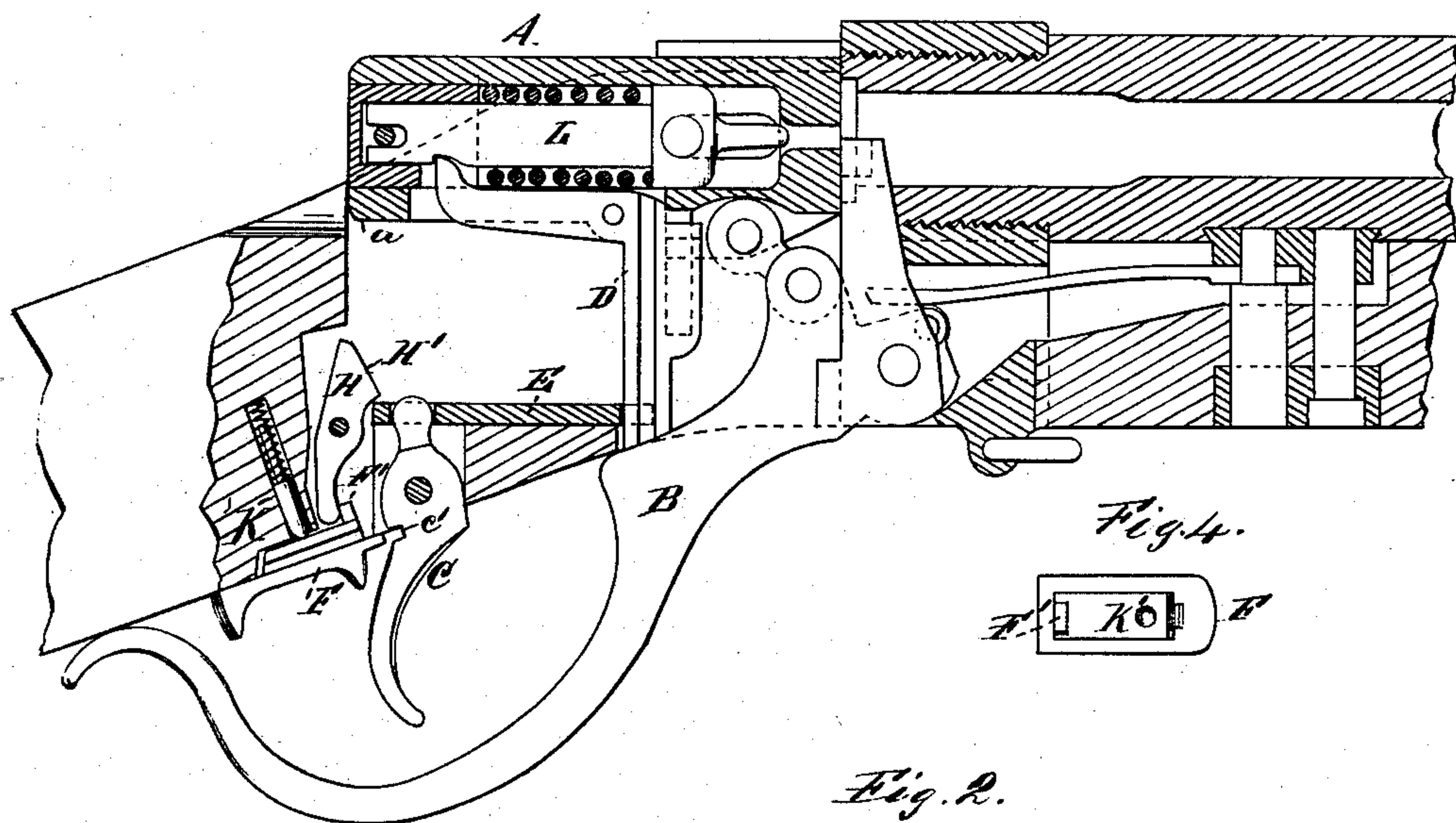


Fig. 4.



Fig. 2.

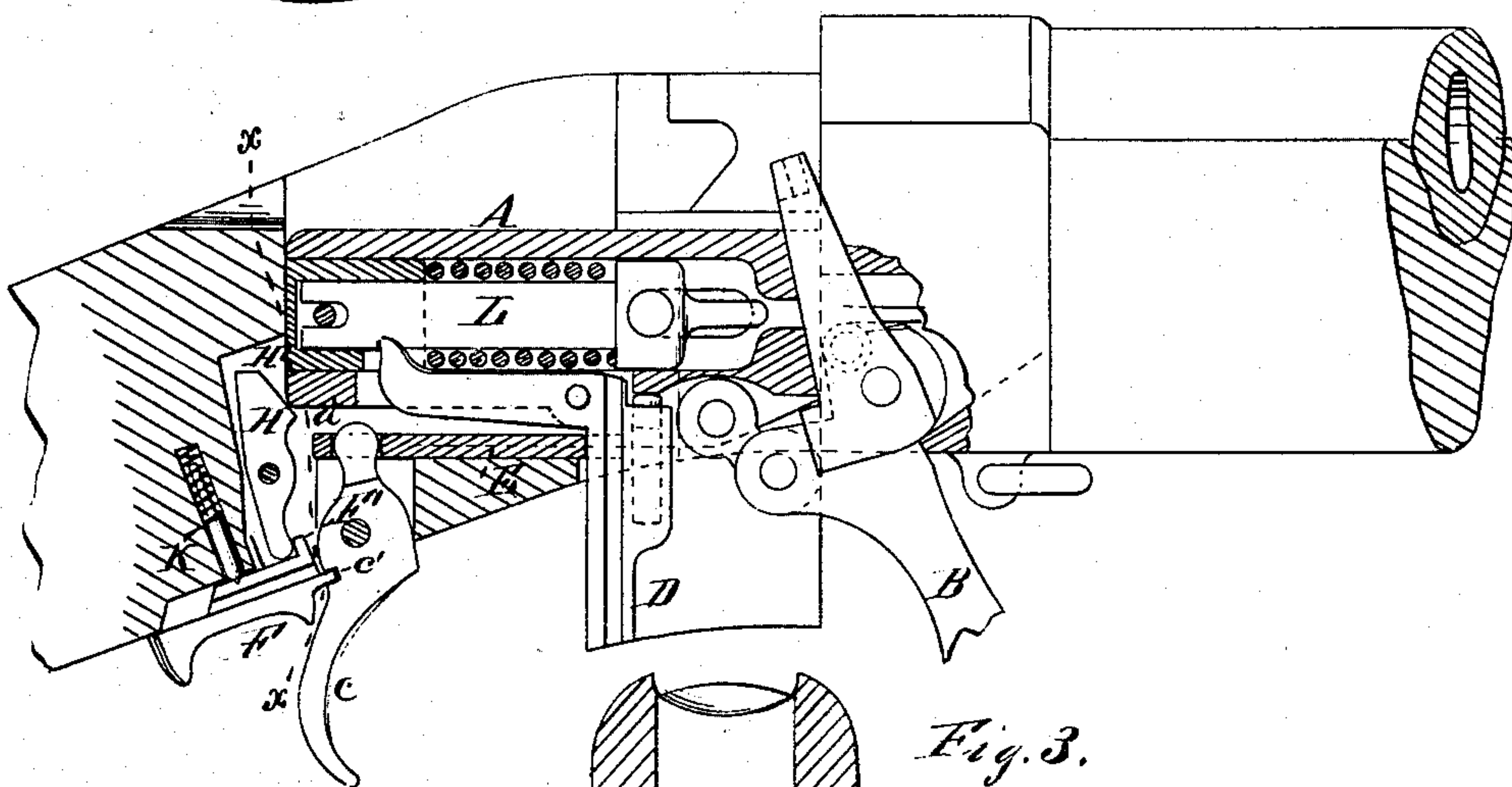
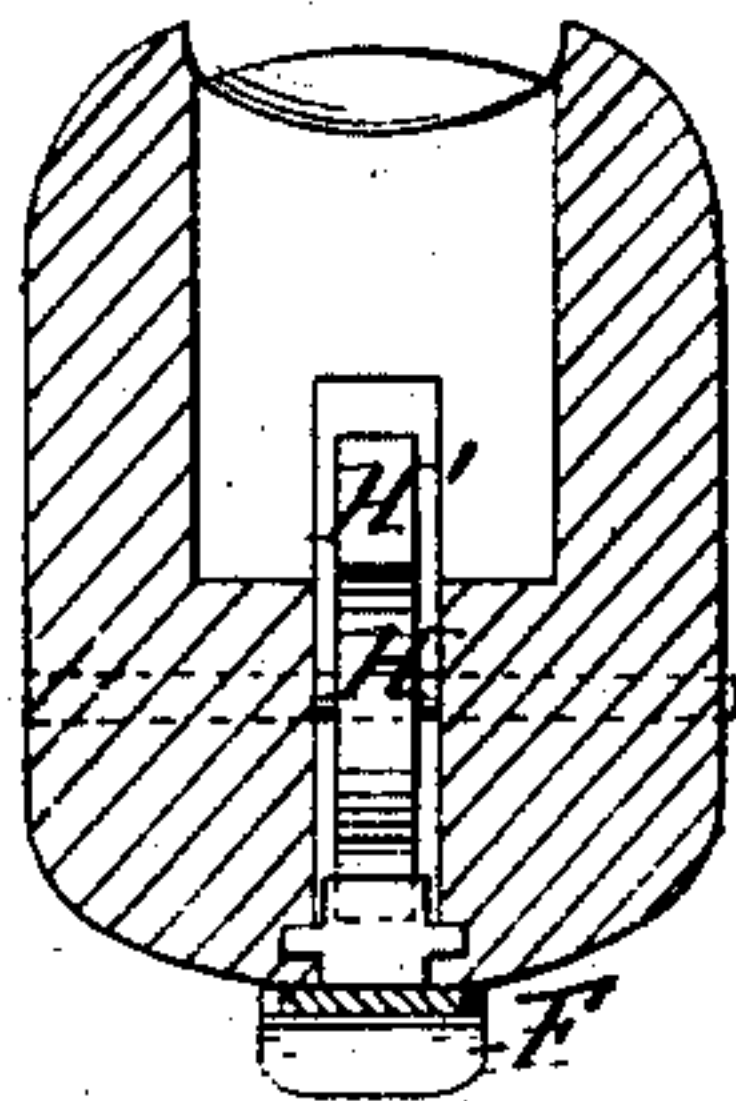


Fig. 3.



Witnesses
Wm. H. H. H.
H. H. H.

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by Charles F. Blake
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Fig. 5.

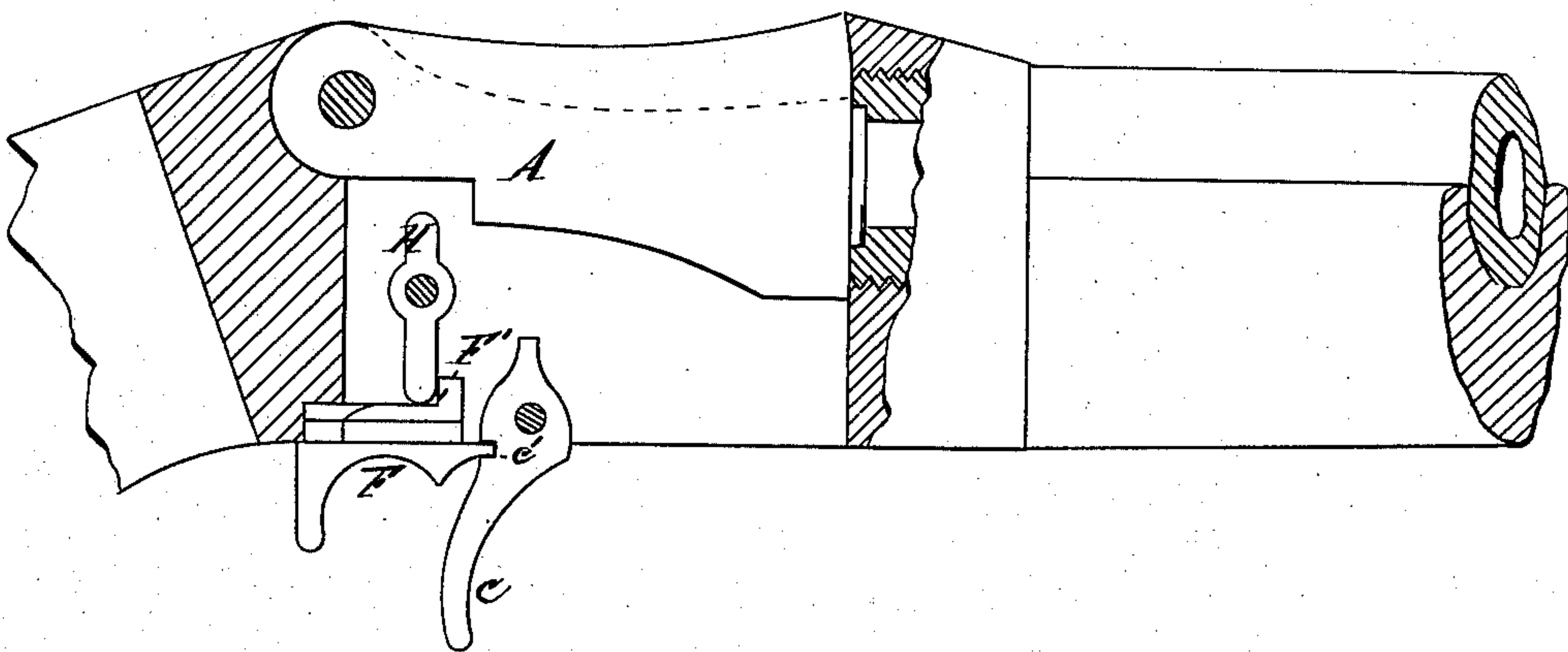
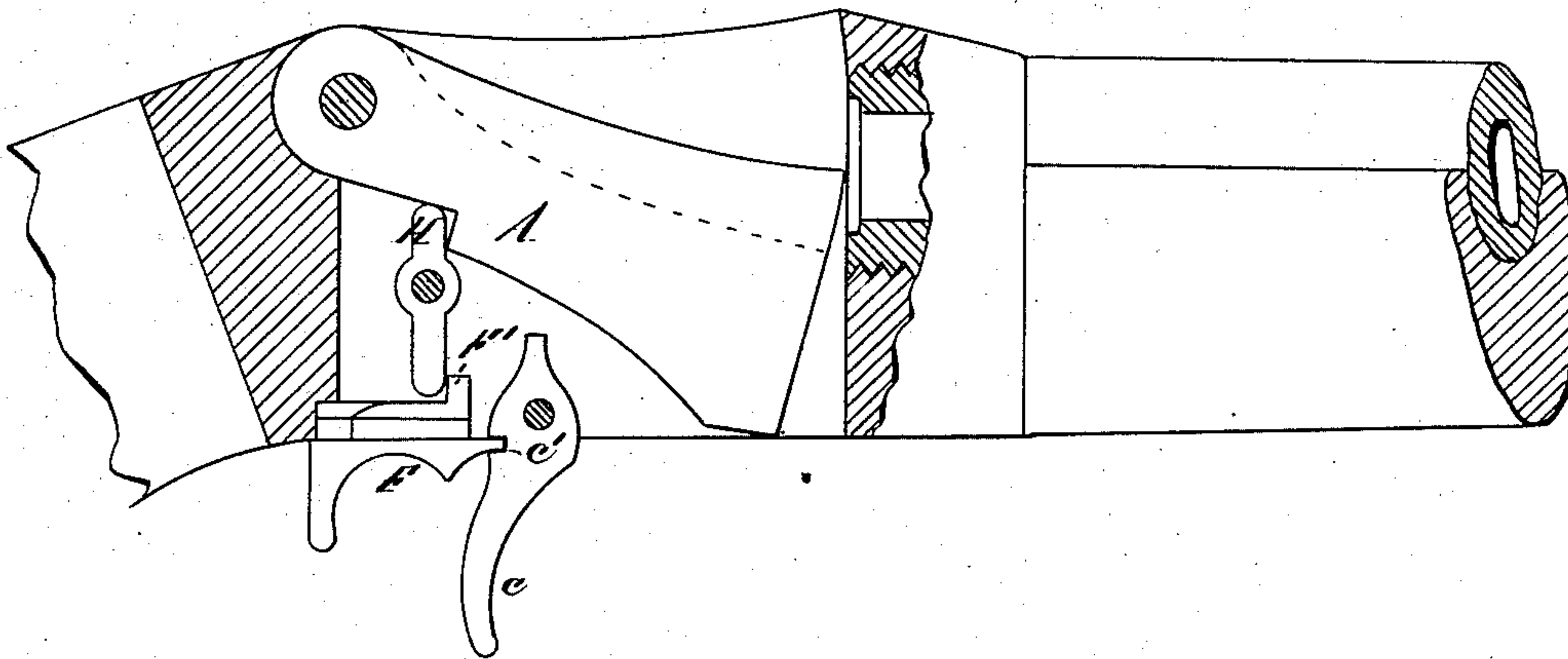


Fig. 6.



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UNITED STATES PATENT OFFICE.

HUGO BORCHARDT, OF BRIDGEPORT, CONNECTICUT, ASSIGNOR TO SHARPS RIFLE COMPANY.

IMPROVEMENT IN BREECH-LOADING FIRE-ARMS.

Specification forming part of Letters Patent No. **206,217**, dated July 23, 1878; application filed May 26, 1877.

To all whom it may concern:

Be it known that I, HUGO BORCHARDT, of the city of Bridgeport, in the State of Connecticut, have invented a new Automatic Safety-Check for Breech-Loading Fire-Arms; and that the following is a full, clear, and exact description thereof, when taken in connection with the accompanying drawings, in which—

Figure 1 is a vertical longitudinal section, showing my automatic safety-check as applied to a breech-loading gun, the check being withdrawn and the gun ready to discharge. Fig. 2 is a similar section, showing the breech-block down and the gun in condition to be loaded, the safety-check being in the locking position. Fig. 3 is a vertical cross-section on the line $x x$ of Fig. 2. Fig. 4 is a top view of a part of the safety-check mechanism. Figs. 5 and 6 are views of a form in which my automatic check may be sometimes applied.

Like letters indicate like parts in all the drawings.

In breech-loading fire-arms in which the cocking of the firing-pin or hammer is effected by the movement of the breech-block the gun is ready to discharge as soon as the breech is closed, and if it is desired to carry the arm loaded it must be done with the firing-pin retracted or cocked.

To avoid danger from accidental discharges, a check-piece is applied, which, when in one position, prevents the operation of the trigger, and when in the other position leaves the trigger free and the gun in proper condition to be fired. Thus, to enable the arm to be carried with safety when loaded and cocked, the check-piece or safety-check has to be pushed forward or otherwise moved into the locking position by the operator's fingers, either during or after the closing of the breech.

My invention consists in so combining the moving breech-block and safety-check mechanism as that the breech-block, when moved by the lever, automatically operates the safety-check device, forcing it into the locking position, and securing the gun against accidental discharge when the breech is closed and the firing-pin retracted or at full-cock. A separate and distinct operation to move the safety-check into the locking position is therefore by my

invention obviated, the opening of the breech performing the locking operation, while the closing of the breech leaves the trigger locked.

When it is desired to discharge the gun the safety-check is moved back or out of its locking position, thus leaving the trigger free to operate in discharging the gun.

In the drawings I have shown my invention as applied to a breech-loading fire-arm having an upwardly and downwardly moving breech-block carrying a firing-pin, the block and pin moving together by the operation of a lever, and the cocking of the pin being effected during the opening of the breech.

The particular form of breech mechanism which I have shown in the drawings was patented by me on the 26th of December, 1876, by Letters Patent No. 185,721, and it is not necessary here to specially describe it.

I will now describe my invention in automatic safety-checks, which may be used with guns of various breech mechanisms.

At A is seen the breech-block, which is moved up and down by the operation of the lever B. At C is shown the trigger, which is connected with the sear-bolt D by the sliding piece E. On the back of the trigger C a slot, hole, or other appropriate opening is made, as at c' , into which opening the safety-check slide F projects when pushed forward, its front end being so formed as to enter the opening c' in the trigger C and prevent the movement of the trigger and the discharge of the gun.

The slide-piece F is arranged, as shown, to slide backward and forward in grooves formed in the frame of the gun, or it may be pivoted and operate as a lever, if preferred. The lower surface of the slide is suitably formed to receive the finger of the operator, so that he may readily slide it back and forth out of and into locking position. The upper part of the slide-piece F is provided with a projection, F' , for a purpose to be hereinafter more fully described.

At H is seen a lever pivoted within and to the frame of the gun, the upper part of which is inclined, as shown in the figures at H' , and the lower end of which rests behind the projection F' of the slide-piece F. At K is shown a pin pushed out by a light spring, the lower

end of which pin rests in a depression, K', formed in the upper surface of the piece F, when the latter is forward or in its locking position, the object being to keep the safety-check slide F in this its locking position and prevent it from being dislodged by jarring the piece.

The operation of the parts is as follows: The piece having been discharged, it is desired to load the gun. The lever B is thrown down, and with it the breech-block A slides down to open the breech. As the block A slides down its rear end *a* comes in contact with the inclined portion H' of the lever H, thereby causing the lever to move, throwing back its upper end and throwing its lower end forward, which causes the check-slide F to advance, making its front portion enter the opening *c'* provided for it in the trigger C. The cocking of the firing-pin must be accomplished before the slide-piece F is made to advance. Thus when the breech is open the trigger is locked by the falling breech-block moving the lever, which in turn moves the safety-check slide, the result being obtained by merely opening the breech of the gun. The arm is now loaded, and the breech is closed by moving the lever B, and the slide-piece F remains forward and locks the trigger, and will so remain till drawn back by the hand of the operator preparatory to discharging the piece. Until the slide is drawn back the piece is perfectly safe, not being liable to accidental discharge.

It will be observed that I provide a simple

automatic or self-acting safety-check, which is operated by the operation of opening the breech.

It is apparent that my invention may be applied to guns having pivoted breech-blocks, as shown in Figs. 5 and 6, or to various forms of arms, the motion of the swinging block when opening or closing being communicated to a safety-check slide by a lever or other appropriate connecting or transmitting device.

I am aware that other forms of transmitting mechanism may be used in conveying the motion of the breech-block to the safety-slide, such as cams, slots, and toggles; but I prefer to use a lever, as shown.

Instead of moving the slide into position when falling, the breech-block may move the slide when rising; but this a more complicated arrangement.

What I claim as new, and desire to secure by Letters Patent of the United States, is—

1. The safety-slide, lever, and breech-block combined, as and for the purpose specified.

2. In a breech-loading gun, the combination of the upward and downward sliding breech-block A, having the portion *a*, pivoted lever H, having the incline surface H', the check-slide F, having the projection F', and the trigger C, having the slot or opening *c'*, all operated substantially as described.

HUGO BORCHARDT.

Witnesses:

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