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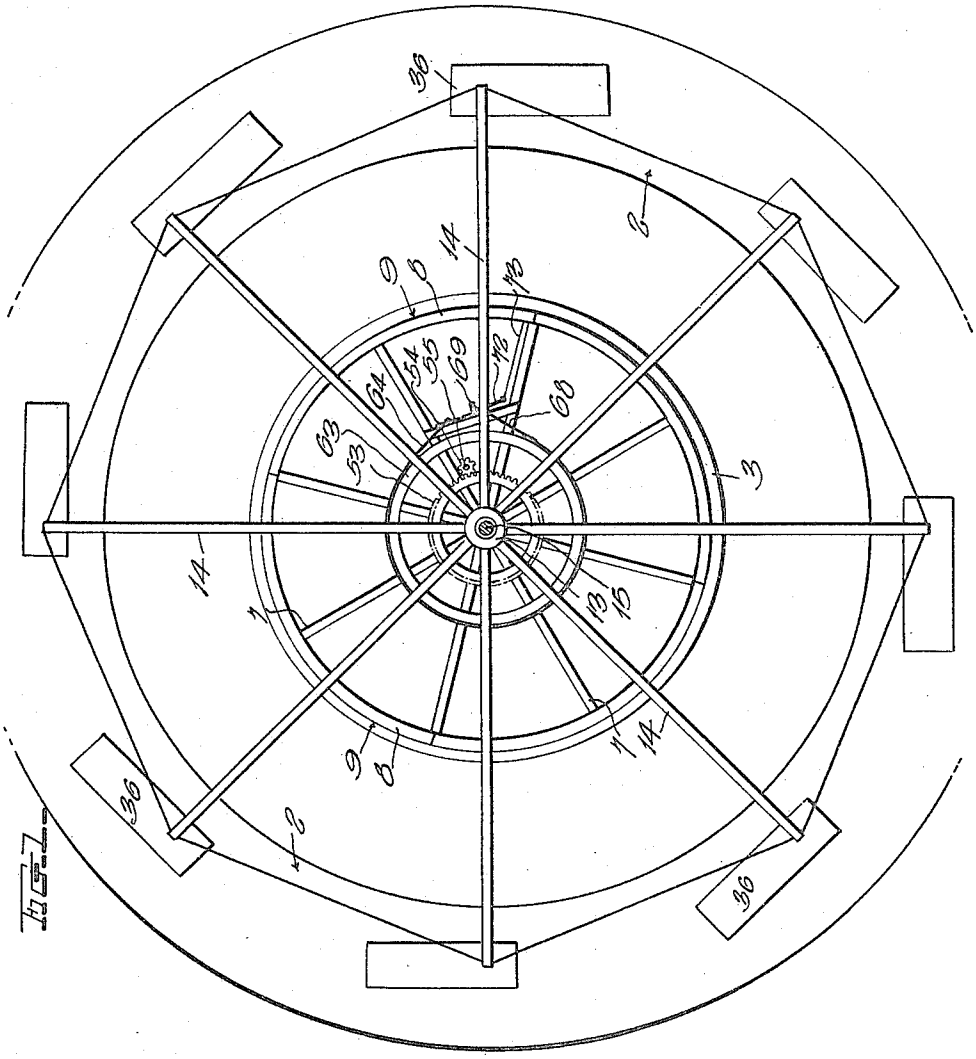
AMUSEMENT APPARATUS.

APPLICATION FILED JUNE 22, 1916.

1,222,622.

Patented Apr. 17, 1917.

5 SHEETS—SHEET 1.



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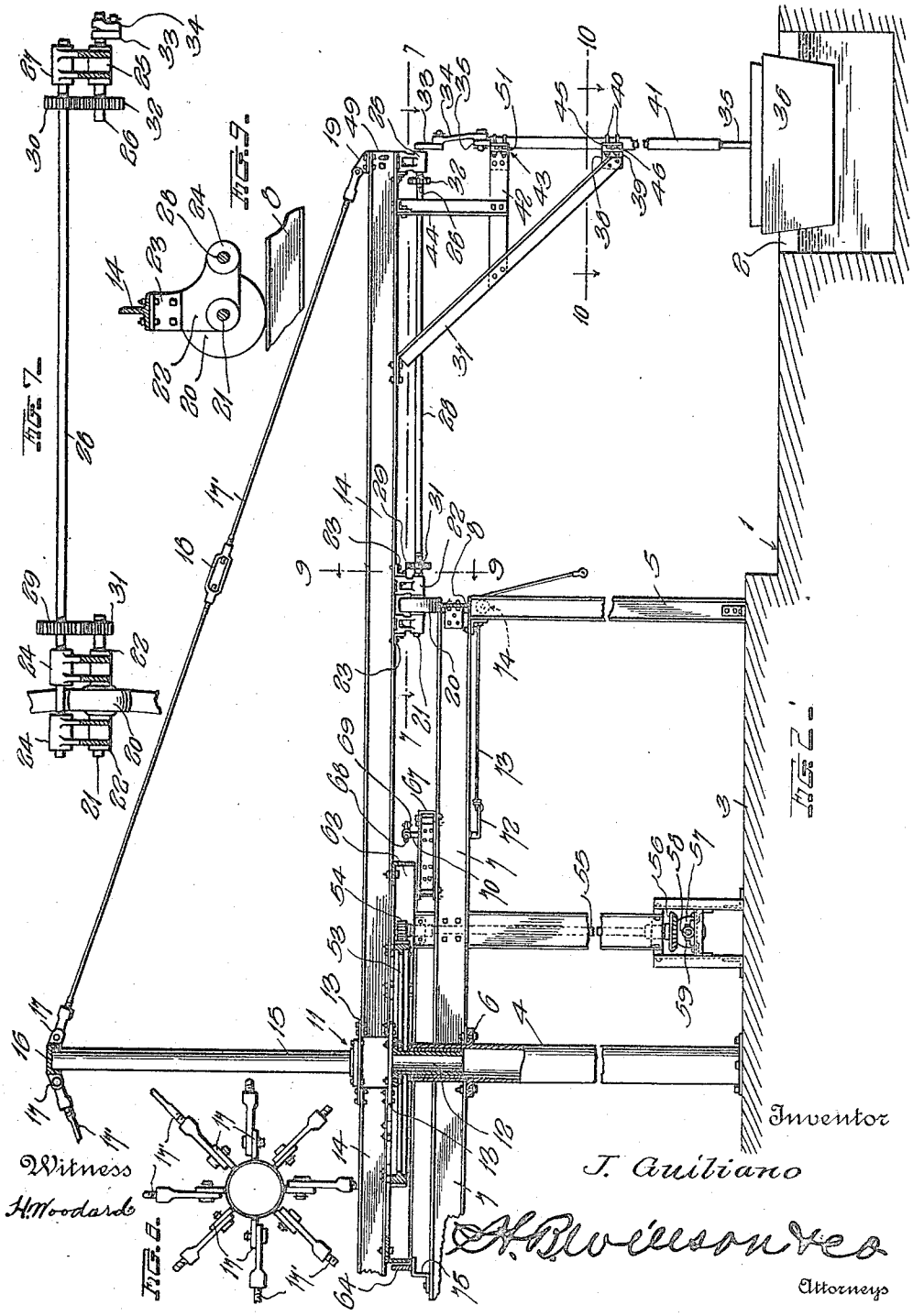

FIG. 7.

FIG. 7a.

FIG. 8.

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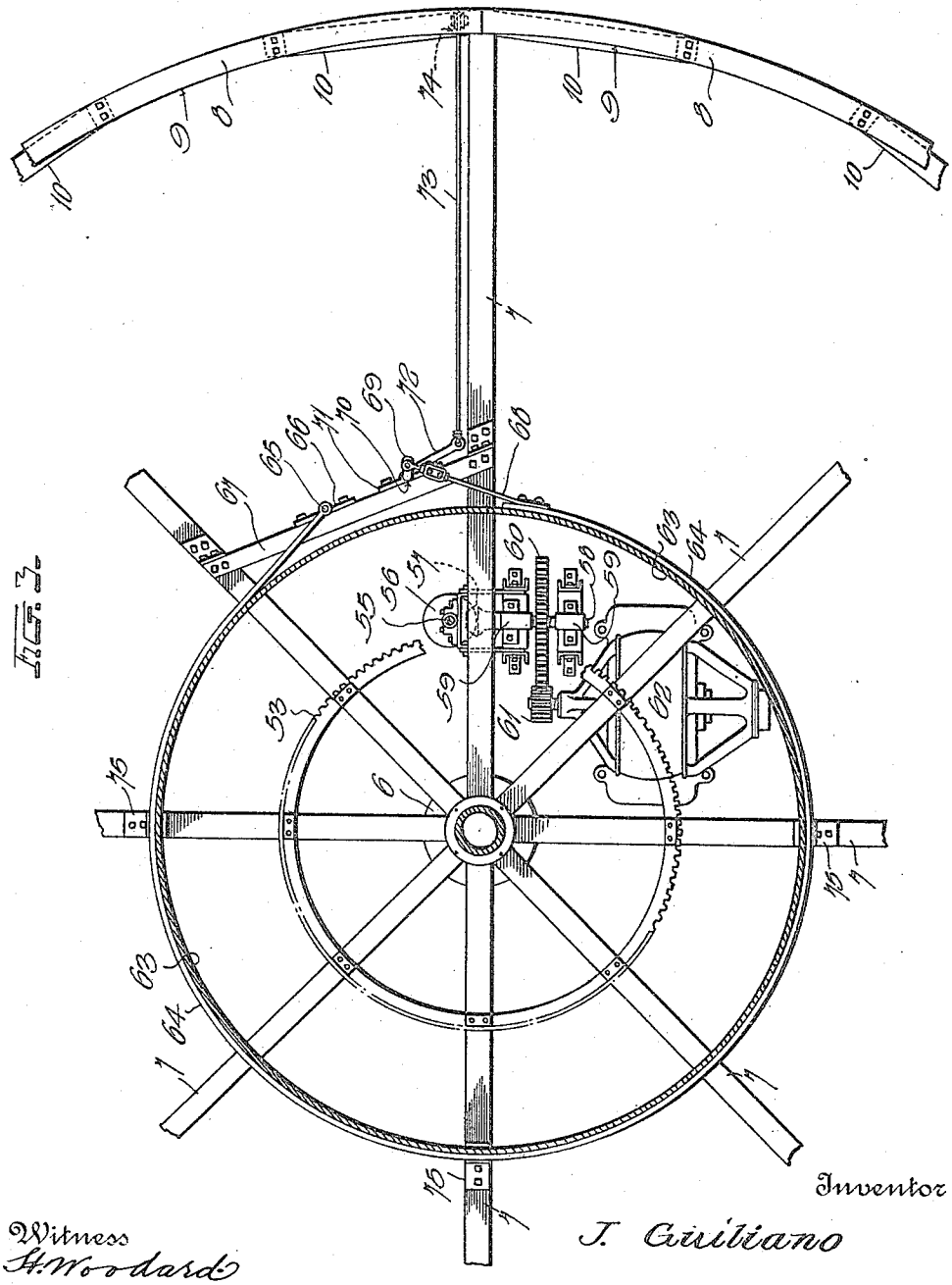

Fig. 3.

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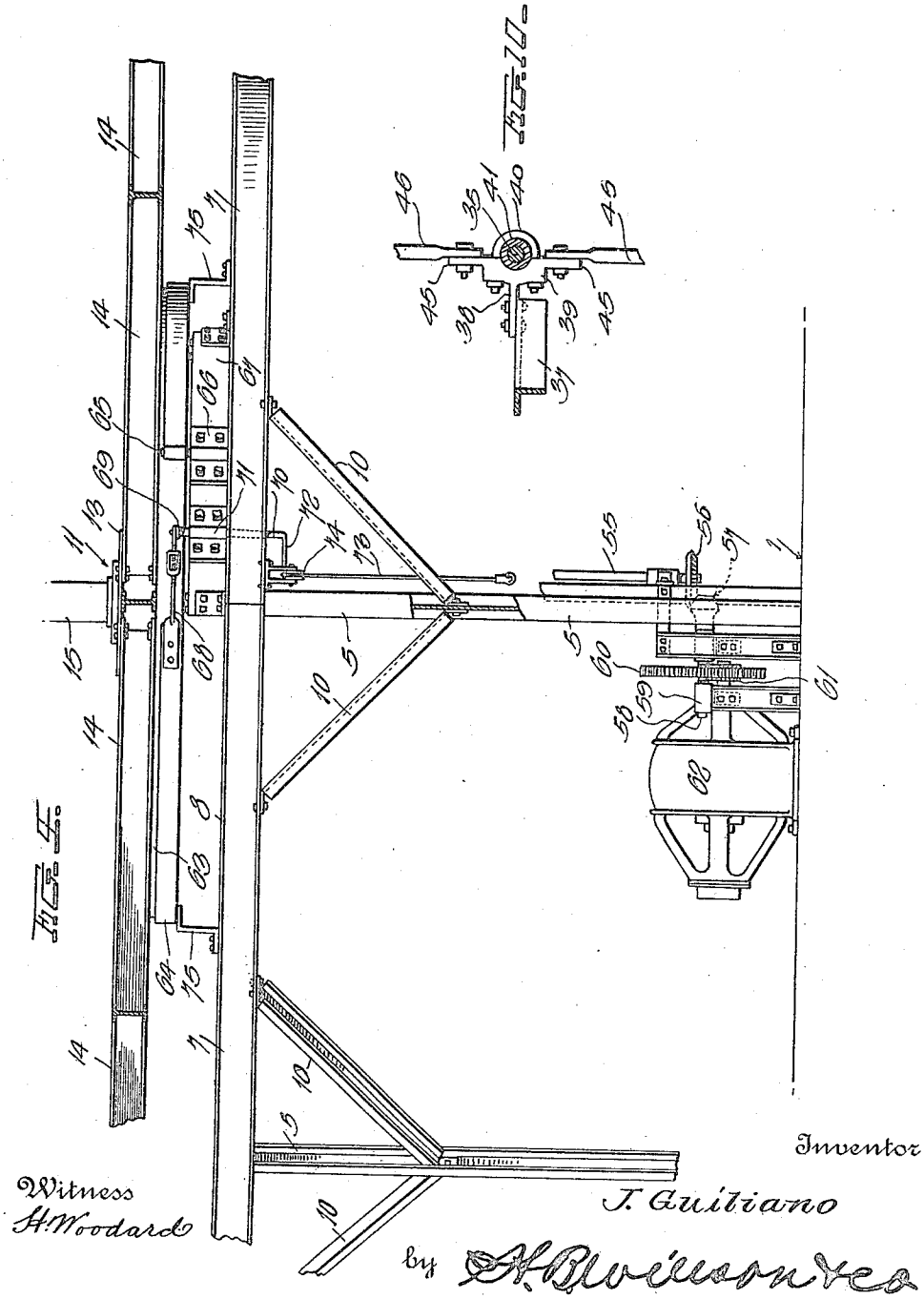

FIG. 4.

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5 SHEETS—SHEET 5.

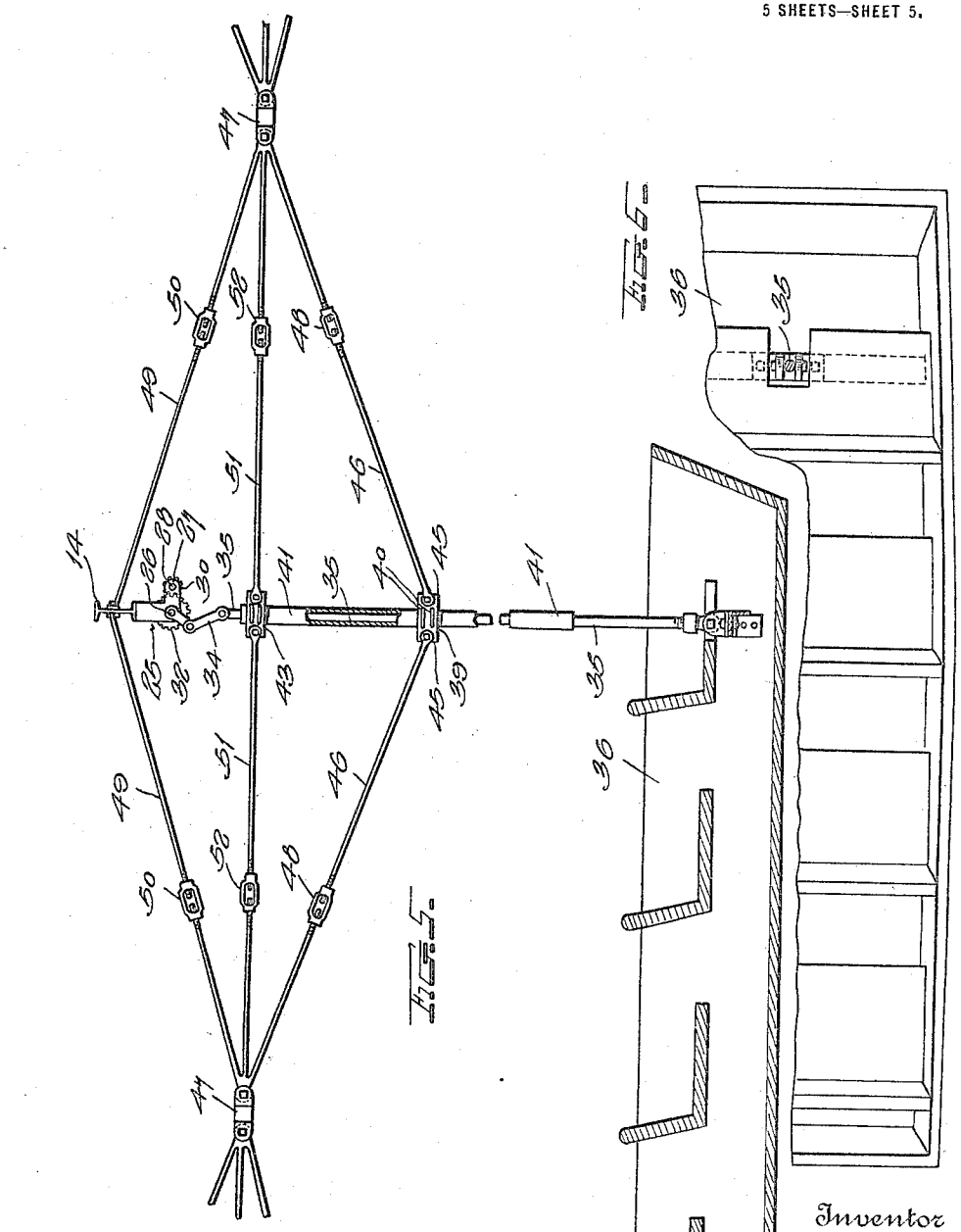

FIG. 5.

FIG. 6.

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UNITED STATES PATENT OFFICE.

JOSEPH GUILIANO, OF NEW HAVEN, CONNECTICUT.

AMUSEMENT APPARATUS.

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Application filed June 22, 1916. Serial No. 105,233.

To all whom it may concern:

Be it known that I, JOSEPH GUILIANO, a subject of the King of Italy, residing at New Haven, in the county of New Haven and State of Connecticut, have invented certain new and useful Improvements in Amusement Apparatus; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates generally to an amusement apparatus, and more particularly to that form of such apparatus commonly known as a "carousel" or "merry-go-round."

The primary object of the invention is to provide a device of this general character which may be readily and easily disassembled should it be desired to transport it from place to place.

Another object of the invention is to provide an efficient means for rotating the rotary member thereof, and also provide efficient braking means for the same.

A still further object of the invention is to provide an improved means for imparting an up and down movement to the passenger carrying devices hung or suspended from the rotating member.

An additional object of this invention is to provide a device of this character which will be simple, strong, durable and inexpensive in construction, efficient and reliable in operation and well adapted to the purpose for which it is desired.

With these and numerous other objects in view, the invention consists of certain novel features of construction, and the combination and arrangement of parts as will be hereinafter fully described and claimed.

In the accompanying drawings, forming a part of the specification and in which similar reference characters designate like parts throughout the several views:—

Figure 1 is a diagrammatic top-plan view of an amusement apparatus constructed in accordance with this invention;

Fig. 2 is a central vertical sectional view through a portion of the same;

Fig. 3 is a top-plan view of a portion of the annular track, the members associated therewith, the brake band, and the brake drum carried by the rotating member in section;

Fig. 4 is a side elevation of a portion of the annular track and members associated therewith, showing partly in section a part of the rotating member supported by said track;

Fig. 5 is a side elevation partly in section, showing the structural details at the outer end of one of the radial arms of the rotary member, one of the passenger carrying devices operatively connected with the end of said arms being here shown in longitudinal section;

Fig. 6 is a top-plan view of a portion of one of the passenger carrying devices;

Fig. 7 is a horizontal sectional view taken on the plane of the line 7—7 of Fig. 2;

Fig. 8 is a top-plan view of the plate to which the guide rods for supporting the radial arms of the rotary member are connected;

Fig. 9 is a vertical sectional view taken on the plane of the line 9—9 of Fig. 2; and

Fig. 10 is a horizontal sectional view taken on the plane of the line 10—10 of Fig. 2.

Briefly stated, the present invention comprises a base, an annular track supported in the plane above the base, a rotary member disposed above the track and having a plurality of wheels on its lower side which travel upon the track, a plurality of passenger carrying devices depending or suspending from the outer side of the rotary member, means for imparting an up and down movement to the passenger carrying devices, and means for rotating the rotary member.

Referring more particularly to the drawings, the reference numeral 1 designates a base or foundation of this improved apparatus, which is preferably made of solid concrete, or other suitable masonry, and being provided with an annular channel or water-way 2 therein. The base 1 is provided with a raised portion 3, which is concentrically arranged with respect to the annular water-way 2 and has a centrally arranged tubular post 4 rising therefrom. This post 4 need not be tubular, if desired, so long as the upper end thereof is provided with a recess, the purpose of which will be hereinafter described. Rising from the raised portion 3 along the outer side thereof is a plurality of upright supporting standards or posts 5, the latter being secured to the base in any convenient manner and being preferably, as here shown, formed from I-

shaped iron or steel structure. The centrally arranged post 4 is provided at a point spaced below its upper end with a horizontal flange 6, to which are bolted the inner ends of a plurality of radially extending beams 7, the outer ends of which rest upon the upper ends of the standards 5, and being bolted to an annular track 8, the latter also resting upon the upper ends of the standards 5, and being composed of a plurality of circumferential sections 9. Secured to the lower side of the track 8 at points spaced substantially one-third of the distance between the adjacent upright standards 5 at their upper ends are diagonal channeled iron braces 10, the lower ends of which are similarly secured to the web portions of said standards, the purpose of these braces being to assist in forming a very rigid structure.

The afore-mentioned rotary member comprises a hub portion 11 the lower end of which is reduced as at 12 and being disposed and revolubly mounted in the upper recessed end of the post 4. Bolted between the spaced horizontal flanges 13 of the hub portion 11 are the inner ends of a plurality of radially extending arms 14, the latter being substantially twice the length of the beams 7, and having passenger carrying devices to be hereinafter referred to depending or suspended from their outer ends. The upper end of the hub portion 11 is provided with an upright standard 15, the upper end of which rests in the recessed lower side of a plate 16 carrying radially extending ears 17 thereon in which are removably attached the inner ends of diagonal guide or supporting rods 17', the latter being provided with turnbuckles 18 intermediate of their lengths, and having their outer ends connected to suitable brackets 19 carried at the outer ends of the arms 14. Revolubly mounted in the manner to be hereinafter described to the lower sides of the arms 14, and arranged in a circle concentric with the hub portion 11 of the rotary member is a plurality of wheels 20, the latter traveling upon the afore-mentioned track 8 for supporting said member.

These wheels 20 are fixed to stub shafts 21 which are revolubly mounted in spaced bearings 22, the latter being provided with attaching flanges 23 for detachable connection to said arms 14, and having thereon additional bearings 24 integrally connected with the same by suitable web portions as clearly shown in Fig. 9 of the drawings. The outer ends of the arms 14 are provided with similar bearings 25 in which are mounted suitable shafts 26, and having similar additional bearings 27 connected therewith, and being arranged in alinement with the aforesaid bearings 24. Revolubly mounted in the alined bearings 24 and 27 is a shaft 28, to which are fixed near its opposite ends gear wheels 29 and 30 of different sizes, the gear wheels 29 meshing with gear wheels 31 fixed to one end of the stub shafts 21 and the gear wheels 30 meshing with gear wheels 32 fixed to one end of the shafts 26. Preferably the gear wheels 31 and 32 are of different sizes, as here shown. To the other end of the shafts 26 are fixed crank arms 33, having pitmen or connecting elements 34 pivotally connected at one of their ends to the outer ends thereof, said connecting elements 34 being in turn pivotally connected at their other ends to upright rods 35 pivotally attached to the passenger carrying devices 36. By this construction, it may be seen that whenever the rotary member is rotated by means hereinafter to be described, the wheels 20 will be revolved as they travel upon the track 8, and through the medium of the gear wheels 29, 30, 31 and 32, and the shafts 28, which parts comprise in effect trains of reducing gears, will impart the rotary motion to the crank arms 33 at a speed greatly less than the speed of the wheels 20. A to and fro motion will be in turn imparted to the passenger carrying devices 36, as will be readily understood.

Secured at their upper ends at points spaced a short distance inwardly of the outer ends of the arms 14 are diagonal supporting bars 37, which are constructed from channeled iron members, and having their lower ends disposed substantially in vertical alinement with the outer ends of the arms 14, and being bolted to the inwardly extending ears 38 carried by suitable brackets 39, as shown clearly in Fig. 2 of the drawings. These brackets 39 are provided with U-bolts 40 which coöperate with the same to firmly, but detachably connect the lower ends of said supporting bars 37 to the intermediate portions of upright tubular guides 41, through which the above referred to rods 35 carried by the passenger carrying devices 36 slide. Bolted at their inner ends to the intermediate portions of the supporting bars 37 are horizontal brace bars 42, the other or outer ends of the latter being bolted to brackets 43 identical in construction with the brackets 39, said brackets 43 being clamped around the upper ends of the guides 41. These brace bars 42 are connected substantially intermediate of their ends by vertical brace bars 44, the latter being bolted in any convenient manner to the lower sides of the arms 14. This novel construction, as clearly shown in Fig. 2 of the drawings, forms a very rigid means for supporting the tubular guides 41.

Secured to ears 45 which extend horizontally in opposite directions from the brackets 39 by suitable securing elements are one of the ends of diagonal struts 46, the other ends of which are connected in a similar manner to connecting elements 47. These

diagonal struts are provided with turn buckles 48, the purpose of which will be obvious. Secured to the outer end of the arms 14 in any suitable manner are additional diagonal struts 49, the latter being provided with turn buckles 50, and having their other ends secured to the connecting elements 47, while disposed between the diagonal struts 46 and 49 and having their ends secured in a similar manner to the connecting elements 47 and the brackets 43 are horizontal struts 51, the latter being likewise provided with turn buckles 52. By this construction, it may be seen that the ends of the arms 14 are firmly braced and spaced apart, and any relative circumferential movements of the same is prevented.

Although the passenger carrying devices 36 may be of any desired nature in configuration, they are preferably in the form of boats, as here shown. By having the lower ends of the rods 35 pivotally connected to the forward ends of these boats as shown in Figs. 5 and 6 of the drawings, as the rotary member carrying said rods revolves, and as an up and down motion is imparted to said rods, the boats 36 will be given a motion resembling the motion given to boats when riding the waves in a rough sea.

The motion above referred to for rotating the rotary member comprises a large external gear wheel 53 fixed to the lower sides of the arms 14 concentrically arranged with respect to the hub portion 11, and which meshes with a pinion 54 carried at the upper end of an upright shaft 55, the lower end of the latter being provided with a beveled gear 56 which in turn meshes with a similar gear 57 arranged at one end of a shaft 58. This shaft 58 is mounted in suitable bearings 59 supported in any convenient manner in a plane above the raised portion 3 of the base 1, and has fixed thereto a large gear wheel 60, the latter meshing with a pinion 61 keyed, or otherwise fixed to one end of the shaft of an electric motor 62, the latter being anchored or bolted in any convenient manner to the raised portion 3 of the base 1. This construction is preferably to be employed, although it is to be understood that it may be substituted by any other equivalent means.

The braking means above referred to comprises broadly a brake drum, a braking element adapted to engage the drum, and manually operable means for moving the braking element into engagement with the drum. This drum comprises an annular angle iron ring 63 bolted to the lower side of the arms 14 and being arranged concentric with the hub portion 11 to which said arms are connected. Disposed around this ring or brake drum 63 is a brake band 64, which is the above referred to braking element, said brake band having one of its ends secured to a pin 65 carried by a bracket 66, the latter being fixed to a cross bar 67 disposed between and adjacent the beams 7, and having its ends secured thereto. The other end of the brake band 64 is connected to one end of a link 68, the other end of which is pivotally connected to the laterally bent end 69 of a shaft 70, the latter being revolubly mounted in a bearing 71 carried by the cross bar 67, and having its other or lower end bent laterally to form an arm 72, the latter being arranged in a different angle with respect to the shaft 70 than its other end, and being connected to one end of a flexible element 73. This element 73 is carried over a pulley 74 mounted in any suitable manner to the lower side of the track 8, and is provided at its other end with a handle by which it may be engaged when pulled. By this construction, it may be seen that when the flexible element 73 is pulled, the shaft 70 will be rocked in a direction so as to cause the brake band 64 to become tightened around the brake drum 63, and thereby cause a stopping of the rotary member. The brake band 64 is here shown supported upon suitable brackets 75 mounted at the upper sides of the beams 7.

From the foregoing description it may be seen that the objects of the invention have been effectively carried out, a device having been set forth constructed entirely of I-beams, channeled iron and angle iron members, all of said parts or members being detachably connected together with bolts, or other similar securing devices so that the entire structure may be readily and easily assembled or disassembled. The advantages of this will be obvious, especially if the device is to be transported from place to place. It may also be seen that the manner in which the rotary member is supported by the wheels upon the track is an improvement over the devices heretofore in use, together with the means operatively connected with said wheels for imparting an up and down motion to the passenger carrying devices.

As numerous changes in form, proportion and the minor details of construction may be resorted to without departing from the spirit of this invention, I do not wish to be limited to the construction herein shown and described other than that set forth in the appended claims.

I claim:—

1. A device of the class described comprising a base, an annular track supported in a plane above said base, a rotary member having a plurality of radially extending arms, wheels mounted on said arms and traveling on said track for supporting said member, upright tubular guides fixed to the outer ends of said arms, rods slidable in said guides, means interposed between said wheels and said rods for imparting an up and down

movement to the latter, passenger carrying devices connected to the lower ends of said rods, and means for rotating said member.

2. A device of the class described comprising a base, an annular track supported in a plane above said base, a rotary member having a plurality of radially extending arms, wheels mounted on said arms and traveling on said track for supporting said member, diagonal supporting bars secured at their upper ends to said arms at points spaced inwardly from the outer ends thereof, horizontal brace bars secured at one of their ends to the intermediate portions of said supporting bars, vertical brace bars disposed between said arms and the intermediate portions of said horizontal brace bars, upright tubular guides having means for attachment to the other ends of said supporting bars and said horizontal brace bars, rods slidable in said guides, means interposed between said wheels and said rods for imparting an up and down movement to the latter, passenger carrying devices connected to the lower ends of said rods, and means for rotating said member.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

JOSEPH GUILIANO.

Witnesses:
PHILIP POND,
ETHEL M. WHITTLESEY.