F. BEALS.

Breech-loading Fire-arm.

No. 46,207. Patented Feb. 7, 1865.

Fig. 1.

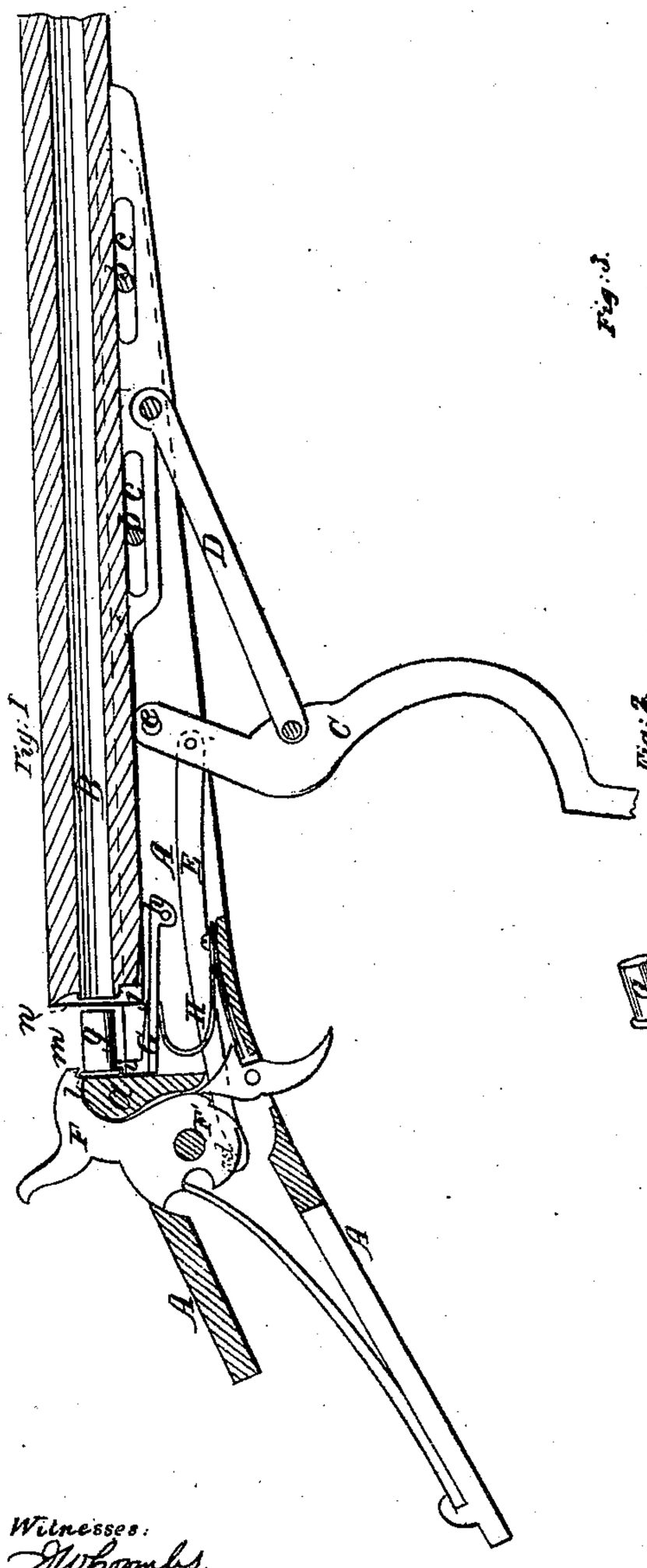


Fig. 3.

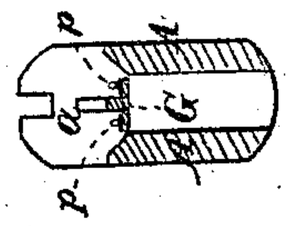
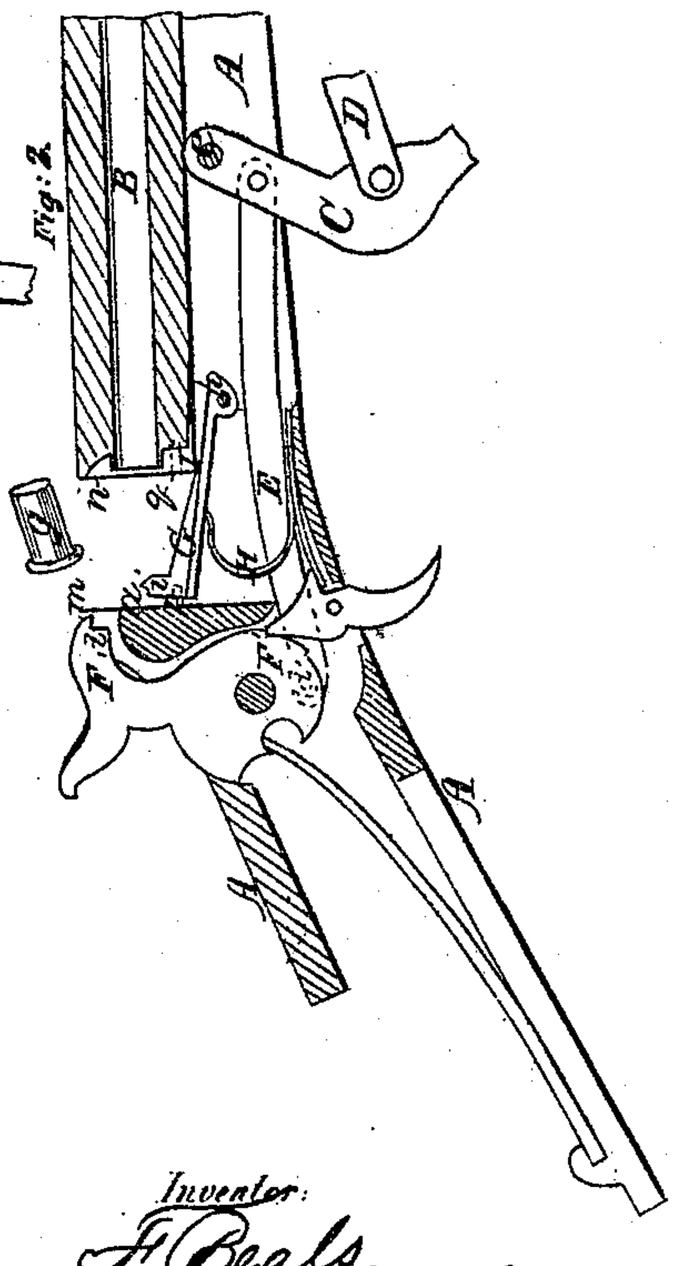


Fig. 2.



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UNITED STATES PATENT OFFICE.

FORDYCE BEALS, OF NEW HAVEN, CONNECTICUT.

IMPROVEMENT IN CARTRIDGE-RETRACTORS FOR BREECH-LOADING FIRE-ARMS.

Specification forming part of Letters Patent No. **46,207**, dated February 7, 1865.

To all whom it may concern:

Be it known that I, FORDYCE BEALS, of the city of New Haven, in the county of New Haven and State of Connecticut, have invented a new and useful Improvement in Breech-Loading 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—

Figures 1 and 2 are vertical longitudinal sectional views of the principal parts of a fire-arm with my improvement, showing the movable parts in different positions. Fig. 3 is a transverse section of the same in front of the breech.

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

The object of this invention is to effect the withdrawal of the shells of metallic cartridges or the cartridges themselves from the barrel of a fire-arm, and after withdrawing to eject them completely from the gun by more simple means than those heretofore employed; and the invention consists in a novel device for this purpose.

To enable others skilled in the art to apply my invention, I will proceed to describe it with reference to the drawings.

A is the frame of the arm, constructed with a fixed breech-piece, *a*.

B is the barrel, fitted to slide lengthwise upon or within the frame A, and attached thereto by means of pins *b b*, which are inserted transversely through holes in the frame, and through slots *c c* in a rib provided on the under side of the barrel. The opening of the chamber of the barrel for loading is effected by a forward movement of the barrel to a suitable distance away from the breech.

C is the lever by which this movement is produced, pivoted to the frame at *e*, and connected with the barrel by means of a rod, D. The said lever has also attached to it a hook, E, which acts upon a pin or projection, *d*, upon one side of the tumbler F′ of the hammer F, for the purpose of bringing the hammer to half-cock by the forward movement of the lever C, by which the aforesaid forward movement of the barrel is effected; but this hook does not come into operation on the pin *d* until the forward movement of the barrel is nearly completed.

G is the cartridge-shell retractor and ejector, consisting of a small lever or finger attached at its front end by a pin, *h*, to the frame A at a point below the line of motion of the lower side of the barrel, and some distance in front of the stationary breech *a*. It has its rear end, which is nearly close to the breech, turned upward in such shape (indicated at *i*) as to form a point or tooth which is capable of entering the angle or recess formed between the front of the flanged head and the side of a cartridge-shell, *g*, while the said head abuts against the face of the breech, as shown in Fig. 1.

H is a spring secured within the frame A below the retractor and ejector G, to exert an upward pressure against the latter. A spring for this purpose may be applied in any other way; or the retractor and ejector may be constructed and applied in such manner that a part of it forms a spring to press the rear end upward.

j is a notch provided in the lower part of the rear end of the barrel for the reception of the turned-up portion *i* of the retractor and ejector when the barrel is drawn back to the breech into position for firing.

l m is a notch in the face of the hammer for the reception of the flange on the head of the cartridge-shell when the hammer is down, as shown in Fig. 1. The portion *l* of the hammer forming this notch is what strikes upon the flange to produce the ignition of the fulminate priming. *n* is a notch in the rear end of the barrel above the bore for the reception of the protruding upper portion of the nose of the hammer above the notch *l m* when the hammer strikes. Below the position occupied by the head of the cartridge there are provided on the face of the breech *a* two projecting pins, *p p*, to serve as stops to prevent the retractor and ejector from being pressed upward too high by its spring, when the barrel has been drawn forward and after the discharged cartridge-shell has been removed. These pins, when the barrel is drawn back to the breech, enter holes *q* in the rear end of the barrel and serve to hold it down.

The operation is as follows: After the fire-arm has been loaded by inserting the cartridge into the rear portion or chamber of the barrel and drawing back the barrel to the breech by means of the lever C, the firing is performed in the same way as in other

fire-arms. The hammer after firing remains upon the shell of the cartridge with its notch *l m* upon the upper portion of the flange of the shell, while the barrel is drawn forward by the lever C to open it for reloading, and is thus made to hold down the upper part of the flange, while the tooth *i* of the retractor and ejector, which is in front of the lower part of the said flange, holds back that part, and in this way the shell is held back against the face of the breech and withdrawn from the barrel as the forward movement of the latter takes place. The shell continues to be thus held between the hammer and the retractor and ejector after it has been entirely withdrawn from the barrel until the hook E is brought into operation by the continued movement of the lever C, and as the hook throws back the head of the hammer toward the position of half-cock, the notch *l m* liberates the upper part of the shell. Instantly after this liberation has been completed the rear end of the extractor and ejector is thrown up suddenly by its spring, as shown in Fig. 2, and so made to jerk out and eject the shell from the fire-arm. This extractor and ejector will act in a similar manner, in combination with the hammer, to extract and eject a cartridge which has not been discharged whenever it is desirable to withdraw a charge.

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

1. The hammer F, provided with the notch *l m*, in combination with the ejector G, when constructed and operating as herein set forth.

2. The spring H, when constructed and arranged to operate in combination with the ejector G, as and for the purpose set forth.

FORDYCE BEALS.

Witnesses:

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