March 12, 1935. J. E. BRUBAKER 1,993,916

TOY PISTOL

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Fig.1.

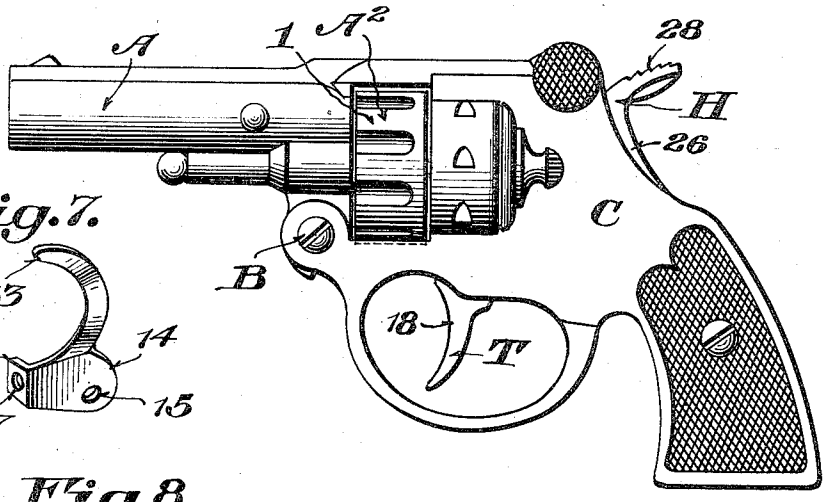


Fig.7.

Fig.8.

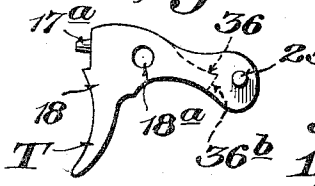
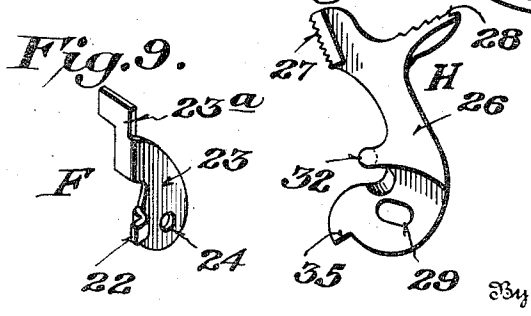


Fig.2.

Fig.10.

Fig.9.



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Fig. 3.

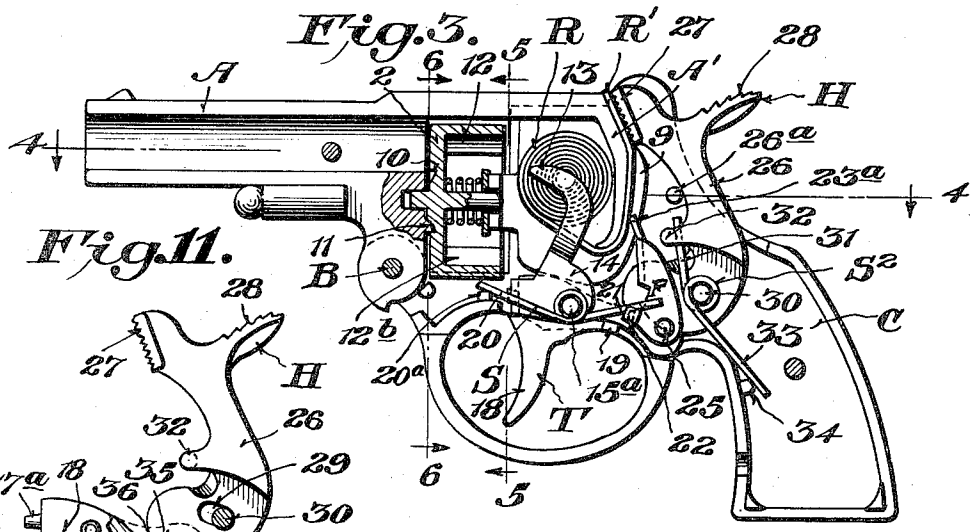


Fig. 11.

Fig. 4.

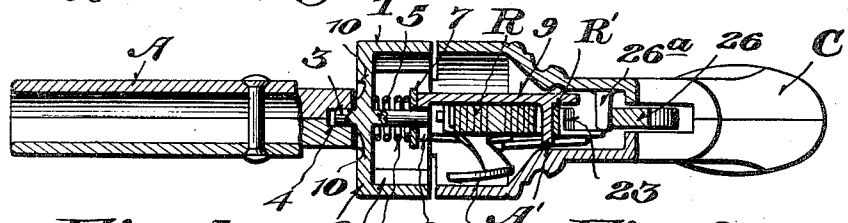


Fig. 5.

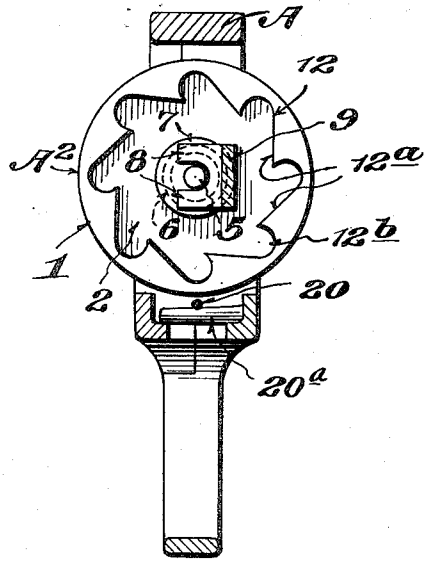
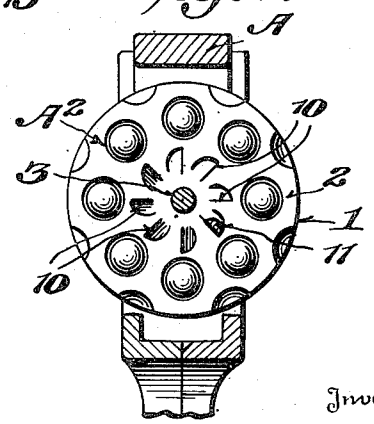


Fig. 6.



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UNITED STATES PATENT OFFICE

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TOY PISTOL

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Application December 5, 1934, Serial No. 756,141

19 Claims. (Cl. 42—57)

This invention relates to toy pistols of the repeater type.

Heretofore, repeating cap pistols, while simulating standard devices in many respects, have lacked the feature of providing a toy that would detonate fifty or more caps while at the same time rotating a portion of the device simulating the magazine or shell container upon each explosion. Where prior toy pistols have attempted to use the rotating magazine or cylinder feature in the past, it has been customary to use a disk having the explosive charges arranged in an annular series. This arrangement has the disadvantage that the toy is of limited detonating capacity in the respect that only five or six detonations may be obtained from each disk and then it is necessary to reload, by placing a fresh disk therein.

Accordingly, the present invention has primarily in view overcoming the objections above noted and to provide a novel combination of features which permit of using a reel or roll of tape having caps thereon, in combination with a rotating magazine or cylinder.

Another object of the invention is to provide a pistol of the break-barrel type which is easy to load and wherein the pivoted portion of the barrel carries the detonating anvil and the magazine for the reel of cap tape, and also carries the rotating part simulating the standard cartridge cylinder. Thus, the reel of tape may be readily mounted in place while the gun is open and a portion thereof brought into position over the anvil, and the part simulating the cartridge cylinder will also be held in the pivoted barrel structure so as not to become detached when the barrel is "broken".

A further object of the invention is to provide novel means for simultaneously actuating the cartridge simulating cylinder and feeding the cap tape step by step to position the caps on the anvil for detonation by the hammer. In that connection, the hammer itself is interconnected in a novel way with a trigger piece which is the primary actuator for both the cap tape feeding means and the cylinder operating means. The trigger, also, of course actuates the hammer.

With the above and other objects in view which will more readily appear as the nature of the invention is better understood, the same consists in the novel features of construction, combination and arrangement of parts hereinafter more fully described, illustrated in the accompanying drawings and defined in the appended claims.

A preferred and practical embodiment of the invention is shown in the accompanying drawings, in which:—

Figure 1 is a side elevation of the improved toy pistol.

Figure 2 is a side elevation with the barrel broken to illustrate the manner of loading the tape magazine and more clearly showing the anvil.

Figure 3 is a vertical sectional view illustrating the various parts in their normal inert position.

Figure 4 is a horizontal sectional view taken on the line 4—4 of Figure 3.

Figure 5 is a vertical sectional view taken on the line 5—5 of Figure 3.

Figure 6 is a vertical sectional view taken on the line 6—6 of Figure 3.

Figure 7 is a detail perspective view of the cylinder actuator.

Figure 8 is a detail view of the trigger member.

Figure 9 is a detail perspective view of the tape feeding means.

Figure 10 is a detail view of the hammer.

Figure 11 is a detail view of the hammer and trigger means showing the engaging parts thereof.

Similar reference characters designate corresponding parts throughout the several figures of the drawings.

According to the embodiment of the invention shown in the drawings, the same includes in its organization a barrel designated generally as A, the same being pivoted at B to a stock portion C, the latter carrying therewith a trigger T and a hammer H. The hammer cooperates with a detonating anvil A′ on the pivoted barrel portion of the device and the said anvil is positioned intermediate the hammer H and a rotating cylinder simulating a standard magazine designated as A^2. The arrangement described clearly permits of the barrel unit A being moved relative to the stock unit C so as to expose the cap magazine M when the barrel is broken, as shown in Figure 2, for the purpose of readily loading the toy. The magazine M includes the post P carried by one wall of the pivoted member A and adapted to receive the reel or roll of tape R having thereon the explosive charges. As will be apparent from Figure 2, the free end of the tape R′ may be led over the face of the detonating anvil A′, and will be held thereagainst and moved thereover by

the tape feeding means F to be presently described.

The cartridge simulating cylinder or magazine A^2 is mounted to freely rotate in the pivoted barrel unit, and, to that end, comprises a circular body 1 having the cross sectional shape or form of a cup or shell whose peripheral surface is made to simulate the cylinder of a standard weapon while the front face of the wall 2 is formed to simulate cartridge compartments having the imitation bullet heads 3 exposed therein as shown in Figure 6. The wall 2 is provided with an axial stud 3 rotatably fitted in a socket 4 formed by the complemental meeting sections of the barrel A (Figure 4). The inner face of the wall 2 is provided with a post or shaft 5 having a spring 6 coiled thereabout, the latter abutting against a washer 7 which in turn has a bearing on the forked or bifurcated portion 8 of the wall 9 of the tape magazine which is formed as a part of the barrel unit A. With this arrangement, it will be apparent that the cylinder A^2 may be readily fitted in the space provided for that purpose in the pivoted barrel unit by inserting the stud 3 in the socket 4 and then moving the post 5 carrying the spring 6 and washer 7 into the slotted portion of the fork 8. When so mounted, the cylinder A^2 will be capable of rotation, and will be urged toward the front end of the barrel by the spring 6.

The wall 9, above referred to is in the nature of a tennon carried by the barrel which fits into a mortised like part of the stock as will be apparent from Figure 4. Thus, the wall 9 carrying the tape reel support, and the anvil, may fit into and be concealed by the stock.

Referring further to the body 1 of the cylinder A^2, it will be observed that the outer face of the end wall 2 is provided with a circular series of ratchet faces 10 which are depressed below the plane of the outer face of the wall and which cooperate with a pawl 11 made integral with one end of the barrel proper. In that way, it will be apparent that the cylinder may be rotated step by step and that the interlocking ratchet and pawl surfaces 10 and 11 will hold the cylinder still after each rotation. The inner surface of the side wall of the cylinder is provided with an internal ratchet 12 comprising a plurality of alternate teeth or shoulders 12^a and sockets 12^b adapted to receive the arm 13 of a cylinder actuator 14.

The cylinder actuator 14 is interlocked with the trigger T so as to move therewith. Therefore, it will be apparent that when the trigger T is pulled, the arm 13 will enter the notches or recesses 12^b and move the cylinder one step due to the yielding ratchet arrangement previously described. The arm 13 is offset from the body 14 as will be apparent from Figure 4 so as to clear the tape reel and permit of the operation referred to. The body 14 of the cylinder actuator is provided with an opening 15 and a laterally offset portion 16 also having an opening 17. The openings 15 and 17 are intended to loosely engage with stud 15^a on the stock portion C and the stud 17^a on the trigger T. Therefore, sufficient lateral play will be provided to permit the cylinder actuator to properly move the cylinder when the trigger is pulled.

The trigger T comprises a body 18 having the stud 17^a and the opening 18^a for receiving the stud 15^a on the stock portion. It will, therefore, be apparent that the trigger, is pivotally supported on the stud 15^a so that it may rotate about the same as an axis. In fact the stud 15^a provides a common axis of rotation for the trigger and the cylinder actuator, and, since both are interlocked, it will be apparent that movement of the finger piece of the trigger will be imparted to the cylinder actuator. The body 18 of the trigger is normally held against the abutment 19 on the stock by means of a spring S which is looped about the stud 15^a on the stock and has its forward arm 20 resting on the abutment 20^a on the stock unit while the arm 21 engages with an abutment 22 on the body 23 of the tape feeding member F. The body 23 has an opening 24 (Figure 9) for receiving a stud 25 on the main portions 18 of the trigger. The tape feeding member E has a tape engaging portion 23^a at its upper end which is directed toward the anvil A' so that it will be apparent that when the arm 21 of the spring S bears on the abutment 22 of the tape feeding member, the latter will be moved or tensioned toward the anvil A', and, because of the fact that tape feeding member 23 is carried on stud 25 of the trigger body, the trigger itself will be tensioned by the arm 21 of the spring S. Inasmuch as the actuator 13 is interlocked with the body 18 of the trigger, it will be apparent that the single spring S performs the functions of tensioning both the trigger and the tape feeding member and likewise compels oscillating movement of the cylinder actuator 13 because it is interlocked with the trigger body. The single spring S, therefore, through its arm 21, effectively positions and tensions both the trigger and the tape feeding means so that when the single piece of the trigger is pulled backwardly, the tape feeding member 23 will move upwardly and its end 23^a will slide along the anvil or push the tape between the same and the anvil, while at the same time, the actuator 13 will be moved forward to impart one step or movement to the cylinder A^2. When pressure on the single piece T is released, the trigger will assume its normal position and the actuator 13 and tape feeding member 23 will perform their rearward strokes.

The trigger T also actuates the hammer H. As will be observed from Figures 3 and 4, the hammer H includes a body 26 having a detonating head 27 and a finger piece 28, while the lower portion thereof is formed with an elongated opening 29 (Figure 10) for receiving the stud 30 carried by the stock or handle. For the purpose of tensioning the hammer, a spring S^2 is provided. This spring is looped about the stud 30 and the arm 31 is engaged behind the offset shoulder 32 of the body of the hammer while the arm 33 engages with the abutment 34 in the hollow handle portion of the stock. The spring S^2, therefore, normally urges the head 27 of the hammer toward the anvil. For the purpose of detonating the cap on the tape strip R, it is, of course, necessary to permit the hammer to move with a snap action. This action is effected through the movement of the trigger T. To that end, the body 26 of the hammer is of reduced thickness at its lower end which contains the elongated opening 29 so as to provide a shoulder 35 for engaging with the inclined ledge 36 (Figure 8) at one side of the body 18 of the trigger piece. At this point, it may be observed that one side of the body 18 of the trigger is of reduced thickness to provide a complement for the portion of reduced thickness at the lower end of the body 26 of the hammer. When the parts are in their normal position, the shoulder

35 of the hammer overlies the ledge 36 of the trigger piece. As the trigger piece moves on its stud 15^a, due to its finger grip being pulled, it will be apparent that the body 26 of the hammer will be rocked rearwardly on the stud 29 and against the tension of the spring S^2. When the trigger T has substantially completed its rearward movement, the shoulder 35 of the hammer will drop off of the ledge 36 and the hammer will be snapped forward by the released force of the spring S^2 toward the anvil. The springs S and S^2 will always tend to return the trigger and hammer to normal position, but, on the other hand, when the trigger is pulled, the hammer and trigger will move in their separate paths until the point of disconnection between parts 35 and 36 has been reached, whereupon the spring S^2 will snap the hammer forward and detonate the cap.

The purpose of the oblong or oval hole 29 in the body of the hammer is to permit sufficient play to enable the trigger to reengage the hammer after it is fired. In other words, when the hammer is fired, the shoulder 35 will be positioned beneath the nose 36^b of the ledge so that to enable the parts 35 and 36 to reengage the elongated opening 29 permits the nose to yieldingly push the shoulder 35 rearwardly as the trigger returns to its normal position so that 35 and 36 may directly reengage.

In connection with the spring 32 for the hammer H, it may be pointed out that a stud 26^a is provided on the stock which may limit the forward movement of the hammer under the tension of the spring S^2. It will of course be understood that the stud 26 in no way prevents the head 27^a of the hammer from reaching the anvil. This stud serves a two-fold purpose. It is used as in the assembling operation to mount the hammer because the arms 31 and 33 of the spring must be properly positioned to tension the hammer during assembly, and it is, of course, necessary to keep the hammer in its proper relative position while assembling the spring. Moreover, when the barrel is broken, that is when the barrel is rotated on its pivot B and the anvil A' is elevated as shown in Figure 2, it is necessary to provide means for preventing the spring S^2 moving the hammer H too far inwardly. The stud or abutment 26^a is, therefore, a stud for properly providing for limiting the forward movement of the hammer under conditions of assembly and use.

In connection with the spring pressed hammer H, it may be also pointed out that the same acts to yieldingly hold the pivoted barrel A in position while the parts are in their normal position. It will be recalled that as the hammer moves away from the anvil to begin the firing stroke, due to movement of the trigger T, the actuator 13 moves forward to engage the internal ratchet of the cylinder A^2. Therefore, as the hammer H leaves the anvil, the actuator 13 serves to hold the barrel in proper position through the cylinder. In other words, simultaneously upon pulling the trigger T, 13 engages with the cylinder of the barrel; the tape feeding means 23 pushes the tape over the anvil; and the hammer H begins its firing stroke.

From the foregoing, it will be apparent that when it is desired to load the magazine M with a reel of cap tape, it is only necessary to break the barrel as shown in Figure 2. That is to say, the barrel unit A may be moved on the pivot B to insert the reel of cap tape. When the barrel is moved back to its normal position shown in Fig. 1, the free end of the tape R' which has been threaded over the anvil will lie between the hammer head 27 and the anvil A'. When the finger piece of the trigger is pulled, the arm 13 of cylinder actuator 14 will move forward and engage the recesses or notches of the internal ratchet 12 and move the cylinder. The cylinder will move until the trigger reaches approximately the end of the firing stroke at which time the spring tensioned hammer is released. When the hammer is released by the trigger, it will snap forward and detonate the cap. This operation may be repeated indefinitely to explode all of the caps on the tape. Simultaneously, with each cocking of the trigger, the cylinder will be moved to provide the realistic and novel effect of moving a cartridge or shell into firing position.

Although the present construction and arrangement is the first to combine a tape feeding cap pistol with a rotating cylinder, nevertheless, the construction and arrangement for effecting this novel result is simple, practical and consists of a minimum number of parts to that end. Only two springs are utilized, and, only two castings and two stamped metal pieces complete the entire trigger and hammer action as well as cylinder feed and tape feed. Moreover, by providing a pistol of the break barrel type with the wall 9 which fits between parts of the stock, it is unnecessary to provide a movable cover for the tape magazine, when the barrel is down, and, also, the magazine M is exposed when the barrel is tilted as shown in Figure 2. In other words, when the barrel is restored to its normal position, the magazine is automatically closed or covered.

Without further description it is thought that the features and advantages of the invention will be readily apparent to those skilled in the art, and it will of course be understood, that changes in the form, proportion and minor details of construction may be resorted to, without departing from the spirit of the invention and scope of the appended claims.

I claim:—

1. A toy pistol including, in combination, tape feeding means, a rotatable member simulating a cartridge holding cylinder, and means for simultaneously actuating the tape feeding means and rotating the said member thereby to simulate the bringing of a cartridge into firing position.

2. A toy pistol, including in combination, a member simulating a cartridge cylinder, a tape holding magazine, a hammer, tape feeding means, cylinder actuating means; and trigger means operatively connecting the tape feeding means, cylinder actuating means and the hammer, for simultaneous movement.

3. In a toy pistol, the combination of a rotatable member simulating a cartridge cylinder, cylinder actuating means, a detonating anvil, and means cooperating with the anvil for progressively feeding a continuous series of caps mounted on a linearly moving tape over the anvil with each movement of the said actuating means to move the cylinder.

4. A toy pistol including, in combination, means for detonating caps carried on a strip of tape, comprising, an anvil, a rotatable member simulating a cartridge cylinder, means for simultaneously positioning explosive cap charges on a portion of the tape in detonating position on the anvil and moving the cylinder, and means

synchronized with said first named means for successively exploding said charges on the tape against the anvil.

5. In a toy pistol, the combination of a movable member simulating a cartridge cylinder, actuating means for advancing said member step by step, a detonating anvil, and means synchronized with said actuating means for feeding a portion of a strip of cap tape over said anvil in step with the movement of said member.

6. In a toy repeating cap pistol simulating the appearance and action of a standard weapon, the combination of a rotatable member simulating a movable cartridge cylinder, means for intermittently moving the rotatable member, an anvil relatively stationary with respect to said rotatable member and means normally interconnected with said means for intermittently moving the cylinder for similarly moving a portion of a strip of cap tape over the said anvil.

7. In a toy repeating cap pistol including a barrel, the combination of a rotatable member exposed at the sides of the barrel to simulate a cartridge cylinder and mounted on an axis parallel with the horizontal axis of the barrel, a hammer, an anvil between the hammer and the rotatable member, actuating means for the rotatable member, and means for feeding a portion of a strip bearing explosive charges over the anvil simultaneously with the operation of the actuating means for the rotatable member.

8. A toy repeating cap pistol, including in combination, a barrel having muzzle and breech portions, a rotatable member exposed at the sides of the barrel to simulate a cartridge cylinder and mounted between the muzzle and the breech, actuating means for the rotatable member, a hammer, a relatively stationary anvil at the breech end of the barrel to receive percussion blows of the hammer, and means normally interconnected with said actuating means and with the hammer to move a portion of a cap bearing strip over the anvil beneath the hammer, whereby a cap is exploded approximately when movement of the rotatable member is completed by said actuating means.

9. A toy pistol, including, a stock and a pivoted barrel, a cylinder rotatably supported by the barrel, a tape holding magazine on the barrel, an anvil on the barrel, a hammer carried by the stock, and trigger actuated means for simultaneously feeding the tape over the anvil and operating the cylinder.

10. A toy pistol, including, in combination, a stock, a barrel pivoted thereto, a cylinder pivotally carried by the barrel, an anvil on the pivoted barrel, a tape roll support between the anvil and the cylinder, a hammer in the stock, and trigger actuated means for simultaneously moving the tape over the anvil, actuating the cylinder, and cocking and releasing the hammer.

11. A toy pistol including in combination, a stock, a barrel pivoted to the stock, a cylinder rotatably supported in the barrel, ratchet means on the barrel and cylinder for compelling step by step movement of the cylinder, an anvil formed on the barrel, a tape roll support carried by the barrel between the anvil and the cylinder, a hammer yieldingly mounted in the stock, a pivoted trigger member operatively engaging the hammer, means actuated by the trigger member for turning the cylinder, and tape feeding means also actuated by the trigger member to feed a tape over the anvil while the hammer is making its backward stroke.

12. A toy pistol including, in combination, a stock, a barrel pivoted to the stock, a cylinder pivotally mounted in the barrel, ratchet means on the barrel and cylinder for compelling step by step movement of the cylinder, a spring for urging the cylinder toward the barrel to render said ratchet means effective, internal ratchet elements on the cylinder, an anvil on the barrel, tape supporting means on the barrel, a spring tensioned hammer mounted in the stock, a cylinder actuator loosely interlocked with the trigger and having means for engaging the internal ratchet of the cylinder, and tape feeding means also carried by the trigger and adapted to feed the tape over the anvil when the hammer makes its rearward stroke.

13. A toy pistol including, in combination, a stock, a barrel pivoted to the stock, a cylinder carried by the barrel and having external and internal ratchet parts, pawl means on the barrel, a spring for urging the cylinder to maintain the pawl means on the barrel and external ratchet means on the cylinder in engagement, an anvil on the barrel, tape holding means on the barrel, a spring tensioned hammer mounted in the stock, a trigger pivoted in the stock, a cylinder actuator carried by the trigger and including a pawl arm for engaging with the internal ratchet means of the cylinder, tape feeding means carried by the trigger, a spring for tensioning the trigger and the tape feeding means to urge the latter toward the anvil for the purpose of moving a tape thereover, and cooperating means on the trigger and spring tensioned hammer whereby the hammer may be synchronously operated with the tape feeding means.

14. In a toy pistol, the combination of pivoted barrel and stock members, a member simulating a cartridge cylinder rotatably supported on the barrel, tape reel holding means on the barrel, an anvil on the barrel, a spring tensioned hammer mounted on the stock, and spring tensioned trigger means also pivotally mounted on the stock, said trigger means having tape feeding means and cylinder actuating means associated therewith.

15. In a toy pistol, the combination of a stock including a handle and having a mortised portion, a barrel pivotally carried by the stock, and having a wall fitting in said mortised portion of the stock, a cylinder rotatably supported by the barrel, an anvil formed on the wall of the barrel fitting in said mortised portion of the stock, tape reel supporting means on the barrel housed between said anvil and the cylinder, a spring tensioned hammer mounted in the stock and in detonating relation to said anvil of the barrel when the latter is in its closed position with reference to the stock, a trigger pivoted in the stock, cylinder actuating means carried by the trigger, tape feeding means also carried by the trigger, and a spring for tensioning the trigger and the tape feeding means.

16. In a toy pistol, the combination of a stock and a barrel pivoted thereto, said stock including a mortised portion adapted to receive a tenon wall portion of the barrel, a ratchet restrained cylinder rotatably carried by the barrel, an anvil formed on the tenon wall of the barrel, a tape reel support on the tenon wall between the anvil and the cylinder, a hammer pivoted in the stock, a spring for tensioning the hammer,

means for limiting the forward movement of the hammer, a trigger pivoted in the stock, a cylinder actuating member carried by the trigger, tape feeding means carried by the trigger, and a spring having one arm engaging a portion of the stock and the other arm engaging the tape feeding means carried by the trigger, thereby to tension said tape feeding means and trigger, and cooperating means on the trigger and hammer for actuating the latter with reference to the anvil.

17. In a toy pistol, the combination of a stock, a barrel including an anvil integral therewith pivoted to the stock, a tape reel support on the barrel, a rotatable member simulating a cartridge cylinder mounted on the barrel, a spring tensioned trigger member, means actuated by the trigger member for rotating the said member, means also actuated by the trigger member for advancing a tape over said anvil, a hammer in the stock having an elongated pivot opening, a pivot in the stock adapted to enter said pivot opening of the hammer, a stop abutment on the stock, a spring for normally urging said hammer toward the stop abutment, and cooperating opposed shoulder elements respectively on the hammer and the trigger normally engaged for sliding movement and adapted to be operated when the trigger is pulled to release the spring tensioned hammer toward the anvil and to become reengaged when the trigger and hammer are spring returned to their normal positions due to the hammer shifting on its supporting pivot through the medium of the elongated pivot opening in the hammer.

18. A toy pistol including a stock, a barrel pivoted to the stock and having an anvil, a rotatable cartridge simulating cylinder mounted on the barrel and movable therewith toward and from the stock, and trigger actuating means on the stock, said trigger actuated means having hammer actuating means, cylinder actuating means and tape feeding means associated therewith whereby the barrel having the anvil and cylinder may be moved relative to the stock to bring said anvil and cylinder into and out of operative relation to the last three named means.

19. A toy pistol including a stock, a barrel pivoted thereto and having an anvil, a rotatable cartridge simulating cylinder carried by the barrel and having a yielding ratchet engagement therewith, a spring tensioned hammer mounted in the stock, a spring tensioned trigger pivotally mounted in the stock and operatively related to the hammer, and cylinder actuating means and tape feeding means carried by the trigger at opposite sides of its pivot and adapted, respectively, to move successively toward the cylinder and anvil.

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