C. B. OSBORN.

TOY REPEATING GUN.

APPLICATION FILED MAY 6, 1916.

1,213,683.

Patented Jan. 23, 1917.

3 SHEETS—SHEET 1.

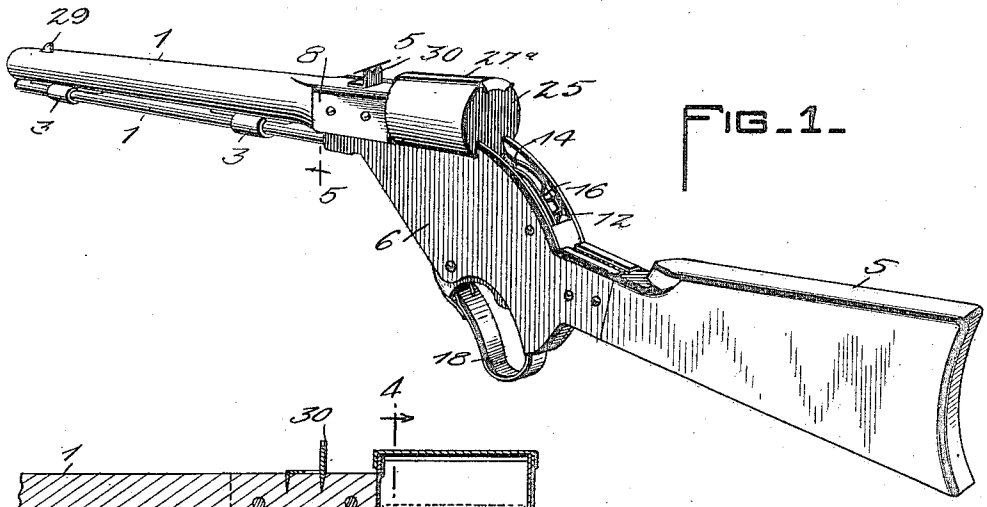


FIG. 1.

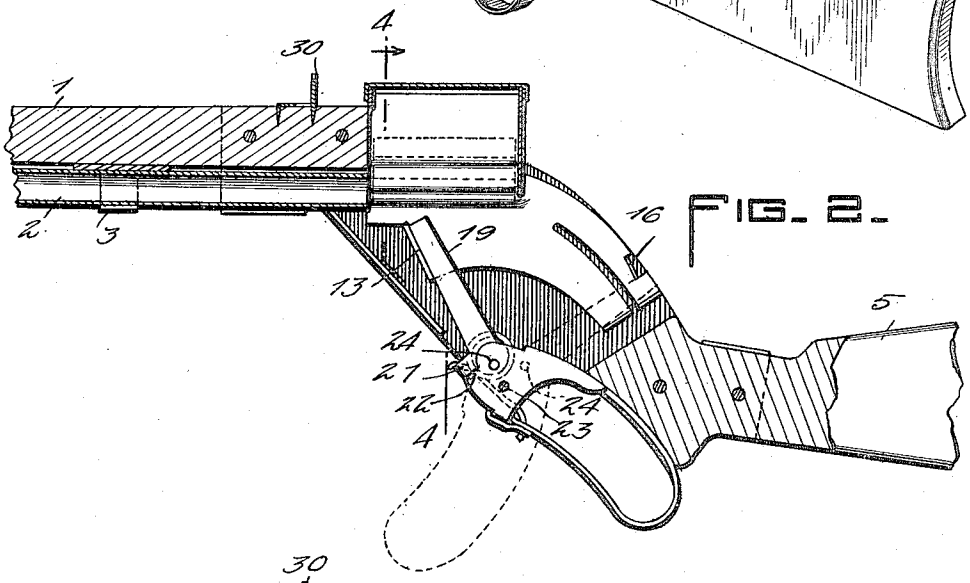


FIG. 2.

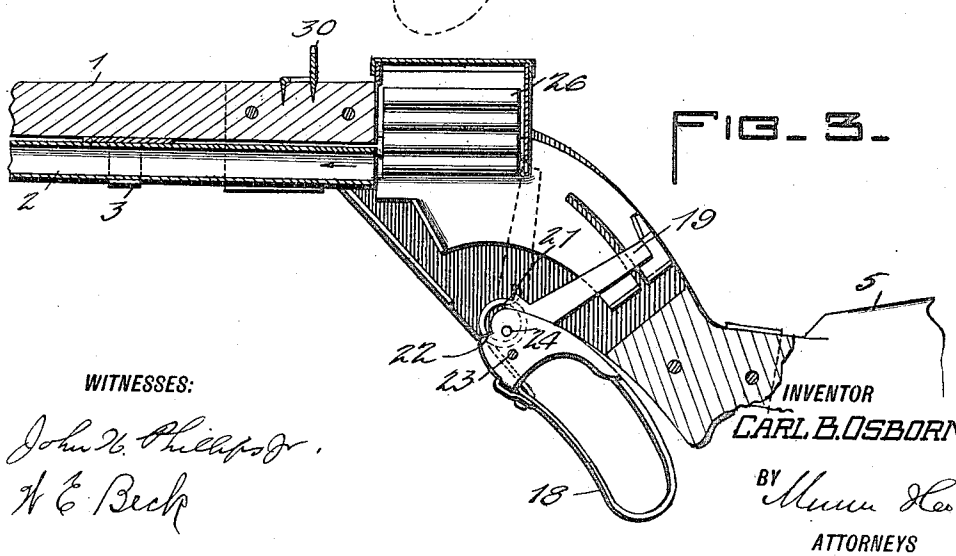


FIG. 3.

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FIG. 4.

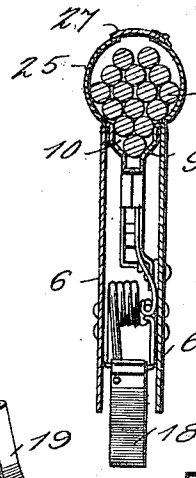


FIG. 5.

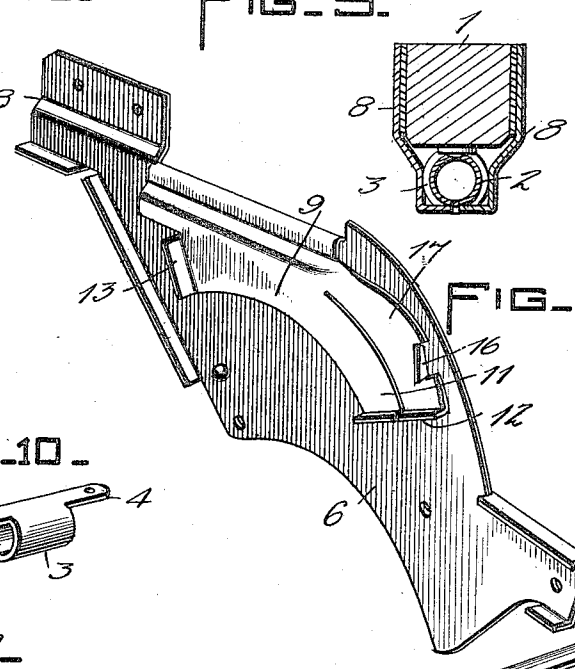


FIG. 6.

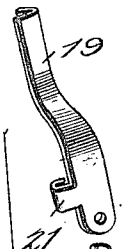


FIG. 10.

FIG. 7.

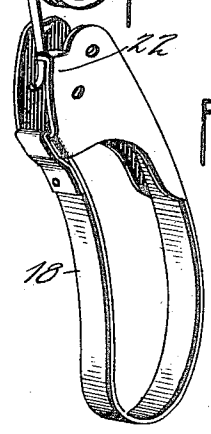


FIG. 8.

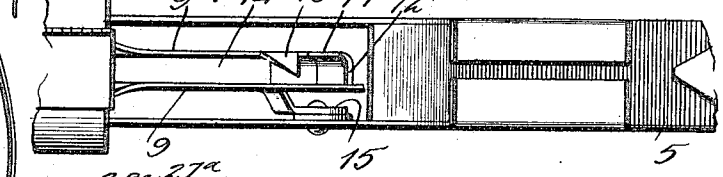


FIG. 9.

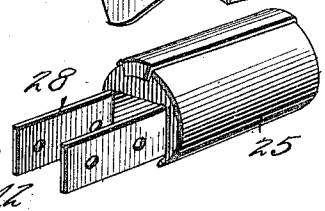
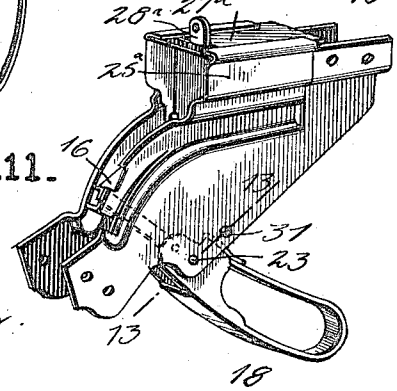


FIG. 11.



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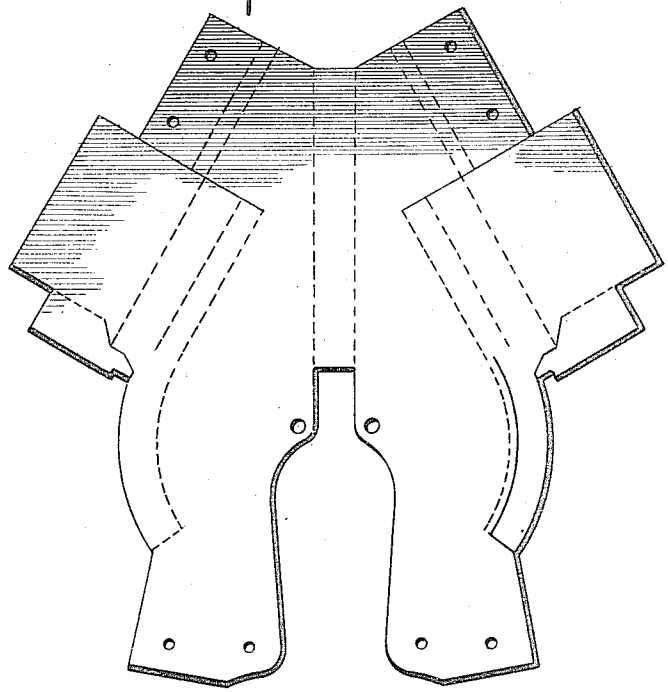
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3 SHEETS—SHEET 3.

FIG. 14.



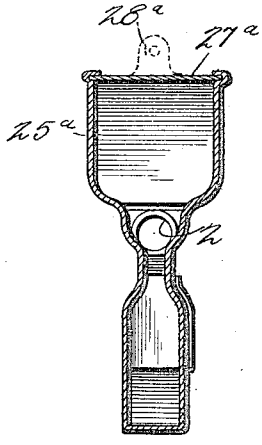
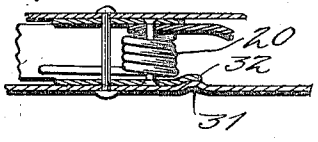


FIG. 12.

FIG. 13.



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UNITED STATES PATENT OFFICE.

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TOY REPEATING GUN.

1,213,683. Specification of Letters Patent. Patented Jan. 23, 1917.

Application filed May 6, 1916. Serial No. 95,803.

To all whom it may concern:

Be it known that I, CARL B. OSBORN, a citizen of the United States, and a resident of San Marcos, in the county of Hays and State of Texas, have invented an Improvement in Toy Repeating Guns, of which the following is a specification.

This invention has relation to toy guns, being designed to provide an article of this character which may be cocked and fired by the manipulation of a single member and which embodies a magazine to receive a number of projectiles which automatically feed by gravitative action into proper position to be projected by the striker or discharging member.

The invention provides an action of simple structure and easy of manipulation, the same comprising an operating member and a catch, the operating member embodying a trigger, a striker and a main spring, the trigger serving the two-fold purpose of cocking the gun and discharging the same. Forward movement of the trigger cocks the gun whereas rearward movement of the trigger places the main spring under tension and effects release of the striker or discharging member which is thrown forward by the action of the main spring to project the missile.

The invention has for its object simplicity of construction, utilization of a minimum number of parts, and ease of manipulation, the gun being set and discharged by one complete operation of a single member, forward movement of the trigger setting the action and rearward movement of the trigger tensioning the discharging spring and releasing the discharging member after the same has been subjected to the predetermined tension.

The invention consists of the novel features, details of construction, and combinations of parts which are hereinafter described in detail, with reference to the accompanying drawings which illustrate the preferred embodiment of the invention, although it is to be understood that within the scope of the invention as claimed various changes in the form, proportion and minor details of construction may be resorted to in adapting the invention to meet varying requirements and conditions without departing from the nature thereof.

In the drawings, Figure 1 is a perspective view of a gun constructed in accordance with the invention and embodying the essential features thereof. Fig. 2 is an enlarged longitudinal section of the frame and parts attached thereto, the dotted lines showing the position of the operating member when cocked. Fig. 3 is a view similar to Fig. 2 showing the striker or discharging member about to be released and the trigger about at the limit of its rearward movement, the dotted lines indicating the forward movement of the striker after being released and in the act of engaging a projectile. Fig. 4 is a transverse section on the line 4—4 of Fig. 2 looking toward the breech as indicated by the arrow. Fig. 5 is a cross section on the line 5—5 of Fig. 1 looking toward the muzzle as designated by the arrow. Fig. 6 is a detail perspective view of one-half of the frame. Fig. 7 is a detail perspective view of the operating member, the parts being separated and disposed in coöperative position. Fig. 8 is a top plan view of the frame, the operating member being removed. Fig. 9 is a detail perspective view of the magazine. Fig. 10 is a detail perspective view of one of the thimbles for securing the discharging tube to the barrel. Fig. 11 is a detail perspective view of the lock embodying the frame and action. Fig. 12 is a transverse section of a modified form of frame illustrating the several parts of integral formation. Fig. 13 is a sectional detail on the line 13—13 of Fig. 11. Fig. 14 is a detail view of the blank from which the frame is formed when the parts are of integral formation.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

The gun comprises the usual barrel, lock, and grip or stock portions. The lock consists of a frame and action and has the barrel and the stock or grip attached thereto in any manner.

In the present instance the barrel portion of the gun comprises members 1 and 2. The member 1 corresponds with the usual barrel of a small fire arm and in the present instance is a dummy, that is it consists of a dead element because it is not bored or utilized for giving direction to the projectile when the gun is discharged. The member 2 consists of a small tube and the projec-

tile travels therethrough when the gun is discharged. The members 1 and 2 are provided to give the gun the usual appearance. The said tube 2 may be of light metal and is protected and reinforced by the barrel 1 to which it is attached by suitable fastening means such as thimbles 3 which, as indicated clearly in Fig. 10, are formed with oppositely extending ears 4 which are apertured to receive screws, tacks or other securing means for fastening the thimbles to the member 1.

The stock or grip 5 may be of any form and is usually constructed of light material such as wood which is secured to the rear portion of the frame. As shown most clearly in Figs. 1 and 2 of the drawings the stock and frame are shaped to provide a pistol grip thereby enabling the gun to be steadied from the shoulder when discharged.

The lock comprises a frame and action and the frame may be of integral formation as indicated in Figs. 12 and 14, or may comprise similar side plates between which the rear end of the barrel member 1 and the forward end of the stock 5 are secured. One-half or side plate of the frame is indicated most clearly in Fig. 6, the same comprising a middle portion 6, a rear end portion 7 and a forward portion 8. The end portions of the side plates are formed with inwardly extending flanges which serve to stiffen the plate and also as engaging means to retain the parts in proper position when assembled. An edge portion of the plate is folded upon itself as indicated at 9 and is shaped to provide the pocket or chamber 10 see Fig. 4, which receives the projectile when in position for discharging. The chamber 10 is in longitudinal alinement with the discharging tube 2, thereby admitting of the projectile passing readily from the said chamber into the tube when the gun is discharged. The folded portion 9 of the side plate has a rear extension forming a guide 11. The rear edge of the extension 11 is bent inwardly to form a stop 12 to limit the rearward movement of the striker or firing member when the gun is cocked. The front end of the folded part 9 is formed with an inwardly bent portion 13 which constitutes a stop to limit the forward movement of the firing member or striker. The parts 9 of the side plates of the frame are spaced apart and are disposed in parallel relation, the space 14 formed between such parts receiving the striker or firing member which is arranged to operate therein. The parts 9 constitute guides and one of such guide members has a rear portion partly separated therefrom by means of a slit and bent outwardly as indicated at 15 and secured to the adjacent plate thereby fixing the position of such guide member. A catch 16 is provided at the rear of the space 14 and is adapted to engage with the striker or discharging member when the gun is cocked and hold the same in cocked position during tensioning of the main spring. The catch 16 is spaced a short distance from the stop 12 to admit of the firing member occupying a position between the stop 12 and catch 16 when the gun is cocked. The catch 16 is laterally yieldable so as to clear the firing member or striker when cocking the gun. The inner edge of the catch 16 is inclined and the firing member rides thereon when moving to cocking position. The catch 16 is provided upon a spring 17, the latter forming a part of the rear extension of the guide member 9, such spring being separated by means of a slit from the lower portion of the rear extension. In this connection it is to be understood that the catch 16 may be provided in any manner and mounted so as to yield so long as it serves the purpose of coacting with the discharging member to permit the same to assume a cocking position and to be retained during tensioning of the main spring.

The operating member or action comprises a trigger 18, striker or discharging member 19 and a main spring 20. The said member or striker 19 is pivotally connected to the trigger and the latter is pivotally mounted between the side plates of the frame. The several parts of the operating member may be of any desired construction and relative arrangement. The main spring, as shown, consists of a coil which receives the pivot connection between the parts 18 and 19, one end of such spring engaging the discharging member and the remaining end engaging the trigger. When the trigger is moved forward at its lower end the discharging member or striker 19 receives a corresponding rearward movement, this being effected by coöperating stop shoulders 21 and 22 provided upon the respective parts. When the gun is cocked the upper end of the striker or firing member 19 engages in the rear of the catch 16. Rearward movement of the lower end of the trigger places the spring 20 under tension and during such movement of the trigger the stop 22 recedes from the stop 21. During the rearward movement of the trigger and the tensioning of the spring 20 the discharging member 19 receives a longitudinal movement which at the critical stage effects disengagement of the discharging member 19 from the catch 16 thereby admitting of the spring 20 imparting a violent forward movement of the discharging member which coming in contact with the projectile in firing position causes the same to be projected through the small tube 2. The axis of the trigger 18 is indicated at 23. The axis of the discharging member or striker 19 is shown at 24. These parts 23 and 24 may be pivot fastenings of any nature.

When the gun is cocked as indicated by the dotted lines in Fig. 2 the axis of pivot fastening 24 between the member 19 and trigger 18 is above the pivot fastening or axis 23 between the trigger and frame. When the lower end of the trigger is moved rearward the axis of pivot fastening 24 is moved forward and downward thereby effecting a downward longitudinal movement of the discharging member, such parts being so proportioned and arranged that when the trigger 23 is approaching the limit of its rearward movement the end of the said member clears the catch 16 and when the member is thus released it is thrown violently forward at its upper end and effects discharge of the projectile. The forward movement of the striker or discharging member 19 is limited by means of the stop 13 provided at the forward end of the space 14.

The magazine is indicated at 25 and may be of any construction. The lower portion of the magazine communicates with the receiving chamber 10 and the construction is such as to admit of the projectiles 26 passing from the magazine into the said chamber, the lowermost projectile being in line with the tube 2 so as to be projected therethrough when the gun is discharged. A cover 27 closes the opening of the magazine through which the projectiles are introduced when charging the magazine. When the magazine is formed separately from the frame it is attached to the barrel member 1 by means of ears 28, see Fig. 9, which project from the forward end of the magazine and embrace opposite sides of the member 1.

Within the purview of the invention the frame, magazine, and discharging chamber may be provided in any manner and constructed as separate parts and assembled in any way, or such parts may be of integral formation and comprise elements of a single blank, such as indicated in Fig. 14, which is bent upon itself into the required shape. As indicated in Fig. 12 the magazine 25^a has a different form from the magazine 25 and is closed by means of a sliding cover 27^a, which is provided with the rear gun-sight 28^a. As shown in Fig. 1 the gun sights 29 and 30 are secured to the barrel member 1.

In the operation of the gun a number of projectiles 26 are placed in the magazine and the lowermost projectile passes into the receiving chamber and assumes a position in line with the discharge tube 2. The gun is now cocked preliminary to discharge by moving the lower end of the operating member 18 forwardly thereby causing the member or striker 19 to move rearwardly and engage in the rear of the catch 16. The gun is now discharged by a rearward pull upon the trigger 18, such movement placing the spring 20 under tension and causing a downward longitudinal movement of the discharging member, and an instant before the trigger reaches the limit of its extreme rearward movement the said member escapes from the catch 16 and is thrown forward by the action of the spring 20. During the forward movement of the member 19 it comes in contact with the rear end of the projectile which is in due position and causes the same to travel through the guide tube 2. The projectiles in the magazine move down and the lowermost projectile drops into the receiving chamber. On the return of the discharging member into cocking position it sweeps through the said chamber and serves to agitate the projectiles to insure the lowermost projectile assuming proper position for discharge. It is also noted that when the firing member is returning to cocking position, the catch 16 is pressed laterally and the jar resulting from the snapping action of the cocking spring, when the catch 16 is thrown in front of the striker, is sufficient to cause the projectiles to gravitate so that the lowermost projectile will properly assume a position to be discharged when the gun is discharged. The trigger or operating member 18 is retained in its rearmost position by any suitable means, such as a projection 31 formed upon a side plate of the frame and engaging a depression 32 in the adjacent side of the trigger. This is indicated most clearly in Fig. 13. The projection 31 is formed by a depression in the side member of the frame.

I claim:

1. In an action for toy guns, an operating member comprising a trigger, a striker and a spring the latter being tensioned by a pull upon the trigger in the act of firing the gun, and a catch for engaging the discharging member to hold the same in cocked position, the said member being movable longitudinally by means of the trigger and released from the catch after the said spring has been subjected to tension.

2. An action for toy guns comprising a trigger, a discharging member connected with the trigger and movable therewith, a spring for operating the said member and adapted to be placed under tension when pulling upon the trigger to fire the gun, and a catch for retaining the member in cocked position, such member being releasable from the catch by the action of the trigger after the said spring has been subjected to tension.

3. An action for toy guns comprising a trigger, a discharging member having pivotal connection with the trigger and adapted to be moved longitudinally thereby, an operating spring for the said member adapted to be tensioned when pulling upon the trigger in the act of discharging the gun, and a catch for retaining the said member in cocked position during the tensioning of the spring, such member being releasable from

the catch by the action of the trigger when reaching the limit of its movement when tensioning the spring.

4. An action for toy guns comprising a trigger, a discharging member pivotally connected to the trigger a distance from the axis of the trigger, a main spring having engagement with the said member and trigger, coacting stops between the trigger and such member to cause both to move together in one direction, and a catch for engaging the member to hold the same in cocked position, the discharging member being releasable from the catch by the action of the trigger during its movement after tensioning the main spring.

5. An action for toy guns, the same comprising a pivotally mounted trigger, a discharging member pivoted to the trigger a distance from the axis of such trigger, cooperating stop means between the trigger and said member to cause both to move in unison in one direction, a spring engaging both the trigger and the member and adapted to be subjected to tension when the trigger is operated to discharge the gun, and a catch coöperating with the discharging member to hold the same in cocked position.

6. In an action for toy guns, the combination of a laterally yieldable catch, a discharging member mounted to receive a pivotal and a longitudinal movement, a trigger for setting the said member and adapted to effect release thereof from the catch, and a spring engaging the member and trigger and adapted to be tensioned by the latter when drawn upon in the act of discharging the gun.

7. In an action for toy guns, the combination of a discharging member pivotally mounted and adapted to receive a longitudinal movement, a stop for limiting the pivotal movement of the said member, a catch for engaging and holding the member in cocked position, a trigger operatively connected with the discharging member to effect a longitudinal movement thereof, and an operating spring for the said member adapted to be tensioned by the trigger when the latter is drawn upon for discharging the gun.

8. In a toy gun the combination of a discharging member, a cocking spring at one side of said member provided with a catch for engaging the member to hold the same in cocked position, a trigger for operating the discharging member and effecting a release thereof from the catch, and a spring for the said member adapted to be tensioned by means of the trigger when the latter is drawn upon for discharging the gun.

9. In a toy gun, the combination of a discharging member, a trigger adapted to set the said member to effect a release thereof by means of a longitudinal movement, an operating spring for the discharging member adapted to be tensioned by means of the trigger, guides on opposite sides of the member, and a cocking spring disposed at one side of the said member and provided with a catch for engaging the member and holding the same in cocked position.

10. In a toy gun, the combination of transversely spaced guides, stops at opposite ends of the space formed between the guides, a catch at the rear of the guide space, a discharging member operable between the guides and limited in its movements by the said stops and adapted to be held in cocked position by means of the catch, a trigger for operating and setting the discharging member, and an operating spring for the said member adapted to be tensioned by means of the trigger when the latter is drawn upon to discharge the gun.

11. A gun of the character specified, comprising a discharge tube, a magazine for the projectiles, a receiving chamber in line with the said tube and opening into the magazine to receive the projectiles therefrom, and a discharge member adapted to sweep through the chamber to effect a discharge of the projectile when in due position, also to agitate the remaining projectiles and insure a proper feeding of the next projectile into discharging position.

12. In a toy gun, a frame comprising side plates, guide members disposed between the side plates and transversely spaced, a discharging member disposed between the guide members, a catch for engaging and holding the said member in cocked position, a trigger pivotally mounted between the side plates and having the said member pivoted thereto a distance from the axis of the trigger, and an operating spring for the discharging member adapted to be tensioned by means of the trigger when the latter is drawn upon to discharge the gun.

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."