April 19, 1938. R. J. RICKENBACHER 2,114,574

TOY PISTOL

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FIG. 1.

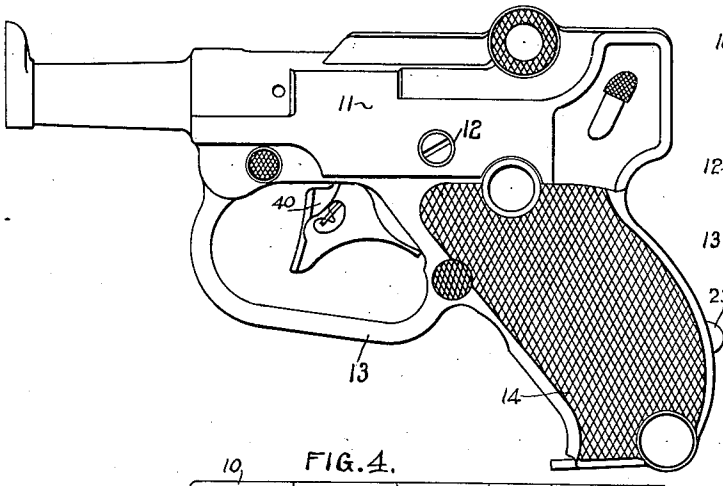


FIG. 2.

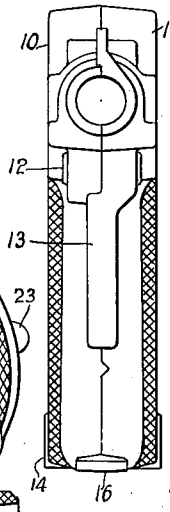


FIG. 3.

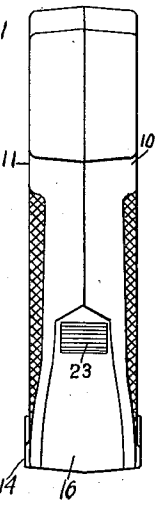


FIG. 4.

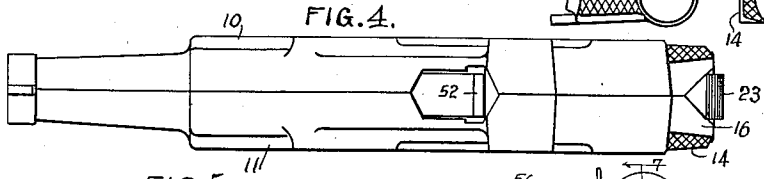


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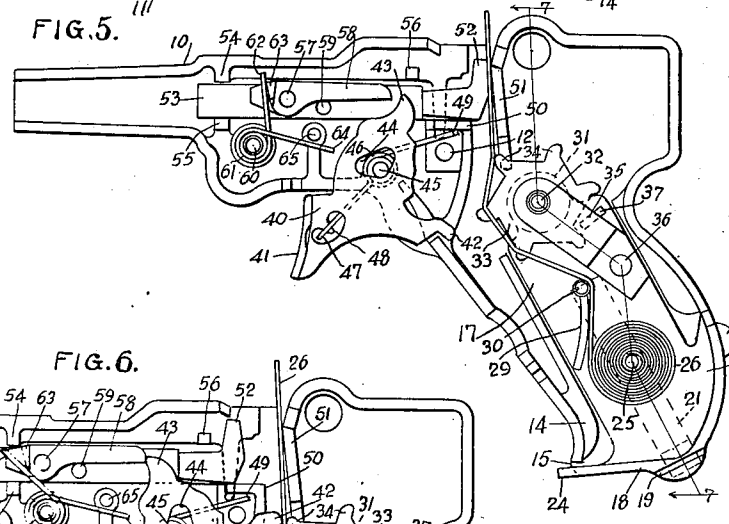


FIG. 7.

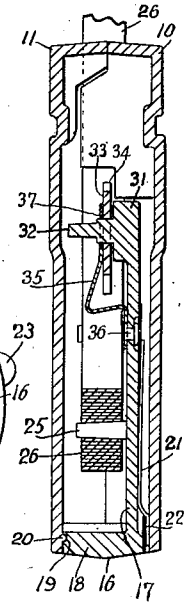
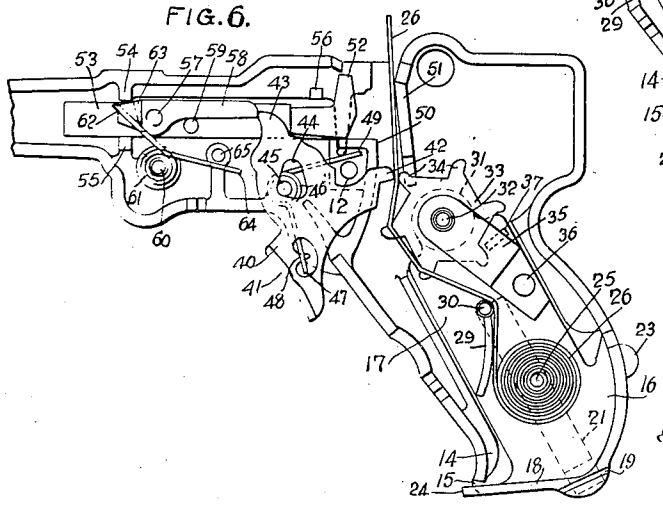


FIG. 6.



Inventor
ROBERT J. RICKENBACHER,
BY Toulmin & Toulmin
Attorneys.

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FIG. 8.

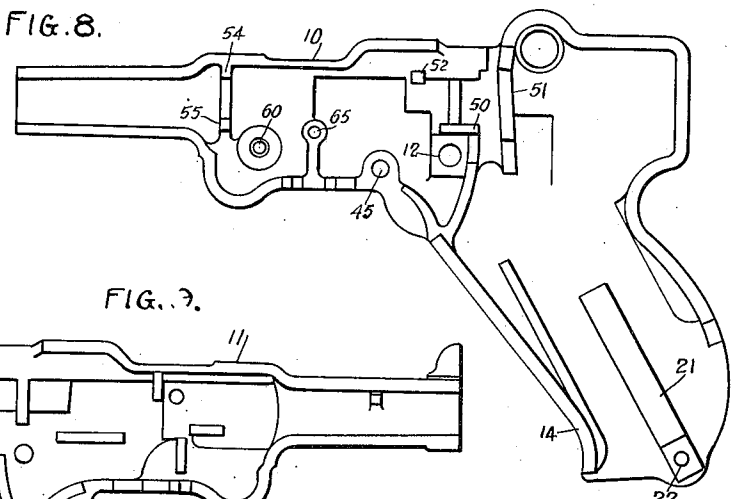


FIG. 9.

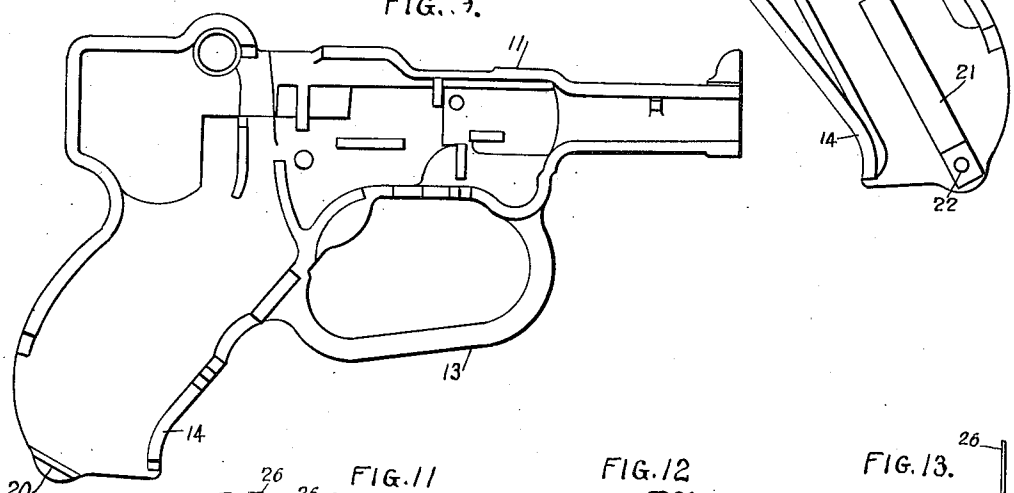


FIG. 10.

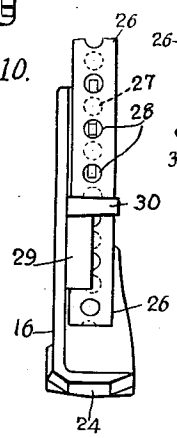


FIG. 11

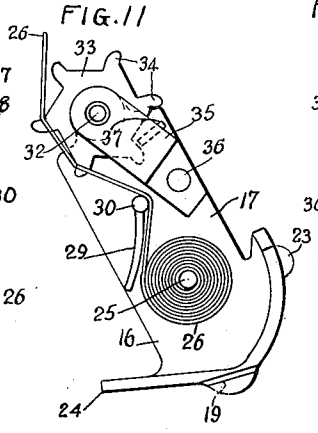


FIG. 12

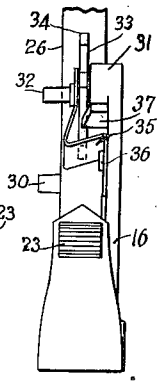


FIG. 13.

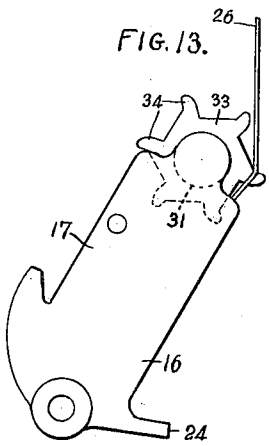
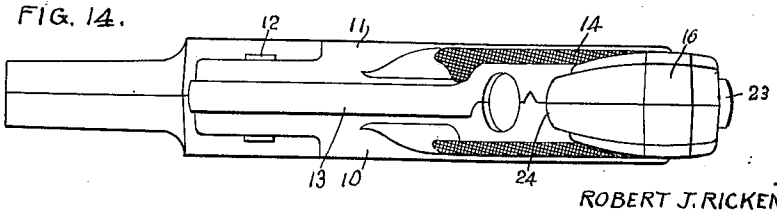


FIG. 14.



Inventor
ROBERT J. RICKENBACHER,
By Toulmin & Toulmin
Attorneys

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UNITED STATES PATENT OFFICE

2,114,574

TOY PISTOL

Robert J. Rickenbacher, Columbus, Ohio, assignor to The Kilgore Mfg. Company, Columbus, Ohio, a corporation of Ohio

Application February 6, 1936, Serial No. 62,642

10 Claims. (Cl. 42—57)

This invention relates to toy pistols, and in particular, to a toy pistol having an ammunition carrier which is slidably and detachably mounted in the pistol.

One object of this invention is to provide a toy pistol having a removable ammunition carrier insertable therein, and adapted to hold ammunition in strip form.

Another object is to provide such a pistol and ammunition carrier wherein the carrier is provided with aligning and feeding mechanism for causing the ammunition to be aligned and fed in synchronism with the firing mechanism.

Another object is to provide a toy pistol with an ammunition carrier having a rotary ammunition feeding device which is adapted to be engaged by the firing mechanism so as to be operated in synchronism therewith, to the end that the ammunition shall be quickly and accurately brought into the firing position as the hammer approaches it and the discharged ammunition removed therefrom after firing.

Another object is to provide a toy pistol having a trigger member which is arranged to operate simultaneously a hammer and an ammunition-feeding device step by step by reason of the operation of the trigger and in exact synchronism and registration with one another, the parts being arranged to move out of the way as the trigger returns to its normal position.

Another object is to provide a toy pistol with an ammunition carrier adapted to be inserted in the butt thereof, the latter having resilient means for retaining the carrier in position so that the carrier is readily removed by the operator.

Another object is to provide a toy pistol having an ammunition carrier with a pin wheel arrangement for feeding strip ammunition, this pin wheel being positioned to be engaged by a portion of the trigger mechanism, while another portion of the latter engages the firing mechanism so as to bring the ammunition strip into position while operating the hammer in synchronism and registration with one another.

This application is a continuation in part of application Ser. No. 32,340, filed July 20, 1935.

In the drawings:

Figure 1 is a left-hand side elevation of the toy pistol of this invention.

Figure 2 is a front elevation thereof.

Figure 3 is a rear elevation thereof.

Figure 4 is a top plan view.

Figure 5 is a side elevation of the pistol, with the left-hand half removed to reveal the arrangement of the interior parts while in a position that the hammer is resting upon the ammunition strip.

Figure 6 is a view similar to Figure 5, but showing the parts in position immediately before firing.

Figure 7 is a section along the irregular line 7—7 of Figure 5.

Figure 8 is a side elevation of the right-hand half of the pistol.

Figure 9 is a side elevation of the left-hand half of the pistol.

Figure 10 is a front elevation of the ammunition carrier, with the perforated strip of ammunition mounted therein.

Figure 11 is a left side elevation thereof.

Figure 12 is a rear elevation thereof.

Figure 13 is a right-hand side elevation thereof.

Figure 14 is a bottom plan view of the pistol, showing the ammunition carrier inserted in the butt.

General construction

Referring to the drawings in detail, Figure 1 shows the pistol in its assembled condition, as having a right-hand half 10 and a left-hand half 11, which are held together by the bolt 12 so as to form, in assembly, an inclosure for the operating mechanism. The right-hand portion 10 serves as the primary support for the operating mechanism, whereas the left-hand portion 11 serves primarily as a cover, and also carries the trigger guard 13. The pistol is provided with a butt portion 14, having an aperture 15 at the bottom thereof (Figure 7) into which is inserted the ammunition carrier, generally designated 16.

Ammunition carrier construction

The ammunition carrier 16 consists of a supporting plate 17 having an edge flange 18 at the bottom thereof, this edge flange 18 being adapted to close the aperture 15 in the butt 14. The edge flange 18 is provided at its margin with a notch 19, which is arranged to register with a corresponding projection 20 in the pistol butt 14. A spring 21, attached as at 22 to the inside of the butt 14, serves to urge the ammunition carrier 16 to the left (Figure 7) so that the notch 19 tends to remain in engagement with the projection 20. A boss 23 on one end of the edge flange 18, and a lip 24 on the other end thereof, serve to assist the operator in grasping the ammunition carrier 16 so as to withdraw it from the pistol.

The supporting plate 17 of the ammunition carrier 16 is provided with a pin 25, which serves as a support for the roll 26 of strip ammunition. The ammunition is provided with alternate spots

of explosive 27 and perforations 28 (Figure 10) adapted to be engaged by the feeding mechanism. A flange 29 (Figures 5 and 10), having a guide pin 30, is formed integral with the supporting plate 17 and these cooperate to guide the ammunition strip in its path through the feeding mechanism. The supporting plate 17 is provided at its upper end with a boss 31, from which projects a pin 32. Upon this is mounted a pin wheel 33 with peripherally-spaced pins 34, adapted to engage the correspondingly spaced apertures 28 in the ammunition strip 26. A bent spring strip 35 is secured, as at 36, to the ammunition carrier 16 and is provided with an aperture adapted to be slipped over the free end of the pin 32 so as to engage the pin wheel 33 and urge its arms into engagement with a wedge-shaped stop 37. The stop 37 has a ratchet-like action, whereby its inclined top edge permits the pins 34 to move in a clockwise direction (Figures 5 and 6). Its forward edge, however, engages the edges of the pins 34 to prevent counter-clockwise motion.

Trigger construction

The trigger, generally designated 40, serves the dual purpose of actuating the feeding mechanism and the firing mechanism in synchronism. For this purpose the trigger 40 is provided with a finger portion 41, a feed-actuating finger 42 and a hammer-actuating finger 43. The trigger is likewise provided with a central enlarged aperture 44, of roughly triangular outline, and mounted upon a trigger pin 45 which is integral with the right-hand half 10 of the pistol. A spring 46 encircles the trigger pin 45 and is secured at one end 47 to the trigger, as at 48, in close proximity to the finger portion 41. The opposite end 49 of the spring 46 is anchored to the pistol half 10, between the shoulder 50 and the bolt 12.

Firing mechanism

The right-hand pistol half 10 is provided with a shoulder 51, serving as an anvil to support the ammunition strip 26 and to receive the impact of the firing portion 52 of the hammer, generally designated 53. The latter is guided for horizontal reciprocation at its forward end between the lugs 54 and 55, and at its rearward end between the lug 56 and the shoulder 50, these lugs and shoulders being integral with the right-hand pistol half 10. The hammer 53 is provided with a pivot pin 57, which serves to pivotally support the latch member 58, the latter being limited in its motion by the projection 59 on the hammer. A pin 60, formed integral with the right-hand pistol half 10, is encircled by the coils of a spring 61. One end 62 engages the projection 63 on the latch member 58, whereas the opposite end 64 is anchored against the projection 65 integral with the pistol half 10.

Operation

Prior to operating the pistol the operator places a roll of cap tape or strip ammunition upon the pin 25 of the ammunition carrier, and threads the projecting end past the guide portions 29 and 30 and causes the perforations 28 to be engaged by the pins 34 on the pin wheel 33. The ammunition carrier 16 is then inserted in the butt of the pistol and pushed upward until the projection 20 engages the notch 19. The operator now pulls the trigger 40 from the position shown in Figure 5 to that shown in Figure 6, whereupon the feed-actuating finger 42 engages one of the pins 34 on the pin wheel 33, thereby forcing the ammunition strip 26 upwardly until it arrives opposite the anvil 51.

Meanwhile, the hammer-actuating finger 43 engages the end of the latch member 58 and forces the hammer 53 to the left (Figure 6) until the finger 43 slips off the latch 58. This permits the hammer to plunge to the right, under the influence of the spring 61, striking the ammunition spots 27 against the anvil 51 and firing the ammunition. When the trigger 40 is released it returns to its original position (Figure 5), under the urge of its spring 46, and the finger 43 passes beneath the latch member 58, lifting it so as to permit its passage against the resistance of the spring 61. At the same time the enlarged aperture 44 permits the feed-actuating finger 42 of the trigger 40 to move out of the way of the pin wheel 33, and thus return to its original position. By this means the ammunition strip 26 and the feeding and firing mechanisms are actuated in synchronism so that a fresh spot 27 of ammunition is presented each time the hammer portion 53 returns to the anvil 51. The ammunition carrier 16 may also be loaded and the ammunition aligned on the feeding pin wheel 33 entirely outside the pistol, and no threading operations are required within the pistol. By repeating the foregoing operations the operator may fire the pistol as many times as there are unfired spots of ammunition on the strip, the ammunition spots being presented accurately in registration and in synchronism with the feeding and firing mechanisms.

It will be understood that I desire to comprehend within my invention such modifications as come within the scope of the claims and the invention.

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

1. In combination in a toy pistol having a frame with a hollow butt, firing mechanism within said frame including a hammer and a trigger for actuating said hammer, a butt-insertable and removable ammunition carrier for carrying a strip of ammunition, said ammunition carrier in its removed position being completely detached from said frame, feeding means on said carrier to feed the ammunition step by step over said anvil, means on said trigger for engaging said feeding means, yielding means for urging said trigger in one direction, yielding means for actuating said hammer, and latch means actuated by said second yielding means cooperating with said trigger to permit the release of the hammer and after firing the reengagement of the trigger with the hammer.

2. In combination in a toy pistol having a frame with a hollow butt, firing mechanism including a trigger and a hammer within said frame, an ammunition carrier adapted to be removably inserted into said hollow butt and to close the rear end thereof, said ammunition carrier in its removed position being completely detached from said frame, means on said carrier for supporting and guiding a roll of ammunition strip, and a pin wheel rotatably mounted on said carrier engaging said perforations in said strip for feeding the strip upwardly through said pistol out of an aperture in the top thereof, said trigger and said firing mechanism being arranged for actuating and releasing said hammer and synchronously actuating said feeding wheel.

3. In combination in a toy pistol having a frame with a hollow butt, firing mechanism in-

cluding a trigger and a hammer within said frame, an ammunition carrier adapted to be removably inserted into said hollow butt and to close the rear end thereof, said ammunition carrier in its removed position being completely detached from said frame, means on said carrier for supporting and guiding a roll of ammunition strip, a pin wheel rotatably mounted on said carrier engaging said perforations in said strip for feeding the strip upwardly through said pistol out of an aperture in the top thereof, and an anvil on said frame between said feeding means and the top of the pistol, said hammer being adapted to engage said strip and anvil, said trigger and said firing mechanism being arranged for actuating and releasing said hammer and synchronously actuating said feeding wheel.

4. In a toy pistol, the combination of a pistol having a barrel, frame and butt, firing mechanism including a trigger and a hammer within said frame, an ammunition carrier for strip ammunition removable from the frame and firing mechanism and insertable in said butt, said carrier being completely detachable from said frame in its removed position, an aligning and feeding mechanism mounted on said carrier located within said pistol, and means for supporting a roll of ammunition strip on said carrier and guiding it to said feeding mechanism.

5. In combination in a toy pistol having a frame with a hollow butt, firing mechanism within said frame including a hammer and a trigger for actuating said hammer, a butt-insertable and removable ammunition carrier for carrying a strip of ammunition, said ammunition carrier in its removed position being completely detached from said frame and firing mechanism, an anvil in said frame, feeding means on said carrier to feed the ammunition step by step over said anvil, and means on said trigger for engaging said feeding means.

6. In combination with a toy pistol having a frame with a hollow butt, of an anvil, firing mechanism within said frame including a hammer and a trigger for actuating said hammer, a butt-insertable and removable ammunition carrier for carrying a strip of ammunition, said ammunition carrier in its removed position being completely detached from said frame and firing mechanism, of feeding means on said carrier to feed the ammunition step by step over said anvil, means on said trigger for engaging said feeding means, yielding means for urging said trigger in one direction, and yielding means for actuating said hammer.

7. In combination, a toy pistol having a frame with a hollow butt portion, firing mechanism including a trigger and a hammer within said frame, a carrier comprising means for supporting a roll of strip ammunition, said carrier being removable and insertable in said hollow butt portion and completely detachable from said firing mechanism, said carrier having a contact portion adapted to engage said butt portion, said portions being adapted to releasably interlock with one another, and a spring adapted to urge said carrier into releasable engagement with said butt portion.

8. In combination, a toy pistol having a frame with a hollow butt portion, firing mechanism including a trigger and a hammer within said frame, a carrier comprising means for supporting a roll of strip ammunition and removably insertable in said hollow butt portion and completely detachable from said firing mechanism, a spring adapted to urge said carrier into releasable engagement with said butt portion, and projections arranged on said carrier adjacent said butt portion for assisting the operator in the withdrawal of said carrier.

9. In combination, a toy pistol having a frame with a hollow butt portion with an aperture, firing mechanism including a trigger and a hammer within said frame, a carrier removably insertable in said hollow portion and completely detachable from said firing mechanism, said carrier comprising means for supporting a roll of strip ammunition and having an edge flange adapted to close said aperture, said flange having a contact portion adapted to engage said butt portion, said portions being adapted to releasably interlock with one another, and a spring adapted to urge said carrier into releasable engagement with said butt portion.

10. In combination, a toy pistol having a frame with a hollow butt portion with an aperture, firing mechanism including a trigger and a hammer within said frame, a carrier removably insertable in said hollow butt portion and completely detachable from said firing mechanism, said carrier comprising means for supporting a roll of strip ammunition and having an edge flange adapted to close said aperture, said flange having a contact portion adapted to engage said butt portion, said portions being adapted to releasably interlock with one another, and a spring arranged between said carrier and said butt portion to urge said carrier into releasable engagement with said butt portion.

ROBERT J. RICKENBACHER.