June 9, 1942. N. McLEOD 2,285,737

GAME CANAL DEVICE

Filed May 8, 1939 2 Sheets-Sheet 1

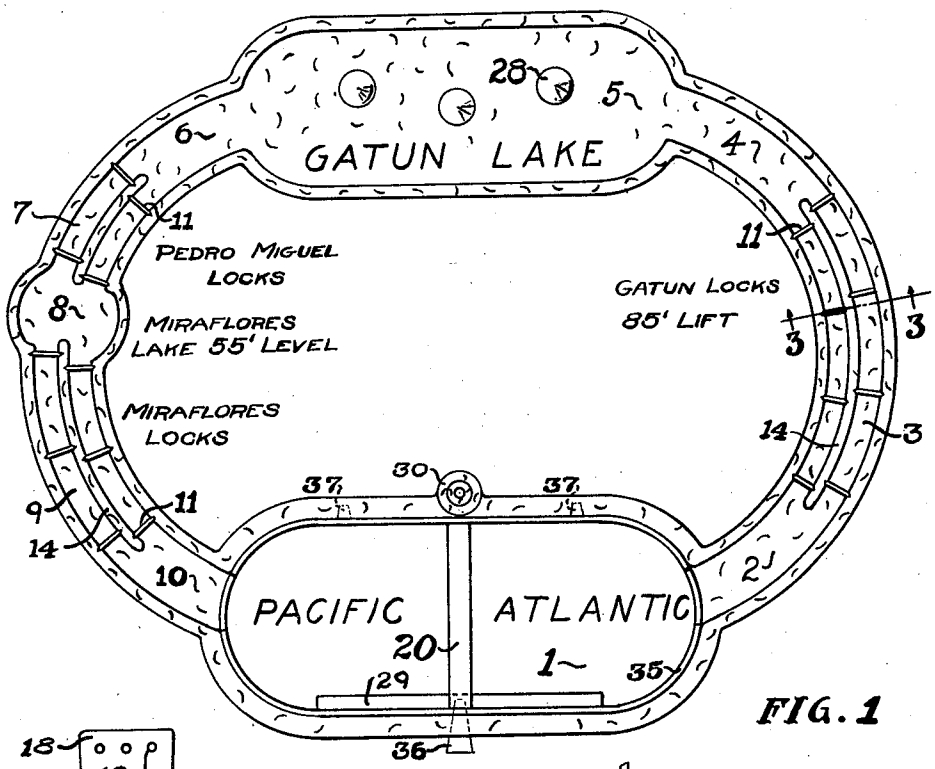


FIG. 1

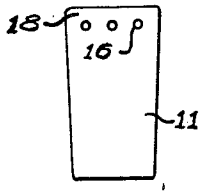


FIG. 6

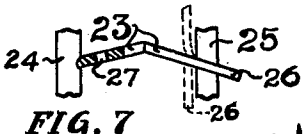


FIG. 7

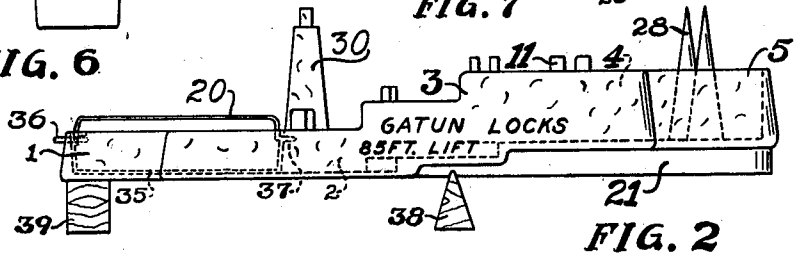


FIG. 2

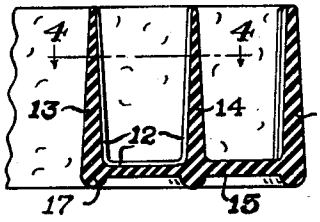


FIG. 3

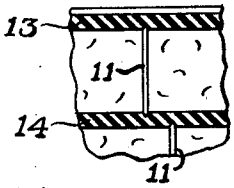


FIG. 4

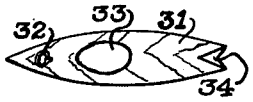


FIG. 5

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GAME CANAL DEVICE

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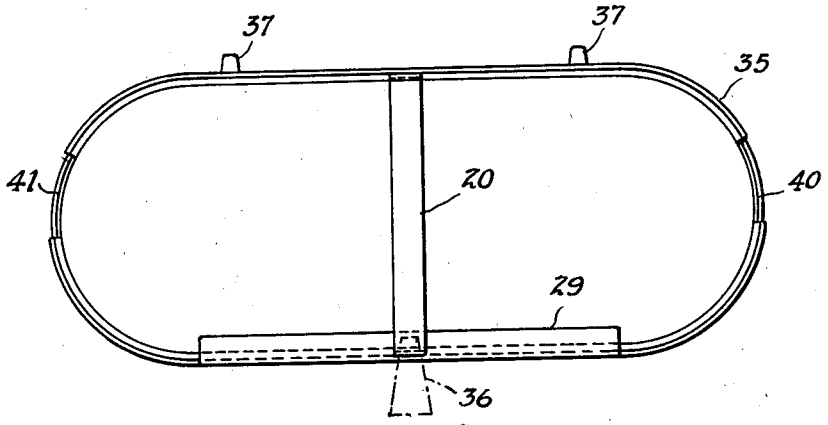


FIG. 8

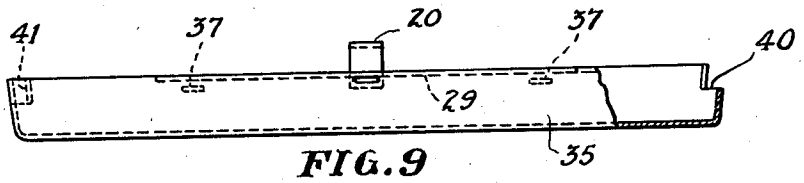


FIG. 9

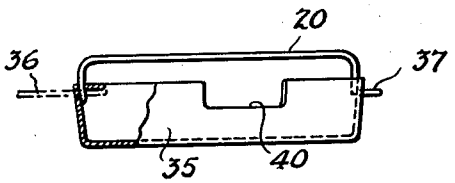


FIG. 10

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GAME CANAL DEVICE

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Application May 8, 1939, Serial No. 272,336

11 Claims. (Cl. 35—11)

This invention relates to game equipment and more particularly to equipment for a water game that involves a plurality of water levels.

An object of the present invention is to provide an instructive game device that is adapted for a wide range of development in complexity and interest.

Another object is to provide a game device that is of historical and engineering interest.

A further object is to provide a durable and rugged game equipment that may be manufactured by simple and practical methods.

With the above and other objects in view that will be apparent to those who are familiar with the art to which the present invention pertains from the following description, a suitable illustrative embodiment of the game apparatus is disclosed in the accompanying drawings, wherein:

Fig. 1 is a plan view of the game equipment in circular form;

Fig. 2 is an elevation of one side of the device that is shown in Fig. 1;

Fig. 3 is a fragmentary enlarged section taken along the line 3—3 of Fig. 1;

Fig. 4 is a fragmentary enlarged section taken along the line 4—4 of Fig. 3;

Fig. 5 is a plan of a boat to be used with the device;

Fig. 6 is an enlarged elevation of one of the lock gates used in the device;

Fig. 7 is a fragmentary plan, partly in section, of another type of lock gate in a lock;

Fig. 8 is a plan view of an auxiliary tank that, if used, is removably nested in the low water level tank;

Fig. 9 is a side elevation with an end partly cut away in section, of the tank that is shown in Fig. 8; and

Fig. 10 is an end view with a side partly cut away in section, of the tank that is shown in Fig. 8.

This game device broadly comprises a canal system that includes a plurality of water levels and means for establishing and renewing the water levels and with means whereby the passage of water craft from one water level to another water level may be accomplished in a realistic manner.

The structure that has been chosen for the purpose of illustrating this invention simulates the Panama Canal because of its diversity of interesting features, such as single, double and triple flight locks, together with lakes, islands, oceans and all of the things that may be related and associated therewith and that increase the attractiveness of the game. The structure shown may be replaced by any other real or fanciful canal, water system, or shipping game that operates in a similar manner.

In the illustrated game device the low water level tank 1 is continuously connected in any desired manner, as by the watercourse 2, to the multiple and adjustable water level locks 3, from which the watercourse 4 opens into the high water level tank 5. The high water level tank 5 is connected by the watercourse 6 to the adjustable multiple water level locks 7 that open into the intermediate water level lake 8 from which the multiple water level locks 9 and watercourse 10 open into the same or another low water level tank 1.

Suitable water flow arresting means, such as the gate 11, that substantially restrains water at a higher level in one compartment from flowing into water at a lower level in another compartment, are disposed in any desired manner in the locks 3, 7 and 9.

The gate 11 is slidably inserted in suitable gate receiving means, such as the grooves 12 that extend transversely of the side wall 13, and the partition 14 and that may, if desired, continue across the bottom 15, as shown in section in Fig. 3. The bottom 15 may, if desired, rest on the axially extending ribs 17 or the like that form a part thereof. The gate 11 may, if preferred, be provided with the spillway apertures 16 and a suitable handgrip portion 18.

The tanks and canals may be made of any suitable material, such as rubber, metal, polymerized resins, treated wood or the like. A resilient rubber is suggested for ease of moulding, advantageous manipulation and the absence of any dangerous parts by which children may be injured, as well as for durability and adaptability for use on polished floors, on rubber mats or the like, without causing injury thereto.

Any desired means for returning the water that flows by gravity from the higher tank 5 to the lower tank 1 may be used. The bail 20 provides a hand grip so that, when the water in the higher tank 5 is too low for navigation, the gates 11 are removed and the lower tank 1 is elevated sufficiently to permit the return flow of water thru the watercourses 2 and 4 and the locks 3 back into the high level tank 5 where it is impounded by the insertion of the gates 11. The lower tank may then be returned to its original level.

The bail 20 forms part of an auxiliary sheet metal tank 35 that is of a rim depth at its open-

ing into the watercourses **2** and **10** so that toy boats of slight draft may clear the rim edge at all operative water levels. Where its use is preferred, the auxiliary tank **35** is removably disposed in the lower tank **1** where it is held in place by suitable means such as the wedge **36** and the ears **37** that seat in suitable apertures that are provided therefor. When the water level in the high level tank **5** becomes low, the wedge **36** may be removed, and the tank **35** lifted out of the low level tank **1** and a desired quantity of water emptied from the tank **35** into the high level tank **5**. The tank **35** may then be returned to the low level tank **1**, the wedge **36** reinserted, and the play resumed.

The auxiliary tank **35** is preferably of substantially thin gauge stock, such as of sheet metal or the like, and is provided at one end with the rim depression **40**, that opens into the watercourse **2**, and at the other end with the rim depression **41**, that opens into the watercourse **10**. The depressions **40** and **41** serve as spouts when water is poured from the tank **35** into the high water level tank **5**.

The support **21** may be of sufficiently light sponge rubber, low pressure air inflated balloon stock, or the like, so that, on the removal of the gates **11** and the depressing of the high level tank **5**, with or without the use of the removable fulcrum block **38**, as desired, the return flow of water will again sufficiently fill the high level tank **5** so that the play may be resumed on the reinsertion of the gates **11** and the subsequent return of the higher tank to its former level. Where the fulcrum block **38** is used, one or more of the supporting blocks **39** may also be used, if desired. Where the body of the device is made of resilient rubber the return flow of the water into the higher tank **5** may be accomplished by flexing the rubber to elevate the lower tank **1**.

Another form of gate is shown in Fig. 7 of the accompanying drawings. In this construction the gate comprises two parts that meet in substantially water sealing engagement midway of the waterway and that are hinged in any desired manner to rest, when open, substantially against the sides of the waterway, as shown in dotted outline, so that vessels may pass therebetween.

In the structure shown, the gates **23** are of flexible, resilient rubber that may be integral with the side wall **24** and the partition **25**, where desired, and that terminate upwardly in the stiff, hand grip rod **26** that controls the operation of the gate. Suitable spillway apertures **27** are disposed in the gates **23** just below the rod **26** and serve to establish the proper water levels. By drawing the free ends of the rods **26** toward each other, as shown in dotted outline for one of the gates, the gates are caused to open the channel therebetween and on the release of the rods **26** the channel is again closed by the resilient compression against each other of the unattached edges of the opposed gates.

Interference to free shipping in the lakes, waterways, oceans, etc., is provided by suitable means, such as the movable objects **28** that are shown in the tank **5** and that are shaped to flare outwardly at their lower portions for purposes of stability and in a desired degree of contour ruggedness and irregularity so that they simulate islands, submerged reefs or sand bars, landslides, bombed wrecks, enemy locations and the like, within the scope of the present invention.

A suitable above water, flat area, such as the strip **29**, is provided to simulate land area on which may be disposed towns, battery positions of home forces or invaders, a loading platform, buried treasure, beaches, cliffs and the like.

The handle or bail **20**, serves, in the illustrative circular device that is shown, to simulate the separation of the Atlantic Ocean from the Pacific Ocean. The device is not materially changed in its operation or result by the actual separation of the oceans and by making the device in conformity with the actual topography of the Canal Zone or other canal areas, where such a structure is preferred.

The lighthouse **30** is illustrative of shore structures and may be provided with any desired accessories, such as a simulated or actual light source, different conformation and the like.

The game is adapted for use with a wide variety of auxiliary equipment, such as watercraft, passenger ships, freighters, warships, destroyers, submarines, plane carriers, hydroplanes, floating mines, and the like. The boat **31**, that is shown in Fig. 5, may be taken as being representative of any form of watercraft.

The hook **32** on the boat **31**, provides means for propelling the craft by its engagement with a small boat hook or the like, and also provides means to which the anchor, not shown, may be attached. The deck cavity **33** provides an anchor compartment in which the anchor may be removably disposed. The notch **34** in the stern of the boat provides a guide for the anchor rope so that the boat remains stable when the anchor is overboard. Clumsiness in managing the boat, its anchor, any desired cargo, the lock gates or other accessories, provides a penalty during the playing of the game.

It is to be understood that the device that is shown and described herein is submitted for the purposes of illustration and explanation of the invention and that modifications may be made therein and in the related matter without departing from the invention as defined in the appended claims.

What is claim is:

1. An educational toy substantially defining an endless canal system, comprising in combination, a low level tank portion, a water course portion opening continuously out of said low level tank portion, a high level tank portion opening continuously out of said water course portion and at the end of said watercourse portion that is remote from said low level tank portion, a second water course portion opening continuously into both said low level tank portion and said high level tank portion remote from the opening of said first water course into said tank portions, a partition extending longitudinally of a part of one of said watercourse portions and transversely dividing said watercourse portion into a plurality of lesser channels, and a means for releasably and separately closing one of said lesser channels to the flow of water therethru.

2. An educational toy substantially defining an endless canal system, comprising in combination, a low level tank portion, a watercourse portion opening continuously out of said low level tank portion, a high level tank portion opening continuously out of said watercourse portion at the end of said watercourse portion that is remote from said low level tank portion, a second watercourse portion opening continuously into both said low level tank portion and said high level tank portion remote from the opening of said first watercourse portion into said tank por-

tions, a partition extending longitudinally of a part of one of said watercourse portions and transversely dividing said watercourse portion into a plurality of lesser channels, a means for releasably and separately closing one of said lesser channels to the flow of water therethru, and a bail for hand lifting the low level tank portion.

3. An educational toy substantially defining an endless canal system, comprising in combination, a low level tank portion having an upwardly extending side wall, an auxiliary tank removably nested into said low level tank portion, a pouring spout side wall portion of said auxiliary tank that is a fraction less than the height of said low level tank portion side wall, a bail portion of said auxiliary tank for hand lifting said auxiliary tank out of said low level tank portion of said canal system, a watercourse portion opening continuously out of said low level tank portion, a high level tank portion opening continuously out of said watercourse portion at the end of said watercourse portion that is remote from said low level tank portion, a second watercourse portion opening continuously into both said low level tank portion and said high level tank portion remote from the opening of said first watercourse portion into said tank portions, and means in one of said watercourse portions for releasably substantially preventing the flow of water therethru.

4. An educational toy substantially defining an endless canal system, comprising in combination, a receptacle having upstanding side wall portions and continuing endlessly in a closed course, a plurality of laterally dilated portions of said receptacle providing tank portions that are spaced from each other, an auxiliary tank removably nesting in one of said tank portions, means for removably securing said auxiliary tank in said tank portion, means comprising a part of said auxiliary tank for providing a hand grip thereon by means of which said auxiliary tank may be lifted out of said tank portion, and means in one of said undilated portions of said receptacle for releasably closing said undilated portion to the flow of a fluid therethru.

5. An educational toy substantially defining an endless canal system, comprising in combination, a low level tank portion, a watercourse portion opening continuously out of said low level tank portion, a high level tank portion opening continuously out of said watercourse portion and at the end of said watercourse portion that is remote from said low level tank portion, and between said tanks a pivotal fulcrum means whereby the elevations of the bottom of said high level tank portion and the bottom of said low level tank portion may be made substantially level with each other.

6. A toy device defining a closed course, comprising in combination, a low tank portion, an elevated high tank portion spaced elevationally and laterally from said low tank portion, a watercourse portion that is connected with both of said tank portions to provide a waterway for the floating of objects thereon and said watercourse means being interposed between said low tank portion and said high tank portion for continuously conducting water therebetween, a partition portion extending longitudinally of a part of said watercourse means portion for subdividing said watercourse portion transversely into a plurality of individual lock portions of substantially equal levels, and removable means in said lock portions for releasably restraining the flow of water from one to the other of said tank portions.

7. An educational device for demonstrating the workings of a canal, comprising in combination, an upwardly open low tank portion, an upwardly open high tank portion spaced elevationally and laterally from said low tank portion, an upwardly open fluid conducting portion of substantially U-shaped section connecting one end of said low tank portion with a corresponding end of said high tank portion, a second upwardly opening fluid conducting portion of substantially U-shaped section connecting the opposite end of said low tank portion with the opposite end of said high tank portion, a partition extending longitudinally of a part of said fluid conducting portion for laterally subdividing said fluid conducting portion into a pair of locks of substantially equally elevated upper edges, a groove extending continuously down the inner side walls and across the bottom of said locks, and a gate removably insertable in said groove.

8. An educational toy device, comprising in combination, an endless channel portion of substantially U-shaped section having upstanding side wall portions terminating upwardly in edge portions that are substantially inclined longitudinally of said channel portion, a partition extending longitudinally of a part of said channel and providing laterally disposed ways in said channel whereby a plurality of objects may be propelled in opposite directions in said channel on opposite sides of said partition so that said objects may pass each other in said laterally adjacent ways without contact, and means in one of said ways for arresting the movement of said objects in said way.

9. A device, comprising in combination, a continuously upwardly open container longitudinally describing a closed course, a pair of radially dilated portions of said container at different elevations and each member of said pair being at substantially an end of a diameter of said circular container, a support beneath the upper of said dilated portions of said container that functions as a pivotal point when the lower dilated portion is lifted, and a substantially inclined upper edge portion of said container connecting said pair of dilated portions and that may be positioned substantially level by lifting the lower dilated portion of said container.

10. A device simulating a canal, comprising in combination, a channel of substantially U-shaped section having upstanding side walls and defining a closed course, a partition disposed substantially midway between said side walls and extending longitudinally of said channel to provide a plurality of ways in said channel, a gate receiving means disposed in the inner surface of one of said ways, and a gate in said gate receiving means and disposed substantially transversely of said way for substantially closing said way to the passage of an object therethru.

11. A canal device, comprising in combination, a channel of substantially U-shaped section, a partition extending longitudinally of said channel, a tank having upstanding side walls and opening into said channel, and an obstruction means in said tank and adapted for substantially obstructing the passage of objects between said channel and said tank when positioned at substantially the junction thereof.

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