

1,181,417.

Patented May 2, 1916.

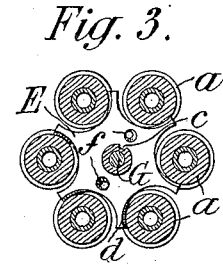
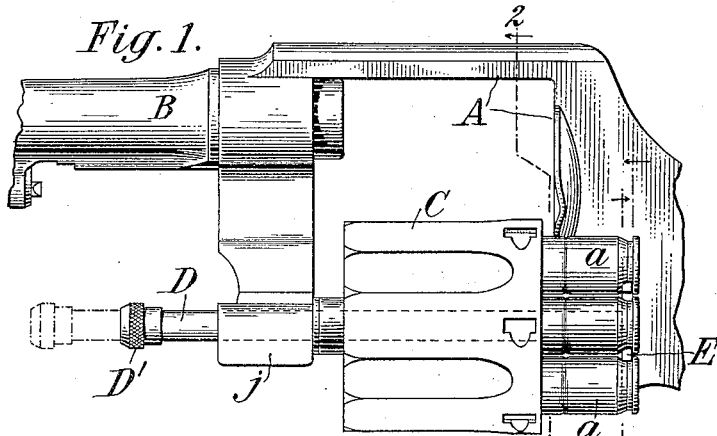


Fig. 2.

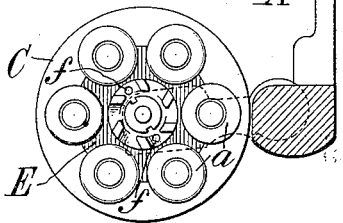


Fig. 5.

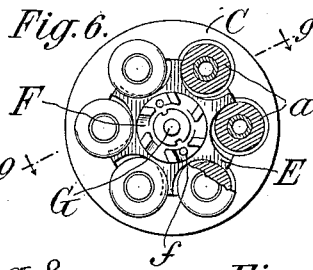
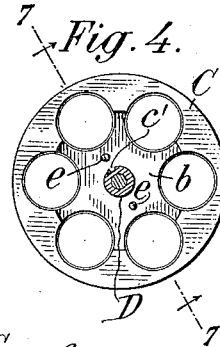
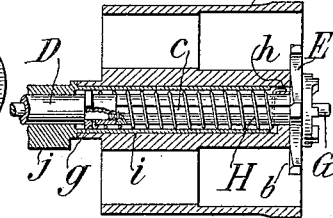


Fig. 7.

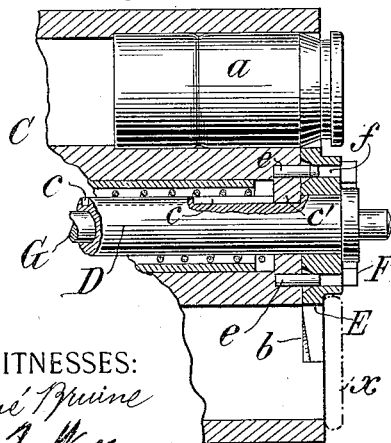


Fig. 8.

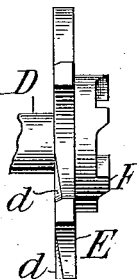
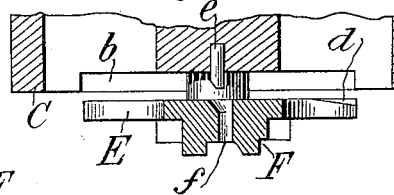


Fig. 9.



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UNITED STATES PATENT OFFICE.

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REVOLVER.

1,181,417.

Specification of Letters Patent.

Patented May 2, 1916.

Application filed January 31, 1916. Serial No. 75,224.

To all whom it may concern:

Be it known that I, JOSEPH H. WESSON, a citizen of the United States of America, residing at Springfield, in the county of Hampden and State of Massachusetts, have invented certain new and useful Improvements in Revolvers, of which the following is a specification.

This invention relates to the ejector or extractor for expelling the empty shells from the cylinder. Its object is to permit of the ejection of the shells of headless or rimless cartridges. Its object also is to adapt the ejector for use with the shells of either headless cartridges or the ordinary headed or rimmed cartridges.

To these ends, the ejector is made in substantially the ordinary manner, so as to adapt the cylinder to receive the ordinary headed cartridges, and in addition, it is constructed so that it may execute a slight turning movement around the axis of the cylinder, whereby, as the ejector is pushed back, its arms may enter the grooves or necks of the headless cartridges so that its further backward movement will eject the shells of such cartridges. The slight rotary movement necessary may be imparted by a twisting movement given to the ejector head by the fingers of the operator; or it may be imparted by a spring which acts at the beginning of the rearward or ejecting movement; or it may be imparted by any suitable mechanical provision. The ejector has the usual retracting spring, and this spring or a separate spring may be applied to impart the rotative effort to the ejector stem in order to give the slight rotative movement necessary to cause the ejector to engage the necks of headless shells. Upon the release of the ejector as it is returned to its normal position by the usual ejector spring, it is restored at the end of its movement to its original or normal position, with respect to the cylinder, by the action of inclined faces on the ejector and cylinder respectively, which by their co-engagement, cam back the ejector by a slight counter-rotative movement to its original position.

The invention is shown in its preferred construction in the accompanying drawings, wherein,

Figure 1 is a partial side elevation of the revolver, showing the cylinder thrown out, and the shells in the act of ejection. Fig. 2

is a rear elevation of the cylinder and shells, the revolver frame being in section, on the line 2 in Fig. 1. Fig. 3 is a transverse section of the shells and ejector, on the plane of the line 3 in Fig. 1, and looking toward the rear. Fig. 4 is a rear elevation of the cylinder with the ejector removed and its stem in section on the line 4 in Fig. 1, the shells being omitted. Fig. 5 is a longitudinal section through the cylinder and ejector. Fig. 6 is a rear elevation of the cylinder, showing the initial turning movement of the ejector, three of the shells being in section. Fig. 7 is a sectional view on the line 7 in Fig. 4, on a larger scale. Fig. 8 is an elevation of the ejector, protruded, showing its relation with the cylinder ratchet. Fig. 9 is a sectional view on the plane of the line 9—9 in Fig. 6, showing the ejector near the end of its return movement. Figs. 7, 8 and 9 are enlarged to double the scale of the preceding views.

The revolver as a whole is of the ordinary construction and needs no description. In Figs. 1 and 2 only the frame A, barrel B and cylinder C are shown, the latter being thrown out to the ejecting position, and the ejector stem D being shown in the position where it is being pressed rearwardly by the operator, to cause the ejector E to extract the empty shells. These shells *a a* are shown as headless or rimless shells, having the usual grooved neck for permitting the ejector to engage the shell.

The cylinder has the usual recess *b* (Fig. 9) for receiving the ejector, so that when the latter is seated therein, its rear face is flush with the rear of the cylinder, as shown in Fig. 7, so that if a rimmed cartridge is used, its head or rim will overlie the ejector, as shown in dotted lines at *x* in Fig. 7. The ejector is as usual made in one piece, with the cylinder ratchet F in the usual manner.

The ejector is mounted on the stem D, which as usual passes through the cylinder and the cylinder arm and carries on its front end the usual head D'. Through the stem D passes as usual the centering and releasing pin G which is constructed and operates in the ordinary manner. The stem D is formed with the usual spline or groove *c*, which is engaged by a lug or projection *c'* in the cylinder to limit the ejector stem to a longitudinal movement; but instead of these having the usual close fit, they are con-

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5 constructed with a slight clearance sufficient to permit of enough oscillation to allow of the initial rotative movement of the ejector. The extent of this initial movement may
 10 be seen by comparing the ejector in Fig. 2 with that in Figs. 3 or 6, which latter figures show the ejector after it has been turned sufficiently to bring its arms or wings into the grooves or necks of the cartridge shells.
 15 To facilitate its engagement with the shells, its arms are beveled on one side, as shown at *z* in Fig. 8. The arms of the ejector must be thus turned enough to bring them fully into the necks, so that they may squarely
 20 engage the shoulders formed by the front faces of the flanges on the shells. This initial turning or twisting movement may be imparted manually by the operator grasping the head *D'* between the fingers and
 25 turning it, after which he should hold it so turned during the ejecting movement. Or preferably, this may be accomplished automatically by spring action, as will presently be described.
 30 After the ejecting operation, the ejector is returned to its normal position by the action of the usual ejector spring *H*, Fig. 5. This spring ordinarily imparts only a longitudinal movement to the ejector, but in the pres-
 35 ent construction, it has preferably the additional function of imparting the initial rotative movement. To accomplish this, the opposite ends of the spring are connected to the stem *D* and the cylinder respectively, a
 40 torsional stress being imparted by twisting the spring, before thus attaching its ends. The direction of this stress is such as to tend to impart to the ejector the initial engaging rotation.
 45 To restore the ejector at the end of its return movement and to hold it against rotation when in its normal position of rest (see Fig. 2), the cylinder is provided with guide pins *e e* which enter corresponding
 50 holes *f f* in the ejector. The pins are shown in Fig. 4 and the holes in Figs. 2, 3 and 6. The pins are beveled on one side and the holes at the base are correspondingly beveled, as best shown in Fig. 9, so as to have
 55 a reciprocal cam action, whereby at the very end of the return movement of the ejector, it is rotated back to its original position of rest. This return rotation might of course, be accomplished by other means, and at an earlier period if desired, it being permissible to impart this movement at any time after the ejecting shells have disengaged themselves from the ejector. The simplest operation however, and especially
 60 when the torsional action of the spring *H* is utilized, as above explained, is to permit the ejector to move forward while in its rotatively displaced position, so that it approaches the pins *e* in the manner shown in
 65 Fig. 9, and finally to utilize the inclined

faces of the pins and holes for camming back the ejector just as it seats itself in the recess *b*.

As a constructional detail it is preferable to make the stem *D* in two sections, screwing together, with a sleeve *g* fastened between them, the sleeve having a hole which receives the inturned front end of the spring, while the rear end of the spring enters a socket in the end of the cylinder, as shown at *h* in Fig. 5. The cylinder turns in the usual manner on a thin tubular hub *i*, projecting rearwardly from and integral with the cylinder arm *j*.

The operation of extracting is performed by holding the arm in the right hand, releasing the cylinder lock in the usual manner and throwing the cylinder out to the left and holding it by a finger of the right hand, which is passed through the cylinder opening and pressed against the cylinder to keep it from turning; then with the left hand, the extractor stem is pushed backward in precisely the usual manner except that it executes the initial turning movement already described, to cause the ejector arms to enter the necks of the shells. If this initial turning movement is imparted by the spring, as described, the operator need give no attention thereto; otherwise it is necessary for the operator to grasp the head *D'* between the thumb and finger and impart to it a twisting movement in clockwise direction at the very beginning of the rearward movement.

It is obvious that the invention may be availed of by resorting to different mechanical means for imparting the rotative movement to the ejector in place of the specific means herein described.

I claim as my invention:—

1. A revolver having its ejector capable of a slight rotative motion, whereby its arms may enter the necks of headless cartridge shells to eject them.
2. A revolver having its ejector capable of a slight rotative motion, whereby its arms may enter the necks of headless cartridge shells to eject them, and having means for rotating back the ejector on its return to its normal position.
3. A revolver having its ejector capable of a slight rotative motion, whereby its arms may enter the necks of headless cartridge shells to eject them, and having cam means for rotating back the ejector on its return to its normal position.
4. A revolver having its ejector adapted for either headed or headless cartridge shells, its arms being shaped to enter the necks of headless shells, and the ejector being capable of a slight rotative motion relative to the cylinder, whereby to cause its arms to so engage such necks.
5. A revolver having its ejector capable

of a slight rotative motion at the beginning of its rearward movement, having a spring for retracting it when released, and cam means for giving it a counter rotative motion at the end of its forward movement to restore it to its normal position of rest.

5 6. A revolver having its ejector, in addition to its usual longitudinal movement, capable of a slight rotative motion, a spring
10 for imparting such rotation at the beginning of its rearward movement, and cam means for giving it a counter rotative motion at the end of its forward motion.

15 7. A revolver having its ejector capable of a slight rotative motion whereby its arms may enter the necks of headless car-

tridge shells, and a spring for imparting such rotation at the beginning of the ejecting movement.

8. A revolver having its ejector capable
20 of a slight rotative motion relatively to the cylinder, the ejector and cylinder having co-engaging pins and holes with inclined surfaces adapted to rotate back the ejector
25 on its return to its normal position.

In witness whereof, I have hereunto signed my name in the presence of two subscribing witnesses.

JOSEPH H. WESSON.

Witnesses:

F. C. MARSH,
S. E. GROUT.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."