

No. 876,841.

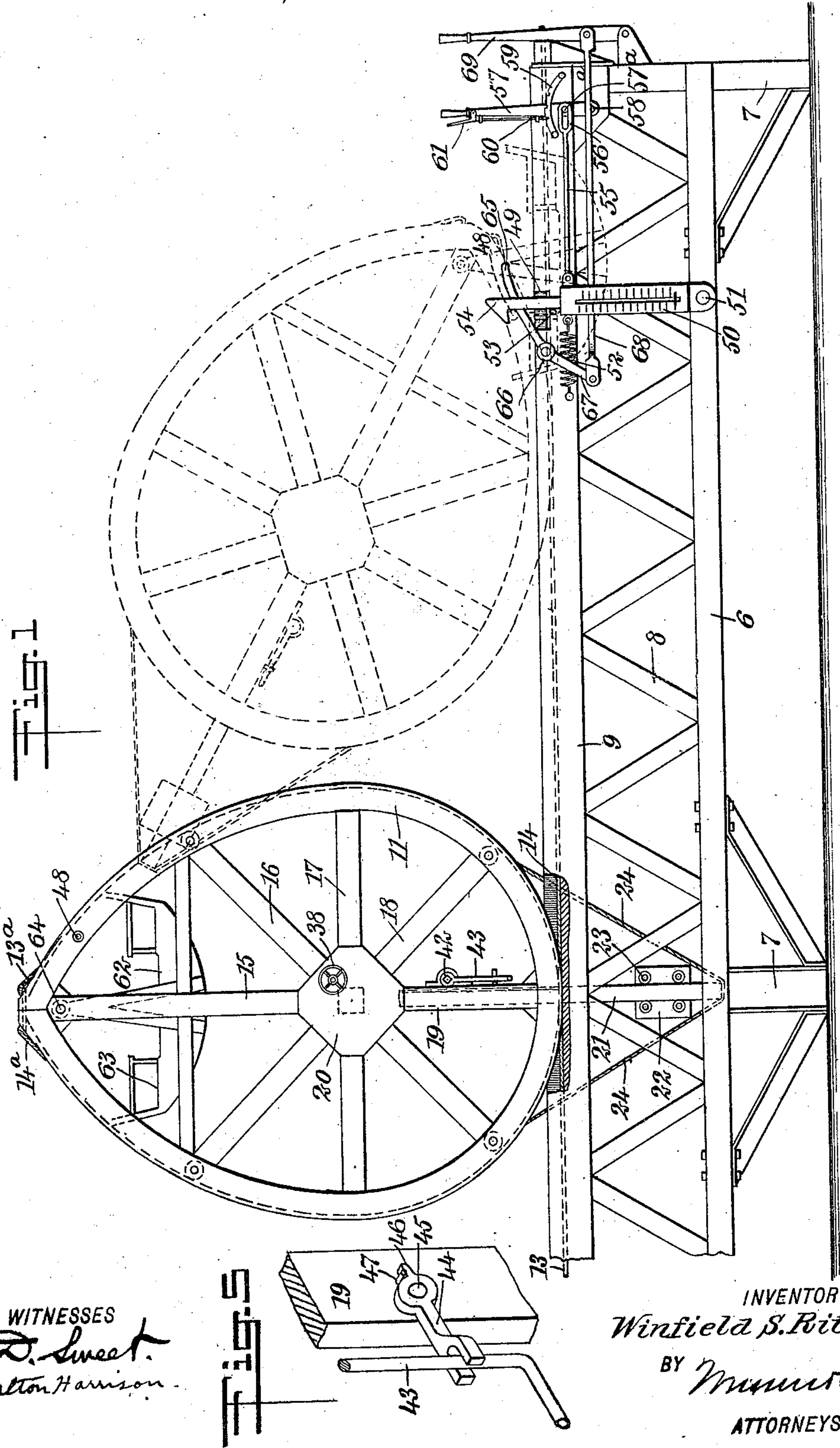
PATENTED JAN. 14, 1908.

W. S. RITCH.

OBSERVATION SWING.

APPLICATION FILED NOV. 9, 1907.

2 SHEETS—SHEET 1.

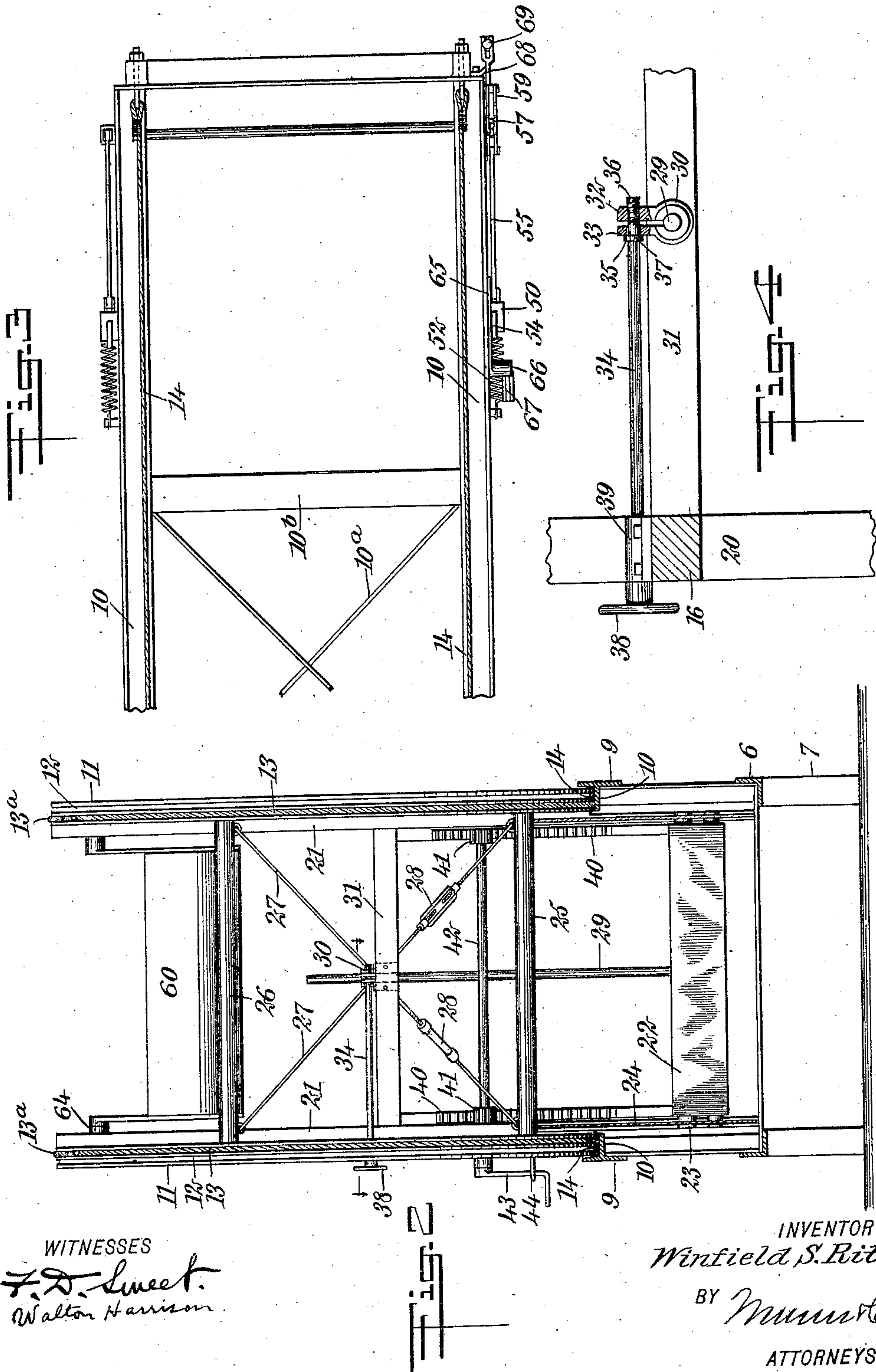


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# UNITED STATES PATENT OFFICE.

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## OBSERVATION-SWING.

No. 876,841.

Specification of Letters Patent.

Patented Jan. 14, 1908.

Application filed November 9, 1907. Serial No. 401,421.

*To all whom it may concern:*

Be it known that I, WINFIELD S. RITCH, a citizen of the United States, and a resident of the city of New York, borough of Brooklyn, in the county of Kings and State of New York, have invented a new and Improved Observation-Swing, of which the following is a full, clear, and exact description.

My invention relates to mechanism used for purposes of observation and amusement, and comprises more particularly a type of swing having some of the characteristics of an observation wheel.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of my observation swing complete, showing the passenger car in its most elevated position, and also indicating in dotted lines a portion of the movement of the rockers supporting the car; Fig. 2 is a substantially central vertical section through Fig. 1, showing in elevation the rockers supporting the car, and also supporting the counterweight for the car and gearing for shifting this counterweight at will; Fig. 3 is a fragmentary plan view of a portion of the tracks used for supporting the rockers, this view also showing the hand-operated mechanism for releasing the rockers; Fig. 4 is an enlarged fragmentary section showing the hand wheel and parts operated thereby for securing the counterweight at different elevations; and Fig. 5 is an enlarged fragmentary perspective of the latch used for holding rigidly in position the hand crank used in operating the mechanism for shifting the counterweight.

Beams 6 are mounted upon supports 7, and connected with these beams are brace rods 8 supporting tracks 9 having parallel tread portions 10, as will be understood from Fig. 3. Brace rods 10<sup>a</sup> and cross beams 10<sup>b</sup> are provided for the purpose of securing the tracks rigid in relation to each other. A pair of rockers 11 have each a substantially elliptical form, as indicated in Fig. 1. Each rocker 11 is provided with a pair of grooves 12 parallel with each other and cords 13, 14 are provided and so disposed as to fit loosely into these grooves. These cords are fastened at their outermost ends, as will be understood from Fig. 3, and the

cords are partially wound upon the rockers 11 and terminate in loops 13<sup>a</sup> and 14<sup>a</sup>, whereby they are rigidly secured to the rockers (see Fig. 1).

The rockers contain spokes 15, 16, 17, 18, 19 mounted in a central hub 20. Connected with the rockers upon the inner faces thereof are rails 21, each having the form of a rigid bar. A counterweight 22, is provided with rollers 23, which engage opposite sides of each bar 21, as will be understood from Figs. 1 and 2. Each rail 21 is engaged at its outer end by a wire cable 24, which serves to brace it rigidly in position, the ends of the wire cables 24 being connected with cross rods 25. These cross rods together with other cross rods 26 connect the rollers firmly together.

Brace rods 27 are provided with turnbuckles 28 and cross each other, and are connected with the brace rods 25, 26, as indicated in Fig. 2. Mounted centrally upon the counterweight 22 is a rod 29, which extends upwardly through a collar 30, supported upon a cross beam 31. This collar is provided with jaws 32, 33, the jaw 32 being provided with a threaded hole, and the jaw 33 being provided with a smooth hole 37 in registry therewith, as will be understood from Fig. 4.

A rod 34 is provided with an annular bead 35 integral with it, and also provided with a threaded portion 36, this threaded portion 36 engaging the threaded hole of the jaw 32, while the smooth portion 35 extends loosely through the smooth hole 37. A hand wheel 38 is mounted upon the rod 34 and used to turn the same, and a bearing 39 is provided for the rod 34. By turning the wheel 38 the jaws 32, 33 are moved toward each other, or allowed to spring apart, as the case may be, thereby tightening or loosening the split collar 30 relatively to the rod 29.

Two racks 40 are connected rigidly with the counterweight 22 and extend upwardly from the ends thereof. Pinions 41 engage the racks 40 and are mounted upon a revolvable shaft 42. A hand crank 43 is mounted upon the rod 42 and used for the purpose of turning the pinions 41, thereby raising or lowering the racks 40. By turning the hand wheel 38 so as to loosen the collar 30 and then turning the hand crank 43 so as to raise or lower the counterweight 22, the operator may bring the counterweight into any desired position within certain limits. This



being done, he again turns the hand wheel 38, and in so doing tightens the collar 30 upon the rod 29 while securing the counterweight in the desired position and enabling the counterweight to be supported directly from the collar 30 and beam 31. This avoids all necessity for supporting the counterweight from the pinions 41 and racks 40.

In order to avoid possibility of premature retrograde motion of the hand crank 43, a latch 44 (see Fig. 5), having the form of a fork, is provided for the purpose of engaging the hand crank. This latch is mounted upon a pivot 45 and is provided with a lug 46 which engages a pin 47 fixed in the spoke 19 and serving as a limiting stop for the latch. In order to be able to turn the hand crank 43, the operator raises the latch 44 and after the movement of the hand crank is completed, he lowers the latch so as to bring it into engagement with the hand crank 43. The friction of the pivot pin 46 may be relied upon to prevent accidental movement of the latch 44.

A pin 48 (see upper portion of Fig. 1) is mounted upon one of the rockers 11, and an aperture 49 is cut into one of the rails 9 in such position that the pin 48 may be brought into registry with this aperture, as indicated by dotted lines in Fig. 1. A dynamometer scale 50 is mounted on the beam 6 upon a pivot 51, and is connected by a spring 52 to the adjacent rail 9. The spring 52 tends to draw the scale toward the left, according to Fig. 1. An extensible latch 54, forming a part of the scale, is adapted to be engaged by the pin 48 and is normally held against a pin 53, carried by the rail 9.

When the parts are in their normal position, as indicated in Fig. 1, the pin 48 of the rocker, by engaging the upper end of the extensible latch 54, will force the latter slightly to the right according to Fig. 1, so that the pin 48 may catch under a portion of the latch 54, and to facilitate this purpose, the upper end of the latch 54 is beveled. A rod 55 is pivotally connected with the scale 50 and is provided at one of its ends with a link 56. A hand lever 57 is provided with a pin 57<sup>a</sup> which extends through the link 56. The hand lever 57 is mounted upon a pivot 58 secured to the framework. A ratchet 59 of arcuate form is engaged by a pawl 60 under control of a handle 61. A passenger car 62 is provided with seats 63 and is suspended from pivot pins 64 mounted upon the rockers.

A cam lever 65 is mounted upon a pivot 66 and is provided with a portion 67 extending below the tracks 9. A rod 68 is pivoted to the portion 67 and is also pivoted to a hand lever 69. By rocking the hand lever 69 the cam lever 65 may be caused to oscillate. When the rocker is in the position indicated by dotted lines in Fig. 1, the pin 48 engages the cam lever 65. When, therefore, the device is at rest and the pin 48 lodges against

the latch 54, as above described, the operator, by releasing said latch by aid of the hand lever 57, and at the same time pulling upon the hand lever 69, may start the rocker into motion with a considerable degree of impetus.

My invention is used as follows: The rockers are rocked or turned as indicated by dotted lines in Fig. 1, so that the latch 54 engages the pin 48 and holds the rockers in the position indicated by dotted lines in the figure just mentioned. Passengers now take their seats in the car 62 which hangs at a convenient level for this purpose. The operator notes from the dynamometer scale 50 the approximate weight of the passengers aboard and adjusts the counterweight 22 accordingly. It will be understood that this weight should always be so adjusted that the observation car will rise and pass over the center of movement and in doing this will not carry the observation car at a dangerous rate of speed on the one hand, and will not be too tardy on the other. The operator soon learns from experience how to adjust the counterweight quickly so as to accommodate a given amount of tonnage carried in the observation car.

Having adjusted the weight, he prevents any further movement of the latter by securing the hand crank 43 by aid of the latch 44 (see Fig. 5) as above described. The operator next releases the lever 57 by withdrawing the pawl 60 from the rack 59, and by turning the lever to the right, according to Fig. 1, he draws the latch 54 out of engagement with the pin 48. This releases the rockers and the observation car swings upward and over toward the left, oscillating back and forth several times. It depends upon the program whether the observation car 62 is allowed to come to a state of rest in the position indicated by full lines in Fig. 1. The rocking may be continuous, if desired, the operator merely grasping any portion of either one of the rockers and causing the rocking to take place after the manner of a swing, or he may simply release the rockers as above described and allow the car to come to a state of rest in its uppermost position.

The operator, by swinging the hand lever 69 back and forth, may cause the rocker to oscillate for an indefinite length of time, all strokes of the rocker being of substantially equal length.

I do not limit myself to any particular size or dimensions for the car, nor to its use in places of amusement, for obviously variations in such matters may be made without departing from the spirit of my invention. Neither do I limit myself to any particular material, nor to any exact shape for any part except as may be specified hereinafter in my claims.

Having thus described my invention, I



claim as new and desire to secure by Letters Patent:

1. A device of the character described, comprising tracks, rocking mechanism supported thereupon, an observation car mounted upon said rocking mechanism and carried thereby, and cords wound partially upon said rocking mechanism and disposed parallel with said tracks for the purpose of maintaining said rocking mechanism in a predetermined plane relatively to said tracks.
2. The combination of tracks, rockers of elliptical form engaging said tracks, an observation car mounted upon said rockers, and means for partially counterbalancing the weight of said observation car.
3. The combination of a track, rockers mounted thereupon, an observation car carried by said rockers, a counterweight connected with said rockers, and means for shifting the position of said counterweight for the purpose of varying the counterbalancing effect thereof relatively to said observation car.
4. The combination of tracks, a pair of rockers of substantially elliptical form engaging said tracks, an observation car mounted upon said rockers at a point remote from the geometrical center thereof, rails mounted upon said rockers, a counterweight connected movably with said rails, and means controllable at will for shifting the position of said counterweight relatively to said rails.
5. The combination of a track, rockers mounted thereupon, mechanism mounted upon said rockers for the purpose of carrying passengers, a scale to be temporarily engaged by said rockers for the purpose of indicating the approximate aggregate weight

of the passengers carried, a counterweight for partially counterbalancing the weight of said passengers, and means for connecting said scale with said rockers and disconnecting the same therefrom at will.

6. The combination of a track, rockers engaging the same, mechanism connected with said rockers for carrying passengers, a counterweight for partially counteracting the weight of said passengers, said counterweight accommodating variations in the aggregate weight of said passengers, and mechanism controllable at will for securing said counterweight in various positions independently of said mechanism used for shifting said counterweight.

7. The combination of a track, rockers engaging the same, mechanism connected with said rockers for carrying passengers, a cam lever for periodically actuating said rockers, and mechanism connected with said cam lever and including a hand lever for manipulating said cam lever.

8. The combination of an oscillating member provided with means for carrying passengers, and further provided with a pin, a movable hook engaging said pin and controllable by the operator for releasing the same, a cam lever for actuating said oscillating member, and means controllable at will for actuating said cam lever.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WINFIELD S. RITCH.

Witnesses:

WALTON HARRISON,  
EVERARD B. MARSHALL.