J. F. HARTMEISTER.

ROUNDABOUT.

APPLICATION FILED DEC. 18, 1914.

1,202,710.

Patented Oct. 24, 1916.

2 SHEETS—SHEET 1.

Fig. 1.

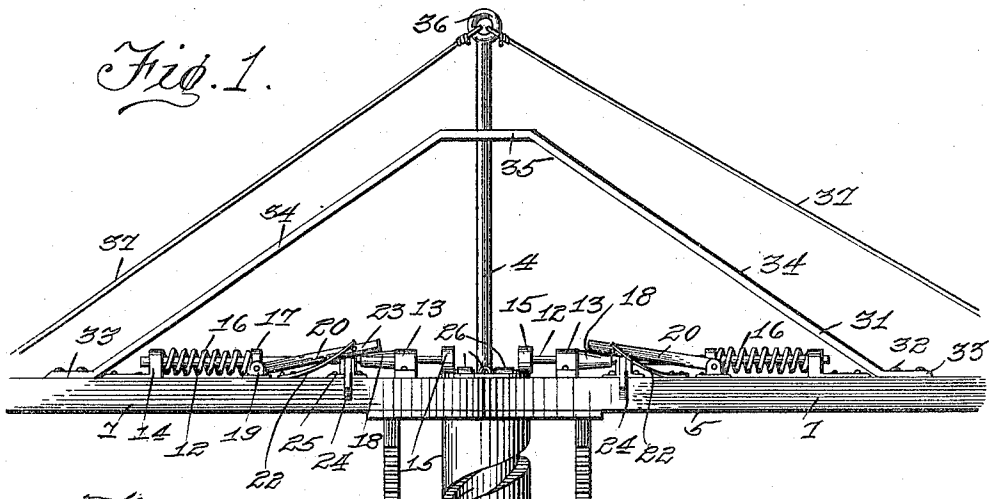
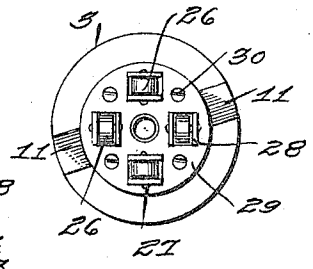
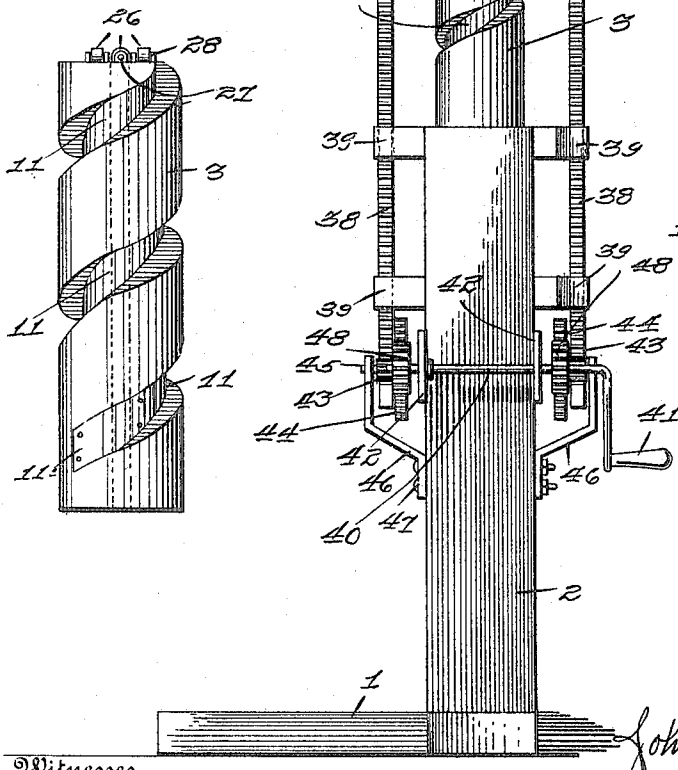


Fig. 2.

Fig. 3.





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2 SHEETS—SHEET 2.

Fig. 4.

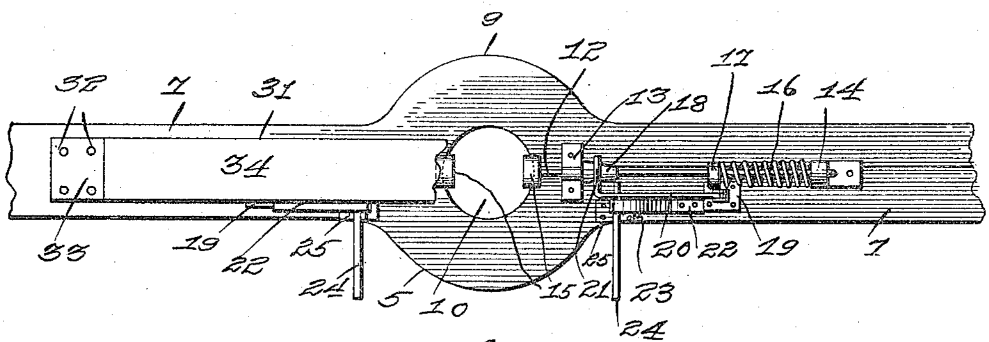


Fig. 6.

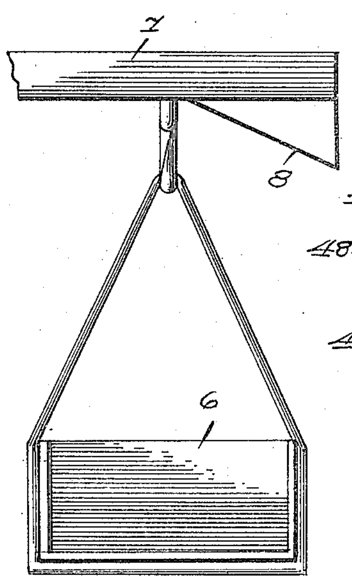


Fig. 5.

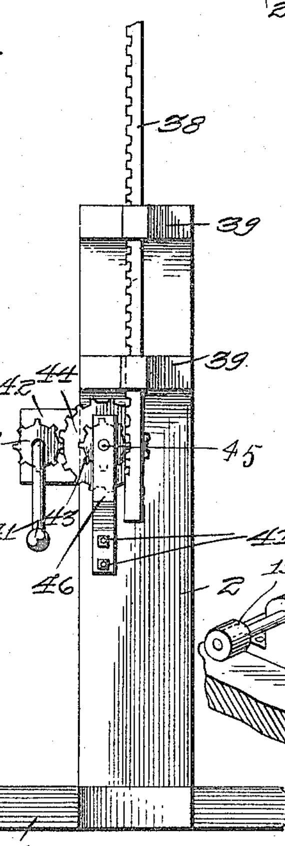
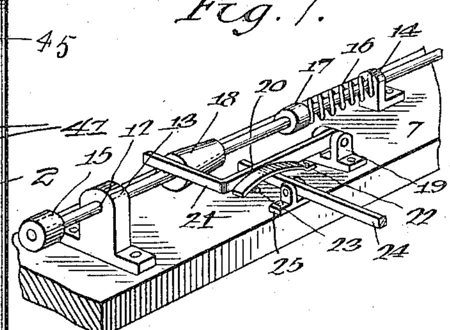


Fig. 7.



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UNITED STATES PATENT OFFICE.

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ROUNDABOUT.

1,202,710. Specification of Letters Patent. Patented Oct. 24, 1916.

Application filed December 18, 1914. Serial No. 877,919.

To all whom it may concern:

Be it known that I, JOHN F. HARTMEISTER, a citizen of the United States, residing at Altamont, in the county of Effingham and State of Illinois, have invented certain new and useful Improvements in Roundabouts, of which the following is a specification.

My invention relates to amusement apparatus and more particularly to a rotary swing or roundabout.

The main object of the invention is to provide apparatus of this nature having its rotary movement imparted by means traveling in a spiral path and assisted by the weight of the occupant after a start, and means to support the said means without undue friction after such movement for continued rotary movement but in its lowermost position until the velocity gained by travel in the spiral path has been spent.

Another object of the invention is to provide a means on the rotary structure or carrier adapted to travel in a spirally arranged path and means to coöperate therewith to move the same out of the path mentioned at the lower extremity thereof to permit rotation of the rotary structure in a single plane.

A further object of the invention is to provide an effective manually operable means to lift the rotary structure after rotary movement to position preparatory for the succeeding rotary movement.

With a view to attaining the foregoing objects as well as additional objects, as will become apparent from the description hereinafter following taken in connection with accompanying drawings illustrating the preferred embodiment, the invention resides in certain novel features of construction, combination and arrangement of parts.

In said drawings, Figure 1 is a view in elevation, partly broken away, illustrating my improved roundabout; Fig. 2 is a detail enlarged side elevation of the track post; Fig. 3 is an enlarged plan or top view of the track post; Fig. 4 is a plan or top view, partly broken away, from the rotary carrier structure; Fig. 5 is an elevation illustrating the standard and lift means carried thereby; Fig. 6 is a detail illustrating the means for supporting a carriage or the like from the carrier structure, and Fig. 7 is a detail perspective view illustrating one of the retractile shafts and its latch means.

Referring specifically to the drawings, wherein like reference characters designate like or similar parts, a conventional base is shown at 1 upon which is mounted a standard 2, in turn having mounted thereon a track post 3 on the top of which a guide pole or rod 4 is fastened.

A rotary carrier structure is shown and designated as a whole at 5, which may be of any preferred construction. Seats or carriages 6 as seen in Fig. 5, may be pendently supported from the carrier structure, specifically from diametrically opposite arms thereof designated 7. These arms may have suitable weights 8 fastened thereto so as to give the carrier the proper weight for the best results. Said arms 7 radiate from a hub 9 which is also a part of the carrier 5, and which has a central opening 10 through which the post 3 extends.

Post 3 is provided with one or more spirally arranged track grooves 11. Specifically two of these grooves are shown in the drawings, see Fig. 3, and in the grooves suitable means mounted on the carrier 5 is adapted to extend and travel so as to impart rotary movement to carrier 5. To this end, two diametrically alined shafts 12 may be provided which are adapted to extend into the grooves 11. To avoid undue friction, shafts 12 are rotatably mounted as by means of bearings 13 and 14 fastened to the carrier 5. In addition the inner ends of the shafts may carry fixed wheels 15 which project over the opening 10, normally, as seen in Figs. 1 and 3, which travel on the lower walls of the grooves 11. The grooves 11 do not extend to the lower end of the post 3 but terminate at the periphery of the post midway of its ends in order to provide cam faces which are reinforced by metal plates 11′. The wheels 15 bear against the metal plates 11′ which causes the wheels and shafts to move out of projected position and into position where the latches later to be described will engage the shafts 12 beyond their inner ends to maintain the shafts in retracted position.

Around shafts 12 are disposed coil expansion springs 16 which bear against bearings 14 and against stops 17 fixed to the shafts 12, serving to project the wheels 15 into grooves 11. The extent of projection or movement of the shafts 12 toward the axis of the hub 9 is limited by means of stops or abutments 18, which engage the bearings 13 as seen in Figs. 1 and 4. At times, shafts 12 should be fastened with the wheels 15 in retracted position for a purpose later to be explained, and therefore means to fasten the shaft in retracted position is provided, which will now be described. On the arms 7 suitable brackets 19 are fastened to which are pivoted latches 20 adapted to swing in a vertical plane and which have lugs 21 adapted to fall on the shafts 12 intermediate brackets 13 and abutments 18, when shafts 12 are retracted, and to be engaged by the abutment 18 to prevent return movement. Leaf springs 22 are fastened to the arms 7, and engage lugs 23 on the latches 20 and serve to draw the latches downwardly. In order to raise the latches to release shafts 12 at proper times, levers 24 are provided which extend under and against the latches as seen in Fig. 4, and which levers are pivoted to bracket 25 mounted on the arms 7.

On the top of the track post 3, suitable bearing means is provided, for instance the rollers 26 which are pivoted on shafts or pins 27 mounted in lugs 28 extending upwardly from a plate 29 fastened to the post as by means of screws 30. In its lowermost position, the carrier 5 is supported from the said rollers or bearings 26 and to this end a bearing member 31 is secured to the carrier as by bolts 32 which extend through feet 33 of the bearing. From the said feet 33 inwardly converging arms 34 rise, which are connected to a horizontally disposed bearing plate 35 of the bearing 31. Plate 35 directly engages the bearings 26 when the carrier is in its lowermost position. Also this bearing 35 is provided with a central aperture through which the pole 4 extends.

In order to brace the structure, an eyelet 36 may be formed at the top of the pole 4 and have connected thereto suitable stays 37 which are also connected to posts, trees, or other stationary objects.

From the standard, suitable means is supported which is operable to lift the carrier after turning movement, for the succeeding operation or movement, which may be as follows: Vertically movable lifting members in the form of rack bars 38 are slidably mounted in guide brackets 39 fastened to standard 2. The bars 38 are independent of the carrier and simply abut or engage the under surface thereof at the hub 9 when the carrier is being raised. An operating shaft 40 having a handle or crank 41 is mounted in bearings 42 from the standard 2 and is adapted to operate improved gearing to elevate or lower the rack bars 38. Meshing with the teeth of the rack bars 38, are pinions or gear wheels 43 which are integral with larger gear wheels 44 and which are mounted on a shaft 45 parallel with and in the same horizontal plane as shaft 40 and supported in suitable openings in the standards 2 and in brackets 46 fastened to the standards as by means of bolts 47. Shaft 40 carries gear wheels 48 which mesh with the gear wheels 44.

In operation, when it is desired to rotate the carrier 5, the lifting or elevating bars 38 should be in their lowermost position, in which position, their upper ends will be so disposed as not to contact with the carrier when in its lowermost position. With the members 38 lowered, and the occupants seated in carriages or the equivalent, such as 6, and with the wheels 15 resting upon the upper end of the track post 3 as seen in Fig. 1, the carrier member is initially manually turned until the wheels 15 move to a position directly above the grooves 11 whereupon the wheels will move in the grooves, following them, and causing the carrier to rotate and move downwardly. The downward movement continues until plate 35 engages the bearings 26, when the carrier will continue to rotate, but in a single plane, until the velocity obtained by the combined rotary and downward travel has been spent. The provision of the rollers 26, greatly reduces the friction and enables the carrier to rotate longer as a result. When the rollers 15 while traveling in the grooves 11 however, engage the cam plates 11', the rollers 15 and shafts 12 are moved away from the post 3, by sliding in the bearings 13 and 14, until the abutments 18 pass the lugs 21, when the springs 22 will move the lugs 21 against the shafts 12 to prevent the springs 16 from returning the shafts to projected position. When the shafts 12 are thus retracted, the rollers 15 and shafts will not in any way obstruct the rotation of the carrier around the post 3. After an operation, in order to lift the carrier for the succeeding operation, crank 41 is turned so as to turn shaft 40, gear wheels 48, 44 and 43 so that gear wheels 43 will slide or elevate the lift bars and the carrier therewith. When this carrier is in starting position, the levers 24 may be manually adjusted so as to free the abutments 18 in order that spring 16 may again urge the shafts 12 and wheels 15 into projected position. Prior to the succeeding operation, crank 41 is turned in a reverse direction to lower the lift members 38.

It is to be understood that inasmuch as I have shown only the preferred embodiment

of my invention, that changes in the details of construction, arrangement and combination of the parts may be resorted to without departing from the spirit and scope of the invention.

Having thus described my invention what I claim is:—

1. In a roundabout, means providing a track, a carrier, means on the carrier to overlap and rest on the said means out of said track to support the carrier against descent, and said second mentioned means being turnable to initially engage said track.

2. In a roundabout, means providing a track, a carrier, means on the carrier to overlap and rest on the said means out of said track to support the carrier against descent, and said second mentioned means being turnable to initially engage said track, and means on the first mentioned means to disengage the second mentioned means from the track after descent of the carrier.

3. In a roundabout, a carrier, means providing a track, retractile means normally projected to rest on said means out of said track, and to turn thereon to enter and follow said track to impart rotary motion to the carrier, means to disengage the retractile means from the track, and means operating during movement of the carrier to positively fasten said retractile means in retracted position after disengagement with the track.

4. In a roundabout, a carrier, means providing a track, retractile means normally projected to rest on said means out of said track and to turn thereon to enter and to follow said track to impart rotary motion to the carrier, spring means to urge said retractile means into projected position, means to disengage the retractile means from the track, and a fastening device positively operating during movement of the carrier to secure said retractile means into retracted position after disengagement with the track.

5. In a roundabout, a carrier, means providing a track to impart rotary motion to the carrier, movable means on the carrier to engage the track, and cam means associated with the track to be engaged by said means to disengage the carrier and track.

6. In a roundabout, a carrier, a track followed by said carrier to impart rotary motion to the carrier, said carrier having a retractile means to engage said track, means to normally urge said retractile means into projected position, means to shift said retractile means during rotation of the carrier, and means operating during movement of the carrier to fasten said retractile means against return movement after retraction.

7. In a roundabout, a carrier, means providing a spiral track, a slidable device on said carrier to engage said track, an abutment on said device, an expansion spring engaging said abutment, a second abutment on said device, a latch to engage said abutment to hold the device in retracted position, and means operable to shift said latch.

8. In a roundabout, a carrier, means providing a track, retractile means to follow said track to impart rotary motion to the carrier, a slidable member to follow said track to impart rotary motion to the carrier, a spring to urge said member into engagement with the track, an abutment on the said member, a latch to cooperate with said abutment to maintain the slidable member in retracted position, a spring to urge the latch into engagement with the abutment, and means to move said latch out of engagement with the abutment to permit the spring to urge the slidable member into projected position.

9. In a roundabout, a carrier, a post along which the carrier travels having a portion serving as a bearing element, a rod rising from the post, a bracing and bearing member rising from the carrier having a bearing element rising from the carrier, and said bearing elements adapted to engage when the carrier is in its lowermost position.

10. In a roundabout, a carrier, a post along which the carrier travels having a portion serving as a bearing element, a rod rising from the post, a bracing and bearing member connected to the carrier on opposite sides of the rod and having a bearing element rising from the carrier, said rod extending through said bearing member, said bearing elements adapted to engage when the carrier is in its lowermost position, and one of said elements being provided with friction-reducing means.

11. In a roundabout, a standard, a track member rising from said standard having a spiral track, a carrier through which said track extends, a retractile means on said carrier to overlap and rest on the track member, said means adapted to travel in said spiral track, means in said spiral track to shift the retractile means during rotary movement of the carrier, means operating during movement of the retractile means, to fasten it in retracted position, bearing means on said track member, a bearing on said carrier member engageable with said bearing means to limit the downward movement of the carrier and support it for rotation, and means mounted from said standard operable to elevate the carrier after rotation thereof.

12. In a roundabout, a carrier, a track along which the carrier travels, a bar normally disposed out of the path of travel of the carrier, said bar being slidable vertically independently of the track, and engageable with the carrier to support and

elevate the same, means to guide the bar for vertical sliding movement, and means to elevate the bar.

13. In a roundabout, a carrier, a track along which the carrier moves, a lifting bar for the carrier provided with teeth, means to support and guide said bar, a turnable shaft, means to support the shaft, and gear means traveling from said shaft to cooperate with the teeth of said bar to elevate the bar.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN F. HARTMEISTER.

Witnesses:
THOS. E. HOGAN,
MARY QUATMAN.