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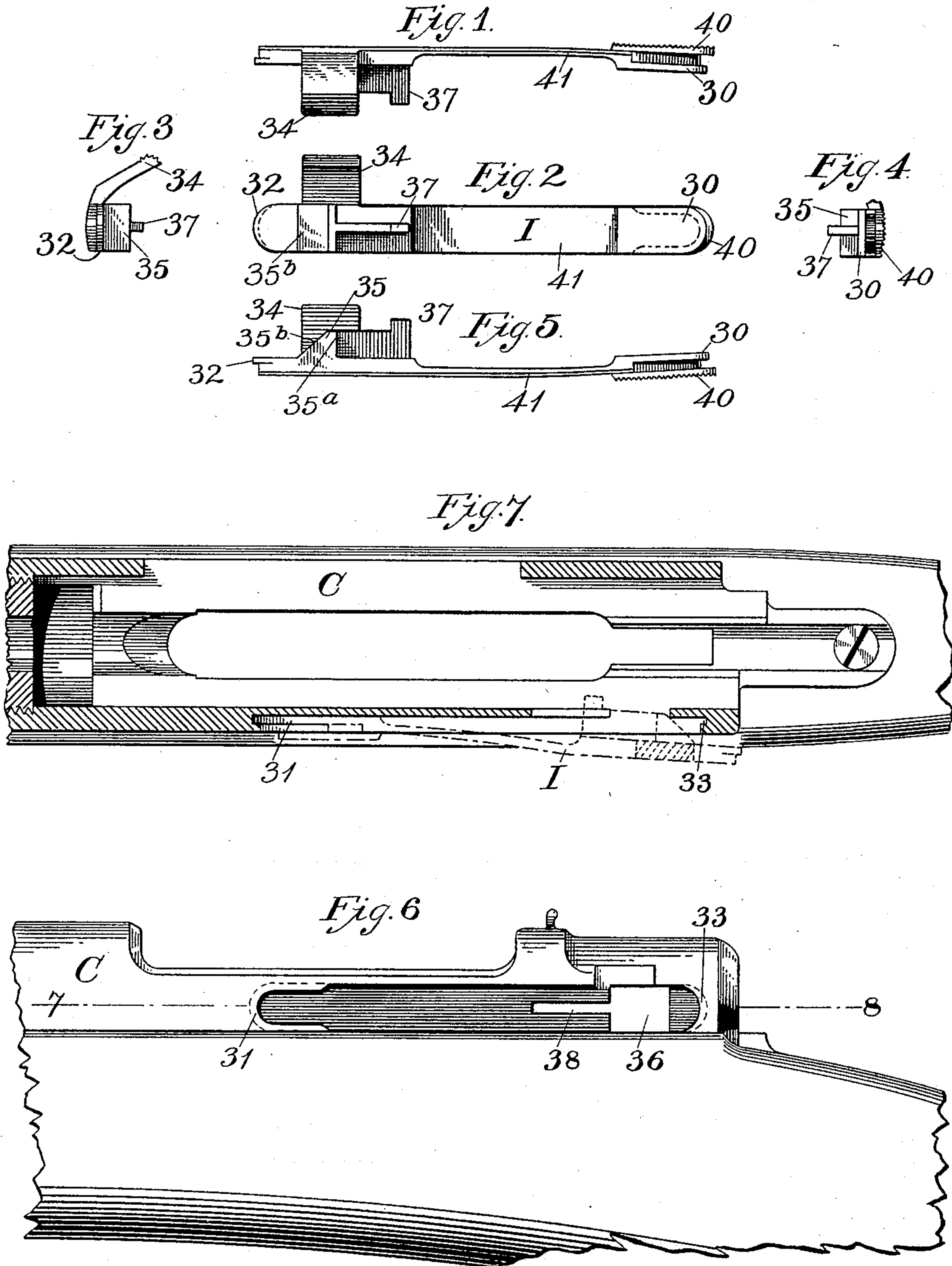
2 Sheets—Sheet 1.

W. P. LARAWAY.

COMBINED BOLT STOP AND CARTRIDGE EJECTOR FOR BOLT GUNS.

No. 579,096.

Patented Mar. 16, 1897.



Witnesses
William A. Lorenz.
L. H. Horner.

Inventor
W. P. Laraway
By his Attorney
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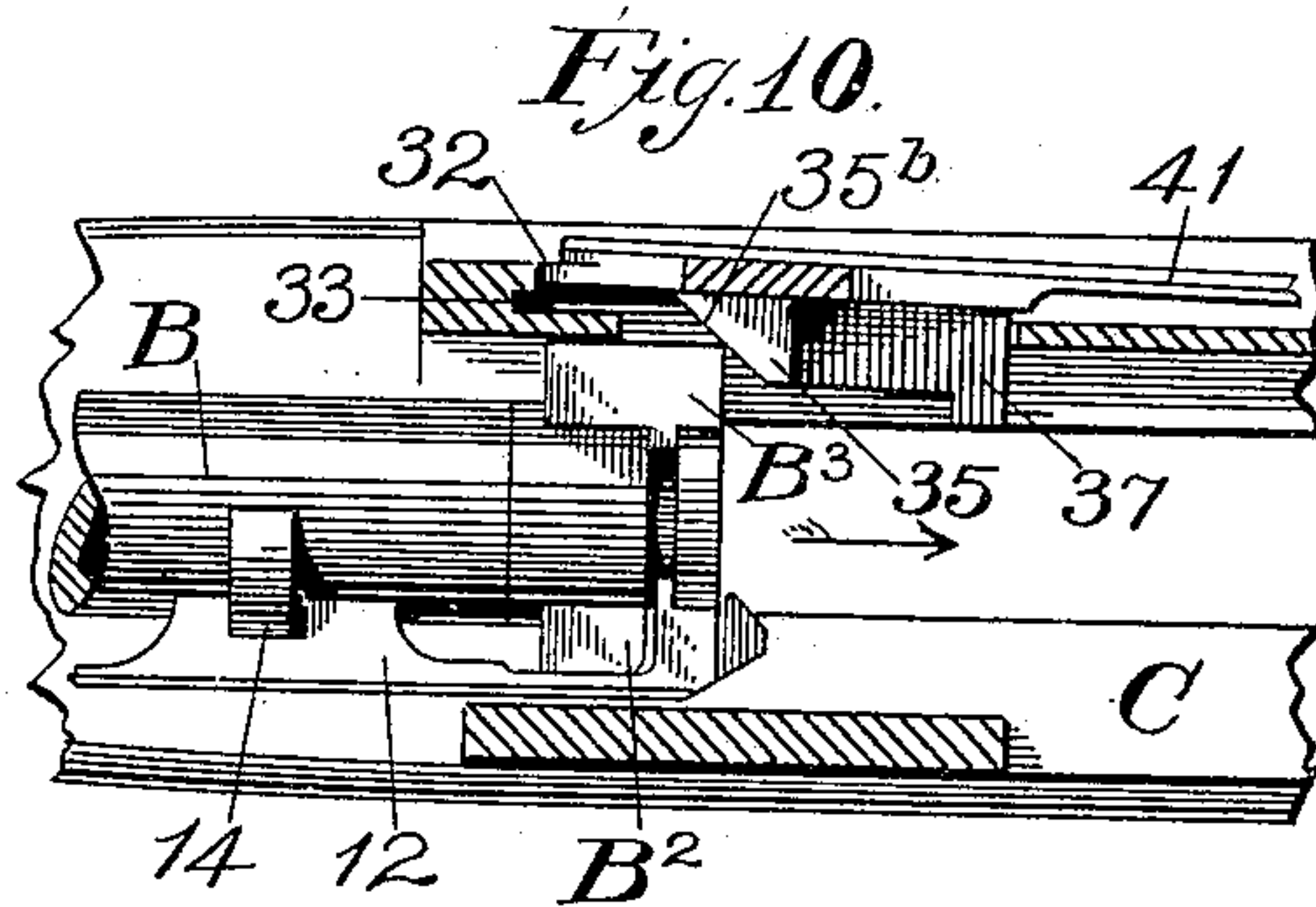
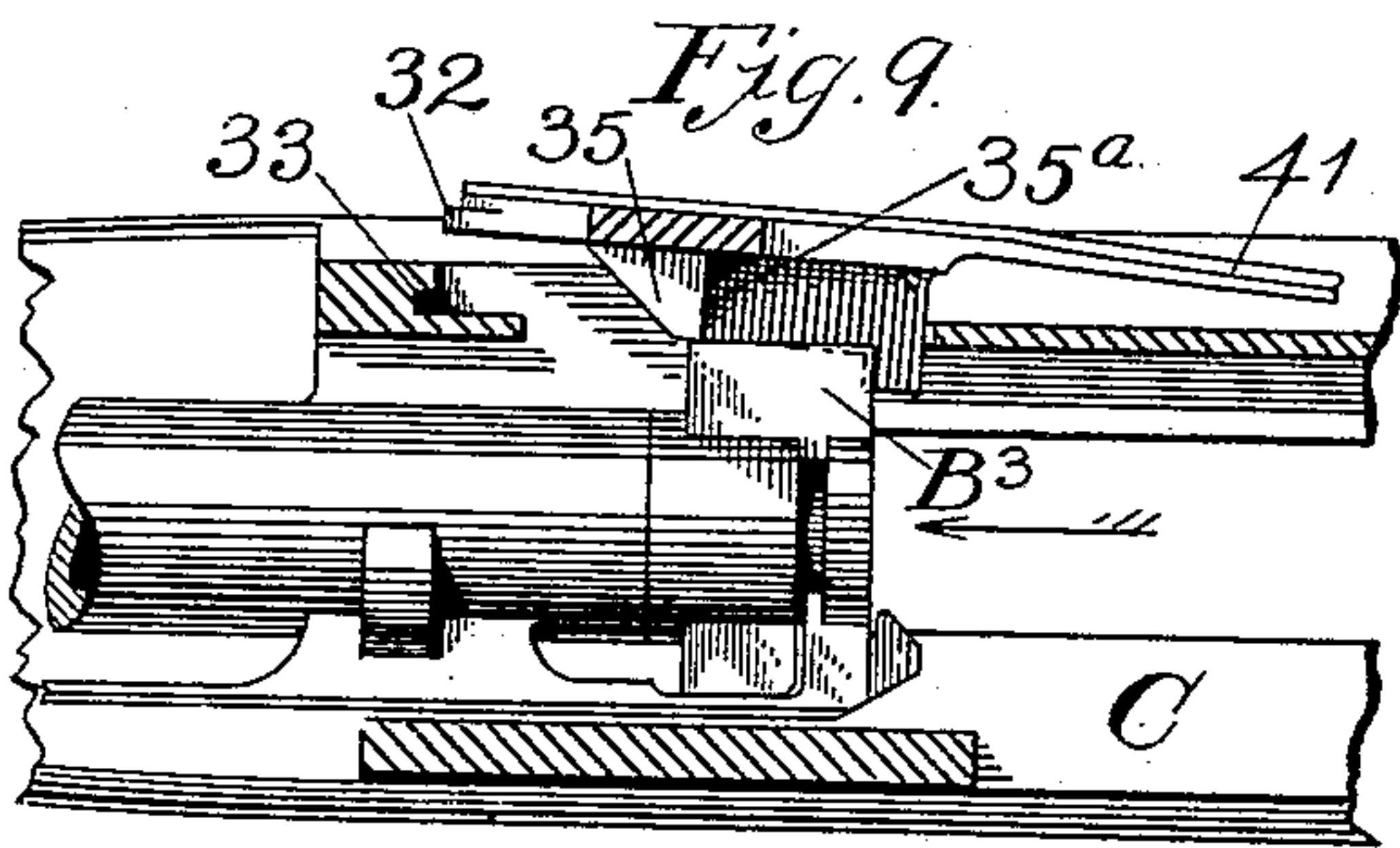
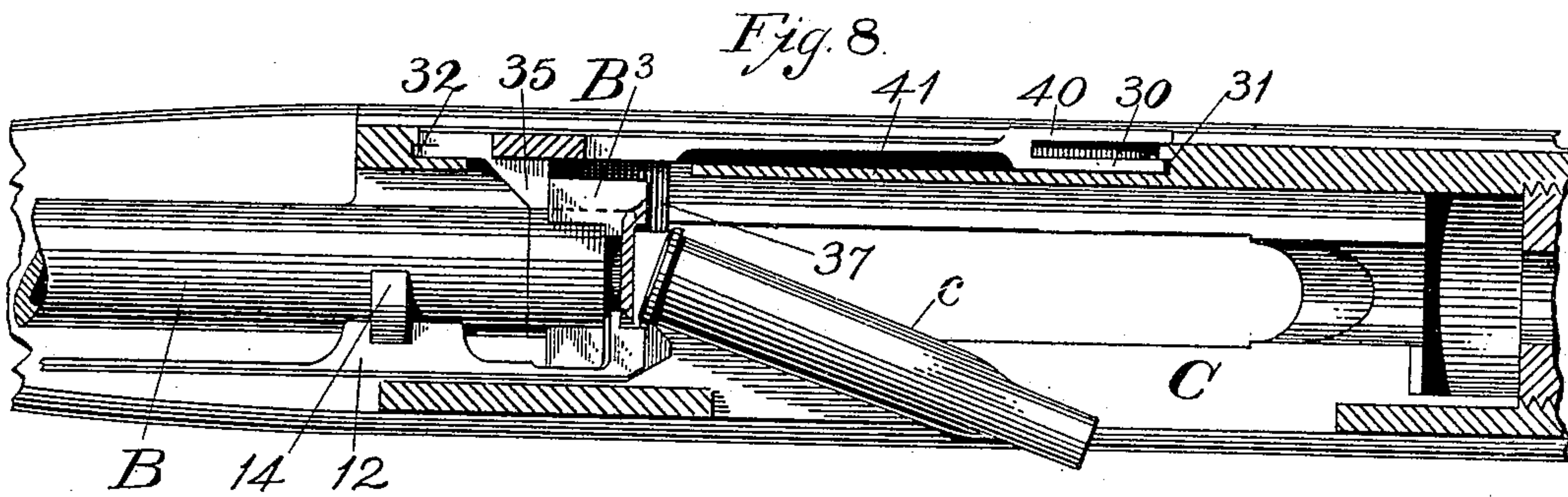
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UNITED STATES PATENT OFFICE.

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COMBINED BOLT-STOP AND CARTRIDGE-EJECTOR FOR BOLT-GUNS.

SPECIFICATION forming part of Letters Patent No. 579,096, dated March 16, 1897.

Application filed April 20, 1896. Serial No. 588,263. (No model.) Patented in England May 5, 1896, No. 9,570; in France May 9, 1896, No. 256,228; in Belgium May 9, 1896, No. 121,276; in Italy May 9, 1896, LXXXI, 279, and in Austria July 28, 1896, No. 46/3,018.

To all whom it may concern:

Be it known that I, WILLIAM P. LARAWAY, a citizen of the United States, residing at Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Bolt-Guns, of which the following is a full, clear, and exact specification.

This invention relates to certain improvements in that class of firearms comprising what are commonly known as "bolt-guns," in which the breech is closed by a bolt containing the firing-pin and the main spring therefor. To operate a gun of this class, the bolt is moved back and forth by the operator from its closed position to an extent determined by a stop, which allows the bolt to be drawn back to a definite extent sufficient to enable the discharged shell to be extracted from its chamber and ejected from the receiver, also allowing of the insertion of a new cartridge.

This invention is patented in Great Britain, No. 9,570, dated May 5, 1896; in France, No. 256,228, dated May 9, 1896; in Belgium, No. 121,276, dated May 9, 1896; in Austria, No. 46/3,018, dated July 28, 1896, and in Italy, Vol. LXXXI, No. 279, dated May 9, 1896.

The object of this invention is to provide a simple, inexpensive, and preferably integral device adapted when in its operative position on the firearm to form an abutment or stop to limit the rearward movement of the bolt during the normal operation thereof, as above referred to, and also adapted to cooperate with the extractor in positively ejecting the discharged and withdrawn cartridge-shell from the receiver. Thus by the employment of what may be, and preferably is, an integral piece of mechanism I accomplish what has hitherto been done by various devices each comprising several separate pieces, some of which have necessarily been fragile in construction and all of which have been open to the serious objection of multiplicity of parts, which is of peculiar importance in the construction of firearms.

In pursuance of the twofold object above stated I have so arranged the method of attaching the device upon the receiver as to en-

able it to be easily and quickly assembled and disassembled therefrom and so arranged that the portion which serves as the bolt-stop may readily be pushed aside by the thumb of the operator, so as to enable the bolt to be withdrawn from the receiver in the operation of disassembling.

My improvements comprising this invention are herein shown to be adapted to and embodied in a gun similar to that shown in an application for Letters Patent of the United States, Serial No. 588,365, filed April 20, 1896, by Edward G. Parkhurst, for an improved magazine bolt-gun, it being understood, however, that this invention is capable of application to many other firearms of the general type herein referred to.

Figure 1 of the drawings is a plan view of my improved combined bolt-stop and ejector. Fig. 2 is a view projected from Fig. 1, showing that side of the device which faces toward the inside or bolt of the gun. Fig. 3 is a rearward end view, and Fig. 4 is a front end view, projected from Fig. 2. Fig. 5 is a view, also projected from Fig. 2, of the under side of the device. Fig. 6 is a left-hand side view of a portion of the receiver and stock of a gun similar to that shown in the Parkhurst application above referred to, showing the manner in which the receiver is recessed to receive my improved device. Fig. 7 is a plan view in section, taken on the line 7 8 of Fig. 6, showing the recess for the stop and ejector and showing also by dotted lines the device itself in the position in which it is applied to the receiver in the operation of assembling. Fig. 8 is a plan view, also in section, taken on the line 7 8 of Fig. 6, showing my improved device in position in the receiver and showing also a bolt drawn to its backward position against the shoulder of the stop. In this figure is also shown a cartridge-shell in the operation of being ejected from the gun by the joint operation of the extractor and the ejector. Fig. 9 is a plan view of a sufficient portion of the mechanism to enable the method of withdrawing the bolt from the receiver to be understood, the bolt-stop having been pushed forward so as to enable its rearward

or latching end to be sprung outwardly to the position shown in this figure, in which it clears the stop-engaging portion of the locking-lug B^3 of the bolt-head. Fig. 10 is a view similar in extent to that of Fig. 9, illustrating the operation of assembling the bolt by pushing it in the direction of the arrow into the receiver. Fig. 11 is a view of the left-hand side of the bolt, showing the grooves made therein to clear the ejector.

The bolt-stop and ejector (designated in a general way by I) is preferably an integral piece made of a sufficient length to insure the desired degree of elasticity. It is provided at its forward end with a flange 30, which is fitted to slide in a corresponding undercut recess 31 in the receiver. The opposite end of the receiver is provided with a latch 32, fitted to engage with a correspondingly undercut recess 33 in the receiver. The ends of these flanges and their recesses are preferably of the semicircular form shown in Fig. 6, in order to enable the recesses to be conveniently cut out by a rotary milling-cutter. The stop I is also provided with the thumb-piece 34, which projects above the receiver to an extent sufficient to enable it to be engaged by the finger or thumb of the operator, the surface of the thumb-piece being preferably checked or fluted for that purpose.

As a means for stopping the bolt the abutment 35 is made to project through the opening 36 in the receiver into the path of the stop-engaging lug B^3 of the bolt-head, as shown in Fig. 8. The forward face 35^a of this abutment is made substantially at right angles to the path of movement of the bolt, while the rearward face 35^b is made inclined to enable the bolt by engaging therewith to spring the bolt-stop out of the way in the operation of inserting the bolt, as shown in Fig. 10.

As a means for effecting the positive ejection of the cartridge-shells I have provided an inwardly-extending fin 37, which projects through the recess 38 in the receiver and into the groove 39 of the bolt B. The forward end of this ejecting-fin is located sufficiently far in front of the abutting face 35^a of the bolt-stop to enable it to project beyond the rearward position of the front end of the bolt, as shown in Fig. 8, so as to throw the cartridge-shell c positively to one side, as shown in that figure, cooperating with the extractor 12, which is attached to and drawn back by the bolt-head.

At its forward end the bolt-stop and ejector is preferably provided with a projecting thumb-piece 40, which is adapted to cover the opening made by the backward or latching movement of the bolt-stop with relation to the receiver, and the outward surface of the thumb-piece is preferably checked to enable the operator to seize it more positively. The extended portion 41, lying between the thumb-piece 40 and the ejector-fin 37, is reduced so as to form a spring, and is preferably curved,

as shown in Figs. 1 and 5, so as to hold the stop and ejector end of the device with spring-tension to its seat in the receiver when the flange 30 is seated in its recess 31 of the receiver.

The groove 39 in the bolt B (best shown in Fig. 11) is made of a sufficient depth to enable the ejector to project well within the pathway of the cartridge. The path of that groove must be made to suit the movement of the bolt, the lateral divergence of the groove shown in Fig. 11 being for the purpose of enabling the bolt to make the quarter-turn movement necessary to lock it in its forward position, as shown and described in the Parkhurst application above referred to.

In the assembling operation my improved bolt-stop and ejector is applied to the receiver in the position shown in dotted lines in Fig. 7, with the flange 30 entering its recess 31 in the receiver, the elasticity of the reduced portion 41 of the bolt-stop enabling the rearward portion to spring outwardly while the bolt-stop is being pushed forward from the dot-and-dash position of Fig. 7 until its latch 32 reaches the position shown in Figs. 9 and 10 with relation to the receiver, which allows the rearward end to spring down upon its seat, when the latch 32 can be pushed backward into its recess 33, as shown in Fig. 8. To disassemble the parts, the operations are reversed, the bolt-stop being first pushed forward until its rearward latch 32 can be pushed out to the position shown in Fig. 9, when it is drawn backwardly to the position shown in Fig. 7, which allows of its removal.

When the bolt-stop is in the latched position, (shown in Fig. 8,) it is obvious that the repeated blows imparted to the face 35^a of the abutment 35, due to the stopping of the bolt by the abutment and the impact of the cartridge-shell against the ejector, all serve to retain the bolt-stop more firmly in its latched position.

In order to enable the bolt-head to be withdrawn, it is only necessary to push the bolt-stop forward by means of either of its thumb-pieces 34 or 40, so as to bring the latch 32 out of its recess 33, when the rearward portion of the bolt-stop may be swung outwardly to the position shown in Fig. 9, the forward flange 30 remaining still in engagement in its recess. After the bolt has been withdrawn the bolt-stop springs back to its seat upon the receiver, where it may remain until the parts are again assembled. Upon the insertion of the bolt from the rearward end of the receiver, as shown in Fig. 10, it impinges against the inclined surface 35^b of the bolt-stop, thereby forcing its rear end outwardly again to the position shown in Fig. 9, the bolt-stop springing back again to its seat in the receiver as soon as the lug B^3 has passed by the face 35^a of the abutment, the next backward movement of the bolt against the abutment 35 serving to move the bolt-stop to its latched position. (Shown in Fig. 8.)

It is not an essential feature of this invention that the device comprising the bolt-stop and ejector be cut out, forged, or otherwise made in a single solid piece. The conditions to which the term "integral" is herein applied would be satisfied by a construction in which two or more parts were riveted or otherwise secured together to form the device, so long as that device in its entirety operates as a unitary thing.

I claim as my invention—

1. In a firearm, in combination with the bolt thereof, a detachable bolt-stop therefor, provided with an elastic receiver-engaging portion, and provided with an abutment 35, the abutment being provided with a stopping-face for the bolt, substantially at right angles to the motion thereof, and having an inclined rearward face whereby the stop may be sprung outwardly by the bolt in the assembling operation, substantially as described.

2. A bolt-stop and ejector provided with an elastic extension terminating in receiver-engaging flanges, the extended or elastic portion thereof being formed and set so as to hold the bolt-stop and ejector portion with spring tension normally toward their operative positions, substantially as described.

3. The herein-described bolt-stop, having an extended elastic portion provided with retaining-flanges, and having a latching-flange at its rearward end, an abutment integral therewith and projecting therefrom into the path of movement of the bolt, substantially as described.

4. A detachable combined bolt-stop and cartridge-ejector, consisting of an extended flexible plate provided at its ends with engaging and latching flanges respectively, and of an abutment integral therewith, and projecting therefrom into the path of movement of the bolt, provided with an extension projecting

into the pathway of the extracted cartridge-shell, for the purpose specified.

5. In a firearm, in combination with the bolt thereof, a detachable combined bolt-stop and cartridge-ejector, consisting of a flexible plate provided at its ends with engaging and latching flanges respectively, and having a T-shaped projection extending laterally therefrom into the pathway of the bolt and of the extracted shell, the bolt having a lug B³ for engaging with the abutment, the lug being slotted to allow of the passage of the cartridge-ejector, substantially as described.

6. A bolt-stop and ejector for the purpose specified, provided with a forwardly-extending flexible plate, terminating in receiver-engaging flanges, the rearward end being adapted as a latch, an abutment integral therewith and projecting therefrom into the path of movement of the bolt, having its front face substantially at right angles to the direction of movement of the bolt, and having its rearward face beveled, substantially as described and for the purpose specified.

7. In a firearm, in combination with the receiver thereof, a bolt-stop therefor, provided with a forwardly-extending elastic member terminating in receiver-engaging flanges, its rearward end being adapted as a latch, a stop-abutment and an ejector integral therewith and extending laterally therefrom in the form of a T, into the path of movement of the bolt and the cartridge-shell, the receiver being recessed to receive the flange and the latching portions of the bolt-stop, and having a T-shaped mortise through its side wall to receive the inwardly-projecting stop-abutment and ejector.

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Witnesses:

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