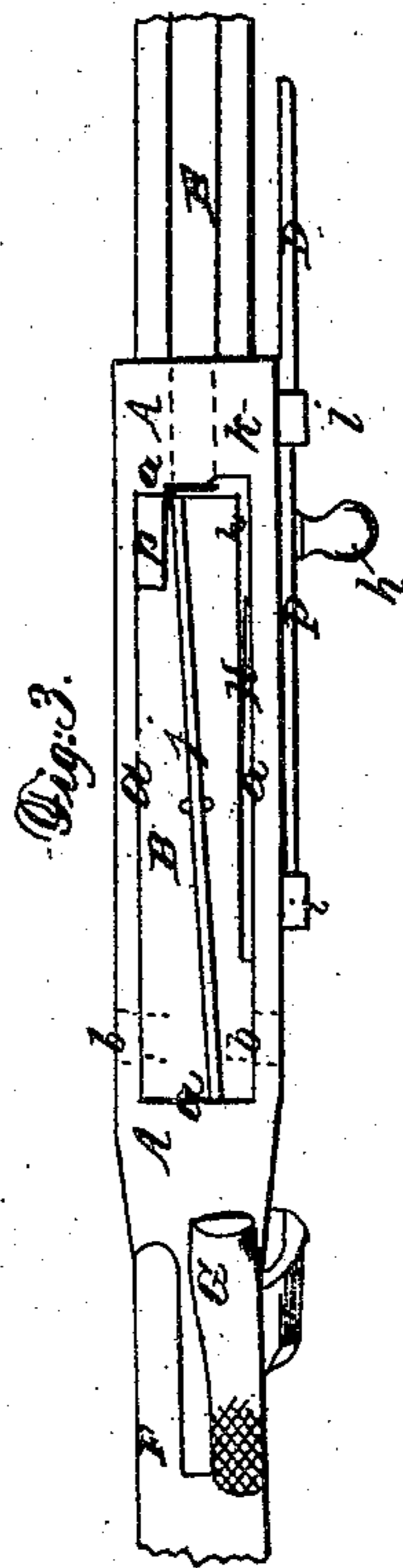
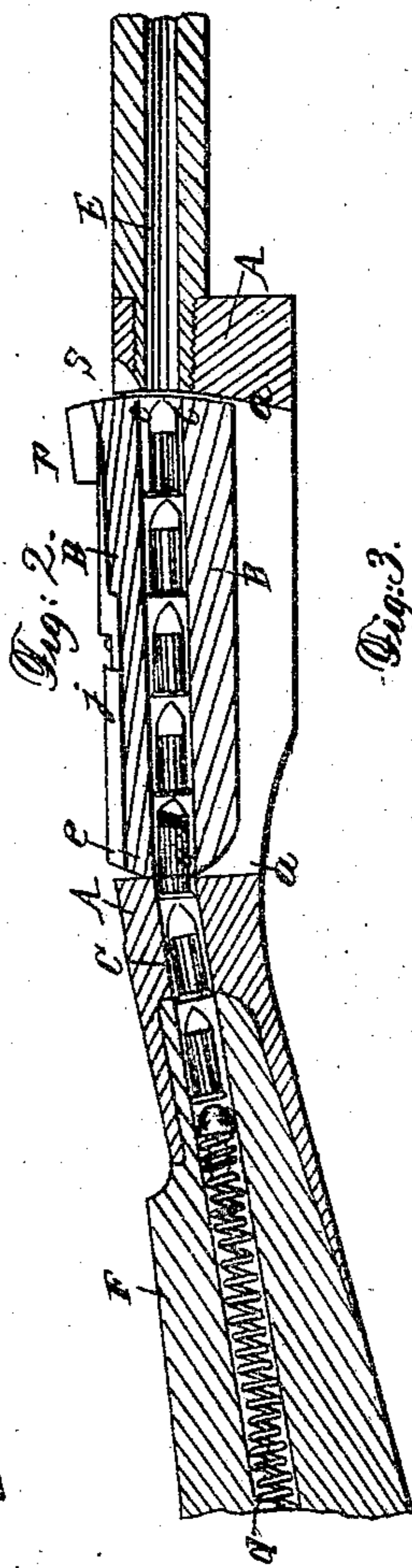
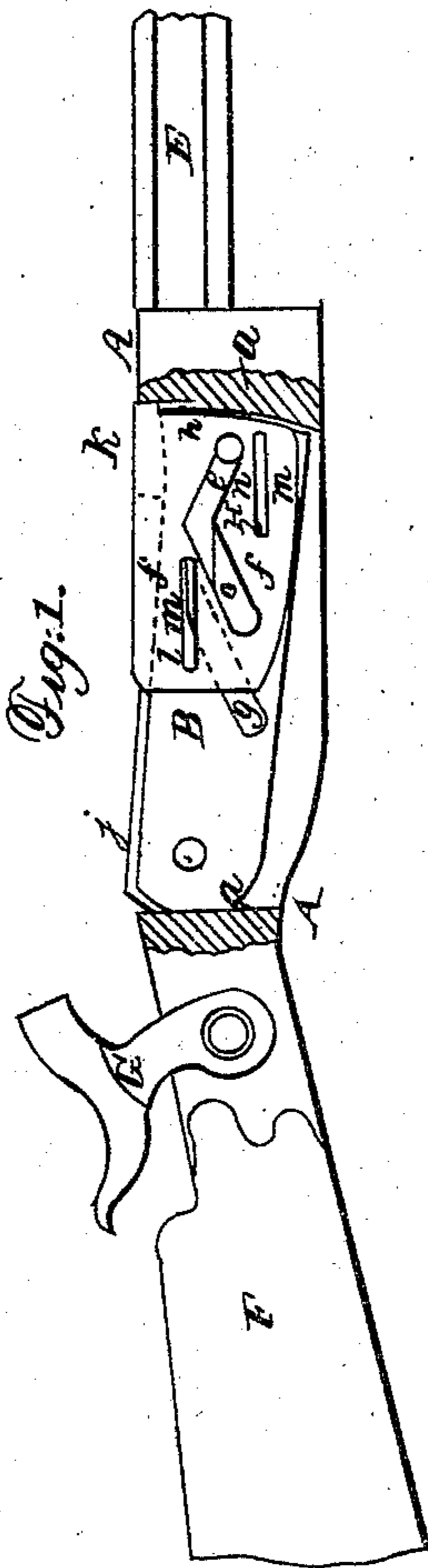
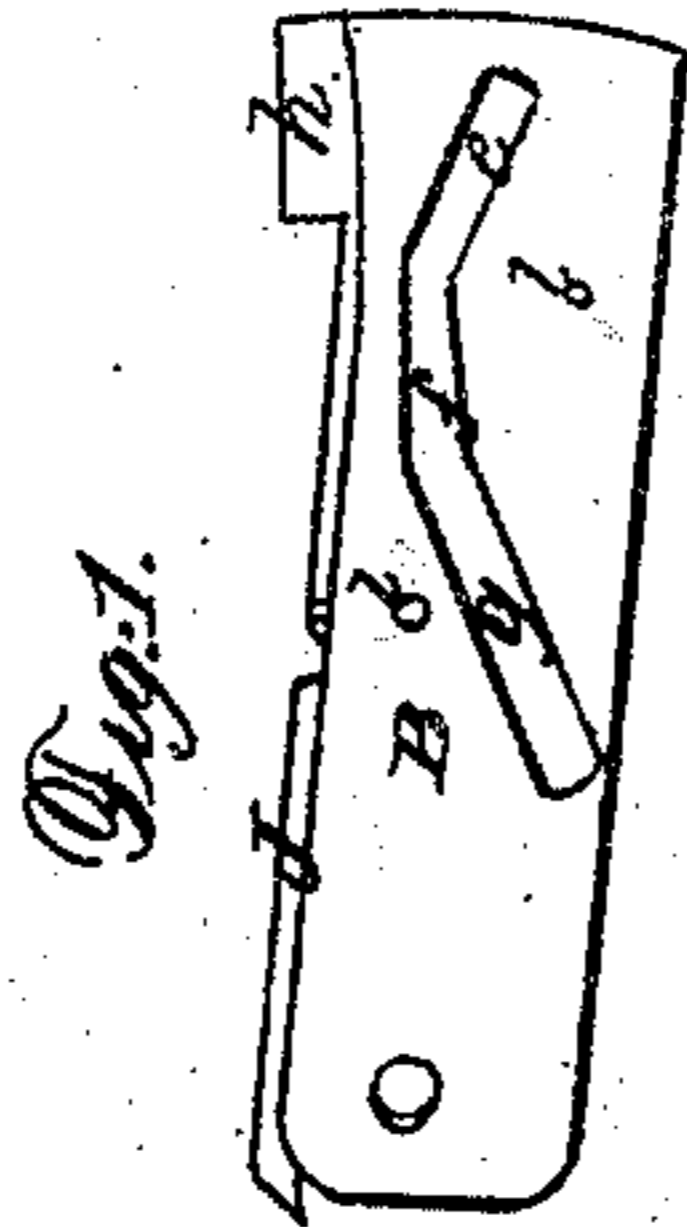


No. 38,702.

PATENTED MAY 26, 1863.

C. M. SPENCER.
MAGAZINE FIREARM.



Witnesses:
J. W. Coombs
J. W. Reed

Inventor:
C. M. Spencer
per Messrs. C. & G.
Attorneys.

The drawing in this case
is ~~not~~ in print.

UNITED STATES PATENT OFFICE.

CHRISTOPHER M. SPENCER, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN MAGAZINE FIRE-ARMS.

Specification forming part of Letters Patent No. **38,702**, dated May 26, 1863; antedated January 3, 1863.

To all whom it may concern:

Be it known that I, CHRISTOPHER M. SPENCER, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Repeating Fire-Arms; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side view of the breech and parts of the stock and barrel of a repeating fire-arm having my invention applied. Fig. 2 is a central longitudinal vertical section of the same. Fig. 3 is a top view of the same. Fig. 4 is a side view of the movable breech detached from the arm.

Similar letters of reference indicate corresponding parts in the several figures.

This invention relates to that description of repeating fire-arms in which loading at the breech is effected automatically from a magazine within the stock.

It consists, first, in making the passage through which the cartridges pass from the magazine into the barrel within a movable breech-piece, which is constructed and applied to swing vertically from points near its rear end, whereby some important advantages over previous constructions and arrangements of the said passage are obtained, as will be hereinafter explained.

It also consists in certain means of operating a so constructed and applied breech-piece for the purpose of loading from the magazine in the stock; and, further, in a certain mode of applying in combination with such breech-piece and of producing the operation of a device for withdrawing the discharged shells of the cartridges from the barrel.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

A is the breech-frame, which connects the barrel E with the stock F, having provided in it a vertical longitudinal parallel-sided opening, *aa*, for the reception of the movable breech-piece B, which is fitted snugly therewith, and secured therein by means of two screw-pivots, *bb*, screwing through the sides of the frame at opposite points, and entering pivot-holes

provided for them in the sides of the breech-piece, near the rear end thereof. The front end of the breech-piece B is of the form of a cylindrical arc concentric with the axis of the pivots *bb*, and the front end of the opening *aa* in the breech-frame is of corresponding form. The rear end of the said breech-piece is rounded, to permit its oscillating movement. The said breech-piece is bored longitudinally and centrally, or nearly so, as shown in Fig. 2, to form the passage of communication, *cc*, between the magazine C in the stock and the chamber of the barrel, the said passage being large enough for the cartridges to pass freely through it, and forming practically a portion of the magazine, as it may be long enough to contain two, three, four, or more cartridges.

The cartridges in the magazine, arranged one behind another, are pressed forward toward the barrel by means of a spiral spring, *d*, placed behind them, so that when the front end of the passage *cc* is brought opposite to the open chamber of the barrel, the several cartridges in the magazine and in the said passage are allowed to be all forced forward by the spring, and the front one is deposited within the chamber in position for firing, when the chamber has been closed by the depression of the breech-piece to bring the solid portions of its face, which is above the passage *cc*, opposite to the barrel, and the cartridge in the chamber has been thus separated from those in the passage *cc*.

The movement of the breech-piece up and down upon the pivots *bb* is all that is necessary to enable the repeated loading of the gun to be effected, provided the shells of the cartridges are expelled in the act of firing or drawn out through the rear of the chamber after every fire.

In the fire-arm represented flanged cartridges are used, and the empty or discharged shells are drawn out through the rear of the chamber and over the breech-piece, which must be depressed low enough for that purpose after every fire and before the elevation of the breech for reloading.

In the right-hand side of the breech-piece there is a groove, *efg*, whose form is shown in Fig. 4. The front part, *e*, of this groove has an upward inclination toward the middle, *f*,

which is nearly parallel with the top of the breech-piece, and the back part, *g*, has a downward direction from the part *f*. This groove receives the end of a pin, *h*, which is secured to a straight slide, *D*, which is fitted to work in suitable guides, *i i*, secured to the outside of the right-hand side of the breech-frame *A*, the said pin working through an opening provided for it in the said frame, and being furnished outside of the slide with a knob, *h'*, which serves as a handle to work the slide.

When the slide *D* is in its most forward condition and the pin *h* at the front end of the groove *e f g*, as shown in Fig. 1, the breech-piece is in condition for firing. After firing, the slide *D* is drawn back by the knob *h'*, and the pin *h* caused to move back along the groove *e f g*. In moving along the portion *e* of the said groove the said pin presses against the lower side and depresses the breech-piece low enough to expose the rear end of the chamber of the barrel open above it to permit the withdrawal of the empty cartridge-shell. In moving along the portion *f* of the said groove the said pin produces no movement of the breech-piece, which is thus kept stationary long enough to permit the withdrawal of the shell by the means provided for the purpose, and in moving along the part *g* of the said groove the said pin acts upon the upper side and presses the breech up to the position shown in Fig. 2, in which the passage *c c* is open to the chamber to permit the spring *d* to force forward the cartridges and deposit the front one in the chamber.

The loading being now effected, the slide *D* is moved forward, and the pin *h*, in moving back along the groove *g f e*, brings back the breech to the proper position to close the barrel and the magazine.

In a groove in the top of the breech-piece *B* there is fitted a slide, *j*, upon which the rear end of the hammer *G* strikes to drive the said slide forward, and drive its front end against the rear end of the cartridge in the chamber of the barrel to produce the explosion of the charge therein.

On the right-hand side of the breech-piece, between it and the corresponding side of the opening *a a* in the frame *B*, there is arranged a flat plate of steel, *H*, on the front upper corner of which is formed a hook, *k*, which is capable of moving over the top of the breech-piece, for the purpose of drawing out the empty cartridge-shells from the barrel. In this plate there are two narrow slots, *m m*, which are fitted to slide on two guide-pins, *l l*, secured in the breech-piece *B*, the two slots being so arranged as to be parallel with the middle portion, *f*, of the groove *e f g* in the breech-piece *B*; and there is also provided in the said plate a bent slot, *n o*, the front part, *n*, of which corresponds in width, length, and direction with the front portion, *e*, of the groove *e f g*, and the back part, *o*, of which corresponds with the part *g* of the said groove.

When the breech is in the closed condition represented in Fig. 1 and the slide *D* in its most forward position, the pin *h* is at the front end of the slot *n o* of the plate *H*, and the hook *k* is in a slight recess provided for it in the front side of the opening *a a*, as shown in the Fig. 1, and the part *n* of the slot *n o* is exactly opposite the part *e* of the groove *e f g*. The plate is free to move lengthwise of the breech-piece on the pins *l l*, but in no other direction independently of the breech-piece; and while in the drawing back of the slide *D* the pin *h* moves along the portion *e* of the groove *e f g*, it also moves along the portion *n* of the groove *n o* without moving the plate *H* relatively to the breech-piece, with which it descends, thus passing its hook *k* in front of the flange of the empty shell, if there be one in the chamber; but when the pin *h* arrives in the portion *f* of the slot *e f g* it arrives against the upper side of the part *o* of the slot *n o*, and draws back the plate *H* and hook *k*, while the breech-piece is stationary in its depressed condition, and so causes the hook *k* to draw out the shell over the top of the breech, bringing the portion *o* of the slot *n o* opposite to the portion *g* of the groove *e f g*, so that as the pin *h* completes its backward movement it may pass along *o*, and hence permit the plate *H* to move up and down with the breech-piece, but prevent its being otherwise moved.

To prevent the shell escaping from the hook *k* a projection or guide-piece, *p*, is provided on the top of the breech-piece opposite to the hook *k*.

When the slide is moved forward again the pin *h* moves along *o* and *g* together, and does not move the plate *H* relatively to the breech-piece until it arrives in the part *f* of the groove in the latter, when it moves the plate and its hook *k* forward, afterward moving along *e* and *n* together.

The rear ends of the slot *n o* and groove *e f g* are cut a little downward, as shown in Fig. 1, so that when the pin *h* is in its most backward position, the breech-piece may be raised by hand high enough to expose its mouth above the front of the *A*-frame, to permit the magazine to be filled with cartridges from the front, thereby saving the trouble of taking out the feeding-spring or opening the magazine at the rear.

Instead of making the groove *e f g* in the breech-piece and attaching the slide *D* to the frame *A*, the groove may be in the frame, and the slide attached to the breech-piece.

By making the passage from the magazine to the barrel in a vertically-swinging breech-piece, the greatest simplicity of construction that is practicable in repeating fire-arms is attained, and the great difficulty that attends the movement of the cartridges through other kinds of movable breeches—viz., the clogging of the cartridges at the rear orifice of the passage in the breech—is obviated, as the rear orifice of the passage *c c* in the swinging

breech-piece is always opposite to the mouth of the magazine C, and the said passage forms at all times a forward continuation of the magazine.

I do not claim the invention of a vertically-swinging movable breech. Nor do I claim, broadly, providing, in a movable breech, a passage of communication between a magazine and the barrel; but

What I claim as my invention, and desire to secure by Letters Patent, is—

1. Combining a magazine in the stock of a fire-arm with the barrel thereof by means of a breech-piece, B, swinging from points near its rear end, and having provided in it a passage, *c c*, which forms a continuation of the magazine, substantially as herein specified.

2. Operating the swinging breech-piece by means of a slide, D, pin *h*, and groove *e f g*, applied and operating substantially as herein set forth.

3. Combining the plate H, carrying the cartridge-drawing hook *k*, with the slide D, which operates the breech by means of a pin, *h*, slot *n o*, groove *e f g*, slots *m m*, and guide-pins *l l*, the whole applied and operating substantially as and for the purpose herein specified.

CHRISTOPHER M. SPENCER.

Witnesses:

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T. F. BOYNTON.