

Jan. 14, 1964

C. S. ALLEN, JR

3,117,567

AIR RING GUN

Filed Sept. 1, 1961

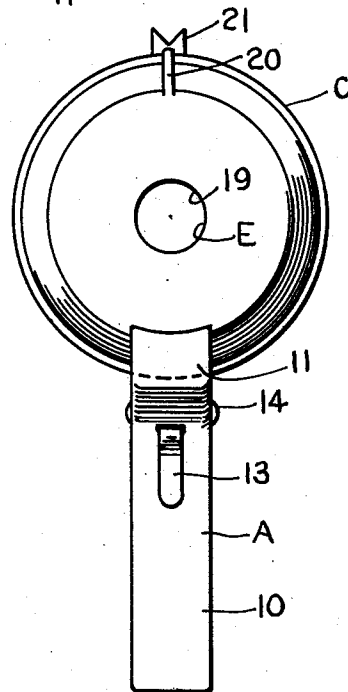
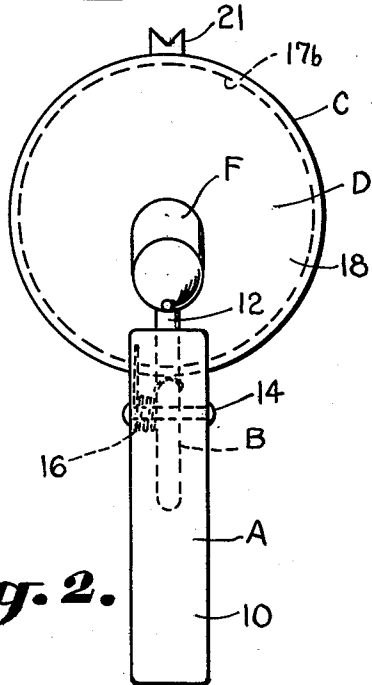
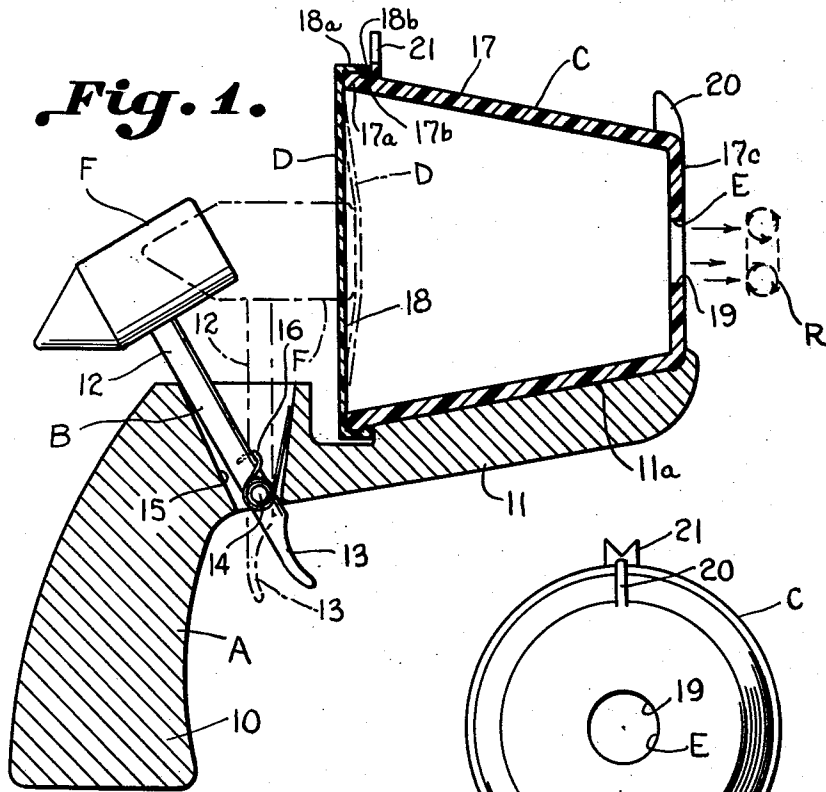


Fig. 2.

Fig. 3.

INVENTOR.
CHARLES S. ALLEN, JR.
BY *James H. Bailey*
ATTORNEY

1

3,117,567

AIR RING GUN

Charles S. Allen, Jr., 36 Wedgewood Drive,

Greenville, S.C.

Filed Sept. 1, 1961, Ser. No. 135,607

1 Claim. (Cl. 124—1)

This invention relates to a device especially useful as an amusement device in the form of a toy gun.

Toy guns of all types have long had a great appeal for young people. Such toys range from the variety which simply make noise responsive to actuation of trigger mechanism to those which eject projectiles of various kinds with varying amounts of force. Those devices which simply make noise lack the attraction inherent in the projectile firing devices while those which fire projectiles have a certain amount of danger inherent in their use.

Accordingly, it is an important object of this invention to provide a toy gun which would be especially attractive in that it makes noise and emits an air ring with sufficient force to be felt and to dislodge objects, thus having many of the advantages of the projectile type gun without its disadvantages.

Another object of this invention is to provide a novel toy in the form of a gun which emits an air ring which may be used safely by children.

Another object of this invention is to provide a toy gun which is useful for target practice but which fires no projectiles having a potential for destruction.

It is believed that the subject device will also have commercial and industrial uses although such are not developed at present.

The invention will be more readily understood from a reading of the following specification and by reference to the accompanying drawing forming a part thereof, wherein an example of the invention is shown and wherein:

FIGURE 1 is a side elevation illustrating a toy gun constructed in accordance with the present invention, with parts in section,

FIGURE 2 is a rear elevation of the device shown in FIGURE 1, and

FIGURE 3 is a front elevation of the device shown in FIGURE 1.

The air gun illustrated in FIGURE 1 has a gun housing A which carries a trigger mechanism B. An air chamber C is carried by the housing and is preferably in the form of a barrel-like closure or drum. A diaphragm D is positioned across the drum C on the end thereof adjacent the trigger mechanism B while a relatively small aperture E preferably circular in shape is carried opposite the diaphragm. The trigger mechanism B carries a hammer or other striking element F which strikes the diaphragm D as illustrated in dotted lines in FIGURE 1.

Referring more particularly to the drawing, the housing A is illustrated as having a pistol grip portion 10 and a barrel supporting stock 11. While the device is illustrated in the form of a pistol, it may be adapted to be of another type such as that which is fired from the shoulder. The trigger mechanism is illustrated as including a lever 12 and a trigger portion 13 integral therewith. The lever portion 12 and the trigger 13 are pivoted intermediately as at 14 within an opening 15 within the housing. A torsion spring 16 is provided to normally maintain a trigger mechanism in rearward or cocked position as illustrated in solid lines in FIGURE 1.

An air chamber in the form of a drum-like housing C is preferably elongated and cylindrical in shape, and includes a conical portion 17 which may be constructed of any suitable material. The drum 17 is supported by the stock 11 at 11a as is suitably secured thereto as by a

2

suitable glue (not specifically illustrated). The drum includes an enlarged annular bead 17a defining an annular slot 17b therein on the end adjacent the trigger mechanism B. On the end of the drum 17 opposite the trigger mechanism a vertical portion 17c is illustrated.

The diaphragm D is preferably constructed in the form of a membrane 18 of a suitable material such as polyethylene. The membrane passes over the bead 17a as at 18a and a downturned portion 18b is confined within the slot 17b in the drum. The aperture E in the portion opposite the diaphragm D is illustrated as being preferably in the form of a circular aperture 19.

The hammer F is illustrated as being fixed adjacent the upper end of the lever 12 and upon the application of a gripping force to the trigger 13 the hammer is caused to strike the diaphragm D as illustrated in broken lines in FIGURE 1. This striking action causes an air ring to be emitted from the aperture E and since the aperture E is illustrated as being circular, the air ring will be toroidal in shape with air currents flowing from the inside outwardly as illustrated at R in FIGURE 1. Front and rear sights 20 and 21 are illustrated for directing the outward path of the air ring R.

Toy guns manufactured in accordance with the invention make an excellent indoor game. This is done with soap bubbles and using the gun to burst the bubbles. Sometimes the air ring strikes the bubble and puts another smaller bubble inside the target bubble. Also, at times, the ring will hit the bubble and bounce off, causing five to twenty five smaller bubbles to be knocked off that records a hit, but leaving the target bubble intact. Also, as a toy, it will activate any light targeted shooting gallery, with or without electrical or battery operated contacts or switches. It will knock over cigarettes stood on end at close range. It will put out a candle light at from five to ten feet or more, according to the size of the gun.

While a preferred embodiment of the invention has been described using specific terms, such description is for illustrative purposes only, and it is to be understood that changes and variations may be made without departing from the spirit or scope of the following claim.

What is claimed is:

1. An air gun including, a gun housing, a trigger mechanism carried in said housing, said trigger mechanism including a link pivotally carried by the housing intermediate its ends, one end of said link extending below the housing forming a trigger, the free end of said link extending upwardly above said housing, an elongated cylindrical air chamber carried by said housing being mounted longitudinally thereof so as to form a barrel for the gun, a diaphragm carried on one end of the housing adjacent said trigger mechanism, a relatively small cylindrical aperture in said air chamber opposite said diaphragm, a hammer carried by the free end of said link, resilient means normally holding the trigger and hammer in position for moving the hammer for striking the diaphragm responsive to movement of the trigger mechanism, against said resilient means whereby an air ring is emitted from the aperture.

References Cited in the file of this patent

UNITED STATES PATENTS

2,534,398	Beathan	Dec. 19, 1950
2,543,651	Weiss	Feb. 27, 1951
2,628,450	Shelton	Feb. 17, 1953
2,788,607	Ward	Apr. 16, 1957
2,879,759	Webb	Mar. 31, 1959