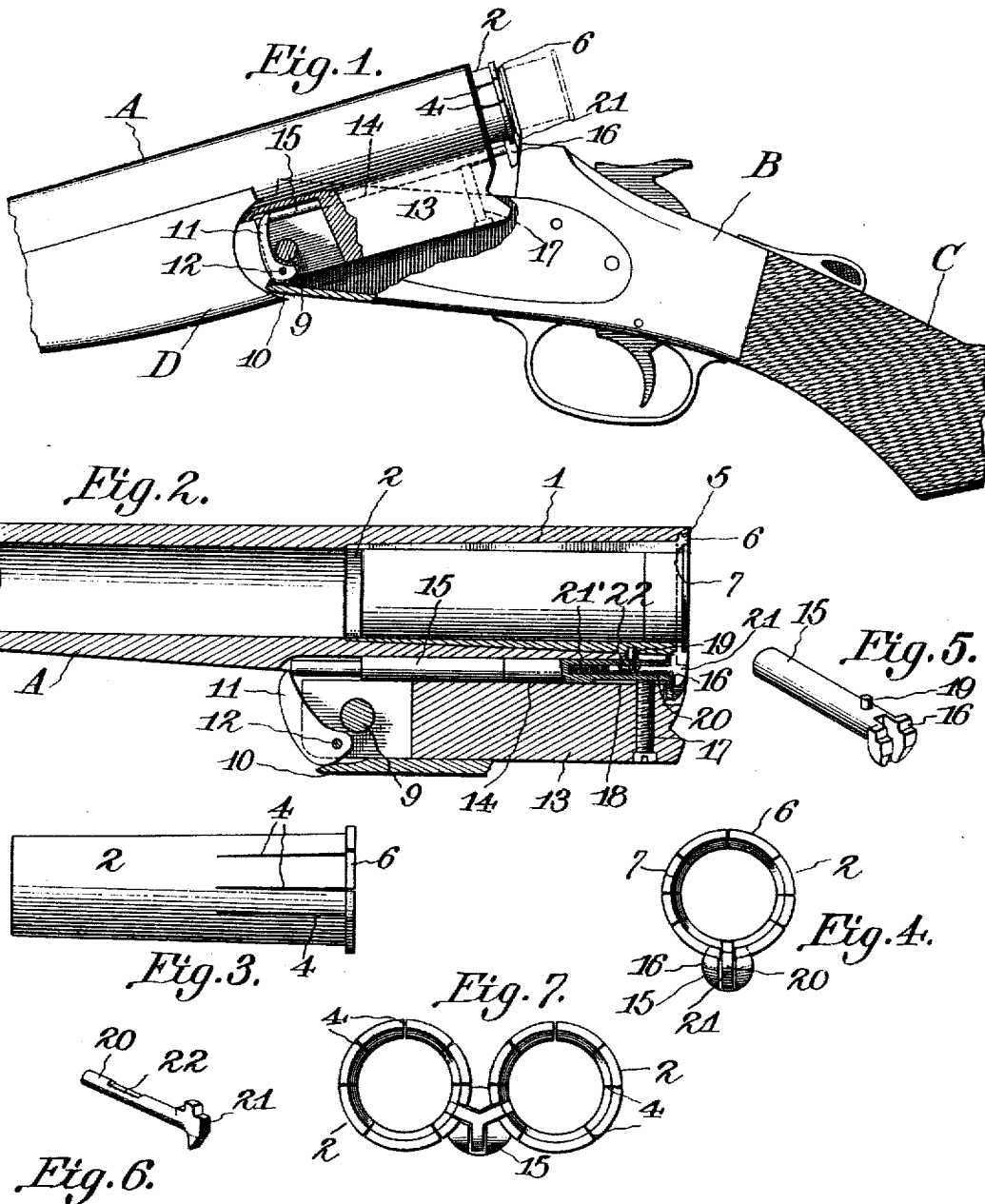


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F. P. WHITE.
SHELL EJECTING MECHANISM FOR FIREARMS.
APPLICATION FILED OCT. 27, 1903.



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UNITED STATES PATENT OFFICE.

FRANKLIN P. WHITE, OF SHALLOTTE, NORTH CAROLINA.

SHELL-EJECTING MECHANISM FOR FIREARMS.

SPECIFICATION forming part of Letters Patent No. 783,561, dated February 28, 1905.

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To all whom it may concern:

Be it known that I, FRANKLIN P. WHITE, a citizen of the United States, residing at Shallotte, in the county of Brunswick and State of North Carolina, have invented a new and useful Firearm, of which the following is a specification.

This invention relates to certain improvements in breech-loading firearms, and has for its principal object to provide a novel form of shell-ejector by means of which a shell may be drawn from the barrel after firing.

A further object of the invention is to provide a shell-holder which will firmly embrace and back the shell during firing, and thus prevent rupture of the shell, whether it be formed of paper or metal, so that the shell may be refilled and used again and again.

A still further object of the invention is to provide a firearm construction in which the shell is received in a supporting-sleeve movable into and out of the breech end of the barrel.

A further object of the invention is to provide a firearm with a shell-supporting sleeve so arranged and constructed as to contract while being forced into the barrel, and thus firmly embrace and reinforce the shell and which will expand automatically during outward movement from the barrel, so as to release the shell.

With these and other objects in view, as will hereinafter more fully appear, the invention consists in the novel construction and arrangement of parts hereinafter described, illustrated in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that various changes in the form, proportions, size, and minor details of the structure may be made without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawings, Figure 1 is a side elevation, partly in section, of the breech end of a firearm constructed in accordance with the invention. Fig. 2 is a longitudinal sectional elevation of the breech end of the barrel. Fig. 3 is a side elevation of the shell-carrying sleeve. Fig. 4 is an end elevation of the same. Fig. 5 is a detail perspective

view of the extractor for the shell-carrying sleeve. Fig. 6 is a similar view of the shell-ejecting pin. Fig. 7 is an end elevation illustrating the application of the invention to a double-barrel gun.

Similar numerals of reference are employed to indicate corresponding parts throughout the several figures of the drawings.

The present invention is applicable to all classes of breech-loading firearms, whether made for ball cartridges or shells and of the rifle or shotgun type.

In the drawings there is shown a single-barrel gun, in which A designates the barrel; B, the frame; C, the rear stock, and D the fore stock. These members may be of the ordinary construction. The breech end of the barrel is bored out to form a tapering opening 1 of a diameter somewhat larger than the remaining portion of the bore, and in this tapering opening is placed a shell or cartridge carrier 2, the outer surface of which is tapered or inclined to correspond to the tapered bore 1. The shell-carrying sleeve 2 is split at one point for its entire length, and at suitable intervals are formed a number of parallel longitudinally-disposed slots 4, that are cut through the thicker portion of the carrier 2, and said sleeve is so formed as to have an inherent spreading or opening tendency, so that when removed from the bore 1 it will open out to its fullest extent. The rim-receiving groove 5 at the breech end of the barrel is enlarged for the reception of the flange 6 of the carrier, and in said flange is formed a groove 7 for the reception of the rim of the shell or cartridge. When in place, a shell within the carrying-sleeve will be firmly clamped and reinforced throughout the whole of its area, and thus all tendency to rupture will be avoided.

The barrel of the gun is pivoted between the breech-plates by a pin 9, arranged in the usual manner, and the lower front end of the forward extension 10 bears against a cam-lever 11, pivoted at 12 within a suitable recess formed in a block 13, that is secured to the barrel. In the block 13 is an opening 14, arranged parallel with the bore and serving to receive a sleeve-extracting pin 15, which

may be formed in one or more sections. The breech end of the pin is provided with a head 16, adapted to engage the flange 6 of the shell-carrying sleeve, and when the gun is broke the breech-plate 10, by engagement with the cam-lever 11, will force the extracting-pin 15 to the rear and positively move the sleeve until its rear end is projected for some distance beyond the breech end of the barrel. The outward movement of the head 16 is limited by the engagement of said head with the standing breech, and the parts are so proportioned and the cam-lever 11 so arranged that the movement will be gradual and the carrying-sleeve will not be withdrawn to the fullest extent until the cartridge or shell is wholly above the breech-block and in position to be ejected.

The pin 15 is held from turning by means of a stop screw or pin 17, the end of which fits within a suitable slot 18, formed in the under side of the pin, and serves also to limit longitudinal movement of the pin. In order to insure positive movement of the pin and the carrying-sleeve, the two are connected together by a screw 19, and when the barrel is turned to close the gun the cam-shaped head 16 of the pin will be engaged by the standing breech and the carrier will be forced positively into the tapered bore of the barrel and contract said sleeve around the shell.

The pin 15 is bored for the reception of a shell-ejector pin 20, having a suitably-shaped head 21 extending in part through the head 16 and the rim of the shell-carrying sleeve and serving to engage the rim of the shell. This pin may be projected by means of a small compression-spring 21', and its independent longitudinal movement is limited by the engagement of the screw or pin 19 with the ends of a slot 22, formed in said shell-ejector pin.

In the operation of the device the breaking of the gun will cause the bottom of the forward extension to engage the cam-lever 11 and force the pin 15 to the rear in order to move the carrying-sleeve out from the barrel. The outward movement is limited by the engagement of the tapered heads 16 and 21 with the face of the standing breech, so that while the movement of the shell and its carrier is positive there can be no independent movement of the shell-ejecting pin until the head 21 of the latter moves above the standing breech, or to the position shown in Fig. 1, at which time the spring 21' forces the pin outward and throws the shell from the carrying-sleeve. When the parts are being reassembled, the cam-shaped heads ride down the front of the standing breech, and the shell and its carrying-sleeve are slowly forced into the tapered bore of the barrel, so that the sleeve will be contracted and will firmly embrace and reinforce the cartridge or shell.

Having thus described the invention, what is claimed is:

1. In firearms, a shell-receiving sleeve, means for moving the same to assist in ejecting the shell, and means for limiting the movement of the sleeve.

2. In firearms, a shell-receiving sleeve, movable with the shell into and out of the breech end of the barrel, and means for ejecting the shell from the sleeve after outward movement of the latter has ceased.

3. In firearms, a shell-receiving sleeve movable with the shell into and out of the breech end of the barrel, and serving as a positive clamp for holding the shell in firing position, means for extracting the shell and sleeve, and means for ejecting the shell at the conclusion of the extracting movement.

4. In firearms, a sleeve adapted to limit movement into and out of the breech end of the barrel and serving to receive the shell in advance of its entrance to the barrel, an extractor for partly moving both the shell and the sleeve outward from the breech end of the barrel, and an ejector movable with the extractor and serving to eject the shell at the conclusion of the extracting movement.

5. In firearms, a shell-carrying sleeve, extracting mechanism for moving both the sleeve and shell from the breech end of the barrel, and means for positively limiting outward movement of the sleeve without interfering with further movement of the shell.

6. In firearms, a split sleeve for receiving the shell in advance of the movement of the latter to firing position, and means for partly extracting the split sleeve after each discharge of the firearm, to thereby permit spreading movement of the sleeve and the loosening of the shell.

7. In firearms, a split shell-receiving sleeve, an extractor for engagement with the sleeve, and an ejector for engagement with the shell, the ejector having a greater range of movement than the extractor.

8. In firearms, a shell-receiving sleeve, an extractor for the sleeve, and an ejector carried by the sleeve.

9. In firearms, a shell-receiving sleeve, an extractor for the sleeve, and a shell-ejector slidably mounted in the extractor.

10. In firearms, a shell-receiving sleeve, and a pair of telescopic extractors, one for engagement with the sleeve and the other with the shell, and a spring disposed between said extractors.

11. In firearms, a shell-receiving sleeve, a pair of telescopic extractors, one for engagement with the sleeve, and the other with the shell, the shell-extractor serving also as an ejector.

12. In firearms, a shell-receiving sleeve, a pair of extractors operable respectively on the sleeve and shell, said extractors engaging the

base of the standing breech during the preliminary extracting movement, and means for forcing the shell-extractor outward to eject the shell after movement of the sleeve-extractor has ceased.

13. In firearms, a barrel having its bore tapered and of increased diameter at the breech end, a split sleeve fitting within the tapered portion of the bore, a longitudinally-movable extractor-pin connected to the sleeve and having an inclined head for contact with the standing breech, means for moving the extractor-

pin, a shell-ejecting pin adapted to a guiding-opening in the extractor-pin and also provided with a tapered breech-engaging head, and a spring acting on the ejector.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

FRANKLIN P. WHITE.

Witnesses:

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