Dec. 31, 1935. A. L. LERCH 2,025,995

BALL THROWING AND CATCHING APPARATUS

Filed Sept. 10, 1934

Fig. 1.

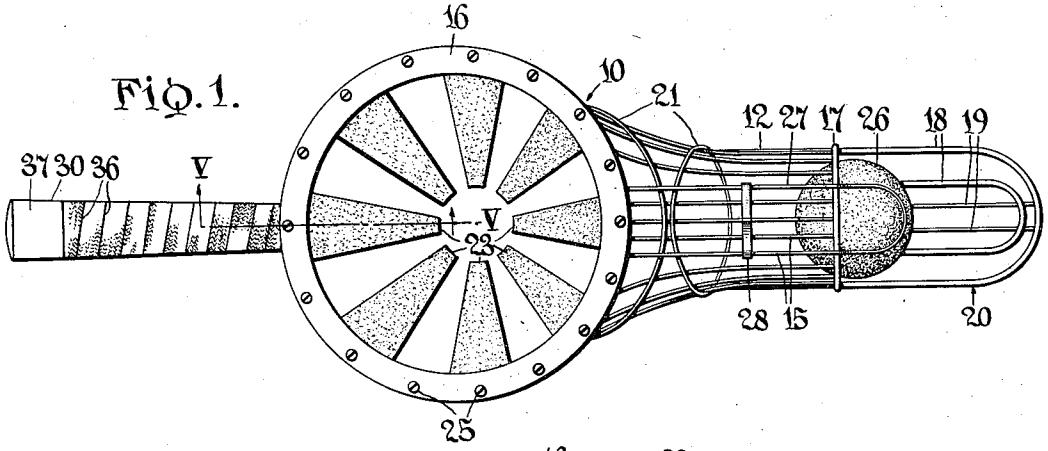


Fig. 2.

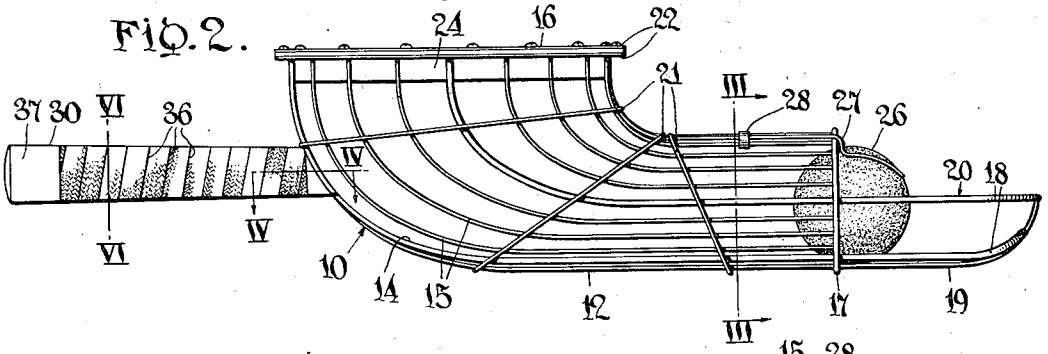


Fig. 4.

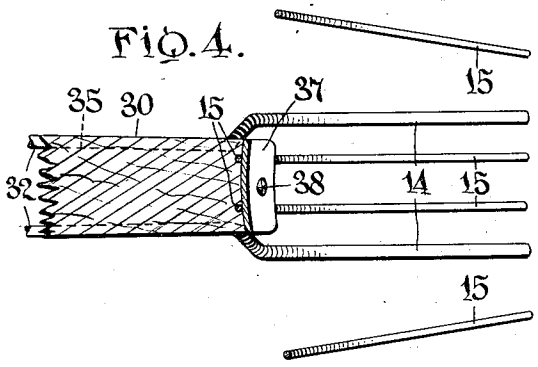


Fig. 3.

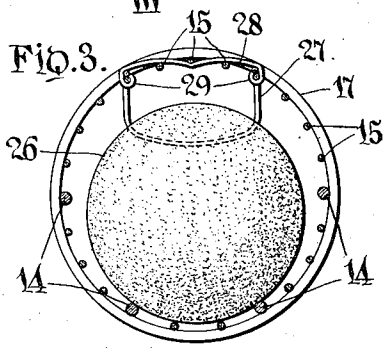


Fig. 5.

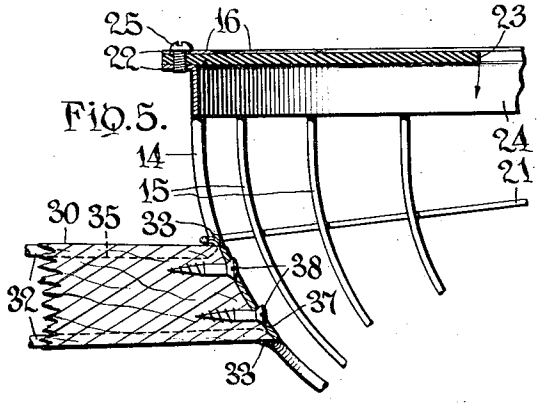
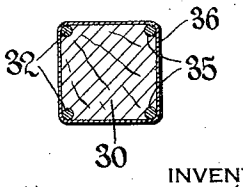


Fig. 6.



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BALL THROWING AND CATCHING APPARATUS

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Application September 10, 1934, Serial No. 743,453

6 Claims. (Cl. 273—96)

The invention relates to ball games and it has particular relation to an apparatus for throwing and catching balls.

One object of the invention is to provide an improved ball throwing apparatus which will automatically maintain a ball yieldably in a position spaced considerable distance from the hand of the player whereby a relatively long swinging arc is insured for centrifugally projecting or snapping the ball in a given direction from its position of yieldable support.

Another object of the invention is to provide an improved ball throwing and catching device which upon catching a ball therein tends to impel it to a desired position of throwing and maintain it yieldably in such position until the player snaps or slings it therefrom by centrifugal force.

Another object of the invention is to provide an improved cage construction for a ball throwing and catching apparatus.

In the accompanying drawing:

Fig. 1 is a plan of a game apparatus embodying the invention and in which the illustration of a part of the frame work and the lower side of the apparatus is omitted;

Fig. 2 is a side elevation of the apparatus;

Fig. 3 is a cross section taken substantially along the line III—III of Fig. 2;

Fig. 4 is a cross section, on a larger scale, taken substantially along the line IV—IV of Fig. 2;

Fig. 5 is a cross section, on a larger scale, taken substantially along the line V—V of Fig. 1; and

Fig. 6 is a cross section taken substantially along the line VI—VI of Fig. 2.

One practical embodiment of the invention is exemplified in a ball throwing and catching apparatus 10 comprising a cage 12 having an outline shape somewhat similar to a funnel and including longitudinal bracing members 14 and 15, such as wires, extending from a ring 16 at the mouth of the apparatus to a ring 17 adjacent an exit end of the apparatus. Certain of the wires in the form of extensions 18 and 19 project outwardly from the ring 17 to form a trough-like scoop 20. In order to provide the configuration desired the extensions 18 and 19, as viewed in Fig. 2, are rounded upwardly at their outer end portions. As best shown in Fig. 1 these extensions 18 are curved and continuous but the extensions 19 are secured across the curved extensions 18 at their extremities.

Additional reinforcing rings 21 surround the cage and constitute rigid portions thereof. All of the rings 16, 17, and 21, and the longitudinal members 18 and 19 of the cage are secured together by means of welding, soldering, or the like.

The mouth or ball receiving ring 16 is composed of a pair of flat ring members 22 between which are clamped the outer end of a series of flexible and preferably resilient fingers 23 which can be composed of rubber, rubberized fabric, leather, or the like, and which project inwardly in the plane of the ring 16 and converge toward a point eccentrically located with respect to the ring 16. A flange 24 depending from the inner ring 22 provides a suitable surface for soldering or welding or otherwise securing the ends of the longitudinal members 14 and 15. The ring members 22 are clamped upon the fingers by suitable fastening devices 25, such as screws, or the like. It is of course to be understood that the fingers 23 can be cut from a disc of material with the outer rim remaining intact and secured in clamped relation between the ring members 22.

It will be observed that the ring 16 provides a mouth through which a ball 26 may be caught and that the cage decreases in size from the ring 16 toward the end ring 17 which is disposed at substantially right angles to the ring 16.

A loop of resilient wire 27 extends slightly outwardly beyond the ring 17 and its end portion is shaped to conform to the curvature of the ball 26 as it lies in the trough 20. The rear portion of the loop is secured by soldering or the like, to rings 16 and 21.

A suitable adjusting clip 28 having angularly turned guiding eyes 29 at its extremities that are slidably mounted upon a pair of the spaced upper wires 15, slidably engages along its intermediate portions alternately over and underneath adjacent wires 15, as shown in Fig. 3. This clip also slidably engages adjacent its eyes, the shank of the loop 27. By sliding the clip 28 forwardly to the right, as viewed in Fig. 2, the effective length of the loop is decreased and the pressure required to release ball 26 outwardly from the end of the loop accordingly increases. On the other hand, by sliding the clip rearwardly the resistance to the release of the ball is lessened.

A handle 30 substantially polygonal in cross section is connected adjacent the mouth ring 16 of the cage in substantially axial alignment with the ring 17 and is secured to the cage by means of extensions 32 of the larger wires 14 which are bent outwardly as indicated at 33 so as to be in position to lie in grooves 35 formed longitudinally along the corner portions of the handle. Suitable wrapping 36 and a cap 37 for the handle provide a convenient grip for a player's hand.

Further securing structure for the handle is provided in the form of a plate **37** having screws **38** securing it against the inner end of the handle and a plurality of the longitudinal wires **15** (see Fig. 4) are clamped between the plate and end of the handle. Thus a very rigid mounting of the handle upon the cage is insured.

In utilizing the apparatus, a player grasps the handle **30**, which, by virtue of its polygonal cross sectional contour, can be held conveniently without danger of it turning in the player's hand and the cage is held downwardly in order that the ball can fall to the position shown in Figs. 1 and 2. In this position the ball is wedged under the influence of gravity between the resilient loop **27** and the bottom of the trough **20** adjacent the end of the cage, and the resilient loop **26** yieldably and releasably maintains the ball in this position until it is desired to impel it from the trough. Then by swinging the apparatus somewhat in the manner of swinging a tennis racket the ball is thrown from the trough at the smaller end of the cage.

In catching the ball thrown from another player, or after it has bounded from a wall or from a playing area, it is allowed to fall through the ring **16** and the resilient fingers **23** will yield to the sudden impact of the ball to permit it to enter the cage. Since the shape of the cage is such as to present the members **14** and **15** inclined with respect to the plane of the ring **16** (Fig. 2), the ball will bounce toward the small exit end of the cage rather than rebounding through the fingers **23**. However, the fingers are sufficiently firm to sustain the weight of the ball when the apparatus is in an inverted position with respect to the structure shown in Fig. 2 and under ordinary conditions of handling the ball will be confined in the cage. It will be noted (Fig. 5) that the inner rim of the upper ring member **22** projects inwardly beyond the inner rim of the lower ring member **22**, and thus provides an abutment to offer more resistance to outward bending of the finger **23** than is offered to inward bending thereof. In other words, there is more leverage provided in bending the fingers inwardly than in bending them outwardly for insuring slight resistance in receiving the ball and providing ample resistance to any tendency of the ball to bound or fall outwardly through the fingers.

It will be observed that the trough **20** is somewhat scoop shaped and this portion of the apparatus can be employed to pick up a ball from the floor or ground by placing it over the ball and imparting a rapid turn to the handle and cage.

Various types of games can be played with the apparatus in catching and throwing a ball, or an individual can secure interesting and useful exercise by playing the ball against a wall and catching it upon the rebound.

Although only one form of the invention has been shown and described in detail it will be apparent to those skilled in the art that the invention is not so limited but that various changes may be made therein without departing from the spirit of the invention or from the scope of the invention defined in the accompanying claims.

I claim:

1. A game apparatus comprising a receptacle having a mouth including a pair of rings, a series of flexible fingers extending inwardly from the circumferential portions of the rings to provide a partial shield across the ring opening, and means for clamping the outer ends of the fingers between the rings, said receptacle having an exit opening, and an extension adjacent the exit opening in the form of a scoop for picking up a ball from a playing surface.

2. A ball throwing and catching apparatus comprising a receptacle having entrance and exit openings for accommodating the passage of a ball into and out of the receptacle, a handle at one extremity of the receptacle substantially opposite the exit opening, means mounted upon the receptacle structure defining each opening for maintaining the ball against passage therethrough under the influence of its own weight, said means being yieldable to the force of the ball under the influence of its momentum when projected into the entrance opening or hurled from the exit opening, a partially enclosed extension continuing from the exit opening and being closed at its outer end to provide for substantially transverse expulsion of the ball therefrom.

3. A ball throwing and catching apparatus comprising a receptacle having an entrance opening for catching a ball therethrough, said receptacle having an exit opening for guiding the ball out of the receptacle, a handle at one extremity of the receptacle, a partially enclosed extension opening transversely to form a part of the exit opening, yieldable means mounted upon the receptacle adjacent the exit opening thereof and engageable with the ball for temporarily maintaining the latter in a predetermined position from which it is thrown from the extension.

4. A ball throwing and catching apparatus comprising a receptacle having an entrance opening for catching a ball therethrough, said receptacle having an exit opening for the ball, a trough-like extension projecting outwardly from the receptacle from the exit opening for receiving the ball, and yieldable means mounted upon the receptacle adjacent the exit opening and yieldable to receive and secure the ball in wedged relation in the trough in the proximity of the extension.

5. A ball throwing and catching apparatus comprising a receptacle having an entrance opening for receiving a ball therethrough, said receptacle having an exit opening for the ball, a yieldable device extending along the receptacle toward the exit opening for automatically engaging the ball and maintaining it against forward or rearward movement in a predetermined position upon dropping the ball from one extremity of the receptacle toward said exit opening, means for securing said device to the receptacle, and means having coacting connection with the receptacle and with the yieldable device and movable toward and away from the exit opening for varying the yielding resistance of the latter.

6. A ball throwing and catching apparatus comprising a receptacle having an entrance opening, a plurality of flexible fingers secured to the receptacle around the entrance opening and partially closing the latter, said receptacle having outer finger securing means overhanging the outer sides of the fingers, and inner finger securing means offset radially outwardly from the overhanging means whereby shorter leverage is secured in bending the fingers outwardly than in bending them inwardly, said receptacle having an exit opening through which the ball is projected by swinging the apparatus.

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