

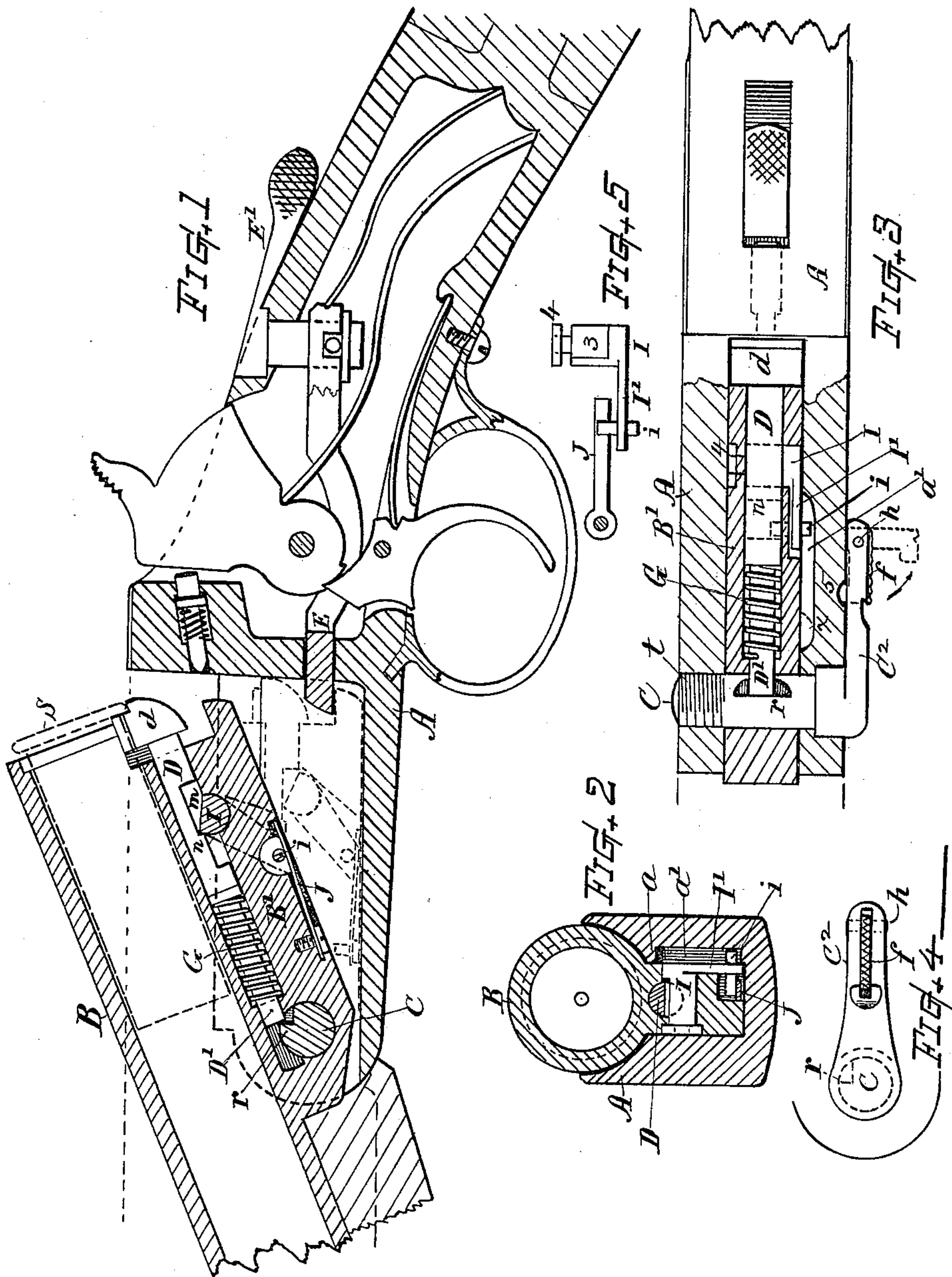
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Patented May 2, 1899.

A. FYRBERG.
SHELL EJECTOR FOR FIREARMS.

(Application filed Dec. 15, 1898.)

(No Model.)



Witnesses.
Gustaf Fyrberg.
Ella P. Blenius

Inventor
Andrew Fyrberg
By Chas. H. Burlingame
Attorney

UNITED STATES PATENT OFFICE.

ANDREW FYRBERG, OF WORCESTER, MASSACHUSETTS.

SHELL-EJECTOR FOR FIREARMS.

SPECIFICATION forming part of Letters Patent No. 624,322, dated May 2, 1899.

Application filed December 15, 1898. Serial No. 699,320. (No model.)

To all whom it may concern:

Be it known that I, ANDREW FYRBERG, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented a new and useful Improvement in Breech-Loading Guns, of which the following, together with the accompanying drawings, is a specification sufficiently full, clear, and exact to enable persons skilled in the art to which this invention appertains to make and use the same.

My present invention relates to improvements in the shell-ejector mechanism, the objects being to render the mechanism substantial, durable, and efficient for use and economical for manufacture and to provide an ejector mechanism comprising means for primarily positively starting the shell from its seated position, in combination with means for then automatically throwing said shell completely out and away from the chamber, said mechanism being constructed and organized for operation in the manner more fully hereinafter set forth.

Another object is to provide an automatic ejecting device with a rocking ejector-catch having an arm and lug that work in conjunction with a stop-shoulder on the frame for tripping the ejector, as more fully hereinafter explained.

These objects I attain by the mechanism illustrated in the drawings, wherein—

Figure 1 is a sectional view of a gun embodying my invention, the parts being shown at the position occupied after the positive starting of the ejector, but immediately preceding the automatic final ejective action. Fig. 2 is a transverse section through the frame and barrel, showing the form of the ejector-catch and the lug or shoulder for actuating the same. Fig. 3 is a sectional plan showing the top of the ejector and joint-screw mechanisms. Fig. 4 is a side view of the joint-screw arm, and Fig. 5 a separate plan view of the ejector-catch and its spring.

In referring to the drawings, A indicates the stock-frame, of suitable or well-known form.

B denotes the barrel, having the joint-block B' fixed on its under side and adapted to fit within the hollow of the frame and hinged or

pivoted therein by the joint screw or pin C for "breakdown" or forwardly-tilting action of the barrel, as illustrated. Said joint-pin C passes through and movably fits a transverse hole formed complete within the joint-block B', near the fore end thereof, said hole coinciding with the openings in the sides of the frame, one of which latter is threaded to receive the screw-thread at the end of the joint-pin when the parts are assembled.

The barrel-catch E and top lever E' for operating the same may be of well-known or any suitable construction.

D indicates the ejector-bar, arranged within a longitudinal bore in the joint-block B' and having the usual head d for engaging the rim of the cartridge-shell, also provided with the backwardly-pressing spring G, coiled about its spindle portion D' within the bore. The inner end of the longitudinal bore or ejector-way is disposed at an overlying position in relation to the transverse hole and partially intersected therewith, the top side of the transverse hole being about half-way up in the longitudinal bore. The spring-supporting spindle D' can be an integral part of the main bar D or made as a separate piece abutting against the end thereof, as per Fig. 1.

I indicates a rocking catch disposed transversely in the joint-block B' beneath the ejector-bar D, which is recessed on its under side and provided at an intermediate position in the top of the recess with an offset-lug n or stop-notch that is engaged by the angle of said rocking catch, the face of which is cut away or flattened, as shown at 3, so that the rocking of the catch-piece will release the ejector. The catch device is secured in the joint-block by a circular nut 4 on one end, and its other end is provided with forwardly and downwardly projecting arm I', that works in a suitable recess formed in the side of the block. The lower end of the arm is furnished with a transversely-disposed pin i, one end of which is pressed by a spring J for keeping the catch normally at interlocked position, while the other end of said pin projects within a recess a', formed in the side of the frame, and acts in conjunction with a horizontal shoulder a at the top of said recess for moving the arm and tripping the catch, thereby releasing the ejector when the barrel is

tilted to a given degree or sufficiently to carry the pin *i* against the shoulder *a*—a slightly greater tilt than that indicated in Fig. 1. The shoulder *a* has a cut-away space at *x* to permit separation of the frame and barrel parts when the joint-screw has been removed and the barrel drawn somewhat forward to bring the pin *i* into line with the cut-away.

The joint-screw C is made with a recess in the side thereof, forming at its top an upright lug or shoulder *r*, disposed across the ejector-way and against which the end of the ejector-spindle contacts in such manner that when the rear end of the barrel rises from the recoil-plate to the position indicated in full lines, Fig. 1, the ejector D will be positively forced backward for a short distance and with sufficient power to start the shell S from the chamber, (see dotted lines, Fig. 1,) overcoming any adhesive tendency or sticking of the shell and partially freeing it from its seat, so that the resilience of the ejector-spring will meet no excessive resistance in throwing out the shell when the automatic ejector is subsequently brought into action. The joint-screw is threaded into one side of the frame at *t* and is provided with an arm C² at its head end, the inner side of said arm fitting against the outer side of the frame when the screw is set home. A latch-finger *f* is arranged in the slotted end of the arm, pivoted, as at *h*, and adapted to close down with its end latching into a nick 5, formed in the frame, as indicated in Fig. 3, for retaining the joint-screw against any tendency for its unscrewing by reason of the pressure of the ejector on the lug *r*. The latch-finger *f* is adapted to be swung outward, as indicated by dotted lines, Fig. 3, and there serve as a crank-handle for turning the joint-screw in and out when desired. The recess *m* in the ejector-bar forward of the offset *n* is made of sufficient length to permit this positive movement before the catch I takes effect on said offset.

In the operation when the barrel is unlatched and tilted forward the first portion of the tilt movement causes the ejector D to be slowly and positively forced outward by the spindle impinging against the lug *r*, so as to start the shell from the chamber however firmly it may be wedged therein. Then as the further tilting movement brings the pin *i* into contact with the shoulder *a* the catch I is rocked away from the offset *n* and the spring J automatically drives back the ejector D, easily and effectively ejecting the shell and throwing it free and clear from the breech of the gun, thus insuring complete ejective ac-

tion and obviating any liability of the shells sticking in the chamber with a resistance that would exceed the power of the ejector-spring. When the barrel is tilted back to its regular position, (see dotted lines in Fig. 1,) the ejector devices are caused to assume their normal set position by the ejector-head working against the face of the recoil-block.

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

1. In a breech-loading firearm in which the barrel is hinged for breakdown action, the combination, as described, of the barrel-hinging joint-block provided with a transverse hole therethrough for the joint-pin, and a longitudinal ejector-way bore overlying and partially intersecting with said transverse hole, a joint-pin having an upright shoulder, disposed across the ejector-way, and an external arm provided with a locking device, the ejector-bar mounted within the ejector-way with its end abutting on said shoulder, said ejector-bar provided with an under recess fitted with an intermediate offset, the ejector-actuating spring, a retaining-catch within said recess, against which said offset engages subsequent to a primary movement of the ejector, and the means for retracting said catch to release the ejector for action by said spring, substantially as set forth.

2. In a breech-loading firearm, the combination with the stock-frame and the barrel pivotally connected to the fore end of said frame, the joint-screw provided with a crank-arm attached to its head end, and a swing-latch pivoted in said arm and adapted to close down and latch into a recess in the frame, and to swing outward as a crank-handle, for the purposes set forth.

3. The combination as described, with the frame having the inner side recess, the barrel with its joint-block pivoted in said frame, the ejector and ejector-spring, of the rocking ejector-catch mounted in the joint-block for engaging the ejector-bar, and having an arm provided with a lug or pin at the end thereof, a spring pressing thereon to move said catch to its normal engaging position, and a shoulder at the side of the frame, against which said pin is arrested for retracting the catch and releasing the ejector when the barrel is tilted forward, substantially as set forth.

Witness my hand this 13th day of December, 1898.

ANDREW FYRBERG.

Witnesses:

CHAS. H. BURLEIGH,
NILS J. A. FYRBERG.