No. 881,505. PATENTED MAR. 10, 1908.

W. H. VANCE.

AMUSEMENT APPARATUS.

APPLICATION FILED JULY 16, 1906.

2 SHEETS—SHEET 1.

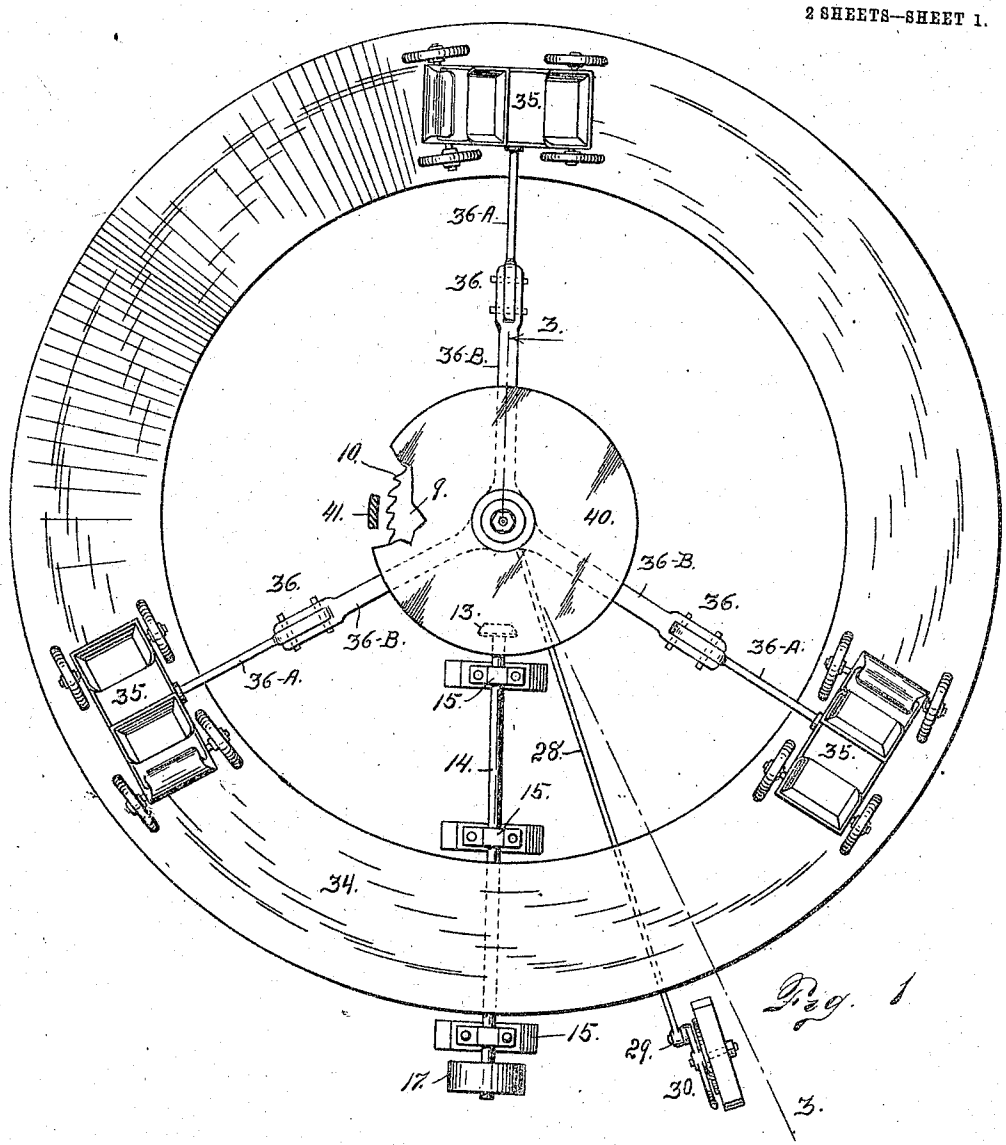

Fig. 1

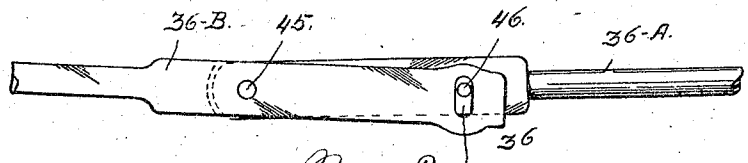

Fig. 2.

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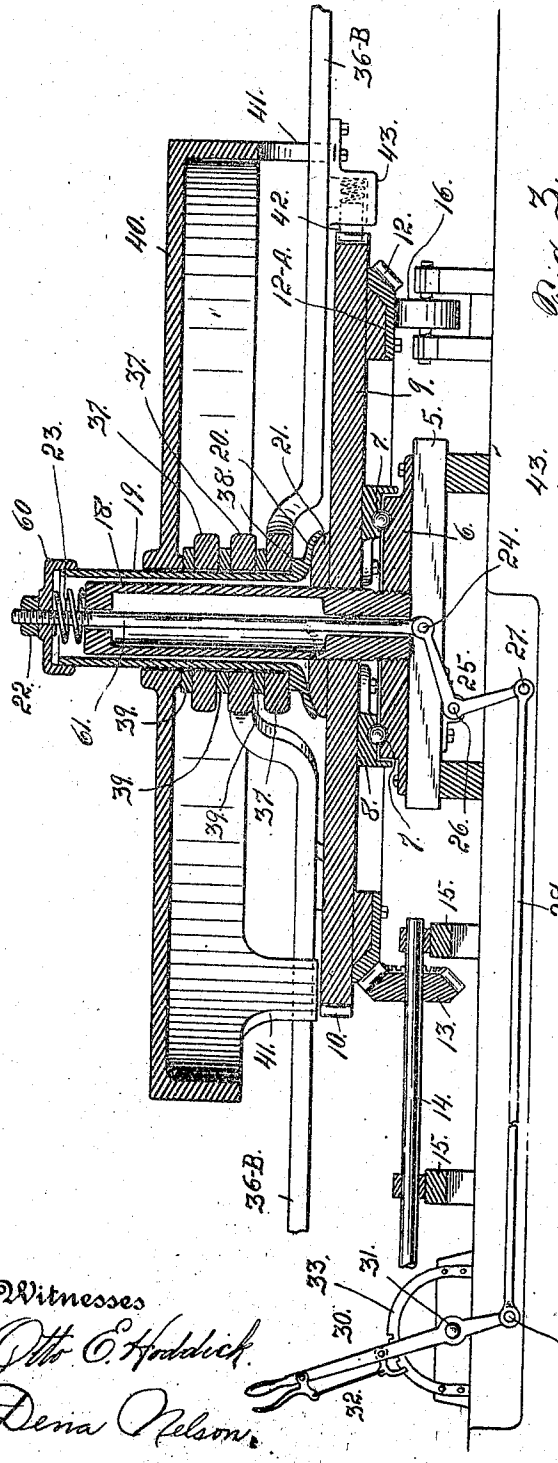

Fig. 3.

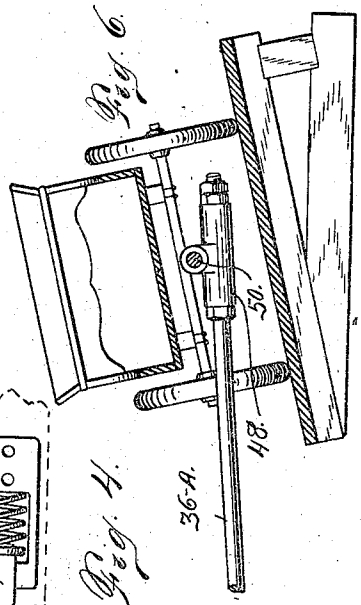

Fig. 6.

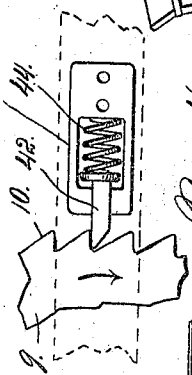

Fig. 4.

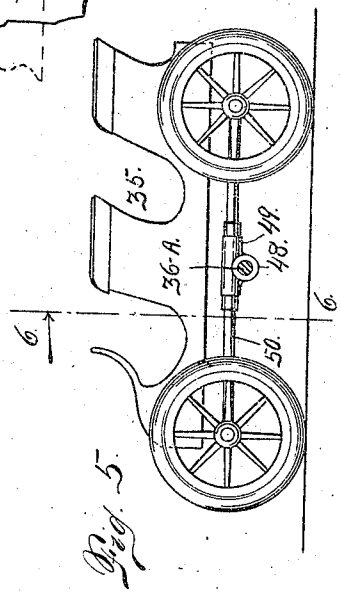

Fig. 5.

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UNITED STATES PATENT OFFICE.

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AMUSEMENT APPARATUS.

No. 881,505. Specification of Letters Patent. Patented March 10, 1908.

Application filed July 16, 1906. Serial No. 326,319.

To all whom it may concern:

Be it known that I, WILLIAM H. VANCE, a citizen of the United States, residing at the city and county of Denver and State of Colorado, have invented certain new and useful Improvements in Amusement Apparatus: and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in amusement apparatus of the class usually termed merry-go-round, my object being to provide an improved construction of this class possessing certain novel features of construction and function, all of which will be fully understood by reference to the accompanying drawing in which is illustrated an embodiment thereof.

In this drawing, Figure 1 is a top plan view of my improved apparatus showing the central platform partly broken away and partly in section to disclose an operating ratchet below. Fig. 2 is a detail view illustrating the jointed sweep construction, the parts being shown on a larger scale. Fig. 3 is a vertical cross section taken through the apparatus, the parts being shown partly in elevation. Fig. 4 is a fragmentary detail view illustrating the ratchet gear and pawl construction, the parts being shown on a scale somewhat larger than in Fig. 3. Fig. 5 is a side elevation of one of the vehicles employed in connection with the apparatus shown on a larger scale than in Fig. 1. Fig. 6 is a cross section taken on the line 6—6 Fig. 5.

The same reference characters indicate the same parts in all the views.

Let the numeral 5 designate a central stationary support provided with a stationary bearing member 6 having a circular groove in its upper surface forming a half ball-race for bearing balls 7 which are engaged from above by a bearing member 8 made fast to the under surface of a wheel 9 which is provided at its outer periphery with ratchet teeth 10. To the under surface of the wheel slightly nearer the center, the latter is equipped with a bevel gear 12 which meshes with a bevel pinion 13 fast on a driving shaft 14 journaled in suitable stationary supports 15. The gear 12 is provided with an inward extension 12^A forming a wearing plate which engages track wheels 16 which give an antifrictional support to the gear wheel 9. The shaft 14 is provided at its outer extremity with a pulley 17 which may be connected with any suitable power for operating the ratchet wheel. Centrally secured to the base 5, is a hollow upright shaft 18 which is surrounded by a loose sleeve 19 whose lower extremity is outwardly flared as shown at 20 to engage a circular brake block 21 made fast to the upper surface of the wheel 9. The sleeve 19 is provided with a loosely fitting cap 60 through which passes the upper extremity of a rod 61 to which is applied a nut 22 whereby the rod is connected with a cap.

Between the cap and the hollow shaft 18 is located a coil spring 23 the tendency of which is to support the cap whereby the brake sleeve is relieved from pressure from above when the brake is not applied. The rod 61 passes downwardly from the cap through the hollow shaft and is connected below the gear 9 as shown at 24 with one arm of a bell crank lever 25. This lever is fulcrumed at 26 and its other arm is connected at 27 with an operating rod 28 whose extremity remote from the bell crank, is connected as shown at 29 with an operating lever 30 fulcrumed at 31 and provided with a locking device 32 cooperating with a quadrant 33.

At a suitable distance from the wheel 9 is located a circular platform 34 surrounding the wheel 9 and forming an undulating track for vehicles 35 which are connected by means of sweeps 36 with the brake sleeve 19. The inner extremity of each sweep is provided with an eye or circular bearing 37 which surrounds and loosely engages the brake sleeve 9. As shown in the drawing there are three sweeps and consequently three sweep eyes 37. The lower of these eyes is located directly above a shoulder 38 formed on the lower extremity of the brake sleeve. The eyes of the respective sweeps are separated by washers 39. There is a similar washer located above the uppermost eye and which separates the said eye from a platform 40 which also loosely surrounds the brake sleeve. This platform is provided with depending parts 41 which lie within the path of the sweeps, and prevent the vehicles from colliding with each other.

Each sweep is connected with the wheel 9 by means of a spring-actuated pawl 42. This

pawl is mounted in a casing 43 secured to the lower surface of the sweep. Within this casing is located a spring 44 which acts on the pawl and normally thrusts the beveled extremity of the latter outwardly to engagement with the teeth 10 of the ratchet wheel.

When the apparatus is in operation, the ratchet wheel is rotated in the direction indicated by the arrow in Fig. 4, whereby the ratchet wheel carries the sweeps along with it by virtue of the engagement of the straight offsets of the ratchet teeth with the pawls of the sweeps. However, by virtue of the undulatory construction of the vehicle track, it happens that the vehicle when moving downwardly on one of the inclined parts of the track, may acquire a speed greater than the speed of the ratchet wheel. In this event the sweep together with the vehicle runs ahead of the ratchet wheel so to speak and the pawl 42 slips over the teeth of the ratchet. When this occurs it may happen that one of the vehicles would have a tendency to come in contact with another, but the depending parts 41 of the platform 40 are so arranged as to prevent this result, since before one vehicle could collide with another, its sweep would strike a projection 41 and interfere with its movement sufficiently to prevent a collision. In other words the depending projections 41 of the platform 40 are so arranged as to prevent any two vehicles from colliding.

The sweeps 36 are composed of two members 36^A and 36^B pivotally connected at 45. The member 36^A has a pin 46 passing through a slot 47 formed in the member 36^B whereby the movement is limited. This jointed sweep construction is important in view of the undulating condition of the track necessitating a certain degree of movement of one sweep member upon the other. Furthermore the outer extremity of each sweep is provided with a sleeve 48 adjustable longitudinally thereon by means of nuts threaded on the sweep and engaging the extremities of the sleeve. This sleeve body 48 is provided with a sleeve 49 extending at right angles to the member 48, and surrounding the reach 50 of the vehicle. The sleeve member 49 is free to turn on the reach, thus giving the sweep sufficient movement with reference to the vehicle, for all practical purposes.

From the foregoing description the use and operation of my improved apparatus will be readily understood. Power being applied to the shaft 14, the wheel 9 is rotated through the instrumentality of the gears 13 and 12, the said wheel turning around the central hollow shaft 18 which maintains the gear in operative relation with the other parts. The rotation of the wheel 9, imparts a swinging movement to the sweeps and engagement of the ratchet teeth with the pawls of the sweep. In this way the vehicles are caused to travel around the undulatory circular track. This track is highest at its outer edge and slopes downwardly at a suitable inclination (see Fig. 4), whereby the centrifugal force incident to the travel of the vehicles is practically neutralized or overcome.

In further explanation of the action of the brake mechanism, attention is called to the fact that this mechanism acts only to check the speed of the operating wheel 9. In other words when it is desired to stop the machine, by applying the brake whereby the cap 60 is forced downwardly upon the sleeve 19, the outwardly flared extremity 20 of the sleeve is forced tightly against the shoe 21 of the wheel 9 thus having a tendency to stop the wheel.

It will be understood that the cap is locked against rotation by virtue of its connection with the bell crank lever 25 by the rod 61. This brake mechanism does not directly affect the speed of the vehicles except so far as the stopping of the operating wheel has this tendency. After the operating wheel 9 ceases to rotate, the vehicles are at liberty to continue their movement by virtue of their acquired speed or momentum and will continue to move until the friction of the parts stops them.

Having thus described my invention, what I claim is:

1. In amusement apparatus, the combination of an operating wheel provided with ratchet teeth, a central shaft, vehicle sweeps connected with the central shaft independently of each other, each sweep having a ratchet and pawl connection with said wheel whereby the sweeps are propelled by the rotation of the wheel, all of the sweeps being connected with the wheel and free to travel faster than the wheel and independently of each other or at varying speeds.

2. In amusement apparatus, the combination of a centrally located operating wheel provided with ratchet teeth, a central shaft around which the wheel rotates, vehicle sweeps connected in operative relation with the central shaft and mounted to swing independently of each other, a pawl and ratchet connection between the sweeps and the operating wheel whereby the rotation of the wheel actuates the sweeps but the latter are free to move faster than the wheel as described.

3. In amusement apparatus, the combination of an operating wheel, vehicle sweeps mounted to swing independently of the wheel and independently of each other, a pawl and ratchet connection between the sweeps and the wheel, means for operating the wheel, and a platform mounted above the wheel and provided with depending projections located in the path of the sweeps for the purpose set forth.

4. In amusement apparatus, the combination of an operating wheel, an undulatory

track surrounding the wheel, vehicles mounted to travel on said track, sweeps connected with the vehicles at one extremity, the said sweeps being mounted to swing from the axis of the wheel as a center, and an operative connection between the sweeps and the wheel whereby the rotation of the wheel actuates the sweeps, the latter, however, being free to move independently of each other and independently of the wheel to permit a speed of travel faster than the travel of the wheel.

5. In amusement apparatus, the combination with an operating wheel, an undulatory track surrounding the wheel, vehicles mounted on the track, sweeps mounted to swing from the axis of the wheel as a center, their outer extremities being connected with the respective vehicles, each sweep being composed of two jointed members, and an operative connection between the sweep and the wheel, the sweeps being mounted to travel independently of each other, and suitable connections between the sweeps and the wheel whereby the latter actuates the sweeps while the latter are free to travel independently of the wheel in the direction of the wheel's travel, to permit the sweeps to travel at a greater speed than that of the wheel.

6. In amusement apparatus, the combination of an operating wheel, sweeps actuated from the wheel, a central stationary shaft around which the wheel rotates, a brake sleeve surrounding the shaft and whose lower extremity is outwardly flared to engage a brake shoe formed on the wheel, a cap loosely mounted on the brake sleeve, a rod connected in operative relation with the cap and passing downwardly through the shaft which is open for the purpose, a bell crank lever with which one arm of the vertically disposed rod is connected, a second rod connected with the other arm of the lever, and an operating lever connected with the last named rod for braking purposes.

7. In amusement apparatus, the combination of an operating wheel, sweeps actuated from the wheel, a central stationary shaft around which the wheel rotates, a brake sleeve surrounding the shaft and whose lower extremity is outwardly flared to engage a brake shoe formed on the wheel, a cap loosely mounted on the brake sleeve, and means acting on the cap to force the brake sleeve downwardly against the brake shoe.

8. In amusement apparatus, the combination of an operating wheel, an undulatory track surrounding the wheel, and a plurality of vehicles actuated by the wheel and mounted to travel on the said track, the vehicles being arranged to move on the track independently of each other and at varying speeds.

9. In amusement apparatus, the combination of a circular undulatory track, vehicles mounted to travel on the said track, and means centrally located and surrounded by the track for propelling the vehicles thereon, the latter being arranged to move on the track independently of each other and at varying speeds.

10. In amusement apparatus, the combination of an undulatory track, a centrally located operating device, a plurality of vehicles mounted to travel on the said track and connected in operative relation with the operating device, the vehicles being arranged to move on the track independently of each other and at varying speeds.

11. The combination of an undulatory track, a centrally located operating device surrounded by the track, vehicles mounted on the track, and sweeps connecting the respective vehicles with the operating device whereby the vehicles are made to travel around the track, the sweeps being jointed to allow the vehicles to change their elevation to conform to the surface of the track, the sweeps being also connected with the operating device to travel independently of each other and at varying speeds.

12. The combination of an undulatory track, vehicles mounted thereon, a centrally located operating wheel, sweeps connected with the vehicles, a ratchet and pawl connection between each sweep and the wheel whereby the vehicles are allowed to continue their movement after the operating wheel has ceased to move, the sweeps being mounted independently of each other, substantially as described.

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

WILLIAM H. VANCE.

Witnesses:

DENA NELSON,
A. J. O'BRIEN.