Jan. 28, 1969 N. A. KIRK 3,424,461

TOY BALL GUN DEVICE

Filed Feb. 28, 1966

FIG. 1

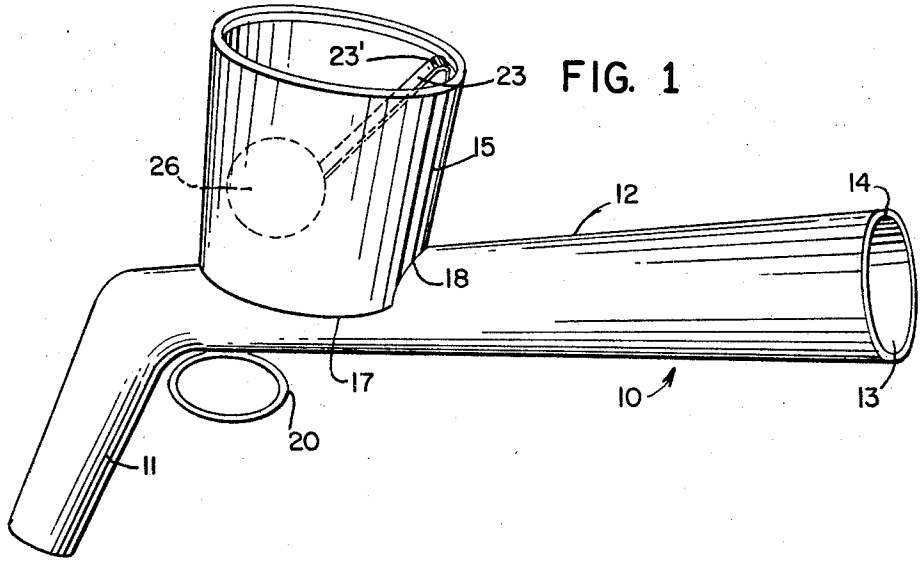


FIG. 2

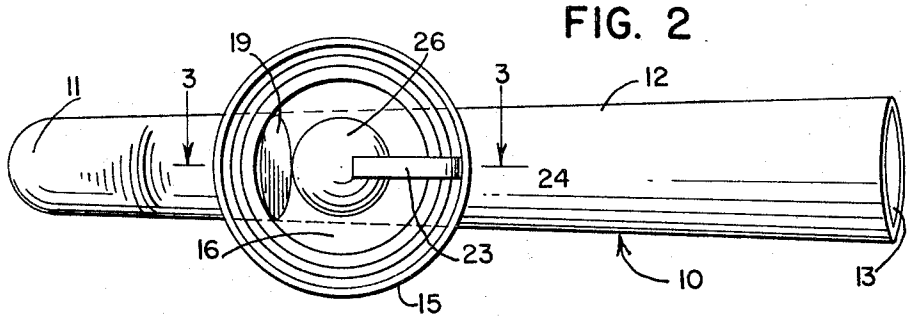
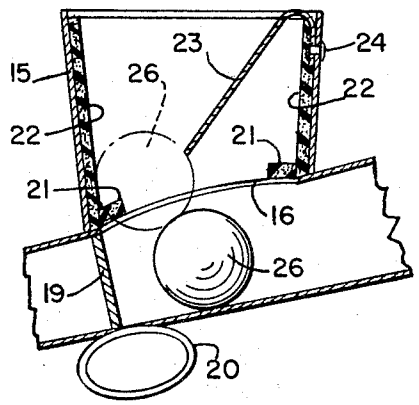


FIG. 3



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TOY BALL GUN DEVICE

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ABSTRACT OF THE DISCLOSURE

A gun shaped, toy device having a hollow barrel and hand grip wherein a hopper is affixed to and in communication with the barrel. The device is so constructed that, for example, a ping pong ball can be caught in the hopper, allowed to descend therethrough to the barrel, and be subsequently emitted from the open end of the barrel, through a swinging type hand motion of the user.

This invention relates to a toy ball gun, and more particularly to a gun-shaped toy which is adapted to receive a ball and to propel the ball so received.

Ball propellant devices are in general quite complicated in that they require springs, plungers and associated propellant mechanisms. In requiring these components the devices are of necessity rather high-priced, which to some extent decreases their merchant-ability as a toy. Furthermore, in requiring component mechanical parts they are prone to breakage and malfunction, which of course limits their commercial acceptability. However, the most serious drawback of these known type toys is that they tend to be physically and psychologically dangerous to those of tender years.

By utilizing spring-type launching mechanisms these propellant-type toys involve relatively high exit speeds for the projectile involved. With these type toys in the hands of immature youths it is well known that harm can be suffered by those at whom the toy is fired. It is only natural for the young to use this type toy as a firearm and in so doing the user becomes part and parcel of an unknowing but nevertheless violent act.

It is to remove this attendant physical danger and psychological harm to the user that I have devised the described device. My device has no moving parts, and as a result the velocity of the ball propelled therefrom is entirely dependent upon the motion of the user's arm and wrist. While my device is shaped somewhat like a gun for convenience, it has no trigger or the like and is not used or intended to be used in the manner of a conventional firearm.

It is therefore an object of this invention to provide a toy device which has neither a mechanized propellant mechanism nor any moving parts.

Another object of this invention is to provide a toy device which is simple and economic to manufacture.

Another object of this invention is to provide a toy device which is inherently safe both in form and operation.

Another object of this invention is to provide a toy device which is especially durable and reliable.

A further object of this invention is to provide a toy device which will present the user with a challenge, as well as providing a source of exercise and enjoyment.

Other objects and advantages of this invention will be apparent from the following description of the preferred embodiment of the invention taken in connection with the accompanying drawings in which:

FIG. 1 is a perspective view of the invention.

FIG. 2 is a plan view of the device of FIG. 1.

FIG. 3 is a sectional view of the device taken along lines 3—3 of FIG. 2.

Referring now to FIG. 1, there is shown the device **10** having a handle portion **11**. The upper end of handle portion **11** is joined to an elongate barrel portion **12**. The barrel portion **12** has a bore **13** thruout most of its length, and the diameter of that end adjacent the handle portion **11** is somewhat smaller than the diameter at the other end **14** thereof. Thus it may be said that the barrel portion gradually increases in size from that end in proximity to the handle portion to the open end thereof.

Intermediate the ends of the barrel **12** but closest to the point of joinder between barrel and handle is an open-ended receptacle **15**. The receptacle **15** is generally in the shape of a truncated cone. The receptacle **15** is mounted as by gluing or the like at a forwardly inclined angle on the barrel. To accommodate the receptacle **15** the barrel at the area of juncture is cut out as at **16** along a bevel **17**. A portion of the base of receptacle **15** may be cut out as at **18** so as to be accommodated along bevel **17**. The barrel, handle and receptacle are preferably made of lightweight, durable plastic, but other materials, such as wood, cardboard or the like, may be utilized.

Near the smaller diametered end of barrel **12** a barrier member **19** is formed so as to close off that end of the barrel bore. It should be understood that while barrier member **19** is shown as a separate member it could just as easily be created by forming the end of the barrel member into a closed surface. In an alternative vein the handle member **11** could be made solid or have a closed upper end, which in either case would define a barrier member similar to the one shown. If this alternative were used the upper end of the handle could be received in the small diametered end of the barrel and permanently attached thereto as by cement or similar means.

Beneath the receptacle **15** and mounted on the underside of the barrel **12** is a trigger guard **20**, the purpose of which will be subsequently explained. At the lower end of the walls of receptacle **15** a circumferential lip **21** is formed as by inwardly forming the lower portions of these walls. A layer of foam rubber **22** surrounds the interior walls of the receptacle **15** and is also placed atop the upper surface of lip **21**. While a layer of foam rubber is shown, felt or any other relatively shock-absorbent material could be used and could be affixed to the receptacle by appropriate and well-known adhesives.

A resilient member **23** having a curvate downwardly turned upper portion **23** is affixed at the extremity of the curvate portion to the receptacle **15** as by a screw or rivet **24**. Resilient member **23** in its extended normal position extends well across the interior of receptacle **15** to thereby serve as a movable barrier member, as will be subsequently explained more fully. Member **23** may be formed of any relatively resilient material, such as any of the well-known plastics or inexpensive metals having this characteristic.

From the description of the device so far it can be seen that a barrel portion has affixed near one end thereof a receptacle having an open top and bottom wherein the top thereof has a resilient member centered therein. A handle member joined to one end of the barrel member completes the basic components of the device. It however should be especially noted that the interior of the receptacle communicates with the interior of the barrel bore.

In operation, the device is grasped by the handle and a finger is inserted through the trigger guard. A ball **26**, which might be of the ping-pong variety in size and weight but which of course could be made of rubber or similar material, is placed in the upper end of the receptacle. The resilient member **23** is constructed in such manner that the weight of the ball **26** is sufficient to depress it to a point (see FIG. 1) where the distance between the end

of the resilient member **23** and the walls of the receptacle is sufficient to allow the ball to proceed to the lower end of the receptacle. Once this has occurred the resilient member resumes its original position wherein it would again have to be depressed to allow a ball to pass therebelow. The ball then falls by gravity through cut-out portion **16** into the bore of barrel **12**, and the device is manipulated to slightly elevate barrel end **14**, thereby causing the ball to come to rest against barrier member **19**. The user then moves the toy rapidly about his wrist up or down in a vertical plane in a motion very similar to that used in fly-casting, thereby causing the ball to be propelled from the open end of the barrel. The device could also be utilized in a sideways direction with either an under or overhanded motion.

In normal practice the ball would be propelled toward a wall or backboard and as the ball caromed off the wall or backboard the user could catch it in the receptacle **15**. As the ball on the rebound enters the receptacle the cushion-like material **22** absorbs some of its force, as does the resilient member **23**, thereby effectively preventing the ball from bouncing out of the receptacle. The resilient member is subsequently depressed by the weight and force of the ball, allowing it to pass to the bottom of the receptacle, with the cushion material atop lip **21** again preventing retrograde movement. The toy is tilted upward as before, the ball comes to rest against the barrier member, and as before a fly-casting motion will again begin the sequence.

From the above operative description it can be seen that the toy provides a sequence of tosses and catches. With practice it is possible to keep this sequence in operation for many minutes, depending of course on the mastery of the user.

If in the course of using the device the ball is not "caught" in the receptacle it may be easily recovered from the floor by "scooping" it into the receptacle. Once the user has developed a certain mastery of the toy he may use a toy in each hand, alternately retrieving the ball with one toy, or he may use two or more balls at the same time in the fashion of a vaudevillian juggler. The user might also after throwing the ball and before retrieving it in the receptacle, bat it with the barrel. Likewise, the user could before receiving the ball in the receptacle twirl the toy about his finger in the trigger guard, stopping just in time to "catch" the ball. To provide competition, two or more individuals equipped with the toy could toss a ball back and forth while developing a score from dropped or missed tosses.

Irrespective of how or by whom the toy is used it provides enjoyment, aids in developing coordination, and provides a valuable means of exercise, which in the case of adults may prove a relaxing addition to a reducing regimen.

The device can also be utilized as a maker of very large bubbles. To accomplish this the open end of the barrel is dipped into a quantity of bubble-making liquid so that a thin film of liquid adheres to the barrel. The user may then waft the toy about, or he may blow through the receptacle, and in either case a series of large bubbles is formed and emitted from the open end of the barrel. To add further enjoyment to this use of the toy the bubbles so formed may be broken by swinging the barrel at them, or they may be caught in the receptacle.

The device with some slight modification may also be used as a snowball maker. In this useage the resilient member **23** might be removed. The user scrapes up snow in the receptacle, taps his other forearm with the intermediate portion of the barrel to compact the snow which has entered the barrel bore through the receptacle, and then using the fly-cast motion propels the snow out of the open end of the barrel. The snowball emitted from the barrel, while not solidly packed (as this may cause injury), is sufficiently packed by the forearm tapping motion to adhere together so that it is emitted as a snowball.

The described device with short practice can be mastered and can be the source of many hours of pleasure to the user. It is relatively inexpensive to produce due to its largely plastic construction and is quite durable due to the lack of moving parts. While projectiles are propelled from it, their speed and force is relatively small since their only force is generated by the fly-casting motion of the user.

While I have shown and described only one embodiment of the invention, it will be obvious to those skilled in the art that various changes and modifications can be made therefrom without departing from the invention thereof, and therefore it is intended for the appended claim to cover all such changes and modifications as fall within the true spirit and scope of the invention.

I claim:

1. A game device of the type described comprising in combination an elongate, first tubular member having an open end wherein the bore of such member increases in size as it approaches said open end, the edges of said tube at said open end being substantially coplanar, a handle member affixed to said elongate first tubular member opposite said open end in such a manner as to extend therebelow at an obtuse angle, said handle member having the upper portion thereof joined to said elongate first tubular member in such a manner as to form a closed end on said elongate first tubular member which is adapted to serve as a projectile positioning means, a second tubular member affixed at its lower end to the upper portion of said elongate first tubular member and having a bore which decreases in size as it approaches the lower end thereof, said second tubular member having open top and bottom ends, and having the bore thereof in communication with the interior of said elongate first tubular member, an arcuate finger grasping portion affixed to said elongate first tubular member adjacent the lower portion thereof and in close proximity to said handle member, said elongate first tubular member and said second tubular member being constructed and arranged in such a manner that a projectile dropped into the upper end of said second tubular member falls therethrough into the interior of said elongate first tubular member coming to rest against the closed end of said elongate first tubular member in position to be subsequently exited therefrom via rapid manual movement of the device.

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