

No. 674,957.

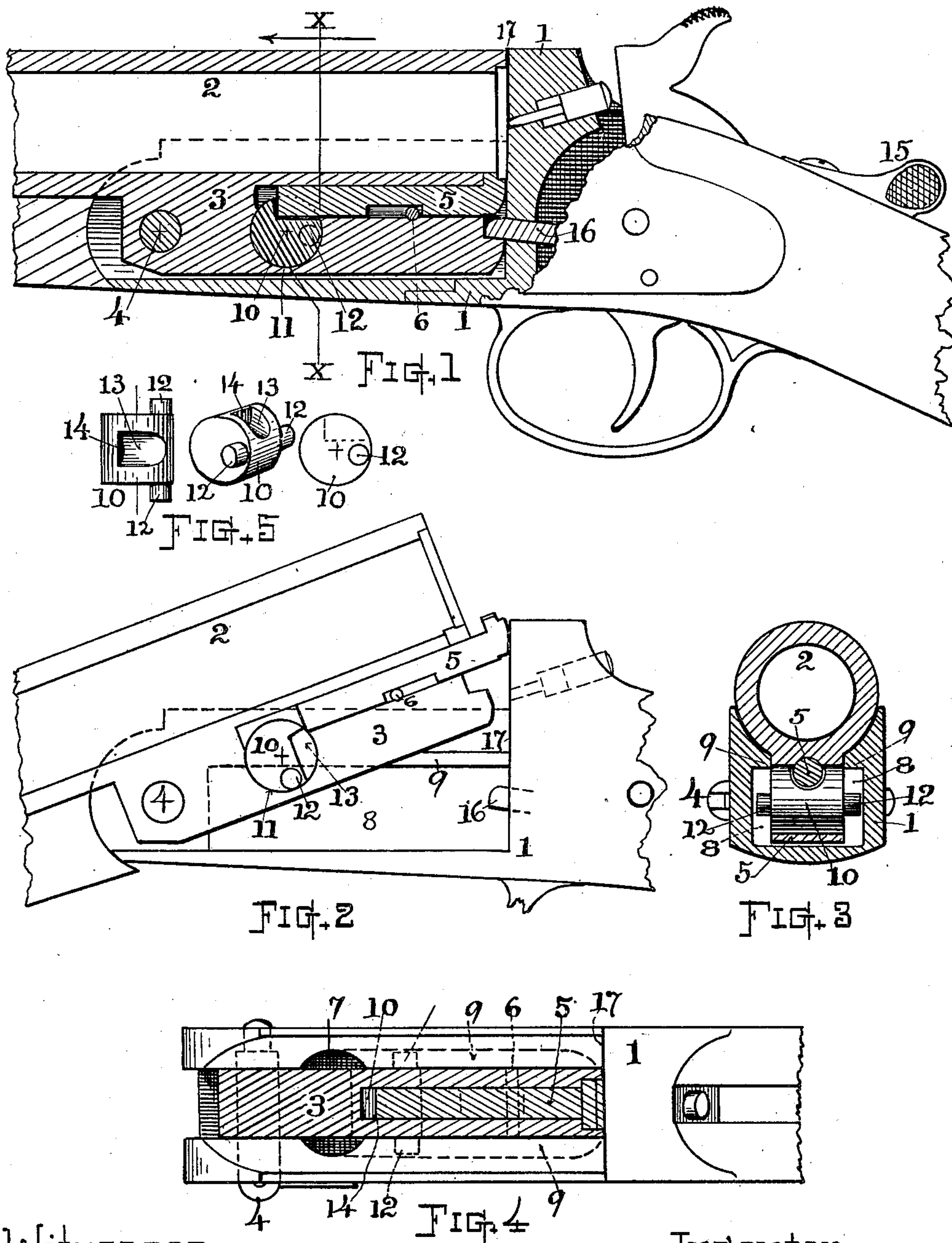
Patented May 28, 1901.

M. BYE.

EJECTOR MECHANISM FOR BREAKDOWN GUNS.

(Application filed Oct. 27, 1900.)

(No Model.)



Witnesses.

W. E. Buck
Simon & King

Inventor

Martin Bye
By Chas. H. Burleigh
Attorney

UNITED STATES PATENT OFFICE.

MARTIN BYE, OF WORCESTER, MASSACHUSETTS, ASSIGNOR TO HARRINGTON
& RICHARDSON ARMS COMPANY, OF SAME PLACE.

EJECTOR MECHANISM FOR BREAKDOWN GUNS.

SPECIFICATION forming part of Letters Patent No. 674,957, dated May 28, 1901.

Application filed October 27, 1900. Serial No. 34,577. (No model.)

To all whom it may concern:

Be it known that I, MARTIN BYE, 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 Ejector Mechanism for Breakdown 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 a novel construction and combination of means for operating a shell extractor or ejector adapted for single-barrel or double-barrel shotguns or firearms of that class known as "breakdown" guns, the objects being to provide a simple and efficient ejector mechanism that can be manufactured with facility and at comparatively small cost, to avoid the necessity for springs and numerous parts liable to get out of order, and to render the actuator efficient as a desirable stop for the tilting or breakdown action, as more fully hereinafter explained. These objects I attain by the mechanism illustrated in the accompanying drawings, wherein—

Figure 1 represents a longitudinal sectional view of such parts of a single-barreled breakdown gun as will illustrate the nature of my invention. Fig. 2 is an outline view indicating the position of the several parts when the barrel is tilted. Fig. 3 represents a transverse vertical section at line *x x* on Fig. 1 looking in the direction indicated by the pointer. Fig. 4 is a top view of the frame with the lug shown in horizontal section; and Fig. 5 shows the ejector-actuating roll separately in detail by top, perspective, and end views.

Referring to the drawings, the numeral 1 indicates the frame, to which the stock is attached and to the fore-end of which the barrel 2 is hinged by the barrel-lug 3 and the hinge pivot-pin 4 for tilting downward in a well-known manner. The barrel-lug 3 is provided with a plain longitudinal bore for receiving and guiding the ejector-stem 5, which

latter is disposed at the usual position and is formed, as shown, with a cylindrical stem carrying a head of usual shape. Said stem is best squared off at its inner end perpendicular with its axis. A portion of the stem is cut away to form shoulders thereon at suitable distance apart, and a pin 6 is inserted transversely through the lug 3 at a suitable position to engage said shoulders for preventing the escape of the ejector-stem from the bore of the lug.

The inner cheek-faces of the frame 1 are undercut along the sides of the chamber or lug-receiving cavity by means of a suitable milling-tool sunk vertically at 7 and then worked horizontally rearward, thereby forming within the frame spaces 8 and inwardly-overhanging shoulders or offsets 9 along the inner sides thereof, as best shown in Figs. 2 and 3.

For operating the ejector-stem I provide at a position somewhat back from the hinging-point an actuating roll, rocker, or cylindrical hub 10, mounted within a transverse horizontal opening or bore 11 in the lug 3, which bore at its upper part intersects with the bore wherein the ejector-stem is supported and slides. The roll 10 is fitted closely, but to turn freely within its opening, and is partially rotatable therein. Said roll is best made in length equal to the lateral thickness of the lug 3, so that its ends are flush with the sides thereof, and is provided on its respective ends with eccentrically-disposed projections or studs 12, that stand outward therefrom beyond the side faces of the lug into the spaces 8 within the cheeks of the frame. (See Fig. 3.)

The projection 12 may be formed by a round pin firmly inserted in the roll 10 or may be an integral portion of the body of said roll disposed eccentric to the axis thereof.

The upper side of the roll or cylinder 10 is fitted with a peripheral recess 13 and with an abutment, shoulder, or detent 14. When the parts are assembled and at normal position, said recess stands in alinement with the ejector-bore and receives the end of the ejector-stem, (see Fig. 1,) the squared-off end of said

stem resting adjacent to the face of the shoulder or detent 14.

The top snap 15 and latch 16 for retaining the barrel in closed position may be of the usual or any suitable construction.

In the operation when the barrel is released and tilted forward, raising the rear end of the lug, the projections 12 upon the ends of the actuator-roll 10 swing into contact with the offsets 9, and said projections being axially eccentric on the cylinder or roll 10 cause, by the further tilt movement, a partial rotation or rocking movement of said actuator-roll within the lug 3, whereby the abutting shoulder 14 engages against the end of the ejector-stem, forcing said ejector rearward, as indicated in Fig. 2, for releasing the cartridge-shell from the barrel chamber or tube. When by rotation of the actuator-roll 10 the eccentrically-disposed projections 12 come to a dead-center in relation to the line of breakdown movement, then said projections act as a stop against the offsets 9 and limit the extent of the tilt or breakdown action. Such stop approaches its point of ultimate retention by a gradually-increasing resistance, owing to the swing of the eccentric axis to its dead-center position, in contradistinction to the abrupt impact-stroke which results from a rigidly-fixed stop device. Hence a less severe shock and strain on the mechanism occurs in the handling of the gun. When the barrel 2 is tilted back to place, the projections 12 recede from the offsets 9 and the pressure on the ejector-head, sliding against the breech-block face 17, effects the return of the ejector-stem and the rotation of the actuator-roll 10 to their normal or primary position.

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

1. In a shell extractor or ejector mechanism for breakdown guns, the combination with the frame having interior offsets or shoulders, and the ejector-stem slidable within a longitudinal bore in the barrel-lug; of an actuating-roll fitted within a transversely-disposed opening in said lug adjacent to said ejector-stem and having means for engaging therewith, said roll provided on its ends with eccentrically-

disposed projections that coact with said offsets to effect a partial rotation of said roll when the barrel is tilted, substantially as and for the purpose set forth.

2. An ejector mechanism comprising the endwise-movable ejector-stem, an actuating member rotatably supported within a transverse opening that eccentrically intersects the ejector-guideway within the barrel-lug, said actuating member furnished with means for pressing back said ejector-stem, and having at its ends projecting studs disposed eccentric to or out of line with its central axis; in combination with the barrel-lug pivoted in the fore-end of the frame, and the frame provided with inwardly-overhanging shoulders against which said projecting studs contact when opening the breech of the gun.

3. In a breakdown gun, an ejector-actuating roll or cylinder arranged transversely through the barrel-lug, and having at its ends eccentrically-disposed projections or pins that serve as a stop for the breakdown movement; in combination with the frame provided with inwardly-overhanging offsets that arrest the upward movement of said projections as the barrel is tilted.

4. The combination, as described, of the frame having undercut inner cheek-faces, the barrel having its lug pivoted at the fore-end to said frame, said lug provided with a plain longitudinal bore and a plain transverse opening intersecting therewith at a position rearward from the hinging pivot-axis; the ejector-stem slidably fitting within said bore, the transverse retaining-pin between shoulders formed on said stem, the actuating roll or cylinder extending through said transverse opening in the lug and provided with a peripheral recess and shoulder for receiving and engaging the end of said ejector-stem, and means for effecting partial rotation of said actuating-roll when the barrel is tilted.

Witness my hand this 25th day of October, 1900.

MARTIN BYE.

Witnesses:

CHAS. H. BURLEIGH,
GEORGE F. BROOKS.