April 3, 1962 J. R. OLIVER 3,027,673

LOW BARREL REVOLVER

Filed March 26, 1957 4 Sheets-Sheet 1

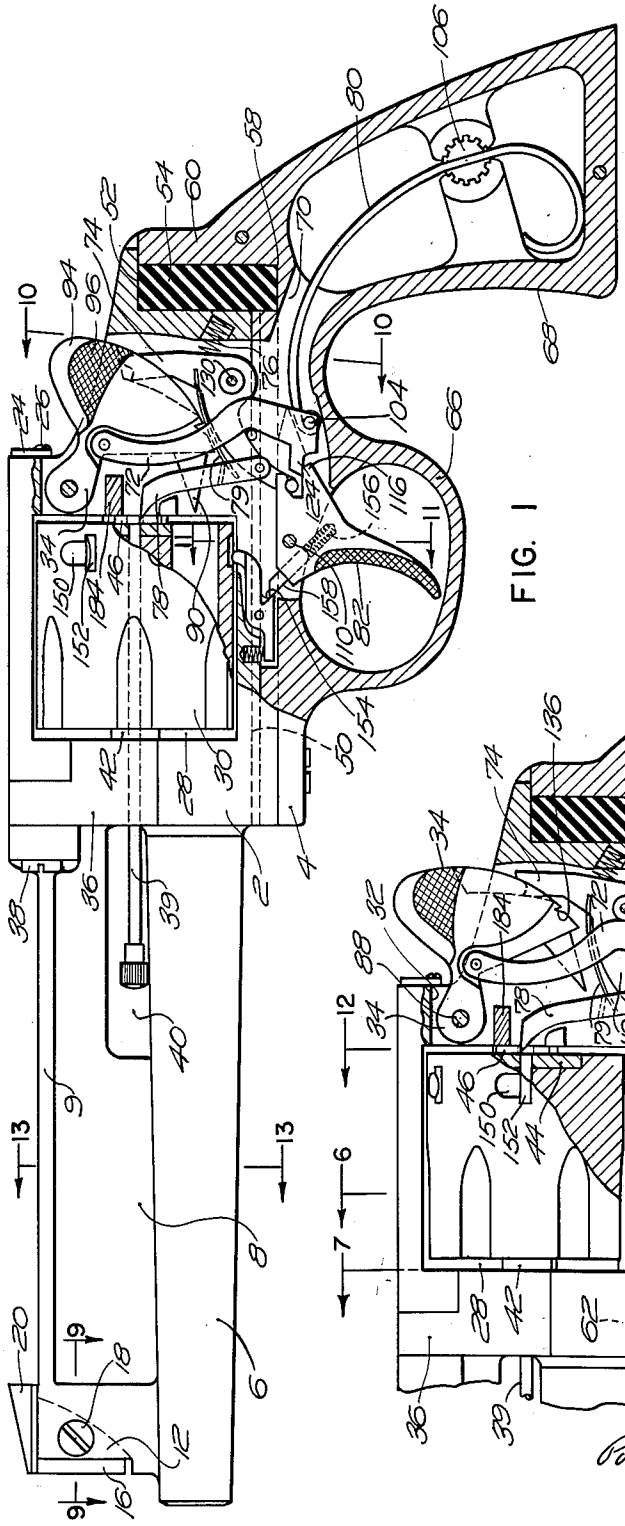

FIG. 1

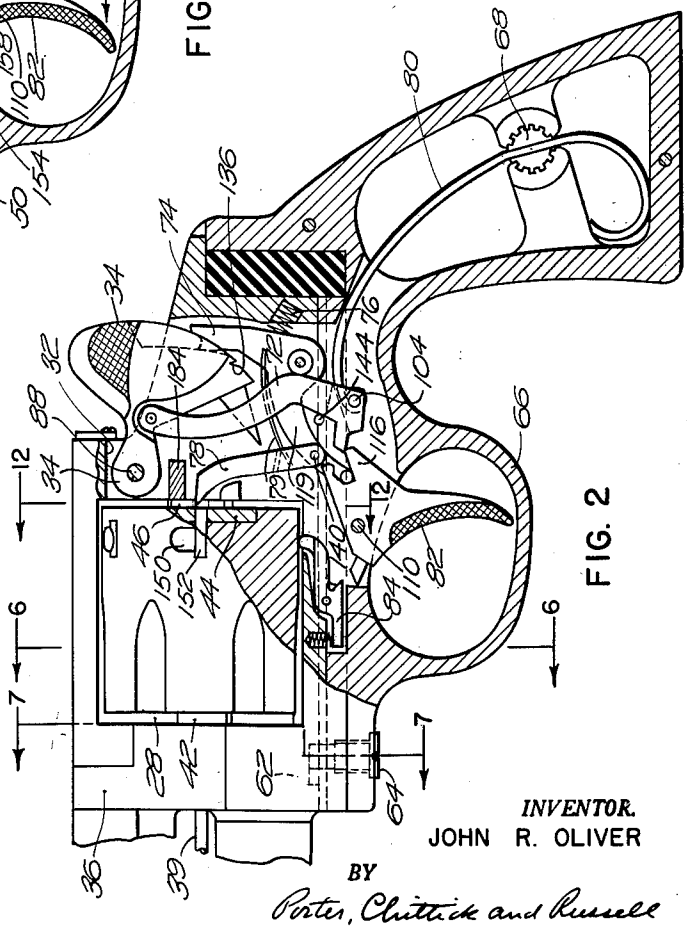

FIG. 2

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LOW BARREL REVOLVER

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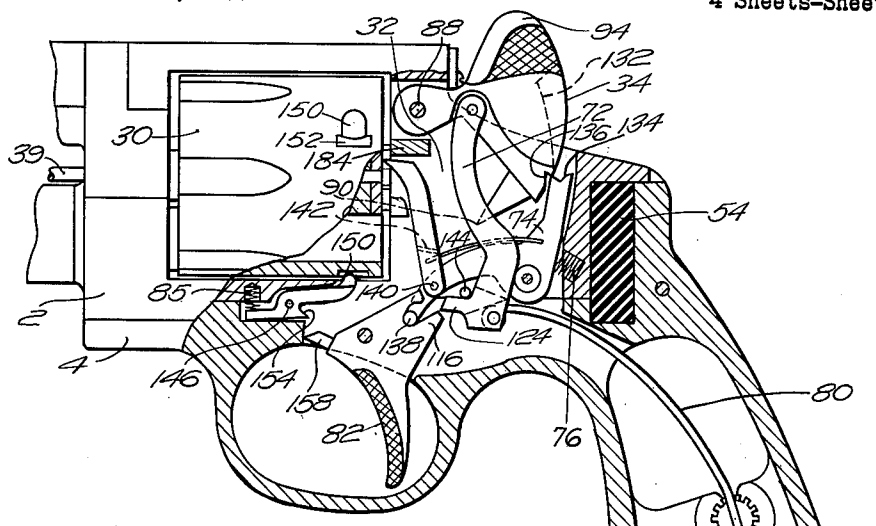

FIG. 4

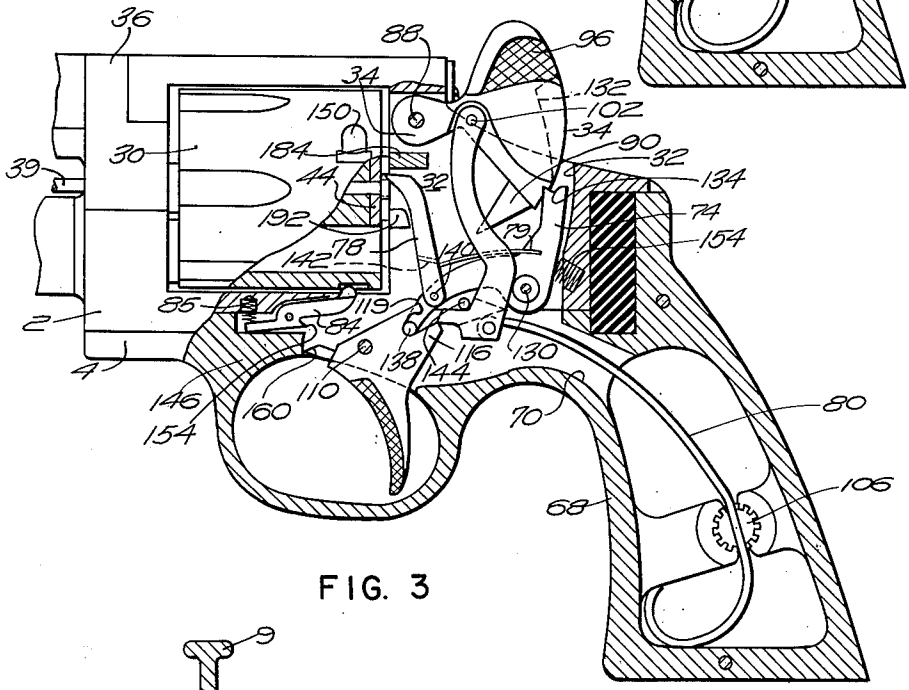

FIG. 3

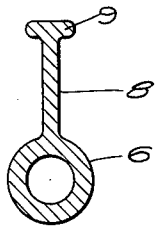

FIG. 13

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LOW BARREL REVOLVER

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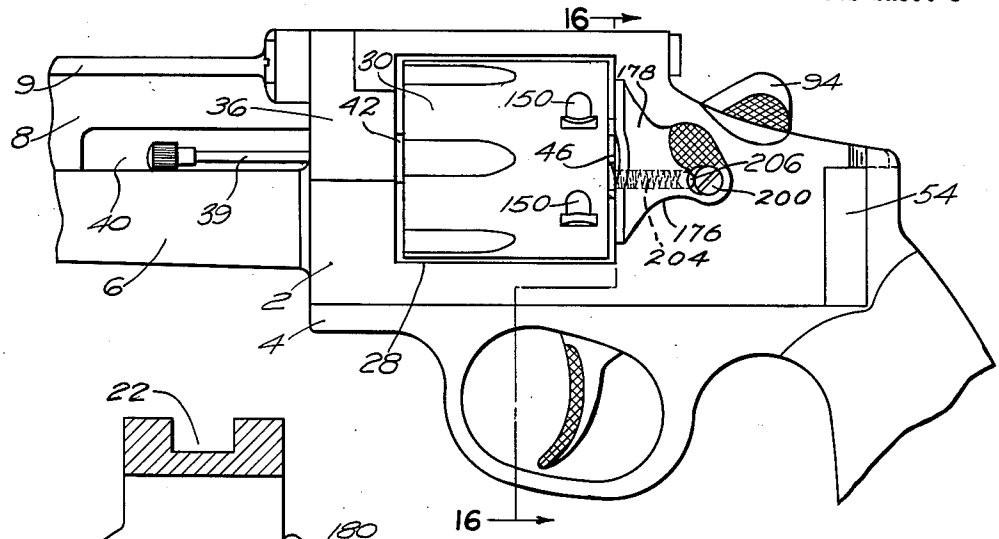

FIG. 15

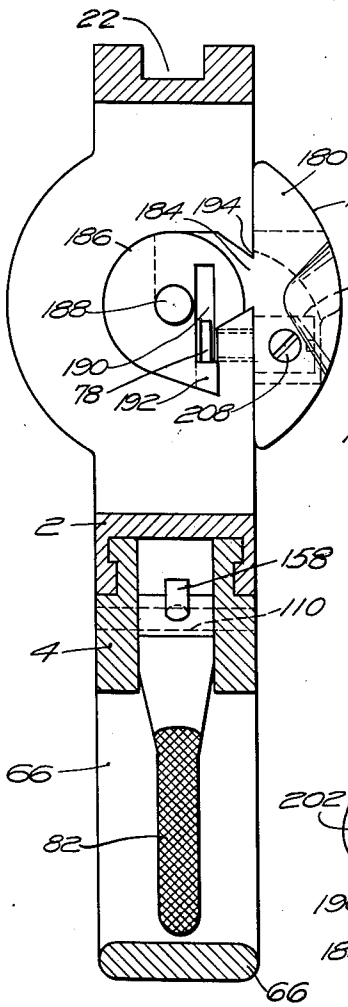

FIG. 16

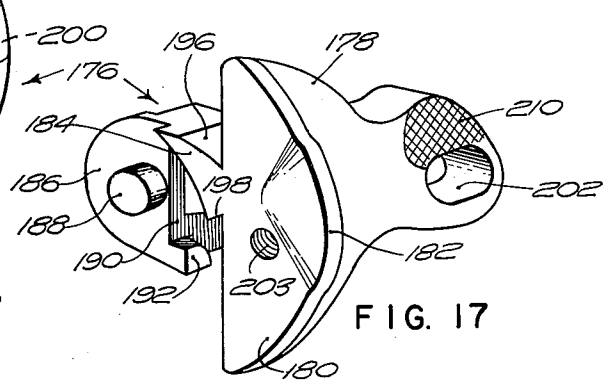

FIG. 17

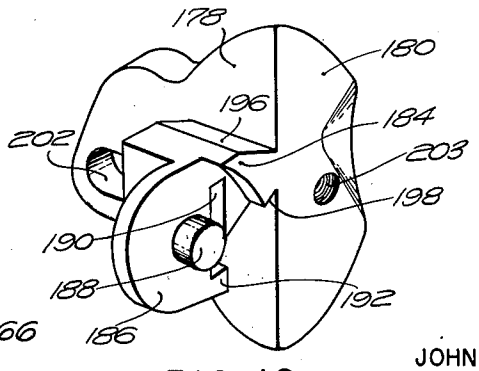

FIG. 18

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LOW BARREL REVOLVER

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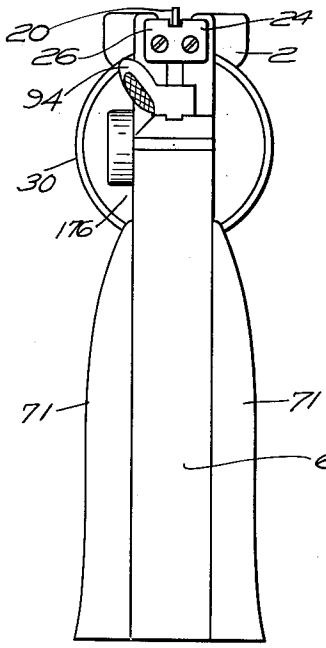

FIG. 5

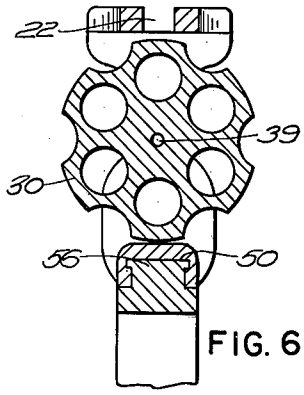

FIG. 6

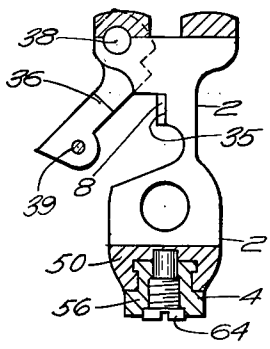

FIG. 7

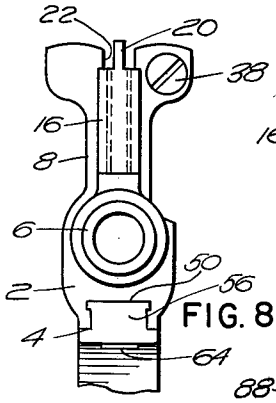

FIG. 8

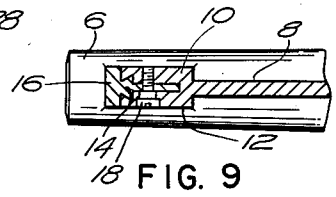

FIG. 9

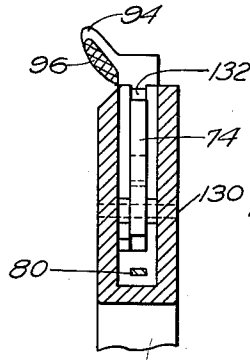

FIG. 10

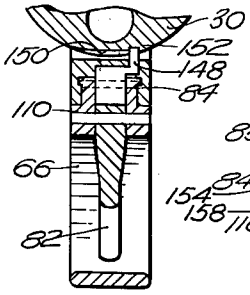

FIG. 11

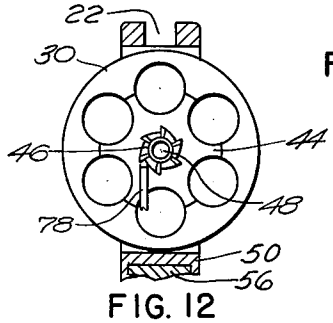

FIG. 12

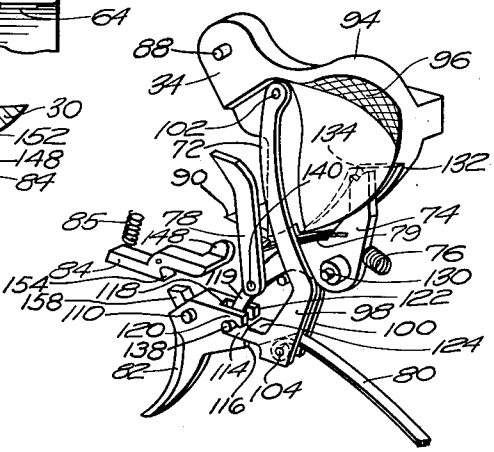

FIG. 14

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United States Patent Office 3,027,673 Patented Apr. 3, 1962

3,027,673

LOW BARREL REVOLVER

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Filed Mar. 26, 1957, Ser. No. 648,569
8 Claims. (Cl. 42—65)

This invention relates to revolvers and more particularly to a revolver having its barrel located in line with the bottom instead of the top chamber of the cylinder.

It is well recognized that the accuracy with which a gun is fired at a target is affected by the recoil force of the gun. In conventional revolvers the barrel is located in line with the top chamber of the cylinder, so that when the revolver is aimed and fired the recoil force of the pistol is in a line above the user's arm. The recoil force acts to make the user's shooting arm bend at the wrist and elbow, throwing the pistol upwardly out of control so as to spoil the accuracy with which the gun was aimed. This difficulty is even more bothersome during rapid firing of the revolver for the speed with which the revolver is fired must be curbed to allow the revolver to be re-aimed after every shot. It is recognized that if the recoil force could be placed more nearly in line with the shooter's arm, the tendency of the pistol to kick upwardly would be materially reduced with an attendant increase in accuracy. It is also recognized that if the recoil force could be rapidly dissipated or absorbed, still further increase in accuracy would be achieved.

Accordingly, one of the primary objects of this invention is to provide a revolver that is so constructed that the recoil force is more nearly in line with the shooter's arm, whereby the revolver may be discharged with greater accuracy, especially under conditions of rapid firing.

Another primary object of this invention is to provide a revolver that is so constructed that the barrel and cylinder shift as a unit relative to the handle when the revolver is fired, thereby greatly reducing the effect of the recoil force on the handle and the shooter's arm.

A more particular object of this invention is to provide a revolver having its barrel located in a line with the bottom chamber of its cylinder and mounted on the frame so that it may be swung laterally and upwardly for loading and subsequent removal of empty shells.

Another object of this invention is to provide a low barrel revolver which includes as part thereof a new and improved double-action firing mechanism.

Still another object of this invention is to provide a new and improved double-action firing mechanism for a revolver of the type having its barrel located in line with the bottommost chamber of its cylinder, the firing mechanism comprising a hammer pivoted to the frame above the axis of the cylinder and having a firing pin for firing a bullet positioned in the bottom chamber of the cylinder, a trigger, a pivoted sear for locking the hammer in elevated handcocked position, the sear being movable by the trigger to release the hammer, a stirrup connected to the hammer, spring means for causing the stirrup to swing the hammer to firing position when the hammer is released by the sear, means associated with the trigger for moving the stirrup to elevate the hammer to a point short of full cocked position when the trigger is pulled, the means associated with the trigger arranged to thereafter clear the stirrup when said hammer is in elevated position short of full cocked position, thereby to allow the stirrup under the influence of the spring to return the hammer to firing position, a hand for indexing the cylinder one chamber each time the hammer is raised, and a bolt for locking the cylinder after it has been indexed one chamber by the hand.

Other objects and many of the attendant advantages of this invention will be readily appreciated as the same

becomes better understood by reference to the following detailed description when considered in connection with the accompanying drawings, wherein:

FIG. 1 is a side elevation of a revolver constructed according to the present invention, with a portion of the revolver broken away in section to show the elements of its firing mechanism approximately in their normal at rest position;

FIG. 2 is a side elevation, similar to FIG. 1, showing the initial movement of the hammer as it is raised by movement of the trigger during fast firing operation;

FIG. 3 is a view similar to FIG. 2, but showing the hammer and trigger in hand cocked position;

FIG. 4 is a view similar to FIG. 3, but showing how the trigger pivots the sear to release the hammer from hand cocked position;

FIG. 5 is a rear elevation of the revolver of FIG. 1;

FIG. 6 is a vertical sectional view taken on line **6—6** of FIG. 2;

FIG. 7 is a sectional view taken along line **7—7** of FIG. 2, showing how the hinged plate to which the cylinder is attached can be swung away from the revolver frame to unload and reload the cylinder;

FIG. 8 is a front view in elevation of the barrel;

FIG. 9 is a top sectional view taken along line **9—9** of FIG. 1;

FIG. 10 is a sectional view taken along line **10—10** of FIG. 1;

FIG. 11 is a sectional view taken along line **11—11** of FIG. 1;

FIG. 12 is a sectional view taken along line **12—12** of FIG. 2 prior to any trigger movement;

FIG. 13 is a sectional view taken along line **13—13** of FIG. 1; and

FIG. 14 is a perspective view of the elements of the firing mechanism.

FIG. 15 is a side elevation of the same revolver showing the location and certain details of the releasable latch provided to lock the cylinder in firing position within the gun frame.

FIG. 16 is a vertical section taken along line **16—16** of FIG. 15.

FIG. 17 is a perspective view of the cylinder latch when removed from the revolver and,

FIG. 18 is a perspective view of the removed latch of FIG. 17 taken from a different vantage point.

The revolver comprises two main body parts, a cylinder frame section **2** and a trigger frame section **4**. The cylinder frame section supports the barrel and the cylinder. The barrel indicated at **6** has integral with its top side a long narrow fin **8** with an upper edge flange **9**. As seen in FIGS. 1 and 9, the enlarged forward end of the fin is bifurcated to provide two spaced flanges **10** and **12**, the forward ends of which are grooved vertically to provide a dovetail section for receiving a dovetail flange **14** of a forward sighting element **16**. A set screw **18** draws flanges **10** and **12** together to lock the sight **16** in vertically adjusted position. The upper end of sight **16** has a narrow bead **20** clearly visible for sighting purposes above the fin **8**. Bead **20** is viewed in sighting through a longitudinal groove **22** in the frame section over the cylinder. A cooperating rear notched sight **24** is held in place by set screws **26** and with bead **20** helps the shooter to aim the revolver.

At the rear end of the barrel **6** the cylinder frame section **2** is provided with a large rectangular transverse opening **28** to receive a cylinder **30**. Rearwardly of opening **28** cylinder frame **2** has a vertical cavity as at **32** to receive certain elements of the firing mechanism, including a hammer **34**.

Cylinder frame section **2** is cut away at **35** (FIG. 7) on the barrel side of opening **28**. Fitting in this cut

away area is a cylinder carrying arm 36 hinged to frame section 2 by a pivot 38. This arm serves the purpose of carrying the cylinder from firing to loading position and vice versa.

Extending through arm 36 is a long small diameter pin 39 on which cylinder 30 rotatably mounted while maintained longitudinally within the confines of opening 28. Fin 8 is cut away as at 40 to accommodate the forward end of the pin. The forward end of the cylinder 30 is provided with a concentric collar 42 which surrounds pin 39 and rotatably engages the rear face of plate 36 to permit easy rotation of the cylinder. At its rear end pin 39 carries a shell ejector 44 which normally resides in a correspondingly shaped depression in the rear face of cylinder 30. The rear face of shell ejector 44 is provided with a small ratchet gear 46 whose teeth are so shaped as to cause the cylinder to be rotated clockwise (FIG. 12) by a hand element described hereinafter. At the center of its rear face gear 46 has a small cavity 48 adapted to receive a stud 188 carried by a cylinder latch 176 described hereinafter. When stud 188 is released by movement to the rear of the cylinder latch, cylinder 30 can be swung laterally out of the cylinder opening 28 (see position of plate 36 in FIG. 7) for loading and unloading purposes. The cylinder is unloaded by pushing pin 39 rearwardly with respect to the cylinder. This forces the ejector plate 44 away from the rear face of the cylinder to eject the empty shells. Then the ejector is returned to its normal position in the rear face of the cylinder and the cylinder is reloaded and swung back into cylinder opening 28. In the illustrated embodiment the ejector is moved back into the depression in the rear face of the cylinder by pulling pin 39 forward and with the cylinder in firing position is maintained in this position by the cylinder latch 176 hereinafter described. However, it is to be understood that suitable spring means may be provided which will automatically return the ejector plate to its normal position when pin 39 is released.

The lower edge of the rear section of cylinder frame 2 is provided with an inverted undercut groove 50 designed to cooperate with a corresponding tongue 56 on the forward portion of trigger frame 4 whereby the cylinder frame and the trigger frame may slide longitudinally with respect to each other. At its rear end tongue 56 is transversely slotted as at 58 to receive the bottom end of a recoil cushioning member 54 while a vertical extension 60 on frame section 4 supports the rear vertical side. The top and front faces of cushion 54 are engaged by corresponding surfaces on the rear of frame 2.

The two frame elements are brought into operative relation by sliding cylinder frame 2 onto trigger frame 4, the tongue 56 mating with groove 50. The bottom edge of cylinder frame 2 just forwardly of opening 28 is provided with an elongated slot 62 (FIG. 2). Trigger frame member 4 is provided with a tapped hole which receives a set screw 64, the upper end of which extends into slot 62 thus preventing longitudinal disengagement of the frames while permitting limited relative longitudinal movement. Normally cylinder frame section 2 is so positioned relative to trigger frame section 4 that set screw 64 projects into the rear end of slot 62. This normal position is maintained by cushion member 54 which being under pressure constantly urges the two frame members away from each other. When the revolver is fired, the recoil force drives cylinder frame 2 rearwardly relative to trigger frame section 4, compressing cushion member 54. The cushion member 54 absorbs a substantial portion of the recoil force of the gun, thereby limiting the effect of the recoil on the accuracy of fire.

Trigger frame section 4 comprises a trigger guard 66 and a handle portion 68 and is slotted at 70 to accommodate certain elements of the firing mechanism. Suitable handle side covers and gripping elements 71 are secured to handle portion 68.

The firing mechanism comprises the following elements: hammer 34, stirrup 72, sear 74, compression spring 76, hand spring 79, main spring 80, trigger 82, cylinder bolt 84, and cylinder bolt spring 85. The arrangement of these elements may be most clearly seen in FIG. 14. Hammer 34 is pivoted at 88 in back of the top chamber of the cylinder and is provided with a pointed firing pin 90. As seen in FIGS. 1 and 3, the hammer pivots upwardly and rearwardly from the firing position wherein the firing pin points forwardly, to a cocked position wherein the firing pin points downwardly at an inclined angle. Hammer 34 is provided with a finger gripper lip 94 whose underside is knurled as at 96. To cock hammer 94 the user places his thumb below lip 94 in engagement with knurled surface 96 and pivots the hammer upwardly from the position of FIG. 1 to the position of FIG. 3.

Stirrup 72 is bifurcated so as to provide two spaced arms 98 and 100. Both arms are pivotally secured at their top ends to hammer 34 by a pivot pin 102. Extending to a point between the arms and secured to their lower ends by a pivot pin 104 is the forward end of main spring 80. Main spring 80 projects rearwardly through slot 70 into the handle section 68 and is secured in place in the handle by means of a conventional tension adjusting member 106.

Trigger 82 is pivotally connected to frame section 4 by a pivot pin 110. The rear end of trigger 82 is notched horizontally as at 114 to provide a rearwardly extending lip 116 and is notched vertically at 118 to provide two spaced legs 120 and 122. Stirrup 72 is provided with a short forwardly extending arm 124 which, when the gun is uncocked, extends over lip 116 of trigger 82. See FIGS. 1 and 14.

Sear 74 serves the purpose of holding the hammer in cocked position and is pivoted to cylinder frame 2 by means of a shaft 130. The upper portion of sear 74 extends into a curved groove 132 provided along the rear edge of hammer 34. The top end of sear 74 is notched as at 134. Hammer 34 is provided with a full cock notch 136 at the lower end of the groove 132. The sear has connected thereto a forwardly extending lever arm 119 which passes between the arms of the stirrup and the short legs 120 and 122 of the trigger and is provided with a crosswise extending pin 138 which resides in slot 114 of trigger 82. Sear 74 is urged forward against hammer 34 by a compression spring 76 seated in a small hole in cylinder frame 2.

Hand 78 which acts to index the cylinder is pivoted to sear 74 between shaft 130 and pin 138 by a pivot pin 140. Formed integral with hand 78 is a short laterally extending flange 142 which is engaged on its underside by a leaf spring 79, the rear end of which is secured to sear 74 and extends forwardly therefrom between the arms 98 and 100 of stirrup 74. Spring 79 acts against the flange 142 in such manner that the top end of the hand 78 is continuously urged forwardly to be in engagement with ratchet gear 46. A stop 144 limits the counterclockwise movement of sear 74 and also guides the movement of the lower end of stirrup 72.

The cylinder bolt 84, previously referred to, is secured to trigger frame 4 by a pivot pin 146. This bolt is provided with an upwardly turned projection 148 at its rear end which is adapted upon upward movement to enter into the sloping circumferential notches 150 in the periphery of cylinder 30. The notches 150 commence flush with the periphery of cylinder 30 and terminate abruptly at a depression of greater depth as at 152 and in cooperation with bolt 84 and the indexing mechanism serve to align successively each bullet chamber of the cylinder with the barrel. Each notch is of course in the same relative position with its bullet chamber.

The forward end of bolt 84 is engaged by a small compression spring 85 seated in a cavity in cylinder frame section 2. Spring 85 acts to press projection 148

up into engagement with the outer surface of cylinder 30 so that as the cylinder is rotated projection 148 will automatically enter the next oncoming notch 150. The cylinder will be stopped and locked by bolt 84 when projection 148 enters the deeper depression 152 at the end of notch 150.

In order to remove projection 148 from notch 150 so that the cylinder may be indexed to the next firing position, the following mechanism is provided. The underside of bolt 84 has a rearwardly extending tapered lip 154. This cooperates with a movable pin 158 projecting upwardly and forwardly out of the trigger. A small compression spring supports the inner end of pin 158. The outer end of pin 158 is tapered as at 160 (FIG. 3). When the trigger is at rest in its forward position (FIG. 1) the end of pin 158 overlaps lip 154 but does not prevent spring 85 from pressing projection 148 against the cylinder and into notch 150. Thus if the trigger is at rest and the cylinder is positioned so that one of its notches 152 is positioned directly over projection 148, spring 85 will hold projection 148 in the notch and thereby lock the cylinder against clockwise rotation (FIG. 11). However, when the trigger is pulled rearwardly a slight amount pin 158 will press against lip 154 and pivot the bolt 84 clockwise (FIG. 1) to free the cylinder. As the trigger is moved further pin 158 will slide past lip 154, allowing the spring 85 to move projection 148 back into pressing engagement with the exterior surface of cylinder 30 (FIG. 2) which has now rotated slightly. Thus when the next batch 150 approaches projection 148, the latter will enter the notch but will not stop rotation of the cylinder until it slips into the deeper terminal notch 152. When the trigger is released and moves forward again, pin 158 on encountering lip 154 will be displaced lengthwise to snap past lip 154 to its original position (FIG. 1), the spring 156 being compressed to permit this action.

Referring now to FIGS. 15–18, a latch element is provided that holds the cylinder in operative position in opening 28 without impeding its rotation. The latch element is designated generally by numeral 176. It comprises a body portion 178 provided at its front end with an outwardly extending flange 180 whose edge 182 is curved to correspond to the curvature of cylinder 30. At its front end, body portion 178 has a laterally extending connecting portion 184 provided with a flat transversely extending plate 186. The latter is provided on its front surface with a cylindrical stud 188. The underside of connecting portion 184 and the face of plate 186 is slotted as at 190. Plate 186 has a short projection 192 that extends toward body portion 178.

Latch element 176 is attached to cylinder frame 2 in a manner permitting sufficient rearward movement to free cylinder 30 of stud 188. One wall of frame 2 is provided with an elongated mortise-type slot 194 that extends rearwardly from cylinder opening 28. The connecting portion 184 of the latch element extends through slot 194. Top and bottom surfaces of connecting portion 184 are beveled as at 196 and 198 so as to mate with the top and bottom beveled edges of slot 194. The result is a tongue and groove relationship whereby the latch element may slide rearwardly a limited distance in the cylinder frame.

Removably secured in a tapped opening in the side wall of the cylinder frame 2 is a screw 200. The head of the screw is located in a slot 202 provided in the latch element. The length of slot 202 determines the distance through which the latch element can be moved relative to the cylinder frame. Extending lengthwise through the body of the latch element is a small bore 203 in which a compression spring 204 is located. Attached to one end of the spring is a small ball 206 that engages the side of the head of screw 200. The forward end of bore 203 is threaded to receive a short screw 208 which holds the spring in place. Spring 204 urges the latch element forward to maintain the stud 188 in the round opening 48 provided in the rear face of gear 46. Stud 188 acts to prevent the cylinder from being swung out of cylinder opening 28 but does not prevent it from being rotated by hand 78. When it is desired to reload the cylinder, the latter is released by pushing the latch element rearwardly. When the latch element is released it is returned by spring 204 to its forward cylinder-holding position (FIG. 15). It is to be noted that the outer surface of the latch element is knurled at 210 to assure ready release of the cylinder.

The latch element does not interfere with the hammer or any of the other elements of the firing mechanism. As shown in FIG. 1 the connecting portion 184 of the latch element is spaced from the hammer even when the latter is in its forward firing position. FIGS. 1–4 illustrate the purpose of slot 190 and projection 192 of the latch element. The hand 78 extends up through the slot behind projection 192 and engages the ratchet gear. Because the hand is to one side of the cylinder axis, the cylinder cannot be swung out to reloading position unless hand 78 is moved rearwardly away from gear 46. This is taken care of by projection 192. When the latch element is shifted rearwardly to withdraw stud 188, projection 192 engages the forward edge of the hand and moves it rearwardly about its pivot 140 clear of the gear. As the hand is moved rearward it biases leaf spring 79. Thus when the latch element returns to its forward position, spring 79 urges the hand in the same direction to place it back into engagement with the ratchet gear 46.

Operation of the revolver is as follows:

(1) *Hand cocking.*—In this method of operation, the hammer 34 is lifted by placing the thumb under lip 94. As the hammer is lifted from its uncocked position (FIG. 1), it cams sear 74 rearwardly against the force of spring 76 and at the same time, through arm 119 and pin 138 causes trigger 82 to swing rearwardly. Stirrup 72 moves upward with the hammer against the pull of main spring 80. As soon as the full cock notch 136 of the hammer rises above forked end 134 of the sear, the sear springs forward into the notch 136 to hold the hammer in full cocked position (FIG. 3). In this position the arm 124 of the stirrup is above and to the rear of lip 116 just sufficiently to allow the stirrup to be snapped downwardly by spring 80 when the revolver is fired by further movement of the trigger.

It is to be noted that when the sear is pivoted rearwardly through raising of the hammer it pivots the trigger in the same direction. As soon as the trigger is moved, pin 158 acts downwardly on lip 154 of bolt 84 to rotate the latter clockwise removing projection 148 from notch 152. This allows the cylinder to be indexed by upward movement of hand 78 which is operated simultaneously by the sear. Hand 78 in engagement with one tooth of gear 46 rotates cylinder 30 one chamber, that is, one-sixth of a revolution. As soon as the pin 158 clears the bolt, and this occurs immediately after the bolt has been pivoted away from the cylinder and the cylinder has begun to rotate, the bolt is pivoted by spring 85 back into engagement with the rotating cylinder and soon enters the next slot 152. With the hammer cocked as in FIG. 3, bolt 84 and hand 78 cooperate to hold the cylinder stationary with the bottommost chamber in alignment with barrel 6.

Thereafter when trigger 82 is squeezed to fire the revolver, it pivots sear 74 rearwardly to move it out of hammer notch 136. FIG. 4 shows the sear just before its forked end 134 is clear of notch 136. As soon as the sear clears the notch, spring 80 instantly pulls stirrup 72 downward, thereby causing the hammer to pivot downward and forward so that firing pin 90 will strike the cap of the bullet in the bottommost chamber of the cylinder, thereby firing the bullet. It is to be noted when the trigger is squeezed to fire the revolver, its lip 116 moves slightly further forward beyond stirrup projection

124, thereby eliminating any interference with the stirrup as it is pulled by spring 80 down to its original position when sear 74 is moved clear of notch 136. After the trigger is released, spring 76 acts to move sear 74 forward to the extent permitted by the curved groove 132 in the rear edge of hammer 34. This acts to pivot trigger 82 forward to its original position. As the trigger 82 swings forward, its lip 116 engages the beveled end of stirrup arm 124, camming the lower end of the stirrup rearwardly enough to allow lip 116 to return to its original position (FIG. 1). Stirrup 72 is able to yield because it is pivoted at its upper end by pin 102 to hammer 30 and secured at its other end to spring 80. Pivot pin 130 of the sear limits rearward movement of stirrup 72. Guide pin 144 limits upward movement of hammer 34, although permitting the hammer to be raised just high enough to allow the forked end of the sear to enter the full cock notch 136. Pin 144 also limits the extent to which arm 124 can extend forward over lip 116 of the trigger when the trigger and stirrup are in their at-rest positions (FIG. 1).

(2) *Fast firing.*—In this method of operation the shooter need not cock the hammer. Instead he merely pulls the trigger to actuate the hammer. When the trigger is pulled, its lip 116 bears against arm 124 to lift the stirrup 72. This in turn raises the hammer. The trigger also pivots the sear rearwardly so as to allow the hammer to be lifted readily by the stirrup. As the stirrup moves upwardly it is cammed rearwardly a limited amount by guide pin 144 acting against its forward edge. At the same time lip 116 of the trigger swings counterclockwise about axis. At a predetermined point the lip 116 clears arm 124. This takes place before the hammer is raised high enough to allow sear 74 to snap forward into notch 136. FIG. 2 shows the position of the various elements of the firing mechanism shortly before the lip 116 of the trigger clears stirrup arm 124. As soon as the lip clears arm 124, spring 80 pulls the stirrup down, causing the hammer to swing downward and forward to fire the bullet in the bottom chamber of cylinder 30. Spring 76 moves sear 74 forward again as soon as the trigger is released, and this forward movement of the sear causes the trigger to return to its original position. As described previously, stirrup 72 yields rearwardly to allow lip 116 of the trigger to clear arm 124 as the trigger returns to its normal at-rest position. Thereafter the revolver may be fired again in the same manner. The revolver may be fired as fast as the mechanism returns the stirrup and trigger to the position shown in FIG. 1. Hand 78 and cylinder bolt 84 operate to index the cylinder in the same manner as when the revolver is cocked by lifting the hammer with the thumb.

With a revolver constructed as described it is possible to shoot with greater accuracy than is possible with conventional revolvers. This is due (1) to the fact that the low barrel places the recoil force more in line with the shooter's arm; (*b*) to the fact that a substantial portion of the recoil force is cushioned or absorbed by resilient pad 76; and (*c*) to the fact that the firing mechanism works smoothly, rapidly, and easily. Additionally, the loading and unloading may be accomplished in a conventional manner with the cylinder arranged to be swung outwardly and upwardly after unlatching by rearward movement of latch 176.

Obviously many modifications and variations of the present invention are possible in the light of the above teachings. Therefore, it is to be understood that the invention is not limited in its application to the details of construction and arrangement of parts specifically described or illustrated, and that within the scope of the appended claims it may be practised otherwise than as specifically described or illustrated.

I claim:

1. A revolver comprising a barrel, a cylinder, a supporting frame and a double-action firing mechanism, said mechanism comprising a hammer having a firing pin and a full cock notch, said hammer being pivoted to swing upwardly and rearwardly, a trigger pivotally mounted on said frame below said hammer, a sear pivoted to said frame and having a lower arm, a compression spring bearing against said sear urging said upper end toward said hammer, whereby when said hammer is manually pivoted through a sufficient arc the upper end of said sear will automatically move into said full cock notch and hold said hammer in cocked position, the said lower arm of said sear being engaged by said trigger rearwardly of the pivot point of said trigger and being movable by said trigger so as to withdraw said sear from said full cock notch to free said hammer when said trigger is moved to firing position, a stirrup pivotally connected to said hammer and extending downwardly toward said trigger, a spring connected to said stirrup and urging said stirrup downward whereby when said sear is withdrawn from said full cock notch said hammer is instantly pulled by said stirrup down to firing position, a forwardly extending projection on the lower end of said stirrup, and a rearwardly extending projection on said trigger, said stirrup projection extending over said trigger projection when said trigger is in at-rest position, whereby when said trigger is pulled back said trigger projection will engage said stirrup projection to move said stirrup upwardly against the bias of said spring so as to pivot said hammer to a firing position, said stirrup projection further having its length short enough to be cleared by said trigger projection when said trigger has been pulled back far enough, thereby allowing said spring to pull said stirrup downwardly to return said hammer to firing position, said trigger being returnable to said at-rest position by said sear and said stirrup being shiftable rearwardly by said trigger projection when said trigger is moved from firing position back toward said at-rest position, thereby to allow said trigger projection to clear said stirrup projection so that said trigger may return fully to said at-rest position.

2. A revolver comprising a cylinder, a frame having a barrel and a transverse opening behind said barrel for receiving said cylinder, a plate, means carried by said plate rotatably supporting said cylinder, hinge means connecting said plate to said frame whereby said plate may be swung into and out of said transverse opening, a cartridge ejector carried by said cylinder, said ejector having a ratchet gear fixed on its rear surface, said gear having a small depression at the center of its rear face, said frame having an interior cavity rearward of and communicating with said transverse opening, a firing mechanism carried by said frame including a hammer pivoted to swing upwardly and provided with a firing pin, a trigger, means operated by said trigger for causing said hammer to fire a cartridge in said cylinder, a hand for engaging said ratchet gear to index said cylinder a predetermined amount sufficient to advance a new cartridge into firing position as said hammer is raised, releasable latch means for preventing said cylinder from being swung out of said transverse opening, said releasable means comprising a lateral body section extending into said cavity through a side opening in said frame, a stud member on the front face of the inner end of said lateral body section normally projecting into the depression in said ratchet gear, and spring means urging said body section forward to keep said stud in said depression, said body section having a portion extending outside of said frame whereby it may be forced manually away from said ratchet gear to allow said cylinder to be swung out of said transverse opening.

3. A revolver as defined by claim 2, wherein said body section includes means for disengaging said hand from said ratchet gear when said body section is moved rearwardly to release said cylinder.

4. A revolver comprising first and second frame sections, said first frame section including a barrel, hammer,

and a cylinder wherein the barrel is in line with the bottommost chamber of the cylinder, said second frame section including a trigger and a handle, said frame sections being secured to each other by means permitting said first frame section to move relative to said second frame section along a path parallel to the axis of said barrel, and absorbing means between said frame sections for absorbing the recoil of said first frame section as it moves rearwardly upon firing, said cylinder being pivoted to swing laterally in an upward arc, said hammer being pivoted to said upper first frame above the axis of said cylinder and having a firing pin, said hammer and firing pin pivoting downwardly and forwardly when actuated by said trigger to fire a cartridge positioned in said bottommost chamber.

5. A double action revolver comprising a first frame having thereon a barrel, a cylinder and a hammer having a firing pin for firing a cartridge in the bottommost chamber of said cylinder, a second frame having thereon a trigger, a spring for actuating said hammer and means extending from one frame to the other actuated by said trigger for raising and releasing said hammer and for indexing said cylinder while said hammer is being raised, said hammer being pivoted to said first frame above the axis of said cylinder to swing downwardly on said pivot to fire said cartridge; said first frame being longitudinally slideably moveable on said second frame; shock absorbing means being provided between said frames.

6. A low barrel revolver comprising a barrel and a cylinder frame secured thereto, a rotatable cylinder mounted on said frame and having a plurality of cartridge receiving openings with the lowermost opening aligned with said barrel, an arm pivoted to said cylinder frame and carrying a shaft on which said cylinder rotates, said arm being swingable laterally whereby said cylinder may be swung in an upward arc to a side position for loading and unloading, a trigger frame secured in sliding relation to said cylinder frame, double action firing mechanism comprising a trigger mounted on said trigger frame, a hammer connects to said cylinder frame by a pivot positioned above the axis of said cylinder and cooperating elements therebetween, said hammer having a firing pin extending forwardly therefrom, said hammer and firing pin swinging downwardly and forwardly on said pivot when actuated by said trigger to fire a cartridge positioned in said lowermost opening; shock-absorbing means being provided between said frames.

7. A revolver as set forth in claim 6 in which said cooperating elements comprise a stirrup pivoted to said hammer and movable by said trigger to swing said hammer upwardly, a sear pivoted to said cylinder frame for latching said hammer in cocked position when said hammer has been raised manually a sufficient distance, a spring for snapping said hammer to firing position when said stirrup is freed from said trigger and means for indexing said cylinder as said hammer is being raised.

8. A double action low barrel revolver comprising a barrel and a cylinder wherein the barrel is in line with the bottommost chamber of the cylinder, a cylinder supporting frame and a trigger frame, said frames longitudinally movable with respect to each other a predetermined limited distance, a cushion positioned between said frames for absorbing rearward movement of said barrel, cylinder frame and cylinder as it moves rearwardly toward said trigger frame upon firing and firing mechanism comprising a hammer pivoted on said cylinder frame, above the axis of said cylinder, a trigger on said trigger frame and means actuated by said trigger for simultaueously raising said hammer and indexing said cylinder and other means for snapping said hammer to firing position after said trigger has swung rearwardly through a sufficient arc, said hammer having a firing pin extending forwardly therefrom, said hammer and firing pin swinging downwardly and forwardly on said pivot when actuated by said trigger to fire a cartridge positioned in said bottommost chamber.

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