F. B. WHITMAN & A. D. ROBERTS.

CAROUSEL.

APPLICATION FILED NOV. 10, 1908.

1,068,472.

Patented July 29, 1913.

4 SHEETS—SHEET 1.

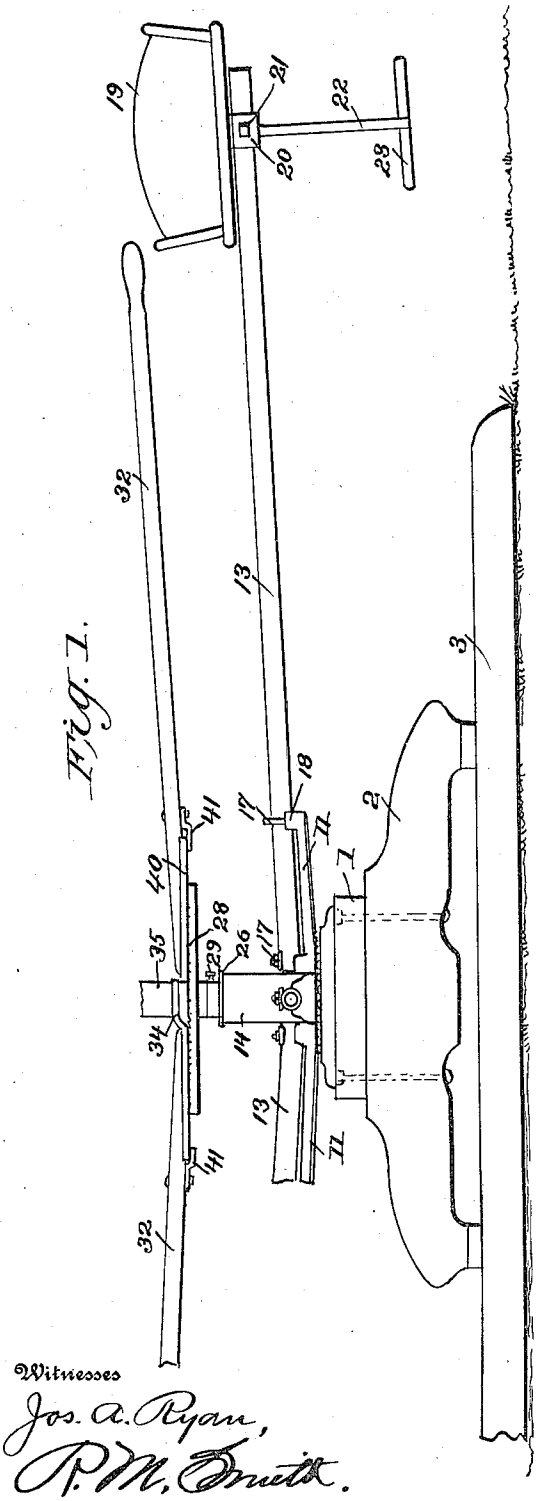

Fig. 1.

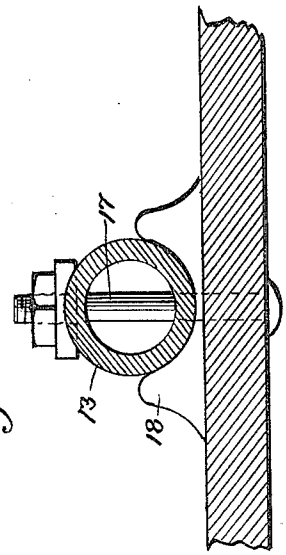

Fig. 9.

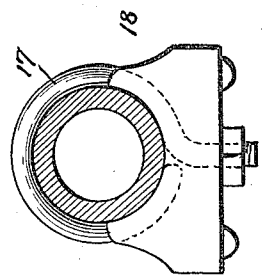

Fig. 8.

Witnesses

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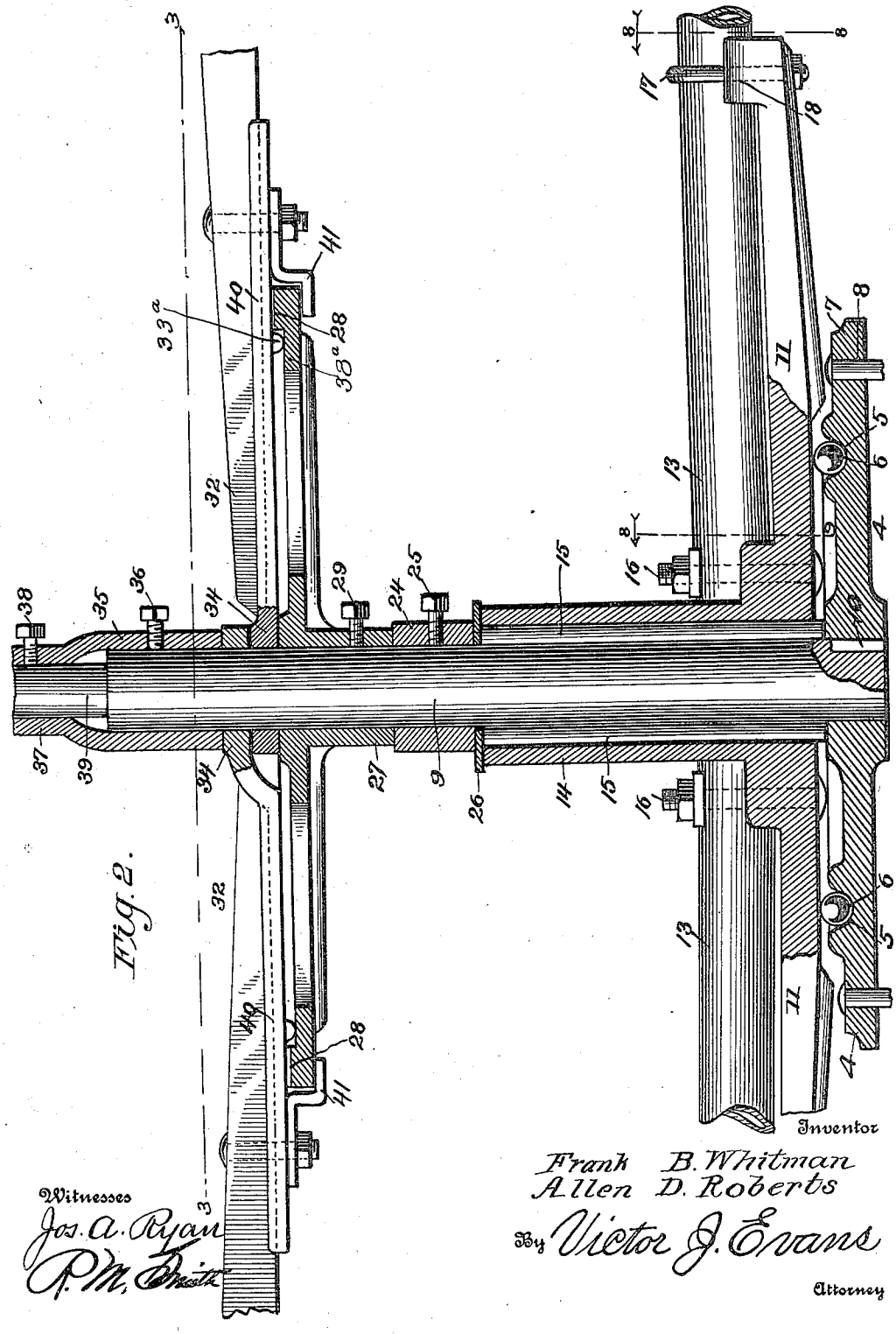

Fig. 2.

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4 SHEETS—SHEET 3.

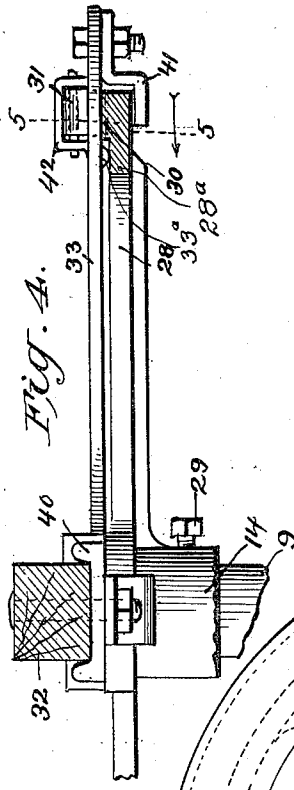

Fig. 4.

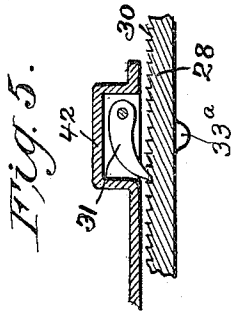

Fig. 5.

Fig. 3.

Witnesses

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4 SHEETS—SHEET 4.

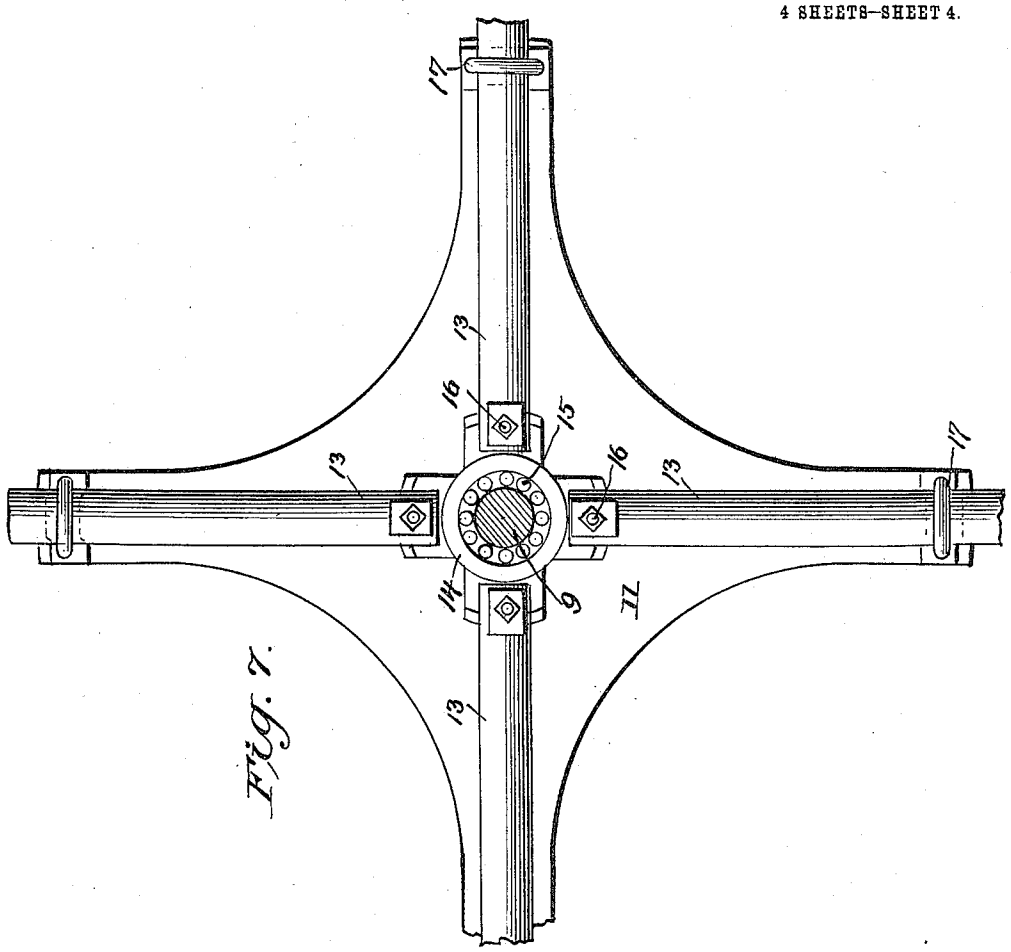

Fig. 7.

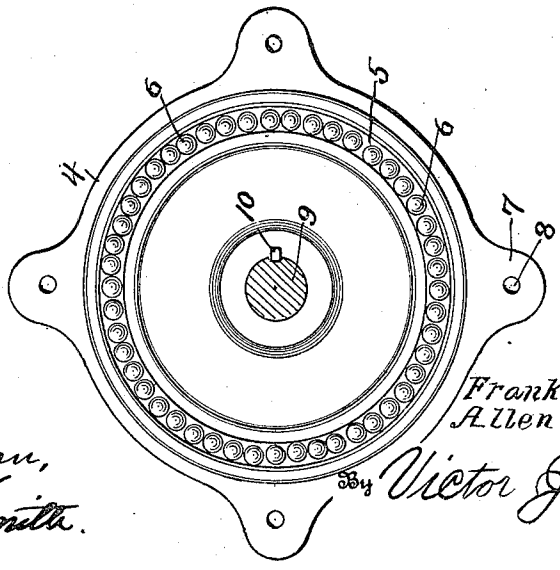

Fig. 6.

Witnesses

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UNITED STATES PATENT OFFICE.

FRANK B. WHITMAN AND ALLEN D. ROBERTS, OF ROCK FALLS, ILLINOIS.

CAROUSEL.

1,068,472. Specification of Letters Patent. Patented July 29, 1913.

Application filed November 10, 1908. Serial No. 461,919.

To all whom it may concern:

Be it known that we, FRANK B. WHITMAN and ALLEN D. ROBERTS, citizens of the United States, residing at Rock Falls, in the county of Whiteside and State of Illinois, have invented new and useful Improvements in Carousels, of which the following is a specification.

This inventions relates to fly-arounds, or as they are sometimes termed merry-go-rounds, the object of the present invention being to provide a light, simple, durable and cheap amusement device of the character referred to by means of which the occupants are enabled to propel themselves or rather the movable part of the device by which they are carried, the actuating mechanism being of such construction as to enable one or more of the occupants to propel the machine with any desired speed.

With the above general object in view, the invention consists in the novel construction, combination and arrangement of parts herein fully described and claimed.

In the accompanying drawings, Figure 1 is a broken elevation of the complete apparatus showing the base or foundation support therefor. Fig. 2 is an enlarged vertical central section, showing the center shaft and the parts mounted thereon. Fig. 3 is a plan view of the driving gear, showing the center shaft and one of the collars in horizontal section. Fig. 4 is a detail section showing the rack and dog elements of the driving mechanism. Fig. 5 is a detail section on the line 5—5 of Fig. 4. Fig. 6 is a plan view of the ball race plate. Fig. 7 is a plan view of the spider showing portions of the main carrying arms. Fig. 8 is an enlarged detail cross section through one of the main carrying arms, showing one form of clamp for holding the arm on the spider. Fig. 9 is a similar section showing the modified form of clamp or fastening device.

Referring to the drawings, 1 designates a table upon which the device of this invention is mounted and adapted to turn, the table 1 being mounted upon a suitable table support 2 which is in turn mounted upon a base or foundation 3. The base referred to may be of any suitable or preferred construction and arrangement, the object of the same being to form a table or support of cheap construction for the merry-go-round or fly-a-round forming the subject matter of this invention.

The device of this invention comprises a ball race plate 4 which is mounted upon the table 1 and secured thereto in any convenient manner. This ball race as shown in Fig. 6 comprises an annular channel 5 in which is arranged a circular series of anti-friction balls 6. Said plate is also shown as comprising the radiating lugs 7 provided with holes 8 to receive fasteners for securing the plate to the table 1. Secured centrally to the plate 4 is a center shaft 9 which is keyed to the plate 4 as shown at 10, the ball race plate and the center shaft both being held stationary.

Supported by the ball bearing hereinbefore described is a spider 11 embodying a series of radiating legs for the support of a corresponding number of main carrying arms 13. The spider 11 is provided with a central upstanding bearing sleeve 14 within which is arranged a circular series of vertically extending rollers 15 which bear against and travel around the center shaft 9 as shown in Figs. 2 and 7. The construction described provides for an effective bearing between the ball race plate and the spider supporting the main carrying arms 13 which may thus revolve with perfect freedom.

Each of the arms 13 is secured at its inner end to the body of the spider by means of a bolt or its equivalent as shown in Fig. 2. It is further secured to the outer end of the respective spider leg by means of a clamp 17 which may be either in the form of an eye bolt as shown in Fig. 8 or a plain bolt as shown in Fig. 9. In order to make the connection doubly secure, the spider leg is provided at or near its outer end with a chair or seat block 18 shaped to partially embrace and receive the arm 13 as shown in Figs. 8 and 9, said arm being preferably tubular, being in fact formed out of a piece of pipe of suitable length and gage. The clamp 17 acts to hold the arm tightly against the seat 18. In this way each of the main carrying arms 13 is firmly secured to the spider so that all of the arms are mounted for simultaneous rotation.

On the outer end of each arm is mounted a passenger carrying element 19 which is for convenience shown in the form of a seat having extending downward from the bottom thereof a sleeve or socket piece 20 which has an opening therein conforming to the cross sectional shape of the arm 13 and held

in place on said arm at any point by means of a set screw 21. Extending downward from the sleeve 20 is the supporting standard 22 of a foot rest 23 shown in the form of a cross bar upon which the passenger may place his feet while sitting on the seat or carrying element 19. The above described connection between the seat and the carrying arm provides for tilting the seat to any angle relatively to a horizontal plane and also adjusting the seat inward or outward lengthwise of the carrying arm.

Above the sleeve 14 there is arranged a collar 24 which is held in fixed position on the center shaft by means of a set screw 25. Between the collar 24 and the sleeve 14 there is interposed a washer 26 to take the wear of the upper extremity of the sleeve 14 in the rotation of the latter.

Mounted fast on the center shaft 9 above the collar 24 is the central collar or hub 27 of an annular rack 28, 29 designating a set screw for fastening said rack to the center shaft to prevent rotation of the rack. The rack comprises an annular rack race 30 which is adapted to be engaged by one or more dogs 31 carried by a corresponding number of operating levers 32. The main body portions of the levers 32 may be composed of wood and may be of any suitable length according to the size of the machine. At their inner ends the levers 32 have fast thereon quadrant shaped extensions 33 each of which is provided with a bearing collar 34 which embraces and is adapted to turn on the shaft 9. Where two or more of such levers are employed, the collars 34 thereof are arranged so as to be superimposed one upon the other as shown in Fig. 2. Above the collars 34 is arranged a combined cap or socket piece 35 of tubular form the same being held in fixed relation to the center shaft 9 by means of a set screw 36. If desired, the upper end of the cap may be reduced as shown at 37 and provided with a set screw 38 for clamping in place a pole 39 adapted to rest on the upper end of the shaft 9 and to support a flag, canopy or any other desired device.

In order to prevent the levers, or more particularly the quadrants or hub members 33 from dragging on the teeth of the rack and producing excessive wear and noise, the circular rack 28 has a circular track 28^a disposed concentrically with the rack teeth 30, and on the under side of each hub frame 33 is a boss or lug 33^a, Fig. 4, which bears on the track 28^a and serves to hold the under side of the frame 33 raised from and out of engagement with the rack teeth 30, as shown in Fig. 5. It will be noted that the frames 33 of the operating levers are disposed in a common plane, the purpose being that whenever a lever accidentally slips from the hand, it will drag for an instant and then be engaged by the quadrant or frame 33 of the other lever, thereby preventing the levers from coming together and injuring the hands of the child holding such other lever. The quadrant frames extend wholly from one side of the levers and when one lever is freed and engaged by the approaching frame 33 of the other lever, the levers will move together while at an angle of ninety degrees to each other, and as the seats are arranged ninety degrees apart, the freed lever can be taken up by the child sitting in the seat nearest thereto, and the lever behind can be released so as to pass to the child sitting in the seat diametrically opposite to that one where the child holding the front lever is seated.

Each of the extensions 33 is provided with upwardly extending parallel ribs or flanges 40 between which the lever 32 is received. The lever 32 may be bolted to the quadrant extension 33 in any convenient manner while said extension is held in proper relation to the annular rack 30 by means of a guard clip 41, the latter being secured to the quadrant extension and projecting under the bottom of the rack as shown in Figs. 2 and 4. This prevents the levers from being lifted high enough to disengage the dogs 31 from the rack 28. It is also preferred to provide each of the quadrant extensions 33 with an upstanding housing 42 within which the dog 31 is contained and pivotally mounted as shown in Fig. 5.

It will be noted that one of the clips 41 is located at the lever 32, of the quadrant, so that the engagement of the clip with the fixed annular rack will prevent any upward movement of the lever which might tend to snap the quadrant at its hub or collar 34, and the other clip serves to maintain the pawl on the quadrant always in cooperative relation with the annular rack.

It is preferred to terminate the elements 32 adjacent to the inner sides of the seats 19 as shown in Fig. 1 so that the passenger occupying said seat may swing the lever 32 forward and backward past his body, it being understood that during such movement of the lever 32, the dog carried thereby will engage the stationary rack 28. This enables the operator to impart movement to all of the main carrying arms 13 through the medium of the connecting spider 11, and the speed of travel of the passenger carrying elements 19 may be regulated by the dexterity with which one or more of the levers 32 are operated.

The quadrant 32 constitutes one of the most important features of this invention and renders the operation practical and reliable. By arranging the lever 32 to extend outward from one of the outer corners of the quadrant and by locating the pawl or

dog at the other outer corner of the quadrant and combining the retainer clips with the quadrant in the manner described and shown, the quadrant is held in a perfectly steady and firm position relatively to the stationary rack, doing away entirely with any tendency of the lever and the dog to twist, turn and become wholly or partially inefficient. The quadrant also forms an effective support for the lever when the machine as a whole is at rest.

We claim:—

In an apparatus of the class described, the combination with a support, a stationary shaft carried by said support, passenger carrying means rotatably mounted upon said shaft, an annular rack fixed to said shaft above said passenger carrying means, a plurality of quadrant extensions rotatably mounted upon said shaft in superimposed relation to each other, each of said extensions being provided with parallel ribs to form a channel therein, operating levers mounted in said channels and secured to said extensions, a guard clip carried by each of said extensions and adapted to engage said annular rack, whereby said levers are prevented from disengagement with said extensions, said extensions being provided with housings, and a dog pivotally mounted in each of said housings and adapted to engage said annular rack for rotating the same when said operating levers are moved in one direction.

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

FRANK B. WHITMAN.
ALLEN D. ROBERTS.

Witnesses:
JOHN M. STAGER,
JOHN H. S. LINK.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."