H. D. GARDY.

AMUSEMENT APPARATUS.

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**1,062,702.** Patented May 27, 1913.

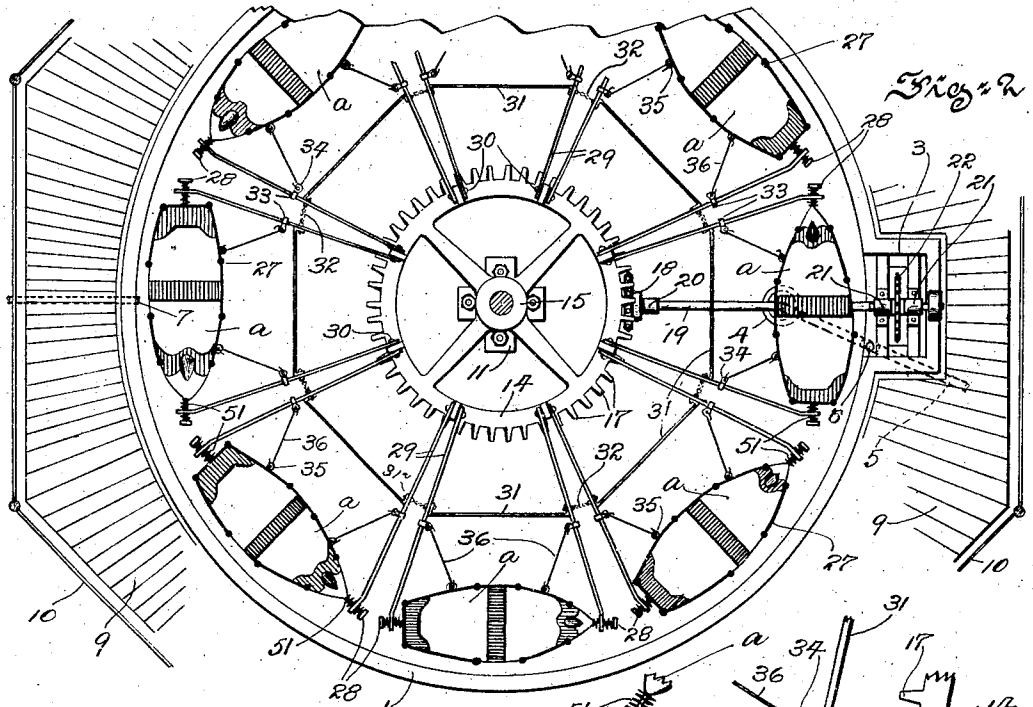

Fig. 2.

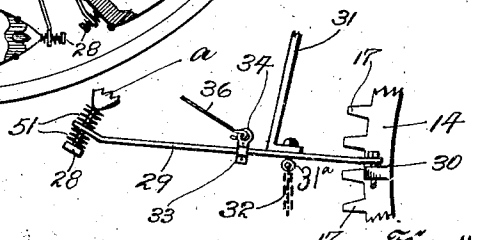

Fig. 4.

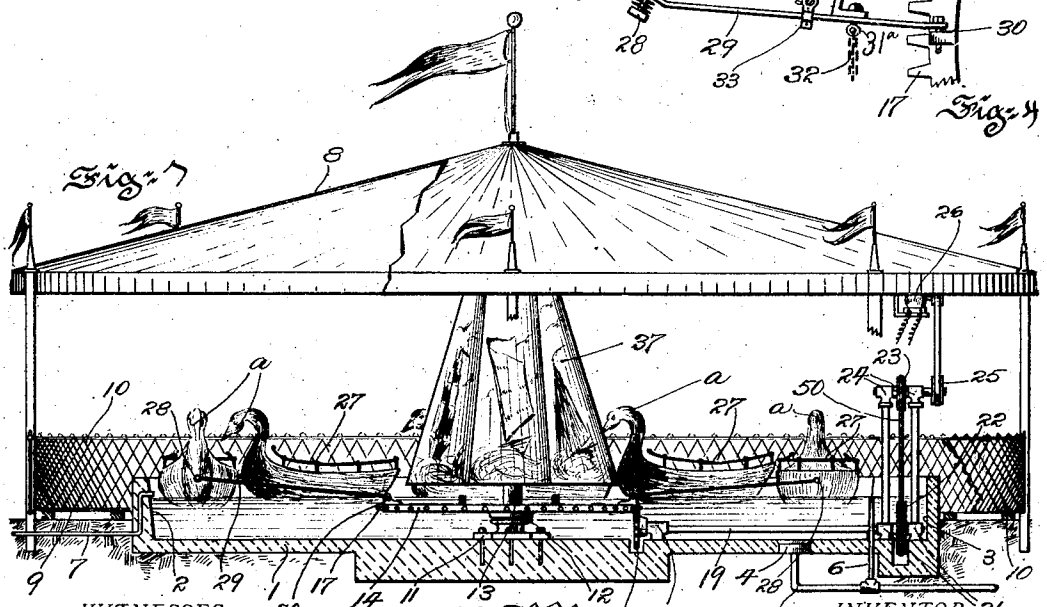

Fig. 1.

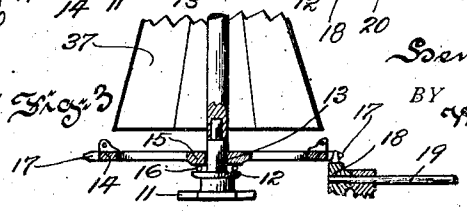

Fig. 3.

WITNESSES:

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# UNITED STATES PATENT OFFICE.

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## AMUSEMENT APPARATUS.

1,062,702. Specification of Letters Patent. Patented May 27, 1913.

Application filed May 4, 1910. Serial No. 559,327.

*To all whom it may concern:*

Be it known that I, HENRY D. GARDY, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Amusement Apparatus, of which the following is a specification.

This invention relates to amusement apparatus and has more particular relation to that class of rotating or revolving pleasure carriages which are in the form of boats adapted for travel through a tank filled with water. Apparatus of this class as now constructed and operated has in practice proven unsatisfactory for the following reasons: First, the driving wheel by which the boats are rotated or revolved is of such small diameter and the arms extending therefrom for guiding the boats are so long, that the boats in starting move in a jerky manner and when about to stop sway back and forth to the discomfort of the passengers; second, strain upon the operating mechanism due to the fact that the arms for moving the boats are not sufficiently braced and are so widely separated.

The principal objects of the present invention are, first, to overcome the above recited disadvantageous features and to provide apparatus of the character indicated in which the driving element or wheel is at least of a diameter equal to one third of the diameter of the tank through which the boats travel, second, to provide a multiplicity of boats yieldingly connected together and so arranged that in starting the same in their travel through the tank the movement of all the boats shall be gradual and uniform and so that in stopping the boats the same may be accomplished without undue swaying or rocking thereof, third, to provide a framework for sustaining and guiding the boats which is of relatively rigid construction, yet is so arranged and connected as to be capable of permitting the boats to respond to necessary rise and fall incident to water movement within the aqueduct and, fourth, to provide a driving element of relatively large diameter equipped with ball-bearings to facilitate the operation thereof both in starting and stopping the movement of the boats.

Other objects of the invention relate to the providing of an amusement apparatus of the character indicated which shall be simple and comparatively inexpensive in construction, efficient in operation and possessing attractive amusement features.

The invention consists of the improvements hereinafter described and finally claimed.

The nature, characteristic features and scope of the invention will be more fully understood from the following description taken in connection with the accompanying drawings forming part hereof and in which:

Figure 1, is a view partly in elevation and partly in central section of amusement apparatus, embodying the invention, Fig. 2, is a plan view of Fig. 1, with the canopy or roof removed and certain parts broken away, Fig. 3, is a fragmentary view in central section of the main driving element in Figs. 1, and 2, and Fig. 4, is a fragmentary view illustrating details of construction hereinafter referred to.

Referring to the drawings there is illustrated a tank 1, normally filled with water. As shown this tank is constructed of concrete and is of circular configuration, the inner walls thereof being slightly inclined as at 2, and is provided with an offset 3, for a purpose to be presently described. The tank 1, is provided with a manhole 4, in the bottom thereof for cleaning purposes, leading from which is an off-take or drain 5. Connecting with the off-take or drain 5, and shown as extending up within the offset 3, in order to be out of the way of the moving boats is an over-flow pipe 6. Water may be admitted to the tank by means of the connection 7. In practice a canopy or roof 8, is erected above the tank and a walk 9, for the convenience of passengers encircles the tank as does a suitable railing 10. Arranged centrally of the tank 1, and anchored thereto is a bearing block 11, provided with a bearing plate 12, and an upwardly projecting stem 13, see Fig. 3. Mounted to freely ro-

tate with respect to the stem 13, is a driving element comprising a wheel 14, interposed between the hub 15, of which and the bearing plate 12, are ball-bearings 16. The driving element 14, is of relatively large diameter and is shown as being of a diameter at least equal to one third of the cross section of the tank. The driving element 14, is horizontally arranged and is provided with peripherally projecting teeth 17, which mesh with the teeth of a vertically disposed driving gear 18, fixed to the main driving shaft 19. As clearly illustrated in Fig. 1, the shaft 19 is horizontally arranged and is supported in close proximity to the bottom of the tank by bearings 20, and 21, the bearings 21, being arranged within the offset 3. Fixed to the shaft 19, and between the bearings 21, within the offset 3, is a sprocket wheel 22, of comparatively large diameter connecting which and a smaller sprocket wheel 23, supported in bearings 24, that rise vertically from the bearings 21, is a sprocket chain 50. Fixed to the same shaft that carries the sprocket wheel 23, is a pulley 25, motion to which may be imparted by means of a belt connected with a suitable source of power, as an electric motor 26.

The boats *a*, are ornamental in appearance, preferably of swan-like configuration and are provided with guard rails 27, the railing on the boat-side nearest the center of the apparatus being continuous to prevent passengers falling into the tank and the railing on the opposite boat-side or that side nearest the side walls of the tank being provided with openings for the ready ingress and egress of passengers. The boats *a*, are equipped fore and aft with headed stems 28, the stems of each boat having movable relation with respect to the rigidly arranged arms 29, which arms in turn have pivotal relation as at 30, with lugs upon the top of the driving element 14. Coiled around the stems 28, between the boats and the arms 29, and between said arms and the head of the stems are springs 51, to provide a buffer construction calculated to enhance the comfort of the passengers incident to the stopping and starting of the boats. Rigidly connecting together each pair of arms 29, are braces shown as comprising angle irons 31. As shown in Fig. 4, the angle irons are secured to and between each pair of arms 29, by means of eye-bolts $31^a$. As shown in Fig. 2, when assembled, the braces are arranged in the shape of an octagon. This construction serves to provide rigidity to each pair of arms without in any way interferring with their hinged relation. Connecting each of the braced pair of arms 29, are yielding connections 32, shown as comprising chains. These yielding connections are secured to adjacent eye-bolts $31^a$ and serve to link all the boats together which in practice it has been demonstrated serves to provide an efficient medium for starting their movement in that as all the boats are connected one with another they may be started to move gradually without undue jerking. In other words each boat in its forward movement serves to draw the following boat. Each of the arms 29, is provided with a clamp 33, having an eye 34, connecting which and an eye 35, on the boats *a*, is a rod 36, provided with hook-like extremities. This construction serves to prevent the boat from accidental tipping and at the same time provides convenient means whereby when the boat ships water the hooked rods 36, may be disconnected and the boats turned about their pivotal connections to drain the same. By the above described construction and arrangement of parts the boats may be slowly and easily started without jerking and on account of the relatively rigid construction of the arms 29, in addition to the fact that they are comparatively short, a steady, firm onward movement is imparted to the boats although on account of their pivotal connection with said arms and the hinged relation of said arms with the driving element they are free to respond to any movement of the water. In stopping the apparatus the above described connection and arrangement of parts likewise serves to prevent the boats from swaying back and forth through the momentum they may have acquired in their travel. That is each boat serves to hold in check the boat following. The center pole of the apparatus may be encircled with a screen 37, having delineated thereon marine or other views which serves to enhance the amusement feature of the apparatus. In practice good results have been obtained by projecting the top of the tank above the walk 9, so that the water line is slightly higher than the walk so that passengers are compelled to step from the walk 9, up into the boats *a*, in contradistinction from stepping down into the boats. This feature is important in view of the fact that when the water line of the tank is below the walk the passengers are apt to jump into the boats, thereby agitating the water within the tank to produce splashing and also serving to strain the structural parts of the apparatus.

What I claim is:

Aquatic apparatus comprising a multiplicity of boats, a rotatable driving element of relatively large diameter, relatively short arms in pairs connecting each boat with said driving element, adjacent arms being arranged relatively close together throughout their length, an angle iron arranged between and rigidly connecting together each pair of arms substantially midway between

said boats and said driving element the assembled angle irons being of octagonal configuration, an eye-bolt for securing each end of each angle iron to place and a short chain section between and secured to adjacent eye-bolts.

In testimony whereof I have hereunto signed my name.

HENRY D. GARDY.

Witnesses:
WILLIAM J. JACKSON,
AGNES CASKEY.