Sept. 10, 1957 C. A. SHAFFER 2,805,657

GAME SHOOTER

Filed Nov. 2, 1953

FIG. 1

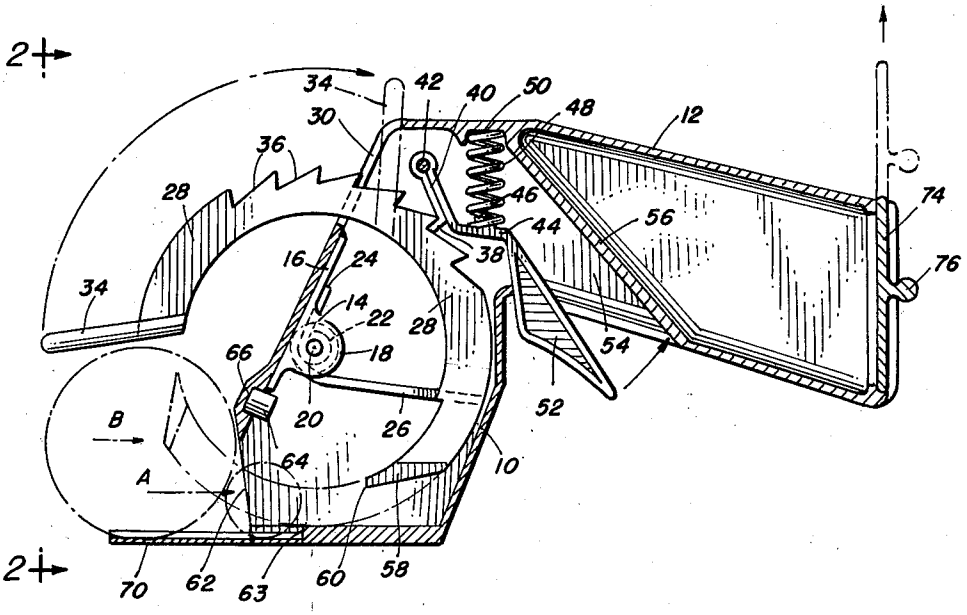


FIG. 2

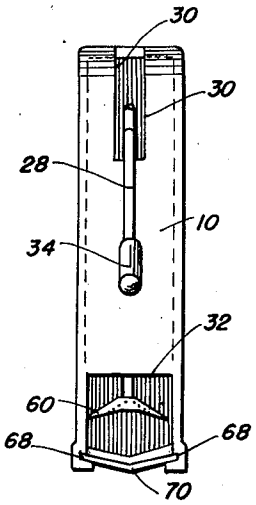


FIG. 3

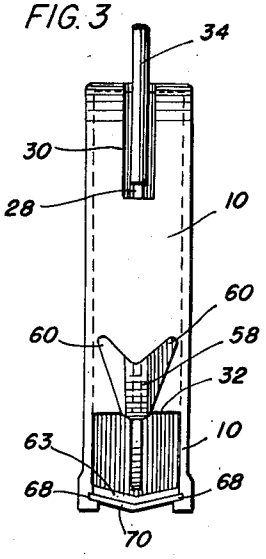
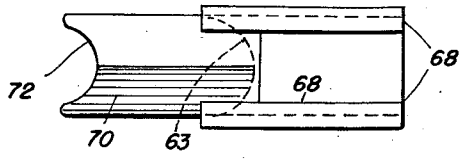


FIG. 4



INVENTOR:
CLIFFORD A. SHAFFER
BY Kent W. Worrell
ATT'Y

United States Patent Office

2,805,657

Patented Sept. 10, 1957

2,805,657

GAME SHOOTER

Clifford A. Shaffer, Newton, Ill.

Application November 2, 1953, Serial No. 389,620

10 Claims. (Cl. 124—16)

This invention relates in general to a toy pistol and is more particularly described as a game shooter of the spring actuated pistol type for toys and games for propelling objects of various kinds therefrom and more particularly for propelling missiles toward a target. Because it is capable of propelling objects which vary greatly in size, it may be considered as a game accessory and is actually adapted for use with games of many types.

The primary use of game shooters in the past has been for shooting marbles and other small pellets or objects. Some have been restricted to level surface or floor rolling action while others have been confined to elevated action, thereby limiting their usefulness essentially to one type of play and generally to the same size of sphere or other small object.

A primary object of this invention is to overcome these past limitations by the development of an attractive, simple, compact and highly efficient shooter of great adaptability and usefulness at a relatively small cost, having the ability to propel projectiles of a wide variety of sizes and ranges either on the floor or the ground, or upon a level surface, upwardly or toward an elevated target, and to do this with unusual accuracy and regulated force.

Other more specific objects of the invention are to provide an enclosing casing adapted to rest upon the floor for appropriate types of play with a grip and trigger elevated therefrom; to provide an adapter extensible in front of the head for accommodating projectiles of different sizes and to support projectiles for elevated shots; to provide means for self-centering the projectile within the propelling head; to provide accommodation for accessories or projectiles within an accessible pistol grip or handle; to provide a spring pressed circular compression member actuated by a handle and adjustable to various degrees of compression by outward rotation of the member by means of the handle; and in general, to produce a game shooter capable of the performance range herein shown and described.

Other objects of the invention will appear in the specification and will be apparent from the accompanying drawing in which,

Fig. 1 is a transverse sectional view of a game shooter in accordance with this invention.

Fig. 2 is a front view as taken on the line 2—2 of Fig. 1 with the shooter in loaded position.

Fig. 3 is a view similar to Fig. 2 with the exposed parts in a released position; and

Fig. 4 is a bottom view of a portion of the shooter showing the adapter in extended position as in Fig. 1.

Game shooters of various kinds have been produced for various purposes, each usually designed for shooting a marble, a pellet or a small disc of a certain particular size and in connection with a game of a certain type.

The present invention is designed and intended to have a more general application by providing a means for accommodating a wide size range of projectiles and projecting them forward with greater accuracy. For the

purpose of this disclosure, a circular type of impeller is selected with the propelling head so located that it engages a small article at one elevation and engages a larger article at another elevation but carried by the same support so that articles of different sizes are propelled by engagement with them more nearly in line with their horizontal center.

Referring now more particularly to the drawings, a casing 10 is stamped, cast or formed from any suitable material such as thin metal or plastic and extending from the upper portion of the casing is an integral hollow projection 12 forming a pistol grip. Disposed within the casing 10 and made integral therewith or rigidly attached thereto by spot welding, riveting, cementing or any suitable means is a bracket 14 having a base plate 16 secured to the front of the casing between the top and bottom and side arms 18 in which a fixed pivot 20 is mounted. A power spring 22 is wound about the pivot 20 between the side arms 18 with one end 24 bearing against the base plate 16 and the other end 26 extending therefrom for fixed engagement with a circular impeller 28.

At the top of the front portion of the casing 10 is an opening 30 preferably in the form of a slot through which the impeller 28 extends and at the lower portion at the front of the casing is an opening 32 through which the lower part of the impeller is projected. The impeller is confined in operation to a substantially circular path by its mounting power spring 22 which is moved about pivot 20 and has an arm 34 at one end which forms a handle extending above the casing for easy engagement therewith so that the impeller may be pulled forwardly out of the top of the casing against the pressure of the spring 22.

In the upper and outer edge of the impeller are a number of ratchet teeth 36 adapted to be engaged by a projecting tooth 38, of a pawl 40 mounted upon a cross pivot 42 at the upper end of the casing. The pawl has an extension 44 with an upward projection 46 to engage one end of a coil spring 48, the other end of which is seated in a recess 50 at the upper portion of the casing adjacent the handle grip 12. Projecting downwardly from the extension 44 is a trigger 52 which may be pressed into an angular space 54 at the under side of the handle grip which is formed by an angular partition 56 in the handle.

The spring 48 tends to press the tooth 38 into engagement with any one of the teeth 36 of the impeller depending upon the amount that the impeller is pulled outwardly by the handle arm 34.

At the lower end of the impeller is a V-type contact head 58 the outer surface of which is disposed substantially at an angle of 45° to a radius line extending from the fixed pivot 20. At the end of the head are two opposite forked extremities 60 which spread substantially across the bottom opening 32 thereof. This opening is disposed upon an inwardly inclined line 62 from the upper portion of the opening to the bottom of the casing as shown more clearly in Fig. 1.

A recess 63 in the base extends inwardly to a point approximately below the center of the pivot 20 which approaches the lowest portion point of the path of the propeller head 58. Thus the impeller and the contact head thereof will extend outwardly and upwardly from the opening 32 as the ultimate position which it assumes at the end of its impelling stroke at which time the arm 34 will be in the upper broken line position as represented in Fig. 1. In the forward impelling position, the impeller supporting end 26 of the power spring will engage a buffer 64 seated in a recess 66 at the inner wall of the casing just below the lower end of the mounting bracket 14.

At the bottom of the casing are inner guide recesses **68** for receiving an adapter plate **70** and the bottom of the casing and the plate **70** are slightly angular in cross section with the lowest portion at the center of the plate to centrally locate or cradle a spherical or other object placed thereon. To obtain maximum control and accuracy of shooting, the propeller head **58** is thus designed in a general V-shape at the contact edge. This forms a device for self-centering a projectile so that the object propelled is contacted at two separate and distinct points in the same plane, forcing the projectile into a center position in relation to the propelling head and its associated parts. The angularity of the head and the angular relation of the extremity **60** is intended to meet the same general angularity formed by the engagement with various size balls or spheres in placement for shooting. A line through the center of each sphere A and B as shown in Fig. 1 is illustrative of the contact of the propelling head **58**. By the application of the impeller, a substantially straight forward sliding or rolling action is imparted to the projectile depending upon whether it is flat like a carom ring or round like a ball.

As thus represented, a small ball or even a disc-like object such as a checker or carom having an approximate thinness of 5/16" may be placed flat in the normal position at the opening **62** is effectively propelled as well as light balls up to and approaching 2" in diameter, since the lower portion of the propelling head **58** sweeps in an arc extremely close to the playing surface at this point. For over small or for very large projectiles, the propelling head may not meet the projectile squarely, but for balls the size of marbles up to those the size of ping-pong balls, the effective engagement of the head with the balls is substantially at right angles to the center line thereof. An object of recessing the rear opening **32** upon a rearwardly inclined line **62** and the provision of the recess **63** in the bottom is to locate small spheres or objects of limited thickness close to the lowest point of the swing of the propeller head and at a tangent to the base line of case **10**. The end of the adapter is formed with a corresponding recesss **72** so that when it is retracted within the base for surface shots of the propeller, it does not interfere with the closest possible placement of the smaller projectiles.

The primary object of the adapter plate **70** is to support a projectile in front of the propelling head so that the shooter is not restricted to propelling an object forward on a level surface, but may be inclined upwardly for elevated shots of variable size and shapes of projectiles, thereby adapting the propeller to a greatly expanded usefulness in other than surface games.

In this construction, the major working parts of the unit lie entirely forward of the hollow pistol grip or handle which has the partition **56** therein. The handle thus becomes a sizable compartment for carrying or storing any favorite and suitable size projectiles as well as possible gun accessories, or other objects. The handle compartment is made accessible by a hinged or sliding door **74** at the end easily operated by a small central knob **76**.

With this construction, it is necessary only to apply the spring tension to the propeller by pulling the arm **34** forwardly to the desired notch, placing the projectile in place upon the adapter plate **70** or at the bottom of the case. The case is aimed by means of the handle grip and the trigger **52** is pulled releasing the impeller for contacting whatever missile is in place. By the arrangement and combination of essential parts as herein shown, this game shooter has a wider usefulness and a greater adaptability to various forms of play than in similar shooters heretofore disclosed. The present design not only lends itself to many forms of long established play, but may also be adapted to other games such as back yard golf using a ping-pong ball, requiring horizontal, elevated driving and putting shots or in a basket type ball game for

shooting baskets and to other and various forms of surface and elevated targets.

While the preferred construction has been described in some detail, it should be regarded as an illustration or an example rather than as a limitation or restriction of the invention, since various changes in the construction, combination, and arrangement of the parts may be made without departing from the spirit and scope of the invention.

I claim:

1. A spring actuated game shooter comprising a casing, a pivot extending across the casing, a spring extending around the pivot with one end engaging the casing, an impeller mounted on the pivot and engaged by the other end of the spring and rotatably movable in the casing by said spring, means for setting the impeller for action by the spring, a propelling head at the end of the impeller opposite the setting means, the propelling head having an end recess for centering a selected projectile, and trigger means for releasing the impeller for imparting the force of the spring to the propelling head, means forming an opening at the bottom of the casing for the head to pass through, said propelling head being adapted to contact a projectile stationed outside the casing through said opening and in front of the moving head and the centering recess imparting to the projectile a more controlled flight movement.

2. A spring actuated game shooter in accordance with claim 1, having a cradle adapter extensible at the bottom of the casing in front of said opening for supporting projectiles of various sizes in position for engagement by the propelling head for elevated and above surface shots.

3. In a game shooter in accordance with claim 1, the casing having an upper opening through which the first end of the impeller is moved against the spring for setting the impeller for spring action, and the casing opening at the bottom through which the propelling head of the impeller is projected when the spring is released by the trigger being substantially in a vertical plane with the shooter in upright position.

4. In a game shooter in accordance with claim 3, the said lower opening extending to the bottom of the casing and inclined slightly inward from the top of the opening to the bottom thereof, the bottom of the casing having a recess therein extending inwardly from the bottom of the lower opening for seating a projectile therein upon a surface below and supporting the game shooter more nearly below the center of the impeller and directly in the path thereof.

5. A game shooter in accordance with claim 3, having an adapter extensible and adjustable from the bottom of the casing for holding a projectile for shots at an angle to the horizontal, both the edge of the bottom at the lower end of the casing opening and the outer end of the adapter having recesses therein which register with each other when the adapter is retracted in the casing.

6. A game shooter in accordance with claim 3, having a cradle adapter slidably mounted in and extensible from the bottom of the casing for supporting a projectile therein in the path of the impeller for shots discharging the projectile at an angle to the horizontal.

7. A game shooter in accordance with claim 6, in which the adapter is slidably mounted in grooves or holes at the bottom of the casing and is moved outwardly to project in front of the casing, the adapter having a central longitudinal depression for seating a projectile centrally therein.

8. A game shooter in accordance with claim 6, in which the adapter is adjustably mounted at the bottom of the casing and projects horizontally outward therefrom with a bottom plate having a transverse V-section for cradling a projectile in the plate and to hold a projectile outside of the casing proper in the path of the

propelling head of the impeller for elevated and above the surface shots.

9. A mechanical shooter comprising a casing having upper and lower openings, a segmental circular impeller pivoted within the casing having opposite ends movable outwardly through the upper and lower openings respectively, a coil spring having one extremity connected to the inside of the casing between the said openings and the other end of the spring having a fixed connection with the impeller, means for moving the impeller partially out of the top opening against the spring to set it for impelling action by the spring, a handle integral with the rear of the casing for manually holding it in horizontal or angular positions inclined upward from the horizontal position, and trigger means in the handle for releasing the impeller from its set position for action by the spring to project the lower end thereof through the lower opening for propelling action.

10. A mechanical shooter in accordance with claim 9, having a projectile supporting adapter at the bottom thereof and extensible in front of the casing for holding projectiles of different sizes thereon, in the path of the impeller and at various distances in front of the casing so that a selected projectile may be engaged substantially in the horizontal line passing from the point of contact with the engaging part of the impeller through the center of the projectile depending upon the size of the projectile.

References Cited in the file of this patent

UNITED STATES PATENTS

1,451,230	Mahoney	Apr. 10, 1923
1,571,643	Renick	Feb. 2, 1926
1,809,708	Kohler et al.	June 9, 1931
2,001,449	Bergstrom	May 14, 1935
2,207,551	Popper	July 9, 1940