Oct. 27, 1942. H. F. MAYNES 2,299,760

AMUSEMENT APPARATUS

Filed Oct. 23, 1941 2 Sheets-Sheet 1

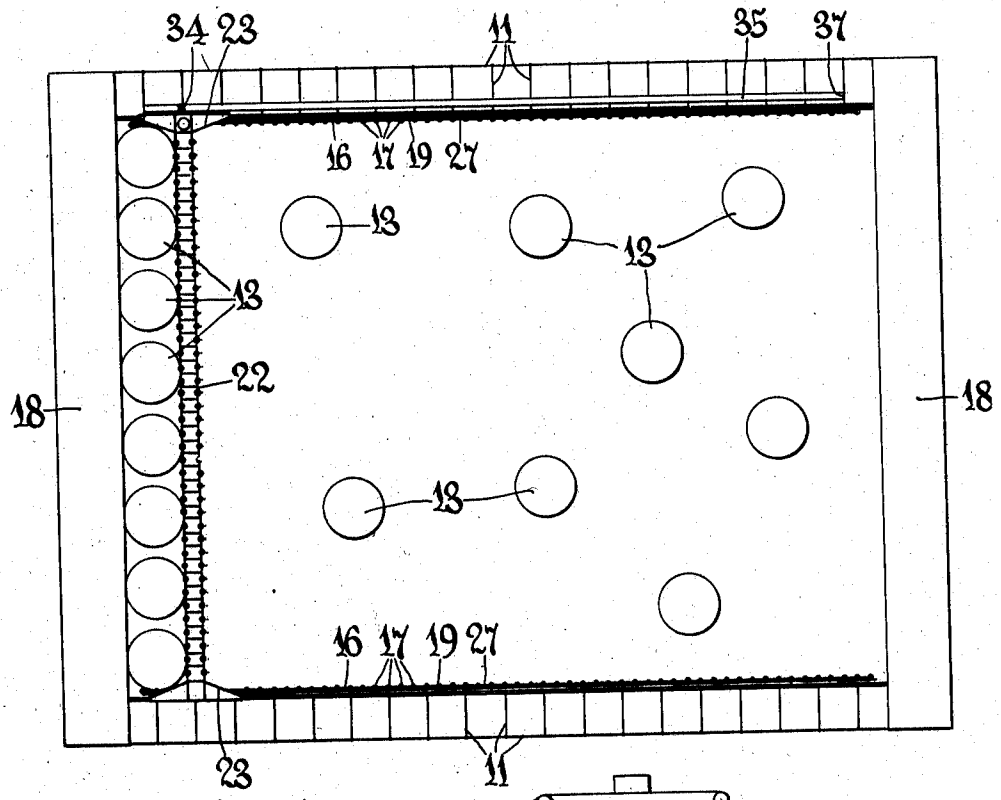

Fig. 1.

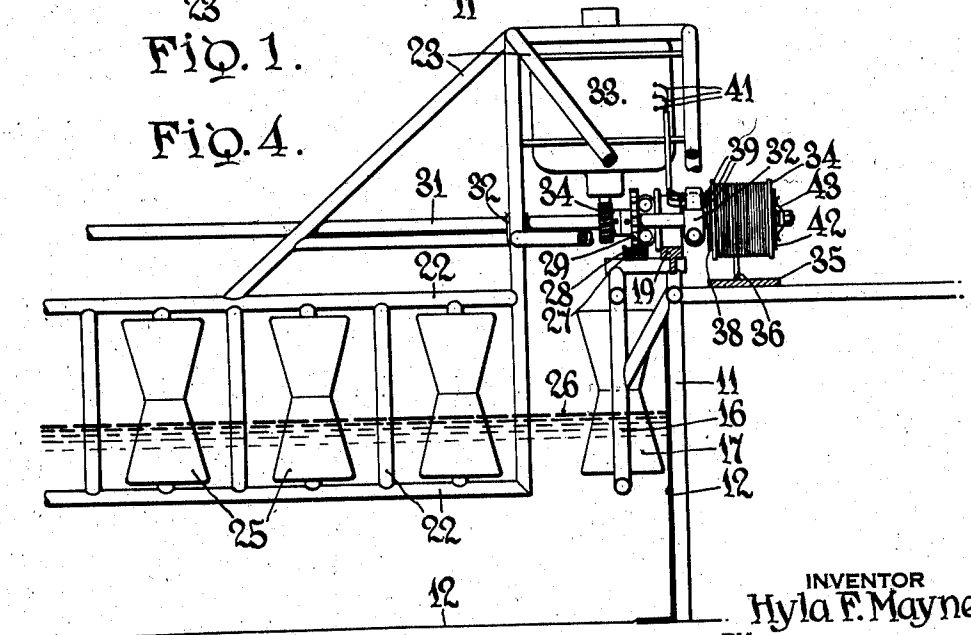

Fig. 4.

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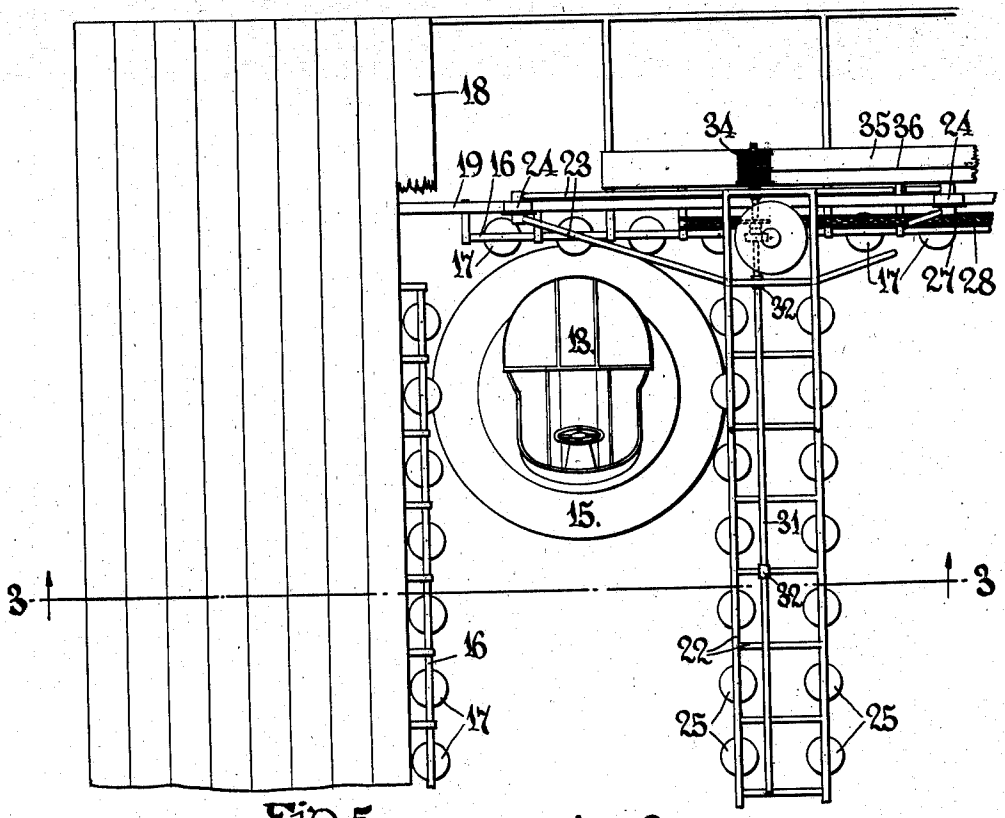


Fig. 5.

Fig. 2.

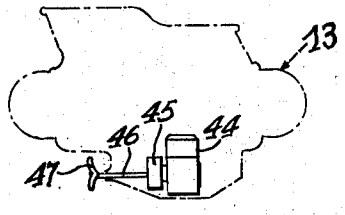
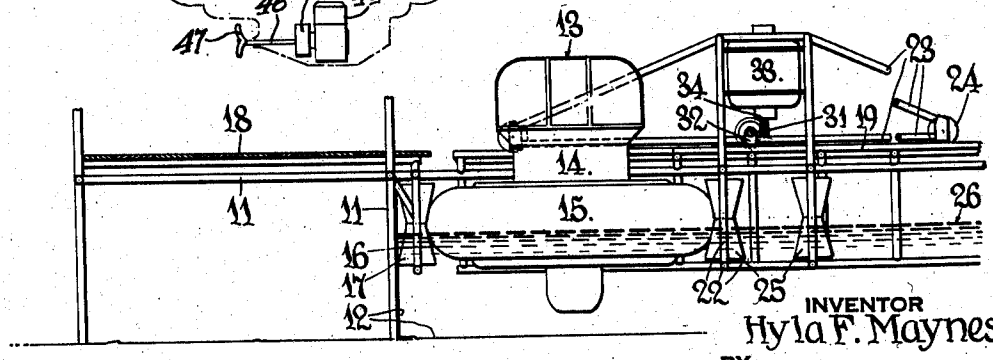


Fig. 3.



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AMUSEMENT APPARATUS

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Application October 23, 1941, Serial No. 416,238

15 Claims. (Cl. 104—53)

The present invention relates to aquatic amusement apparatus of the type wherein a plurality of passenger carrying boats are provided in a tank, and has particular relation to means whereby each boat may be allowed a free range of movement or may be brought to a predetermined wall of the tank for loading and unloading.

According to the present invention a carriage extending across the tank is adapted to travel from end to end thereof, and approximately half of the boats are placed in the tank on each side of the carriage, so that when the latter moves to one end of the tank the boats on one side will be swept to the tank end for transferring passengers while the boats on the other side of the carriage will be allowed free access to the remaining area of the tank.

By this arrangement half of the boats may be loaded while the others are being employed by passengers who may operate them as they desire over substantially the entire area of the tank. The duration of the ride may be controlled entirely by the operator of the amusement apparatus, who may herd the boats to a wall of the tank whenever desired, independently of the wills of the passengers and operators of the individual boats. In this way a high passenger capacity for the apparatus over a limited period of time may be obtained.

The boats may have circular side walls, provided, for example, by extending pneumatic tires around them in the general manner disclosed in my co-pending application Serial No. 288,407, filed August 4, 1939, and the tank walls and the carriage may be provided with rollers so that the boats will easily roll into a confined space between the carriage and tank end wall. The rollers may have concave faces engageable with the tire walls to hold the boats against tipping while passengers are being transferred.

The invention further contemplates means for moving the carriage, including toothed wheels engaging racks extending along each of the opposed side walls of the tank whereby the carriage may be positively driven without possibility of being turned relative to the tank due to unequal resistance being imposed thereon by the boats. Motive power for the carriage may be provided by an electric motor operating on current transmitted through a flexible cable, the invention providing a rotated drum on the carriage for winding and unwinding the cable as the carriage moves from end to end of the tank.

These and other objects and advantages will appear from the following description of the embodiment of the invention shown in the accompanying drawings, wherein:

Fig. 1 is a plan view of the entire apparatus;

Fig. 2 is a detail plan view showing on a larger scale one corner of the structure;

Fig. 3 is a vertical sectional view taken along line 3—3 of Fig. 2;

Fig. 4 is a fragmentary vertical sectional view through one side of the tank structure and showing the adjacent end of the carriage in elevation; and,

Fig. 5 is a view of propelling means for the boats.

As shown in the drawings the tank may comprise a metallic framework 11 supporting a cloth container 12 for water upon which the boats 13 float. The boats may, if desired, be of the type shown in my said co-pending application Serial No. 288,407 comprising passenger carrying hulls 14 provided with passenger controlled propulsion and steering means. These boats are circular in plan, having pneumatic tires 15 extending thereabout to cushion the shock in the event of collision between boats or with the tank walls, and to aid in sustentation of the boats. The propelling means for each of the boats may comprise, as shown in Fig. 5, a motor 44, clutch or driving gear 45, drive shaft 46 and propeller 47.

Overhanging the tank walls and depending into the water, in order to obviate necessity of piercing the cloth 12, are supports 16 upon which rollers 17 are mounted for free rotation about vertical axes. At the ends of the tank are platforms 18 from which passengers may walk when entering or leaving the boats. Extending along each side wall of the tank is a track rail 19 for supporting a carriage 21.

The carriage comprises a framework 22 extending across the tank between the side walls thereof and having adjacent each of the side walls a head portion 23 upon which are mounted the axles of wheels 24 that support the carriage for movement upon the rails 19. The framework 22 carries rollers 25 which may be like rollers 17 and which are mounted for free rotation upon vertical axes. Two parallel rows of rollers 25 may be provided, one row for engagement with boats on each side of the carriage. As shown in Figs. 3 and 4, the rollers 17 and 25 may be disposed at the same level and at about the level 26 of water in the tank, being partly immersed in and partly above water.

Extending along each track rail 19 is a channel 27 in which is secured a chain 28 providing in effect a toothed rack extending along each

side wall of the tank for meshing engagement with sprocket wheels 29. The latter are secured to a shaft 31 journaled in bearings 32 on the carriage, one wheel being adjacent each end of the shaft. Secured to the carriage at one head portion 23 thereof is a reversible electric motor 33 having on its drive shaft a worm 34 meshing with a worm wheel mounted on shaft 31.

Rotatably secured on the latter shaft is a drum 34 which overlies a platform 35 extending along one side wall of the tank, the drum having wound thereon a cable 36 for conducting electrical energy to the motor. One end of the cable may be anchored to the end of the platform 35 indicated at 37 from which it may connect through a suitable motor reversing switch to a source of electrical energy. The other end of the cable, anchored to the drum 34, is connected to insulated contact rings 38 provided on one face of the drum. Contacting these rings are contact points or fingers 39 which are connected by lead wires 41 to the motor.

The drum is adapted to be driven by the shaft 31 to which it is connected by a slip clutch which may comprise a clutch plate 42 rotatable with the shaft and held frictionally engaged with one face of the drum by a spring 43.

In operation of the apparatus, starting with the position shown in Fig. 1, half of the boats 13, that is the eight boats shown to the left of the carriage 22, are held by the latter against the left end wall of the tank so that passengers may enter the boats from the left platform 18. The boats are held against tipping while passengers are entering or leaving by reason of the concave formation of the rollers, as shown in Fig. 3. Meanwhile, the eight boats to the right of the carriage in Fig. 1 are free to move about substantially the entire area of the tank, in whatever paths they may be maneuvered by their occupants.

When the boats to the left of the carriage have been loaded, the motor 33 may be operated by suitable switch means (not shown) located at or beyond point 37 to cause the carriage to move to the right end of the tank. This will cause the boats to the right of the carriage to be swept against said right end of the tank so that their occupants may leave the boats via the right platform 18 and other passengers may enter the boat, while, of course, the boats to the left of the carriage are allowed to move about in the tank.

During such travel of the carriage the length of cable 36 on platform 35 will wind onto drum 34, the clutch 42, 43 maintaining the cable comparatively taut and compensating for build-up of cable on the drum by slipping. The rollers 25 on the carriage will cooperate with the circular side walls of boats and the rollers 17 on the tank walls to enable the boats to assume positions in line along the right wall of the tank. The provision of geared drive means 28, 29 on each side of the tank will result in an even advance of the carriage notwithstanding that at times most of the boats being pushed by it may be near one side wall of the tank, thereby imposing an uneven load on the carriage.

When the right boats have been reloaded, the switch means may be operated to cause the motor to drive the carriage again to the right, reproducing the condition shown in Fig. 1. During such movement of the carriage the cable 36 will unwind from drum 34 and be laid on platform 35.

It will be understood from the foregoing description that the mechanism provides an efficient means for bringing the boats to the passenger loading platforms 18 whenever desired by the operator of the amusement apparatus, thereby enabling an orderly and expeditious manner of handling the patrons of the apparatus.

In the event patrons are not available for some of the boats, such boats may be allowed to run unattended when the carriage is in a position giving them access to the pool, and may constitute obstacles to the other boats whose passengers may obtain added entertainment by seeking to dodge them or to collide with them to change their courses, or otherwise; or, if desired, the empty boats may be tethered to the positions which they happen to take along the end walls of the tank, as, for example, when repairs to them become necessary.

It will be understood further that the apparatus shown and described herein is merely a preferred illustrative example of the inventive features involved, which may be otherwise embodied without departing from the spirit of the invention or the scope of the appended claims.

What is claimed is:

1. In aquatic amusement apparatus, a tank having side walls each provided with a track and a rack extending therealong, a carriage extending across the tank and having wheels engaging said tracks for enabling movement of the carriage substantially from end to end of the tank, said carriage having motive means including an electric motor and toothed wheels driven thereby and engaging said racks to effect movement of the carriage on said tracks, a cable for supplying current to said motor and a winding drum for the cable rotatably mounted upon the carriage for taking up slack in the cable as the carriage moves toward one end of the tank, said drum being rotated by and upon movement of the carriage, substantially circular boats in said tank on each side of said carriage, and rollers mounted on the side and end walls of the tank and also upon said carriage for engaging the circular walls of the boats, the movement of the carriage to either end of the tank sweeping the boats on one side into positions against the wall at said end for loading and unloading, and allowing the boats on the other side of the carriage access to the remaining area of the tank.

2. In aquatic amusement apparatus, a tank having side walls each provided with a rack extending therealong, a carriage extending across the tank and adapted for movement substantially from end to end of the tank, said carriage having reversible motive means including toothed drive wheels engaging said racks to effect movement of the carriage, and boats in said tank on each side of said carriage adapted for engagement by the latter, the movement of the carriage to either end of the tank causing the boats on one side to be moved against the wall at said end for loading and unloading, and allowing the boats on the other side of the carriage access to the remaining area of the tank.

3. In aquatic amusement apparatus, a tank having side walls each provided with a sprocket chain extending therealong and anchored thereto, a carriage extending across the tank and adapted for movement substantially from end to end of the tank, said carriage having reversible motive means including sprocket drive wheels engaging said chains to effect movement of the carriage, boats in said tank on each side of said

carriage adapted for engagement by the latter, and a passenger loading platform at each end of the tank, the movement of the carriage to either end of the tank causing the boats on one side to be moved against the wall at said end and into adjacency with one of said platforms for loading and unloading, and allowing the boats on the other side of the carriage access to the remaining area of the tank.

4. In aquatic amusement apparatus, a tank and a carriage extending thereacross, means for moving the carriage substantially from end to end of the tank, a plurality of boats in said tank on each side of said carriage, and rollers mounted on the walls of the tank and also upon said carriage for engaging the boats, the movement of the carriage to either end of the tank causing the boats on one side to be moved against the wall at said end for loading and unloading, and allowing the boats on the other side of the carriage access to the remaining area of the tank.

5. In aquatic amusement apparatus, a tank having side walls each provided with a track extending therealong, a carriage extending across the tank and supported for movement upon said tracks substantially from end to end of the tank, means to effect such movement of the carriage on said tracks, substantially circular boats in said tank on each side of said carriage, and rollers mounted on the walls of the tank and also upon said carriage for engaging the circular walls of the boats, the movement of the carriage to either end of the tank causing the boats on one side to be moved against the wall at said end for loading and unloading, and allowing the boats on the other side of the carriage access to the remaining area of the tank.

6. In aquatic amusement apparatus, a tank and a carriage extending across the tank and movable substantially from end to end of the tank, a plurality of boats in said tank on each side of said carriage, each of said boats having a substantially annular pneumatic tire extending therearound, and rollers mounted upon said carriage for engaging the tires of the boats, the movement of the carriage to either end of the tank causing the boats on one side to be moved against the wall at said end for loading and unloading, and allowing the boats on the other side of the carriage access to the remaining area of the tank.

7. In aquatic amusement apparatus, a tank and a carriage extending thereacross and movable therealong toward or from one end wall of the tank, a boat in said tank between said end wall thereof and said carriage, said boat having a substantially annular tire extending therearound and concave rollers mounted on the said end wall of the tank and upon said carriage for engaging the tire around the boat, the movement of the carriage to said end of the tank causing the boat to be moved against said end wall for loading and unloading, and the engagement of the concave rollers with the tire holding the boat against tipping during such loading and unloading.

8. In aquatic amusement apparatus, a tank and a carriage extending thereacross and movable therealong toward or from one end wall of the tank, a plurality of circular boats in said tank between said end wall and said carriage, and rollers mounted on the wall of the tank and also upon said carriage for engaging the circular walls of the boats, the movement of the carriage toward said end of the tank causing the boats to be moved against said end wall for loading and unloading, and upon movement away from said end wall allowing the boats access to substantially the entire area of the tank.

9. In aquatic amusement apparatus, a tank and a carriage extending thereacross and movable therealong toward or from one end wall part thereof, a boat in said tank between said end wall and said carriage, means on said wall part and a part of the carriage for engaging substantially opposed portions of the boat when the carriage is moved to its limit position toward said end wall, said means including vertical rollers on at least one of said parts, and the boat having a portion engageable with said rollers, and said rollers and portion of the boat having interengaging formations to hold the boat against tipping while it is held against the end wall for loading or unloading passengers.

10. In aquatic amusement apparatus, a tank and a carriage extending thereacross and movable therealong toward or from one end wall thereof, boats in said tank between said end wall and said carriage, said boats having substantially annular pneumatic tires extending therearound, and means on the carriage and end wall for engaging said boats, the means including concave rollers on at least one of said carriage and end wall for engaging said pneumatic tires to hold the boats against tipping when moved against the end wall by the carriage.

11. In aquatic amusement apparatus, a liquid-containing tank and boats supported by liquid in the tank, track means extending along the tank, a carriage extending across the tank and movable upon the track means substantially from end to end of the tank for engaging and moving the boats toward an end wall of the tank, said carriage having motive means for propelling it in such movement including an electric motor, a cable for supplying current to said motor, and a drum for the cable rotatably mounted upon the carriage for winding up the cable thereon as the carriage moves toward one end of the tank and for unwinding the cable along the tank as the carriage moves in the opposite direction, said drum being rotated by and upon movement of the carriage.

12. In aquatic amusement apparatus, a tank and a carriage extending thereacross and movable therealong toward or from one end wall of the tank, a plurality of boats having circular resilient tires extending therearound, said boats being disposed in said tank between said end wall and said carriage, means upon said wall and said carriage for engaging said tires, the movement of the carriage toward said end wall of the tank causing the boats to be moved against said end wall for loading and unloading, and upon movement away from said end wall allowing the boats to move about in the tank.

13. In aquatic amusement apparatus, a tank and a carriage extending thereacross and movable therealong toward or from one end wall of the tank, a plurality of boats disposed in said tank between said end wall and said carriage, means upon said wall and said carriage for engaging said boats, the movement of the carriage toward said end wall of the tank causing the boats to be moved against said end wall for loading and unloading, and upon movement away from said end wall allowing the boats to move about in the tank.

14. In aquatic amusement apparatus, a liquid-containing tank and boats supported by liquid

in the tank, track means extending along the tank, a carriage extending across the tank and movable upon the track means substantially from end to end of the tank for engaging and moving the boats, said carriage having motive means including an electric motor, a cable for supplying current to said motor, a winding drum for the cable rotatably mounted upon the carriage for winding up the cable thereon as the carriage moves toward one end of the tank and for unwinding the cable along the tank as the carriage moves in the opposite direction, said drum being rotated by said motive means in accordance with movement of the carriage, and means for conducting electrical energy from the end of the cable on the drum to the electric motor.

15. In aquatic amusement apparatus, a liquid-containing tank and boats supported by the liquid, track means extending along the tank, a carriage extending across the tank and movable upon the track means for engaging and moving said boats, means for supplying electrical energy to the carriage including a cable, a winding drum for the cable rotatably mounted upon the carriage for winding up the cable thereon as the carriage moves toward one end of the tank and for unwinding the cable along the tank as the carriage moves in the opposite direction, drive means for the carriage, and means connecting the drum to the drive means for rotation thereby, the connecting means including means for compensating for variation in effective diameter of the drum as cable is wound thereon and therefrom.

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