

May 22, 1956

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2,746,757

FLUID FILLED GAME PIECE RECEPTACLE

Filed March 19, 1951

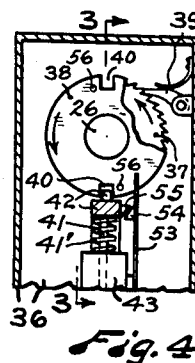
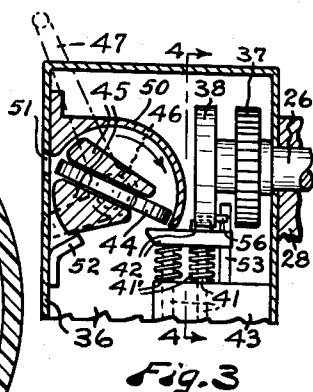
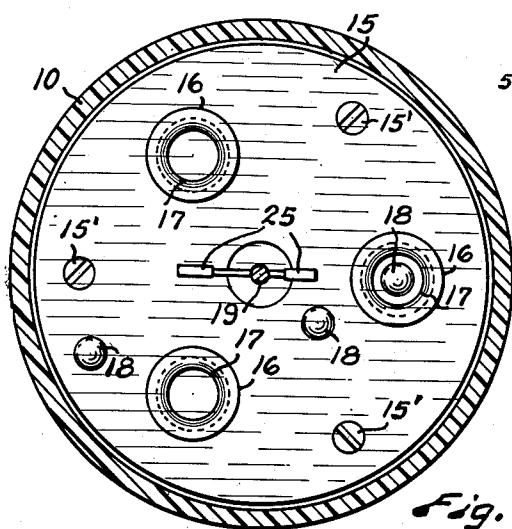
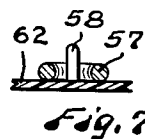
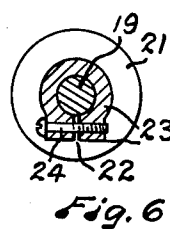
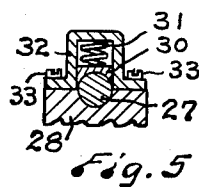
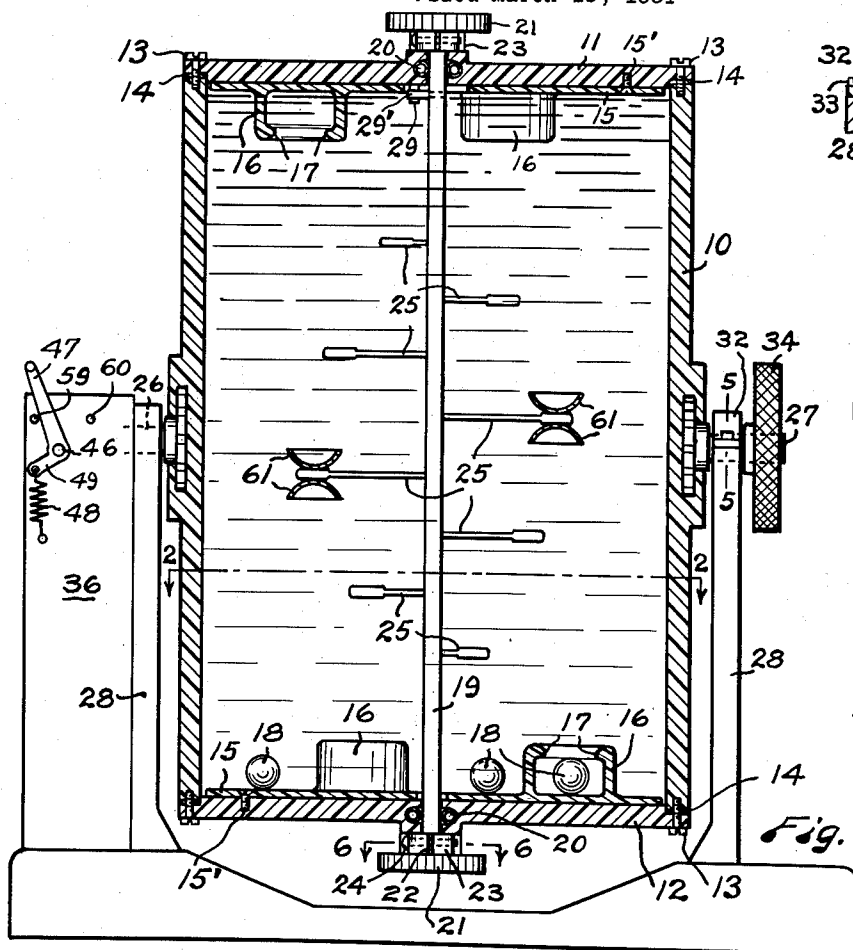


Fig. 2

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FLUID FILLED GAME PIECE RECEPTACLE

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Application March 19, 1951, Serial No. 216,417

5 Claims. (Cl. 273—138)

This invention relates to game apparatus and an object of this invention is to provide game apparatus comprising a pivotally supported transparent receptacle having therein a fluid, which may be a liquid or a gas such as air and also having therein game pieces of a specific gravity different from the specific gravity of the fluid whereby the game pieces will tend to move vertically through the fluid when the receptacle is inverted, and further having means operable from the exterior of the receptacle by which skill may be exercised to guide and influence the movement of the game pieces.

Another object is to provide game apparatus comprising a pivotally supported, liquid filled, sealed receptacle having therein game pieces of different specific gravity from the liquid and having in each end a removable transparent plate carrying cups to receive the game pieces and having an axial shaft extending therethrough, said shaft having radial game piece directing arms within the receptacle and having means external to the receptacle by which it may be rotated.

Other objects are to provide, in game apparatus, a receptacle containing game pieces and angularly movable on a horizontal axis and having friction means to retard its angular movement and ratchet means to prevent angular movement in one direction and releasable means to lock said receptacle at the end of each half turn.

Another object is to provide game apparatus of this nature in which the pivotally mounted receptacle contains air and has gas filled balloon type playing pieces therein, the playing pieces being enough lighter or enough heavier than air so they will move vertically when the receptacle is turned end for end.

Other objects of the invention are to provide game apparatus of this nature which is simple in construction, not expensive to manufacture, easy to operate, and which is fascinating and allows a player to develop considerable skill in playing a game.

Other objects will be apparent from the following description taken in connection with the accompanying drawings.

In the drawings Fig. 1 is a view in vertical section, with parts in elevation, showing game apparatus constructed in accordance with this invention.

Fig. 2 is a view in cross section, with parts in plan, taken substantially on broken line 2—2 of Fig. 1.

Fig. 3 is a detached cross sectional view, with parts in elevation, taken substantially on broken line 3—3 of Fig. 4, and showing means which may be used to control the pivotal movement of a fluid filled, transparent, sealed receptacle which has game pieces therein.

Fig. 4 is a view partly in section and partly in elevation taken substantially on broken line 4—4 of Fig. 3.

Fig. 5 is a fragmentary sectional view taken substantially on broken line 5—5 of Fig. 1 showing friction means for retarding rotary movement of a receptacle.

Fig. 6 is a detached sectional view taken substantially on broken line 6—6 of Fig. 1 showing friction means used in mounting a knob on a shaft.

Fig. 7 is a fragmentary view partly in elevation and partly in section showing ring and peg means which may be embodied in this game apparatus.

Like reference numerals designate like parts throughout the several views.

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This game apparatus comprises a transparent receptacle 10 having removable transparent end walls 11 and 12 secured thereto as by screws 13. Gaskets 14 are preferably used between the ends of the receptacle 10 and the end walls 11 and 12 to seal against leakage.

I have illustrated the receptacle 10 as being cylindrical in shape but it will be understood that the shape of this receptacle may be varied, as for instance it may be of oval cross section or may have flat sides.

A transparent plate 15 is secured, as by screws 15' to the inner side of each end wall 11 and 12. The plates 15 are readily removable when the end walls 11 and 12 are detached from the receptacle 10. Thus one plate 15 can be quickly and easily removed and replaced by another plate. Each plate 15 has a plurality of cup members 16 fixedly secured thereto. The open ends of the cup members 16 are directed inwardly and have annular inwardly extending lips 17 which help to retard the escape of game pieces 18 from said cup members as hereinafter explained. Different plates 15 are provided with a different number of cups 16 and with differently arranged or positioned cups and with cups of different size. Thus the cup arrangement within the receptacle may be changed by interchange of plates 15.

A shaft 19 extends axially through the receptacle 10 and is journaled in the end walls 11 and 12. Preferably packing or sealing rings 20 of the type commonly termed O rings are provided around the shaft 19 where it passes through the end walls 11 and 12 to prevent fluid leakage at this location.

The shaft 19 extends outwardly through the end walls 11 and 12 and a knob 21 is provided on each end of said shaft whereby said shaft may be manually turned. Preferably each knob 21 is frictionally secured to the shaft 19 by means which will allow the knob to turn on the shaft 21 if said shaft is locked against turning. Such a frictional connection, see Fig. 6, may be provided by splitting or cutting a radial slot 22 in the hub 23 of each knob and using a clamp screw 24 to tighten the split hub 23 on the shaft 19. The shaft 19 is provided within the receptacle 10 with a plurality of rigidly attached radial arms 25 which are preferably of different lengths. Also means, such as a stop lug 29, Fig. 1, rigid with the end plate 11 and adapted to be engaged by a pin 29' on shaft 19, is preferably provided to limit the rotation of shaft 19 to substantially one complete turn. The end plates 15 are shaped so as to afford room for the stop lug 29.

The receptacle 10 is provided at two diametrically opposite points substantially mid way between the top and bottom thereof with two outwardly protruding rigidly attached radial shafts or bearing members 26 and 27. The shafts 26 and 27 are rotatably supported in suitable bearings in frame means 28. Preferably a friction means is provided in connection with either one or both of the bearings which support the shafts 26 and 27 to retard rotary movement of the receptacle 10 and to prevent shock to the same when it is stopped by means hereinafter explained. One operative friction means which may be used is shown in Fig. 5 in connection with the bearing for bearing member 27. This means comprises a friction plate 30 urged by a spring 31 against the bearing member 27. The friction plate 30 and spring 31 are disposed in a suitably recessed bearing cap 32 which is secured to the frame means 28 as by screws 33.

The shaft 27 has a handwheel or knob 34 fixedly secured thereto by which the receptacle 10 may be rotatively moved. Preferably devices are provided to prevent rotary movement of the receptacle 10 in one direction. Also receptacle locking means, which is adapted to be released by the insertion of a coin, is provided to

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limit each cycle of rotary movement of the receptacle 10 to substantially one half of one complete revolution. The means for thus restricting the rotary movement of receptacle 10 is shown in Figs. 1, 3 and 4 and is hereinafter described. However it will be understood that numerous different means may be used to thus restrict rotary movement of the receptacle 10.

Referring to Figs. 1, 3 and 4, the shaft 26 extends into a control housing 36 and is provided within said housing 36 with a ratchet wheel 37 and a stop wheel 38. Both of the wheels 37 and 38 are rigidly secured to the shaft 26. A spring pressed pawl 39 engages with the ratchet wheel 37 and prevents rotary movement of the receptacle 10 in one direction but leaves it free to be rotated in the other direction.

Preferably coin controlled mechanism is provided for locking the receptacle 10 against rotary movement in both directions whenever said receptacle is in an upright or starting position and irrespective of which end of the receptacle is uppermost. This coin controlled locking means requires the insertion of a proper coin to unlock the receptacle so that it can be angularly moved. Each time the receptacle is thus unlocked it can be inverted or turned end for end and will again be locked at the end of substantially a half turn of angular movement. This half turn of angular movement must be in a predetermined direction, due to the ratchet means 37, 39 and the receptacle can not be backed up but after it has been moved away from the starting position it must continue in the same angular direction to the end of the cycle.

The coin controlled locking means herein disclosed includes the stop wheel 38. This wheel 38 has two diametrically opposite peripheral notches 40 adapted to receive a locking member 42. Rods 41 attached to the locking member 42 and slidable vertically in frame means 43 may be used to movably support said locking member. The locking member 42 is radially movable toward and away from the stop wheel 38 and is resiliently urged toward the stop wheel 38 as by springs 41'. The locking member 42 is adapted to be moved away from the stop wheel 38 to release said stop wheel by engagement therewith of a coin 44 which is held within a pivotally mounted coin receiving jaw 45. This coin receiving jaw 45 is supported for angular movement on axial pins 46, one of which is shown in Fig. 1. A crank 47 may be used to rotatively move the coin receiving jaw 45 in one direction. A spring 48 yieldingly urges the coin receiving jaw 45 and the crank 47 in an opposite direction. The spring 48 may be connected with an arm 49 which is rigid with the crank 47 or with one of the pivot members 46.

A guard member 50, which preferably conforms to the circular shape of the coin 44 serves as a guide for said coin. The coin 44 is inserted into the jaw 45 through a slot 51 in the housing 36. A stop member 52 limits rotary return movement of the jaw 46 and insures proper alignment of said jaw with the slot 51. A flat spring 53 having a catch member 54 thereon is positioned so that the catch member 54 is adapted to engage with a shoulder 55 on the locking member 42. This will hold said locking member 42 in a fully retracted position and prevent said locking member from snapping back into a notch 40 from which it has just been withdrawn after the coin 44 has moved past and has released the locking member 42. The upper end portion of the spring 53 extends into the path of a pin 56 on the stop wheel 38 and the pin 56 will move the catch member 54 out of engagement with the shoulder 55 as soon as the stop wheel has been rotatively moved far enough away from the starting position to dis-align the lowermost notch 40 relative to the locking member 42. The ratchet means 37, 39 will prevent the stop wheel 38 from being reversely moved back to its starting position after it has been moved far enough to disengage the catch member 54.

Before the receptacle 10 is sealed it is filled with liquid

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and any desired number of the game pieces are placed therein. The specific gravity of the game pieces is different than the specific gravity of the liquid in the receptacle so that the game pieces will move vertically through the liquid when they are free to do so. Game pieces 18 of spherical shape, as shown in Figs. 1 and 2 may be used and the cups 16 may be shaped and dimensioned to receive these spherical game pieces. Obviously the shape and size and color and specific gravity of the game pieces may be widely varied and these game pieces may have different markings. For instance, the game pieces may be in the form of dice having the usual dice markings thereon and may have a low specific gravity so that they will always tend to float to the top of the receptacle 10 and may be read through the transparent top end wall of said receptacle. If dice are used as game pieces the transparent plates 15 with cups 16 thereon may be omitted. Also the receptacle 10 may contain air and may not be sealed and the game pieces 18 therein may be balloon type elastic bags inflated with a gas of different specific gravity than air so that the game pieces will move through the air in the receptacle when the receptacle is turned end for end.

Also, if desired, game pieces 57, Fig. 7, shaped like rings or doughnuts, may be used and pins 58 may be provided on transparent plates 62, the plates 62 being interchangeable with the plates 15.

Also I may provide on the arms 25 cups 61, as shown in Fig. 1, and the game pieces may be caught in these cups as they move through the receptacle 10. Catching the game pieces in the cups may enter into the scoring of the game. Also game pieces caught in cups 61 may be directed toward cups 16. A quick movement of shaft 19 will usually dislodge the game pieces from the cups 61.

In operating this game apparatus the user inserts a proper coin in the coin jaw 45 and moves the lever 47 through a complete cycle of movement. Preferably stop means, such as pins 59 and 60, Fig. 1, limit movement of lever 47 in both directions. Pin 59 cooperates with stop member 52 in the path of coin jaw 45. Movement of lever 47 clockwise, referring to Figs. 1 and 3, angularly moves jaw 45 and coin 44 in a corresponding direction and the coin 44 will engage with the locking member 42 and move the same out of engagement with stop wheel 38. After locking member 42 has been moved clear of stop wheel 38 catch members 54 and 55 will engage with each other and will hold the locking member 42 retracted and disengaged as respects stop wheel 38. Also before lever 47 engages with stop member 60 the coin 44 will move past the end of locking member 42 and will drop free of the jaw 45. As soon as the lever 47 is released the spring 48 will return it and the jaw 45 to the starting position with lever 47 resting against stop member 59. The release of the stop wheel 38 leaves the receptacle 10 free so that it can be rotatively moved in one direction. The latch means 53, 54, 55 holds the catch member 42 retracted so it can not snap back into a notch 40 when it is released by downward pressure of a coin 44. As soon as the receptacle 10 is rotatively moved away from a starting position far enough to make it impossible for locking member 42 to re-enter a notch 40 from which it has just been withdrawn the pin 56 on the stop wheel 38 will engage with the flat spring 53 and disengage catch members 54 and 55 and the locking member 42 will move upwardly and press against the periphery of stop wheel 38 so that it will act as a brake and also will be ready to drop into the opposed notch 40 on said stop wheel at the completion of the cycle of movement.

If the game pieces 18 are in one end of the receptacle 10 and said receptacle is inverted or moved through one half of a revolution the game pieces therein will begin to move toward the opposite end of said receptacle and may be caught in the cups at such opposite end. The shaft 19 with the arms 25 thereon can be manipulated to

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change the course of the game pieces and to help get them into line with the cups 16. Considerable skill is required to successfully manipulate the shaft 19 so as to direct game pieces toward the cups 16. Values may be assigned to the cups 16 and to the cups 61 and to the game pieces 18, or to any of these parts, for scoring purposes as desired.

Also it is possible to provide, in the receptacle 10, two sets of game pieces, one set being heavy enough to sink in the liquid in the receptacle 10 and the other set being buoyant enough to float. This makes the game more complicated and makes possible a scoring at both ends of the receptacle each time it is inverted.

The lips 17 on the cups 16 help to retain the game pieces 18 in the cups 16 while the receptacle 10 is being angularly moved and thus carry the game pieces farther around with the receptacle 10 before they are released for movement toward the opposite end of said receptacle.

The stop means 29, 29' for shaft 19 prevents the person playing the game from spinning this shaft rapidly. The frictional attachment of the knobs 21 to shaft 19 prevents excessive strain being applied to said shaft 19. The friction in the bearing of shaft 27 helps to prevent rapid spinning of the receptacle 10. All of these means are safety devices which help to protect the game apparatus from being damaged by a person using the same.

The foregoing description and accompanying drawings clearly disclose a preferred embodiment of this invention but it will be understood that this disclosure is merely illustrative and that changes may be made within the scope of the following claims.

I claim:

1. Game apparatus comprising a sealed transparent liquid filled receptacle; pivot means supporting said receptacle for angular movement about a substantially horizontal axis; game pieces in said receptacle, said game pieces being of a specific gravity different than the specific gravity of the liquid in the receptacle, whereby they will tend to move vertically through the liquid when the receptacle is inverted substantially at right angles to the axis of the pivot means; cup members carried by two oppositely positioned walls of said receptacle; a rotatable shaft supported by and extending through said receptacle; game piece deflecting arms on said shaft within said receptacle movable by rotation of said shaft into contacting relation with game pieces which are moving through the liquid in the receptacle; and finger piece means on each end of said shaft external to said receptacle, whereby the shaft may be angularly moved manually in skilfully moving the arms and guiding the playing pieces therewith as the playing pieces move toward the cup members.

2. The apparatus as claimed in claim 1 in which stop means is provided for limiting rotary movement of said shaft to an angle of less than substantially one complete revolution; and in which the finger piece means are frictionally connected with the shaft, whereby they may slip rotatively on the shaft when the shaft is restrained from angular movement by the stop means.

3. Game apparatus comprising a sealed transparent liquid filled receptacle; pivot means supporting said receptacle for angular movement about a substantially horizontal axis; game pieces in said receptacle, said game pieces being of a specific gravity different from the specific gravity of the liquid in the receptacle, whereby they will tend to move vertically through the liquid when the receptacle is inverted; cup members carried by two oppositely positioned walls of said receptacle, said cup members being large enough to receive the game pieces as the game pieces move toward the cup members; a rotatable shaft supported by and extending through said receptacle in a direction substantially at right angles to the axis of the pivot means thereof; game piece deflecting arms carried by said shaft within said receptacle and extending outwardly from said shaft; and finger piece means on each end of said shaft external to said receptacle pro-

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viding manually controlled angular movement of said shaft in two directions in moving the arms and guiding the playing pieces therewith as the playing pieces move toward the cup members.

4. Game apparatus comprising a sealed transparent liquid filled receptacle having two substantially parallel spaced apart end walls; a plurality of inwardly directed cup shaped members carried by each end wall; pivot means disposed substantially mid way between said two end walls supporting said receptacle for rotary movement on a substantially horizontal axis; ratchet means preventing rotation of said receptacle in one direction; receptacle locking means releasable by the insertion of a coin adapted to lock said receptacle against rotary movement at the end of each half revolution thereof; a plurality of game pieces of different specific gravity than the liquid in the receptacle freely movable in the liquid, whereby they will tend to move from one end to the other of said receptacle each time the receptacle is turned end for end, said game pieces being smaller than the cups whereby they may enter the cups, a rotatable shaft supported by and extending through said receptacle in a direction substantially at right angles to the axis of the pivot means thereof; game piece deflecting arms carried by said shaft within said receptacle and extending outwardly from said shaft; and finger piece means on each end of said shaft external to said receptacle providing manually controlled angular movement in two directions of said shaft in skilfully moving the arms and guiding the playing pieces therewith as the playing pieces move toward the cup members.

5. Game apparatus comprising a sealed transparent cylindrical receptacle having two substantially parallel flat transparent end walls, at least one of said end walls being removable; liquid substantially filling said receptacle; a transparent plate detachably secured to each transparent end wall and positioned within the receptacle; a plurality of cup shaped members carried by each plate and having their open ends inwardly directed, the detachable plates and cups being replaceable to provide different cup arrangements within the receptacle; pivot means disposed substantially mid way between said two end walls supporting said receptacle for rotary movement on a substantially horizontal axis which intersects the longitudinal axis of the receptacle; an axial shaft extending through said receptacle and rotatively supported thereby; substantially radial arms of different length rigid with said shaft within the receptacle; knobs on the respective ends of said shaft outside of said receptacle; releasable means adapted to lock said receptacle in two different positions with said axial shaft substantially upright in both of said positions; and game pieces in said receptacle, said game pieces being of greater specific gravity than the liquid in said receptacle whereby they will move through the liquid to the bottom of the receptacle each time the receptacle is rotatively moved from one upright position to another.

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