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TOY CARTRIDGE TYPE GUN

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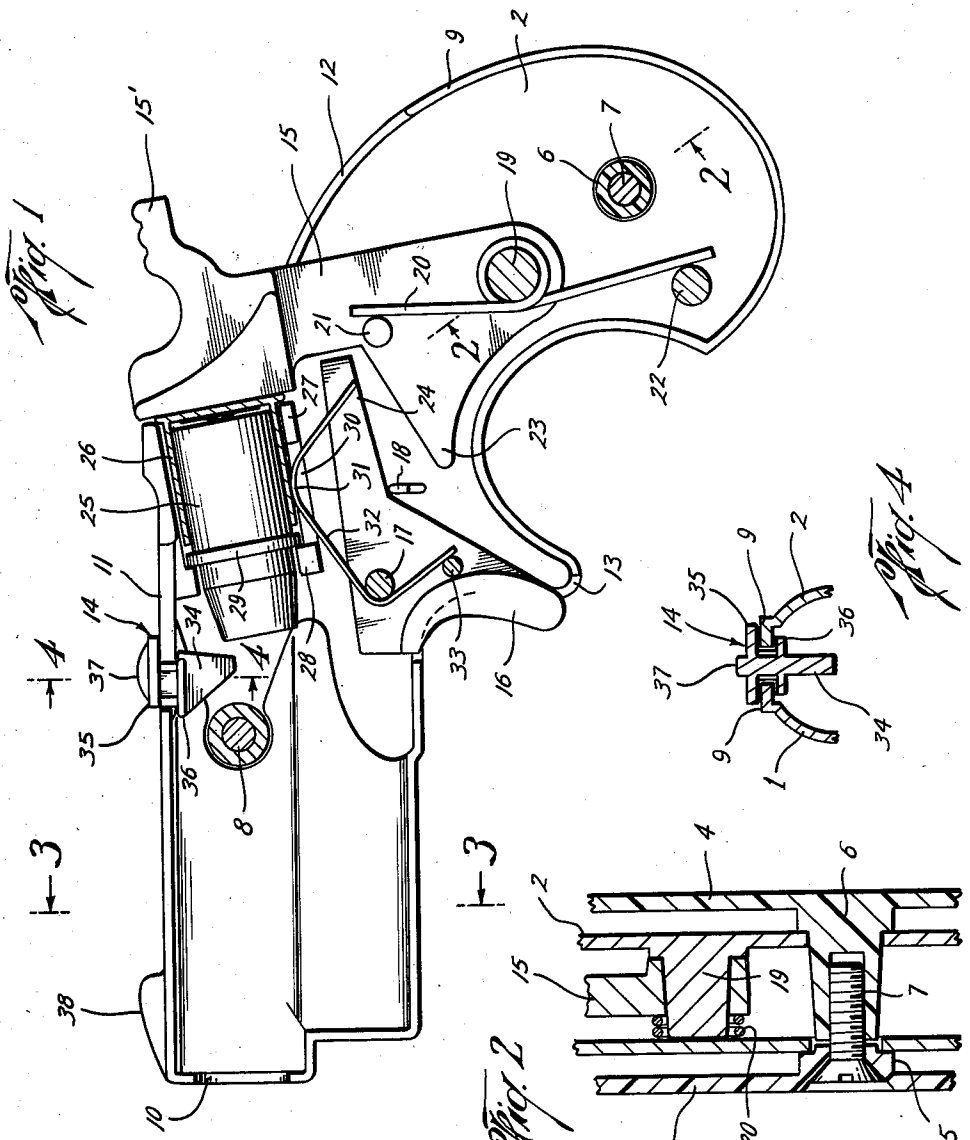


Fig. 1

Fig. 4

Fig. 2

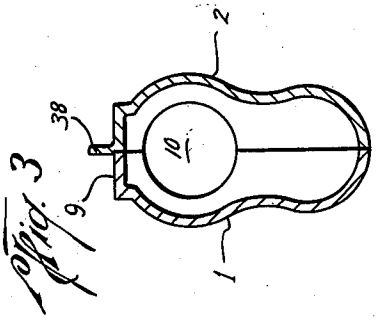


Fig. 3

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TOY CARTRIDGE TYPE GUN

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9 Claims. (Cl. 42—54)

This invention relates to toy guns, and more particularly to an improved cap cartridge type pistol.

It is an object of the invention to provide a toy pistol having a rearwardly opening chamber for reception of a removable cartridge in co-operative relation with a trigger actuated hammer and into which chamber there projects a yieldable friction slide bearing for braking cartridge displacement and a finger actuated slider at the forward limit of cartridge insertion providing a means for pushing or ejecting the cartridge from its frictionally held position within the chamber.

A further object of the invention is to provide an improved design of easily formed sturdy parts arranged in a co-operative relation to facilitate manufacture and assembly and wherein the hollow gun body is longitudinally split into two bolted together complementary halves which can be separately cast or molded in a manner to avoid costly machining operations and with integral internal formations affording mounting pivots for the firing mechanism and a cartridge receiving chamber and having marginal abutment flanges which when the halves are assembled, are in edge to edge seating along the longitudinal body split and contain relieved portions forming openings or operating slots at proper places for the passage of outwardly extending parts of the interiorly mounted firing mechanism and the passage of a removable cartridge to and from the loading chamber and the passage of a cartridge ejector, and which latter is shaped to have interlocking and sliding keyed relation with adjoining flange edges.

Another object of the invention is to provide a pistol having a cartridge receiving chamber whose wall affords a grounded bearing for an intermediate portion of a spring bar or wire having one end in biasing abutment with the gun trigger and its opposite end portion bowed and projected longitudinally in the direction of the chamber axis and through a longitudinal slot in the chamber wall to a height inside the chamber space as to lie in the path of and to make frictional sliding contact and exert a lateral spring force against the side of a cartridge and thereby brake its displacement from the cartridge chamber in the absence of an ejecting push on the cartridge.

Additional objects and advantages of the structure will become apparent during the course of the following specification having reference to the accompanying drawing wherein Fig. 1 is an elevation with fastening studs in section showing the operating mechanism of a toy gun mounted interiorly of one of the split halves of the gun body or outer case and Figs. 2, 3, and 4 are transverse sections through the assembled body halves as viewed substantially on lines indicated at 2—2, 3—3, and 4—4, respectively, of Fig. 1.

As shown in the drawing, the hollow longitudinally split body comprises a thin wall cover half 1 and a complementary thin wall half 2 on which the operating parts are carried. Major components of the assembly are bright coated or nickel plated metal castings. In simulation of a pearl gun handle, the opposite faces of the

handle portion of the gun body may be overlaid by white or light-colored molded plastic covers 3 and 4 (see Fig. 2) having internal shouldered lugs 5 and 6, which fit through aligned openings in the side walls of the halves 1 and 2, and these lugs conveniently are arranged to receive a fastening pin or screw threaded stud 7 which not only holds the decorative covers in place but also through the seatings of the lugs 5 and 6, serves as one means for retaining the body halves or shells in assembly. An additional headed fastening screw 8 in the vicinity of the barrel of the gun can pass through an opening in the cover half 1 and into threaded engagement with an internal boss cast on the body half 2.

Throughout the major extent of the margins of the two body halves, there are cast on both halves inwardly extended flanges 9, whose facing edges are in seating abutment with one another along the longitudinal split line of the hollow body assembly. In certain regions the marginal flanges 9 end short of abutment with one another or are relieved so as to form a round opening 10, representative of a gun bore, at the forward end of the gun barrel and elongated slots at 11, 12, and 13, and these slots respectively are located in the top of the gun barrel for the longitudinal slide travel of an ejector 14 in the upper rearward portion of the gun handle for the passage of a pivoted hammer 15 and in the forward portion of the handle for reception of a depressible finger pad of a pivoted trigger lever 16.

The trigger 16 has an opening in a central region thereof to receive a pivot pin 17 cast as an internal lug on the gun body half 2 and a bottom edge of the trigger is arranged to abut a limit stop 18 which conveniently is also a cast lug on the body half 2. A similar integrally cast pin 19 forms the pivot for the lower end of the hammer lever 15, which is rockable within opposite end limits of the flange slot 12 and is shown in Fig. 1 in a position in which its enlarged hammer head is in cap firing or released position. It is biased to this position by a spring wire or bar 20 having an intermediate coil wrapped around and located by the pin 19 with one end of the spring bar bearing against an abutment 21 on the swingable hammer and the other end of the spring bar grounded against and held in compression by a pin 22 cast or fixed to the body half 2. The hammer lever 15 has a forwardly projecting arm terminating in a locking nose 23 which when the hammer lever 15 is swung rearwardly, as by manual engagement with a thumb piece 15' at the free end of the lever, will swing upwardly into contact with the tail 24 of the finger trigger 16 and lift the tail piece and then pass beyond the end thereof. Thereupon the tail piece 24 swings downwardly into the path ahead of the nose 23 and latches the hammer in its rearward cocked position with the biasing spring 20 under compression to throw the hammer forward upon finger depression of the trigger 16 for lifting the locking abutment 24 out of aligned relation to the abutment 23.

At its upper end the hammer receiving slot 12 is enlarged in width to receive the hammer head and also, when the head is retracted, to accommodate the passage into and removal from the gun assembly of a cap containing cartridge. This toy cap cartridge consists of a pair of nested inner and outer parts 25 and 26. The inner part 25 simulates in appearance a cartridge bullet and its rearward end is slidably encased within the outer member 26, which is of cup shape and resembles a cartridge shell. A firing cap can be placed between the base of the outer shell 26 and the rearward face of the bullet 25 so that the latter can act as an anvil when the base of the cup 26 is struck and banged forward by the trigger released and spring pressed hammer for firing the cap.

The rearwardly opening chamber for slidably receiving the cartridge assembly may in cross section be generally

square in shape and of a transverse dimension slightly greater than the diameter of the cartridge shell **26**. The side walls of the chamber are constituted by side wall portions of the body halves **1** and **2**; the upper chamber wall is afforded by the inturned upper bearing flanges **9** of the two halves while the bottom chamber wall **27** is formed by an internally projecting web on the body half **2**. Longitudinally extending raised and narrow ribs may be centrally formed on each of the four walls as guide line bearings, and each of one or more walls and at the forward end of the chamber is provided with an inwardly extending boss or stop shoulder **28** serving as a forward limit abutment seat for an annular flange **29** carried by the bullet **25** at a point adjacent the forward edge of the cartridge shell **26** when these parts are assembled.

In the cartridge chamber wall **27** immediately overlying the trigger housing space, is a longitudinally extending slot **30** through which a longitudinal spring bar projects into the path of and for frictional bearing engagement with the cartridge case **26**. This spring bar is afforded by a bowed or bent portion **31** of a spring wire which also constitutes the trigger return biasing force. An intermediate portion of the length of the wire bears or is grounded at **32** against the chamber wall **27** at the forward end of the slot **30**, and the end of the bar opposite to the bow **31** is formed with a right-angled bend that fits around the pivot pin **17** and has its terminal leg in bearing abutment with a shoulder or pin **33** fixed on the trigger. Thus the force of the spring bar acting on the shoulder **33** biases the trigger in a clockwise direction, as viewed in Fig. 1, within the limit afforded by the stop **18**, and independently of trigger biasing action the bowed portion **31** affords a friction sliding element engageable with a side of the cartridge **26** for yieldably retaining the cartridge in place even though the latter is loosely fitted within its receiving chamber. Thus when the hammer **15** is pulled back to its cocked position a cartridge can be easily inserted in the chamber by holding the cartridge in the fingers and pushing it forwardly into the chamber with enough force to overcome the lateral or radially inward force of the spring bow **31** extending longitudinally in the direction of cartridge travel for an easy outward camming resilient action. Thereafter, even though the gun is pointed directly upwardly or is roughly handled, the cartridge will remain in place by spring action and will not drop out.

After a cap has been fired and it is desired to reload the cartridge with a new cap, the cartridge can be removed from the chamber by pushing rearwardly on the ejector **14** for slide action within its receiving slot **11**. A dependent arm **34** of the ejector projects internally of the hollow gun body and is positioned just ahead of the nose of the bullet **25** when the ejector is at its forward limit of travel, but immediately the rearward travel begins, the arm **34** will contact with the bullet **24** and finger pressure exerted on the ejector will be transmitted to the cartridge assembly for overcoming the elastic pressure of the spring bow **31** exerted laterally and for moving the cartridge out of the chamber.

The ejector **14** is preferably a small one-piece casting which intermediate its vertical height is formed in opposite side faces with longitudinally extending grooves or with vertically spaced apart outwardly projected flanges **35** and **36**. The vertical spacing between the flanges **35** and **36** conforms substantially to the thickness of the inturned marginal flanges **9** of the gun body halves, so that the flanges on the ejector and those on the gun body will overlap in tongue and groove relation and constitute interfitting key and keyway formations for an interlocked sliding retention of the ejector **14** within its receiving slot **11**. Together, the upper ejector flanges **35** are substantially square in plan and afford a finger actuating knob by which the ejector can be slid back and forth. Extending upwardly from this finger knob will be a narrow longitudinally extending lug **37** to simulate a gun sight in longitudinal alignment with a raised sighting lug **38** cast at the forward end of the gun barrel on one of the body halves.

From the foregoing description it will be apparent that there is provided a simple design for a toy cap pistol which will involve a minimum number of parts easily manufactured and assembled and which will provide an attractive toy simulating the appearance of a real pistol of the type in favor many years ago and known in the trade as a derringer. Modifications of a preferred embodiment illustrated in the drawing may be made without departing from the invention as defined in the attached claims.

What is claimed is:

1. In a toy gun of the removable cartridge type, a gun body having a wall portion bounding a chamber which is for slidable insertion into and ejection from the chamber of a removable cap containing cartridge, a hammer mechanism having a trigger pivotally mounted in the body, a bar spring having a grounded bearing at one end on said chamber wall and having in spaced relation to said grounded end an abutment on the trigger to yieldably bias the same in one direction, said spring at its grounded end having a portion thereof projected through an opening in said wall and into said chamber in the path of a cartridge for frictional engagement by the side of a cartridge located within the chamber and a slidable ejector slidably carried by the body for movement in the direction of cartridge insertion-ejection travel, said ejector having inside the body a cartridge engaging abutment and having outside said body a finger actuating abutment.

2. A cartridge type toy gun comprising a hollow body medially split into separable sections with opposed upper marginal flanges, a removable cartridge receiving chamber underlying said upper marginal flanges and a cartridge ejector having a portion inside the hollow body constituting a pusher abutment for the forward portion of a cartridge positioned in the chamber, a finger portion outside the body, an intermediate portion slidable within a flange slot for travel in the direction of cartridge insertion and ejection and interfitting key formations on opposite sides of said intermediate portion and on the flange slot marginal edges.

3. The structure of claim 2 wherein said interfitting key formations comprise the opposed flange edges on both sides of the slot and grooved keyways on opposite side faces of said intermediate portion for reception of and slidable guide track travel on said opposed flange edges of the separable sections.

4. A cartridge type toy gun comprising a hollow body having a forwardly projected gun barrel and a cartridge chamber at the rear of the barrel extending in the general direction of forward barrel projection and having a loading opening to accommodate slidable reception of a removable cartridge through said loading opening and in the direction of barrel projection, an apertured wall at one side of said chamber and a yieldable spring means having a bearing portion extending through the apertured wall and into the cartridge receiving chamber for frictional slide bearing contact by the side of a cartridge positioned in the chamber as resistance to cartridge removal.

5. In a cartridge type toy gun, a longitudinally split hollow body enclosing a rearwardly opening chamber for removable reception of a cartridge and comprising a pair of halves secured in side by side relation and provided at adjoining sides with upper marginal flanges in edge to edge abutment, one of said flanges along its edge in the region above said pocket being laterally and longitudinally relieved to define in co-operation with the other edge a cartridge ejector locating slot extending in the direction of the axis of said cartridge chamber, a cartridge ejector having an intermediate portion projected through said slot and formed on opposite side faces with guide grooves receiving said flange edges and being retained by and slidable on said flanges for travel

within said slot, said ejector also having projected outwardly of the body from said intermediate retaining and guide portion a finger piece through which cartridge ejecting force may be transmitted and an inward projection extended into the forward end of said chamber as a cartridge engageable pusher when the ejector is moved rearwardly in said slot, firing mechanism including a pivoted lever mounted within the body, a bar spring having one end abutting said lever to bias it in one direction and having a portion spaced from said end in grounded abutment with a cartridge chamber wall and another portion beyond said grounded portion projected through an aperture in said chamber wall and into the path of a removable cartridge for frictional slide bearing with the side of a cartridge positioned within the chamber and whose friction is to be overcome upon actuation of said ejector.

6. A cartridge type gun including a longitudinally split body enclosing a rearwardly opening cartridge chamber, a cartridge ejector longitudinally slidably carried by the body and projected into the forward end of said cartridge chamber for rearward ejecting travel, said ejector and the adjacent portions of the split body in the sides thereof having interlocking key and keyway formations accommodating guided longitudinal ejector slide travel and fastening means holding together the split body in assembly with the ejector through said interlocking key and keyway formations.

7. A cartridge type gun as in claim 6 wherein a bowed spring extends longitudinally through an elongated slot in the wall of the cartridge chamber to exert an elastic

braking force laterally against the side of a cartridge positioned within the chamber.

8. A cartridge type gun as in claim 6 wherein a trigger is pivoted within the body and a bar spring has one end in biasing abutment with the trigger, an intermediate bar portion in grounded bearing with the wall of said chamber and a bowed portion extending toward the spring opposite end from said grounded portion and projecting through a longitudinal slot in said chamber wall for frictional drag contact with a cartridge removably positioned in the chamber.

9. In a toy gun, a hammer, a body supporting the hammer and having a rearwardly open chamber to receive and position a removable cartridge in the path of and forward of the hammer, a cartridge comprised as separable parts of a casing and a bullet simulating insert serving as an anvil for a firing cap fitting between said parts, a cartridge insert abutment stop positioned in the chamber to locate a cartridge for firing co-operation with said hammer, a cartridge ejector having an insert engageable portion inside the chamber and a finger actuating portion accessible from outside the body and means slidably mounting said ejector on the body for cartridge ejecting action travel longitudinally of said chamber.

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