G. M. REAGEN & L. A. MARKS.

ROUNDABOUT.

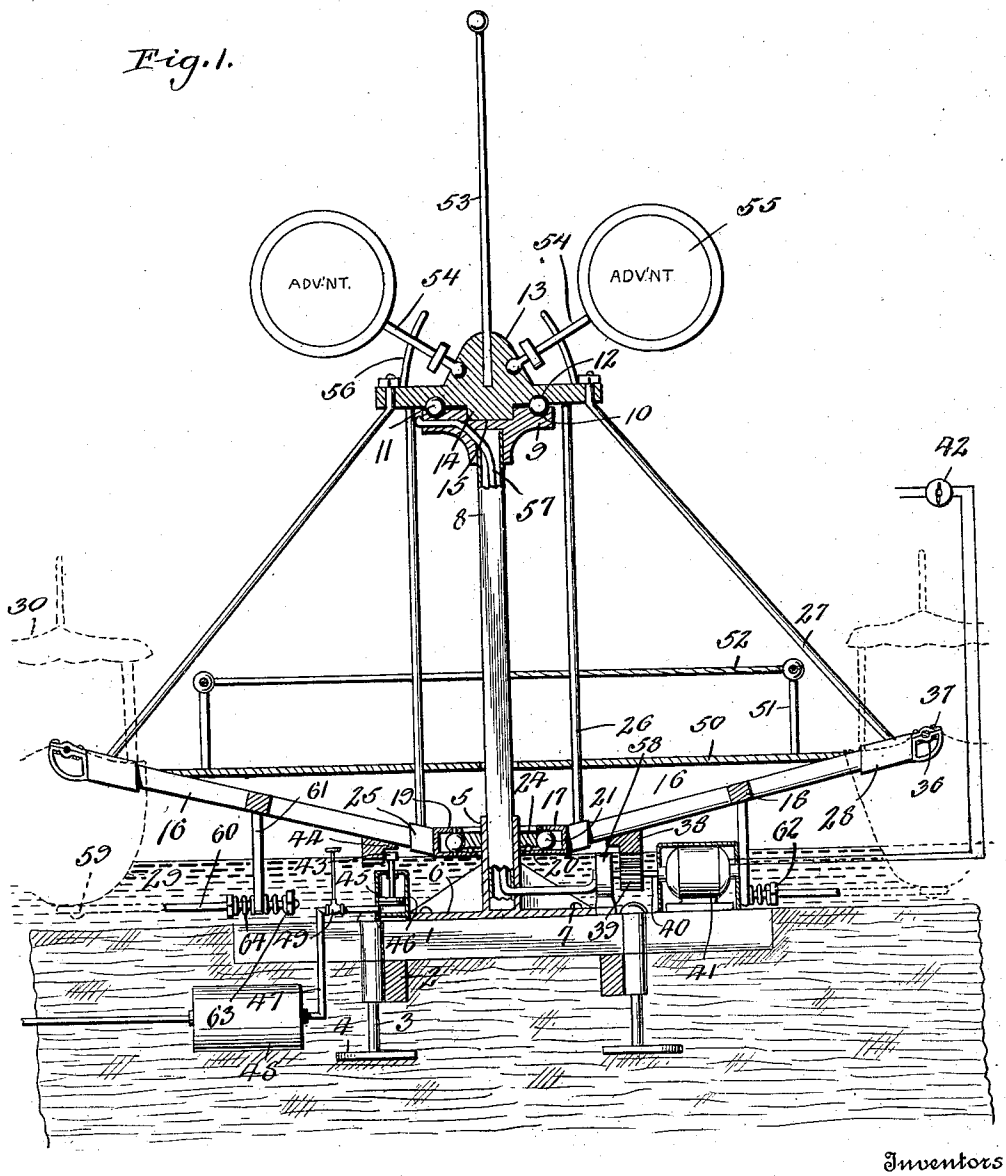
APPLICATION FILED MAR. 31, 1914.

1,124,950.

Patented Jan. 12, 1915.

3 SHEETS—SHEET 1.

Fig. 1.



Inventors

L. A. Marks and

G. M. Reagen,

Witnesses

E. Adeuer Jr.

R. M. Smith.

By Victor J. Evans

Attorney

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3 SHEETS—SHEET 2.

Fig. 2.

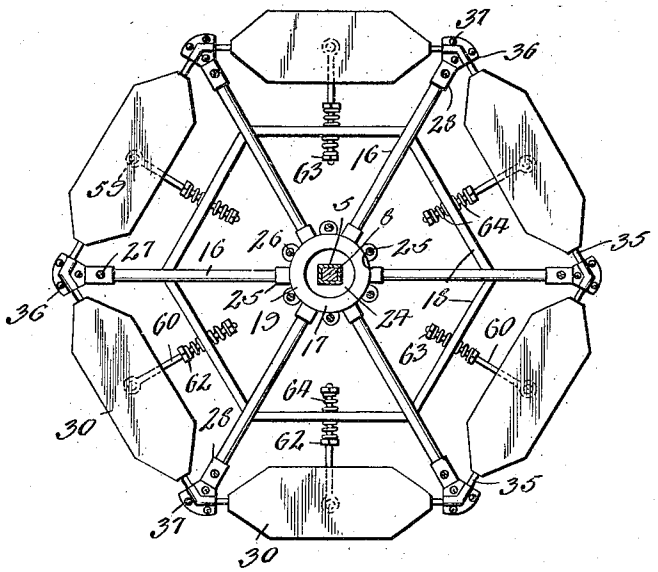


Fig. 3.

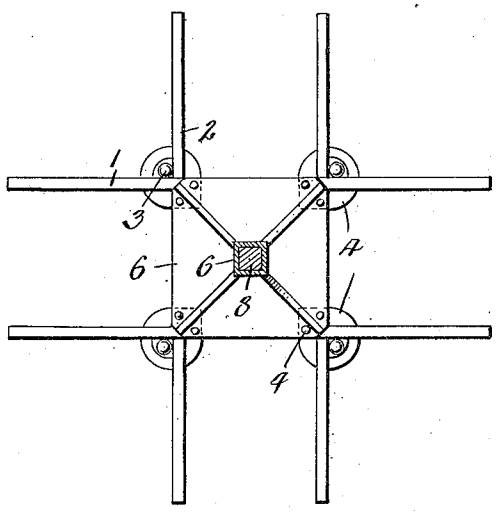
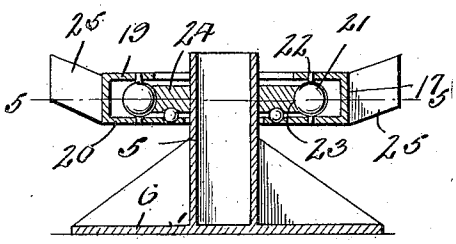


Fig. 4.



Witnesses

E. Andersen Jr.

P. M. Smith

Inventors

L. A. Marks and

G. M. Reagen,

By Victor J. Evans

Attorney

G. M. REAGEN & L. A. MARKS.

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3 SHEETS—SHEET 3.

Fig. 5.

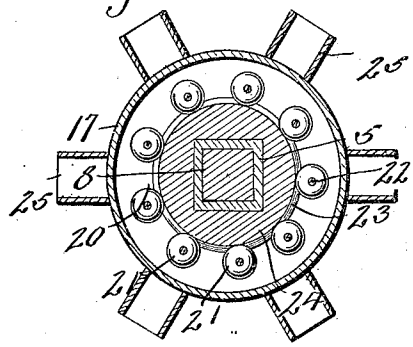


Fig. 7.

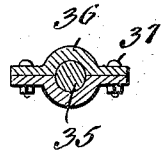


Fig. 6.

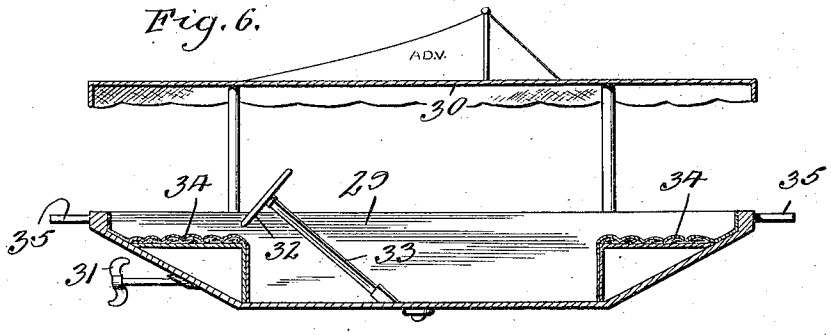
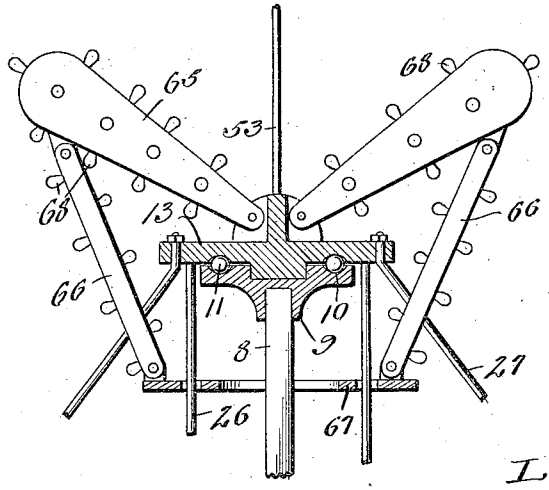


Fig. 8.



Witnesses

E. Schreuer Jr.

P. M. Smith.

Inventors

L. A. Marks and

G. M. Reagen,

By Victor J. Evans

Attorney

UNITED STATES PATENT OFFICE.

GEORGE M. REAGEN AND LEO A. MARKS, OF COSHOCTON, OHIO.

ROUNDABOUT.

1,124,950. Specification of Letters Patent. **Patented Jan. 12, 1915.**

Application filed March 31, 1914. Serial No. 828,620.

To all whom it may concern:

Be it known that we, GEORGE M. REAGEN and LEO A. MARKS, citizens of the United States, residing at Coshocton, in the county of Coshocton and State of Ohio, have invented new and useful Improvements in Roundabouts, of which the following is a specification.

This invention relates to roundabouts, the object of the invention being to produce an attractive amusement and advertising device somewhat in the nature of a merry-go-round, the said amusement device embodying a circular series of motor boats suspended from a common rotating table or spider, combined with means for imparting rotary motion to said spider, and means for restricting within certain limits the outward swaying movement of the boats caused by centrifugal action.

A further object of the invention is to provide a novel mounting of the rotating part of the structure, whereby the rotative movement thereof is steadied and friction reduced to a minimum.

With the above and other objects in view, the invention relates to the novel construction, combination and arrangement of parts, as will hereinafter be more fully described, illustrated and claimed.

In the accompanying drawings:—Figure 1 is a vertical diametrical section through a roundabout embodying the present invention. Fig. 2 is a plan view of the spider and the series of boats carried thereby. Fig. 3 is a plan view of the foundation or support for the rotary structure. Fig. 4 is an enlarged detail diametrical section through the mast step, showing the radial bearing for the spider. Fig. 5 is a horizontal section on the line 5—5 of Fig. 4. Fig. 6 is an enlarged vertical longitudinal section through one of the boats. Fig. 7 is a detail view of one of the boat supporting bearings. Fig. 8 is a fragmentary diametrical section through the upper portion of the structure showing a modification.

The supporting base or foundation of the roundabout, in the preferred embodiment thereof comprises two sets of parallel I-beams 1 and 2, the beams of one set crossing and being arranged perpendicularly to the parallel beams of the other set as illustrated in Fig. 3 and also in Fig. 1, the beams of one set resting upon those of the other set. The beams 1 and 2 are fastened in place and prevented from shifting by means of anchor bolts 3 which extend downwardly and are embedded any suitable depth in the ground, the lower ends of the anchor bolts 3 being connected to planted anchors 4 in the form of plates as shown in Fig. 3 so as to obtain a broad hold in the ground.

Supported centrally upon the foundation structure above described is a mast socket or step comprising a tubular upright portion 5 and a base flange 6 which is secured by suitable fasteners 7 to the foundation. The receiving portion 5 of the step is preferably square in cross section as shown in Figs. 3 and 5 and the mast 8 is correspondingly square in cross section so that it will not turn in said step.

Detachably mounted on the upper extremity of the mast 8 is a supporting cap 9 provided on its upper side with an annular ball race 10 in which travel anti-friction balls 11 which also travel in contact with an annular ball race 12 on the under side of a rotary head 13. This head 13 supports the entire rotary structure and is provided with a central depending journal 14 which is received in a corresponding socket 15 in the stationary cap 9, the member 14 serving to take any excessive lateral thrust on the head 13.

The rotary spider or boat carrier comprises a series of arms 16 radiating from a central ring 17, the said arms being braced between their inner and outer ends by means of the struts or frame members 18. The ring 17 is provided with inwardly extending top flanges 19 and bottom flanges 20 and between said flanges is arranged a circular series of balls 21 journaled on vertical axes 22. These balls travel in contact with the concaved periphery 23 of a collar 24 fast on and surrounding the upright portion 5 of the mast step as clearly shown in Fig. 1. The ring 17 also comprises outwardly extending sockets 25 in which the inner extremities of the arms 16 are received, thus enabling the spider to be taken down and packed up for transportation. Supporting bolts or rods 26 extend from the rotary head 13 downwardly to the ring 17 while other stay bolts 27 extend from the rotary head 13 downwardly to the outer extremities of the arms 16, each of said arms 16 having fitted on the outer end thereof a cap 28 through which the lower end of one of the stay bolts 27 passes.

Interposed between the outer extremities of each pair of adjacent arms 16 is a boat body 29 preferably shaped to resemble a motor boat, the same being provided with a canopy or top 30, a propeller 31 and a steering wheel 32 mounted on an inclined steering column 33. Within the boat are seats 34 preferably arranged at each end while at the extreme bow and stern of the boat are projecting pins or journals 35 that are received in bearings 36 formed in upper and lower sections as shown in Fig. 7, the upper or cap section being detachably fastened to the lower section by means of bolts 37 or their equivalent. This enables a boat to be removed and replaced as often as may be necessary.

In order to impart rotary motion to the superstructure, an annular rack 38 is fastened to the bottom faces of the arms 16 which rack meshes with and is driven by a spur gear wheel or pinion 39 fast on the shaft 40 of a motor which is illustrated as consisting of an electric motor 41 to which the current wires lead from a manually controlled switch 42 whereby the current may be turned on and off from the motor 41.

In order to stop the rotating structure as rapidly as desired, we provide a pneumatic brake consisting of a brake shoe 43 movable toward and away from an annular brake surface 44 preferably formed integrally with the annular rack 38 as shown in Fig. 1. The brake shoe 43 is connected to and actuated by a piston 45 contained in an air cylinder 46 to which air is led by a pipe 47 leading to a compressed air tank 48 controlled by a hand operated valve 49. Any suitable air compressor may be used in conjunction with the compressed air tank 48 to keep the latter supplied with air at the desired pressure.

Supported over and upon the spider is a musicians' platform 50 provided around its marginal edge with upstanding posts 51 and a suitable guard rope or rail 52.

53 designates a flag staff stepped in the rotary head 13. In order to add to the attractiveness of the roundabout, pivoted arms 54 are pivotally mounted on the rotary head 13 and adapted to swing upwardly and downwardly, said arms carrying disk-shaped fan blades 55 at their outer ends upon which any suitable advertising matter or information may be printed.

56 designates guides for regulating the swinging movement of the arms 54.

57 designates an air blast pipe leading off from a blast fan 58 actuated by the motor 41 and having its discharge end arranged to deliver a blast of air against the blades or wings 55 as they revolve, said blades or wings being pitched at an angle so that the blast of air will lift them as they pass over the discharge end of the blast pipe 57.

To prevent undue swaying or outward swinging of the boats, each boat has connected thereto at 59 a tension rod 60, the inner portion of said tension rod passing through an opening in an extension 61 of one of the bracing members 18. Said rod is threaded to receive nuts 62 and 63 which are threaded thereon at opposite sides of the extension 61 and coiled springs 64 are interposed between the extension 61 and the nuts 62 and 63, said springs serving to cushion the outward and inward swinging movement of the boats during the rapid rotation of the spider and thereby imparting an easy and cushioned movement to each of the boats, under all speeds of rotation of the superstructure.

In lieu of the arrangement of blades 55 shown in Fig. 1, the arrangement illustrated in Fig. 8 may be employed in which it will be observed that the blades indicated at 65 are pivotally connected at their inner ends to the rotary head adapting them to swing upwardly and downwardly and said blades are connected by links 66 to a vertically movable ring 67 which is apertured to receive and slide longitudinally of the supporting rods 26. The blades 65 as well as the links 66 may be equipped with electric lamps 68 to add to the attractive appearance of the device as a whole.

What we claim is:—

1. In a roundabout, a supporting base, a mast socket thereon, a mast detachably stepped in said socket, a stationary supporting cap on the top of said mast, a rotary head having a ball bearing mounting on said cap, a spider comprising a central ring, arms radiating from said ring, and bracing connecting said arms, suspending stays connecting said rotary head and spider, a radial bearing embodying balls journaled on axes parallel to said mast and carried by said central ring, a stationary collar on said mast around which said balls travel in contactual relation, means for revolving said spider, and a circular series of boat-like bodies pivotally supported and carried by said spider.

2. In a roundabout, a supporting base, a mast socket thereon, a mast detachably stepped in said socket, a stationary supporting cap on the top of said mast, a rotary head having a ball bearing mounting on said cap, a spider comprising a central ring, arms radiating from said ring, and bracing connecting said arms, suspending stays connecting said rotary head and spider, a radial bearing embodying balls journaled on axes parallel to said mast and carried by said central ring, a stationary collar on said mast around which said balls travel in contactual relation, means for revolving said spider, a circular series of boat-like bodies pivotally supported and carried by said spider, and spring balancing means for said bodies.

3. In a roundabout, a supporting base, a mast socket thereon, a mast detachably stepped in said socket, a stationary supporting cap on the top of said mast, a rotary head having a ball bearing mounting on said cap, a spider comprising a central ring, arms radiating from said ring, and bracing connecting said arms, suspending stays connecting said rotary head and spider, a radial bearing embodying balls journaled on axes parallel to said mast and carried by said central ring, a stationary collar on said mast around which said balls travel in contactual relation, means for revolving said spider, a circular series of boat-like bodies pivotally supported and carried by said spider, and spring tensioned rods connecting said bodies with the spider and serving to limit the centrifugal tilting of said bodies.

4. In a roundabout, a supporting base, a mast socket thereon, a mast detachably stepped in said socket, a stationary supporting cap on the top of said mast, a rotary head having a ball bearing mounting on said cap, a spider comprising a central ring, arms radiating from said ring, and bracing connecting said arms, suspending stays connecting said rotary head and spider, a radial bearing embodying balls journaled on axes parallel to said mast and carried by said central ring, a stationary collar on said mast around which said balls travel in contactual relation, means for revolving said spider, a circular series of boat-like bodies pivotally supported and carried by said spider, and a musicians' platform superimposed upon said spider.

In testimony whereof we affix our signatures in presence of two witnesses.

GEORGE M. REAGEN.
LEO. A. MARKS.

Witnesses:
C. O. TURNER,
J. C. DAUGHERTY.