

No. 771,322.

PATENTED OCT. 4, 1904.

H. H. PATTEE.  
BALL COASTER.

APPLICATION FILED DEC. 5, 1903.

NO MODEL.

3. SHEETS—SHEET 1.

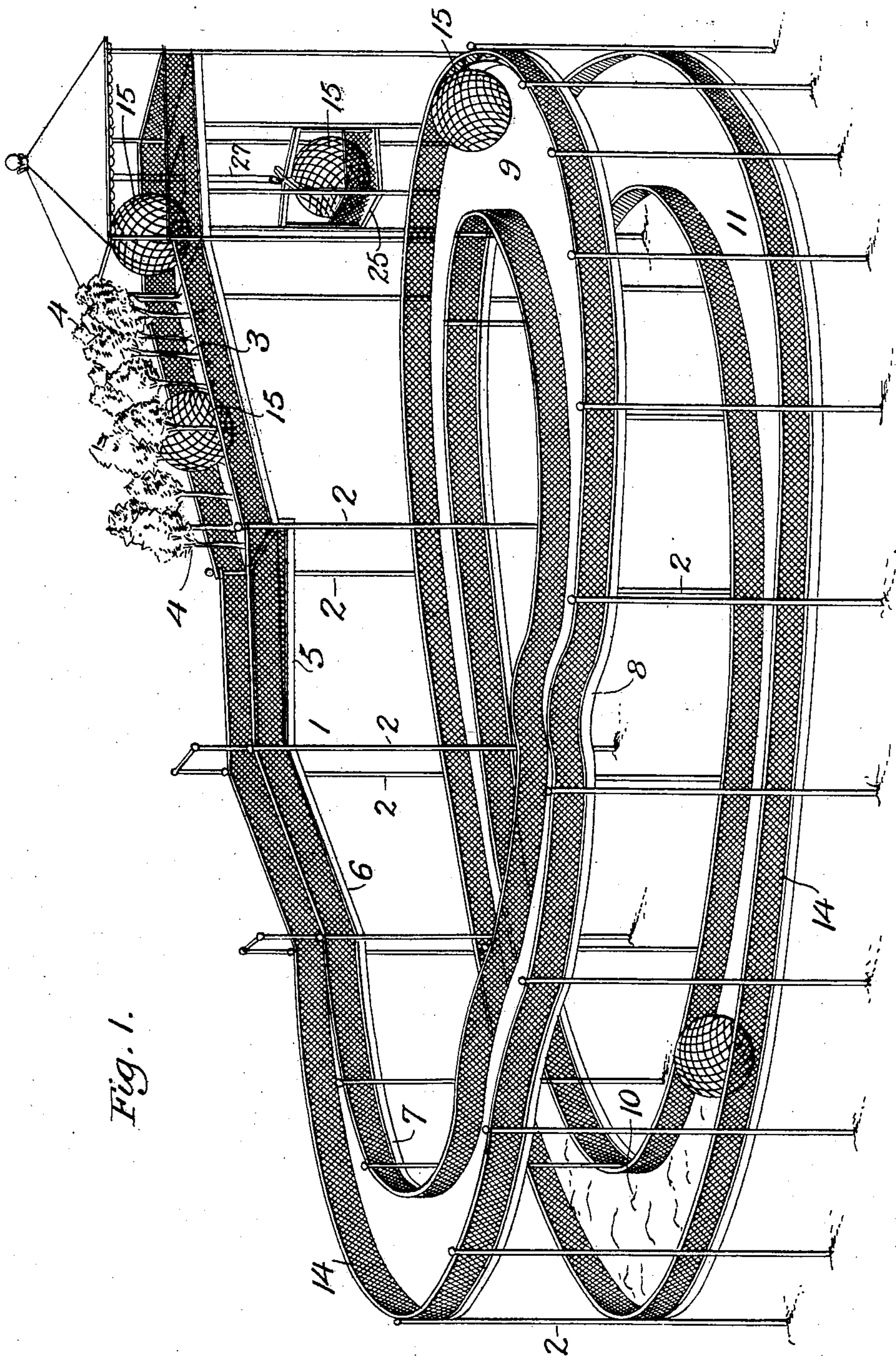


Fig. 1.

Witnesses

James F. Duhamel  
A. E. Dannels.

Herbert A. Pattee Inventor  
By his Attorney Fred A. Caskey

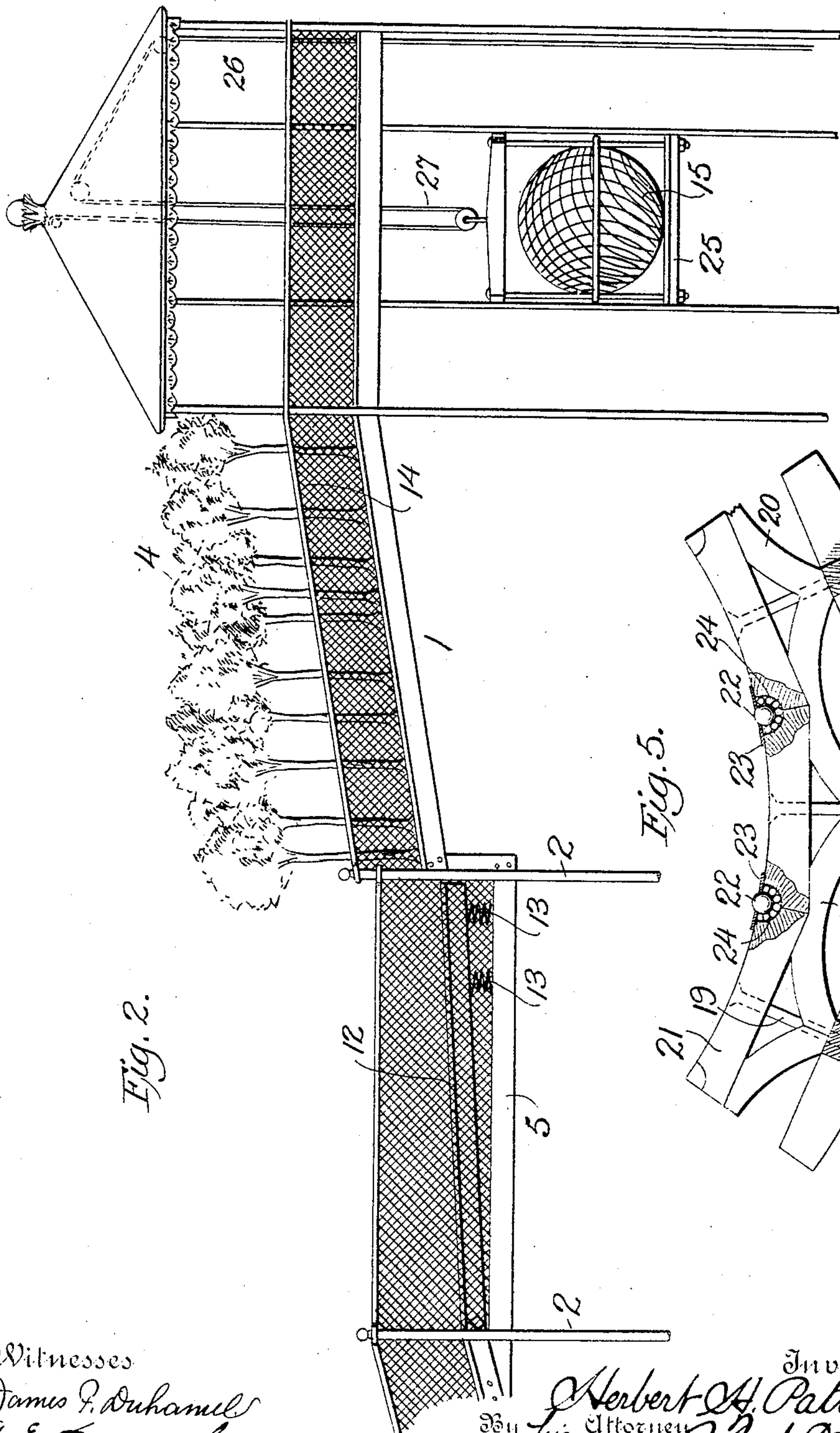


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3 SHEETS—SHEET 2.



Witnesses  
James F. Duhamel  
A. E. Samuels.

Inventor  
Herbert H. Pattee  
By *his* Attorney  
Fred W. Masker.



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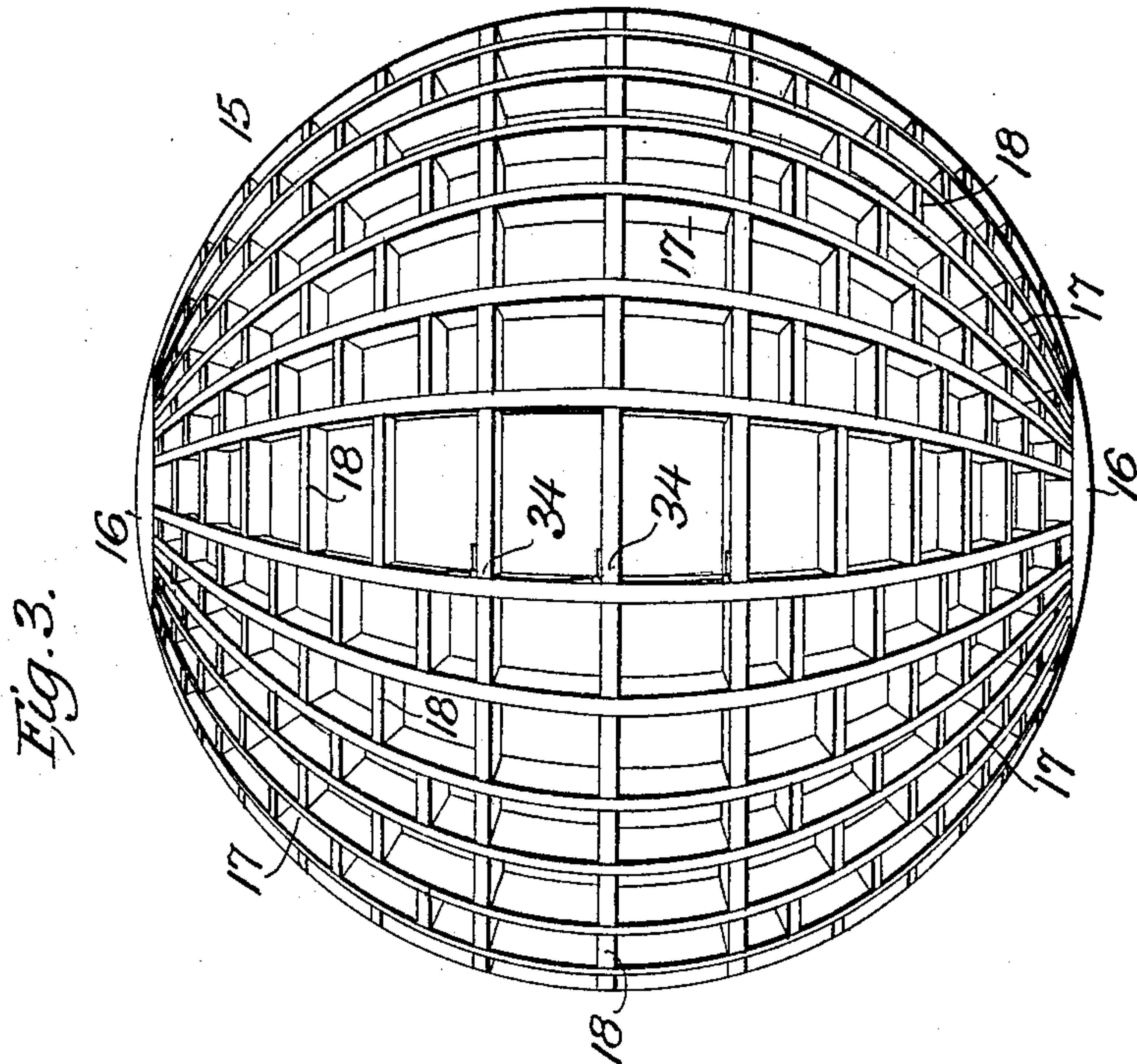
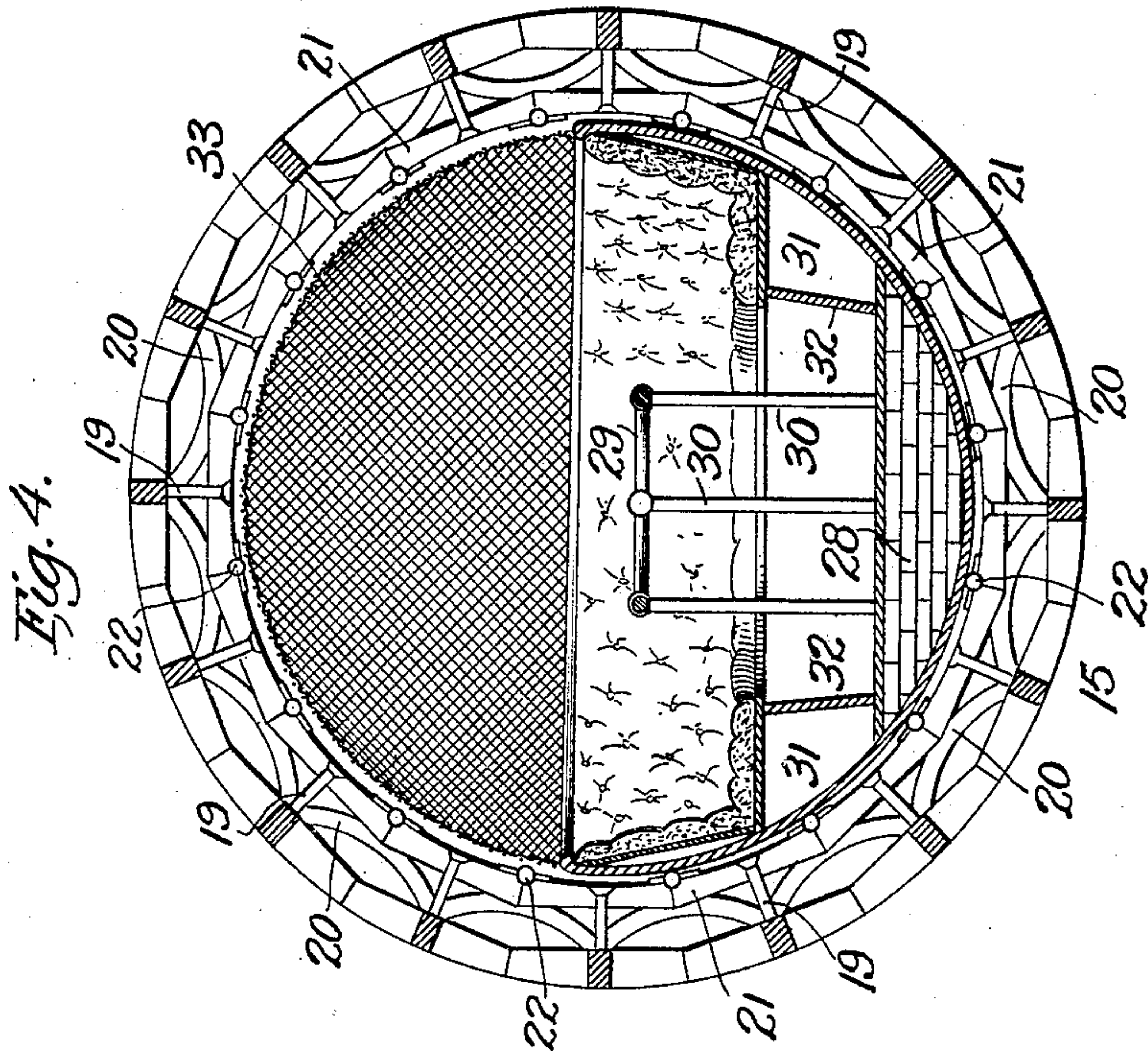
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3 SHEETS—SHEET 3.



Witnesses  
James F. Dahamley  
A. E. Samuels

Inventor  
Herbert H. Pattee  
By his Attorney Fred W. Wisker.



# UNITED STATES PATENT OFFICE.

HERBERT H. PATTEE, OF NEW YORK, N. Y., ASSIGNOR TO THE PLANETS COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

## BALL-COASTER.

SPECIFICATION forming part of Letters Patent No. 771,322, dated October 4, 1904.

Application filed December 5, 1903. Serial No. 183,849. (No model.)

*To all whom it may concern:*

Be it known that I, HERBERT H. PATTEE, a citizen of the United States of America, and a resident of the city, county, and State of New York, have invented certain new and useful Improvements in Ball-Coasters, of which the following is a specification.

This invention relates to an amusement or recreation device adapted to be utilized at parks, fairs, seaside resorts, exhibitions, and other places, its object being to provide an entertaining toy for the people which will operate in a startling or sensational manner, but in perfect safety to those enjoying it; and the invention consists, essentially, in a ball or sphere which rolls freely along a path, preferably an inclined path, by the action of gravity and said gravity-rolling ball serving as a car to carry passengers; and the invention may also be said to consist in numerous details and peculiarities in the construction, combination, and arrangements of parts, substantially as will be hereinafter described and claimed.

In the annexed drawings, illustrating my invention, Figure 1 is a perspective view of my ball-coasting device. Fig. 2 is a side elevation of the same and shows an elevating means for lifting the ball from the level of one terminal of the track to the higher level of the terminal where the coasting start is made. Fig. 3 is a side elevation of the ball. Fig. 4 is a vertical section of the same. Fig. 5 is an enlarged sectional view of a segment of the ball, showing the arrangement of the antifric- tion devices within the latter.

Similar characters of reference denote like parts throughout all the different figures of the drawings.

The track or path along which the ball travels may be of any suitable width, length, incline, and construction, it being only necessary that it be sufficiently inclined at one or more points to enable the ball to descend from one end to the other.

One form of track is shown in the drawings at 1, which is made up of sections, some inclined, some level, some smooth, some rough, some descending, and some ascending, and

the whole following a generally circuitous course and gradually dropping lower and lower, so that the ball may travel easily from the starting-point to the end of the path, having at certain times its speed accelerated and at other times retarded. This path 1, which is given here simply by way of illustration, is supported by uprights 2 and is guarded at the edges by sides or rails 14, which prevent the ball from jumping the track, although affording it plenty of lateral play. Further, the track or path 1 consists of an inclined section 3, a horizontal section 5, an inclined section 6, whose inclination is steeper than that of section 3, a curved inclined section 7, a rising and curving portion 8, a long sweeping inclined curve 9, a rough undulating inclined curve 10, and another long curved incline 11; but of course this succession of different forms in the track may vary widely, provided only the object is subserved, which is to give the ball the proper speed, and thus excite the interest of the occupants and the onlookers. The horizontal section 5 has a pivoted or hinged cover 21 resting on springs 13, whereby a rebound is given to the ball when it strikes it. An elevator 25 of any preferred construction, operated by means of a cable 27, may be employed for lifting the balls from the lower end of the track to the starting-point—as, for instance, the house 26. (Shown in Figs. 1 and 2.) Further, it will be observed that the track or path may be provided at certain points with obstacles to the free movement of the ball—as, for instance, the trees 4, rising from the incline 3, among which trees the ball deploys after leaving the house 26. Obviously the ball will have an irregular bumping movement in these woods, which will add to the pleasure of the passengers, and as soon as it is released from contact with the trees will under the action of gravity shoot down along the inclined way at a high speed and in a startling and striking manner.

I will now proceed to describe the construction of the ball which forms the leading feature of this invention. Examples of this ball are shown at 15. It consists, essentially, of



a skeleton or foraminous shell through the interstices or openings in which persons riding within may readily gaze upon their surroundings no matter in what direction or at what speed the ball may be traveling. This ball must be of great strength, capable of withstanding severe shocks, and must be of sufficiently-accurate sphericity not to permit flat faces that would give a shock to the occupants of the ball when it is rolling along the path. One form of construction of the ball is shown very fully in Figs. 3, 4, and 5. Here the shell consists of the polar pieces 16, longitudinal ribs 17, and latitudinal connections 18, the latter being securely fastened to the long ribs, and there being openings, as shown, between the longitudinal and latitudinal ribs, or, in other words, an open-work construction, like a lattice-frame, is built on the shape of a sphere. Inside of this outer skeleton construction is another similar-ribbed construction 21. Between the inner skeleton 21 and the outer ribs 17 18 curved braces 20 are placed, and suitable bolts 19, passing through the skeleton frame 21 and the outer ribs, as well as the braces 20, serve to firmly unite the several parts and provide a stiff, unyielding, thoroughly-braced envelop for the ball. As one example of antifriction means which may be employed between the car and the inclosing shell I employ ball-bearings arranged in the manner I will now describe. On the inner surface of this outer sphere I provide a plurality of ball-bearings that will afford a multiplicity of antifriction contact-points for supporting an inner car to contain the passengers who may wish to avail themselves of the novel and exciting experience of riding inside a swiftly-moving ball. 32 designates the frame of this car, which is preferably of a semispherical form, as is indicated in Fig. 4, the contour of the car conforming to the inner surface of the shell and being in contact with the ball-bearings on the said inner surface. Car 32 is heavily weighted by means of leaden blocks 23 or other suitable ponderable means which will give the bottom of the car a very great weight, so that the car will remain level however much the outer shell may revolve and rotate about it, the car being thus relatively stationary to the ball and always maintaining a horizontal and level position. Entrance to car 32 is made through a suitable door consisting of a cut-out portion of the sphere, which portion is hinged at 34. The car 32 is provided with one or more seats for passengers, and also with a hand-rail 29, supported on uprights 30, which rail may be grasped by the passengers to steady themselves while the ball is in motion. The ball-bearings are preferably similar to ball-bearing casters, comprising—for example, as shown in Fig. 5—a large ball 22, a segment of whose spherical surface is exposed to contact with the car 32, and a series of small balls 24,

forming a cup to receive the ball 22, the said ball 22, as well as the small balls 24, being held within a socket by means of an outer plate 23. Thus a large number of balls are arranged on the inner surface of the outer sphere and in contact with the spherical surface of the car 32, the result being that in whatever direction the ball rolls and whether it goes fast or slow the car is kept relatively stationary and level, and the safety of the passengers is thereby insured. The outer shell may, if desired, be constructed of spring-steel or other metal or material, so as to give the ball an elastic or resilient movement. Spiral springs, spring-arches, rubber cushions, or other means may be employed for this purpose. When these yielding means are employed, the inner frame will of course be rigid.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A pleasure device, consisting of a track or guideway, and a freely-rolling ball thereon which carries passengers, said ball being free to move forward and sidewise.
2. The combination with a track, of a gravity-rolling ball, and a relatively stationary car within the ball.
3. The combination with an inclined surface, of a gravity-ball, a car within the ball, and ball-bearings between the car and the ball, whereby the car maintains a horizontal position.
4. The combination with an inclined track, of a rolling ball, and a relatively stationary car within the ball.
5. The combination with an inclined track, of a rolling ball, and a relatively stationary car within the ball, said car being properly weighted to keep it level.
6. The combination with an inclined track, of a rolling ball, a relatively stationary car within the ball, ball-bearings on the inner surface of the ball on which the car rests at all times, and a weight in the car for keeping it level.
7. A pleasure device, consisting of a track having some portions rough, and others smooth, and a ball rolling thereon, a relatively stationary car within the ball and means for transferring the ball from the lower terminal of the track to the higher terminal.
8. A pleasure device, consisting of a track or way, a rolling ball thereon having an elastic or resilient surface, and a relatively stationary car within the ball.
9. The combination with a track, of a hollow ball, a relatively stationary car within the ball, and means for weighting the car to keep it level.
10. The combination with a track, of a ball, a relatively stationary car within the ball, and antifriction means between the car and the ball.
11. The combination with a freely-rolling



ball, of a relatively stationary car within it for carrying passengers.

12. The combination with a freely-rolling hollow ball, of a relatively stationary car within the same, and antifriction means between the car and the ball.

13. The combination with a hollow ball free to roll, of a relatively stationary car for carrying passengers, said car being weighted to keep it level, and antifriction means between the car and the ball.

14. The combination with an inclined track, of a ball arranged to roll thereon, means for permitting entrance into the interior of said ball, a relatively stationary car within the ball, and antifriction means between the car and the ball consisting of ball-bearings.

15. The combination with a hollow ball provided on the interior with ball-bearings, of a relatively stationary car within the ball and in contact with the ball-bearings, said car being designed to carry passengers.

16. The combination with a rolling ball having its wall provided with openings, of a car within the same for carrying passengers, which car remains level while the ball rolls.

17. An amusement apparatus comprising a

freely-rolling ball carrying passengers and having a foraminous wall.

18. An amusement apparatus consisting in the combination with a rolling ball having a foraminous wall, of a relatively stationary car within the ball.

19. An amusement apparatus comprising a freely-rolling ball having a wire-netting wall, in combination with a car within the ball adapted to carry passengers and to be kept level.

20. An amusement apparatus comprising a rolling ball carrying passengers, the walls of which are constructed to permit the passengers to see without.

21. An amusement apparatus comprising a spherical rolling device having a foraminous wall, in combination with internal means for carrying passengers, said means keeping level while the ball rolls.

Signed at New York city this 4th day of December, 1903.

HERBERT H. PATTEE.

Witnesses:

JOHN H. HAZELTON,  
A. E. SAMUELS.