June 6, 1950 E. J. KRUPP 2,510,403

BALL JUGGLING TOY

Filed Feb. 26, 1948

Fig. 1.

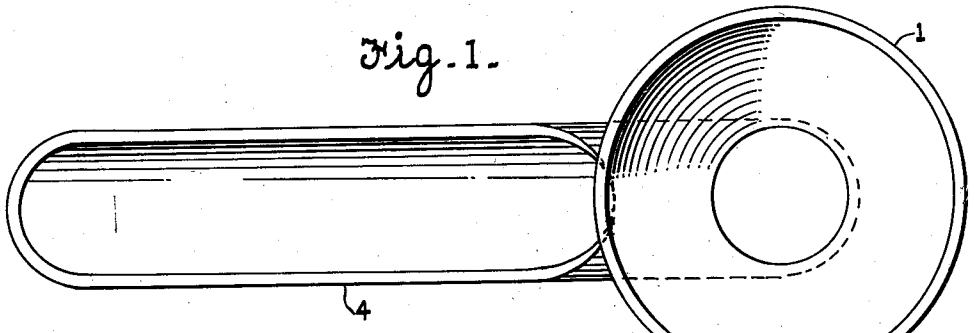


Fig. 2.

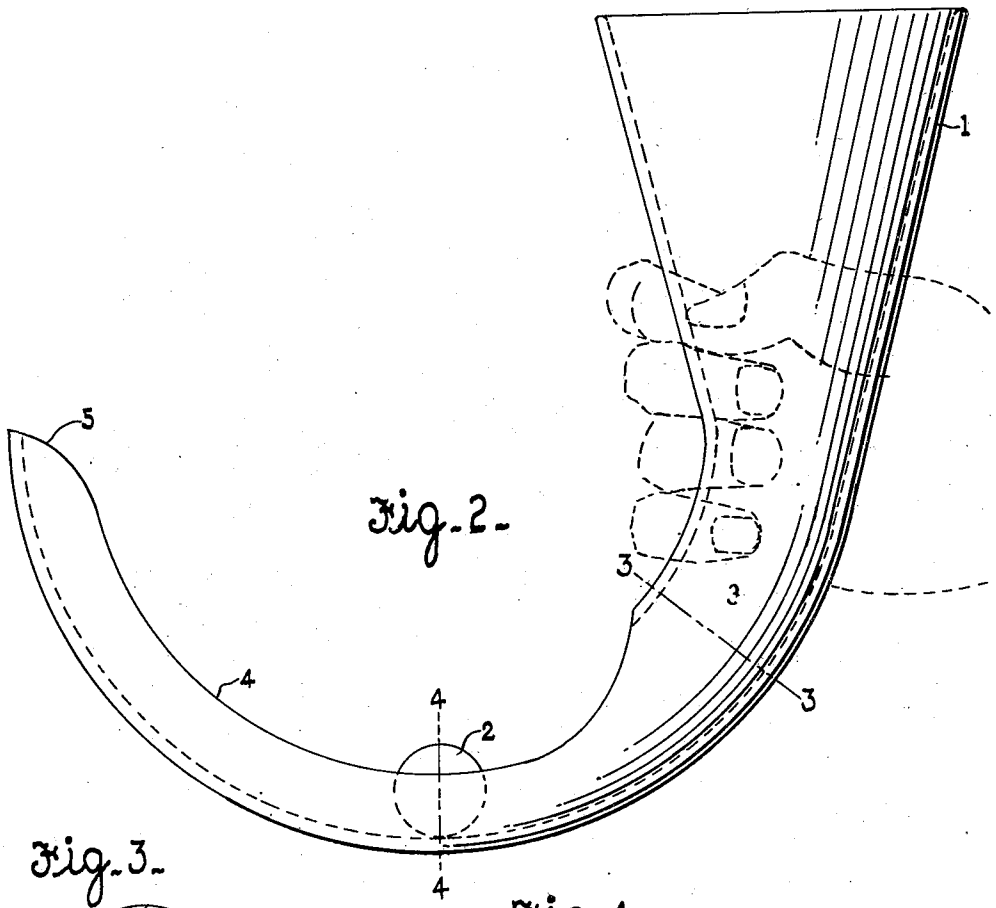


Fig. 3.

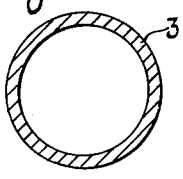
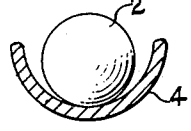


Fig. 4.



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Patented June 6, 1950 2,510,403

UNITED STATES PATENT OFFICE

2,510,403

BALL JUGGLING TOY

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Application February 26, 1948, Serial No. 11,005

1 Claim. (Cl. 273—96)

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This invention relates to toys and particularly toys suited to keep a ball in play, through the exercise of more or less dexterity.

An object of the invention is to provide a device whereby a ball may be continuously tossed upward and caught, permitting the dexterity of a player to be measured by his ability to maintain repeated cycles of such play.

Another object is to provide a toy for maintaining a ball in continuous play by repeatedly tossing the ball upward, utilizing the momentum of its descent in applying upward impulsions.

Another object is to so mount a ball-receiving funnel on one of the upturned ends of a substantially semi-circular guide, that a ball may be delivered from the funnel to the guide under a momentum acquired in falling to said funnel, and may be thrown up from the other end of the guide with a minimum of manual effort.

These and various other objects are attained by the construction hereinafter described and illustrated in the accompanying drawing, wherein:

Fig. 1 is a top plan view of my improved toy.

Fig. 2 is a side elevational view thereof.

Fig. 3 is a cross section taken on the line 3—3 of Fig. 2.

Fig. 4 is a cross section taken on the line 4—4 of Fig. 2.

In these views, the reference character 1 designates a funnel-shaped receiver for a ball 2, a tubular outlet 3 being extended arcuately downwardly and laterally as an extension from the lower end of said receiver. The arcuate extent of the outlet 3 is approximately forty-five degrees and a channel-forming runway or track 4 extends integrally from the lower end of said outlet conforming to the arcuate curvature of the outlet. The joint arcuate extent of the outlet 3 and runway 4 is substantially one hundred and eighty degrees, whereby the runway has a discharge end 5 directed upwardly and having a horizontally opposed relation to the lower end of the receiver 1. The avoidance of any obstruction of this discharge end is a vital feature of the construction. Also vital, for reasons which will presently appear is the included angle formed by the receiver, such angle being within the limits, 28 to 31 degrees.

The described toy is held by grasping the lower portion of the receiver 1 and its outlet portion

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3. A ball 2 of materially lesser radius than the cross sectional radius of the outlet and runway is tossed into the air and caught, in its descent, by said receiver. Under the momentum of its descent, the ball travels through the outlet 3 and along the runway 4, upwardly discharging from the end 5 of the runway. By subjecting the device to a slight upward thrust, as it travels through the runway, the ball is impelled a foot or two upward. Through a rapid manipulation of the device, the descending ball may be caught in the receiver and again tossed upward from the end 5 of the runway. With skill and practice, it is thus possible to keep the ball in continuous play for an indefinite period. The included angle of the receiver, confined to the limits aforementioned, is designed to minimize the loss of momentum of the ball through impact. It has been experimentally ascertained that a ball of suitable weight, size and rigidity, in dropping vertically on the receiver wall having the selected inclination, will rebound only sufficiently to drop directly into the outlet 3. If the included angle is greater than has been specified, the ball rebounds from wall to wall with consequent loss of momentum. A lesser angle than has been specified entails either an unduly small entrance to the receiver or an undue vertical elongation of the receiver. Preservation of a maximum momentum, following impact, entails use of a ball having low resiliency, solid balls of wood or a plastic being preferred. The entire described device is preferably formed as a one-piece plastic casting.

The preservation of momentum as the ball escapes from the receiver to the outlet minimizes the manual effort necessary to keep the ball in play and also renders that effort substantially uniform, as would not be the case, if impact in occasional receptions of the ball, largely neutralized momentum of the latter.

The described toy has been found very interesting to children and conducive to their dexterity.

What I claim is:

A juggling toy comprising a funnel-shaped receiver for an object to be juggled, and a guide opening from and extending rigidly downwardly and laterally from the receiver, with a substantially arcuate curvature continued through ap-

proximately one hundred and eighty degrees to a discharge extremity thereof, whereby said extremity is adapted to deliver the object in an approximately vertical upward direction, said guide having a tubular portion correlated with the lower portion of the receiver to form a hand grip, the major portion of said receiver being above the horizontal level of said discharge end, the guide extending in a channel form from said tubular portion to said discharge end.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,022,186	Engler	Apr. 2, 1912
1,582,811	Adler	Apr. 27, 1926
2,025,995	Lerch	Dec. 31, 1935

FOREIGN PATENTS

Number	Country	Date
17,117	Great Britain	Aug. 14, 1908
393,331	France	Dec. 19, 1908
352,967	Germany	May 10, 1922
661,779	Germany	June 27, 1938