

(No Model.)

2 Sheets—Sheet 1.

G. H. FOX.

EXTRACTOR FOR FIRE ARMS.

No. 278,424.

Patented May 29, 1883.

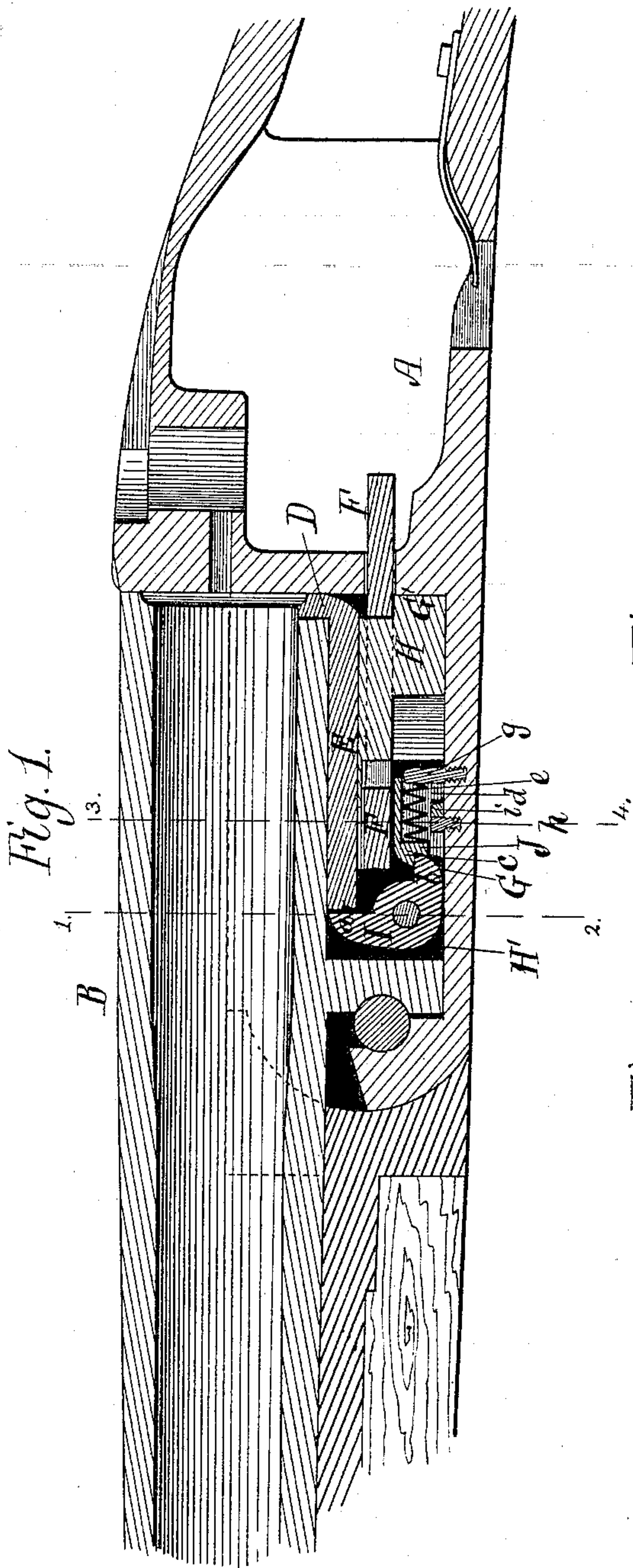


Fig. 3.

Fig. 2.

Line 3-4.

Line 1-2.

Witnesses  
H. B. Lodge  
M. D. Porter

Inventor.  
George Henry Fox.  
J. Curtis, Atty.

(No Model.)

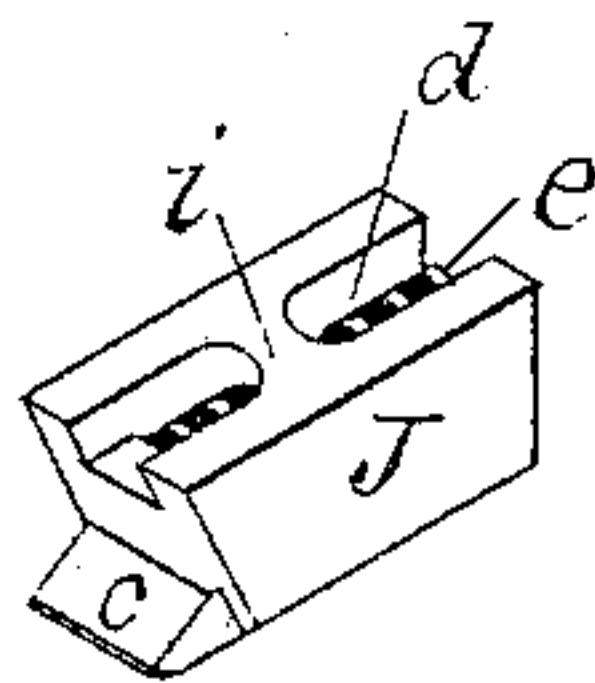
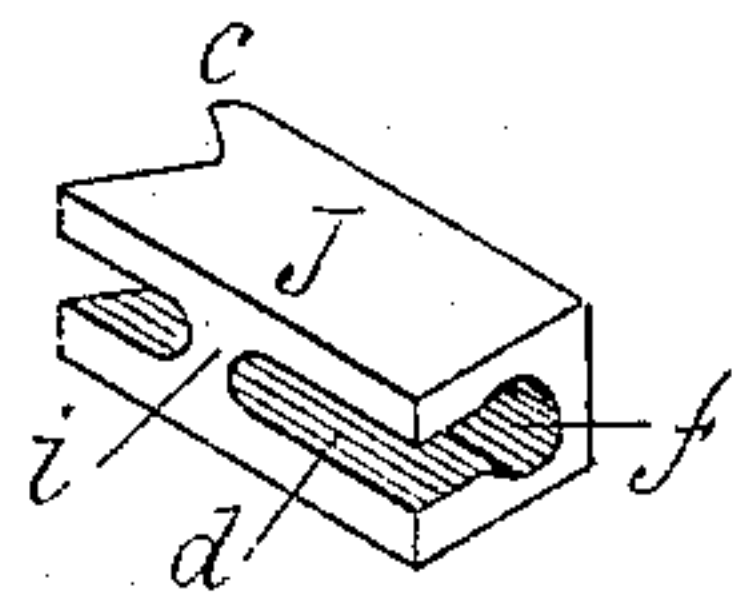
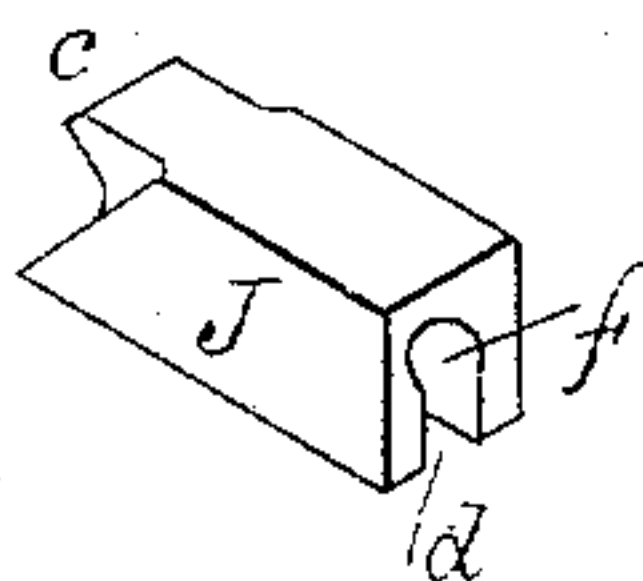
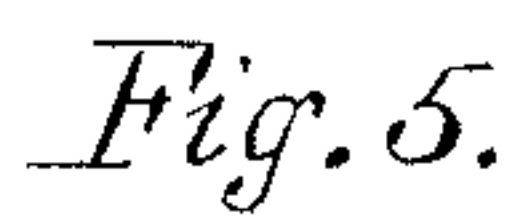
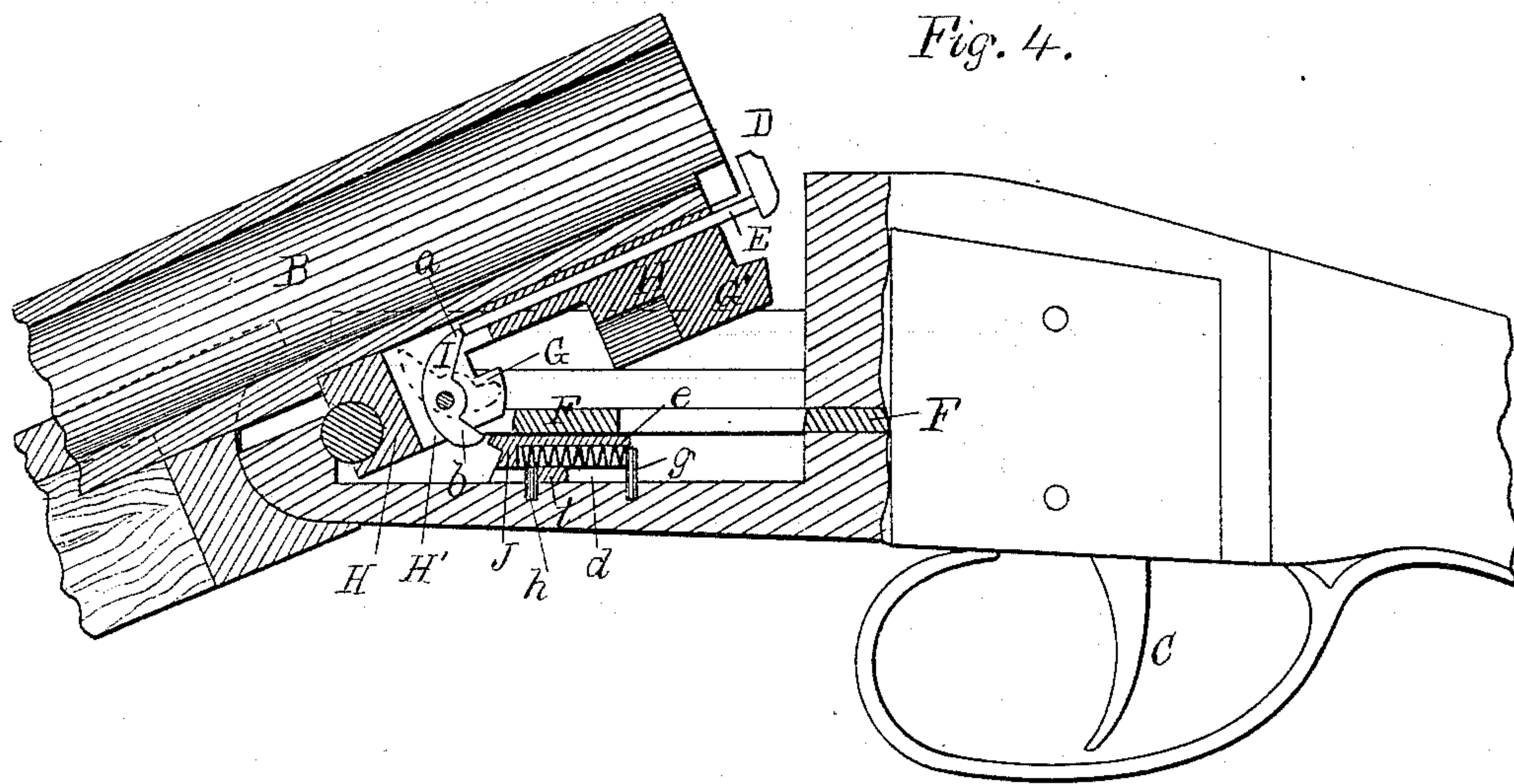
2 Sheets—Sheet 2.

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Mr. D. Foster

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F. Curtis. Atty



# UNITED STATES PATENT OFFICE.

GEORGE HENRY FOX, OF BOSTON, MASSACHUSETTS.

## EXTRACTOR FOR FIRE-ARMS.

SPECIFICATION forming part of Letters Patent No. 278,424, dated May 29, 1883.

Application filed March 3, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE HENRY FOX, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Extractors for Fire-Arms; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

This invention relates to means for operating the extractor of breech-loading fire-arms, the object of the invention being to provide a simple, strong, and durable mechanism for the purpose, and especially one which shall enable the extractor to be pushed home while the barrel is open.

The construction and operation of my improvement will be hereinafter described.

The drawings accompanying this specification represent, in Figure 1, a central longitudinal section of a portion of a breech-loading fire-arm containing my invention, while Fig. 2 is a vertical cross-section on line 1-2, and Fig. 3 a similar section on line 3-4. Fig. 4 represents the gun in an open position, and Fig. 5 shows three different views of the spring-bolt hereinafter described.

In these drawings, A represents the breech-frame or "receiver" of a breech-loading shot-gun. B is the rear end of the barrel; C, the trigger; D, the cartridge-extractor, and E its stem or rod; F, the sliding bolt, which operates to lock the barrel in a closed position, such bolt playing in guides in the frame A and operating with hooked lugs G G', formed upon a boss, H, secured to the under side of the barrel.

In carrying out my improvements I employ a two-armed trip-lever, I, in the form of an ordinary bell-crank lever, such lever being pivoted horizontally to the boss H, within a slot, H', in the hooked lug G, and lying loosely upon such pivot, as contrary to the construction of some guns of this class employing a lever similar to my lever I. Said lever is independent of the control of any spring or other restrain-

ing force when the barrel is open. The upper and vertical arm, *a*, of the lever I operates with the outer or front end of the extractor-rod E to push out the extractor, while the lower and horizontal arm, *b*, of such lever operates with the front end or nose, *c*, of a short bolt, J, which is deposited and slides upon the bottom of the recess *d* in the receiver A, which receives the boss H, the said bolt J being pressed forward toward the lever by a coiled spring, *e*, which is contained within a cavity, *f*, in said bolt, this spring *e* exerting its stress between a post, *g*, erected upon the bottom of the recess *d*, and a shoulder upon the front end of the bolt. The forward movement of the bolt J is determined by a stop, *h*, also erected upon the bottom of the recess *d*, operating with an abutment, *i*, upon the bolt.

The operation of my device is as follows, supposing the arm to be loaded and the barrel closed: After the discharge of the arm the locking-bolt F is withdrawn and the barrel tipped up or opened in the usual manner, the result being that the lower arm, *b*, of the lever I is temporarily restrained by the nose of the bolt J as the barrel begins to open, thereby causing its arm *a* to push the extractor outward and remove the cartridge-shell, while as the barrel becomes fully open the lever I rises with it, and the arm *b* of such lever escapes from the control of the actuating-bolt J. As the arm is again loaded and the barrel closed the arm *b* of the lever I wipes against and pushes aside the bolt J and settles beneath the nose of such bolt.

It will be seen that the arm *b* of the lever I does not extend beyond the rear termination of the lug G, and that it is free upon its pivot. Hence, if the extractor should be pushed home to place while the barrel is open and the barrel be closed with the extractor in this position, the said arm *b* will not interfere with the locking-bolt F or prevent closing of the barrel. This is a novel and valuable feature in my device, as with it I am enabled to push the extractor home after loading and before closing the barrel, and thus avoid the friction and wear between the extractor and breech-seat, and enable the barrel to be closed more easily. If the arm *b* of the lever I extended beyond the extremity of the lug G, and said arm *b*



were crowded downward by spring-pressure,  
 so as to protrude beyond the lug, while the bar-  
 rel was open, the extractor would not remain  
 closed, if pushed home, while the barrel is open;  
 5 or, if the extractor did remain closed, the arm  
*b* would abut against the locking-bolt *F* as the  
 barrel was lowered, thereby preventing clos-  
 ing of such barrel. Now, in my invention it  
 is immaterial in what position the lever *I*, or  
 10 the extractor and the lever, or the extractor  
 itself, may be when the arm is open and about  
 to be closed, as it is evident from the draw-  
 ings that the yielding of the spring-bolt *J* pre-  
 vents any obstacle or tendency to jam in lock-  
 15 ing the piece. Should the extractor be pushed  
 home while the barrel is open and the barrel  
 closed with the extractor in this position, the  
 nose of the arm *b* of the lever *I* will wipe against  
 and push aside the bolt *J* and settle to place  
 20 beneath such bolt as the latter is pressed for-  
 ward over the arm *b* by the action of the spring *e*.  
 I claim—

1. The combination of a gun-barrel and car-  
 tridge-extractor with a lug which is secured  
 to the said barrel, and a lever which bears 25  
 against said extractor, and which is free from  
 spring-pressure while the barrel is in a tilted  
 position, substantially as set forth.

2. The combination of a gun-barrel-locking  
 bolt and cartridge-extractor with a hooked 30  
 lug secured to the said barrel and adapted to  
 engage with said bolt, and a bell-crank lever  
 pivoted to said lug, the upper end of said le-  
 ver bearing against said extractor, and the  
 lower end of said lever being shorter than the 35  
 distance from the pivot of said lever to the  
 outer end of said hooked lug, for the purpose  
 set forth.

In testimony whereof I affix my signature in  
 presence of two witnesses.

GEO. HENRY FOX.

Witnesses:

H. E. LODGE,  
 F. CURTIS.