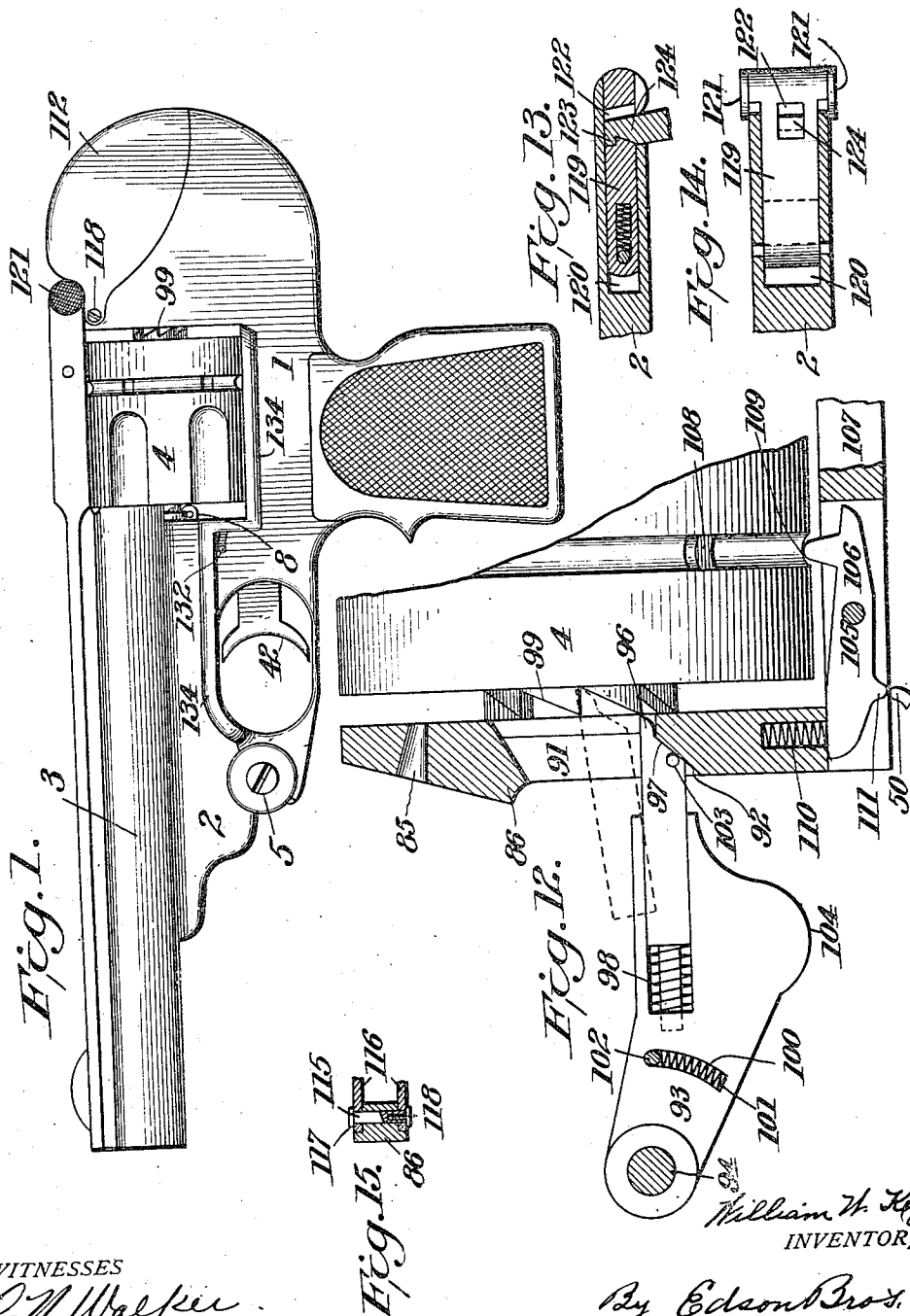


1,049,106.



WITNESSES
C. M. Walker
M. E. Shook

William W. Key
 INVENTOR,
By Edson Bros.
 Attorneys.

APPLICATION FILED DEC. 5, 1911.

Patented Dec. 31, 1912.

4 SHEETS—SHEET 2.

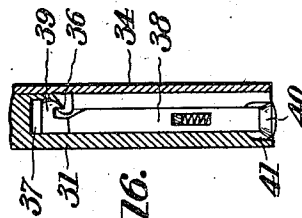


Fig. 16.

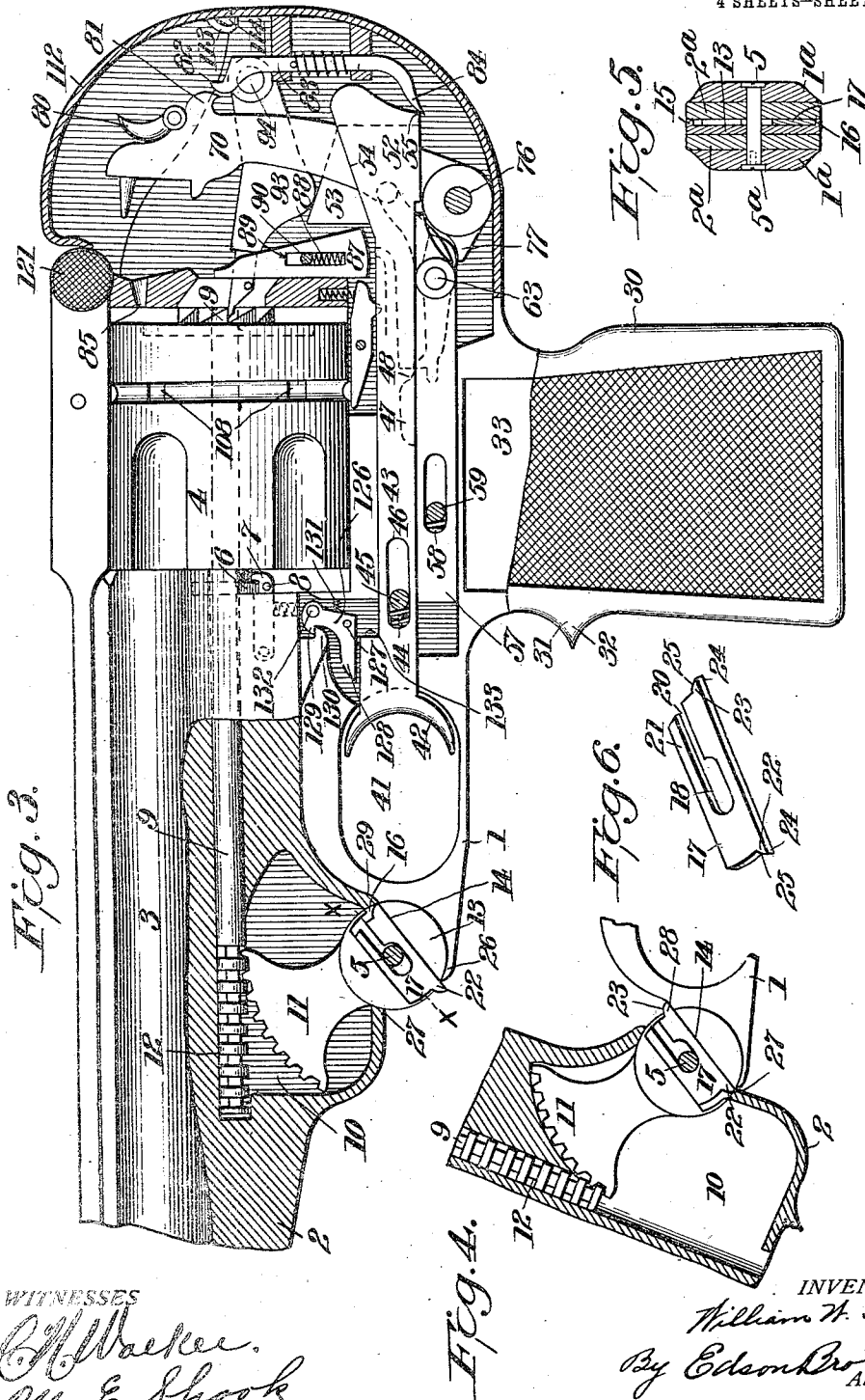
W. E. Shook

By Edison Bros.
Attorneys.

1,049,106.

Patented Dec. 31, 1912.

4 SHEETS—SHEET 3.



WITNESSES
C. H. Waacke.
W. E. Shook

INVENTOR
William W. Key,
By Edson Bros.
Attorney & Co.

W. W. KEY.

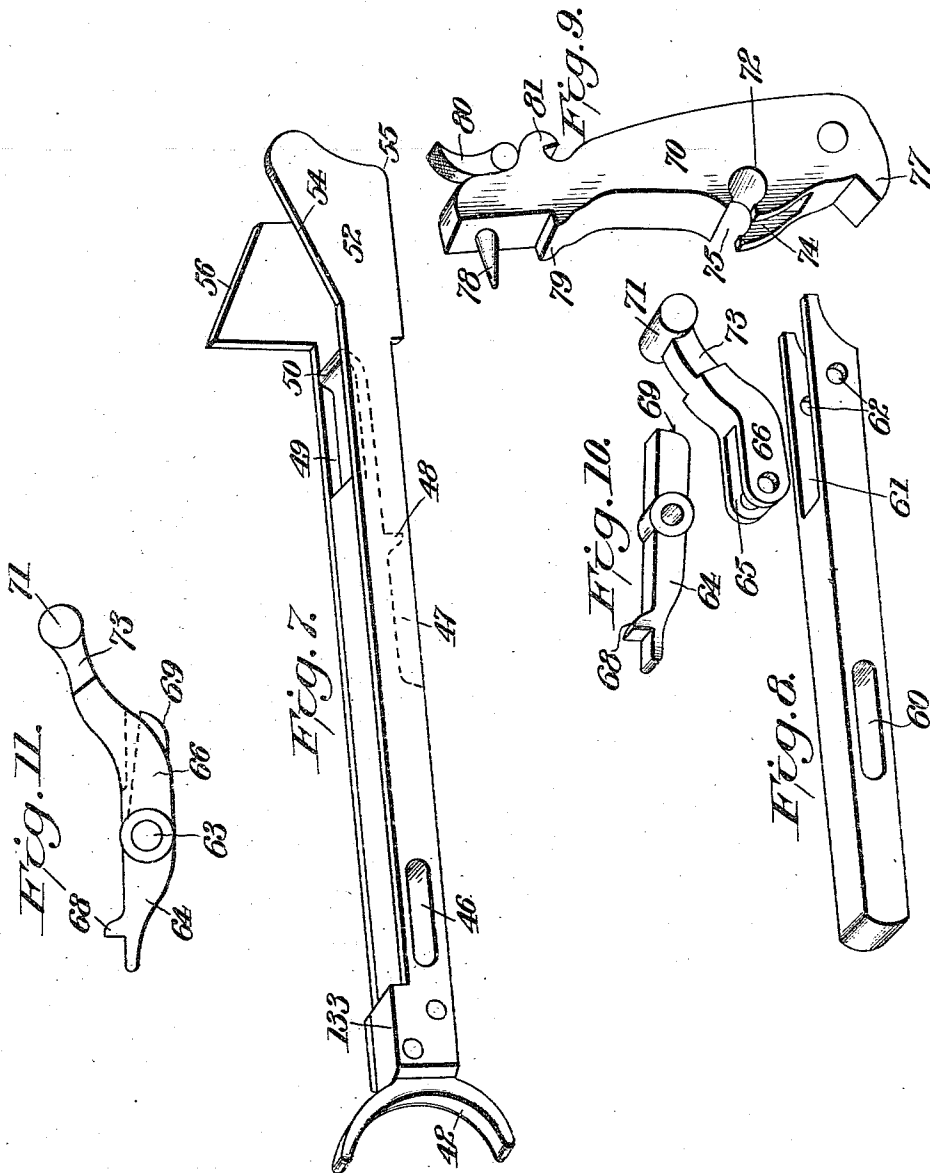
REVOLVER.

APPLICATION FILED DEC. 5, 1911.

1,049,106.

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4 SHEETS-SHEET 4.



WITNESSES

C. M. Walker,
W. E. Shook

William W. Key,
INVENTOR,

By Edson Bros.,
Attorneys.

UNITED STATES PATENT OFFICE.

WILLIAM WARREN KEY, OF FAYETTEVILLE, ARKANSAS.

REVOLVER.

1,049,106.

Specification of Letters Patent.

Patented Dec. 31, 1912.

Application filed December 5, 1911. Serial No. 664,069.

To all whom it may concern:

Be it known that I, WILLIAM WARREN KEY, a citizen of the United States, residing at Fayetteville, in the county of Washington and State of Arkansas, have invented certain new and useful Improvements in Revolvers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

One object of the invention is to insure accuracy in rapid shooting.

Another object is to reduce the strain upon the arm and hand in holding and firing the revolver.

It is also my aim to form the handle so that it will not only be in position to balance the revolver in such a manner as to insure accuracy in shooting but so that it will conform naturally to the hand and will consequently be restful rather than tiresome in the grasp.

Another object is to provide means for carrying an extra round of cartridges in the revolver where they will be accessible for immediate use in an emergency.

A further object is to reduce the length of the revolver over all, as compared with the length of the barrel, whereby the barrel may be made longer than in other revolvers without increasing the entire length of the weapon.

Another object of my invention is to provide improved and thoroughly reliable locking means for fastening the breaking portions of the revolver together, a secondary lock being employed to prevent the accidental opening of the revolver when in use or when handled by an inexperienced person.

A further object is to automatically lock the trigger when the revolver is open thereby preventing said trigger from being pulled when the revolver is being loaded. This lock is also designed to prevent the user from accidentally cocking the revolver, while loading, thus preventing accidental discharge after the weapon has been loaded and closed.

It is also my aim to prevent sparks from the cylinder from burning the finger which is extended along the frame and engaged with the trigger for firing the revolver.

Another object is to improve the construction and operation of the trigger mechanism

whereby it will be easier to operate and will not cause the barrel to waver before firing. In addition to raising and releasing the hammer, the trigger is designed to unlock the cylinder, to lock the hammer against accidental discharge, and to operate the mechanism for revolving the cylinder.

Another object of my invention is to provide improved operative connection between the trigger and hammer whereby the hammer and its operating arm cannot become separated or loosened while in the revolver but may be instantly detached or connected when removed from the gun. This connecting device is constructed with a view to its co-acting with the trigger for throwing back the hammer, as said trigger is pressed back, for automatically tripping said hammer and for returning said hammer when released, as in a hammerless revolver. The hammer is also adapted to be withdrawn by hand and automatically locked in its retracted position. The trigger is designed to automatically release the hammer when used in this manner.

A further object is to provide an improved accidental discharge lock operated by the trigger and serving to prevent the hammer from moving forward a sufficient distance to bring its firing pin into contact with the cap on the cartridge without pressing said trigger.

Still another object is to provide an improved ejector which is simple in construction, reliable and automatic in its operation. The cylinder is retained in position while the ejector moves back and forth as the revolver is opened and closed.

Other objects will become apparent from the following description.

The invention consists in the features of construction and combinations of parts hereinafter described, illustrated in the accompanying drawings, and specified in the appended claims.

In the accompanying drawings: Figure 1 is a side elevation of my revolver complete as when used for automatic firing. Fig. 2 is an enlarged broken side view of the revolver with the adjacent side plate removed. Fig. 3 is a similar view showing the trigger and hammer in their withdrawn positions just before the latter is released. Fig. 4 is a broken side view of the revolver in its open position to illustrate the operation of the

ejector. Fig. 5 is a detailed sectional view on the line $x-x$ of Fig. 3. Fig. 6 is a detailed perspective view of the reciprocating plate for controlling the operation of the ejector. Fig. 7 is a detail view of the sliding trigger. Fig. 8 is a detailed view of the hammer-actuating slide. Fig. 9 is a detailed view of the hammer. Fig. 10 is a detailed view of the two part connection between the trigger, hammer-actuating slide and hammer, said parts being separated. Fig. 11 is a side elevation of the same two parts assembled. Fig. 12 is an enlarged broken detailed view of the cylinder revolving mechanism, taken from the right hand side of the revolver. Fig. 13 is a central longitudinal vertical sectional view through the rear lock for securing the two parts of the revolver together. Fig. 14 is a broken top plan view of the lock shown in Fig. 13. Fig. 15 is a sectional view through the fastening device for the upper forward end of the detachable cap, the removal of which converts the revolver from the hammerless to the hammer type, and Fig. 16 is a transverse vertical sectional view through the lock which secures the closure of the cartridge storing chamber in the handle.

Referring more particularly to the drawings, 1 designates the lower part of the revolver which carries the firing mechanism, and 2 indicates the upper part including the barrel 3 and cylinder 4. The two parts are hinged together by a pivot pin 5, passed through overlapping pairs of pivot lugs 1^a and 2^a on the parts 1 and 2, and secured by a small screw 5^a, see Figs. 1 and 5.

On the front end of the cylinder there is formed a projecting collar 6 normally engaged by a spring-pressed hook 7 whereby said cylinder is retained in proper longitudinal position with respect to the other parts of the revolver but is free to be rotated for successively bringing the cartridges into position for firing. This hook 7 is provided with a small handle or projection 8 for releasing it from the collar 6 when it is desired to remove the cylinder for cleaning the same.

The ejector rod 9 passes through the cylinder in the customary way. The forward end of said rod extends into a chamber 10 in the part 2 of the revolver. Mounted in said chamber, upon the pivot pin 5 as an axis, is a segmental gear 11 meshing with a rack 12 on the end of the ejector rod. As illustrated in Fig. 3, said segmental gear has a disk-shaped offset portion 13 arranged between the pivot lugs 2^a. This offset portion or disk has a channel or groove 14 formed in its surface and extending diagonally thereof, the pivot pin projecting through its center. The opposite ends of said channel or groove are partially closed by flanges 15 which terminate short of the lower lateral

edge of said channel leaving openings 16 at each end thereof. In said channel is fitted a reciprocating plate 17 having an enlarged slot 18 embracing the pivot pin 5. One end of the plate is made a little wider than the channel, and has a slit 20 cut longitudinally therein extending to the elongated slot 18, leaving a resilient finger 21 which serves to hold the plate in either of its positions in the channel without employing a separate spring. Projections 22 and 23 are formed on the opposite ends of the plate 17 and are capable of being extended through the openings 16 at the ends of the channel. The length of the plate, exclusive of its projections, is somewhat less than the distance between the flanges 15 at the ends of the channel so that said plate is capable of having a reciprocating movement. The length of the projections 22 and 23 is such as to bring one of them flush with the periphery of the offset portion 13 at one side thereof when the plate is at the end of its stroke in the opposite direction, that is to say, when the opposite end of said plate is in engagement with the corresponding flange 15. In this position the projection on the last mentioned end of the plate will extend through the corresponding opening 16 beyond the periphery of the disk 13.

The projections 22 and 23 are preferably formed as extensions along the lower lateral edge of the plate 17. The lower sides of said projections are straight, as at 24, but their upper sides are rounded or beveled, as at 25, see Fig. 6. When the revolver is closed, the lower projection 22 engages a shoulder 26 on the lower part 1 and the projection 23 is arranged in line with the meeting edges of said lower part and the upper part 2, but said projection 23 is held within the periphery of the disk 13 by the abutting edges of said lower and upper parts. When the revolver is opened, the projection 22, engaging the shoulder 26, holds the segmental gear 11 rigid upon the lower part as the upper part is swung away from it. The result is that the ejector rod is moved longitudinally by reason of the segmental gear acting upon the rack 12, to remove the cartridges from the cylinder. When the parts 1 and 2 are opened to the fullest extent, the lower face of the upper part, at 27, engages the inclined side of the projection 22 and in riding up it forces the plate 17 upwardly until said projection 22 is retracted within the periphery of the disk 13 and the projection 23 is extended beyond the same along the upper surface of the part 1 at 28, see Fig. 4. The projection 23, engaging the lower part, at 28, holds the segmental gear 11 rigid upon said lower part while the upper part is closed upon it. When the two parts come together in closed position, the lower surface of the upper part, at 29, engages the beveled

side of the projection 23 and forces said projection back into the periphery of the disk 13, extending the projection 22 into its initial position. The operation of the ejector is, therefore, entirely automatic. The formation of the plate 17 with the resilient finger 21 retains it in either of its two positions until it is moved to the other position in the operation of opening and closing the revolver as just explained.

The handle 30 is arranged below and intermediate of the ends of the revolver, preferably beneath the cylinder. At the top of the front edge of the handle there is a groove 31, separated by a forwardly projecting point 32 from the lower part of the handle, to receive the second finger of the hand when clasped around said handle. The confining of this finger within the groove aids in supporting the revolver in the proper level position in the hand. The arrangement of the handle below the heaviest part of the gun makes it balance more naturally, removing the strain on the hand and causing the barrel to normally lie in a level position when the revolver is in operation, thereby making it comparatively easy to aim the weapon and saving considerable time in firing rapidly, as well as insuring accuracy.

The interior of the handle is hollowed out to form a chamber 33 for the storage of an extra round of cartridges. One side, 34, of the handle is hinged at 35 and constitutes a closure for the chamber 33. Said closure is provided with a hook shaped lug 36 on its inner face and registering with a recess 37 in the edge of the handle. Said recess extends down to the base of the handle and contains a spring-pressed catch 38 having a hook 39 at its upper end adapted to automatically interlock with the lug 36 on the closure 34. The lower end of the catch 38 is formed into the shape of a button 40 which is countersunk in the handle, as at 41, space being left to permit the necessary vertical movement of said button for releasing the latch from the lug on the closure when it is desired to open the latter.

The lower part 1 of the revolver is provided with a finger opening or slot 41 located just behind the pivot pin 5 and ejector disk 13. Said finger opening extends parallel to the barrel and into it extends the fingerpiece 42 on the forward end of the trigger slide 43 which also extends parallel to the barrel. Said trigger slide is normally held in its advanced position by a helical spring 44 housed therein and abutting against a fixed pin 45 passed through a slot 46 in said trigger slide for limiting the forward movement thereof, as well as for furnishing an abutment for the spring. The bottom surface of said trigger slide is channeled out at 47 leaving a ratchet tooth or

projection 48 facing rearwardly and extending down into the plane of said bottom surface. The top surface of the trigger slide is also channeled out at 49, leaving a lug 50 extending up into the plane of said top surface. The rear end of said trigger slide has a bifurcation 51 cut vertically and centrally thereof and preferably extending forward to the lug 50, leaving two separated, lateral walls at the rear end of said slide. Both of said lateral walls 52 and 53 project above the top of the main portion of the slide. The upper edge 54 of the wall 52 is inclined upwardly and rearwardly from the main upper surface of the slide and the lower rear corner of said wall is rounded at 55. The upper edge 56 of the lateral wall 53 is inclined forwardly and upwardly.

Below the trigger slide there is arranged another slide 57 which I have called the hammer-actuating slide. This slide moves parallel to the trigger slide and is normally held in advanced position by a helical spring 58 housed therein and abutting against a fixed pin 59 passed through a horizontal slot 60 in said slide. The rear end of this slide has a vertical bifurcation 61 formed therein with registering perforations 62 in the sides thereof. Pivotaly mounted in said bifurcation, by means of a pivot pin 63 engaging said perforations 62, is what I call a two-part connection between the trigger slide and the hammer. One part 64 of said connection is pivoted intermediate of its ends in a fork 65 at the forward end of the other part 66. The forward end of the part 64 is normally held, by means of a spring 67, up in the plane of the top of the slide 57, and is provided with a ratchet tooth 68 facing forward and adapted to engage the ratchet tooth 48 on the bottom of the trigger slide. The rear end of said part 64 normally extends below the rear end of the slide 57 and its lower corner is rounded off, as at 69. The part 66 is connected at its rear end to the hammer 70 by a safety hinge joint comprising a T-shaped head 71 on the part 66 engaging a transverse slot 72 in the hammer, and the reduced shank 73 of said T-shaped head confined in a recess 74 in the lower wall of the slot 72. The opening 75 leading to the slot 72 is of smaller diameter than said slot. This makes it necessary for the head 71 to be introduced endwise into said slot, the shank 73, of course, fitting the opening 75. It will thus be seen that when the part 66 is connected with the hammer and assumes its normal position, there is no chance of said parts working loose or becoming separated in the revolver.

The hammer is pivoted at its lower end upon a pin 76. Below said pivot, the hammer is provided with a forwardly extending lug or projection 77. At its upper end, the hammer carries the firing pin 78 and a short

distance below it another shorter forward projection 79. On the rear edge of the hammer, near its upper end, there is mounted a pivoted thumb-piece 80 for cocking the revolver when it is used as the hammer type. The hammer is further provided on its rear edge with a hook 81 which is adapted to interlock with the upper end 82 of a vertically movable spring-pressed retainer 83 for holding the hammer in its retracted position when cocked by hand. The lower end of said retainer is inclined and extends forwardly, as at 84, into the path of the lower rounded corner 55 of the lateral wall 52 of the trigger slide.

The firing pin 78 extends through an opening 85 in a rigid vertical partition 86 arranged transversely of the part 1 of the revolver just rearward of the cylinder 4. A vertically movable hammer locking block 97 is located behind said partition and is pressed downwardly by a spring 88 mounted in a slot 89 in said block and abutting against a fixed transverse pin 90, passed through said slot. The normal position of said block, however, that is when the trigger slide is advanced, is raised so that its upper end reaches above the lug 79 on the hammer and prevents it from being advanced a sufficient distance to bring its firing pin into contact with a cartridge. Said block is supported in its normal raised position, against the influence of the spring 88, by the inclined upper edge 54 of the lateral wall 52 at the rear end of the trigger slide. The lower end of said block 97 rides easily up and down upon said inclined edge 54. The transverse partition 86, located immediately behind the cylinder, is provided with a vertical slot 91 best illustrated in Fig. 12. The bottom of said slot is beveled outwardly and downwardly, as at 92, for the purpose to be presently explained.

The cylinder revolving device is made in two parts, the main portion 93 thereof being pivoted at its rear end upon a fixed pivot-pin 94 so that it is in line with the vertical slot 91 in the partition 86. The other portion 95 of said revolving device is mounted telescopically in the free end of the part 93. The end of said telescoping part 95 is formed into a ratchet tooth 96 and below said tooth, said part is beveled off, as at 97, to conform to the bottom 92 of the slot 91. The telescoping part 95 is seated upon a spring 98 which normally presses it outward through the slot 91 so that its ratchet tooth 96 will engage one of a series of ratchet teeth 99 arranged in a circle around the middle portion of the rear end of the cylinder. The main portion 93 of the revolving device is normally pressed downward by a spring 100 arranged in a vertical slot 101 in said part and abutting against a fixed pin 102. The spring 100 counteracts the influence of

the spring 98 when the revolving device is passive, that is when the part 95 is at the lower end of its stroke, by reason of the beveled lower corner 97 of the forward end of said part engaging the beveled bottom 92 of the slot 91 and holding said part 95 in a retracted position so that its ratchet tooth 96 does not project inwardly beyond the slot 91 into engagement with the ratchet teeth 99. If desired, a laterally projecting pin 103 may be carried by the beveled lower corner 97 of the part 95 to provide an additional bearing surface upon the beveled bottom 92 of the slot 91.

It will be observed that the construction of the revolving device, as just described, is such that when it is raised against the influence of the spring 100 until the end of the telescoping part 95 is removed from the beveled bottom 92 of the slot 91, the spring 98 will advance the part 95 until its ratchet tooth 96 projects inwardly through the slot 91 into engagement with one of the ratchet teeth 99 on the rear end of the cylinder 4. The lower edge of the main part 93 of said revolving device is rounded, as at 104, and rests upon the inclined upper edge 56 of the lateral wall 53 of the trigger slide.

The cylinder 5 is locked in each of its positions by a lever 105 intermediately pivoted on a fixed pin 106 and having a lug 107 projecting upwardly from one of its ends into engagement with one of a series of notches 108 in the periphery of the cylinder. These notches are spaced equidistant apart and correspond to the cartridge chambers in the cylinder. The lug 107 is preferably rounded and is adapted to ride in a shallow groove 109 between the notches 108. Said lug 107 is normally held in engagement with said groove or said notches by a spring 110 bearing upon the other end of the lever 105. A V-shaped lug 111 is formed on the lower edge of the end of the lever 105, which is pressed by the spring, and extends into the path of the lug 50 on the trigger slide.

The top of the rear end of the part 1 of the revolver is fitted with a removable cap 112 for converting the weapon from the automatic type into the hammer type. When this cap is removed, an opening is left through which the upper end of the hammer projects so that the thumb-piece 80 can be engaged for withdrawing the hammer by hand. Said cap is held in place by a broad hook 113 extending the full width of the interior of the chambered rear portion of the part 1 and projecting from the rear edge of said cap down into the main portion thereof where it engages a corresponding projection or rib 114. It will be seen that when said hook is in engagement with said rib there is no chance for lateral play of the cap upon the main portion of the revolver. The front end of the cap is secured by means of a

headed pin 115 passed through two lateral projections 116 on said cap and through the partition 86. The head 117 of said pin engages the outer face of one of the lateral projections 116. The other end of said pin is bored and tapped to receive a screw 118, the head of which engages the outer surface of the other lateral projection 116 when screwed into the end of the pin 115 whereby said pin is retained in place and the cap 112 is rigidly secured upon the revolver. Said cap is made to exactly fit and conform to the other parts of the revolver so that when it is in place, the joint between them will hardly be discernible and dust and dirt will be excluded from said joint. When the cap is to be removed, it is only necessary to take out the screw 118 and remove the pin 115, whereupon the hook 113 may be readily disengaged from the lug 114 when the revolver is opened or broken.

As hereinbefore indicated, the hinged part 2 of the revolver is secured in closed position upon the main portion 1 thereof by two locks. The upper lock consists of a spring-pressed latch 119, see Figs. 13 and 14, arranged at the rear end of the part 2 so that it projects over the partition 86 on the part 1. Said latch is slidably mounted in a recess 120 in the rigid portion of the part 2 which extends over the cylinder. The rear end of said latch is formed with lateral projections 121 which extend slightly beyond the sides of the revolver and are milled or roughened so as to be readily engaged by the thumb and finger. A vertical passage 122 in the latch 119 has a rearwardly projecting ratchet tooth 123 on its front wall. When the revolver is closed, that is that part 2 is closed down upon the part 1, this ratchet tooth 123 snaps into engagement with a hooked projection or lug 124 on the upper edge of the partition 86, thereby locking the two parts of the revolver together. When it is desired to release the lock, the projections 121 are gripped between the thumb and finger and moved forwardly until the ratchet tooth 123 is disengaged from the hooked lug 124.

The second or safety lock comprises a pivoted member 125 mounted on the main portion 1 of the revolver just in front of the cylinder and above the trigger slide. Said pivoted member is angular in shape, having one arm 126 extending upwardly from the pivot 127 and the other arm 128 extending forwardly therefrom. The upwardly extending arm has a ratchet hook 129 formed on its forward edge and adapted to engage a similar but inverted hook 130 on the part 2 of the revolver. A spring 131 engages the rear edge of said arm 126 and normally presses the same forward so that the hook 129 will engage the hook 130 when the part 2 is closed upon the part 1. Milled lateral

projections 132 extend from the arm 126 of the locking member 125, slightly beyond the sides of the revolver where they may be engaged by the thumb and finger for retracting and disengaging the hook 129 from the hook 130. When the revolver is opened, that is when the part 2 is spread away from the part 1, the spring 131 pressing against the arm 126 of the locking member 125 causes the other arm 128 thereof to drop behind a shoulder 133 on the trigger slide, thereby automatically locking said trigger from being pressed while the revolver is in its open position. It will thus be seen that the locking member 125 serves the double function of a safety lock for holding the two parts of the revolver together and also of a safety lock for preventing the rearward movement of the trigger when the revolver is open.

From the foregoing description, it will be seen that, when the revolver is closed and the firing mechanism is in its normal position, as illustrated in Fig. 2, the trigger slide and hammer-actuating slide are held in advanced positions by their springs, the hammer is in its advanced position but held in safety position by the block 97 which is supported in its raised position upon the inclined upper edge 54 of the lateral wall 52 of the rear end of the trigger slide, the cylinder is locked by the lug 107 on the lever 105 engaging one of the notches 108 therein, and the revolving device is in its lowered and retracted position with its rounded lower edge 104 resting upon the lower portion of the inclined upper edge 56 of the other lateral wall 53 at the rear end of the trigger slide. It will be observed that when the parts are in this position, the lug 50 on the trigger slide is arranged in front of the V-shaped lug 111 on the bottom of the cylinder locking lever 105, and that the ratchet tooth 48 on said trigger slide is arranged in front of and engaged with the ratchet tooth 68 on the intermediately pivoted part 64 of the two-part connection between the trigger slide and hammer. When the trigger is pressed, moving the trigger slide rearwardly, the hammer-actuating slide is moved with it by reason of the engagement of the ratchet teeth 48 and 68, and the hammer is retracted by reason of the connection 66 between it and said hammer-actuating slide. As the trigger slide moves rearwardly, the lug 50 engages the lug 111 on the cylinder locking lever 105 and operates to withdraw the lug 107 on said lever from its notch in the cylinder. While the cylinder is being unlocked in this way, the revolving device 93 has been traveling up the inclined edge 56 of the lateral wall 53 on said trigger slide, so that by the time the lug on said lock has been entirely withdrawn from the notch in the cylinder, said

revolving device has been raised to the position indicated in dotted lines in Fig. 12 with its end in engagement with one of the ratchet teeth 99 on the end of the cylinder.

5 As the trigger slide travels still farther rearward, the revolving device travels farther up the inclined edge 56 with the result that the cylinder is revolved until the next one of the notches 108 therein is brought into register with the lug 107 on the locking lever 105. In the meantime, the lug 50 on the trigger slide has passed the lug 111 on the bottom of the locking lever 105 and said lever has been returned to normal position by the spring 110 so that the lug 107 on said lever engages the notch 108 which has been brought into register therewith and thus locks the cylinder in position for the firing of a cartridge.

10 All of the operations just described in sequence will have taken place before the trigger slide reaches the limit of its rearward movement. During this operation, however, the hammer has been swung back the requisite distance and the projection 77 on the lower end thereof has been raised into the path of the rear end 69 of the immediately pivoted part 64 of the two-part connection between the trigger slide and the hammer. As the trigger slide reaches the end of its rear stroke, said lug 77 comes into contact with said rear end 69 of the part 64 and raises it thereby withdrawing and disengaging the ratchet tooth 68 on said part 64 from the ratchet tooth 48 on the trigger slide. The moment these ratchet teeth are disengaged, the spring 58 throws the slide 57 forward bringing the hammer with it and firing the cartridge. When the pressure of the finger is removed from the trigger slide, its spring 44 moves it forward and returns all of the parts to their initial positions. In doing so, the safety locking block 97 is pushed up between the partition 45 86 and the lug 79 on the hammer and the cylinder lock is merely withdrawn momentarily from its notch in the cylinder as the lug 50 on the trigger slide passes under the lug 111 on its lock. As the trigger slide reaches the end of its front stroke, the ratchet tooth 48 thereon snaps into engagement again with the ratchet tooth 68 on the pivoted part 64 of the hammer connection.

50 When it is preferred to operate the revolver as one of the hammer type, instead of automatically, the cap 112 is removed and the hammer withdrawn, by engaging the thumb and the thumb-piece 80, until the hook 81 on said hammer interlocks with the hook 82 on the spring-pressed retainer 83. The operations resulting from the reciprocation of the trigger slide, in this case, are the same as already described except that the hammer is released in a different way.

65 The hammer-actuating slide 57 has been

previously withdrawn with the hammer and the ratchet tooth 68 on the part 64 dropped below the plane of the ratchet tooth 48 on the trigger slide by the engagement of the projection 77 on the hammer with the rear end of said part 64 in the retracted positions of said hammer and its actuating slide. As the trigger slide reaches the end of its rear stroke, and after its ratchet tooth 48 has passed the ratchet tooth 68, the lower rounded corner 55 on the lateral wall 52 at the rear end of said slide engages the beveled forward projection 84 on the lower end of the retainer 83, thereby releasing the hammer which is thereupon immediately drawn forward for firing by the spring of its actuating slide.

It is obvious that variations may be made in the details of construction of my revolver, as herein shown and described, without departing from the spirit or sacrificing the advantages of my invention. I, therefore, reserve the right to make such changes as fairly fall within the scope of the appended claims.

In order to prevent the finger used for pulling the trigger from becoming burned by sparks escaping from the breech of the revolver, I have provided a flange 134 extending along the edge of the upper part 2 below the barrel and cylinder and above the place occupied by the finger when the gun is in use.

I claim:

1. In a fire-arm, the combination, with the firing mechanism including a hammer and means for actuating it automatically, of a casing inclosing said mechanism, a removable cap on said casing above said hammer, a hook on one end of the cap, a lug on the interior of the casing, said hook adapted to fit between the lateral walls of the casing and engage said lug, and means to fasten the other end of said cap to the casing.

2. In a fire-arm, the combination, with the firing mechanism including a hammer and means for actuating it automatically, of a casing inclosing said mechanism, a removable cap on said casing above said hammer, a hook on one end of the cap, a lug on the interior of the casing, said hook adapted to fit between the lateral walls of the casing and engage said lug, extending arms on the other end of the cap embracing a portion of the casing, and fastening means passed through said arm and casing.

3. In a revolver, the combination, with a barrel and cylinder, of a hammer, a trigger slide, operative connection between said trigger-slide and hammer, a cylinder lock comprising an intermediately pivoted lever having a locking lug on one end, and a V-shaped lug on its other end, resilient means for normally holding the locking lug in engagement with the cylinder, a lug on the

trigger-slide adapted to engage the V-shaped lug on the lever for withdrawing its locking lug from engagement with the cylinder, and means for revolving the cylinder also operated by said trigger slide.

4. In a revolver, the combination, with a barrel and cylinder, of a hammer, a trigger-slide, operative connection between said trigger-slide and hammer, a continuous series of ratchet teeth arranged concentrically on the end of the cylinder, a pivoted member having a ratchet tooth at its end adapted to engage the ratchet teeth on the cylinder, and means carried by the trigger-slide for actuating said pivoted member.

5. In a revolver, the combination, with a barrel and cylinder, of a hammer, a trigger-slide, operative connection between said trigger-slide and hammer, a continuous series of ratchet teeth arranged concentrically on the end of the cylinder, a pivoted pawl adapted to engage said teeth, resilient means for normally holding said pawl in a lowered position, and means on the trigger-slide for raising said pawl as said slide is moved rearward.

6. In a revolver, the combination, with the cylinder and hammer, of a trigger-slide operatively connected to the hammer, a continuous series of ratchet teeth arranged concentrically on the end of the cylinder, a pivoted member having a cushioned pawl mounted telescopically in its end, resilient

means for normally holding said pivoted member in a lowered position, means on the trigger-slide for raising said member for revolving the cylinder as said slide is moved rearwardly, and means for retracting the pawl into said member and out of engagement with said ratchet teeth when said pawl is in its lowered position.

7. In a revolver, the combination, with a cylinder and hammer, of a rigid partition arranged behind the cylinder and provided with a vertical slot beveled at its lower end, a pivoted member having a cushioned pawl telescopically mounted in its end and adapted to extend through said slot into engagement with said ratchet teeth, means to normally hold said member in a lowered position, means on said pawl cooperating with the beveled lower end of said slot for telescoping the pawl partially within the pivoted member and out of engagement with the ratchet teeth when in its lower position, a trigger-slide and means carried by the trigger-slide for raising said pivoted member in the operation of firing the revolver.

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

WILLIAM WARREN KEY.

Witnesses:

J. W. VAUGHN,

R. E. SHADEL.