Feb. 19, 1935. C. R. RAWDON 1,991,626

GAME APPARATUS

Filed Feb. 8, 1934 2 Sheets-Sheet 1

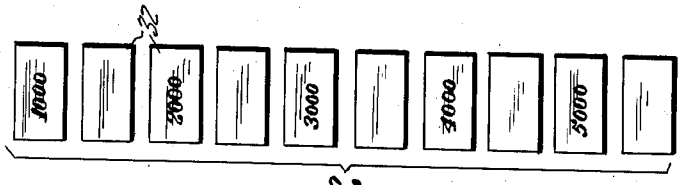

Fig. 8.

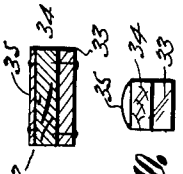

Fig. 9. Fig. 10.

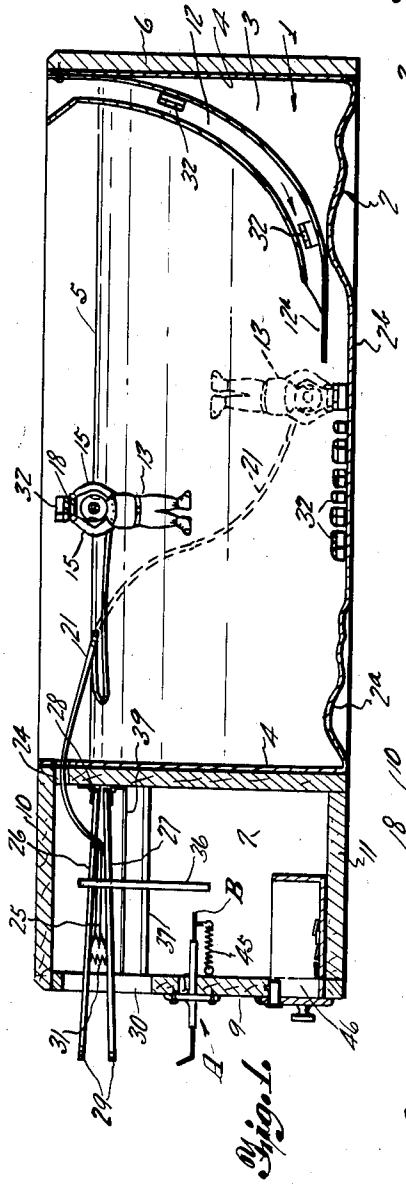

Fig. 7.

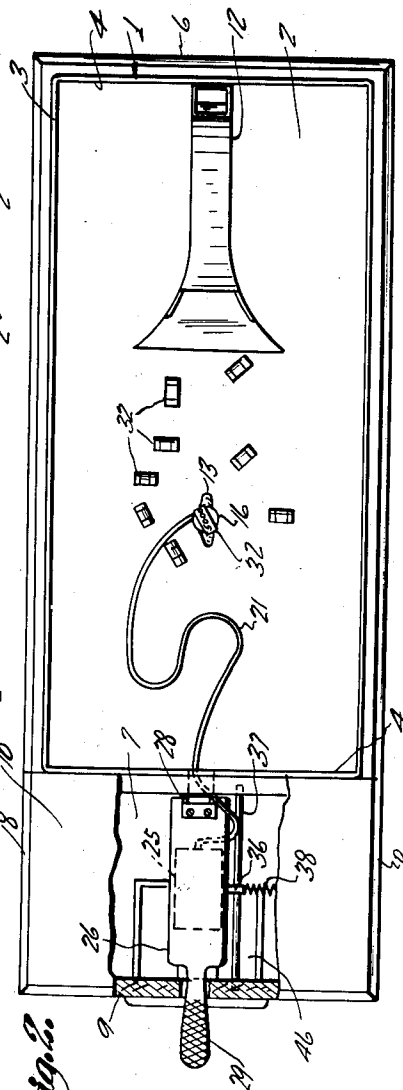

Fig. 12.

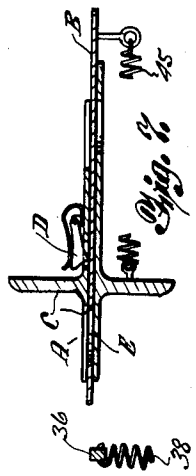

Fig. 11.

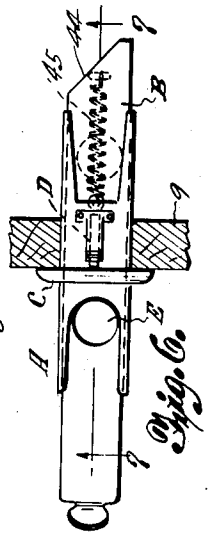

Fig. 6.

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GAME APPARATUS

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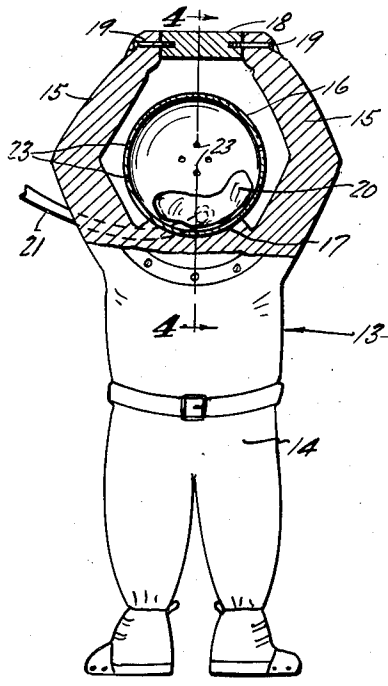

Fig. 3.

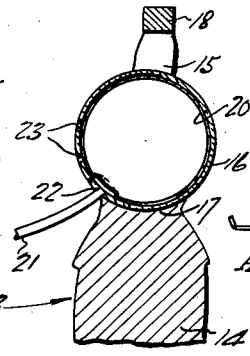

Fig. 4.

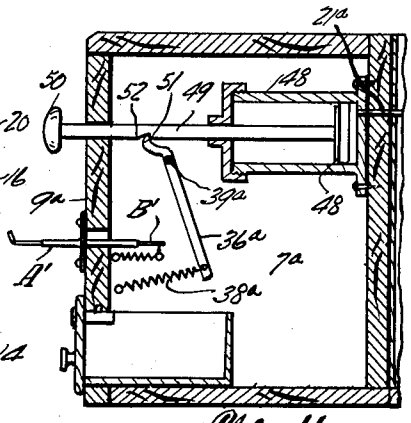

Fig. 11.

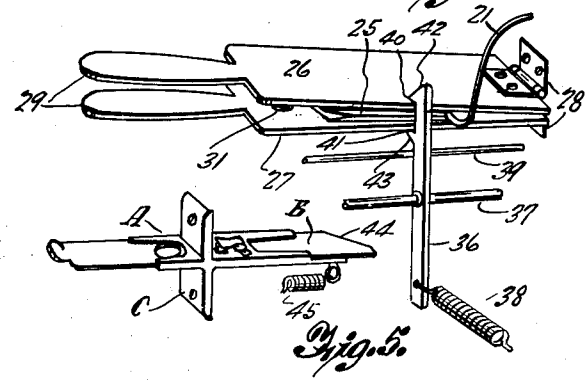

Fig. 5.

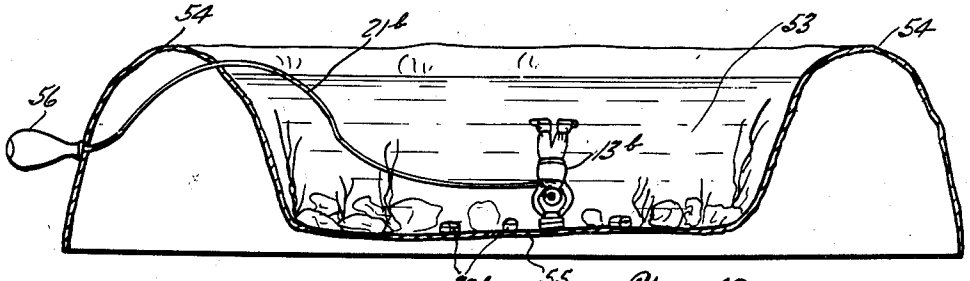

Fig. 12.

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UNITED STATES PATENT OFFICE

1,991,626

GAME APPARATUS

Charles R. Rawdon, St. Louis, Mo.

Application February 8, 1934, Serial No. 710,270

18 Claims. (Cl. 273—1)

My invention relates to games and game apparatus and the main object is to provide what may be termed a deep sea diving game employing a tank of water in which are immersed a number of small treasure chests and a figure simulating a diver in diver's helmet and dress which may be controlled by the operator to descend in the tank, pick up one of the treasure chests and then rise and carry the chest to the top of the water, these chests bearing score indicating numbers or indicia not visible while in the water but exposed to view when brought up by the diver.

Another object is to provide a game apparatus of this kind in which the diving figure or diver is pneumatically controlled to have a very life-like action and is weighted and balanced so as to normally submerge and descend headforemost in the tank, an air bladder being provided in or near the head of the diver so that when inflated it will then cause the diver to ascend to the top of the water with its head uppermost.

Another object is to provide a game apparatus of this kind in which the treasure chests are weighted to normally rest bottom down on the tank bottom and which include a contact strip of iron or similar ferrous material on their upper sides adapted to coact with a small permanent magnet carried between the upthrust arms of the diver so that the chests will be attracted and held to the diver as it ascends and will come into view with their bottoms up to present score indicating numerals thereon to the sight of the operator.

A further object is to provide a novel, practical and efficient form of diving figure or diver for the game including a body with upthrust arms carrying a small permanent magnet bar, the body of the figure being formed of wood, or similar light material, and the head being made of a rubber ball secured in place on the shoulders, the said ball containing a thin air bladder connected by small flexible tubing to a remote bellows, bulb or pump by which the bag may be inflated and the ball having small perforations to admit water to its interior when the bladder is deflated. The diver thus formed is weighted and proportioned so that it will be buoyant when the air bladder is inflated and will rest normally in a vertical position in the water with its head uppermost and partially submerged. Then as the bladder is deflated, water enters the ball through its perforations causing the diver to invert and sink or descend headforemost. As the bladder is inflated the water is then expelled and the diver buoyed up by its head and returns headforemost to the top of the water.

Another object is to provide in a game apparatus of this kind a water tank partially filled with water and suitably ornamented with rocks, small plants and the like to simulate the ocean bottom and shore, a portion of the bottom of the tank being left flat and unobstructed to receive the treasure chests which are distributed thereon by a chute leading down into the water, the diver being arranged to ascend and descend over this portion of the tank bottom to bring its electromagnet into contact with the contact strips on the chests to raise them to view, an air bag or pump located exteriorly of the tank and connected to the diver by a small flexible tube to control the action of the diver, and a coin control means whereby the diver is normally held in its elevated position at the top of the water until a coin is inserted after which the air bag or pump may be manipulated to cause the diver to ascend and descend as the game is played.

With the foregoing and other additional objects and advantages in view as may be developed in the course of the following description, attention is directed to the accompanying drawings wherein certain practical embodiments of my invention are exemplified and wherein:

Figure 1 is a longitudinal vertical section through my game apparatus.

Figure 2 is a plan view.

Figure 3 is an enlarged elevation of the diving figure or diver employed in my game, the head and upper parts being shown in cross section with the air bladder deflated.

Figure 4 is a section along the line 4—4 in Figure 3 showing the air bladder inflated.

Figure 5 is an enlarged perspective view of the pneumatic control means for the diving figure and coin control therefor.

Figure 6 is a plan view of the coin control means and a section through the control latch.

Figure 7 is a section along the line 7—7 in Figure 6.

Figure 8 is an inverted plan view of the set of treasure chests as used in playing the game showing the score indicating indicia on certain of the chests.

Figure 9 is a longitudinal vertical cross section through one chest.

Figure 10 is an end view of one chest.

Figure 11 is a fragmentary longitudinal and vertical cross section through a game apparatus showing a modified form of pneumatic control means and coin control latch.

Figure 12 is a longitudinal vertical cross section through a further modified form of game apparatus particularly designed for home use or as a toy.

Referring now with more particularity to the drawings and in carrying out the first embodiment of my invention as shown therein I provide a tank 1 of metal or other watertight material shown as rectangular in form but which may be of any shape desired. The tank 1 includes a bottom 2 and upstanding walls or sides 3 and ends 4 and is filled with water to a point near the top as designated at 5. A wooden frame 6 surrounds the tank and at one end is built out to form a chamber 7 enclosed by sides 8, end 9, top 10 and bottom 11. The tank bottom 2 may be roughened or ridged as designated at 2*a* to simulate the ocean bottom and may be if desired partially filled with small rocks, sea plants and the like to further enhance this effect. A medial portion 2*b* of the bottom, however, is left flat and unobstructed to receive the treasure chests hereinafter described and a chute 12 leads downwardly from one end of the tank inward to the margin of this flat portion 2*b* where the chute is flared out as shown at 12*a* for a purpose which will appear.

A diving figure or diver designated generally at 13 is provided and in its preferred construction in accordance with my invention comprises a body 14 of wood or similar light or buoyant material with upthrust arms 15. The head of the diver is formed of a round rubber ball 16 cemented or otherwise secured in a rounded depression 17 formed in the shoulders of the body 14. The whole figure is painted and ornamented to simulate the appearance of a diver in helmet and diver's dress as shown. A small permanent magnet in the form of a flat rectangular bar 18 is secured as by screws 19 between the upthrust arms of the diver over its head and the structure thus formed is weighted and balanced so that when placed in the water it will barely float therein and is slightly top or head heavy. An air bladder 20 of thin rubber is placed within the ball 16 and an elongated small flexible tube 21 leads from this bladder out through a hole 22 in the ball at the back and neck of the diver simulating the air and signal line of the usual diver's apparatus. The ball 16 has a plurality of small and inconspicuously located perforations 23. Now when placed in the water with the bladder 20 deflated (Figure 3) water will enter the ball 16 through the perforations 23 increasing the weight of the diver and making it greatly top heavy so that it will descend head down to the bottom of the tank as shown in dotted lines in Figure 1. Upon inflating the bladder 20 it will expand completely filling the interior of the ball 16 and expelling the water therefrom whereupon the diver becomes buoyant and ascends to the top of the water. The head being thus lightened by the air in the bladder, the lower portion of the diver overbalances its head or upper portion and it turns end for end and rises headforemost. The diver then comes to rest in a vertical position at the surface of the water as shown in Figure 1 and remains so as long as the bladder is held inflated.

The tube 21 leads from the diving figure to the chamber 7 through an opening 24 in the frame 6 above the water line 5 and is connected at its end to a bellows 25 located in said chamber between two bellows paddles or arms 26 and 27 which are hinged at their inner ends at 28 to said frame 6. The paddles 26 and 27 have narrow handles 29 extended freely outward through an elongated slot 30 in the frame end 9 so that by operating these handles the bellows 25 may be compressed or expanded, a small expansion coil spring 31 being braced between the paddles near their ends to normally force them apart. Thus by pressing the handles 29 together, the air bladder 20 in the diver 13 may be inflated causing the diver to ascend and by then releasing the handles the bladder will be deflated causing the diver to descend.

A plurality of "treasures" or treasure chests 32 are provided and each comprises a heavy bottom 33 of metal, a center section 34 of wood or other suitable material and a thin top contact strip 35 of iron or similar ferrous metal, the whole being shaped and ornamented to simulate a chest or trunk and being sufficiently heavy to sink when placed in the water in the tank. The chests thus formed when dropped into the tank will come to rest with their bottoms 33 down due to the relatively great weight thereof and a number of different score indicating numerals are provided on the undersides of certain of the chests as shown in Figure 8 while others are left blank as also shown.

In playing the game as thus far described and assuming that the chests 32 are scattered over the tank bottom and the diver 13 is resting at the top of the water in the tank, the handles 29 of the bellows 25 are released deflating the bladder 20 so that water flows into the head of the diver and it descends headforemost down toward the bottom of the tank as hereinbefore described. By releasing the handles 29 first gradually and then sharply and otherwise suitably manipulating them, the diver may be "bobbed" or moved about in the tank so as to descend over any one of the chests desired. As the magnet bar 18 comes in contact with the iron top strip 35 of the desired chest that chest is attracted by and adheres to this bar and by then squeezing the handles 29 together the bladder 20 is again inflated and the diver ascends with its head uppermost exposing the underside of the chest to view so that the score number, if any, thereon may be noted. The chest is then pulled off the bar 18 and placed to one side and the action is repeated either by another player or by the same player. The resulting score from each operation or dive or a predetermined number thereof by each player indicates the winner. A number of possible rules of play will be readily apparent and may be set up as desired. When all the chests have been raised and removed from the "hands" of the diver they are dropped into the chute 12 whereupon they slide down and are scattered around over the tank bottom again by the flared mouth 12*a* of the chute, this to prevent the players from knowing beforehand the location of the high scoring chests.

The operation of the game apparatus may be coin controlled by the means now to be described though it is obvious that this control may be dispensed with and the apparatus used and operated as set forth above if so desired. With coin control it is necessary that before the coin is inserted the bellows 25 be locked in such position that the diver 13 is at the top of the water. Then upon inserting the coin the bellows is released and the diver is caused to descend and pick up a treasure chest after which the coin control mechanism again locks the bellows. The mechanism for carrying out these operations comprises a latch or latch lever 36 arranged vertically alongside the bellows and fulcrumed intermediate its ends

and below the bellows on a shaft 37 extended through the chamber 7 between the end 9 and end of the frame 6 (Figure 1) so that the latch may swing on this shaft and move at its upper end toward or away from the bellows. A retractile coil spring 38 is stretched between the lower end of the latch 36 and one chamber side 8 to normally move the said upper end of the latch toward and against the bellows, the extent of this movement being limited by a stop rod 39 extended through the chamber 7 parallel with the shaft 37 so that the latch will normally stand with its upper end in contact with or immediately adjacent the margins of the bellows paddles 26 and 27 near their outer ends. Spaced catches or catch lugs 40 and 41 are formed on the upper edge of the latch 36 in vertically spaced relationship and are arranged to slip or hook over the upper and lower faces of the bellows paddles 26 and 27 respectively when these paddles are compresed or squeezed together thus locking the paddles against moving apart as will be readily apparent in Figure 5. The catch lugs 40 and 41 have their noses or upwardly and downwardly extended faces 42 and 43 beveled off toward the latch as shown whereby the margins of the paddles 26 and 27 as they are squeezed together (after having been once released and expanded) will strike these beveled faces and move the upper end of the latch 36 outward to permit the full compression of the bellows after which the spring 38 returns the latch to normal position and the catch lugs engage and lock the paddles as described.

A conventional form of coin control slide designated generally at A of the type comprising an elongated slide bar B slidably mounted through a frame C and normally restrained against inward movement beyond a certain point by a stop D engaging the coin opening E is mounted in the chamber end 9 below the bellows with the said slide bar B directed inwardly toward and in line with the lower end portion of the latch 36. The inner end of this bar B is in accordance with my invention beveled off at one edge 44 and by placing a coin (not shown) in the opening E the stop D may be raised and the bar slid inwardly bringing this beveled end into wedging engagement with the said lower end of the latch the result being that the upper end of the latch is swung away from the bellows disengaging the catch lugs 40 and 41 from the paddles. The bellows may then be operated as described to play the game but as they are fully compressed to cause the diver to ascend again after a dive the edges of the paddles force their way past the catch lugs and are then engaged and locked thereby pending the insertion of another coin and repetition of the operation described. When the coin slide bar B is released by the operator a retractile coil spring 45 stretched between its inner end and the chamber end 9 returns it to normal position clear of the latch 36, the coin meanwhile dropping into a locked drawer 46 at the bottom of the chamber 7.

In lieu of the bellows and coin control mechanism as described the modified structure illustrated in Figure 11 may be employed in which a cylinder 47 is mounted in the chamber 7*a* and connected to the air tube 21*a* for inflating the air bladder in the diver (not shown). The piston 48 in the cylinder is controlled by a piston rod 49 extended slidably out through the chamber end 9*a* and provided exteriorly thereof with a knob 50. The latch 36*a* is fulcrumed near its upper end on a shaft 37*a* extended across the chamber 7*a* and has a catch 51 at its upper end engaging an angular notch 52 in the piston rod 49 when the piston is pushed inward into the cylinder to fully inflate the air bladder, the said catch being normally urged into the notch by a retractile coil spring 38*a* stretched between the lower end of the latch and the end 9*a* of the chamber. A coin control slide mechanism A' exactly as heretofore described is mounted below the cylinder and the inner end of the slide bar B' is arranged to strike the lower end of the latch 36*a* as a coin is inserted and the slide pushed inward, this action swinging the catch 51 out of the notch 52 and allowing one full operation of the diver before the catch again engages and locks the piston rod 49 as the diver is raised to bring up a treasure chest.

A simplified and modified form of the apparatus particularly suited for use in the home as a toy is illustrated in Figure 12 in which the tank 53 is formed with a rolled and roughened margin 54 which together with the tank bottom 55 may be painted and decorated to simulate a sea shore and bottom to add realism to the game. The diver 13*b* and treasure chests 32*b* are exactly as set forth hereinbefore but the tube 21*b* leads out to an air bulb 56 of a simple conventional form by squeezing and releasing which the figure may be controlled and caused to dive or ascend at will.

From the foregoing it will be apparent that the game apparatus is entertaining and convenient in operation and by practice a high degree of skill may be attained in jockeying the diver around over the chests to choose any desired one. The action of the diver in inverting and diving head foremost and then again inverting and ascending likewise all by simple manipulation of a handle or similar control is highly entertaining to young and old alike.

While I have herein set forth certain preferred and practical embodiments of my invention it is understood that I may vary from the same in minor details so as best to provide a practical apparatus for the purposes in view, not departing from the scope of the appended claims.

I claim:

1. In a game apparatus, a water tank filled with water, a plurality of chest shaped objects immersed in the tank, a diving figure in the tank, and remotely controlled means for causing the diving figure to descend, engage one of the chests and then rise to the water surface with the chest, the whole simulating the operation of a diver recovering treasure from the ocean bottom.

2. In a game apparatus, a water tank, a plurality of treasure chests in the tank, a diving figure in the tank, and means connected to the figure whereby the same will descend, engage and hold one of the chests and ascend with the chest.

3. In a game apparatus, a tank adapted to hold water, a miniature chest immersed in the tank, a diving figure in the tank and adapted to normally sink therein, magnetic means for engaging the figure to the chest, and pneumatic means for floating the figure to the water surface after the chest is engaged.

4. In a game apparatus, a water tank, a plurality of miniature chests adapted to be immersed in the tank, a diving figure simulating a diver in diving dress, the said figure being adapted to normally descend headfirst in the tank, means on the figure to engage and hold any one of the chests, and remotely controlled means in the fig-

ure whereby the same may be caused to ascend headfirst with the chest.

5. In a game apparatus, a water tank, a plurality of miniature chests immersed in the tank and each including an iron contact member, a diving figure simulating a diver in diver's helmet and dress, the said figure being adapted to normally sink in the tank, a permanent magnet carried by the figure and adapted to engage the iron contact strips on the chests and hold the chest to the figure.

6. In a game apparatus, a water tank, a plurality of miniature chests immersed in the tank and each including an iron contact member, a diving figure simulating a diver in diver's helmet and dress, the said figure being adapted to normally sink in the tank, a permanent magnet carried by the figure and adapted to engage the iron contact strips on the chests and hold the chest to the figure and the said figure including remotely controlled means for causing it to rise headforemost with the attached chest.

7. In a game apparatus, a tank adapted to be filled with water, a plurality of miniature objects simulating treasures immersed in the tank, a diving figure simulating a diver in diver's helmet and dress, the said figure being adapted to normally sink when placed in the tank, means on the figure for engaging and holding any of the treasure objects, and remotely controlled means associated with the figure whereby the same may be caused to rise and float in the tank with one of the treasure objects attached.

8. In a game apparatus, a tank adapted to be filled with water, an object simulating a treasure and adapted to sink when placed in the tank, a diving figure adapted to be placed in the tank and sink therein, and means for engaging the object to the figure when the two come in contact, an air bladder in the figure, and remotely controlled means for inflating the bladder and floating the figure and object to the top of the water in the tank.

9. In a game apparatus, a tank adapted to hold water, a miniature chest adapted to sink when placed in the tank, an iron contact strip on the chest, a diving figure also adapted to sink when placed in the tank, a permanent magnet on the diving figure adapted to engage and adhere to the contact strip on the chest, an air bladder in the figure, and means for inflating the bladder to raise the figure and chest to the top of the water.

10. In a game apparatus, a tank adapted to hold water, a miniature chest adapted to sink when placed in the tank, an iron contact strip on the chest, a diving figure also adapted to sink when placed in the tank, a permanent magnet on the diving figure adapted to engage and adhere to the contact strip on the chest, an air bladder in the figure, and means for inflating the bladder to raise the figure and chest to the top of the water the said figure being proportioned and weighted to sink headfirst and the air bag being located within the head to cause the figure to also rise to the surface headfirst.

11. In a game apparatus, a tank filled with water, a plurality of miniature treasure chests immersed in the tank and each including an iron contact strip, a diving figure in the tank and adapted to normally sink therein, the said figure including a hollow head and upthrust arms, a permanent magnet set between the arms, an air bladder in the head of the figure, a flexible tube leading from the bladder exteriorly of the tank, a bellows connected to the other end of the tube.

12. In a game apparatus, a tank filled with water, a plurality of miniature treasure chests immersed in the tank and each including an iron contact strip, a diving figure in the tank and adapted to normally sink therein, the said figure including a hollow head and upthrust arms, a permanent magnet set between the arms, an air bladder in the head of the figure, a flexible tube leading from the bladder exteriorly of the tank, a bellows connected to the other end of the tube the said head of the figure having perforations to admit water when the bladder is deflated whereby the figure will normally sink headffirst in the tank.

13. In a game apparatus, a tank filled with water, a plurality of miniature treasure chests immersed in the tank and each including an iron contact strip, a diving figure in the tank and adapted to normally sink therein, the said figure including a hollow head and upthrust arms, a permanent magnet set between the arms, an air bladder in the head of the figure, a flexible tube leading from the bladder exteriorly of the tank, a bellows connected to the other end of the tube the said head of the figure being perforated whereby water will enter from the tank when the bladder is deflated and cause the figure to descend headfirst, the said bladder being arranged when inflated to expel the water from the head and cause the figure to ascend also headfirst.

14. In a game apparatus, a tank adapted to be filled with water, a plurality of miniature treasure chests immersed in the tank, each chest including a heavy base and light upper iron contact strip, the said chests having score indicia on their undersides, a diving figure in the tank and including a hollow head and upthrust arms, a permanent magnet set between the arms, an air bladder in the head of the figure, a flexible tube leading from the bladder out exteriorly of the tank, air compressing means on the outer end of the tube for inflating the air bladder at will, the said head having perforations adapted when the bladder is deflated to admit water and cause the figure to descend in the water headfirst and bring the permanent magnet into engagement with one of the contact strips on the chests, the air bladder being then inflated, expelling the water and causing the figure to invert and rise headforemost with the chest attached and bottom uppermost.

15. In a game apparatus, a tank adapted to be filled with water, a plurality of miniature treasure chests immersed in the tank, each chest including a heavy base and light upper iron contact strip, the said chests having score indicia on their undersides, a diving figure in the tank and including a hollow head and upthrust arms, a permanent magnet set between the arms, an air bladder in the head of the figure, a flexible tube leading from the bladder out exteriorly of the tank, air compressing means on the outer end of the tube for inflating the air bladder at will, the said head having perforations adapted when the bladder is deflated to admit water and cause the figure to descend in the water headfirst and bring the permanent magnet into engagement with one of the contact strips on the chests, the air bladder being then inflated, expelling the water and causing the figure to invert and rise headforemost with the chest attached and bottom uppermost, and a chute extended down into the tank to carry the chests and scatter them over the bottom thereof.

16. In a diving figure for a game apparatus, a buoyant body and hollow head, the said head having water admitting perforations, an air bladder

in the head, and a flexible tube leading outward from the air bladder.

17. In a diving figure for a game apparatus of the kind described, a buoyant figure comprising a body and hollow spherical head attached to the body, the said head having a plurality of perforations, an air bladder in the head, and a flexible tube leading from the air bladder out from the back of the figure adjacent the head.

18. In a diving figure for a game apparatus of the kind described, a normally buoyant figure including a body and hollow spherical head, simulating a diver in diver's dress, an air bladder in the head, a flexible tube connected to the bladder and leading outward from the back and neck of the figure, and the said head having a plurality of small perforations adapted to admit water to the head when the bladder is deflated whereby the figure will sink and descend headfirst when placed in a body of water, and means connected to the tube whereby the bladder may be inflated, expelling the water from the head and causing the figure to ascend headfirst.

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