

(No Model.)

2 Sheets—Sheet 1.

S. K. HINDLEY & E. S. FIELD.

BREECH LOADING FIRE ARM.

No. 345,058.

Patented July 6, 1886.

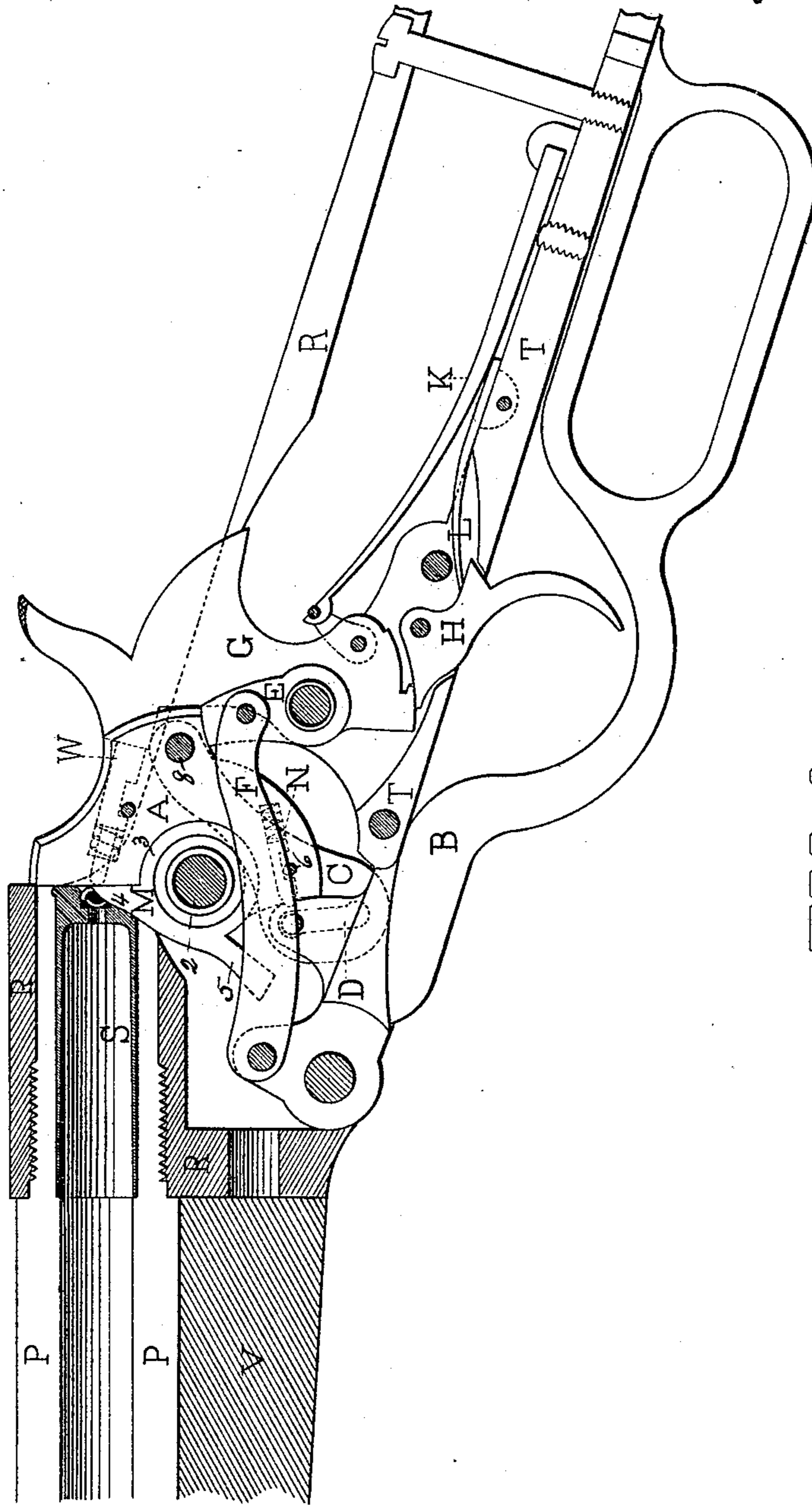


FIG. 1.

WITNESSES:

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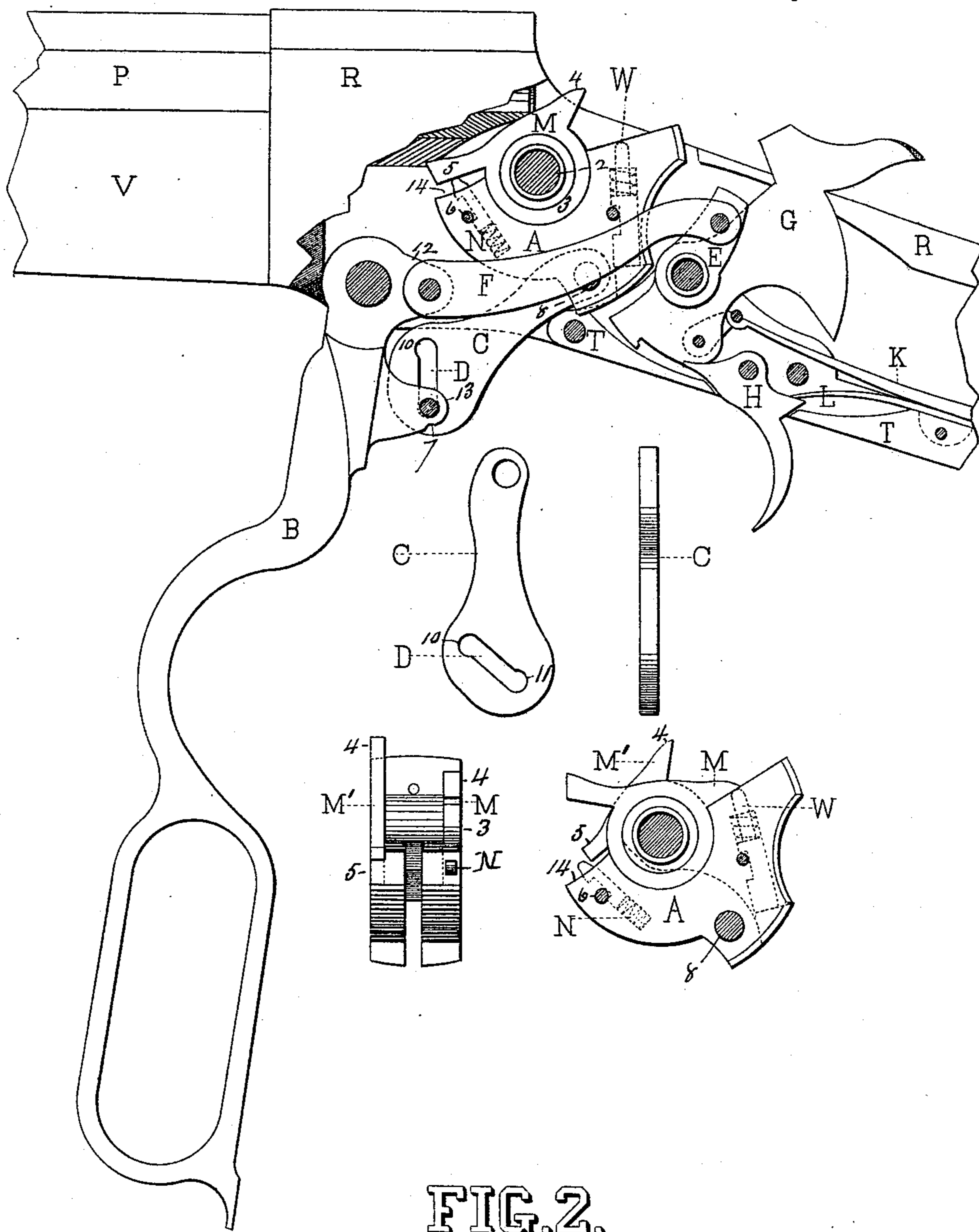


FIG. 2.

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# UNITED STATES PATENT OFFICE.

SOLOMON K. HINDLEY AND EDWIN S. FIELD, OF SPRINGFIELD, MASS.

## BREECH-LOADING FIRE-ARM.

SPECIFICATION forming part of Letters Patent No. 345,058, dated July 6, 1886.

Application filed January 28, 1886. Serial No. 190,043. (No model.)

*To all whom it may concern:*

Be it known that we, SOLOMON K. HINDLEY and EDWIN S. FIELD, citizens of the United States, residing at Springfield, in the county of Hampden and State of Massachusetts, have invented new and useful Improvements in Breech-Loading Fire-Arms, of which the following is a specification.

This invention relates to improvements in breech-loading fire-arms, the object being to provide an improved swinging breech-block, and mechanism for operating and locking the same, and an improved extractor and extractor-spring.

In the drawings forming part of this specification, Figure 1 is a longitudinal vertical section of a portion of the stock, frame, and barrel of a breech-loading gun, and a side elevation of the breech mechanism thereof, all constructed according to our invention, said figures showing a cartridge-shell in section in the barrel, and the breech and extractor mechanism in the positions they occupy after firing. Fig. 2 is a side elevation of the rear part of the barrel and stock, and of the frame immediately adjoining the latter, of the breech mechanism shown in the position which the parts thereof occupy after the extraction of the shell, and when they are in a position to permit of reloading the gun, and edge and side elevations of the breech-block with the extractors thereon, and of the breech-block link.

In the drawings, R is the frame of the gun, P is the barrel, and V is the stock.

A is the breech block, pivoted on the pin 2 in the frame, and adapted to have its upper end, in which is located the firing-pin W, swing against and close the rear end of the barrel.

M M' are the extractors, two being shown in the detached views of the breech-block in Fig. 2; but one may be omitted, if desired. Each extractor consists of a ring, 3, having the arms 4 and 5 thereon, the first for engagement with the cartridge-head, and the second for engagement with the spring-actuated extractor-pin N, which is located in the lower end of the breech-block. Said ring 3 of the extractor is let into the side of the breech-block, so that its outer side and that of said arms are in the same plane as the side of the latter, and it has

a free swinging motion on the said block to the extent shown in Fig. 2, where its two positions are shown. The side of the rear end of the barrel P is cut away sufficiently to receive the said arm 4 of the extractor, and when the breech-block is against the end of the barrel, as in Fig. 1, to allow said arm 4 to take the position there shown. The said extractor-pin N is, as aforesaid, located in the breech-block behind the extractor-arm 5, and is thrown outward by a coil-spring shown in dotted lines thereon. One side of said pin is notched, as shown in dotted lines, and a pin, 6, passes through the breech-block under pin N, and within said notch therein, whereby the latter is secured in the block, but is free to have a limited endwise movement therein. The outer end of pin N is V-shaped to adapt it to enter a notch, 7, in a projection on the guard-lever B, when the parts are in the position shown in Fig. 1, and serve to hold said lever in the position there shown. The breech-block has a central slot about midway between its sides, as shown in Fig. 2, in which is pivoted one end of the link C at 8, and near the opposite end of said link is formed the slot D, having the curved recesses 10 11 at opposite ends thereof. The edge of the breech-block at 14, Fig. 2, is slightly curved for a purpose below described. The guard-lever B is pivoted near the lower side of the frame R, and is provided with the usual finger-loop, and has thereon the projection 12 opposite its pivot, and the projection 13 below the latter. Two brace-links, F, (only one of which is shown in the drawings,) have one end pivotally connected to said projection 12 on the guard-lever, and they extend each side of the breech-block to the rear of the latter, and are there pivotally connected to the swinging brace E, which is hung on the hammer-pivot. The said projection 13 on the guard-lever B is slotted to receive the lower end of the breech block link C, and the latter is connected to said projection by a pin passing through the latter and the slot D therein.

G is the hammer, pivoted in the usual manner in the frame, H is the sear, K is the main spring, and L is the sear-spring.

The operation of our improvements is as follows: The parts of the breech mechanism

being in the positions shown in Fig. 2, a cartridge is partially inserted in the barrel, its head being left projecting rearward just beyond the extractor-arm 4, Fig. 2, so that said arm is behind the rim thereof, and the guard-lever B is then drawn up against the gun, as in Fig. 1. As said lever is swung up, the breech-block link C is given an endwise motion, whereby the breech-block A is made to swing against the head of said cartridge, pushing it into the barrel, and at the same time carrying the extractor-arm 4 with it to the position shown in Fig. 1, and the breech-block then is brought against the end of the barrel and the head of the cartridge. As soon as the breech-block comes to said position, the link C ceases to move, but meanwhile the brace E, actuated by its connection through the brace-link F with the guard-lever, has been swinging toward the rear edge of the breech-block, and continues so to swing after the breech-block is quite up against the barrel, the elongated slot D in link C allowing the pin 13 to move to the upper end of said slot without imparting any further endwise motion to said link, and thus the guard-lever is brought quite up against the under side of the gun, and the brace E is brought fully into position behind the breech-block, firmly locking it and holding it against the recoil force of the exploding cartridge.

In addition to the above-described means for locking the breech-block the guard-lever itself is also brought to act directly as a species of cam against the breech-block, as follows: The end of projection 13 on the guard-lever is in the course of the said upward movement of the latter brought to act against the said curved edge 14 of the breech-block after the latter has been brought fully, or nearly so, against the end of the barrel, thus doubly locking the breech-block, and if the cartridge has not already been forced quite to its position in the barrel the cam action of said projection 13 against the breech-block swings the latter so that the cartridge is forced quite to its place, and thus efficient means is provided for fully inserting a cartridge before the gun is fired, although the cartridge may fit so closely that it cannot easily be pushed in by the fingers; and, furthermore, the engagement of the guard-lever with the breech-block, as aforesaid relieves the links F of any strain when the gun is fired, for said block is held rigidly by the brace E and said lever. The hammer during the above-described movement of the other parts remains at full-cock, as in Fig. 2, and by pressing the finger upon the sear H the gun is fired by the action of the hammer against the firing-pin W, the parts of the breech mechanism thereby being brought to the positions shown in Fig. 1. When the lever B is swung quite up, as there shown, the pin in projection 13 engages in the said curved recess 10 at one end of slot D in link C, for the purpose before described, and when lever B is

swung downward, as in Fig. 2, the engagement of said pin with the curved recess 11 in said link serves to hold the lever steady while the cartridge is being inserted in the barrel. When the guard-lever B is swung forward after the gun has been fired, the hammer is brought to full-cock by the action of the pin against it, which passes through the ends of the said two links F, and the brace E and the breech-block are swung back, drawing the arm 4 of the extractor M against the rim of the cartridge-shell and extracting the latter, the lower arm, 5, of the extractor being thus forced against the end of the pin N, forcing it inward against its said spring; but as soon as the shell is free from the barrel the said pin reacts, springing against said arm 5, and the shell is thrown from the gun.

What we claim as our invention is—

1. The swinging breech-block A, having the curved portion 14 on its front edge, the guard-lever having the projection 13 thereon, which engages directly with said curved portion of said block below its pivot when in its locked position, and the link C, having the slot D therein connected to said lever by the latter and to said block, combined and operating substantially as set forth.

2. The breech-block A, the guard-lever having the projections 12 and 13 thereon, the latter engaging with said block below its pivot, the link C, connected to said projection 13 and to said block, the swinging brace E, pivoted back of the latter, and the links F, pivotally connected to said brace and to the projection 12 on said lever, combined and operating substantially as set forth.

3. The swinging breech-block A, having the spring-actuated extractor-pin N therein, the extractor M, swinging on the side of said block, and having the arm 4, to engage with the cartridge, and the arm 5, extending opposite said extractor-pin, the guard-lever B, and the link C, connecting the latter and the breech-block, combined and operating substantially as set forth.

4. The breech-block A, the spring-actuated extractor-pin N, located in said block, the extractor M, swinging on the side of said block, and having the arm 4, to engage with the cartridge, and the arm 5, extending opposite said extractor-pin, and mechanism, substantially as described, for imparting a swinging motion to said breech-block, combined and operating substantially as set forth.

5. In combination, the hammer G, pivoted in the frame of the arm, the brace E, pivoted at one side of the hammer and swinging independently of the latter, to bring its free end under the breech-block, the guard-lever D, pivoted in said frame, and the links F, pivotally connected to said lever and to said brace, substantially as set forth.

6. The link C, having the slot D, provided with the curved recesses 10 11 at the opposite ends thereof, combined with the breech-block

A, and the guard-lever B, connected to said link by a pin passing through said slot D, substantially as set forth.

5 7. The combination, with the spring-actuated pin N, located in the breech-block under the pivot of the latter, and having one end projecting beyond the front edge thereof, of the guard-lever D, having the projection 13 thereon to one side of its pivot provided with  
10 a notch, 7, in which said projecting end of

said pin engages when the guard-lever is swung up against the arm to swing the breech-block against the end of the barrel, substantially as set forth.

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