(No Model.)

C. M. BURTON.

CARTRIDGE SHELL EXTRACTOR.

No. 314,563. Patented Mar. 31, 1885.

Fig 2-

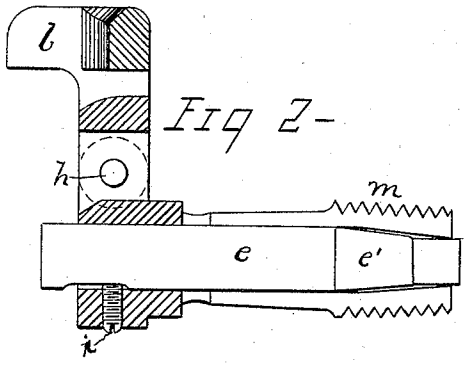


Fig 3-

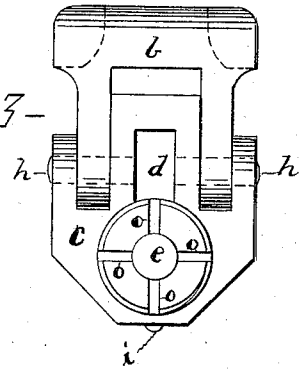


Fig 1-

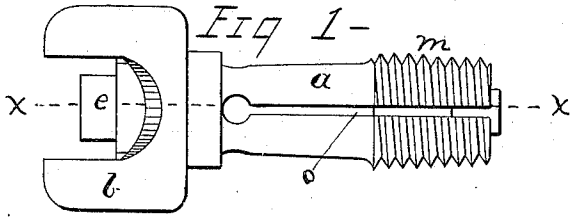


Fig 4-

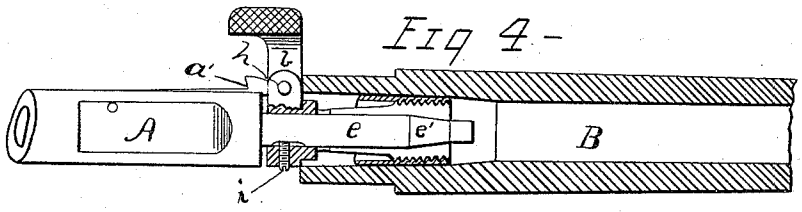


Fig 5-

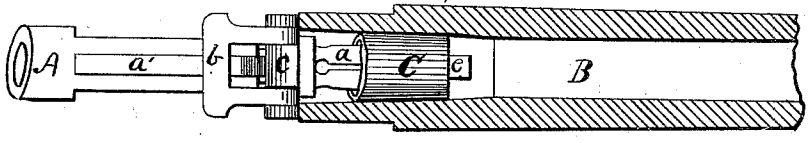
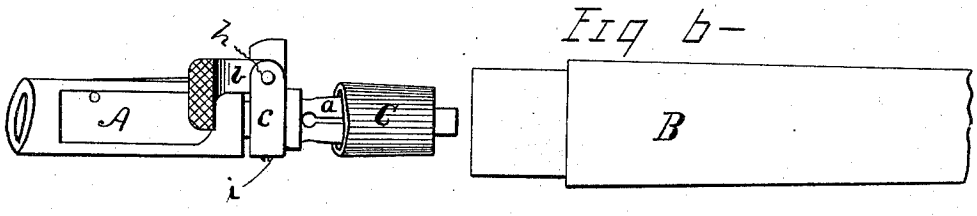


Fig 6-



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UNITED STATES PATENT OFFICE.

CHARLES M. BURTON, OF NEW HAVEN, CONNECTICUT.

CARTRIDGE-SHELL EXTRACTOR.

SPECIFICATION forming part of Letters Patent No. 314,563, dated March 31, 1885.

Application filed January 14, 1885. (No model.)

To all whom it may concern:

Be it known that I, CHARLES M. BURTON, a citizen of the United States, residing at New Haven, in the county of New Haven and State of Connecticut, have invented certain new and useful Improvements in Cartridge-Shell Extractors, of which the following is a specification, reference being had therein to the accompanying drawings.

The metallic cartridges used in breech-loading fire-arms have an annular rib at one end known as the "head" of the shell. Among the most prominent functions of this head is the aiding in the removal of the cartridge-shell from the gun-barrel, which is accomplished by means of a latch or hook so arranged as to engage with this head and withdraw the shell from the chamber. It quite frequently occurs that this head of the shell is broken off from the body when a discharge takes place, whereby the usual means employed in extracting the shell is rendered inoperative as to removing the part of the shell remaining in the gun-barrel.

My invention relates to improvements in a tool or implement for extracting mutilated or headless shells from gun-barrels; and it consists of an implement composed of a hollow expansible cylinder provided with a reciprocating expanding-piston, and a movable latch or cam in the base of the extractor, by which it is adapted to operate with the breech pin or bolt of the gun to extract the shell.

In the accompanying drawings, Figures 1, 2, and 3 are drawn on an enlarged scale, in which Fig. 1 represents a top view of my extractor, Fig. 2 a longitudinal central section on line *x x* in Fig. 1. Fig. 3 is a front end elevation of the extractor. Figs. 4, 5, and 6 represent the position of the several parts in the act of engaging with and withdrawing the broken shell from the barrel when being used with a "Winchester" rifle.

In the drawings, A represents a detached portion of a breech pin or bolt, B a portion of a gun-barrel, C the body of a broken cartridge-shell. The hollow cylindrical body *a*, having an enlargement or base, *c*, at one end, is provided with a series of longitudinal slots, *o*, which divide said cylinder *a* into a series of flexible divisions having the serrations *m* upon the end of each division, as shown, the outer diameter of the serrations *m* being such as will permit the insertion of the cylinder *a* inside of an empty shell, when the expanding-piston *e* is in the position indicated in Fig. 2. The piston *e* consists of a rod of two diameters concentric with each other, having a conical surface, *e'*, near one end, and arranged to operate in the tubular opening which passes through the center of the cylinder *a* and the base *c*. Said tubular opening converges to a smaller diameter at the serrated end of the cylinder *a*, whereby the serrated ends *m* are adapted to be expanded to a larger diameter and embedded into the inner surface of the shell C when the conical portion *e'* of the piston *e* is driven forward as shown in Fig. 4.

In the base *c* is an aperture, *d*, into which the ordinary extractor of the gun *a'* enters when this device is being used, affording a safety clearance for the same. Hinged to the base *c* by the pins *h* is a movable latch or cam, *b*, which is shown as having a bifurcation which adapts it for being connected with the peculiar form of the Winchester breech pin or bolt, as shown in Figs. 5 and 6. As other styles of guns have a different form of the breech pin or bolt, a modification of the latch or cam *b* is necessary to adapt it for being used therewith.

Having described the several parts which constitute my invention, the operation and functions of the same when being used are as follows, viz: The several parts having been placed in the positions shown in the sectional view, Fig. 2, and the breech pin or bolt A having been drawn back as far as possible, the cylindrical body *a* is inserted from the rear of gun-barrel into the broken shell C remaining in the barrel, when the breech pin or bolt A is moved forward, pressing the piston *e* forward too. The conical portion *e'* of said piston, when thus forced into the convergent aperture of the cylindrical body *a*, expands the body *a* to a larger diameter, by which the serrations *m* are embedded in the inner surface of the broken shell C, after which the movable latch or cam *b* is turned down upon the breech-pin A, as shown in Fig. 5, which is a top view of the parts shown in Figs. 4 and 6. The enlarged end of the breech-pin will not pass through the bifurcation in the cam *b*. Consequently, when the breech-pin or bolt is drawn

backward by the proper mechanism provided for doing the same, the broken shell C is thereby extracted from the chamber of the gun-barrel B, as shown in Fig. 6.

I am aware that extractors for removing broken shells from gun-barrels have been made and used prior to my invention, in which the serrated end of the extractor has been employed, as set forth in Letters Patent No. 280,239, issued June 26, 1883; also the slotting of the body to render it flexible in connection with a taper pin for expanding the same, as set forth in Letters Patent No. 290,255, issued December 18, 1883. Therefore, I do not claim them, broadly; but

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

In an implement for extracting broken shells from gun-barrels, the combination of the cylindrical slotted body *a*, provided with the serrations *m* and base *c*, the expanding-piston *e*, arranged so as to expand the cylinder *a* when the breech pin or bolt A is pressed forward, and the hinged latch or cam *b*, arranged to operate in the base *c* and engage with the breech pin or bolt A, as and for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES M. BURTON.

Witnesses:
J. LO. KIERNAN,
GEORGE R. CORLEY.