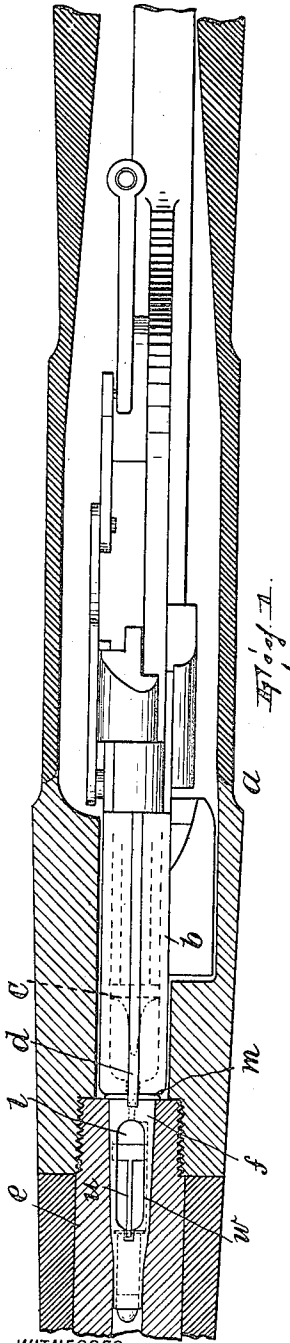


F. C. CHADWICK.
CARTRIDGE ADAPTER FOR FIREARMS.
APPLICATION FILED OCT. 8, 1912.

1,061,265.

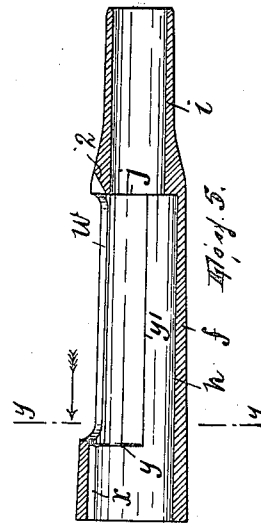
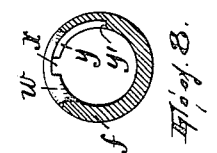
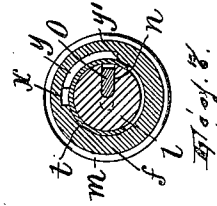
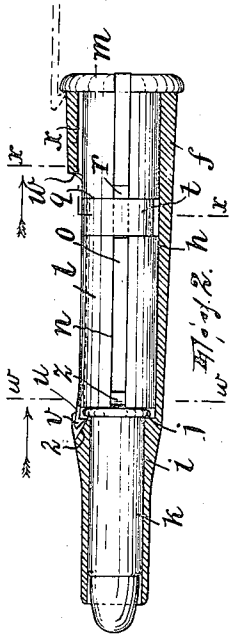
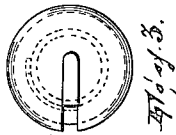
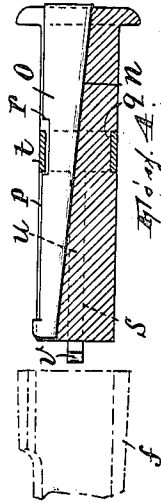
Patented May 13, 1913.

2 SHEETS—SHEET 1.



WITNESSES

Wm. M. Bell.
Elio Kaufmann



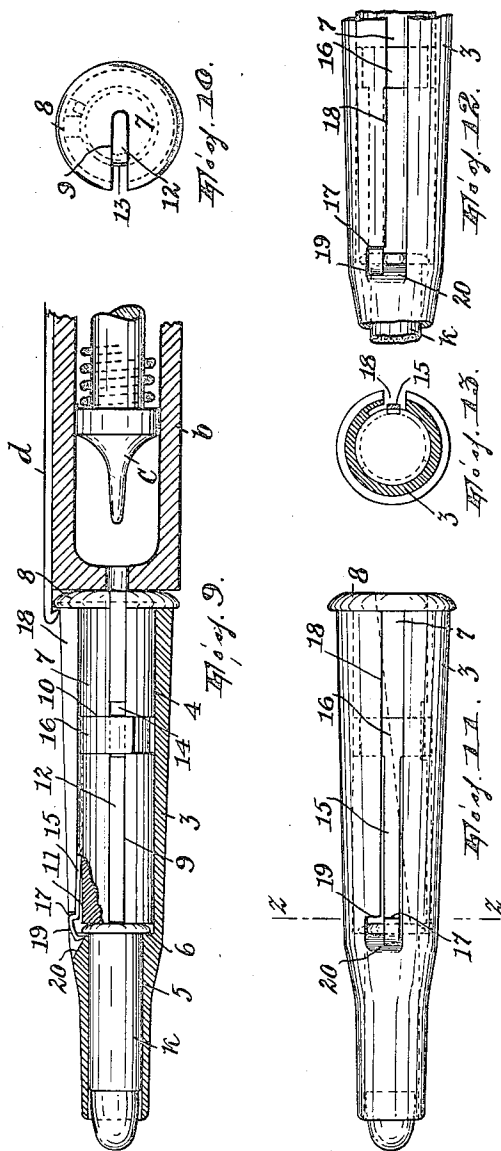
INVENTOR,
Francis C. Chadwick,
BY
John Edward.
ATTORNEY.

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2 SHEETS—SHEET 2.



WITNESSES

Wm. M. Bell.
Chas. Kaufmann

INVENTOR,
Francis C. Chadwick,
BY
John Steward,
ATTORNEY.

UNITED STATES PATENT OFFICE.

FRANCIS C. CHADWICK, OF HARTFORD, CONNECTICUT, ASSIGNOR TO SAVAGE ARMS COMPANY, OF UTICA, NEW YORK.

CARTRIDGE-ADAPTER FOR FIREARMS.

1,061,265.

Specification of Letters Patent.

Patented May 13, 1913.

Application filed October 8, 1912. Serial No. 724,533.

To all whom it may concern:

Be it known that I, FRANCIS C. CHADWICK, 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 Cartridge-Adapters for Firearms, of which the following is a specification.

This invention relates particularly to devices employed in firearms for the purpose of adapting thereto cartridges of less length and diameter, and hence power, than those which it has capacity or is intended regularly to receive, whereby to increase the range of usefulness of the arm.

My object is to provide a device of the character indicated which, while embodying the general qualities of simplicity of construction, convenience in handling and reliability of operation, shall in particular afford substantial support for the cartridge against back-pressure on explosion; insure the effectiveness of the percussion; be readily removable from the arm after the firing; and allow the charging thereof and the removal of the empty cartridge shell in a facile and quick manner.

The invention will be found fully illustrated in the accompanying drawings, wherein,

Figure 1 shows the breech portion of a rifle in horizontal section with one form of the device constituting the invention appearing in elevation, in position for the firing of a cartridge held thereby; Fig. 2 is an enlarged side elevation of the device, its shell appearing in section and a cartridge being shown in position; Fig. 3 is a rear elevation; Fig. 4 shows the plug in longitudinal section and certain parts carried thereby; Fig. 5 is a longitudinal sectional view of the shell. Figs. 6 and 7 are sectional views on the lines *w—w* and *x—x* in Fig. 2, and Fig. 8 a sectional view on line *y—y* in Fig. 5, looking in the direction of the arrows in said figures; Fig. 9 shows another form of the device in side elevation, partly in section and partly broken away; with cooperating parts of the breech mechanism; Fig. 10 is a rear elevation of that form of the device seen in Fig. 9; Figs. 11 and 12 are plan views of the device seen in Fig. 9, showing its plug in two different positions; and, Fig. 13 is a sectional view on the line *z—z* of Fig. 11.

In the arm *a* is a breech-block *b* provided with a firing-pin *c* and an extractor hook *d*, the said parts being formed and arranged in any suitable manner contemplating the employment of the breech block to drive the cartridge home into the rear of the barrel *e* on loading, supporting the cartridge against back pressure on firing and, by the extractor hook, withdrawing the empty shell after firing.

Describing in detail the improved device: *f* is an elongated substantially tubular shell formed to fit the bore of the barrel at the rear end thereof, being externally of the same shape as the barrel portion of the cartridge intended to be fitted into said bore. The shell has a longitudinal cylindrical bore *h* which, at its forward portion, *i*, is reduced, producing an internal shoulder *j*, said portion *i*, with the shoulder *j*, forming a seat for a cartridge *k* which, when properly fitted into said portion, will stand with its rim abutting the shoulder *j*. The forward part of the shell is made as thin as possible (much thinner than it appears in Fig. 2 where it is shown exaggerated), so that a cartridge may be used whose ball approximates in diameter the diameter of the bore of the barrel *a*.

Fitted into the shell *f* is a cylindrical plug *l* having a flange or rim *m* (forming an extractor-shoulder) at its rear end of slightly greater diameter than the rear end of the shell, the length of the plug from its rim to its forward end being sufficiently less than that of the bore *h* from its rear end to shoulder *j* so that, with a cartridge in place in the shell and the plug driven home with its rim abutting the rear end of the shell, its forward end will abut the cartridge, or approximately so. The plug *l* is formed with a longitudinal groove *n*, disposed radially, the groove gradually increasing in depth from the forward to the rear end of the plug, where its depth is slightly greater than a radius of the plug. In this groove is fitted a firing-pin *o*, approximating in length the length of the plug and so formed that its exposed surface *p* is substantially parallel with the axis of the plug and (when the firing-pin is held in the plug in the way to be described) approximately coincides with the cylindrical surface of the plug. About midway its length the plug has a surrounding groove *q* formed in it. In the exposed

surface of the firing pin is formed a notch *r* whose length is slightly greater than the width of the groove *q*. From the forward end of the plug to groove *q* the plug has a longitudinal groove *s* formed therein. Embracing the plug is the part-circular strap *t* of an elastic extractor hook *u* whose shank lies in the groove *s* and whose hook proper *v* projects somewhat beyond the forward end of the plug. With the parts arranged as shown best in Figs. 2 and 4, the strap of the extractor hook preserves the firing pin in the assembled relation with the plug, the firing-pin being susceptible of slight longitudinal movement in the plug. The peculiar shapes of the firing-pin and groove *n* are to permit a rim-fire cartridge to be used in the device with an arm having a center-fire firing-pin *c*, as shown, it being understood that the firing-pin *o* is employed to transmit the percussive action of the firing-pin *c* to the cartridge *k*.

The shell *f* has a lateral elongated opening *w* of a size to admit the cartridge there-through, the same extending from about the shoulder *j* to a point near the rear end of the shell. Internally the shell has a groove *x* extending longitudinally from its rear end to the opening *w*.

y y' is an angular shoulder also formed interiorly of the shell, its side *y* extending from the groove *x* laterally therefrom approximately the same number of degrees of a circle as the hook *u* is disposed from the firing-pin *o* in the plug and whose side *y'* extends from the side *y* longitudinally to the shoulder *j*. The firing pin *o* has on its forward end a projecting lug *z*. At 2, at the forward end of the opening *w*, the shell has an inclined seat alined with the groove *x*, the function of which will be described.

A cartridge having been introduced into its seat in the shell, having brought the lug *z* into registry with the groove *x*, the plug is forced inwardly until said lug clears the groove. The plug is then turned until the lug engages the shoulder *y'*, whereupon it is forced in as far as it will go, driving the cartridge home, if not already there. With lug *z* engaged with shoulder *y'* the extractor hook is alined with the seat 2, so that when the extractor hook snaps over the rim of the cartridge it falls upon the seat 2 and so prevents puncturing the cartridge shell. When the arm is to be fired the device, thus loaded, is introduced into the bore of the barrel *e* by means of the breech block *h* in the same manner as a cartridge regularly adapted for the arm. Upon firing, the firing-pin *c*, transmits its percussive action through the firing-pin *o* to the cartridge. Upon unloading the arm the extractor hook *d*, which has engaged the rim *m* of the plug *l*, withdraws the device from the bore of the barrel *e* as the breech block recedes, in the same manner

that the shell of the regular cartridge would be withdrawn, it being understood that the friction of the parts *k*, *f* and *l* is ordinarily sufficient to keep them assembled until extracted. Upon now grasping the shell *f* with one hand and withdrawing the plug with the other, upon the lug *z* abutting the shoulder *y* the firing pin *o* will be advanced in the plug and, coacting with the hook *v* of the extractor hook, will cause the empty cartridge shell to be ejected end over end through the opening *w*. To remove the plug from the shell requires only to turn the plug until shoulder *z* registers with groove *x*.

In Figs. 9 to 13 the shell 3, its bore portions 4 and 5 and shoulder 6; the plug 7, its head 8 and grooves 9, 10 and 11, and the firing pin 12, having the exterior surface 13 and notch 14 therein are or may be all substantially the same as the parts *f*, *h*, *i*, *j*, *l*, *m*, *n*, *q*, *s*, *o*, *p* and *r*, respectively. In the present case, however, the elastic extractor hook 15, having the part circular strap 16 fitted into the groove 10 and itself received by the groove 11, has its hook proper formed with a rearward shoulder 17. The shell 3 has a longitudinal slot 18 extending from its rear end to the shoulder 6, where it communicates with a lateral notch 19. Upon introducing the cartridge into the shell at the rear end thereof, the plug is inserted behind it and made to force it home, whereupon the plug is turned to bring the shoulder 17 of the extractor hook into locking relation with the notch. To withdraw the empty cartridge shell from the device after firing, the plug is turned in the opposite direction and then withdrawn. The bayonet-joint connection between the plug and shell members thus afforded positively insures the withdrawal of the shell member from the bore of the arm after firing. 20 is an inclined seat at the end of slot 18 serving the same function as the seat 2.

Having thus fully described my invention, what I claim as new and desire to secure by Letters Patent is:—

1. In combination, a holder member having a cartridge seat and a back-pressure-assuming member for the cartridge supported by the holder member back of said seat, said members coacting to resist backward independent movement of the second member and the latter having an exposed shoulder to be engaged by the extractor device of the arm, substantially as described.

2. In combination, a holder member having a passage extending longitudinally therethrough and a cartridge seat in said passage, and a rigid back-pressure assuming member for the cartridge arranged in said passage and extending from said seat to substantially the rear end of the passage and having in its rear portion an extractor-shoulder, substantially as described.

3. In combination, a holder member having a bore extending longitudinally therethrough and a cartridge seat in said bore, a plug fitted into said bore relatively back of the seat and movable in said bore longitudinally thereof, and a cartridge extracting device carried by said plug, substantially as described.

4. In combination, a holder member having a bore extending longitudinally therethrough and a cartridge-seat in said bore, a plug fitted into said bore relatively back of the seat and movable in said bore longitudinally thereof, a cartridge extracting device carried by said plug, and a firing-piece movable in said plug and held assembled therewith by the extractor device, substantially as described.

5. In combination, a holder member having a bore extending longitudinally therethrough and a cartridge-seat in said bore, a plug fitted into said bore relatively back of the seat and movable in said bore longitudinally thereof, a cartridge extracting device having a band embracing the plug, and a firing-piece movable in said plug and held assembled therewith by said band, substantially as described.

6. In combination, a holder member having a cartridge seat and a back-pressure-assuming member for the cartridge confined by the holder member to thrust movement toward and from said cartridge seat and having a cartridge shell extracting member, substantially as described.

7. In combination, a holder member having a cartridge seat and a back-pressure assuming member for the cartridge slidable in said holder member toward and from said seat, and having a forwardly projecting extractor hook faced toward the cartridge axis of the holder member, said holder member having an external hook supporting seat at the rear end of the cartridge seat, substantially as described.

8. In combination, a holder member having a passage therethrough and a cartridge-seat in said passage and a lateral cartridge-shell discharge outlet from said passage, and a back-pressure-assuming member for the cartridge slidable in the holder member toward and from said seat and having means to eject the spent shell through said outlet

on movement thereof from said seat, substantially as described.

9. In combination, a holder member having a passage therethrough and a cartridge-seat in said passage, a back-pressure-assuming member slidable in said passage toward and from said seat and having an extracting device engageable with the cartridge rim, said holder member having a lateral cartridge-shell discharge opening, and a cartridge tripping device carried by the second-named member and movable therein to its forward end, said holder member having means to limit the movement of the tripping device with said second-named member from said seat, substantially as described.

10. In combination, a holder member having a passage therethrough and a cartridge-seat in said passage, a back-pressure-assuming member slidable in said passage toward and from said seat and having an extracting device engageable with the cartridge-rim, said holder member having a lateral cartridge-shell discharge opening, and a firing piece carried by the second-named member and movable therein to its forward end, said holder member having means to limit the movement of the firing-piece with said second-named member from said seat, substantially as described.

11. In combination, a holder member having a passage therethrough and a cartridge-seat in said passage, and a back-pressure-assuming member slidable in said passage toward and from said seat, said member having a bayonet-joint connection with each other, substantially as described.

12. In combination, a holder member having a passage therethrough and a cartridge-seat in said passage, a back-pressure-assuming member slidable in said passage toward and from said seat and having an extracting device engageable with the cartridge-rim, said members having a bayonet-joint connection with each other, substantially as described.

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

FRANCIS C. CHADWICK.

Witnesses:

C. J. EHBETS,
K. POWERS.