No. 638,322. Patented Dec. 5, 1899.

W. H. DAVENPORT.

EXTRACTOR MECHANISM FOR BREAKDOWN GUNS.

(Application filed Mar. 27, 1899.)

(No Model.)

Fig. 1.

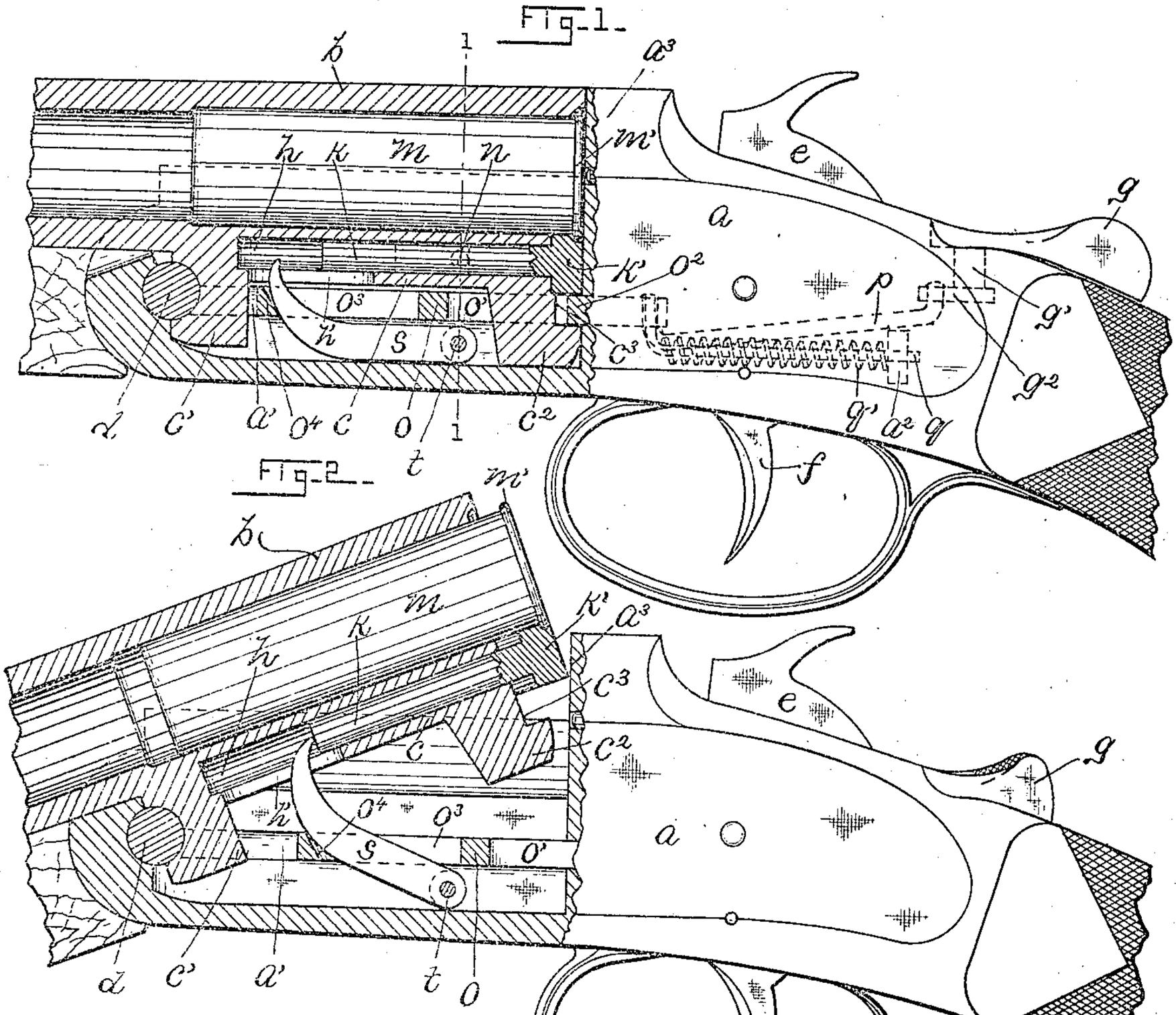


Fig. 2.

Fig. 4.

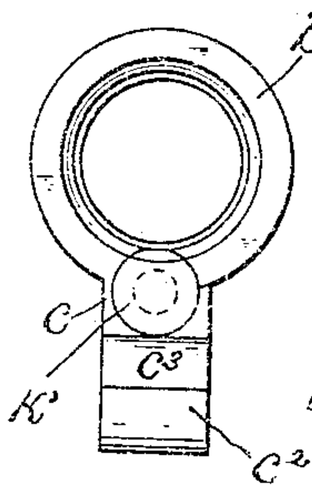


Fig. 5.

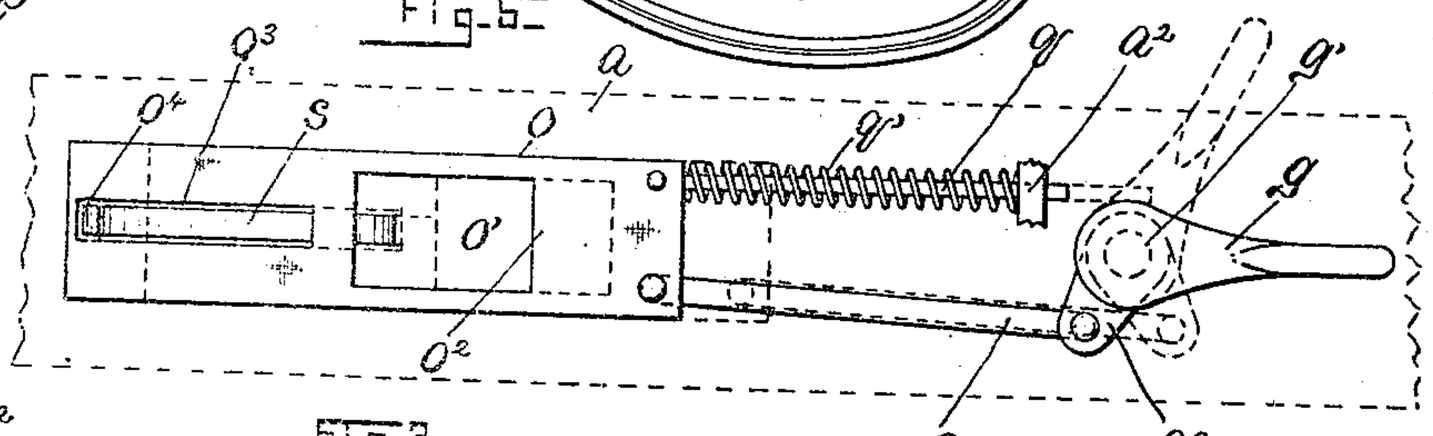
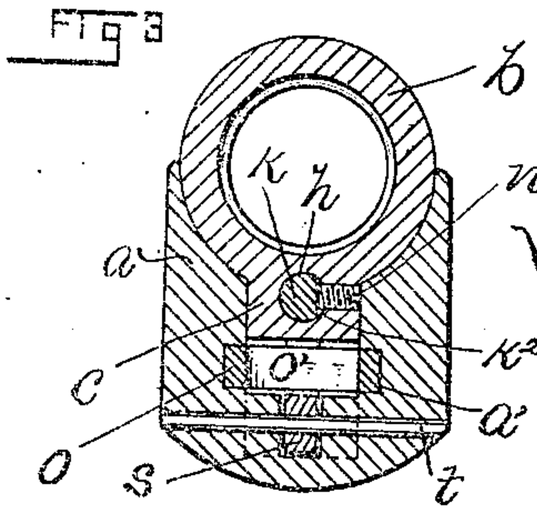


Fig. 3.



WITNESSES

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EXTRACTOR MECHANISM FOR BREAKDOWN GUNS.

SPECIFICATION forming part of Letters Patent No. 638,322, dated December 5, 1899.

Application filed March 27, 1899. Serial No. 710,529. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. DAVENPORT, a citizen of the United States, residing at Norwich, in the county of New London and State of Connecticut, have invented certain new and useful Improvements in Breakdown Guns, of which the following is a full, clear, and exact description.

This invention is in firearms and relates particularly to the extractor mechanism thereof.

The object of said invention is to provide simple mechanism applicable particularly to "breakdown" shotguns and operated and controlled by the top-snap lever of the arm, the manipulation of said lever serving not only to release the barrel to permit the breaking down of the latter, but also to start the shell from its seat sufficiently to permit it to be grasped and withdrawn from the barrel.

To assist in explaining my invention, I have provided the accompanying sheet of drawings, which serve to illustrate the same, as follows:

Figure 1 shows, partly in elevation and partly in section, an arm fitted up with my newly-invented improvements. Fig. 2 is a view similar to Fig. 1, illustrating the arm broken down and serving also to explain the manner in which my said improvements operate. Fig. 3 is a cross-sectional view taken on line 1 1. Fig. 4 is an end view of the barrel and its lug. Fig. 5 is a plan view of my newly-invented mechanism.

The principal feature of my newly-invented ejector mechanism consists in providing an extension to the usual barrel-locking bolt, which extension near its forward end is adapted to engage a hinged lever hung in the frame of the arm, the free end of which lever is adjacent to and adapted to engage the forward end of the extractor-rod. When the top-snap lever is moved to disengage the bolt from the barrel-lug, said bolt engaging the hinged lever above mentioned serves at the same time to rock the said lever upward, as hereinafter explained. The initial movement of the bolt disengages it from the barrel-lug, when the barrel may be broken down, after which continued rearward movement of the bolt rocks the free end of the hinged lever upward, as seen in Fig. 2, said free end engaging the forward end of the ejector-rod and forcing the latter rearward. The head of the ejector-rod engages the flange of the shell in the usual manner, and when thus moved rearward it carries said shell with it, the movement being sufficient to draw the shell from its seat, as above mentioned.

Referring now to the drawings, the principal elements of the arm are denoted as follows:

The letter *a* denotes the frame of the arm; *b*, the barrel; *c*, the barrel-lug; *d*, the hinge-pin, upon which the barrel is adapted to rock; *e*, the hammer; *f*, the trigger, and *g* the top-snap lever, the above-named several parts being constructed, assembled, and operated in the usual manner, and, being well understood by those conversant with this class of arms, no detailed description or illustration of them or of the lockwork of the arm is deemed necessary.

The barrel-lug *c* has a chamber *h* located therein beneath and parallel with the bore of the barrel. The chamber *h* is provided for the reception of an extractor-rod *k*, bearing on its outer end a head *k'*, which latter when said rod is in its inner or closed position forms a portion of the barrel *b* and partly encircles the flange of the shell, which latter is denoted by the letter *m* and its flange or head by the letter *m'*. When the extractor-rod is forced rearward, as hereinafter explained, the flange *k'* engages the flange *m'* of the shell and moves the shell correspondingly outward to permit it to be readily withdrawn from the barrel.

To limit the movement of the rod *k* and also to prevent its rotation, a flattened recess k^2 is provided thereon, which is engaged by the inner end of a screw *n*, located in the lug *c*, as is best seen in Fig. 3, the engagement of said screw with the flattened recess k^2 preventing rotation of the rod *k* and its engagement with the end walls of said recess serving to limit the endwise movement of said rod.

The barrel-locking bolt is denoted as a whole by the letter *o* and, as before mentioned, has a forwardly-extending portion, concerning which a more detailed description is given hereinafter. Said bolt as here shown is of plate form and is adapted to travel reciprocally within the frame *a* in grooves *a'*, provided in the frame to receive the opposite edges of the bolt. In order that the long bolt

o may not interfere with the closing of the arm, the lower portion of the lug *c* is largely cut away between its opposite ends, thus leaving the hook portions c' c^2 at said opposite ends to engage, respectively, the hinge-pin *d* and the bolt *o*. The bolt *o* is provided with an opening *o'*, through which the lug portion c^2 passes when the arm is closed. The portion of the bolt *o* adapted to engage the lug-notch c^3 is denoted by the reference-letter o^2, and said portion is adapted to be carried into or out of engagement with said notch as the bolt travels forward and rearward, and to actuate said bolt to cause it to travel as just mentioned the top-snap lever *g* is utilized through the following-described mechanism: The said top-snap lever is mounted in the usual manner upon a pin *g'*, having a bearing in the wall of the frame *a* and having secured to its end within the frame an arm g^2, the free end of which is connected by a link *p* with the bolt *o*. The bolt *o* has also secured thereto a rod *q*, bearing a coiled spring *q'*, that is confined between the bolt *o* (or an angular bend in the rod *q*, as shown) and a bearing a^2, provided within the frame *a* to receive the free end of the said rod *q*. It will now be seen by reference to Fig. 5 that should the said top-snap lever be swung from the position shown in full lines to that shown in dotted lines the arm g^2, moving in unison therewith, will, through the link *p*, draw rearward the bolt *o* and the rod *q*, and thus compress the spring *q'* between the points of its confinement. Upon the release of the top-snap lever *g* the spring *q'* at once expands and returns the several elements to their normal or starting positions.

The hinged lever above mentioned is denoted by the letter *s* and is shaped substantially as shown in the drawings. Said lever lies in a plane parallel with the length of the frame and is secured between the confronting faces of the side walls of the frame beneath the bolt *o* by a pin *t* passing through its rear end and seated in the frame, as shown in Fig. 3. The forward end of the lever *s* is curved to pass through a slot o^3 in the bolt *o*, and the extreme forward end of said lever passes also through a slot *h'*, leading from the chamber *h* to the bottom of the lug *c*, thus allowing the free end of said lever to enter the chamber *h*, as shown. The wall at the forward end of the slot o^3 is preferably beveled, as at o^4, and is thus adapted to engage the adjacent curved edge of the lever *s*. It will now be seen that when the arm is closed, as shown in Fig. 1, should the bolt *o* be drawn rearward, as above described, the beveled wall o^4 of the slot o^3 will engage the curved front edge of the lever *s* and cause said curved edge to travel upward on said beveled wall, and thus rock the free end of the lever upward. At about the time or just before the said free end of the lever *s* engages the upper side of the chamber *h* the bolt portion o^2 becomes disengaged from the notch c^3, thus permitting the breaking down of the barrel. Such operation carries the rear end of the barrel upward, after which continued movement of the top snap and bolt rocks the lever *s* and causes its free end to travel rearward in the chamber *h*, said end engaging and forcing before it the bolt *k*, whose head portion *k'* effects the starting of the shell, as already described. Upon the release of the top-snap lever *g* the bolt *o* at once reassumes its forward position and the lever *s* travels downward in the slot g^3 returning to the position shown in Fig. 1.

Upon the reloading of the arm the bolt *k* may be pushed inward to bring the outer face of the latter and the end of the new shell flush with the end of the barrel, or such result may be attained upon the closing of the arm, when said shell and the extractor are forced inward by their engagement with the front face of the recoil-block a^3.

The above-described mechanism operates positively to accomplish the starting of the shell, and, while two operations are accomplished by the sliding of the bolt *o*, it should be borne in mind that unless purposely operated with an intermittent movement the said operations result from a single movement of the top-snap lever, the starting of the shell occurring substantially simultaneously with the breaking down of the arm.

The above-described mechanism is very simple in its construction, is not expensive to produce, and greatly improves the class of firearms to which it relates.

Having thus described my invention, I claim—

1. In a breakdown arm, in combination, a frame, a barrel, hinged thereto, having a sliding extractor as set forth, a bolt mounted to slide in the frame, and a pivoted lever lying in the path of said bolt and adapted to engage the extractor substantially as specified.

2. In a breakdown arm, in combination, a frame, a barrel, hinged thereto, having a sliding extractor in its lower portion, a slotted bolt mounted to slide in the frame, and a lever located in the bolt-slot; one end of said lever being pivoted in the frame and the other end extending upward in engagement with the extractor, substantially as specified.

Signed at Norwich, Connecticut, this 18th day of March, 1899.

WILLIAM H. DAVENPORT.

Witnesses:

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