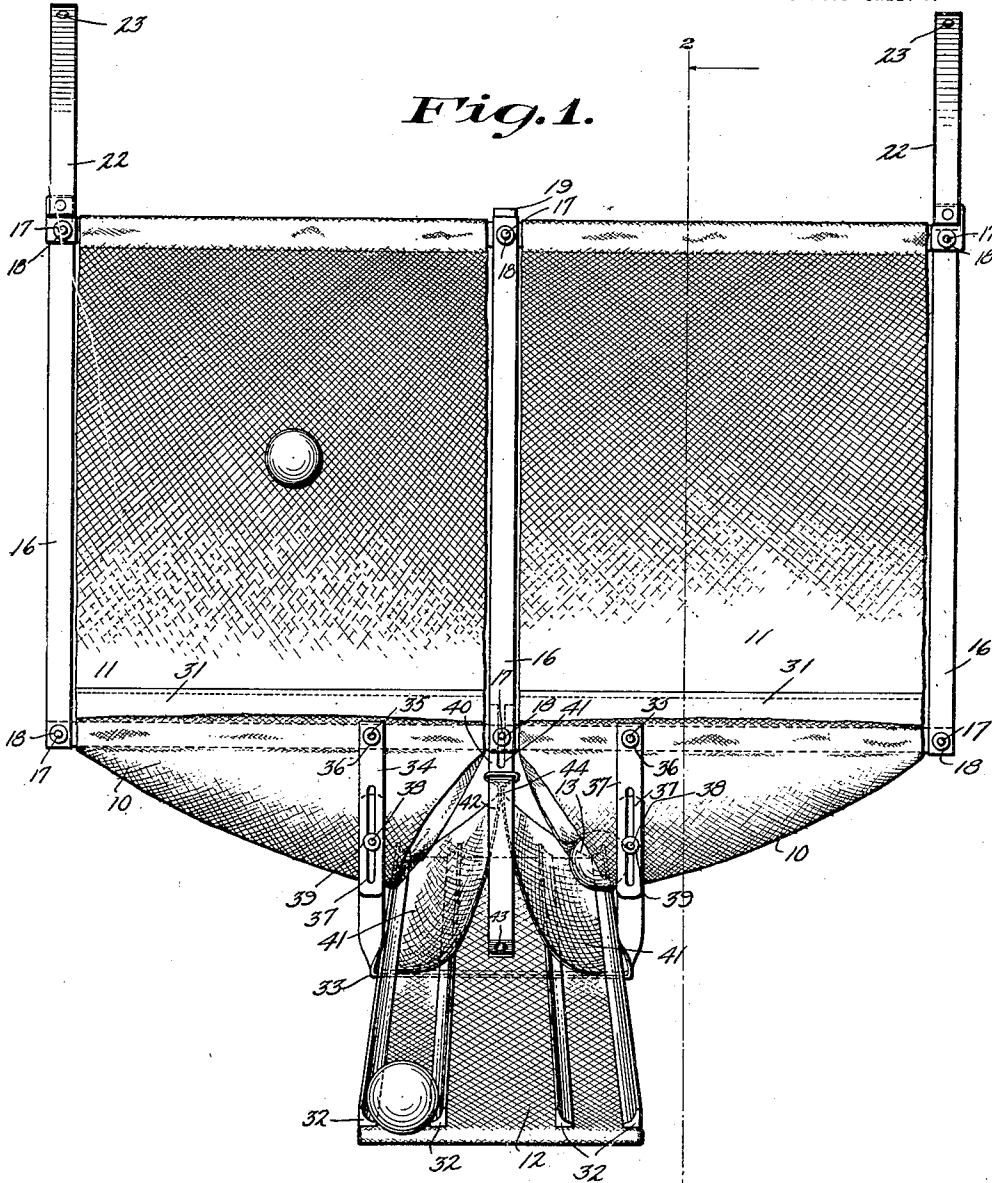


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APPLICATION FILED MAR. 20, 1920.

1,371,867.

Patented Mar. 15, 1921.

2 SHEETS—SHEET 1.



WITNESSES

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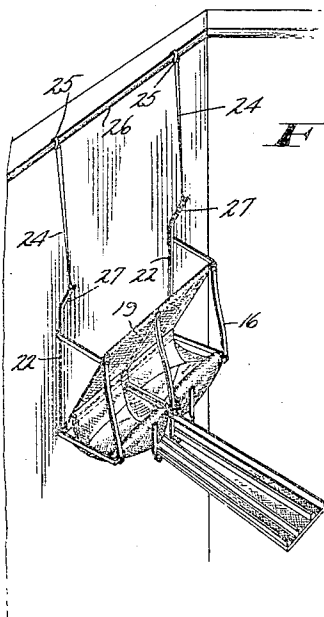


Fig. 3.

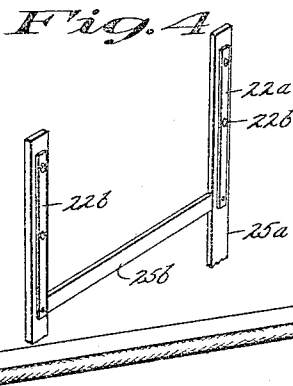


Fig. 4.

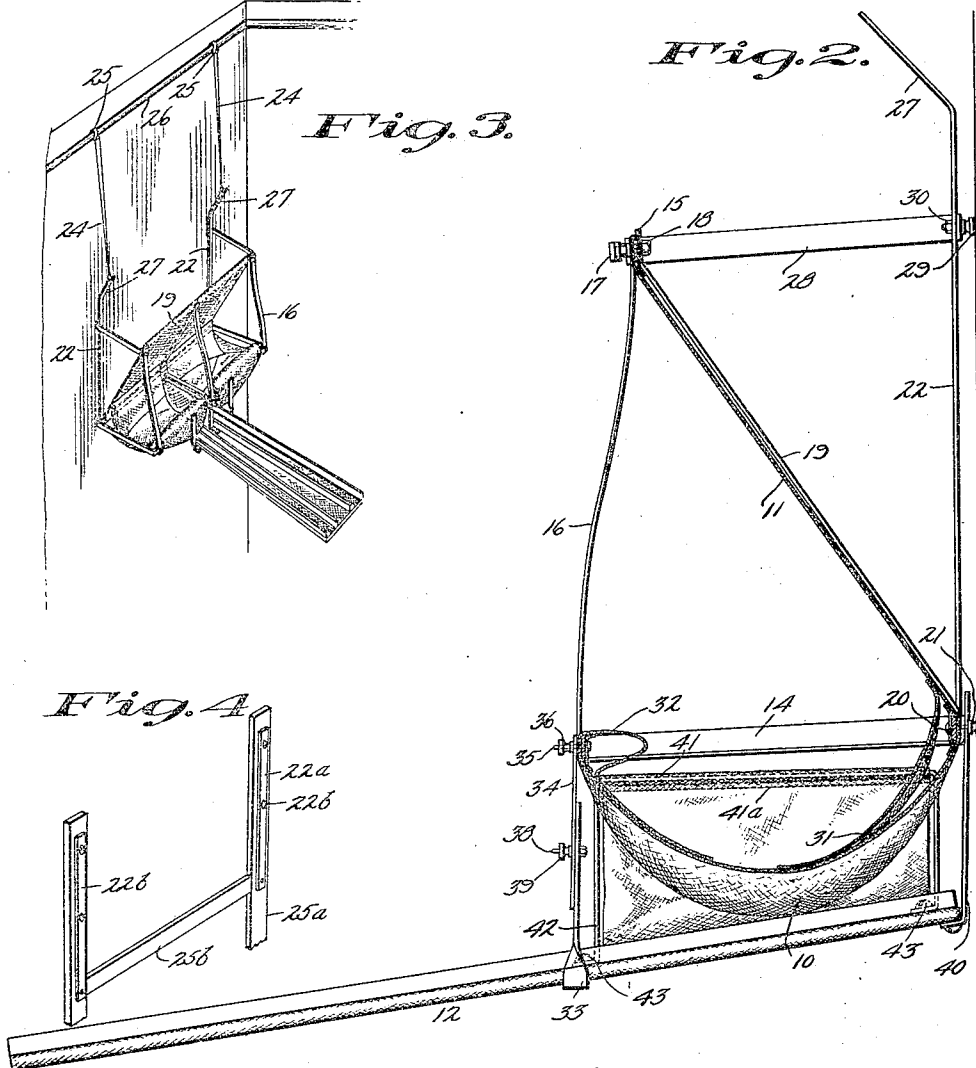


Fig. 2.

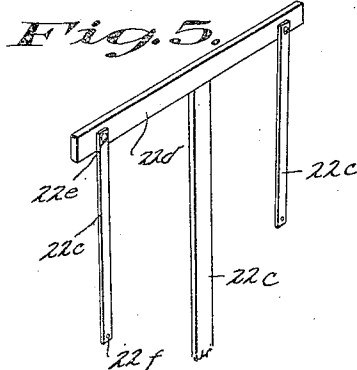


Fig. 5.

WITNESSES

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AMUSEMENT AND EXERCISE APPARATUS.

1,371,867.

Specification of Letters Patent. Patented Mar. 15, 1921.

Application filed March 20, 1920. Serial No. 367,410.

To all whom it may concern:

Be it known that I, JOHN W. E. DEAN, a citizen of the United States, and a resident of Yonkers, in the county of Westchester and State of New York, have invented a new and Improved Amusement and Exercise Apparatus, of which the following is a description.

My invention resides in an apparatus adapted for use either by a single person or by two or more persons and in which may be employed a ball, or balls, and a receiver into which a ball may be thrown by the player and from which it will be automatically discharged in a direction to permit of its being caught by a player so that the balls may be returned to the receiver as rapidly as discharged.

An object of the invention is to provide an apparatus by the use of which amusement involving skill and helpful exercise may be obtained; a further object being to provide an apparatus of the indicated character in the use of which the activities of the player or players may be optionally increased by bringing into play additional balls as the amusement, exercise, or the game of skill between players proceeds.

Reference is to be had to the accompanying drawings forming a part of this specification, it being understood that the drawings are merely illustrative of one example of the invention.

Figure 1 is a front elevation of an apparatus embodying my invention;

Fig. 2 is a transverse vertical section in a plane indicated by the line 2—2, Fig. 1;

Fig. 3 is a perspective view on a reduced scale showing one mode of supporting the apparatus in position for use;

Figs. 4 and 5 are fragmentary perspective views showing other forms of supporting means that may be employed.

In carrying out my invention in accordance with the illustrated example, the apparatus is made with a receiver designated generally by the numeral 10 dipping at the bottom toward one end as hereinafter explained and comprising a back 11 rising from the receiver and inclining forwardly. The receiver discharges gravitationally to a ball return 12, a received ball or balls 13, three or these being indicated as in play in Fig. 1. The receiver 10 and back 11 are made of canvas or equivalent flexible material and properly supported by suitable

frame work. In the example shown a rectangular frame 14 is provided at the top of the reservoir 10. At the top of the apparatus and extending along the top of the back 11 is a longitudinal bar 15 which is connected with the frame 14 by flat bars or straps 16, the connection preferably being through the medium of screws or bolts 17 and nuts 18 in order that the frame may be made in knockdown form. A central oblique brace 19 is employed in the illustrated form approximately in or adjacent to the plane of the back 11 and secured at its upper end to the frame bar 15 by the adjacent bolt 18 and at its lower end to the back of the frame 14 by a bolt 20 and nut 21. The frame in the illustrated form includes also supporting uprights 22, the upper ends of which have means to secure them in position or suspend the apparatus, there being shown a hole 23 at the top of each upright adapted to receive suspension cords 24 adapted to be engaged with hooks, nails, or the like on any convenient supporting structure, as for example, to engage picture hooks 25 on a molding 26 of a wall when the apparatus is to be used indoors. Obviously, the suspension cords 24 may be hung from nails driven in a fixed wall or other outdoor structure. The upper end 27 of each upright 22 is given a forward inclination for the proper position of the supported structure. Also, it will be observed from Fig. 2 that said uprights 22 are at an obtuse angle or have a batter relatively to the plane of the rectangular frame 14 which is for the purpose of compensating for the weight of the ball return 12. When the structure minus the ball return is hung as described, the elements 22 will flare rearwardly from the frame 14 but the weight of the ball return 12 will position the supported structure with the elements 12 upright. Said uprights 22 are connected with the front top bar 15 by bars or girts 28, the ends of which are bent at approximately right angles the front ends being secured by the adjacent bolts 17 to the bar 15, while the rear ends are secured by bolts 29 and nuts 30 to the uprights 22.

Any suitable supporting means may be provided to which the uprights 22 may be secured. In Fig. 4 is shown portions of standards 25^a connected by a cross bar 25^b and adapted to receive the uprights, 22^a,

as corresponding generally with the up-
rights 22 but here shown in the form of
plain flat bars secured by nails or other
fasteners 22^b. In Fig. 5 is a T-shaped sup-
port consisting of a single standard 22^c and
top cross bar 22^d to which hangers 22^e cor-
responding generally with the uprights 22
and 22^a may be secured, said hangers 22^e
having holes to receive fasteners 22^e for
securing them to the cross bar 22^d at the
upper end, the lower ends having holes 22^f
to receive nails or the like.

I have illustrated an apparatus equipped
with two receivers 10 and therefore with
two backs or back sections 11 and accordingly
the ball return 12 which is disposed beneath a
receiver is given a form and capacity to
return the balls from both receivers. Each
back or back section 11 pertaining to a re-
ceiver 10 is so formed and arranged as to
prevent a thrown ball from rebounding be-
yond the receiver; and in addition to this it
is highly desirable to cause the ball to travel
downwardly on the back 11 and to measur-
ably determine the definite course of travel
of the ball as well as its speed of movement
in being returned to the thrower to the
end that there may be an approach to uni-
formity in the period and manner of its re-
turn, that the player may adapt himself to
reasonably uniform conditions in his ac-
tivities. To factor in attaining the desiderata
referred to, I provide features and appur-
tenances related to the back 11 and receiver
10 as next described. The side edges of the
canvas or the like at the back 11 are free
so that the canvas when struck by a ball
will yield and assume a form at the ball pre-
senting a pronounced depression or pocket,
thereby overcoming the momentum of the
ball and at the same time producing under
the ball what is in effect an inclined sur-
face over which the ball gravitates toward
the receiver 10.

I provide an apron 31 at the bottom of
the back and extending over the surface of
the receiver 10. Said apron at its top edge,
is sewed or otherwise suitably fastened
along the fabric of the back 11 or to an
adjacent part of the apparatus and is pref-
erably fastened also, as by sewing, to the
material of the receiver 10. It will be ob-
served from Fig. 2 that the apron 31 at the
top lies in front of the rear longitudinal bar
of frame 14 to constitute a cushion and
eliminate noise by preventing contact of
the ball with the frame. Also, said apron,
it will be seen, is spaced from the receiver
10 and presents a steep curve over which the
ball rolls which prevents retardation in its
descent and in fact, increases its momentum
so that it moves with considerable speed
toward the front of the receiver and against
the guard 32 hereinafter more particularly
referred to.

The canvas of the receiver 10 has the
front and back edges secured respectively
to the front and rear longitudinal bars of
the frame 14 so that the receiver hangs sus-
pended in said frame to be flexible in va-
rious directions under the weight of a re-
ceived ball. Also, the receiver dips from
its outer end laterally inward toward the
ball return 12, and the flexible apron 31 also
dips laterally and is free to yield in any di-
rection and conform to yielding of the re-
ceiver. The result obtained is that the ball
will be directed in a more or less straight
oblique line from the back 11 and the apron
31 forwardly toward the front of the re-
ceiver.

The guard rail 32 which is disposed lon-
gitudinally at the front of the receiver and
overhanging the latter advantageously may
consist of a sheet of fabric secured upon
the top surface of said receiver and looped
adjacent to the upper edge thereof as best
seen in Fig. 2 into tubular form to constitute
the guard. Thus, the ball will strike the
guard 32 at the under side thereof or at least
at a point on the ball above its greatest diam-
eter, and the ball will be deflected obliquely
toward the lateral discharge end of the re-
ceiver 10, to drop toward the ball return 12.

Said ball return 12 may consist of an
approximately flat chute having a fabric
covering to eliminate noise in the rolling of
the ball. Guide elements for the ball are
provided on the chute 12 and may, as shown,
take the form of pairs of guide tracks 32
having concave inner faces, there being a
pair of such tracks for the balls discharged
by each receiver 10. Said ball return 12, in
practice, is usually disposed at an angle to
the front to discharge the ball directly for-
wardly at approximately right angles to the
receiver, this disposition being particularly
adapted to two receivers.

The chute-like ball return 12 may be sup-
ported by any suitable means in proper
position beneath the receiver or receivers
and at the proper inclination. In the illus-
trated example the supporting means is of
a character to be dismembered in assem-
bling the apparatus in knockdown form and
is as follows: At the front of the appa-
ratus a stirrup 33 is provided in which the ball
return 12 rests, and the upstanding ends of
the stirrup are secured to hangers 34 suit-
ably fastened to the front of the frame 14
as by bolts 35 and nuts 36. To adjust the
height of the stirrup 33 a slot and pin con-
nection is provided with the hangers 34,
there being slots 37 in the hangers and bolts
38 having nuts 39 so that by the loosening of
the nuts the connection may be adjusted. At
the rear end of the ball return 12 a hanger
40 is provided suitably fastened at its lower
end to said ball return and the upper end
is fastened to the frame 14 preferably by a

slot and pin connection, there being a slot in said hanger adapted to receive the bolt 20.

I provide yieldable stop means for balls emerging from a receiver 10, said means functioning also to cushion the ball to prevent noise by the ball striking the ball return 12 and functioning furthermore to reduce the speed of the ball and direct it to the guideway provided by the tracks 32. Said means consists of a flexible sheet 41 adjacent to a receiver 10 and sustained by suitable means to assume a more or less curved and loose form in front of the receiver. When two receivers 10 are employed as shown the sheet 41 of a length to serve for both receivers, may, as illustrated, extend continuously over an arched frame 42 and be brought together beneath the top of said frame and stitched or otherwise fastened as indicated at 41^a. The front and rear ends of said arched frame 42 are fastened as indicated at 43 to the top surface of the ball return 12 between the pairs of tracks 32. The lateral outer edges of the sheet 41 are fastened to the top surface of the ball return 12 in any suitable manner as by extending the same beneath the outer track rails 32 so that the fastening of the rails fastens also said sheet 41.

The apparatus may be used in various ways: For example by a single player, and the balls be all returned to one receiver 10, the number of balls being gradually increased to the limit that the player may be able to maintain in play, or a single player may employ the two receivers and with his right and left hand maintain a separate series of balls in play, returning them to the respective receivers. An interesting use of the apparatus may be made by two players, each endeavoring to embarrass the other by throwing to the receiver 10 of the other player more balls than he can maintain in play.

I would state in conclusion that while the illustrated example constitutes a practical embodiment of my invention, I do not limit myself strictly to the mechanical details herein illustrated, since manifestly the same can be considerably varied without departure from the spirit of the invention as defined in the appended claims.

Having thus described my invention, I claim:

1. An apparatus of the class described including a transverse receiver open at the top into which a ball may be delivered, a back disposed in a transverse plane therein extending obliquely upwardly and forwardly to overhang said receiver, and a ball return to which said receiver discharges and adapted to direct the ball outwardly.

2. An apparatus of the class described including a pair of receivers dipping laterally

toward their adjacent ends, said ends being open for the discharge of balls; together with ball-returning means to which said receivers discharge in common and adapted to direct the ball away from said receivers. 70

3. An apparatus of the class described including a receiver into which a ball may be delivered, said receiver having an open top, a back rising from said receiver against which a ball may be thrown to gravitate to the receiver, and ball-cushioning and guiding means at the lower end of said back for controlling the movement of the ball into said receiver; together with a ball return leading forwardly beyond the front of said receiver. 80

4. An apparatus of the class described including a receiver having an open top to which a ball may be delivered, said receiver having a discharge opening and formed of flexible material to yield to the weight of a ball, a back of flexible material rising from said receiver, and a flexible apron disposed in said receiver and adjacent to the lower end of said back. 90

5. An apparatus of the class described including a receiver having an open top to which a ball may be delivered, said receiver having a discharge opening and formed of flexible material to yield to the weight of a ball, a back of flexible material rising from said receiver, and an apron of flexible material secured at its upper edge adjacent to the lower end of said back and lying free on the surface of said receiver at the rear portion thereof. 100

6. An apparatus of the class described including a receiver to which a ball may be delivered, and presenting an end opening through which a ball may escape laterally, a back rising from said receiver against which a ball may be thrown to gravitate to said receiver, and a guard at the front of the receiver and overhanging the same against which a ball gravitating to the receiver from said back may impinge. 110

7. An apparatus of the class described including a receiver of flexible material open at the top for the entrance of a ball thereto, said receiver being free to yield to the weight of a ball and dipping toward an end thereof, said end being open for the escape of the ball, and a guard of flexible material disposed longitudinally along the front of said receiver, and a back rising from the receiver against which a ball may be thrown to gravitate to the receiver. 120

8. An apparatus of the class described including a receiver of flexible material open at the top for the entrance of a ball thereto, said receiver being free to yield to the weight of a ball and dipping toward the end thereof, said end being open for the escape of the ball, a longitudinal guard on said 130

receiver at the front edge thereof and overhanging the receiver to permit a ball to impinge against the underside of said guard, and a back rising from said receiver against which a ball may be thrown to gravitate to the receiver.

9. An apparatus of the class described including a receiver of flexible material free to yield to the weight of a ball, a back rising from said receiver against which a ball may be thrown to gravitate to the receiver, and a tubular guard on said receiver along the front edge thereof, against which a ball may impinge in moving forwardly in the receiver, said guard overhanging the receiver and being formed of flexible material and free to yield bodily.

10. An apparatus of the class described including a flexible ball receiver presenting an opening for the escape of the ball, and a flexible stop in front of said opening adapted to receive the impact of the ball and to yield to the impact, and a ball return extending beneath said stop and adapted to direct the ball outwardly.

11. An apparatus of the class described including a pair of oppositely disposed receivers into which balls may be delivered, and presenting opposed open ends for the escape of the balls, flexible stops disposed in front of the respective receivers and adapted to receive the impact of the balls escaping from the receivers, and means adapted to receive the ball after impact of said stops and direct it outwardly.

12. An apparatus of the class described including a receiver presenting an opening for the escape of a ball, and a stop of flexible sheet material disposed across the receiver at said opening to receive the impact of the ball together with a ball return arranged to receive the ball after striking the stop.

13. An apparatus of the class described including a receiver open at the top for the entrance of a ball, a ball return extending

forwardly from the receiver, a back for said receiver against which a ball may be thrown to gravitate to the receiver, and a guard along the front of the receiver at the interior thereof and ranging lengthwise of the receiver in a position laterally of said ball return, to offer a barrier against the escape of a ball over the front of the receiver.

14. An apparatus of the class described including a receiver having an open top for the entrance of a ball and having a discharge opening, a ball return, and a stop across the receiver at its discharge opening and adapted to direct the ball to said ball return.

15. An apparatus of the class described including a receiver open at the top for the reception of a ball, and having an outlet opening for the escape of the ball, a back rising from said receiver against which a ball may be thrown, said back extending obliquely forward over the receiver, a ball return adapted to receive the ball from said receiver and direct it away from the latter, and a frame comprising elements to which said receiver is secured at the back and front, standards rising from said back element of the frame, a longitudinal frame bar disposed above the front of the receiver and to which the upper end of said back is secured, and connections between said last-mentioned bar and said standards.

16. An apparatus of the class described including a pair of oppositely disposed receivers into which balls may be delivered and presenting opposed open ends for the escape of the balls, a back rising above said receivers, said back having separate sections of flexible material for the respective receivers, the opposed side edges of which sections are free, and a frame supporting said receivers and back, said frame including a member extending adjacent to the opposed side edges of the back sections.

JOHN W. E. DEAN.