

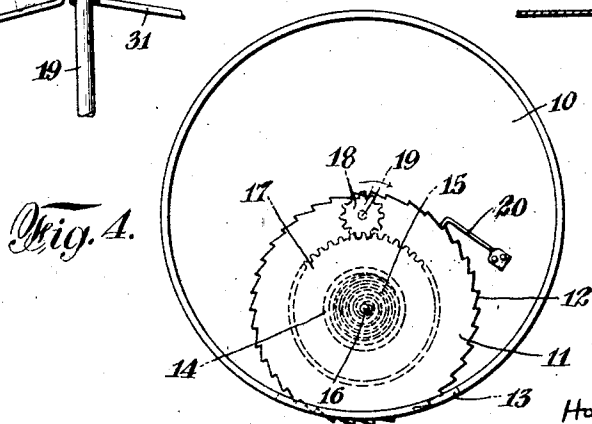
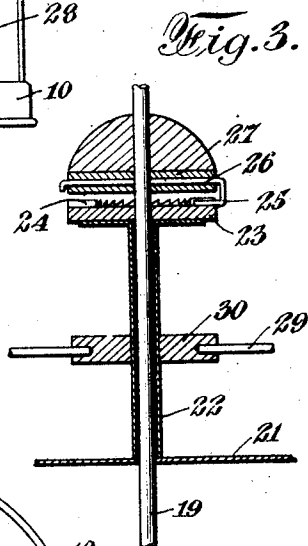
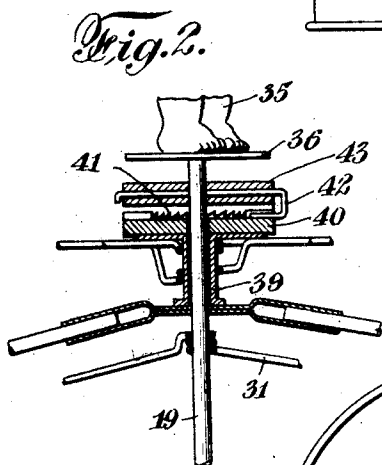
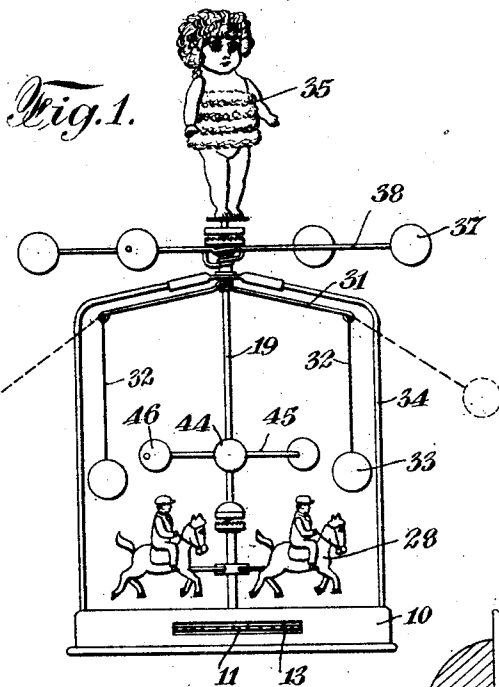
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1,681,310

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TOY ROUNDABOUT

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UNITED STATES PATENT OFFICE.

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TOY ROUNDABOUT.

Application filed December 14, 1926. Serial No. 154,661.

The present invention relates to an improved means for obtaining the rotation of objects and figures and is particularly adapted for application in connection with toy merry-go-rounds and similar apparatus.

In the toy merry-go-rounds which have been hitherto employed utilizing a spring motor as the driving means, the rotating objects have been directly coupled to the driving mechanism. Difficulty has been experienced with this type of apparatus owing to the fact that the spring motor when released winds down rapidly and causes very rapid rotation of the objects or figures which only exists for a short time.

In order to overcome the defects of the prior construction, I have provided an apparatus in which the action of the driving mechanism is periodically arrested for short intervals of time, resulting in a device in which the driving mechanism imparts a series of impulses at certain time intervals to the objects driven, the connection between the driving mechanism and driven elements being such as to result in a continuous rotation of said elements, although one necessarily fluctuating to some extent in speed.

The specific character of the invention and its novel features will be more readily apparent from the following description when taken in connection with the accompanying drawings in which:

Figure 1 is an elevational view of an apparatus constructed in accordance with the invention;

Figure 2 is a sectional view of a detail thereof;

Figure 3 is a sectional view of a further detail thereof; and

Figure 4 is a bottom view of the apparatus.

Referring now to the drawings in which like reference numerals indicate like parts throughout the several views, the invention is embodied in a toy comprising a container, 10, which serves both as a base and as a housing for the driving mechanism. In its preferred form, the driving mechanism includes a plate, 11, having notches or teeth, 12, on its periphery and located within the container. A slot, 13, is provided in the side of the container to permit access to the interior whereby the operator may rotate the plate to wind up the driving mechanism. The notches enable the operator to get a good operative engagement on the edge of the plate 11, with his finger tip. Within the con-

tainer also and rigidly associated with the plate, 11, there is a hollow drum, 14, within which is disposed a spiral spring, 15. The outer end of the spiral spring is attached to the interior of the drum and the inner end to the shaft, 16, which carries a gear, 17, meshing with a pinion, 18, on the shaft, 19. A wire, 20, or similar means is also provided, the wire being stationarily mounted within the container and having a hooked end which cooperates with the notches or teeth of the plate, 11, to permit it to be rotated in one direction only.

The shaft, 19, projects upwardly through the top of the container and serves as the axis around which the merry-go-round table 21, rotates. The table is rigidly attached to a tube, 22, loosely encircling the shaft, 19, so that both the tube and the table are free to rotate on said shaft. The upper end of the tube terminates in a flange, 23, having ratchet teeth, 24, on its upper face. Rotation is imparted to the tube and table by reason of the engagement of a pawl, 25, with the ratchet teeth, 24. This pawl is preferably in the form of a hook secured to the end of a wire, 26, which extends through a flange member, 27, on shaft, 19. Horses, 28, or other figures are secured to the ends of arms, 29, which radiate from a hub, 30, secured to the exterior of the tube 22.

From the description thus far, it will be noted that when the operator rotates the plate, 11, while holding the shaft, 19, stationary and preventing its rotation (which due to the pawl and ratchet engagement of the tube, 22, and the shaft, 19, can conveniently be done by holding one of the horses) the spiral spring is wound up. When the operator releases the toy, the energy stored in the spring serves to rotate the shaft, 19, and consequently the horses and merry-go-round table, by reason of the operative connection between the shaft, 19, and tube, 22, through the pawl and ratchet.

This unwinding of the spiral spring is very rapid and unless some retarding means were employed the toy will be very quickly wound down and the rotation of the horses and table would be so rapid as to create a blur to the vision of a spectator and would also last only for a very brief interval of time. To overcome these difficulties, I provide by my invention, a mechanism for intermittently checking the rotation of the shaft, 19, and consequently unwinding of

the spiral spring. In other words, the spring motor is intermittently released and stopped so as to impart a series of impulses to the horses and table through the pawl and ratchet mechanism described above. It will be understood, of course, that since the tube, 22, is loose on the shaft, 19, the rotation of the horses and table is a continuous one, although fluctuations in the angular velocities occur to some extent.

The mechanism I have disclosed for obtaining the result described comprises outspread arms, 31, secured to the shaft, 19, and adapted to rotate therewith. From the free ends of the arms are suspended as by strings, 32, weighted members such as balls, 33. When the shaft, 19, is rotated the balls are thrown outwardly under the action of centrifugal force and the strings or cords, 32, are wound upon stanchions, 34, thus checking rotation of the shaft, 19, and release of the spring. This checking is only for a short time, however, as the strings or cords quickly unwind and release the shaft, 19, and spring so that the spring again rotates the shaft, 19, until the strings strike the stanchions again and wind up on them.

By reason of the above described construction, a series of impulses are delivered to the table and horses which, being adapted to freely rotate about shaft, 19, are continuously rotated although with a somewhat variable speed. This rotation is, however, relatively slow and endures for a considerable length of time and thus the undesirable effects obtained by coupling the table and horses directly to the spring are eliminated.

On the top of the shaft, 19, I prefer to dispose a doll or other figure, 35, the doll being supported by a stand, 36, or the like. This doll is employed to augment the pleasing appearance of the toy and rotates intermittently with the shaft, 19. I also prefer to employ another set of rotating figures, such as balls, 37, carried on the ends of arms, 38, radiating from a sleeve, 39, which is also loosely mounted on shaft, 19. This sleeve also has a flange, 40, with ratchet teeth, 41,

which are engaged by a pawl 42, carried by a flange, 43, attached to the shaft, 19. The intermittent rotation of the shaft, 19, is transmitted through the pawl and ratchet, thereby to impart a continuous rotation to the balls, 37, in a manner similar to that obtained for the table and horses.

I may also employ in my improved apparatus another ball, 44, on shaft, 19, with projecting arms, 45, on the ends of which balls 46, may be disposed. These members also rotate intermittently with the shaft, 19, and further add to the pleasing appearance of the toy.

Of course, it will be understood that many of the elements shown may be omitted and many more added, if desired, and that the various figures are gayly colored so that when the toy is in action a very attractive apparatus is produced.

Many modifications and changes may be made in the apparatus shown without departing from the invention and I desire to be limited only by the state of the prior art and the scope of the appended claim.

What I claim is:

In a toy roundabout, a container forming a base, a spring motor within the container, a shaft projecting upwardly from the container and operatively connected to the spring motor to be driven thereby, stanchions fastened to the container and projecting upwardly therefrom and having their ends cooperating to form a journal for the shaft, arms associated with the shaft, weighted members, cords suspending said weighted members from the ends of said arms, said stanchions being positioned in the paths of said cords when the weighted members are thrown centrifugally, a tube surrounding the shaft loosely above said container, a pawl and ratchet connection between said tube and shaft, and members rotated by and with said tube.

In testimony whereof, I have signed my name to this specification.

HARRY M. REINER.