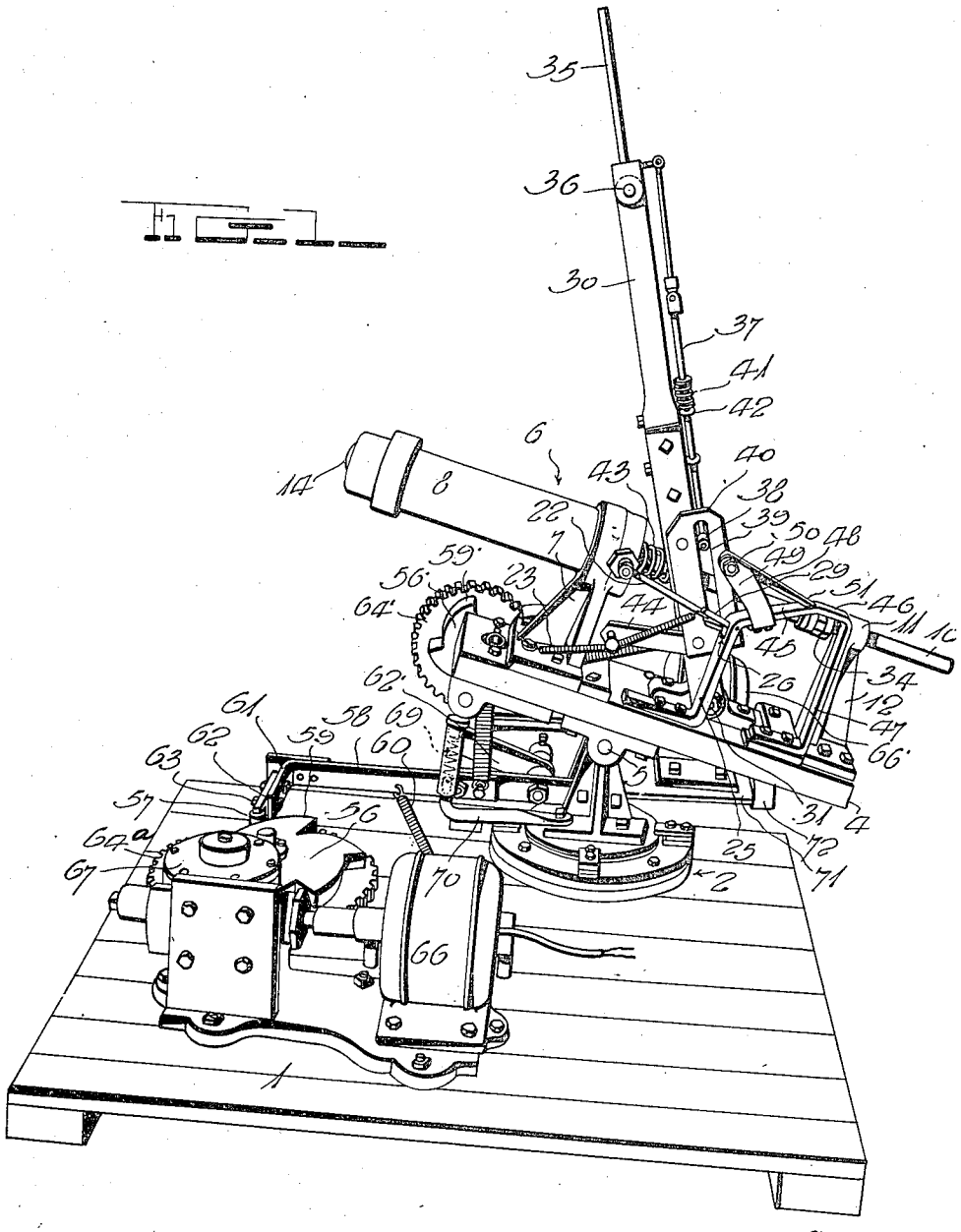
Mar. 6, 1923. 1,447,458

G. ZINT

AMUSEMENT DEVICE

Filed Nov. 1, 1920 5 sheets-sheet 1



Inventor

George Zint

Witness
H. Woodard

By A. B. Williamson

Attorneys

Mar. 6, 1923. 1,447,458

G. ZINT

AMUSEMENT DEVICE

Filed Nov. 1, 1920 5 sheets-sheet 2

FIG. 2.

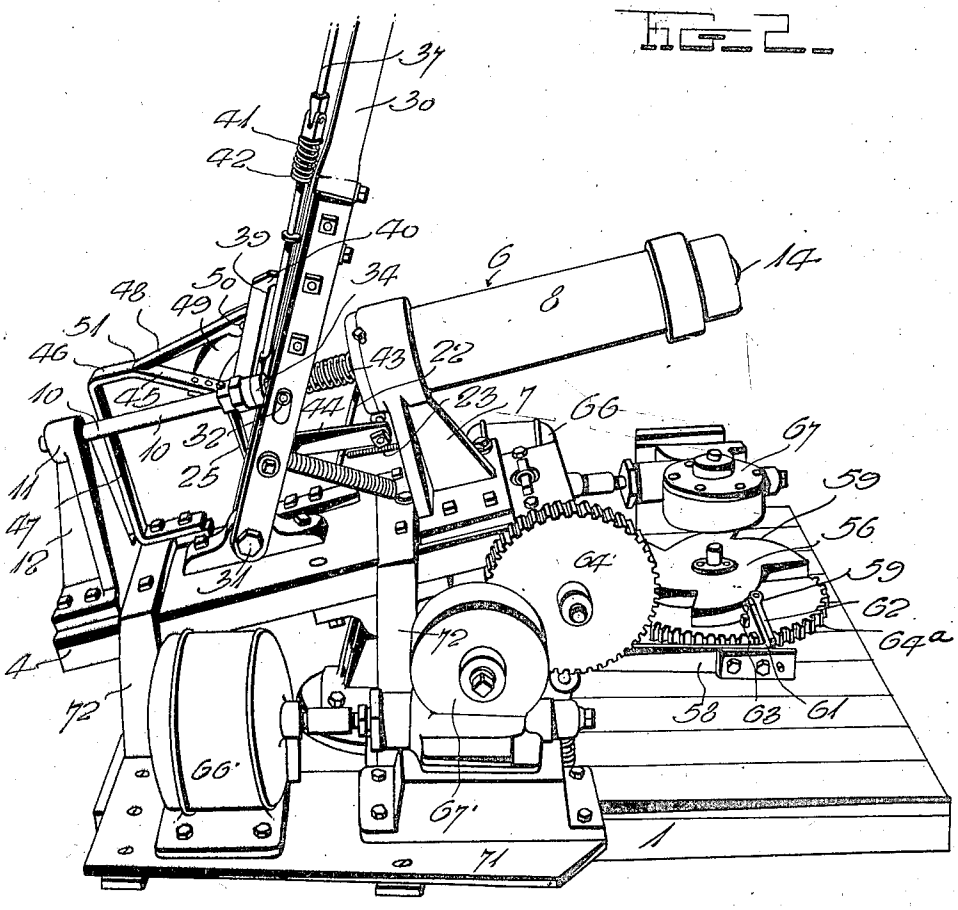
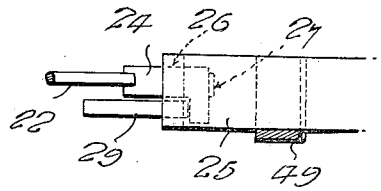


FIG. 8.



Witness
H. Woodard

Inventor
George Zint
By H. B. Williamson & Co
Attorneys

Mar. 6, 1923.

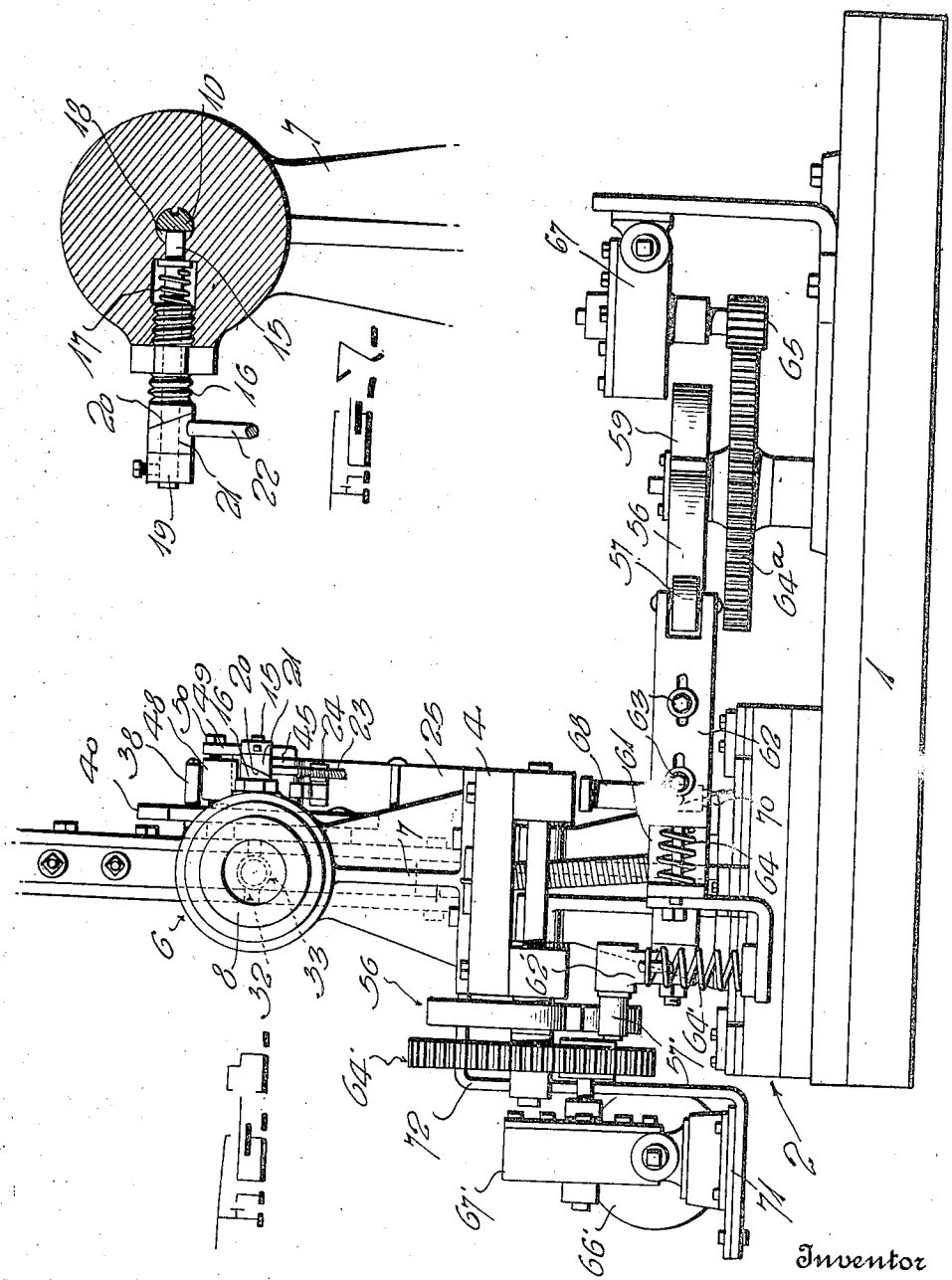
1,447,458

G. ZINT

AMUSEMENT DEVICE

Filed Nov. 1, 1920

5 sheets-sheet 3



Witness
H. Woodard

Inventor
George Zint
By A. Bruesenwee
Attorneys

Mar. 6, 1923.

1,447,458

G. ZINT

AMUSEMENT DEVICE

Filed Nov. 1, 1920

5 sheets-sheet 4

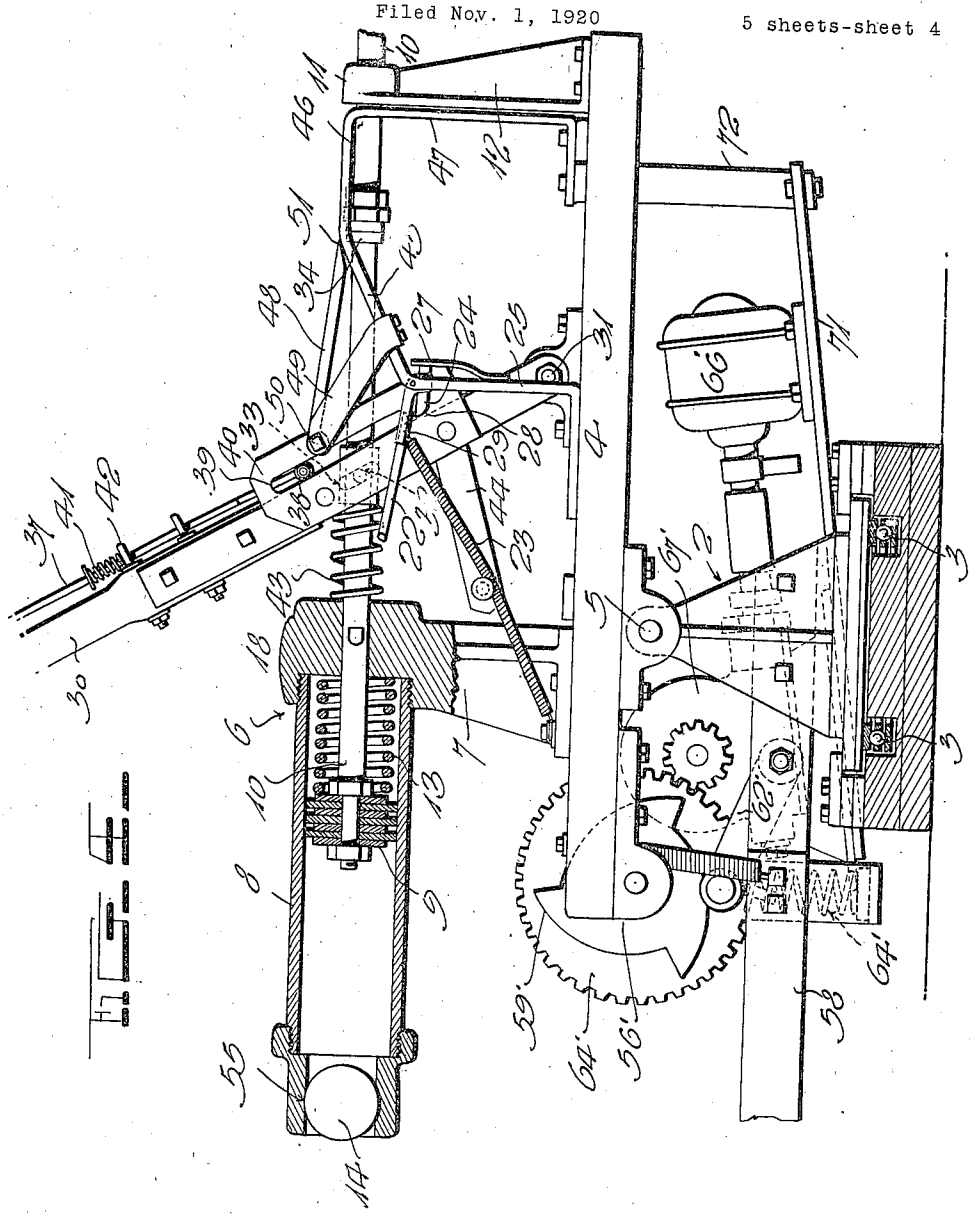


Fig. 4.

Witness
H. Woodard

Inventor
George Zint
By H. B. Williamson & Co
Attorneys

Mar. 6, 1923.

1,447,458

G. ZINT

AMUSEMENT DEVICE

Filed Nov. 1, 1920

5 sheets-sheet 5

FIG. 5.

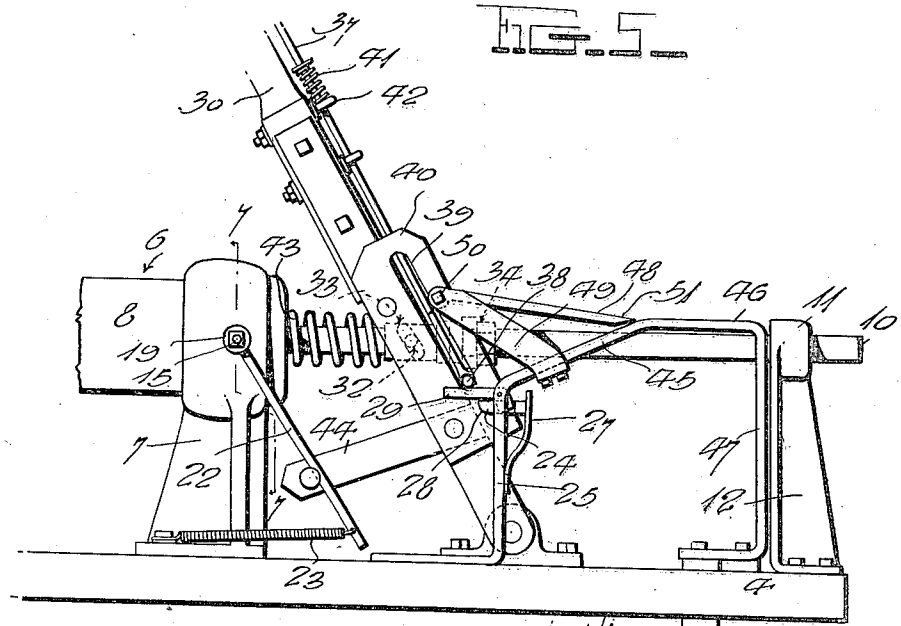
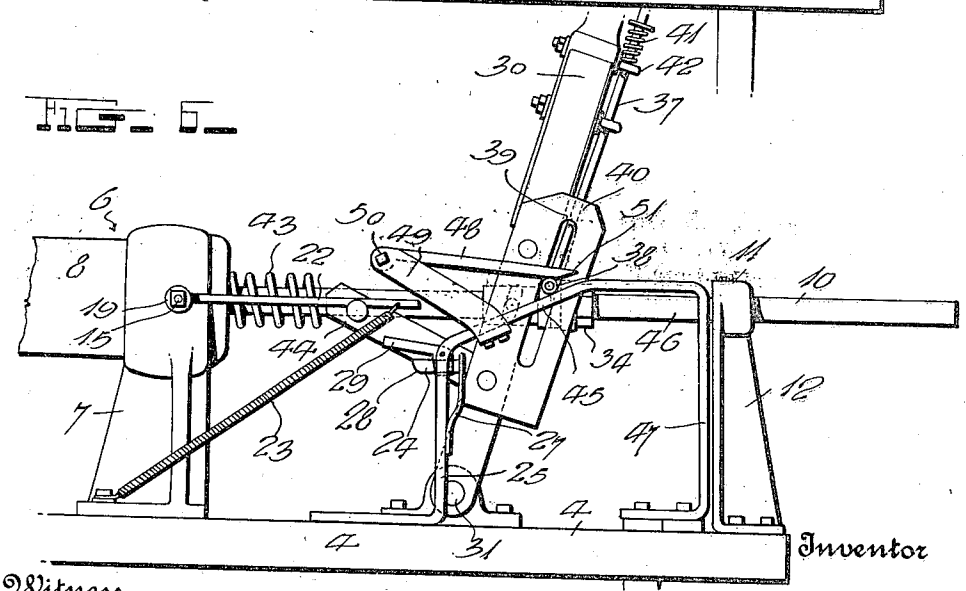


FIG. 6.



Witness
A. Woodard

Inventor
George Zint
By H. Brewson & Co.
Attorneys

Patented Mar. 6, 1923. 1,447,458

UNITED STATES PATENT OFFICE.

GEORGE ZINT, OF WAPAKONETA, OHIO.

AMUSEMENT DEVICE.

Application filed November 1, 1920. Serial No. 421,025.

To all whom it may concern:

Be it known that I, GEORGE ZINT, a citizen of the United States, residing at Wapakoneta, in the county of Auglaize and State of Ohio, have invented certain new and useful Improvements in Amusement Devices; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in amusement devices of the general type in which skill is necessary in order to strike a target with a thrown ball, and the principal object of the invention is to provide a ball shooting gun which will direct a ball in the general direction of the player when the target is struck.

In carrying out the above end, further objects are to provide novel means for moving the target almost continually so that it will be very hard to strike the same, and to similarly move the gun, whereby the player cannot previously judge exactly where the ball will be shot.

Yet another object of the invention is to provide a gun of such construction as to cause a loud report when it is fired, whereby to more or less confuse the player.

A further object is to provide a novel arrangement of parts for resetting the target when the gun is reset, after it has been fired by striking the target.

With the foregoing and minor objects in view, the invention resides in the novel construction and combination of parts hereinafter described and claimed, the descriptive matter being supplmemented by the accompanying drawings.

Figures 1 and 2 are perspective views looking in opposite directions and showing different positions.

Figure 3 is a front elevation.

Figure 4 is a longitudinal sectional view with parts in elevation, showing the gun in set position.

Figure 5 is a detail side elevation showing the relation of parts immediately after the gun has been fired.

Figure 6 is a view similar to Fig. 5, but illustrating the relation of parts as the gun is reset.

Figure 7 is a detail transverse section showing the latch for holding the gun in set position, this view being cut substantially on line 7—7 of Fig. 5.

Figure 8 is a detail horizontal sectional view showing more particularly the latch which holds the gun trigger when the device is set in condition for operation.

In the drawings above briefly described, the numeral 1 designates an appropriate base upon which a gun mount 2 is mounted for rotation in a horizontal plane, ball bearings 3 being preferably employed as shown most clearly in Fig. 4. A gun base 4 is pivotally mounted between its ends on the gun mount 2, by means of a horizontal pivot pin or the like 5, and a ball shooting gun 6 has its stock 7 rigidly secured to said base 4, said gun having a barrel 8 within which is located a suitable piston 9. The piston 9 is provided with a piston rod 10 which extends rearwardly beyond the stock 7, the rear end of said rod being by preference slidably supported in an appropriate bearing 11 which may well be carried by a post 12 riding from the base 4. Between the piston 9 and the breech of the gun, is a coiled spring 13 which is adapted to project the piston 9 and thereby expel a ball 14 from the gun, when said piston is released.

For holding the piston 9 in a retracted position against the tension of the spring 13, I employ a latch bolt 15 which is seen most clearly in Fig. 7. This bolt is slidably received in a suitable guide sleeve 16 which is threaded in the breech of the gun, a coiled spring 17 being employed for normally holding said bolt in engagement with a notch or the like 18 with which the piston rod 10 is provided. The outer end of the latch bolt 15 is provided with a collar 19, the outer end of the guide sleeve 16 is formed with a cam surface 20 and a cam 21 is rotatably mounted on the bolt 15 between said collar and cam surface, said cam 21 having a trigger arm 22 by means of which it is rocked for the purpose of retracting the latch bolt 15 to release the piston rod 10 and allow the spring 13 to project the piston. I have shown a coiled spring 23 connected with the trigger arm 22 for moving the latter to release the latch bolt 15, said trigger arm being normally held in an inoperative position, against the tension of said spring by means of a second latch 24 which is here shown

carried slidably by a standard 25 which rises from the base 4, said standard having an opening 26 (see Fig. 8) in which said latch 24 is slidably mounted, a spring 27 being secured to said standard for normally sliding said latch 24 to an operative position as seen for instance in Fig. 4. The outer end of this latch however may be beveled as shown at 28 so that it will be retracted against the tension of the spring 27 when the trigger arm 22 is swung upwardly to place its operating spring 23 under tension. For releasing the latch 24 I employ a second trigger 29, which may well be pivotally mounted in the opening 26, and this trigger is operated by a novel arrangement of parts described below.

For the purpose of setting the gun, I employ a hand lever 30 which is fulcrumed at 31 to the base 4, said lever being loosely connected at 32 with a collar 33 which is slidable on the piston rod 10, said collar being adapted to move rearwardly into contact with a fixed shoulder 34 on said rod 10, when the lever 30 is pulled rearwardly, whereby a further pull on said lever will retract the piston rod and compress the spring 13, whereupon the latch bolt 15 will come into play to hold said rod in a retracted position. A suitable target 35 is pivotally mounted at 36 on the upper end of the hand lever 30 and by means of appropriate linkage or the like 37, said target is operatively connected with a vertically movable trip device 38 which is here shown slidably received in a vertical slot 39 in a guide plate 40 secured to the lever 30. When the gun is set, as shown in Fig. 1, the trip 38 is spaced above the trigger 29 and the target 35 then stands in an approximately vertical position. When now this target is struck by a thrown ball it tilts rearwardly, thereby lowering the trip 38 into contact with the trigger 29, with the result that the sliding latch 24 releases the trigger arm 22 and the latter in turn withdraws the bolt 15 from the notch 18, permitting the spring 13 to come into play, moving the piston 9 forwardly and shooting the ball 14 from the gun. To absorb the shock when the target 35 is knocked from its initial position, a coiled bumper spring 41 is preferably mounted on the linkage 37 to strike a guide eye 42 on the lever 30, said guide eye receiving said linkage as shown.

It will be observed by reference to Fig. 1, that after the gun is set, the lever 30 is swung toward the barrel 8 to space the collar 33 in advance of the shoulder 34. When the gun is fired however said shoulder again comes in contact with the collar but the latter is then resting against a cushioning spring 43 as seen for instance in Figs. 1, 2 and 4, said spring serving to absorb the shock when the piston rod is projected forwardly by means of the spring 13. To again set the gun, the lever 30 is pulled rearwardly and when this is done, a rigid arm 44 on said lever, strikes and raises the trigger arm 22 as will be clear by referring to Figs. 5 and 6. When the arm 22 strikes the bevel 28 of the latch 24, the latter is retracted against the tension of the spring 27 so that arm 22 may pass, but when the lever 30 is again moved forwardly, said arm 22 is limited in its downward movement by means of said latch 24 so that the trigger arm 22 is held against the action of the spring 23.

I make novel provision for resetting the target 35 and the trip device 38 when the lever 30 is pulled rearwardly to set the piston 9, and although this end may be attained in numerous ways, I prefer to employ the construction described below.

A cam track 45 inclines rearwardly from the upper end of the standard 25 and may well be formed integrally therewith, said track 45 terminating in a horizontal portion 46 from which an appropriate leg 47 depends to the base 4. After releasing the trigger 29, the trip device 38 is adapted to move up along the track 45 when the lever 30 is pulled rearwardly from the position of Fig. 5 to that shown for instance in Fig. 6. During this movement, the linkage 37 and the target 35 are partially returned to their original positions, and by means of a second cam track 48 which inclines forwardly, I complete the resetting of these parts when the lever 30 is moved forwardly against the spring 43, after pulling rearwardly on said lever to set the piston 9. In the present showing, the track 48 is straight and is pivoted at its upper end to a rigid arm 49 extending from the track 45, the pivot 50 being located at the front end of said track 48 while the rear end 51 thereof normally rests on the track 45 as shown in Figs. 1, 2, 4 and 5. As the trip 38 passes under the end 51, the track 48 tilts upwardly as shown in Fig. 6 to permit said trip to pass, but when this has taken place, the track 48 then again drops by gravity and thus serves to further raise the trip 38 when the lever 30 is returned to its foremost position. This raising of the trip 38 is sufficient to reset the target 35 so that it then assumes the initial position shown in Fig. 1.

In order that the gun shall make a loud report when it is fired, I employ the construction shown most clearly in Fig. 4. The bore of the barrel 8 is provided at the muzzle of said barrel, with a continuous circumferential channel 55 which gradually decreases in depth from its center to its edges, said channel being adapted to snugly receive the ball 14. This ball is formed of rubber or other resilient compressible material and it will be observed that said ball

is slightly greater in diameter than the bore at the front end of the barrel 8. It thus follows that the ball must be compressed as it is forced into the barrel and seated in the channel 55. Furthermore, the ball must again compress in order to be forced from the barrel by the air compressed by the piston 9. It thus follows that an extremely tight connection is effected between the ball and the barrel which will permit no escape of air until said ball has entirely left the gun, the result being that a loud report is produced when the gun is fired. This serves to more or less confuse the player so that it will be difficult for him to catch the ball. I also render it more difficult to successfully use the apparatus by providing means for moving the gun mount 2 in a horizontal direction and for swinging the base 4 vertically so that the player will never know at what point the ball 14 will be directed by the gun. Furthermore, since the target 35 must necessarily move with the base 4, this target is very difficult to strike with a thrown ball. By thus rendering the apparatus rather difficult to manipulate, it is insured that the players shall take more interest in the game, as it is one of skill.

For moving the gun mount 2 horizontally, I provide a driven cam 56 which is mounted on the base 1 and coacts with a shoe 57 carried by the mount, said shoe being here shown as mounted on the end of an arm 58 which extends laterally in a horizontal direction from said mount. The cam 56 is provided with circumferentially spaced cam portions 59 which gradually decrease their distances from the center of cam and then stop abruptly. It thus follows that the arm 58 is turned gradually in one direction to slowly move the gun mount 2 horizontally, and is then suddenly released. When this release occurs, a coiled spring 60 quickly returns the arm 58 and gun mount and in order that no injury shall result to any of the moving parts, I yieldably mount the shoe 57 on the arm 58. This is preferably accomplished in the manner shown most clearly in Fig. 3. The free end of the arm 58 is bent laterally as shown at 61 and a horizontally elongated plate 62 is slidably mounted on said laterally bent end by means of bolts and slots 63 or any other preferred means, a coiled spring 64 being positioned behind said plate 62 so that it normally projects the latter toward the cam 56, but permits said plate to yield inwardly when the shoe 57 which is carried thereby, strikes the next adjacent cam portion 59, after being released by one cam portion. This effectively absorbs the shock.

The several cam portions 49 are by preference of different circumferential lengths and of different radial lengths. It will thus be seen that the gun mount 2 is moved at unequal intervals and furthermore that it is moved different distances. It is thus insured that the player shall never know exactly at what angle the barrel 8 will be positioned when the gun is fired.

Any suitable means may be employed for rotating the cam 56, but I have shown said cam rotatable bodily with a spur gear 64, with which a pinion 65 meshes, said pinion being driven by an electric motor 66 through the instrumentality of a well known form of worm and worm gear located in a casing 67.

For effecting vertical movement of the gun base 4 upon its horizontal pivot 5, I rotatably mount a cam 56′ on the front end of said base 4 for co-action with a shoe 57′ which is carried by the arm 58. The cam 56′ is very similar to the cam 56 but preferably it is provided with less teeth and they are of substantially uniform size and shape. The several cam portions 59′ of this cam 56′, coacting with the shoe 57′ and in order that the latter may yield downwardly if struck by the following cam portion after being released by one cam portion, I have shown said shoe 57′ mounted on an arm 62′ which is pivoted to the arm 58, a coiled spring 64′ being employed for normally holding said arm 62′ in an elevated position, but for permitting it to swing downwardly whenever necessary.

The yieldable mounting of the shoe 57′ is more or less supplemental in the present showing, since the drop of the gun base 4 after it is released successively by the cam portion 59′, is checked principally by means of a sleeve 68 within which is located a coiled spring 69, the upper end of said spring resting on the upturned end of an arm 70 which is rigidly secured to the gun mount 2. The sleeve 68 slides over said upturned arm end and is thus guided in its vertical movement. The arrangement of the parts 68, 69 and 70 is preferably such that immediately after the gun base 4 is released and drops by gravity, the front end of said base is tilted upwardly to a slight extent so that the shoe 57′ is spaced upwardly to some extent from the next cam portion 59′. It is thus insured that the gun barrel 8 shall not be continually oscillated in a vertical direction, since such continual movement of the several parts would be more or less injurious and would not permit the lever 30 to be operated with ease to reset the gun after firing.

For the purpose of driving the cam 56′, I have shown an electric motor 66′ which drives a pinion 65′ (Fig. 4) through the instrumentality of a worm and worm gear located in a casing 67′, said pinion being in mesh with a spur gear 64′ which is secured on the same shaft as the cam 56′. The motor 66′ and the casing 67′ are preferably

mounted on a platform 71 carried by the gun base 4, through the instrumentality of suitable hangers 72.

The operation of the entire apparatus is as follows:

The gun is set so that the several parts stand as seen for instance in Fig. 1, and the player then throws ordinary baseballs or the like in an endeavor to strike the target 35. This target however is moving both horizontally and vertically in view of the fact that the gun mount 2 and the gun base 4 are moved in this manner, and hence it is rather difficult to strike said target. When it is struck, however, it tilts rearwardly, thereby forcing down on the linkage 37 and bringing the trip device 38 into contact with the trigger 29. This trigger lowers and releases the latch 24, so that the coiled spring 23 immediately comes into play to lower the trigger arm 22, with the result that the cam 21 is operated to withdraw the latch bolt 15 from engagement with the piston rod 10. When this occurs, the coiled spring 13 immediately projects the piston 9, compressing air in the barrel 8 behind the ball 14, with the result that this ball is forcibly shot from the gun toward the player. Due to the fact that the gun is moving both horizontally and vertically, the player cannot judge before hand exactly where the ball will be thrown and, consequently, it will be rather difficult to catch the same.

To reset the entire apparatus, it is only necessary to pull rearwardly on the lever 30. When this is done, the collar 33 coacts with the shoulder 34 to pull the piston rod 10 rearwardly, thereby cocking the gun against the tension of the spring 13. In the meantime, the arm 44 raises the trigger arm 22 to permit the spring 17 to project the latch bolt 15 and the trip device 38 rides up on the cam track 45 as shown in Fig. 6. When the trip device 38 passes the pivoted track 48, the lever 30 is again moved forwardly to the limit permitted by the cushioning spring 43 and it will be seen that during this movement, the trip device 38 is further elevated, with the result that it forces upwardly on the linkage 37 and returns the target 35 to its initial position, in readiness to be struck by another thrown ball.

The device has been successfully used and has been found to provide a great deal of amusement, the general construction and arrangement herein disclosed, being employed in the working machine. I wish it understood however that within the scope of the invention as claimed, it is not necessary to employ the several details of construction shown and described, but on the other hand, numerous minor changes may well be made.

I claim:

1. In an amusement device, a gun mount movable on a vertical axis, a ball shooting gun on said mount, a shoe carried by said mount, a driven cam coacting with said shoe for turning said mount in one direction, means for returning said mount in the other direction, and means for firing a ball from the gun while the latter is moving.

2. In an amusement device, a gun mount, a ball shooting gun on said mount movable on a horizontal axis, a driven cam carried by said gun, a shoe on the mount co-operable with said cam in rocking said gun upon its axis and means for firing a ball from said gun while the latter is moving.

3. In an amusement device, a gun mount, a vertically swinging gun base on said mount, a gun carried by said base, means for vertically moving said gun base, a rigid arm secured to and extending horizontally from said gun mount, said arm having an upturned free end, a sleeve slidably surrounding said upturned end, and a coiled spring within said sleeve for cushioning its downward movement, said sleeve being positioned in the downward path of said gun base.

4. In an amusement device, a gun mount movable on a vertical axis, a shoe carried by said mount and spaced from the axis thereof, a driven cam wheel co-operable with said shoe for turning the mount horizontally in one direction, means for returning said mount in the other direction, a ball shooting gun having a base pivoted to said mount on a horizontal axis, a second cam wheel carried by said base, means for driving this cam wheel, and a second shoe on the mount co-operable with said second cam wheel for effecting vertical swinging of the gun on the mount.

5. An amusement device comprising a ball shooting gun, means mounting said gun for different movements, a rotary cam and a shoe contacting therewith for moving the gun, said cam having different cam surfaces for moving said gun in different ways, and means for firing a ball from the gun while moving.

6. An amusement device comprising a ball shooting gun movably mounted, a rotary cam and a shoe co-acting therewith for moving said gun to and fro, and means for shooting a ball from said gun while the latter is moving; said cam having circumferentially spaced cam surfaces of different circumferential lengths to move the gun at unequal intervals.

7. An amusement device comprising a ball shooting gun movably mounted, a rotary cam and a shoe co-acting therewith for moving said gun to and fro, and means for shooting a ball from said gun while the latter is moving; said cam having circumferentially spaced cam surfaces of different radial lengths to successively move the gun unequal amounts.

8. An amusement device comprising a ball shooting gun movably mounted, a rotary cam and a shoe co-acting therewith for moving said gun to and fro, and means for shooting a ball from said gun while the latter is moving; said cam having circumferentially spaced cam surfaces of different circumferential lengths and of different radial lengths for moving the gun at unequal intervals and different amounts.

9. In an amusement device, a base, a horizontally swinging gun mount on said base, a gun carried by said mount, a rigid arm extending laterally from said mount, a shoe, yielding means mounting said shoe on said arm, a driven cam coacting with said shoe to alternately swing said arm in one direction and release it, and means for returning said arm after release, said yielding mounting means serving to absorb the shock when the shoe is returned against the cam.

10. In an amusement device, a base, a horizontally swinging gun mount on said base, a gun carried by said mount, a rigid arm extending laterally from said mount, and having its free end turned laterally, a horizontally elongated plate slidably mounted on said laterally turned end of said arm and having on its outer end a shoe, a spring for forcing said plate outwardly, and a driven cam coacting with said shoe to alternately swing said arm in one direction and release it, and means for returning said arm after its release.

11. In an amusement device, a spring gun having a trigger and a spring-setting lever, and a target movably mounted on said lever and connected with said trigger for shooting the gun when struck.

12. An amusement device comprising a movably mounted gun having a trigger and a target connected with said trigger, together with means for bodily moving said gun and target to render the latter difficult to strike.

13. In an amusement device, a gun having a trigger and a target connected with said trigger for shooting the gun when struck, together with means for swinging said gun and target both horizontally and vertically to render the target hard to strike.

14. In an amusement device, a gun having a trigger and a target connected with said trigger for shooting the gun when struck, together with means for moving said gun and target in a to and fro manner and for moving them different distances, whereby to render the target difficult to strike.

15. In an amusement device, a spring gun, a target connected therewith for shooting the gun when struck, and means having a single control handle for resetting the gun spring and the target at a single operation.

16. In an amusement device, a gun having a spring operated plunger, a lever connected with said plunger for setting the same against the action of the spring, means for holding said plunger in set position, a target movably mounted on said lever and associated with said holding means for releasing the same when the target is struck, and means for moving said target with respect to the lever to reset said target when said lever is operated to reset said plunger.

17. In an amusement device, a gun, a lever for setting said gun, a latch for holding the gun in set position and a trigger for releasing said latch, a trip on said lever for effecting movement of said trigger, and a target movably mounted on said lever and connected with said trip to move the same to trigger releasing position when the target is struck.

18. In an amusement device, a gun, a lever for setting said gun, a latch for holding the gun in set position and a trigger for releasing said latch, a trip on said lever for effecting movement of said trigger, a target movably mounted on said lever and connected with said trip to move the same to trigger releasing position when the target is struck, and means for automatically resetting said target, said trip and said trigger when said lever is operated to reset the gun.

19. In an amusement device, a gun, a lever for setting said gun, a latch for holding the gun in set position and a trigger for releasing said latch, a trip on said lever for effecting movement of said trigger, a target movably mounted on said lever and connected with said trip to move the same to trigger releasing position when the target is struck, and cam trackage for resetting said trip and said target when said lever is operated to reset the gun.

20. In an amusement device, a gun, a lever for setting said gun, a latch for holding the gun in set position and a trigger for releasing said latch, a vertically movable trip mounted on said lever for effecting movement of said trigger, a target movably mounted on said lever and connected with said trip for lowering the latter to active position when the target is struck, a cam track for partly raising said trip to inactive position when said lever is moved in one direction to reset the gun, said lever being then idly movable in the other direction, and an additional cam track for completing the raising of said trip and the consequent resetting of the target during said idle movement of the lever.

21. In an amusement device, a gun, a lever for setting said gun, a latch for holding the gun in set position and a trigger for releasing said latch, a spring for moving said trigger, a second latch for normally holding said trigger, a second trigger for releasing said second latch, a trip mounted on said

lever for actuating said second trigger, and a target movably mounted on said lever and connected with said trip for actuating the latter when the target is struck.

22. A gun comprising a support, a gun barrel mounted thereon, a spring actuated piston in said barrel having a piston rod extending rearwardly to the exterior of the barrel, a shoulder on said rod behind the barrel, a collar slidable on said rod between said shoulder and the barrel, a cushioning spring between said collar and the barrel, a lever fulcrumed on said support and connected with said collar for moving the latter into cooperable relation with said shoulder to move the piston rod rearwardly and set the gun, and means for holding said gun in set position.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

GEORGE ZINT.

Witnesses:
FRANK P. CONNAUGHTON,
L. M. START.