March 31, 1925. 1,531,500

O. B. PICKETT

MERRY-GO- ROUND HUB

Filed July 29, 1924

Fig. 1.

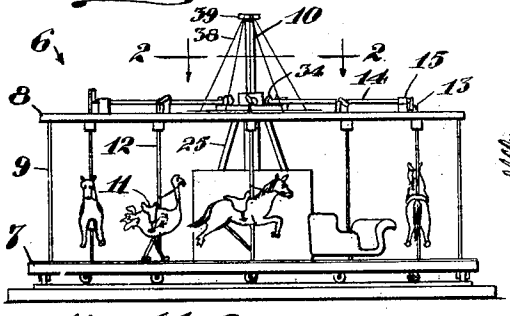
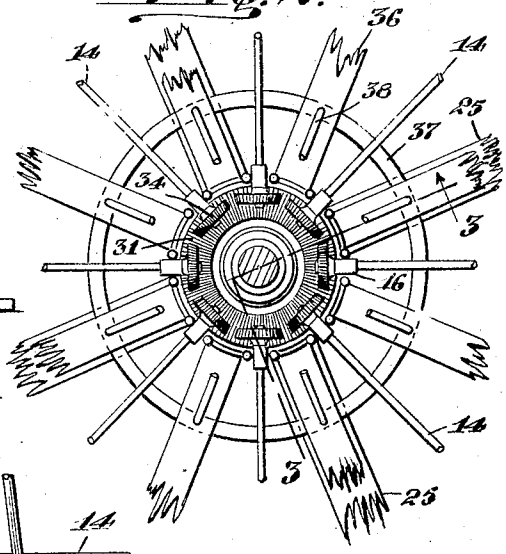


Fig. 2.



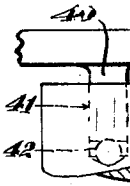


Fig. 3.

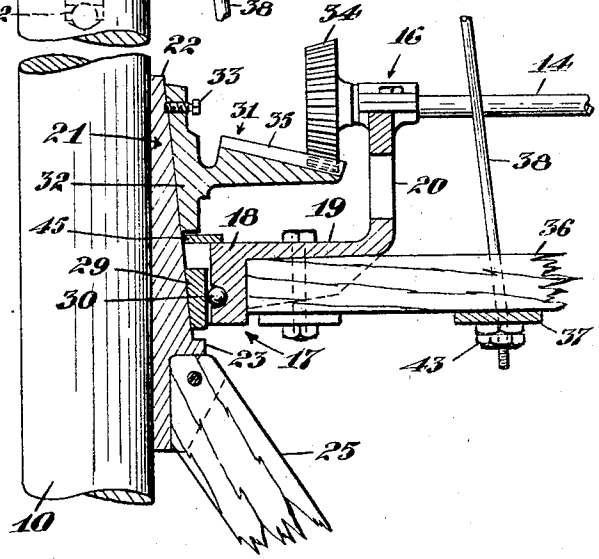


Fig. 4.

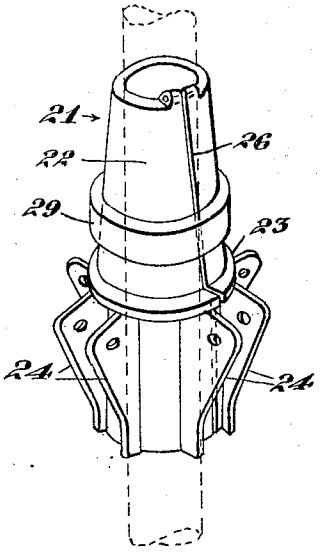
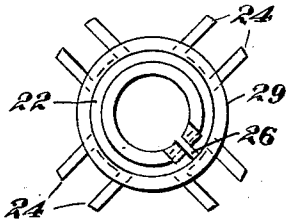


Fig. 5.



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UNITED STATES PATENT OFFICE.

OLIVER B. PICKETT, OF LONG BEACH, CALIFORNIA.

MERRY-GO-ROUND HUB.

Application filed July 29, 1924. Serial No. 728,881.

To all whom it may concern:

Be it known that I, OLIVER B. PICKETT, a citizen of the United States, residing at Long Beach, in the county of Los Angeles and State of California, have invented new and useful Improvements in Merry-Go-Round Hubs, of which the following is a specification.

This invention particularly pertains to the overhead support and bearings for merry-go-rounds, carrousels, and the like, and also relates to the mechanism for effecting actuation of the carriage-seats or figures embodied in a merry-go-round to impart vertical motion thereto while being advanced.

In the construction of merry-go-rounds of a well known type, a rotary platform is provided on which is mounted a series of vertically movable seats usually designed in representation of figures such as animals and birds and which are equipped with seats for riders, and further embodies a stationary central standard on the upper portion of which is revolubly supported the inner portion of an overhead or super-structure carried by the rotary platform. It is the purpose of my invention to provide an effective means whereby the vertical movement of the seats may be accomplished from overhead and contemplates the provision of a hub, a bearing and a support for the superstructure, embodying the driving mechanism for actuating the seats, which is so constructed as to be easily assembled so as to permit ready removal and replacement thereof.

Another object is to provide in a structure of the above character, a circular toothed-rack and a substantial mounting therefor on the standard, and to provide a means whereby a series of pinions meshing with said rack and adapted to traverse same may be adjusted to properly seat thereon and whereby the pinions and rack may be relieved of supporting any portion of the load of the merry-go-round super-structure.

With the foregoing objects in view, together with such other objects and advantages as may subsequently appear, the invention resides in the parts and in the construction, combination and arrangement of parts hereinafter described and claimed and illustrated by way of example in the accompanying drawing in which:

Figure 1 is a view in side elevation of a merry-go-round, embodying the invention.

Figure 2 is a view in horizontal section as seen on the line 2—2 of Figure 1.

Figure 3 is a view in vertical section and elevation, as seen on the line 3—3 of Figure 2.

Figure 4 is a perspective view of the bearing sleeve.

Figure 5 is a plan view of the bearing sleeve.

More specifically 6 indicates a merry-go-round which embodies a rotary platform 7, an overhead frame or super-structure 8 supported at its outer portion by standards 9 carried by the platform, a stationary central standard 10, and seats 11 carried by vertically reciprocal rods 12, which rods 12 are guided in suitable bearings at their lower ends and have their upper ends pivotally connected to cranks 13 on shafts 14 carried by the super-structure 8 and extending radially from the standard 10. The outer end portions of the shafts 14 are journaled in bearings 15 adjacent the cranks 13 and have their inner end portions journaled in bearings 16.

In carrying out the invention, the bearings 16 are carried on a hub 17 comprising an annulus 18 having a horizontally extending flange 19 projecting from the upper portion thereof and which flange is turned upwardly at its outer portion to form a wall 20.

Encompassing the standard 10, is a sleeve 21 particularly shown in Figure 4, which sleeve is formed with a tapered upper end portion 22 converging upwardly from an annular flange 23 formed on the sleeve and spaced from the lower edge of the latter, and formed on the sleeve beneath the flange 23 is a series of pairs of lugs 24 adapted to receive the upper ends of braces or struts 25 which extend downwardly and outwardly at an incline and seat at their lower ends on a suitable fixed support; the struts and sleeve serving as a support for the upper end portion of the standard 10. The sleeve 21 is designed to be rigidly clamped to the standard 10 and to this end the sleeve is divided longitudinally as indicated at 26 whereby the sleeve may be contracted into clamping engagement with the standard 10.

The sleeve 21 is positioned on the standard so that its tapered portion will extend through the hub 17 and encircling the sleeve is a ring 29 the inner face of which is beveled to conform to the taper of the sleeve; this ring being driven downwardly on the sleeve

to effect wedge engagement therewith and act to contract the sleeve against the standard. The outer circumferential face of the ring 29 extends in close proximity to the inner peripheral face of the hub 17 and serves as a bearing for the latter. If desirable, roller or ball-bearings 30 may be interposed between the hub 17 and the ring 29; the hub 17 being designed to rotate around the ring 29.

An annular toothed rack 31 is provided which rack is formed on a collar 32 adapted to seat on the upper end portion of the tapered sleeve, the collar 32 being formed with a beveled inner periphery to conform to the taper on the sleeve. This collar is driven on to the sleeve and will effect wedge action thereon and will thereby cooperate with the ring 29 in clamping the sleeve on the standard. A set screw 33 is mounted in the collar 32 and is adapted to engage the sleeve 21 to hold the sleeve and collar against relative movement.

Mounted on the inner ends of the radial shafts 14 are pinions 34 which mesh with upwardly extending teeth 35 of the rack 31.

The hub 18 is carried on radial timbers 36 embodied in the super-structure 8; the inner end portions of which timbers seat on a ring 37 which is suspended from rods 38 depending from a rotary plate 39 carried on the upper end of the standard 10, the plate 39 being formed on its underside with a stem 40 projecting downwardly into a socket bearing 41 on the end of the standard and seating on a ball thrust-bearing 42.

The lower ends of the rods 38 pass through the radial timbers 36 and through the ring 37 and have their lower end portions threaded to receive nuts 43. The upper ends of the rods 38 extend through openings in the plate 39 and are threaded to receive nuts 44.

The load of the inner portion of the super-structure is designed to be carried by the depending rods 38, plate 39 and bearing 42 whereby this load will not be imposed upon the pinion 34 and rack 31; it being desirable that the pinions 34 seat on the rack in running engagement therewith, and not under load, so as to reduce wear of the pinion and rack to a minimum.

As a means for stabilizing the hub 18 and to minimize vertical movement thereof, a shim 45 in the form of a ring is interposed between the lower edge of the collar 32 and extending over the upper face of the hub as shown in Figure 3.

This shim is put in place after the hub is positioned around the bearing ring 29 and before the collar is assembled on the sleeve, and is formed of a thickness to allow a slight clearance between it and the collar after the latter is driven to its seated position.

An important feature of the invention resides in forming the bearings integral with the hub 18, which construction facilitates forming the bearings in true radial alignment with the axis of the hub, and also obviates racking and disarrangement of the bearings due to shifting of the timbers 36 under the strains imposed thereon when the merry-go-round is in operation.

The application of the invention is apparent from the foregoing, it being seen that the parts may be readily assembled and disassembled, which is particularly advantageous in the construction of merry-go-rounds that are designed to be frequently taken down and set up, and that proper seating of the pinions on the rack may be readily effected.

The operation of the invention is also manifest, it being obvious that on rotation of the platform 7, which may be accomplished in any desired manner, the super-structure 8 will be revolved therewith around the standard 10 and thereby cause the pinions 34 to traverse the rack 31 whereby the shafts 14 will be rotated and vertical reciprocation of the seat carrying rods 12 effected.

While I have shown and described a specific embodiment of the invention, it is manifestly subject to modification and I accordingly do not limit myself to the exact construction and arrangement shown, as I may employ such changes, modifications and equivalents of the parts as come within the spirit of the invention as defined in the appended claims.

I claim—

1. In a merry-go-round, a standard, an annular toothed rack encircling said standard, a super-structure revoluble around said standard, a rotary shaft carried by said super-structure, a pinion on said shaft meshing with said rack, a rotary plate journaled on said standard above said rack, and adjustable depending rods suspending said super-structure from said plate.

2. In a merry-go-round, a standard, an annular toothed rack encircling said standard, a super-structure revoluble around said standard, a rotary shaft carried by said super-structure, a pinion on said shaft meshing with said rack, a rotary plate journaled on said standard above said rack, adjustable depending rods suspending said super-structure from said plate, and a guide bearing between said super-structure and standard.

3. In a merry-go-round, a standard, a sleeve on said standard, an annular toothed rack carried by said sleeve, a revoluble super-structure mounted to rotate around said standard, a hub on said super-structure encircling said sleeve, a guide bearing between said hub and sleeve, rotary shafts carried by

said super-structure, pinions on said shafts meshing with said toothed rack, and means for supporting said super-structure adapted to be adjusted to enable proper seating of the pinions on the rack.

4. In a merry-go-round, a standard, a split sleeve, encircling said standard, a demountable annular toothed rack carried by said sleeve, means whereby mounting said rack on said sleeve will effect clamping engagement of the sleeve on the standard, a super-structure mounted to rotate around said standard, rotary shafts carried by said super-structure, pinions on said shafts meshing with said rack, and a guide bearing between said super-structure and sleeve.

5. In a merry-go-round, a standard, a split sleeve encircling the standard and having a tapered upper end portion, an annular toothed rack adapted to encircle said sleeve and to seat on the tapered portion thereof to effect clamping engagement between said sleeve and standard.

6. In a merry-go-round, a standard, a split sleeve encircling the standard and having a tapered upper end portion, an annular toothed rack adapted to encircle said sleeve and to seat on the tapered portion thereof to effect clamping engagement between said sleeve and standard, and struts supporting said sleeve on said standard.

7. In a merry-go-round, a standard, a sleeve adapted to encircle said standard having a tapered upper end portion, a ring seating on said sleeve, an annular toothed rack encircling the sleeve and seating on the tapered portion thereof, a super-structure mounted to rotate around said standard, a hub on said super-structure encircling said ring and forming with the latter a guide bearing, rotary shafts on said super-structure and pinions on said shafts meshing with said rack.

8. In a merry-go-round, a standard, a sleeve adapted to encircle said standard having a tapered upper end portion, a ring seating on said sleeve, an annular toothed rack encircling the sleeve and seating on the tapered portion thereof, a super-structure mounted to rotate around said standard, a hub on said super-structure encircling said ring and forming with the latter a guide bearing, rotary shafts on said super-structure, pinions on said shafts meshing with said rack, and bearings carried by said hub in which said shafts are journaled.

9. In a merry-go-round, a standard, a sleeve adapted to encircle said standard having a tapered upper end portion, a ring seating on said sleeve, an annular toothed rack encircling the sleeve and seating on the tapered portion thereof, a super-structure mounted to rotate around said standard, a hub on said super-structure encircling said ring and forming with the latter a guide-bearing, rotary shafts on said super-structure, pinions on said shafts meshing with said rack, bearings carried by said hub in which said shafts are journaled, and means for supporting said super-structure independent of said rack and bearing.

OLIVER B. PICKETT.