(No Model.) 2 Sheets—Sheet 1.

A. T. BROWN.

EJECTOR MECHANISM FOR BREAKDOWN GUNS.

No. 513,480. Patented Jan. 30, 1894.

Fig. 3.

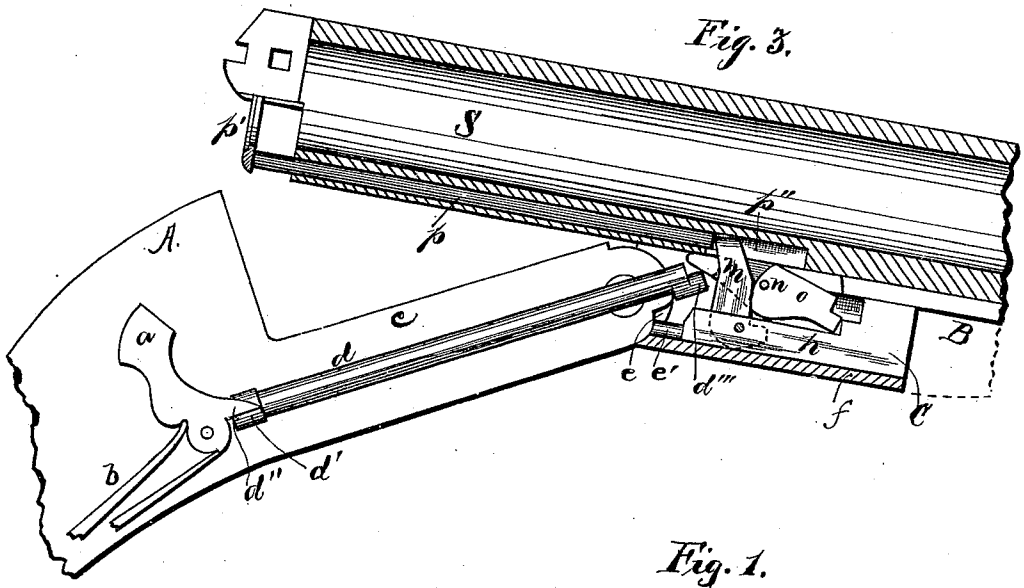


Fig. 1.

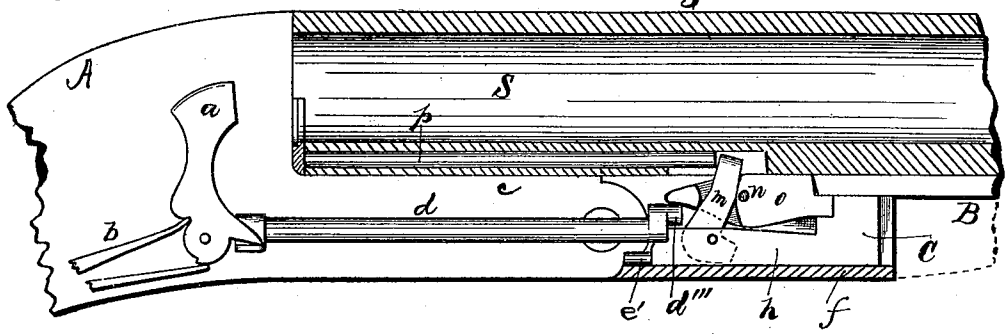
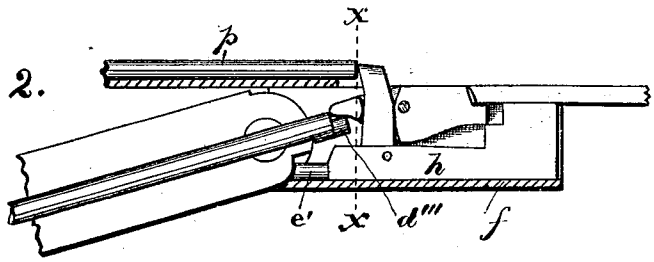


Fig. 2.



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(No Model.) 2 Sheets—Sheet 2.

A. T. BROWN.

EJECTOR MECHANISM FOR BREAKDOWN GUNS.

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Fig. 4.

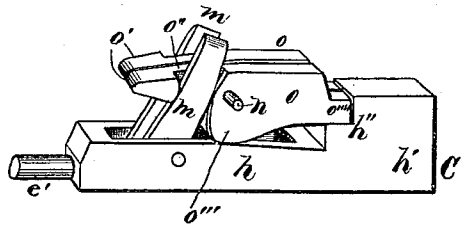


Fig. 5.

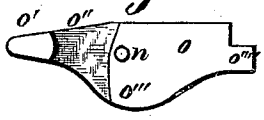


Fig. 6.

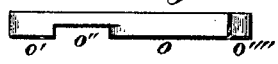


Fig. 8.

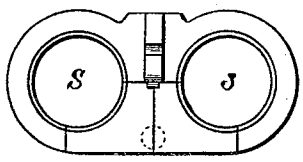
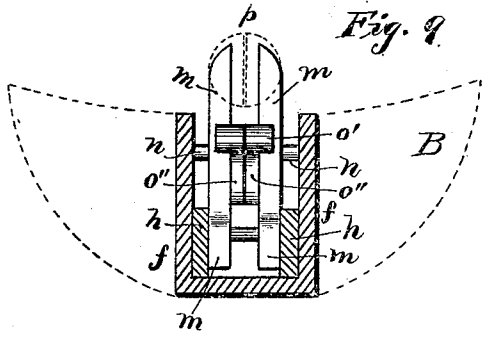


Fig. 7

Fig. 9.



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ALEXANDER T. BROWN, OF SYRACUSE, NEW YORK.

EJECTOR MECHANISM FOR BREAKDOWN GUNS.

SPECIFICATION forming part of Letters Patent No. 513,480, dated January 30, 1894.

Application filed March 7, 1892. Serial No. 424,002. (No model.)

To all whom it may concern:

Be it known that I, ALEXANDER T. BROWN, of Syracuse, in the county of Onondaga, in the State of New York, have invented new and useful Improvements in Breech-Loading Firearms, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

My invention relates to breech-loading fire-arms, and particularly to the spring shell-ejector mechanism therein.

My object is to produce a shell-ejector in which the force applied is wholly exerted by and derived from the main-spring in the locks; in which the tension is imparted to the main-spring by the opening or "breaking-down" of the barrel; in which the extractor hammer receives an impact from an extractor-trigger in the fore-end, and exerts its blow or "strike" directly against the rear of the extractor leg, with sufficient force to eject the shell from the barrel.

My invention consists in the several novel features of construction and operation hereinafter described and which are specifically set forth in the claims hereunto annexed. It is constructed as follows, reference being had to the accompanying drawings, in which I show my invention applied to a "hammerless" gun, omitting the cocking and other mechanisms for greater perspicuity, and in which—

Figure 1, shows, in sectional elevation, the ejector mechanism in its normal position with the gun closed. Fig. 2, shows the same mechanism with the gun partly opened. Fig. 3, shows, in sectional elevation, the gun fully opened, and the shell ejected by the ejector mechanism. Fig. 4, is a perspective elevation of part of the fore-end, and comprising the sliding frame, the ejector hammers, and the ejector triggers. Fig. 5, is a plan view of the ejector trigger detached. Fig. 6, is a top plan of the same. Fig. 7, is an elevation of the ejector hammer, detached. Fig. 8, is an elevation of the rear end of the barrels of a double gun, showing the two extractors. Fig. 9, is a rear sectional elevation of the ejector mechanism and its casing in the fore-end, showing the fore-end itself by the dotted lines.

A—, is the breech block or part of the stock, and —*a*— is the hammer, and —*b*— the main-spring, mounted therein in the usual manner.

In the frame —*c*— of the breech-block, I mount the shaft —*d*— provided with a lip —*d'*— on its rear end, adapted to engage with the horn —*d''*— upon the front of the trigger, and upon its front end with a crank —*d'''*—. The front end of this frame is also cut away, creating the cam shoulder and recess —*e*—, therein.

B— is the fore-end hinged to the frame in the ordinary manner. In this fore-end I secure a box-casing —*f*— open on the ends and top. In this casing I mount the slide —C— consisting of a frame —*h*— slotted longitudinally in its rear part, and a head —*h'*— upon its front end provided with a rabbeted transverse shoulder —*h''*—, and having a pin —*e'*— projecting from the rear of said frame. In this frame I pivotally mount the extractor hammers —*m*—, one for each barrel of the gun.

Upon a shaft —*n*—, transverse to the frame, I pivot my extractor trigger —*o*—, one for each hammer, consisting of a head —*o'*— and a neck —*o''*—, a cam shoulder —*o'''*— and a front arm —*o''''*—, the body being rounded or beveled above this arm, substantially as shown, said arm being normally in engagement with the shoulder —*h''*—, and said head —*o'*— being in engagement with the crank —*d'''*— upon the shaft —*d*—.

In the barrels —*s*— or between them, I mount the longitudinally divided extractor rods —*p*—, each section being provided with a head —*p'*— and having a recess —*p''*— in front of said rods, which receives the upper ends of the extractor hammers, and permits of their engagement with the extractor rods.

It is operated as follows: Starting with the gun closed, I proceed to "break-down" the barrels, the parts being then in the position shown in Fig. 1; and then as the fore-end swings upon its hinge pin, the downward movement of the head —*o'*— bearing upon the crank —*d'''*— partially rotates the shaft —*d*—, causing the lip —*d'*— to raise the horn —*d''*— and through the hammer compresses the main-

spring. Simultaneously with this, the pin —*e'*— by its engagement with the cam shoulder —*e*—, forces the slide —C— forward, the casing —*f*—, the shaft —*n*—, and the extractor hammers all remaining stationary because the shaft —*n*— is secured in the casing, and the casing in the fore-end.

As the barrels begin to open, and the casing begins to slide, the trigger —*o*— begins to rock on the hammer —*m*—, forcing it back and starting the shell loose from its seat in the barrel. This movement of the slide draws the shoulder —*h''*— out from under the trigger arm —*o''''*— and as by the depression of the fore-end the greatest tension is produced upon the main-spring, just before the fore-end reaches the limit of its movement, so when the shoulder —*h''*— passes from under the arm —*o''''*—, then the main-spring is free to exert its full force upon the trigger, throwing this arm downward, bringing the point of the shoulder —*o'''*— quickly against the hammer —*m*—, giving the extractor rod and shell a momentum, sufficient to throw the shell clear of the gun. Then when the gun is closed, the extractor heads strike the face of the breech block and crowd the extractor rods —*p*— back, forcing the hammer —*m*— back. The hammers exert a leverage upon the triggers raising the arm —*o''''*— and at the same time this leverage draws the slide backward, bringing the arm upon the shoulder —*h''*— and these movements continue until all of the parts have reassumed their positions as shown in Fig. 1, and then the lip —*d'*— is out of engagement (not shown) with the horn of the trigger, leaving the trigger free for firing.

I do not limit myself to the precise form of any of the several parts as shown in the drawings herewith.

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

1. A shell extractor comprising an extractor and extractor rod, and extractor hammer, an extractor trigger engaging with said hammer, and a crank shaft operated by the main-spring and extractor trigger and through it, actuating said hammer, in combination, as set forth.

2. A shell extractor comprising an extractor mounted beneath the barrels, an extractor hammer, engaging with the extractor, and an extractor trigger engaging with said hammer, mounted in the fore-end, and a crank shaft mounted in the frame of the breech-block and having the crank in engagement with the trigger, aforesaid, and the rear end operated by the main-spring in combination, as set forth.

3. The combination with the extractor, of an extractor hammer, and an extractor trigger engaging with the hammer, said trigger actuated by the main-spring compressed by the rotation of an intermediate crank-shaft, engaging with the trigger, and with the main spring when the fore-end is depressed.

4. The combination with the breech-block frame, and the fore-end hinged thereto, of a sliding frame mounted in the fore-end and engaging with, said frame, an extractor hammer pivoted in the sliding frame, an extractor trigger pivoted in the fore-end, and engaging with the sliding frame and with said hammer, an extractor, and a crank-shaft engaging with the trigger and operated by the main-spring.

5. An extractor trigger in the fore-end, a crank-shaft in the breech frame, engaging with said trigger, a main spring operating said shaft and compressed by its rotation, and a hammer in the fore-end actuated by said trigger, crank shaft, and main-spring, in combination, as set forth.

6. The combination, with a gun-lock, of a crank-shaft operated at its rear end by the main-spring, a hammer-trigger and extractor-hammer operated by the other end of the crank-shaft, and an extractor operated by the extractor-hammer when actuated by said crank-shaft, substantially as specified.

7. In breech-loading guns, a cartridge ejector comprising an extractor, an ejector hammer adapted to strike the extractor rod, and a crank-shaft operated by the main spring and in turn operating the ejector hammer, all in combination.

8. The combination with a gun-lock, of a crank-shaft operated by the main-spring, a hammer-trigger actuated by said shaft, an ejector-hammer operated by the trigger and an ejector moved by the hammer-trigger to start the shell, substantially as specified.

9. The combination with a gun-lock, of a crank-shaft actuated by the main-spring, an ejector-hammer actuated by said shaft, and an ejector actuated by the ejector-hammer to start the shell, substantially as specified.

In witness whereof I have hereunto set my hand this 4th day of March, 1892.

ALEXANDER T. BROWN.

In presence of—

HOWARD P. DENISON,

C. W. SMITH.