No. 871,777. PATENTED NOV. 26, 1907.

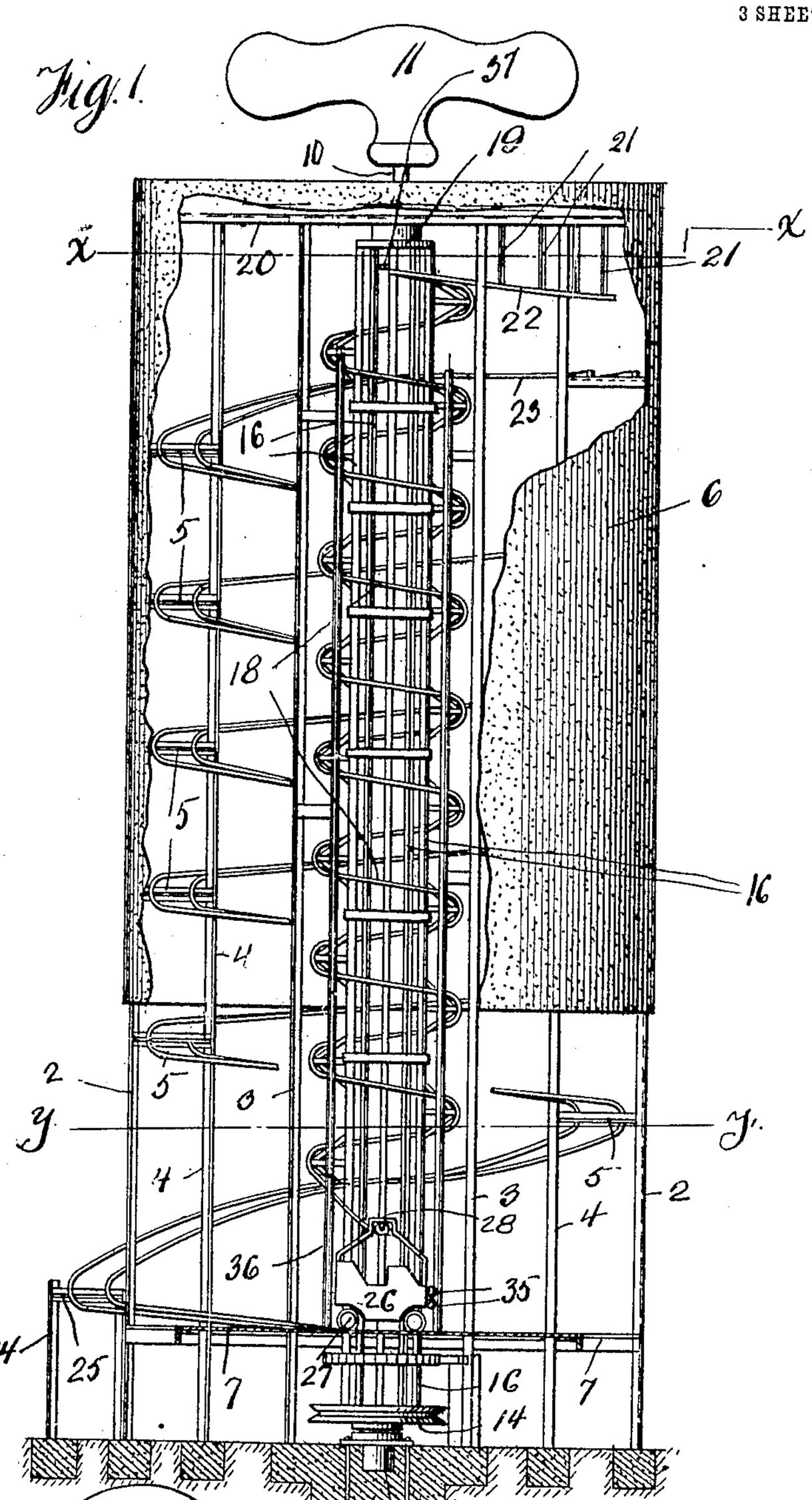
W. J. BROWNE.

AMUSEMENT DEVICE.

APPLICATION FILED MAR. 27, 1907.

3 SHEETS—SHEET 1.

Fig. 1.



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3 SHEETS—SHEET 2.

Fig. 2.

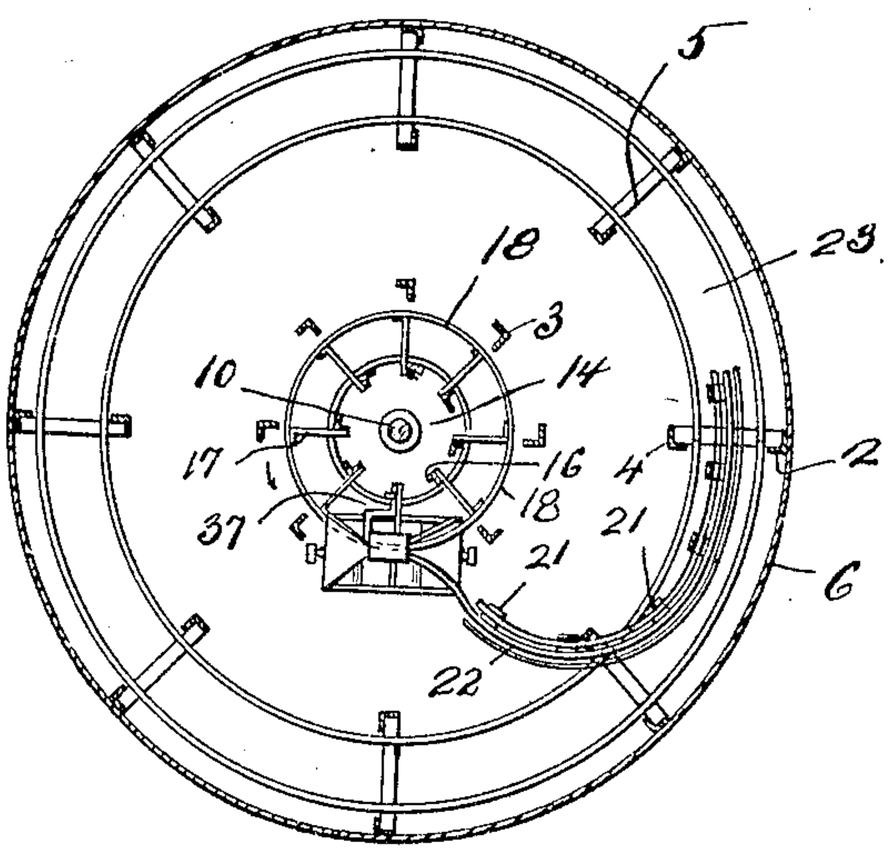


Fig. 3

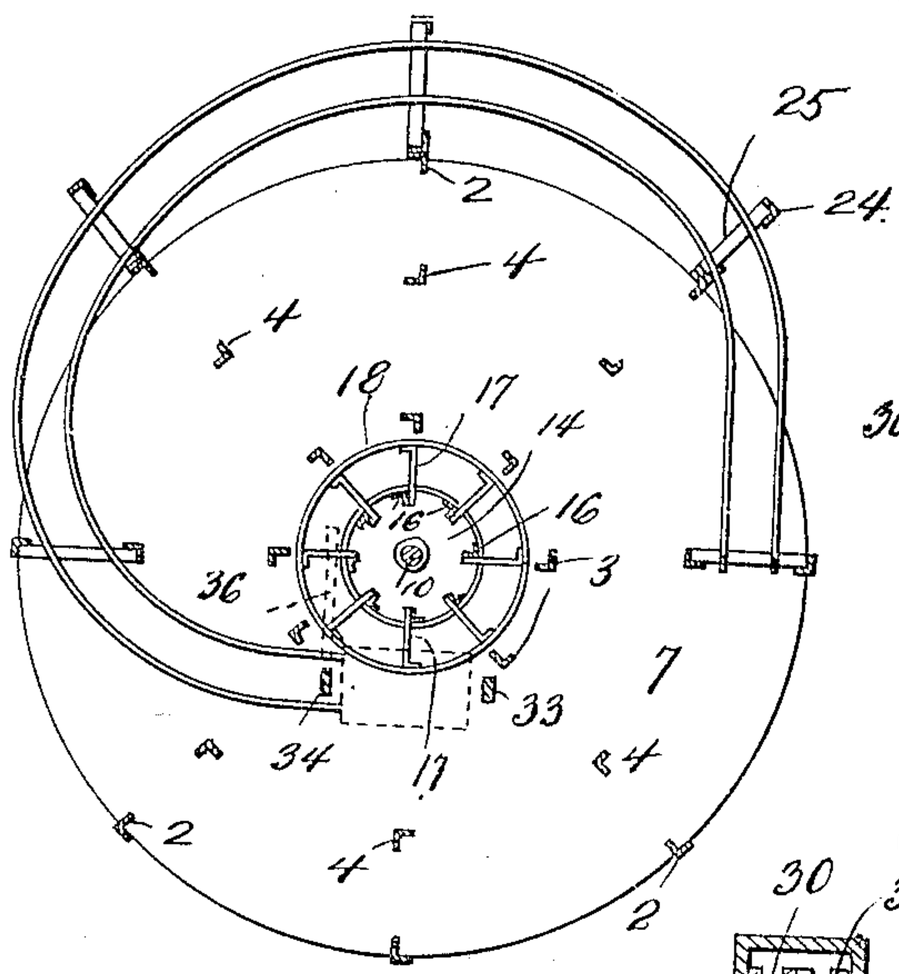


Fig. 4.

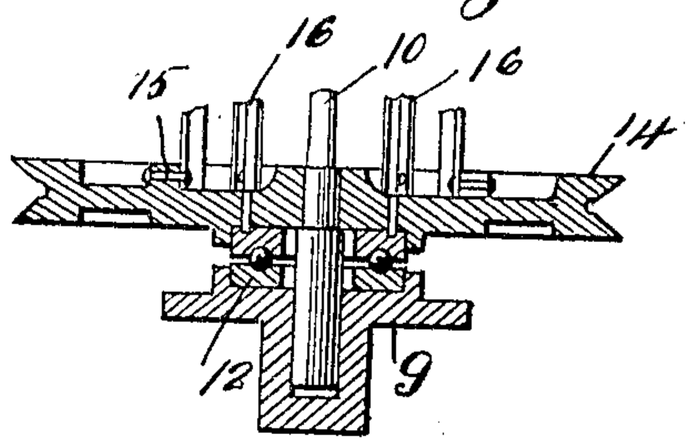


Fig. 5.

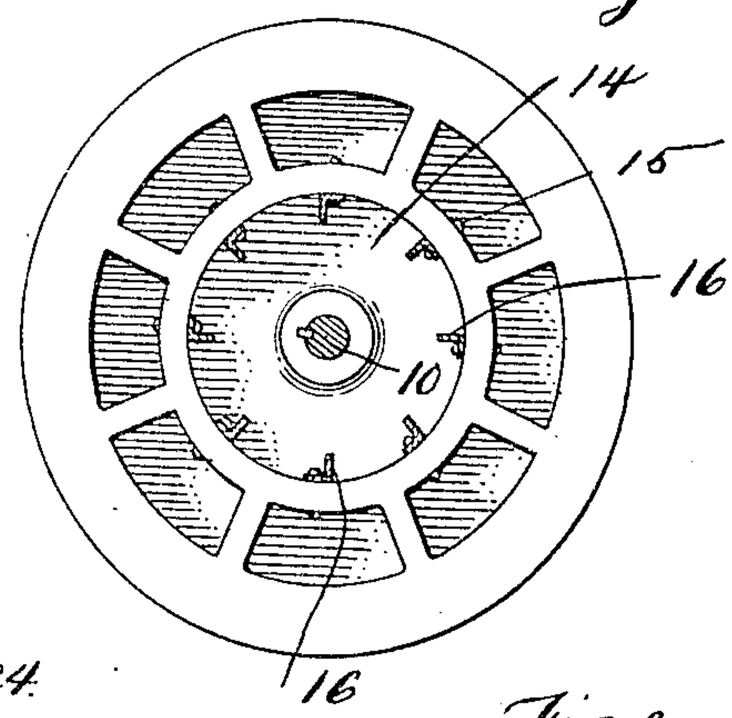


Fig. 6.

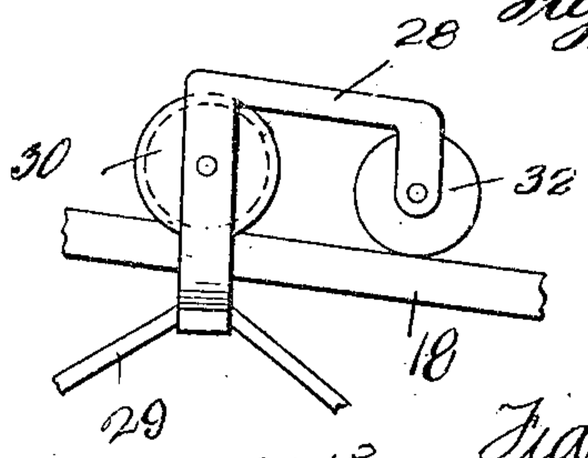


Fig. 7.

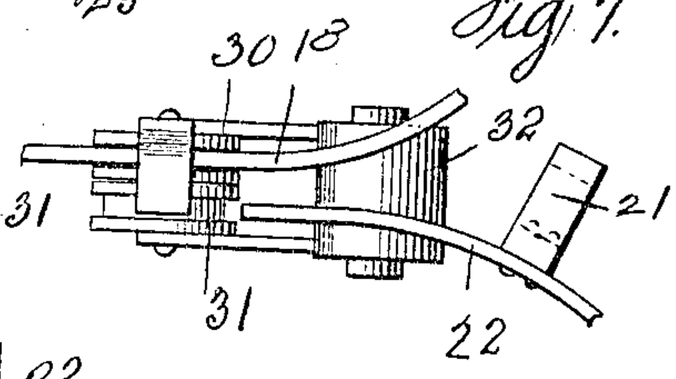
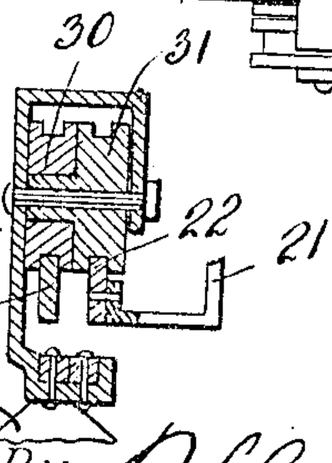


Fig. 8.



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3 SHEETS—SHEET 3.

Fig. 9

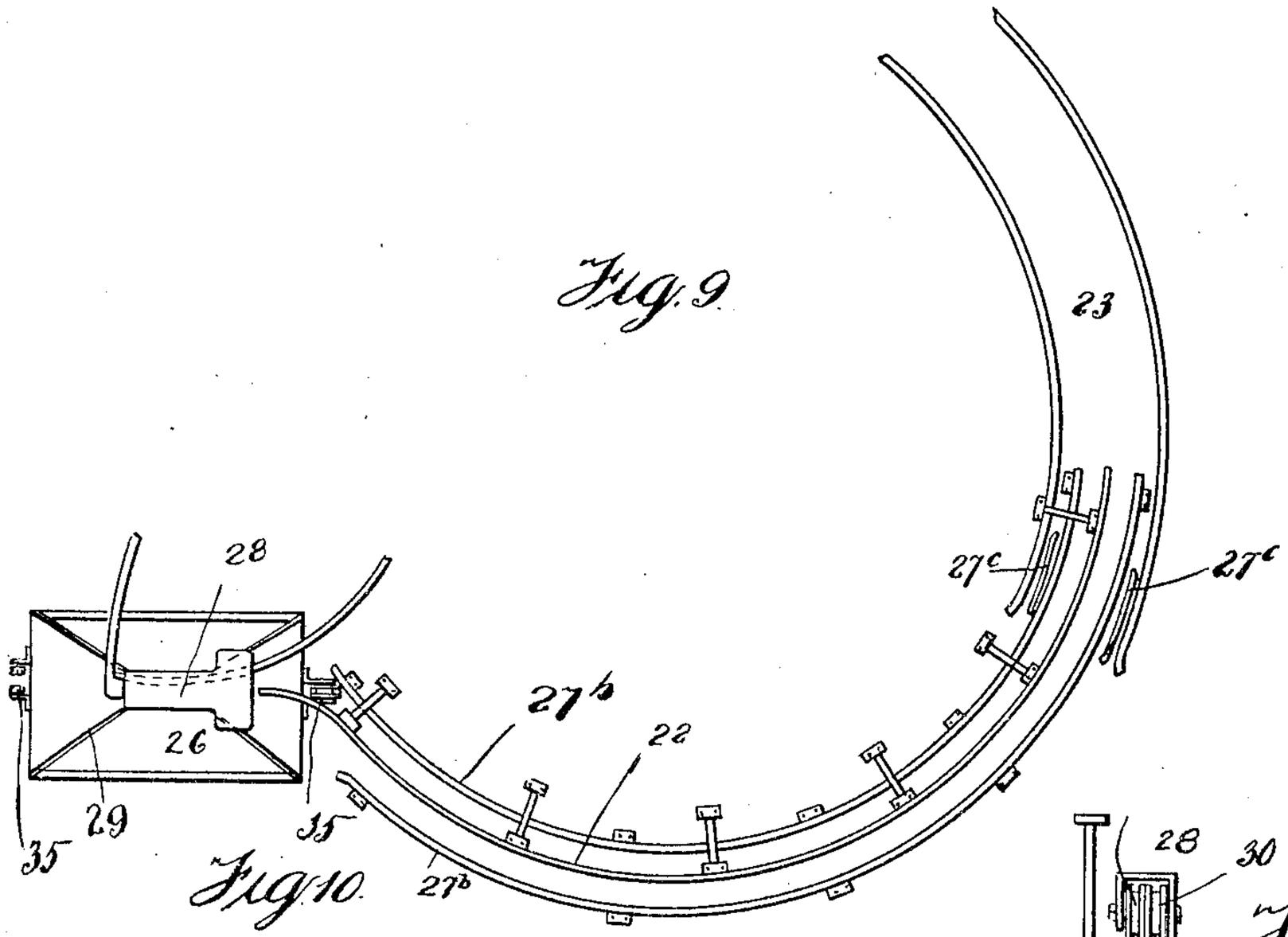


Fig. 10

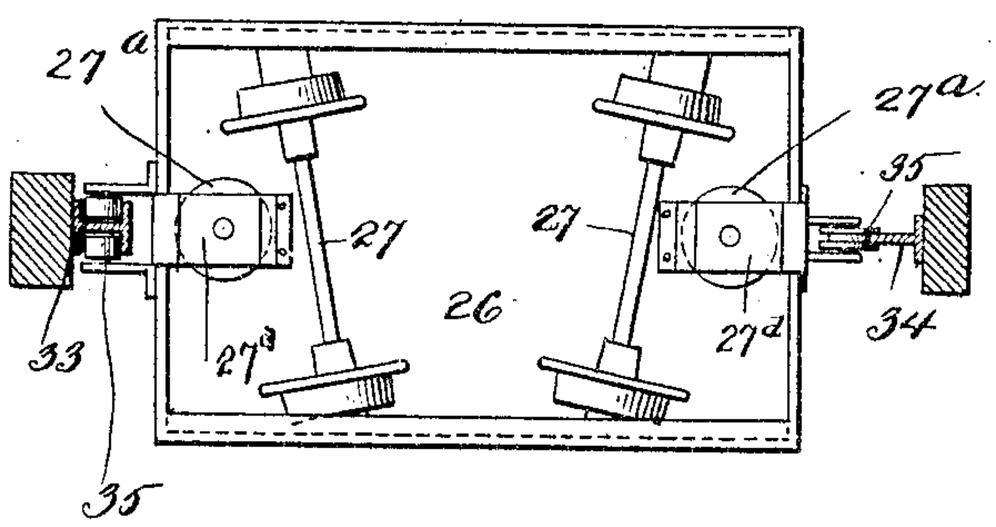


Fig. 11

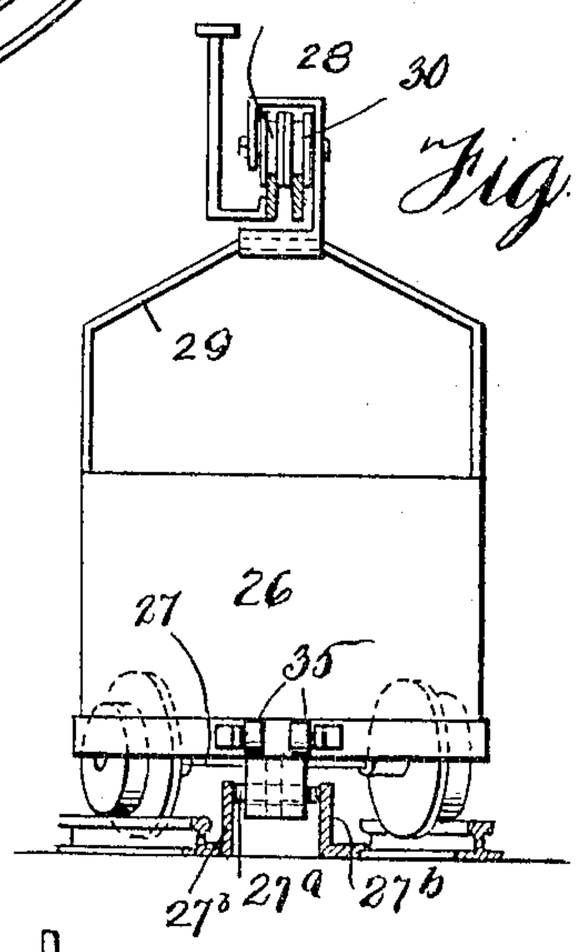
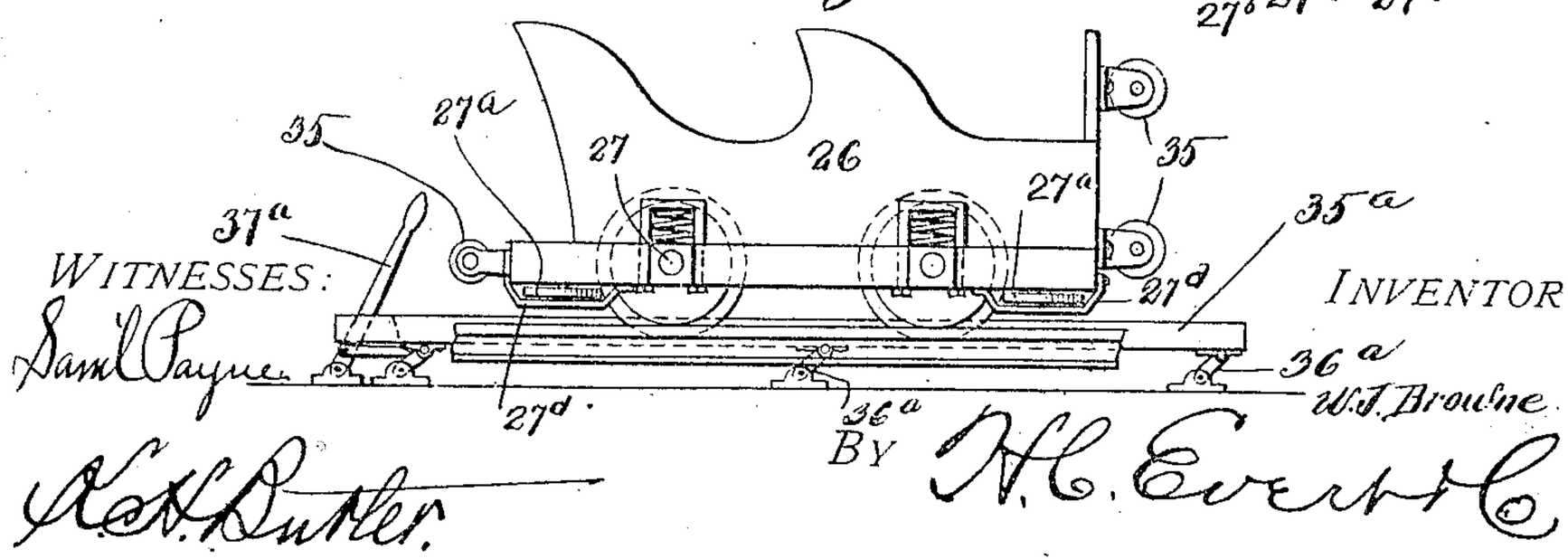


Fig. 12



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UNITED STATES PATENT OFFICE.

WILLIAM J. BROWNE, OF PITTSBURG, PENNSYLVANIA.

AMUSEMENT DEVICE.

No. 871,777. Specification of Letters Patent. Patented Nov. 26, 1907.

Application filed March 27, 1907. Serial No. 364,805.

To all whom it may concern:

Be it known that I, WILLIAM J. BROWNE, a citizen of the United States of America, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Amusement Devices, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to amusement devices, and the invention has for its object to provide a novel device for elevating a car or chariot to an elevation, from which the car or chariot can descend by gravity upon a circuitous or spiral track-way.

My invention aims to provide a novel device wherein the principle of an Archimedean screw is employed for elevating a car or chariot to a desired elevation. In this connection, my improved amusement device is particularly intended for amusement parks and such places.

The device is designed to represent a large cork in which rotates a cork screw, a part of the screw being exposed and operated, whereby parties upon the device will appear to a spectator as if being drawn or pulled through a cork. An altogether different sensation however, is imparted to participants in the pleasure device, owing to the fact that the interior of the cork or device can be suitably decorated to represent numerous scenes throughout the entire route of an ascending or descending car or chariot. To this end, I arrange the structural details of the invention in a novel and compact manner, whereby the device will occupy a comparatively small space and will insure perfect safety of parties riding thereon.

The detail construction entering into my invention will be hereinafter more fully described and then specifically pointed out in the appended claims.

Referring to the drawing forming part of this specification, like numerals of reference designate corresponding parts throughout the several views, in which:—

Figure 1 is an elevation of my improved amusement device partly in section, Fig. 2 is a horizontal sectional view taken on the line *x*—*x* of Fig. 1, Fig. 3 is a similar view taken on the line *y*—*y* of Fig. 1, Fig. 4 is a vertical sectional view of a driven pulley and bearing comprising part of the device, Fig. 5 is a plan of the same, Fig. 6 is an elevation of a car or chariot supporting trolley, Fig. 7 is a bottom plan of the same, Fig. 8 is a vertical sectional view of the same, Fig. 9 is a plan of a portion of the device, Fig. 10 is a bottom plan of a car or chariot used in connection with the device, Fig. 11 is an end view of the same, Fig. 12 is a side elevation, illustrating a brake used in connection with the device.

To put my invention into practice, I provide a sound and firm foundation, 1, and upon the foundation I erect a plurality of standards which are preferably angle iron. The standards are circumferentially arranged and comprise an outer set 2, an inner set 3, and an intermediate set 4, the standards 2 and 4 being connected by braces 5, constituting supports for a spiral track-way as will be hereinafter described. The outer set of standards 2 are connected together by a shell or housing 6 which incloses the upper part of the amusement device. The standards 2, 3 and 4 support a horizontal platform 7 above the foundation 1, said platform serving functionally as the floor of the amusement device in order that easy access may be had to the chariots or cars used in connection with my improved device

Suitably secured to the central portion 8 of the foundation 1, is a bearing 9 for a vertically disposed shaft 10, said shaft passing upwardly through the platform or floor 7 and through the top of the amusement device, where it is provided with a large handle or ornamentation 11 representing the handle of a cork screw. Resting upon the bearing 9 are ball bearing plates 12, supporting a grooved pulley 14, which is suitably secured to the shaft 10. The pulley 14 is driven from a suitable source of energy located beneath the floor or platform 7 or in close proximity thereto. Suitably secured to the pulley 14, as at 15, is a plurality of circumferentially arranged standards 16, said standards being provided with outwardly extending brackets 17 supporting a spiral track way 18, the latter conforming to a screw which is rotated through the medium of the grooved pulley 14. The upper ends of the standards 16 are connected together by a head 19 suitably secured to the shaft 10 within the housing or shell 6 of the amusement device.

The upper ends of the standards 2, 3 and 4 are connected together by a framework 20 and suspended from said frame work by hangers 21 is a curved track 22, one end of which lies in close proximity to the path of

the uppermost convolution of the track way or screw 18, while the opposite end lies in close proximity to the shell or housing 6 and in the path of a spiral trackway 23, carried by the braces 5. In consequence of this construction, the spiral track way 23 surrounds the track way or screw 18, one being a single track way and the other being a double track way, cars or chariots being suspended from the former and supported upon the latter.

In order that the lowermost convolution of the spiral track way 23 may terminate adjacent to the innermost track way 18, I provide auxiliary standards 24 and braces 25 upon one side of the platform or floor 7, whereby a gradual and safe curve can be constructed to carry chariots or cars direct to the track way or screw 18, which constitutes the chariot or car elevating elements of my invention.

In connection with the track way of my improvement I use chariots or cars, one of which is illustrated in Figs. 1, 10, 11 and 12, of the drawings, and designated 26. The chariots or cars are constructed to accommodate a number of persons and are provided with suitable trucks 27, whereby after the chariots or cars have been elevated to the curved track 22, they can descend from said track to the track way 23, and then by gravity to the platform or floor 7. In order that each chariot or car can be elevated by the revoluble track or screw 18, I provide each chariot or car with a trolley harp 28, the latter being carried by a frame work 29 suitably secured to the chariot or car 26. In the harp 28 are journaled flanged wheels 30 and 31, and a follow roller 32, the wheel 30 being adapted to engage the track or screw 18, the wheel 31, the curved track 22, and the follow roller 32 engage either track and prevent the car or chariot 26 from swinging during its movement.

To positively guide the car or chariot on to the track way 23, I provide the bottom of the car or chariot with two horizontally revoluble wheels 27^a, these wheels engaging guides 27^b suitably supported from the standards 2, 3 and 4, said guides being provided with guard rails 27^c at the upper end of the track way 23.

The car or chariot 26 is guided while being elevated by two vertically disposed rails 33 and 34, the rail 33 being of the eye-beam construction and the rail 34 of the T-beam construction, said rails extending from the platform or floor 7 to the top of the amusement device and engaging flanged guide rollers 35, carried by the ends of the chariot or car 26. The rails 33 and 34 are suitably braced from the standards 3 of the device and terminate at their upper ends a sufficient distance from the curved track 22 to permit of the chariot or car 26 being switched upon said track. In order that a car or chariot can be placed in position, to be elevated by the track way or screw 18, I construct the lower part of the rail 34 as a movable section 36 (see Fig. 3) the movable section either being pivoted or hinged to the end of the rail 34 or to the platform or floor 7 of the device.

To transfer the car or chariot 26 from the screw or track way 18 to the curved track 22, I provide the track way or screw 18 adjacent to the uppermost convolution thereof with an arm 37. As the trolley 28 reaches the uppermost convolution of the revolving track way 18, the trolley passes upon the curved track 22, just prior to the end of the last convolution of the track or screw 18 passing the end of the curved track way 22, the arm 37 carried by the track way or screw 18 striking the trolley harp 28 and giving it sufficient impetus to descend upon the curved track 22 and passing upon the spiral gravity way 23.

In Fig. 12, I have illustrated a brake adapted to be used at the lower end of the track way 22, said brake consisting of a plate or board 35^a movably mounted upon bearings 36^a, said bearings being moved by a lever 37^a manipulated by the operator or attendant of the amusement device. The board 35^a is adapted to engage the bottom faces of the housings 27^d of the wheels 27^a.

It will be apparent from the illustration of my invention that I have devised novel and compact means within an amusement device for imparting two sensations to persons carried in the chariots or cars thereof, first elevating the car or chariot through the medium of a track way constructed upon the principle of an Archimedean screw, and second, by allowing a chariot or car to descend by gravity. It will thus be seen that I have devised novel means for hoisting a car or chariot to such an elevation that a spiral track way of considerable length can be constructed to cause a car or chariot to travel a considerable distance by gravity and thus increase the merits of the device as a medium for pleasure.

The novel construction of my improvement permits of the elevating mechanism being entirely screened or partitioned from the gravity railway, and in this manner two distinct and separate rides can be provided by presenting different scenery in connection with the elevation and descent of the cars or chariots. In constructing the amusement device to represent a cork and cork screw, I have simply presented one of the novel and attractive ways in which my amusement device can be used, and it is with this end in view, that I employ the principle of an Archimedean screw for hoisting a car or chariot to the desired elevation.

A suitable brake mechanism, such as illustrated in Fig. 12, can be used in connection

with each car or chariot or at various points throughout the gravity track way, to retard the rapidity of the car if necessary, but I preferably make the convolutions of the gravity track of sufficient radius whereby gradual curves will be provided that will prevent a rapid descent of a car.

I do not care to confine myself to the structural details of the invention, as sufficient braces and tie rods will be employed to insure perfect safety of numerous cars or chariots *en route* throughout the device.

What I claim and desire to secure by Letters Patent, is:—

1. In an amusement device, the combination with a foundation, of metallic standards supported thereby and circumferentially arranged in sets, a housing supported by some of said standards, a grooved pulley revolubly mounted upon said foundation, a plurality of circumferentially arranged standards carried thereby, a spiral track or screw carried by said standards, a spiral gravity track way supported by sets of standards and having its ends terminating in close proximity to the upper and lower ends of said spiral track or screw, a track suspended from the top of said device, and having its ends terminating adjacent to the upper ends of said spiral track ways, a car or chariot adapted to be elevated by the track way or screw and descend upon said gravity track way, and means arranged adjacent to said spiral track way or screw for guiding the upward movement of said car or chariot.

2. In an amusement device, the combination with a foundation, of standards supported thereby, a housing carried by said standards, a plurality of circumferentially arranged standards mounted for rotation upon said foundation, a spiral track or screw carried by said standards, a spiral track supported by the first mentioned standards and having its ends terminating adjacent to the upper and lower ends of said track or screw, a car or chariot adapted to be elevated by said track or screw, means mounted adjacent to said circumferentially arranged standards for guiding the upward movement of said car or chariot, and means for transferring said car or chariot from said track or screw to said gravity track.

3. In an amusement device, the combination with a foundation, of standards carried thereby, a housing supported by said standards, a plurality of circumferentially arranged standards mounted for rotation upon said foundation, a spiral track carried by said standards, a gravity track supported by the first mentioned standards and having its ends terminating adjacent to the ends of said spiral track, a car or chariot adapted to be elevated by said spiral track, means to guide the elevation of said car or chariot, and means to transfer said car or chariot from the upper end of said spiral track and said gravity track.

4. An amusement device consisting of a foundation, standards supported thereby, a housing inclosing the upper part of said standards, a spiral gravity track supported by said standards, a spiral track or screw mounted for rotation within said gravity track, a car or chariot adapted to be elevated by said spiral track or screw, means to guide the elevation of said car or chariot, and means to transfer said car or chariot from said spiral track or screw to said gravity track.

5. An amusement device embodying circumferentially arranged standards, a housing partially inclosing said standards, a spiral track or screw mounted for rotation within said standards, a gravity track supported by said standards, and surrounding said spiral track or screw, a car or chariot adapted to be elevated by said spiral track or screw, means to guide the elevation of said car or chariot, means to transfer said car or chariot from said spiral track or screw to said gravity track, and means to rotate said spiral track or screw.

6. An amusement device consisting of a plurality of circumferentially arranged standards mounted for rotation, a spiral track or screw carried by said standards, a gravity track surrounding said spiral track or screw, a car or chariot adapted to be elevated by said spiral track or screw, means to guide the elevation of said car or chariot, means to transfer said car or chariot from said spiral track or screw to said gravity track, and means to partially inclose said tracks.

7. An amusement device consisting of a spiral gravity track, a hoisting mechanism located centrally of said track and constructed upon the principle of an Archimedean screw, a car or chariot adapted to be elevated by said mechanism, means to guide the elevation of said car or chariot, means to transfer the elevated car or chariot to said gravity track, and means to operate said hoisting mechanism.

8. An amusement device consisting of a gravity track, a hoisting mechanism located adjacent to said track and constructed upon the principle of an Archimedean screw, a car adapted to be elevated by said mechanism and allowed to descend by gravity upon said track, and means to guide the elevation of said car.

9. An amusement apparatus, comprising a stationary shell, a gravity-track within the shell, and a centrally-arranged vertically-disposed spiral-track substantially in the form of a screw revoluble within the shell for lifting cars to the top of the shell, means for transferring cars from said vertically-dis-

posed spiral track to the gravity-track, and means for operating said vertically-disposed spiral-track.

10. An amusement apparatus, comprising a stationary spiral gravity-track, a vertically-disposed revoluble spiral-track substantially in the form of a screw arranged within the gravity-track, means for suspending cars from said revoluble spiral-track, means at the upper end of said tracks for transferring the cars from the revoluble spiral-track to the stationary gravity-track, and means for rotating said revoluble spiral-track.

11. In an amusement apparatus, a vertically-disposed revoluble spiral-track, means for suspending cars from said track for elevation to the upper end thereof, a stationary gravity-track surrounding the revoluble spiral-track, means for transferring cars from the upper end of the revoluble spiral-track to the upper end of the stationary gravity-track, and means for rotating said revoluble spiral track.

12. In an amusement device, a vertically-disposed car-hoisting track substantially in the form of a screw, a surrounding gravity-track, means for transferring cars from the upper end of the hoisting track to the upper end of the gravity-track, means for re-transferring a car from the lower end of the gravity-track to the lower end of the car-hoisting track, and means for rotating said car-hoisting track.

13. In an amusement apparatus, a vertically-disposed car-hoisting track substantially in the form of a screw, means for suspending cars from said track, means for rotating the track to carry the cars from the lower end thereof to the upper end thereof, and means for receiving said cars from the upper end of the track and returning them to the lower end of the track in position to be again elevated by said car-hoisting track.

14. In an amusement apparatus, a vertically-disposed car-hoisting track substantially in the form of an Archimedean screw, means for rotating said car-hoisting track, means for suspending cars thereon whereby they are elevated to the top of the track as the latter is rotated, a surrounding gravity-track receiving cars from the upper end of the revoluble car-hoisting track for returning the cars to the lower end of said car-hoisting track, and an inclosing shell for both of said tracks.

15. In an amusement apparatus, a vertically-disposed car-hoisting track, means for rotating said car-hoisting track, means for suspending a car on said track whereby it will be elevated to the top of the track as the latter is rotated, a surrounding gravity-track to receive said car from the upper end of the car-hoisting track and return the car to the lower end of said car-hoisting track, and a stationary shell inclosing both of said tracks.

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

WILLIAM J. BROWNE.

Witnesses:
MAX H. SROLOVITZ,
K. H. BUTLER.