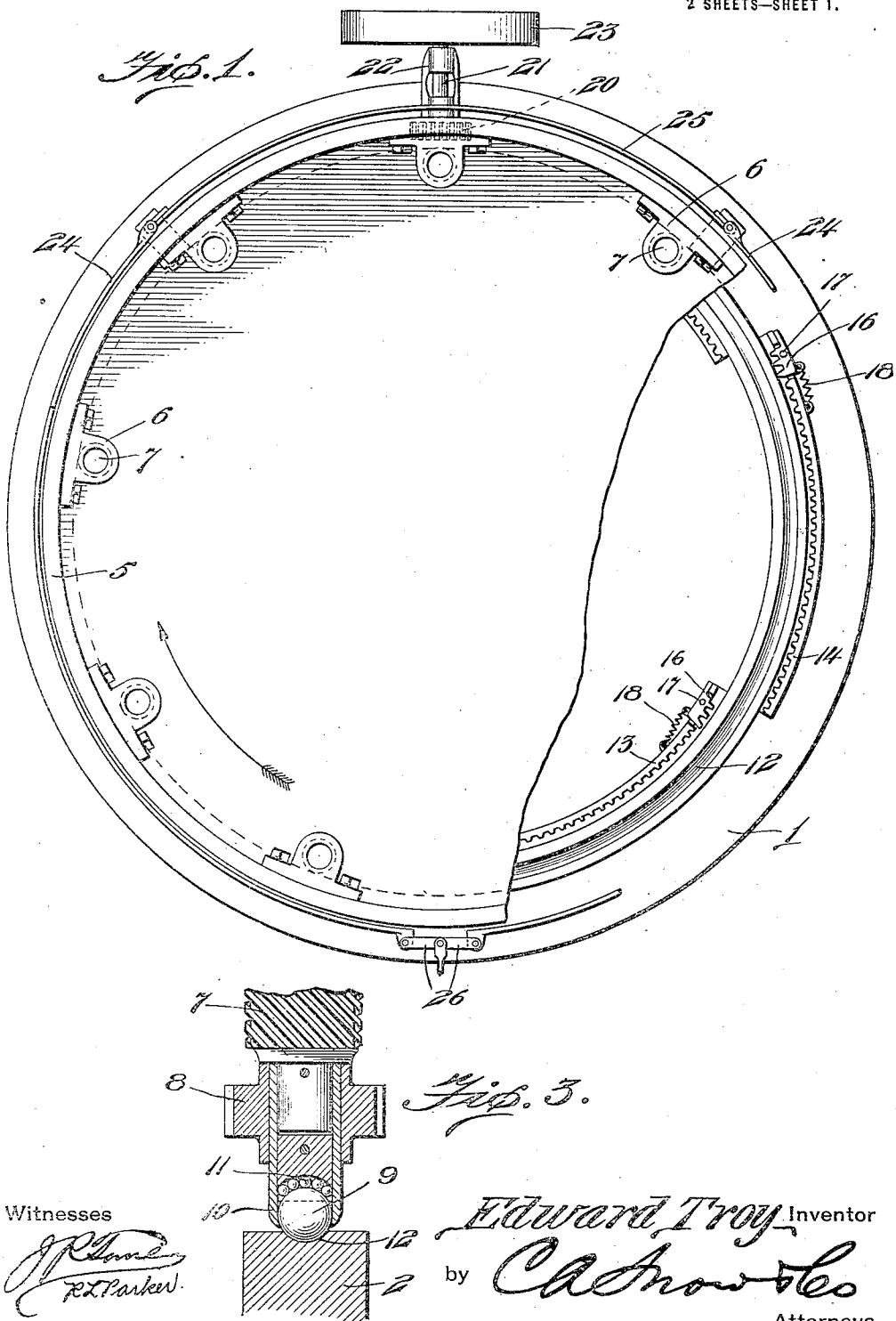


1,251,305.

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ROTARY MACHINE.  
APPLICATION FILED OCT. 13, 1916.

Patented Dec. 25, 1917.

2 SHEETS—SHEET 1.



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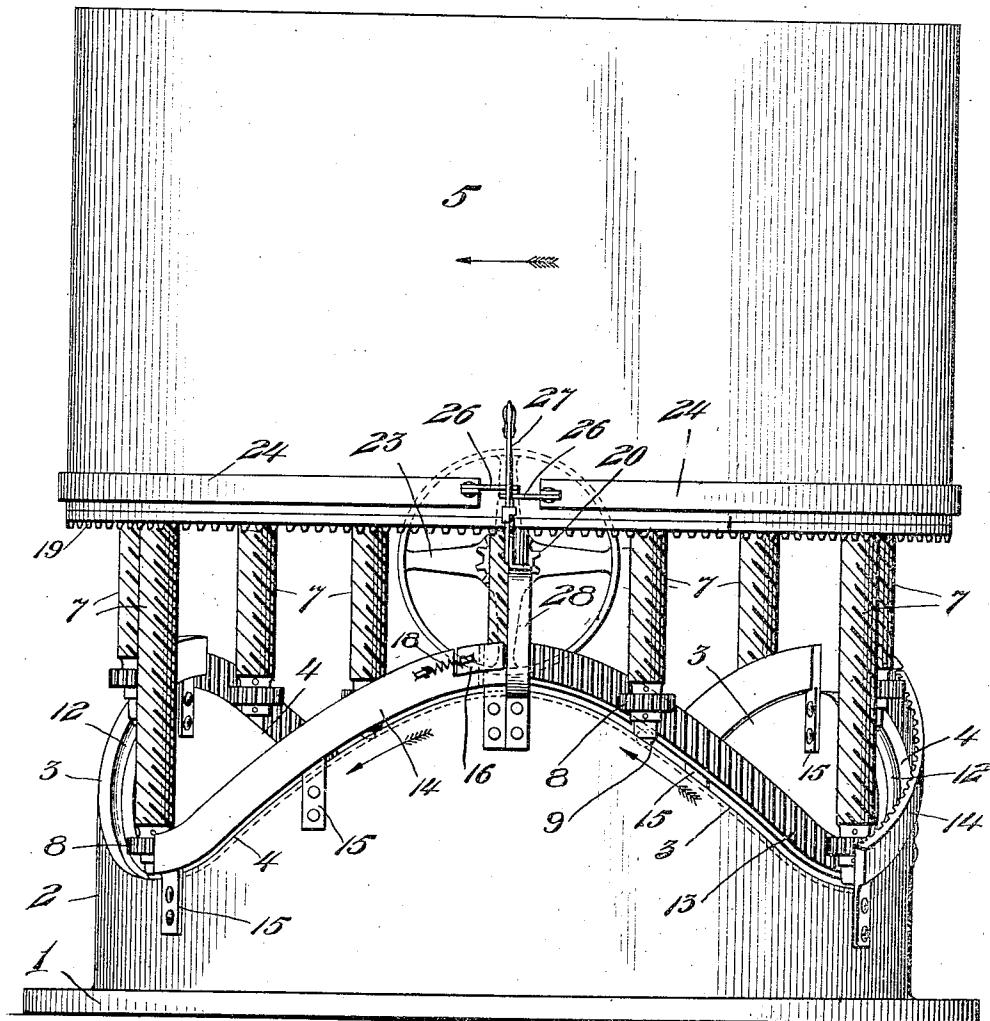
ROTARY MACHINE.

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2 SHEETS—SHEET 2.

*Fig. 2.*



Witnesses

*J. R. Jones*  
*R. L. Parker*

Edward Troy, Inventor  
by *Chas. Snodderly*,  
Attorneys

# UNITED STATES PATENT OFFICE.

EDWARD TROY, OF LACEY, IOWA.

## ROTARY MACHINE.

1,251,305.

Specification of Letters Patent. Patented Dec. 25, 1917.

Application filed October 13, 1916. Serial No. 125,431.

To all whom it may concern:

Be it known that I, EDWARD TROY, a citizen of the United States, residing at Lacey, in the county of Mahaska and State of Iowa, have invented a new and useful Rotary Machine, of which the following is a specification.

The present invention relates to improvements in a rotary machine, and aims to provide a machine embodying a member rotatable about a vertical axis and novel means supporting said member for rotary movement in a novel manner and actuated in a novel manner by the rotation of said member, the present machine being capable of use for various purposes, such as a carousel, merry-go-round or other amusement device.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed, can be made within the scope of what is claimed, without departing from the spirit of the invention.

The invention is illustrated in the accompanying drawings, wherein:—

Figure 1 is a plan view of the machine, portions being broken away.

Fig. 2 is a side elevation of the machine.

Fig. 3 is an enlarged sectional detail to illustrate the parts at the lower end of each screw.

The machine embodies a suitable base 1 provided with an annular upstanding track 2 provided with an upper sinuous or zig-zag edge having the upwardly and downwardly extending inclined portions 3 and 4, respectively.

Disposed above the base is a member 5 mounted for rotation about a vertical axis, and which can be used as a carousel, merry-go-round, or other rotated structure. Secured to the member 5, preferably within the same, are vertical bearings 6 in which downwardly extending screws 7 are threaded, and said screws are supported for vertical movement by the track 2, although the member 5 remains in the same horizontal plane.

Spur gears 8 are secured to the screws 7 at the lower ends thereof, and supporting balls 9 are disposed within socket members 10 carried by the lower ends of the screws, anti-frictional balls or

elements 11 being disposed between the balls 9 and the socket members 10 to reduce the friction. The balls 9 work in a continuous groove 12 with which the upper edge of the track 2 is provided, to enable the screws 7 to move along the track with minimum friction, suitable lubricating means being provided for lubricating the screws. The pitch of the screw threads must be in proportion to the inclinations of the upwardly and downwardly extending portions of the track, and the diameters of the pinions 8, whereby said screws are moved upwardly and downwardly properly during the rotation of the member 5.

In order to reverse the rotation of the screws 7 as they pass from the upwardly extending to the downwardly extending portions of the track, and vice versa, inner and outer racks 13 and 14 are provided with brackets 15 secured to the inner and outer sides of the track 2, and said racks extend along the upwardly extending and downwardly extending portions 3 and 4, respectively. As the screws 7 move up the portions 3, the gears 8 thereof mesh with the inner racks 13, and as the screws move down the portions 4, the gears 8 mesh with the outer racks 14, so that the screws are rotated in reverse directions. Thus, as the member 5 is rotated, the screws 7 are moved in an annular path or circuit, and the screws not only move around the track 2, but are reciprocated vertically and rotated in reverse directions about their axes, thus providing a novel arrangement, but the member 5 remains in the same horizontal position, although it is supported by the screws 7. When the screws 7 reach the portions 3, the gears 8 meshing with the racks 13 will rotate the screws in the proper directions to screw upwardly into the bearings or nuts 6, and when the screws reach the portions 4, the gears 8 in meshing with the racks 14 will rotate the screws in the opposite direction so that they are unscrewed. The screws thus follow the inclinations of the track in order that they will be reciprocated vertically.

As a means for cushioning the parts as the screws are reversed when moving from one rack to another, each rack 13 and 14 is provided at its forward end with a loose piece 16 pivoted to the rack, as at 17, and moved toward the track 2 under the influence of its spring 18. Thus when the

gear 8 of each screw moves from one rack to another, it first encounters the piece 16, which can yield, thus providing a cushion as the rotation of the screw is reversed.

5 In order to transmit the power for the rotation of the member 5, said member is provided with an annular rack 19 with which a pinion 20 meshes, said pinion being carried by a radial shaft 21 journaled in a 10 bracket 22 attached to the track 2. A pulley wheel 23 is carried by the shaft 21 for the reception of a power belt.

As a means for retarding the movement of the member 5, a brake band embodying 15 the sections 24 and 25 surrounds the member 5, and the ends of the brake band are connected by links 26 to a hand lever 27 fulcrumed to a bracket 28 attached to the track 2. Thus, when the lever 27 is swung away 20 from the member 5, the brake band is contracted to retard or stop the member 5.

Having thus described the invention, what is claimed as new is:—

1. An amusement machine embodying an 25 annular sinuous track, a rotary member, an annular series of screws threadedly connected to said rotary member and movable along said track, and means for reversibly rotating said screws as they move up and down the 30 portions of the track.

2. An amusement machine comprising an

annular sinuous track, inner and outer racks assembled with the track, a rotary member above the track, an annular series of screws threadedly connected with the rotary member and movable along said track to support 35 said member, and gears carried by the screws and alternately engageable with the inner and outer racks as the screws move on the upwardly and downwardly extending portions of the track.

3. An amusement machine comprising an annular sinuous track, inner and outer racks assembled with the track, a rotary member above the track, an annular series of screws threadedly connected with the rotary member and movable along said track to support 45 said member, and gears carried by the screws and alternately engageable with the inner and outer racks as the screws move on the upwardly and downwardly extending portions of the track, the racks having yieldable portions at their forward ends for the engagement of the gears as they move from one rack to another.

In testimony that I claim the foregoing 55 as my own, I have hereto affixed my signature in the presence of two witnesses.

EDWARD TROY.

Witnesses:

BESS MARTIN,  
FRANCES MEEK.

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