

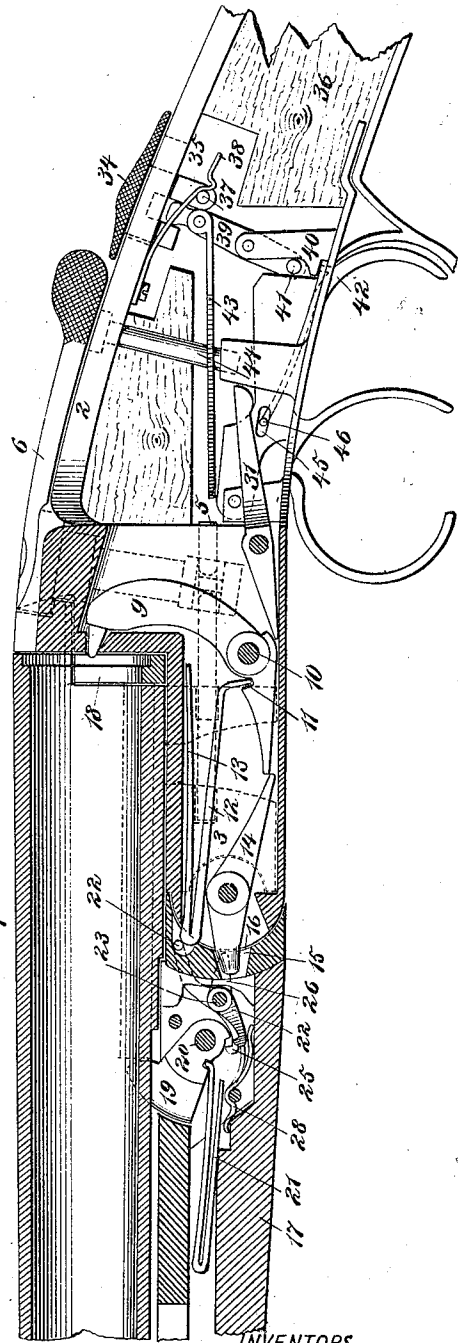
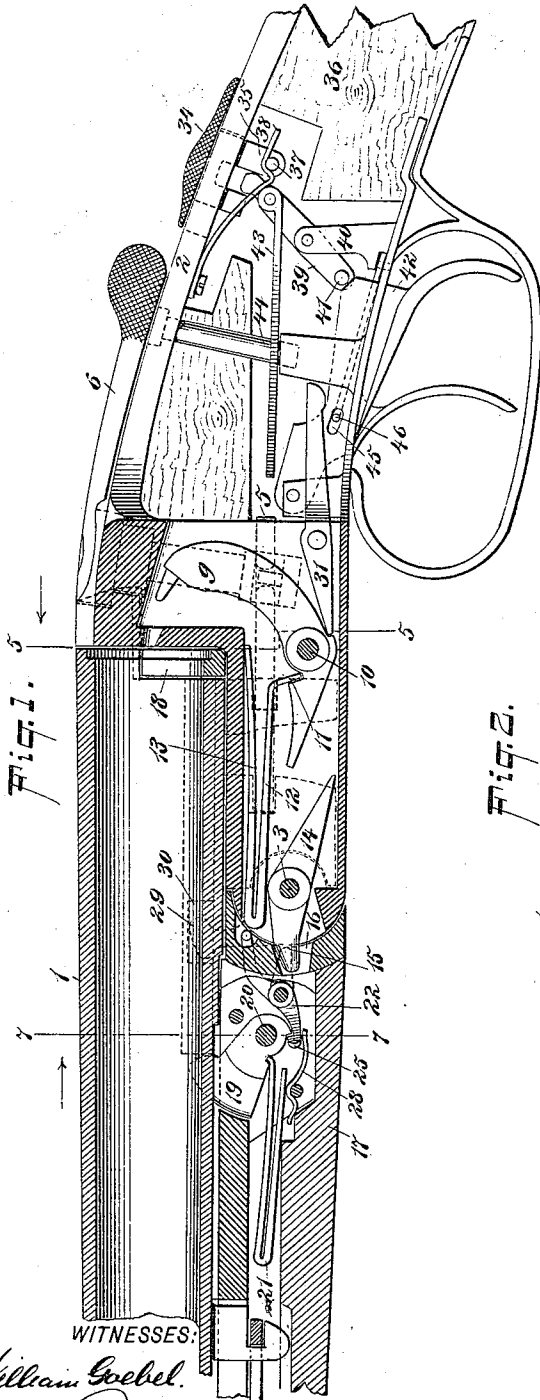
(No Model.)

3 Sheets—Sheet 1.

R. C. FAY & G. E. HUMPHREYS.
EJECTOR FOR BREAKDOWN GUNS.

No. 528,508.

Patented Oct. 30, 1894.



WITNESSES:

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M. V. Bidgood.

INVENTORS

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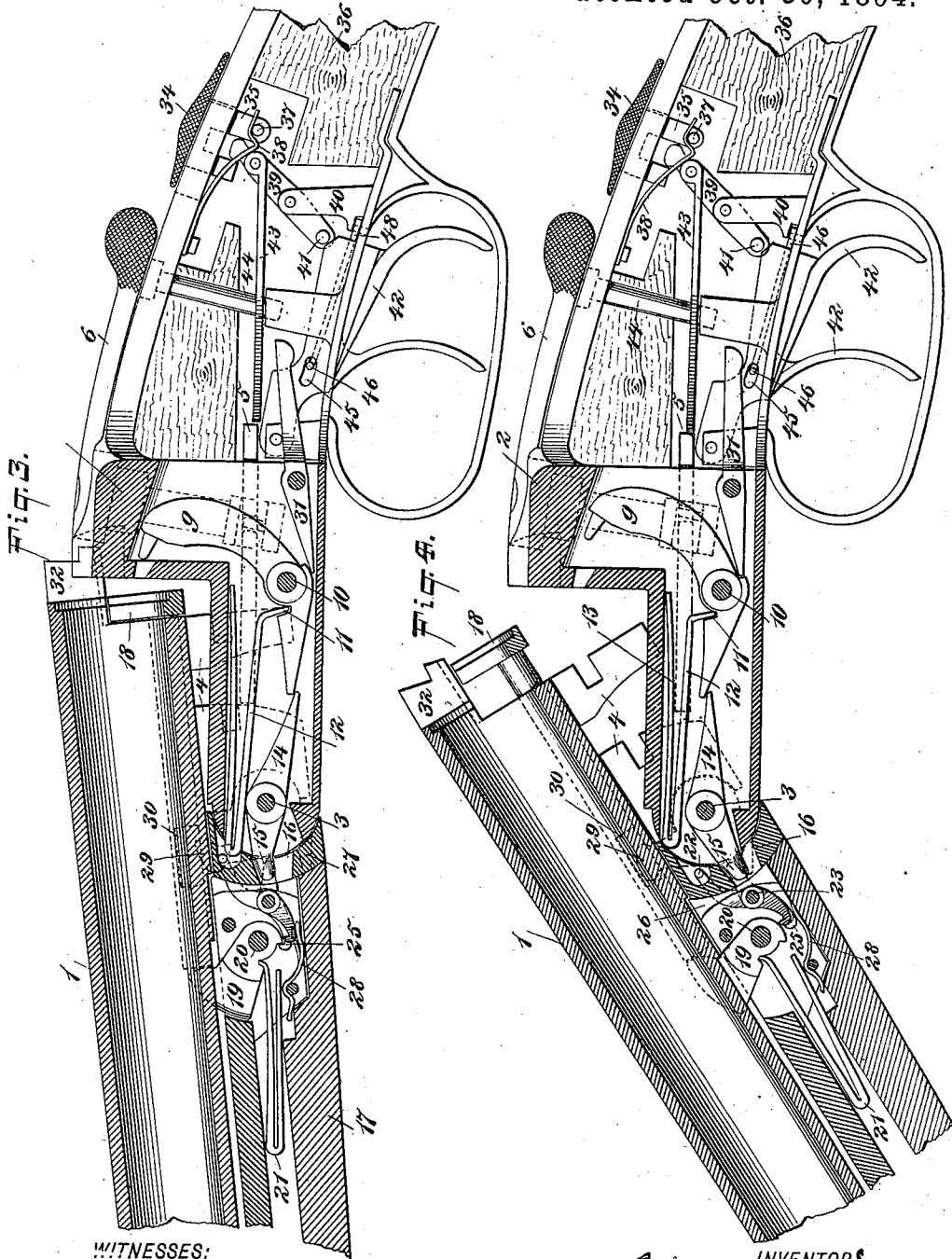
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3 Sheets—Sheet 2.

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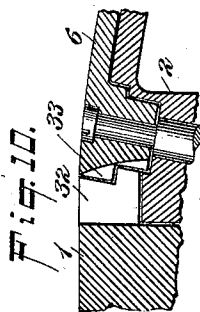
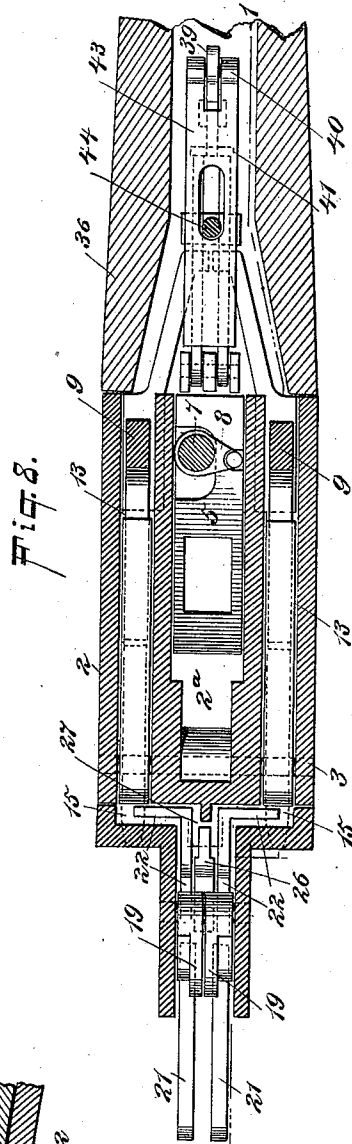
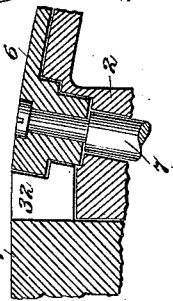
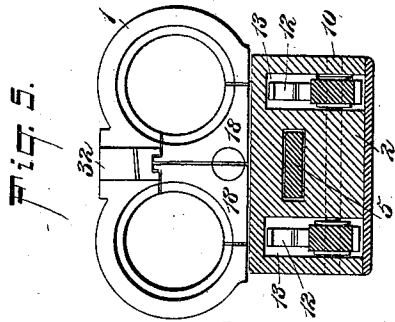
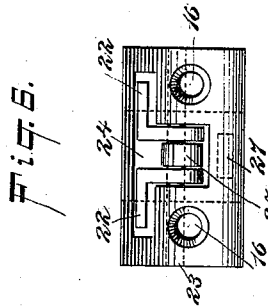
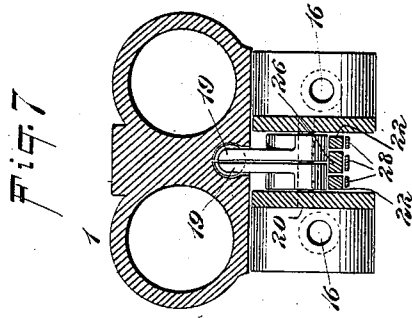
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UNITED STATES PATENT OFFICE.

RIMMON C. FAY AND GEORGE E. HUMPHREYS, OF ILION, NEW YORK, AS-SIGNORS TO THE REMINGTON ARMS COMPANY, OF SAME PLACE.

EJECTOR FOR BREAKDOWN GUNS.

SPECIFICATION forming part of Letters Patent No. 528,508, dated October 30, 1894.

Application filed February 14, 1894. Serial No. 500,109. (No model.)

To all whom it may concern:

Be it known that we, RIMMON C. FAY and GEORGE E. HUMPHREYS, citizens of the United States, residing at Ilion, county of Herkimer, State of New York, have invented certain new and useful Improvements in Double-Barreled Shotguns, of which the following is a specification.

The object of our invention is to produce a shot gun whose mechanism shall be more simple and positive in its action than those in common use, to increase the general efficiency and durability of the gun and to lessen the cost of production.

Our invention relates, broadly speaking, to a class of guns known as automatic ejector, hammerless shot guns, operating on the "break-down" principle. We will first describe our improvements in detail with reference to the accompanying drawings and then point out in the claims the novel parts.

In said drawings: Figure 1 represents a longitudinal section of our improved gun showing the operating parts in a position of safety but cocked and ready to be discharged when the safety is thrown. Fig. 2 represents a central longitudinal section of our improved gun showing the safety thrown and the gun discharged. Fig. 3 is a central longitudinal section showing the barrels of the gun turning on the breech joint. This view illustrates the gun during the preliminary movement of the opening. Fig. 4 is a central longitudinal section of our improved gun showing the limit of the movement of the barrels upon their pivot at the breech with one of the cartridge ejectors in its outward and extreme position. Fig. 5 represents a cross section of our improved gun on the line 5-5, Fig. 1. Fig. 6 is a rear end view of the fore-end removed. Fig. 7 is a cross section on the line 7-7, Fig. 1. Fig. 8 is a horizontal section showing certain of the main working parts. Figs. 9 and 10 are detail views showing the closed and open positions of the top lever.

In the longitudinal sectional views above referred to, it will be understood that the continuity of the sectional line is at times broken, said line being represented at 1-1, Fig. 8, for the purpose of bringing out some special feature at a particular point or points and the

drawings are to be read in this light. As far as possible the continuity of the section upon a constant line has been maintained.

The gun barrels 1 are connected to frame 2 by usual pivot bolt 3 and have lugs 4 notched to engage a locking bolt 5 which is adapted to be operated by a top-lever 6, top lever bolt 7 and crank arm 8. The hammers 9 are pivoted at 10 and each is grooved at 11 to receive the down-turned end of its main spring 12. The main spring is preferably not fixed to the frame but is placed in a longitudinal groove 13 and its connection to the hammer by the groove 11 is such that the action of cocking the hammer shifts the main spring longitudinally.

For each hammer we arrange upon the pivot bolt 3 a cocking lever 14 whose rearwardly projecting arm engages beneath the forward arm of the hammer. The forward arm of the cocking lever is tapered as shown at 15 and enters a correspondingly tapered recess or hole 16 in the rear surface of the fore-end 17. The holes 16 are made sufficiently larger than the tapered ends of the cocking levers and are so tapered as to permit the ends of the cocking levers to enter them whatever the position of the cocking lever so that the fore-end may be taken off and replaced whether the hammers be cocked or uncocked.

We design to have the ejector action of the two barrels independent but capable of conjoint action when required so that either or both of the shells can be ejected according to whether one or both of the cartridges have been discharged.

18 is the divided ejector having an independently operating part for each barrel. With the rear of each part engages an ejector hammer 19 pivoted at 20 on the fore-end and engaged by the ejector-hammers spring 21.

22, 22 are the ejector hammer sears pivoted at 23 on the fore-end and having their forward arms adapted to engage a notch or shoulder on each ejector hammer 19 and their rearward arms passing through a slot 24 in the rear of the fore-end 17 and adapted to be engaged by the forward end of the main springs 12. Between the ejector hammer sears 22 and upon the same pivot 23 we arrange the ejector hammer releasing sear 25

which has its forward end hooked somewhat farther from the pivot 23 than the hooks of the sears 22 and whose rearward arm 26 projects through the rear of the fore-end in position to engage a lug 27 on the frame when the gun is broken.

28 is a three-leaf spring. The leaves of each bear upon and operate independently the several parts 22 and 25. The divisions between the leaves of the said spring are sufficiently extended to insure the independent operation of its parts.

The extractor 18 is positively limited in its motion by means of an arm 29 fixed to the gun frame and entering a suitable slot or recess 30 (shown in dotted lines) in the extractor.

In putting the gun together, the tapered forward end 15 of the cocking levers 14 will, as already stated, readily enter the holes 16 in the rear of the fore-end whatever the position of the cocking levers be. If the gun be uncocked, the opening of the breech will cock it as the cocking lever will have its rear end lifted by the downward movement of the fore-end as shown in Fig. 4 so tilting back the hammer until it is caught by the sear 31. This movement slides the main spring 12 to the position shown in Fig. 4 and it retains this position when the gun is again closed as in Fig. 1. In this position it does not engage the rear ends of the extractor hammer sears 22 which accordingly are in engagement with the shoulder on the extractor hammer so that the gun can be opened and closed without operating the ejector. If now both barrels be discharged bringing the hammers to the position shown in Fig. 2, the main springs are slid forward to engage and lift the rear ends of the sears 22. The action of the ejector hammer springs 21 therefore as the gun is opened causes the ejector hammers 19 to turn slightly until they are arrested by the engagement of their shoulders with the hook of the releasing sear 25. This slight shifting of the hammers prevents their re-engagement by the sears 22 when the latter are released by the main springs 12 on opening the gun. The ejector hammers and their sears will now move with the fore-end around the pivot bolt or frame joint as the gun opens until the rear arm 26 of the releasing sear 25 strikes the lug 27 on the frame, when the releasing sear is caused to release both hammers and they suddenly project the ejector and eject the shells from the gun. If either of the barrels has not been discharged and its hammer is still cocked, the corresponding main spring will remain in the position shown in Fig. 1 and the corresponding sear 22 in engagement with its ejector hammer 19 so that the ejector in that barrel will not be operated when the gun is opened. When the gun is closed, the ejector is pushed in by impinging on the face of the frame in customary manner and in its action forces down the ejector hammers 19 in position to be again engaged by the sears 22.

The barrels have a notched extension 32 engaging the shoulder of the top lever 6 as shown in Fig. 9. The top lever is grooved as shown in Fig. 10 at 39 to permit the extension to pass up when the top lever is turned.

34 is a safety slide milled so as to be capable of easy operation by the thumb. It has two arms 35 projecting into the chamber of the stock 36 of which arms the rear and longer one bears a pin 37 with which engages a humped spring 38.

39 is the safety-slide trigger-locking-lever bearing at its upper end between the arms 35 of the safety-slide, pivoted on a supporting arm 40 on the trigger plate and provided at its lower end with a pin 41 projecting on each side to engage the backs of triggers 42.

43 is the safety-slide bolt hinged to the lever 39 and guided by the bolt 44 in the plane of the barrel locking bolt 5. When the bolt 5 is retracted to unlock the barrels and the gun is opened, it strikes safety-slide bolt 43 and moves it in the same direction. This movement causes the trigger locking lever 39 to swing in its support and push back the safety-slide until its pin 37 engages behind the hump of the spring 38. As soon as it has passed the highest part of the spring, the pressure of the spring completes the movement throwing forward the lower part of the locking lever 39 so that the pin therein passes over and locks the triggers.

The space between the bolt 5 and the bolt 43 is such that if when the gun is open, the slide 34 be pushed forward at the same time that both triggers are pulled, the safety pin 41 will slide from the triggers as the gun is closed and the hammers may thus be let down gradually without firing the cartridges.

The trigger spring usually engages in a round hole in the trigger so that if the spring is long or short a portion of its power is consumed in a pulling or pushing action against the front or back side of the hole which impairs the delicacy of the trigger adjustment. To obviate this trouble we form the hole 45 in the trigger which receives the end of trigger spring 46 oblong instead of round. This form allows a more delicate adjustment of the trigger spring and insures its power being applied in the proper line of pressure.

Having thus described our invention, the following is what we claim as new therein and desire to secure by Letters Patent:

1. The combination of the ejectors, the ejector hammers, the ejector hammer sears, a single ejector hammer releasing sear common to both and the gun frame having a lug or part adapted to engage and operate said ejector hammer releasing sear, substantially as set forth.

2. The combination of the gun frame, the barrels, the main hammers, the main springs, the ejectors, the ejector-hammers, the ejector-hammer-sears and a releasing sear common to both ejector-hammers, and means operated

by the cocking and discharging of said main hammers for tripping said ejector-hammer-sears, as set forth.

3. In a fire-arm, the combination of the ejector, the ejector hammer, the ejector-hammer-sears hooked to engage projections on said ejector hammers and the ejector hammer releasing sear having a hook located forward of the ejector hammer sear hooks, whereby the hammer is caught by the common releasing sear only after being released by the hammer sear, substantially as and for the purposes set forth.

4. The combination of the gun frame, the barrels jointed thereto, the divided ejector, independent hammers for the two parts of said ejector, independent sears for said hammers, a releasing sear common to both ham-

mers, and means for automatically releasing said common sear, substantially as set forth. 20

5. The combination of the gun frame, the barrels jointed thereto, the ejector, the hammers therefor, the releasing sear common to both hammers, the fore-end wherein said releasing sear is pivoted and a part or projection rigid with the gun frame adapted to engage said releasing sear whereby the releasing sear turns with the ejector hammers and fore-end in opening the gun and then suddenly releases the ejector hammers substantially as and for the purposes set forth. 30

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Witnesses:

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