March 11, 1930. A. SPILLMAN 1,750,494

AMUSEMENT DEVICE

Filed Jan. 20, 1927 2 Sheets-Sheet 1

Fig. 1.

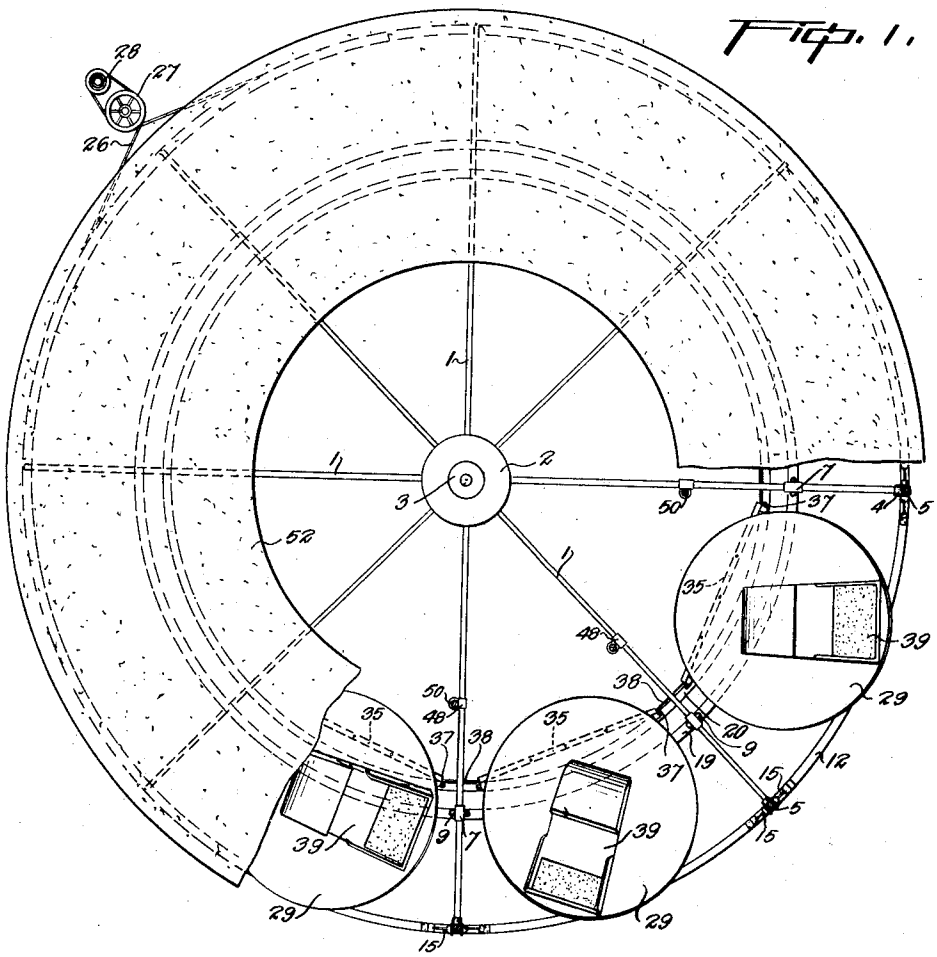

Fig. 2.

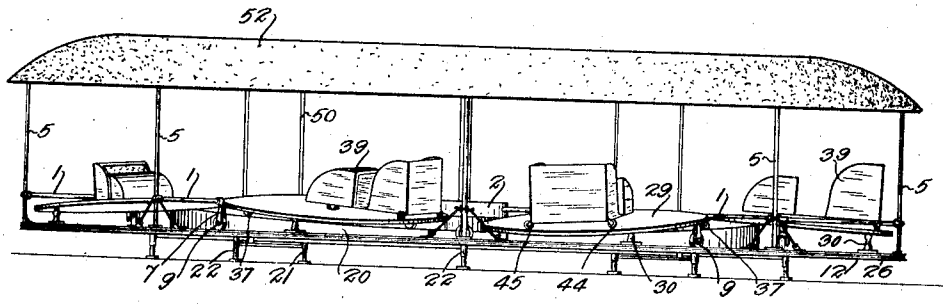

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Fig. 3.

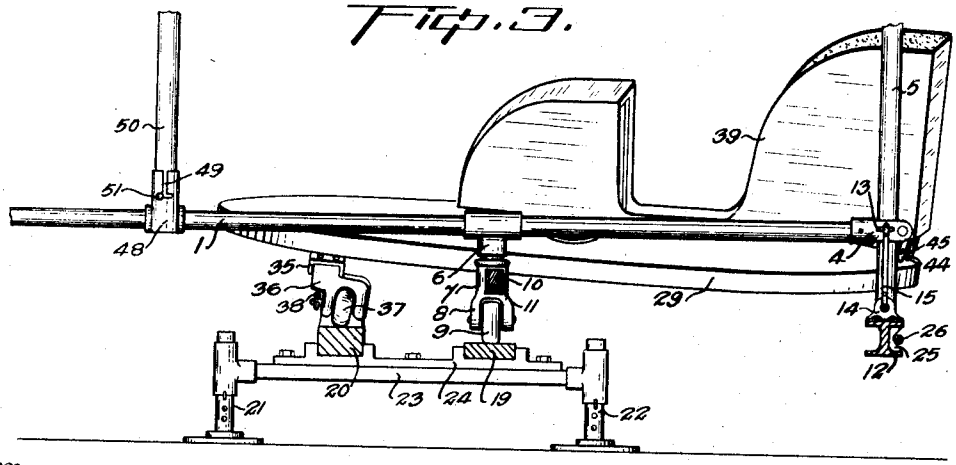


Fig. 4.

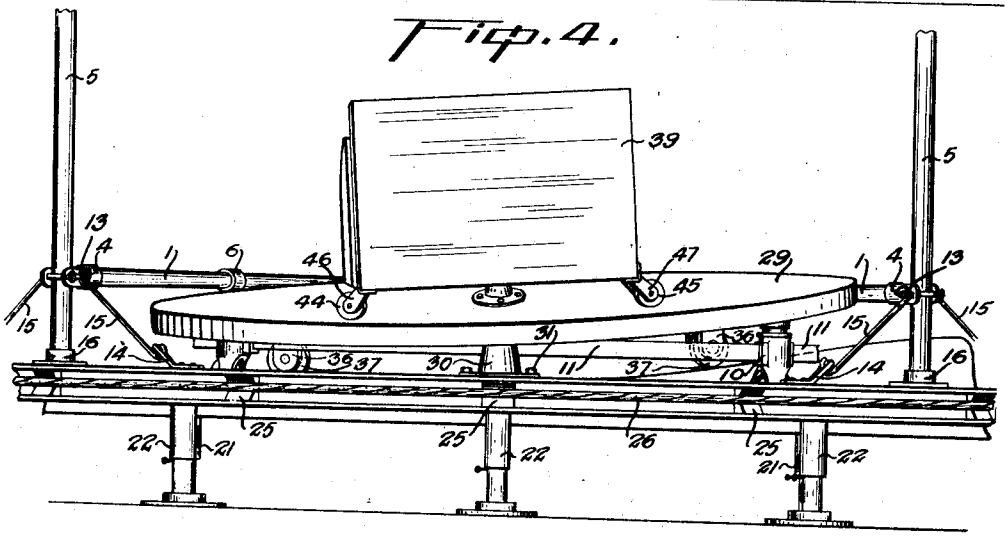


Fig. 6.

Fig. 5.

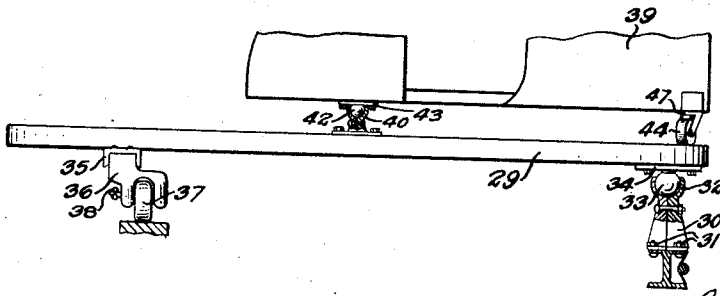
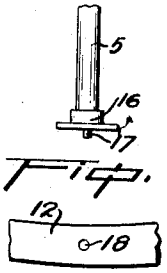


Fig. 7.



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Patented Mar. 11, 1930

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UNITED STATES PATENT OFFICE

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AMUSEMENT DEVICE

Application filed January 20, 1927. Serial No. 162,393.

My invention relates to improvements in passenger carrying amusement devices of the type used in amusement parks and fair grounds and a particular object of the invention is to construct a device comprising a plurality of platforms having passenger carrying cars revolubly mounted thereon and adapted to move around a common central point, such platforms being each supported upon a universal joint mounted upon a common rotative structure and one or more wheels which engage and roll upon an undulated track so that a waving motion is imparted to the platforms as they move along the track with a consequent rotative motion of the cars which are pivotally mounted thereon.

A further object of my invention is to so construct my device that it is rotatably mounted upon a pair of concentrically positioned circular tracks, one of said tracks being flat and adapted to support the rotative structure of the device, and the other track being undulated and upon which the platform running wheels roll, and another object of the invention is to utilize a cable drive for rotating the device, such driving cable passing around the periphery of its frame which is supported upon the flat circular track.

My invention consists of an amusement device constructed and arranged all as hereinafter more particularly described and illustrated in the accompanying drawing in which:

Figure 1 is a plan view of my amusement device, part of the canopy thereof being broken away to disclose the circular tracks and the passenger carrying cars and platforms.

Figure 2 is a side elevational view of my device.

Figure 3 is an enlarged tranverse section through part of the device showing one of the platforms and the passenger carrying car pivotally mounted thereon.

Figure 4 is a front elevational view of the portion of the device illustrated in Figure 3.

Figure 5 is a side elevational view of one the platforms and a fragmentary portion of the car mounted thereon showing the pivotal supports for both the car and the platform.

Figure 6 is a fragmentary view of one of the canopy supporting standards, showing the base plate thereof furnished with a lug which is adapted to enter a suitable orifice in the upper face of the cable carrying ring of the structure, and,

Figure 7 is a plan view of a fragmentary portion of the ring, showing such orifice in the upper face thereof.

Like characters of reference indicate corresponding parts in the different views.

The rotative frame of my device comprises a plurality of sweeps 1 extending radially from a central hub 2 which is revolubly mounted upon a pedestal 3, such sweeps are of equal length and are each provided upon their ends with a bifurcated jaw member 4 which straddles one of a plurality of tubular standards 5, which are held in position by pins passing through the bifurcated portions, the function of the standards will be hereinafter described. Upon each of the sweeps 1 I furnish a downwardly extending mounting 6, such mountings being positioned equi-distantly from the center of the pedestal 3 and each engage a bifurcated member 7, between the jaws 8 of which a running wheel 9 is rotatably mounted. For preventing rotation of the bifurcated members 7 about the mountings 6 which are inserted thereinto I furnish U-shaped brackets 10 upon the sides thereof, and 11 are connecting pieces constructed of wood or any other suitable material adapted to extend between adjacent bifurcated members, their ends being dropped into the U-shaped brackets 10 as illustrated in Figures 3 and 4.

12 is a circular ring constructed of joined curved sections of I-beam which are of course connected together in any manner following standard practice, such ring is of the same diameter as the diameter of the sweep structure and adapted to be supporterd by the sweeps. To constitute the supporting means I furnish rings 13 upon each side of the bifurcated members 4 and suitably positioned eye-pieces 14 upon the upper face of the ring 12, such eye-pieces being equi-distantly spaced from the lower ends of the standards 5 which rest upon the upper face of the ring 12 and connected to the rings 13 on the bifurcated

members 4 by means of hooked rods 15. It will be seen upon reference to the drawings that as each pair of hooked rods depending from a member 4 are oppositely inclined to each other that any rotative movement of the ring 12 in respect to the sweeps 1 is prevented. The lower end of each of the standards is furnished with a suitable base plate 16 having a centrally disposed lug 17 in its lower face, such lug being adapted to enter a suitably positioned orifice 18 within the upper face of the ring 12. The engagement of the lug 17 within the orifice 18 will of course prevent any swinging movement of the standards 5 within the jaws of the bifurcated members 4.

Underneath the sweep structure I position a pair of concentric tracks 19 and 20, the track 19 being flat and the track 20 undulated and as the ground upon which these machines are mounted is very often of uneven surface I find it necessary to furnish an adjustable track supportting structure constructed as follows.

21 and 22 are pairs of jack-stands adjustable in height, the pairs being radially arranged and equi-distant from one another, and 23 are bridge-members extending between the jack-stands of each pair and adapted to support the tracks, each bridge-piece being furnished with an integrally formed double chair 24 which is bolted thereon and adapted to receive the pairs of tracks 19 and 20. By adjusting the jack-stands 21 and 22 to conform with the irregularities of the ground surface the amusement device can be adjusted so that it has a smooth rotation in a horizontal plane.

25 are a plurality of V-shaped driving cable jaws secured within the outer channel of the ring 12 and suitably spaced apart, and 26 is the driving cable extending therearound and leaving the ring at one point to pass over and around a pair of spaced apart pulleys 27 and 28, the pulley 27 being driven from a source of power and the pulley 28 being resiliently held and constituting the cable tensioning means.

A platform 29 is positioned between each adjacent pair of sweeps 1, the outer portions of such platforms being pivotally mounted by means of universal joints upon the ring 12, and their inner portions furnished with running wheels which engage and run upon the undulating track 20. The universal joints and the means for mounting the running wheels upon the platforms can of course be designed in many ways without departing from the spirit of my invention as well as following the design shown in my drawings wherein they are constructed in the following manner, one universal joint and a pair of running wheels and mounting therefor being described.

The universal joint is positioned centrally of the portion of the ring 12 between two of the standards 5 and is secured upon the upper face thereof and comprises a pedestal 30 secured to the ring by means of bolts 31. Upon the upper end of the pedestal is formed a semi-spherical socket 32 adapted to receive a bulbous member 33 depending downwardly from a plate 34 secured to the under-face of the platform and positioned as illustrated in Figures 3 and 5. It will be of course understood that the pedestal 30 will have to be of split form so as to permit the bulbous member 33 being positioned within its semi-spherical portion. This form of joint will permit the platform a swinging movement in any direction upon the pedestal and thus allow it to follow the undulations of the track.

35 is a channel iron bolted to the under-face of the platform and arranged chordally thereto, its ends projecting beyond the periphery of the platform, each end being adapted to receive a mounting 36 in which a running wheel 37 is rotatably secured. These running wheels of course roll upon the undulating track 20 as the platforms are carried around by the rotated structure and to prevent the platforms from swinging about their pivotal mountings and the running wheels 37 from running off the track I couple adjacent platforms by means of coupling rods 38 which extend between adjacent members 36 secured to the ends of the respective channel irons. As these coupling members 38 are swingably connected to the members 36 the platforms will be permitted a vertical swinging movement in order to follow the undulations of the track.

Upon each platform I mount a passenger carrying car 39 which is swingably secured centrally thereof, the forward end of the car being connected to the center of the platform by means of a universal joint of similar construction to the joint upon which the platform is mounted, and consisting of a split pedestal 40 secured by means of bolts to the center of the platform and having a semi-spherical socket formed in its upper end and adapted to receive a bulbous member 42 depending downwardly from a plate 43 bolted to the under-face of the car in the vicinity of its forward end. The rear end of the car which extends approximately to the periphery of its platform is furnished with a pair of running wheels 44 and 45 rotatably mounted within the bifurcated members 46 and 47 which extend outwardly from the lower edge of the car, these bifurcated members are so designed that the running wheels 44 and 45 lie along the periphery of an imaginary circle having its center at the center of the car supporting universal joint.

Intermediately of the length of each sweep I furnish an upwardly extending socket member 48 having a bayonet catch slot 49 in one side thereof and 50 are a plurality of

upright standards their lower ends adapted to be positioned within the socket members 48 and provided with studs 51 which enter the slots 49. The standards 51 and the standards 5 which are positioned at the outer end of the sweeps are designed to support a ring-shaped canopy 52 which of course rotates with the structure but is not illustrated or described in detail as it forms no pertinent part of the present invention.

Having now described the general construction of my amusement device I shall now describe its operation.

The driving cable 26 is rotated from any suitable source of power, a clutch and brake mechanism of course being incorporated in the driving connection between the source of power and the pulley, for permitting the operator to control the actuation of the device. When the device is stationary the passengers are permitted to mount the respective platforms 29 and seat themselves within the cars 39 and when the cars are loaded the clutch is let in to rotate the pulley 27 which in turn will commence to rotate the structure under the influence of the endless driving cable 26 which passes around the ring 12. As the ring 12 depends from the outer ends of the sweeps 1 which are supported by the running wheels mounted upon the flat track 19 and also supports the platforms 29 through the medium of the universal joints 30, the ring 12, sweeps 1, and platforms 29, will revolve around the pedestal 3, the hub 2 which is rotatably mounted upon such pedestal of course carrying the inner ends of the sweeps. As the inner portions of the platforms are mounted upon the respective channel irons 35 which are supported by the running wheels 37 running upon the undulating track 20 the platforms will acquire a waving motion about their respective universal joint supporting means due to the undulations in the track. As the depth of the undulations are so designed to cause the platforms to swing both above and below their normal horizontal plane and as the slope of the undulations impart a waving motion to the platforms about the radii extending from their pivotal points to the hub of the machine the resultant of these two motions imparted to the platforms will give them a wave-like motion about their pivotal supports, such motion being rather similar to the wave-like motion of a spun coin which has swung downwardly from its vertical position into a substantially horizontal plane and is at the point of losing its momentum, the movement of the coin of course differs from the platforms in the respect that even at the latter end of its movement it possesses a tendency to revolve to a slight degree whilst the platforms have no rotary movement about their respective pivotal points.

This movement which is imparted to the platforms of course causes the cars to rotate and oscillate about their respective pivotal points which extend upwardly from the platform centers and thus cause the passengers riding therein much merriment and excitement. When the duration of the ride has been completed the clutch mechanism connecting the source of power to the driving pulley 27 is disengaged and the device brought to a stand still to permit the passengers to dismount.

It will be apparent upon reference to Figures 4 and 5 of the drawings that as the running wheels 44 and 45 lie along the periphery of an imaginary circle having its center at the pivotal point of the cars that the cars will freely rotate under the wave-like motion of the platforms as the friction of the pivotal support and the running wheels is reduced to a minimum.

It will be apparent from the foregoing description and from the drawings that my device is essentially of a different character to the now well known types of amusement devices comprising rotated sweeps supported upon a circular undulated track, and upon which passenger cars and platforms are mounted, the sweeps acquiring an undulating movement as they rotate with the consequent undulating movement of the platforms and cars supported thereon. In this well known type of device the swinging point about which the platforms and cars undulate is situated at the hub of the machine with the result that the varying inclinations imparted to the cars are comparatively small as the ratio between the length of the sweeps and the depth of the undulations of the circular undulated track is comparatively large. In my device the platform pivotal point is situated within the diameter of the platform itself as is also the means on the platform engaging the undulating track which thus imparts a much faster and greater wave-like motion to the cars as they rotate, furthermore as in practical construction the ring 12 and the platforms are set very close to the ground, the passengers are able to step off the ground onto the platforms which thus obviates the necessity of providing a circular loading platform surrounding the device.

From the perusal of the foregoing description and upon reference to the drawings it will be readily perceived that I have developed an amusement device of extreme simplicity in which a minimum number of parts are used and which will provide the thrills and excitement which of course are the great attraction of devices of this description.

Although I have described and illustrated my invention as taking a particular form, it will be readily apparent that the various parts may be altered in construction without departing from its spirit, and whilst I have described the device which I now consider

to be the best embodiment thereof, I do not retain myself to the precise construction set forth, but desire to have it understood that the device shown is subject to such desired changes and alterations as I find necessary and shall fairly come within the scope of the appended claims.

What I claim as my invention is:

1. In an amusement device, an undulated track, a movable structure supported and functioning independently of the track, a passenger carrying platform pivotally connected to the structure, a plurality of running wheels extending from the platform and rolling upon the track so that the platform receives a wave like motion from its undulations and a passenger carrying car pivotally mounted upon the platform.

2. In an amusement device, a plurality of radially extending sweeps rotatable around an axis, a circular track surrounding the axis concentrically of the sweeps, running wheels upon the sweeps rolling upon the track, a driving cable receiving ring supported by the sweeps, a plurality of platforms swingably connected to the ring, a second track of undulated formation concentric with the first track, running wheels supporting the platforms and adapted to run on the second track, and passenger carrying cars pivotally mounted on the platforms.

3. In an amusement device, a plurality of radially extending sweeps rotatable around an axis, a circular track surrounding the axis concentrically of the sweeps, running wheels upon the sweeps rolling upon the track, means extending between the sweeps for retaining the running wheels in their spaced relation, a driving cable receiving ring supported by the sweeps, a plurality of platforms swingably connected to the ring, pivotal coupling means connecting adjacent platforms, a second track of undulated formation concentric with the first track, running wheels supporting the platforms and adapted to run on the second track, and passenger carrying cars pivotally mounted on the platforms.

ALBERT SPILLMAN.