April 15, 1958 L. F. MULNO 2,830,397

REVOLVER WITH SWING-OUT CYLINDER

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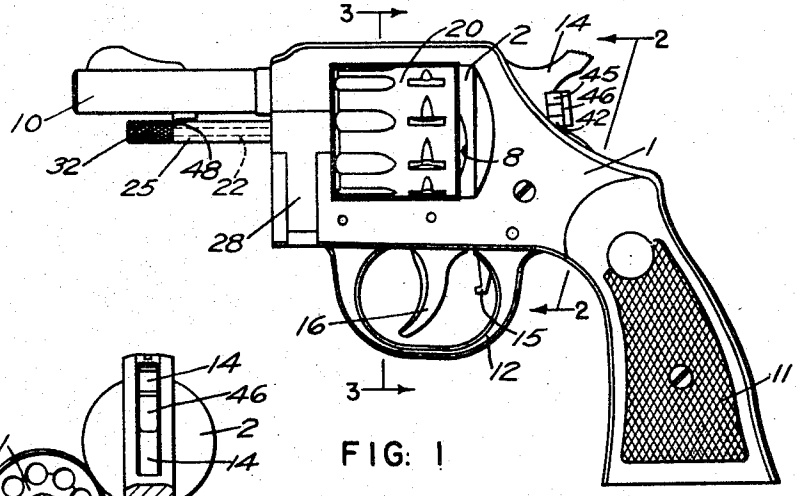


FIG. 1

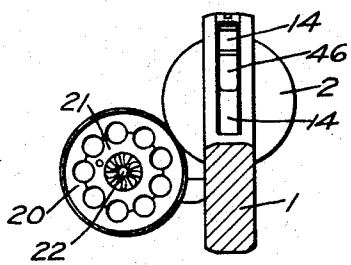


FIG. 2

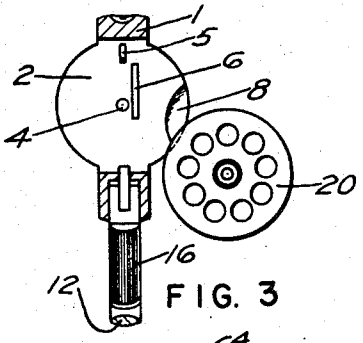


FIG. 3

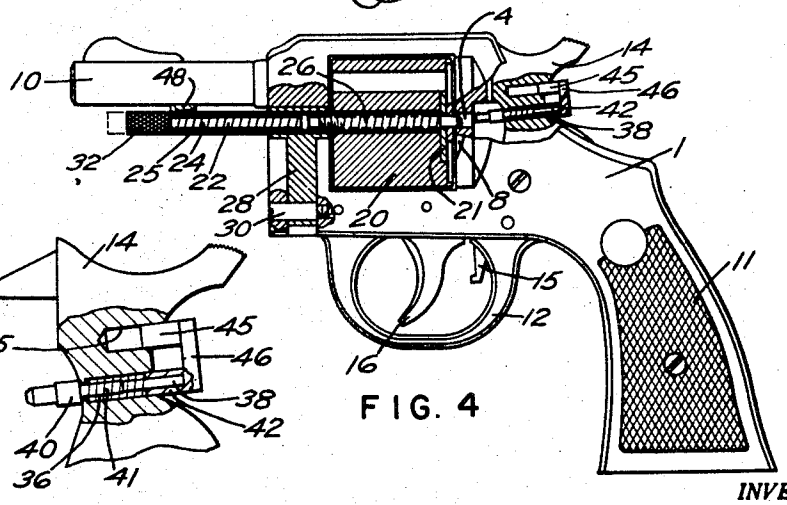


FIG. 4

FIG. 5

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REVOLVER WITH SWING-OUT CYLINDER

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6 Claims. (Cl. 42—62)

This invention relates to revolvers of the type wherein the cylinder is mounted so as to swing outwardly to permit loading and discharge of the cartridges. In such revolvers the cylinder is usually held in firing position by a releasable latch which consists of an axially movable spring pressed center pin on which the cylinder is rotatably mounted, and in order to effect the release of the latch the revolver is held by one hand while the other hand withdraws the pin. Various other types of latch release mechanisms have been suggested, but here again they either require the use of both hands or cannot conveniently be operated by both right and left-handed persons.

The principal objects of the present invention are to provide a latch release mechanism which not only overcomes the aforementioned objectionable features, but which may be applied to any of the conventional types of swing-out revolvers without requiring a redesign or modification of the revolver structure and/or firing mechanism, and to provide a latch release which permits the cylinder to be swung out merely by a twist of the wrist of the user.

Further objects relate to features of construction and will be apparent from a consideration of the following description and the accompanying drawings, wherein:

Fig. 1 is a side view of a swing-out revolver embodying the present invention, the cylinder being shown locked in firing position;

Fig. 2 is a view from the line 2—2 of Fig. 1, but showing the cylinder swung outwardly to loading position;

Fig. 3 is a section on the line 3—3 of Fig. 1, showing the cylinder swung outwardly to loading position;

Fig. 4 is an axial section through the releasable latch mechanism and associated parts; and

Fig. 5 is an enlarged detail of the release actuator.

The embodiment herein shown for the purpose of illustration comprises a frame 1 formed with a generally circular face 2 having a central latch opening 4 (Fig. 3), an opening 5 for the reception of the firing pin, a pawl slot 6 and a cam surface or recess 8. A barrel 10, grip 11 and guard 12 are secured to the frame and a hammer 14, sear 15 and trigger 16 are also carried by the frame in conventional manner.

The cylinder 20 is rotatably mounted on an assembly comprising the extractor 21 (Fig. 2) and center pin 22 which has a reduced inner end extending in through the latch opening 4 under the influence of a coil compression spring 24 (Fig. 4) disposed within a sleeve 25 surrounding the outer end of the center pin. A second spring 26 acts on the extractor so as to yieldingly hold it in retracted position. The sleeve 25 is rigidly secured to the free end of an arm 28, the opposite end of which is pivoted to the frame 1 by a pintle 30, the construction and arrangement of parts being such that when the cylinder 20 is swung from open or loading position (Figs. 2 and 3) to firing position (Figs. 1 and 4) the projecting inner end of the center pin 22 first engages cam surface 8 and is held retracted as it slides against the face 2 and

then snaps into the latch opening 4 when the cylinder reaches firing position. By pulling on the enlarged outer end 32 of the center pin, the latter may be retracted so as to permit the cylinder to be swung outwardly, but this requires the use of both hands, one of which holds the revolver while the other withdraws the center pin or latch.

To permit the cylinder 20 to be swung open without using both hands, I provide a release actuating mechanism which may be conveniently operated by the thumb of the hand holding the revolver. To this end, the outer face of the hammer 14 is recessed below the cocking lug and a pair of openings 35 and 36 (Fig. 5) extend into the hammer, the lower or release opening 36 being aligned and communicating with the latch opening 4. Slidably mounted within the opening 36 is a release pin 38 the inner end portion of which carries a collar 40 defining a shoulder portion engageable with the adjacent inner face of the hammer 14 to limit the outward movement of the pin. One end of a compression spring 41, circumposed about the pin 38, acts on an annular shoulder surrounding the inner end of the opening 36 and its other end acts on a small sleeve 42 carried by the outer end portion of the pin. The pin 38 is thus held in advanced or locking position, wherein the inner end of the center pin 22, under the influence of the spring 24 projects into the opening 4 to lock the cylinder 20 in firing position. Pressure on the end of the pin 38 causes it to move inwardly into engagement with the inner end of the center pin 22 which is forced outwardly clear of the opening 4 thus releasing the cylinder 20 and permitting it to be swung to loading position (Figs. 2 and 3).

In order to insure a smooth operation of the latch release pin, there is provided a supporting pin 45 (Fig. 5) which has a smooth sliding fit in the opening 35 and the outer end of this pin is rigidly connected by a cross piece 46 with the outer end of the sleeve 42 which carries the release pin 38, the outer face of this member being shaped to provide a thumb piece which may be conveniently depressed by the thumb of a hand holding the revolver.

A supplemental locking action on the cylinder 20 is provided by securing to the under surface of a barrel 10 a depending lug 48 (Figs. 1 and 4) formed with a semi-circular recess having a curvature conforming to that of the enlarged end 32 of the center pin, the shape and arrangement of parts being such that the end of the lug 48 clears the center pin 22 but snugly embraces its enlarged end 32. Hence, as the cylinder 20 is being swung from loading to firing position, the inner end of the center pin engages the cam surface 8, forcing the pin outwardly, and as the pin rides against the frame face 2, the enlarged end 32 is held outwardly of the lug 48, thus permitting the cylinder to be swung to firing position, whereupon the inner end of the center pin enters the opening 4 and its enlarged end 32 is received in the semi-circular recess of lug 48, as shown in Fig. 4.

It will be noted that in operation the release pin not only slides the inner end of the center pin out of the latch opening 4, but moves the enlarged end 32 out of the recess of the locking lug 48, thus simultaneously releasing both ends of the center pin. When the center pin is thus released the cylinder 20 may be swung to open position by a quick twist of the wrist of a hand holding the revolver; and closing or swinging the cylinder to firing position may likewise be accomplished by a quick twist of the wrist.

Since the thumb or cross piece 46 is just as accessible for a left-handed person as it is for a right-handed person, swinging the cylinder to and from firing position may be accomplished with equal facility. It will also be noted that the release actuator is carried entirely by the hammer and does not in any way affect the operation of the firing

mechanism or other parts, or require a redesign of such mechanism.

While I have shown and described one desirable embodiment of the invention, it is to be understood that this disclosure is for the purpose of illustration and that various changes and modifications may be made without departing from the spirit and scope of the invention as set forth in the appended claims.

I claim:

1. In a revolver of the type having a cylinder rotatably mounted on a retractable center pin which is carried by an arm pivotally mounted on the frame so as to swing outwardly, a releasable latch mechanism comprising a frame face having a latch opening coaxial with said center pin, a spring acting on said center pin so as normally to hold its inner end in said latch opening and lock said cylinder in firing position, a hammer pivotally mounted on said frame and formed with an outwardly extending cocking lug, said hammer having below its cocking lug a release opening communicating and aligned with said latch opening when in uncocked position, a release pin slidable in said release opening so that its inner end is engageable with that of said center pin, the outer end of said release pin projecting outwardly beyond the adjacent face of said hammer, and resilient means acting on said release pin so as normally to hold its outer end in advanced position, whereby the release pin and center pin may be retracted by inward pressure applied to the projecting end of said release pin so as to permit the cylinder to be swung outwardly to loading position.

2. A revolver as set forth in claim 1 wherein the projecting outer end of said release pin carries a thumb piece.

3. A revolver as set forth in claim 1, wherein said release pin has a shoulder portion engageable with the inner adjacent face of said hammer to limit the outward travel of the release pin.

4. A revolver as set forth in claim 1, wherein the under

surface of said barrel carries a fixed latch engageable with the outer end of said retractable center pin so as to provide a supplemental lock for the cylinder when in firing position.

5. In a revolver of the type having a cylinder rotatably mounted on a retractable center pin which is carried by an arm pivotally mounted on the frame so as to swing outwardly, a releasable latch mechanism comprising a frame face having a latch opening coaxial with said center pin, a spring acting on said center pin so as normally to hold its inner end in said latch opening and lock said cylinder in firing position, a hammer pivotally mounted on said frame and formed with an outwardly extending cocking lug, said hammer having below its cocking lug a release opening communicating and aligned with said latch opening when in uncocked position and a second opening parallel with and spaced from said release opening, a release pin slidable in said release opening so that its inner end is engageable with that of said center pin, a supporting pin slidable in said second opening, the outer ends of the release and supporting pins projecting outwardly beyond the adjacent face of said hammer, a cross piece rigidly connecting the outer ends of said pins, and resilient means acting on one of said pins so as normally to hold them in advanced position, whereby the release pin and center pin may be retracted by inward pressure applied to said cross piece so as to permit the cylinder to be swung outwardly to loading position.

6. A revolver as set forth in claim 5, wherein said cross piece is shaped to provide a thumb piece depressible by the thumb or the hand holding the revolver.

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