

No. 753,037.

PATENTED FEB. 23, 1904.

D. W. BLAIR.
OBSERVATION WHEEL.

APPLICATION FILED OCT. 9, 1903.

NO MODEL.

3 SHEETS—SHEET 1.

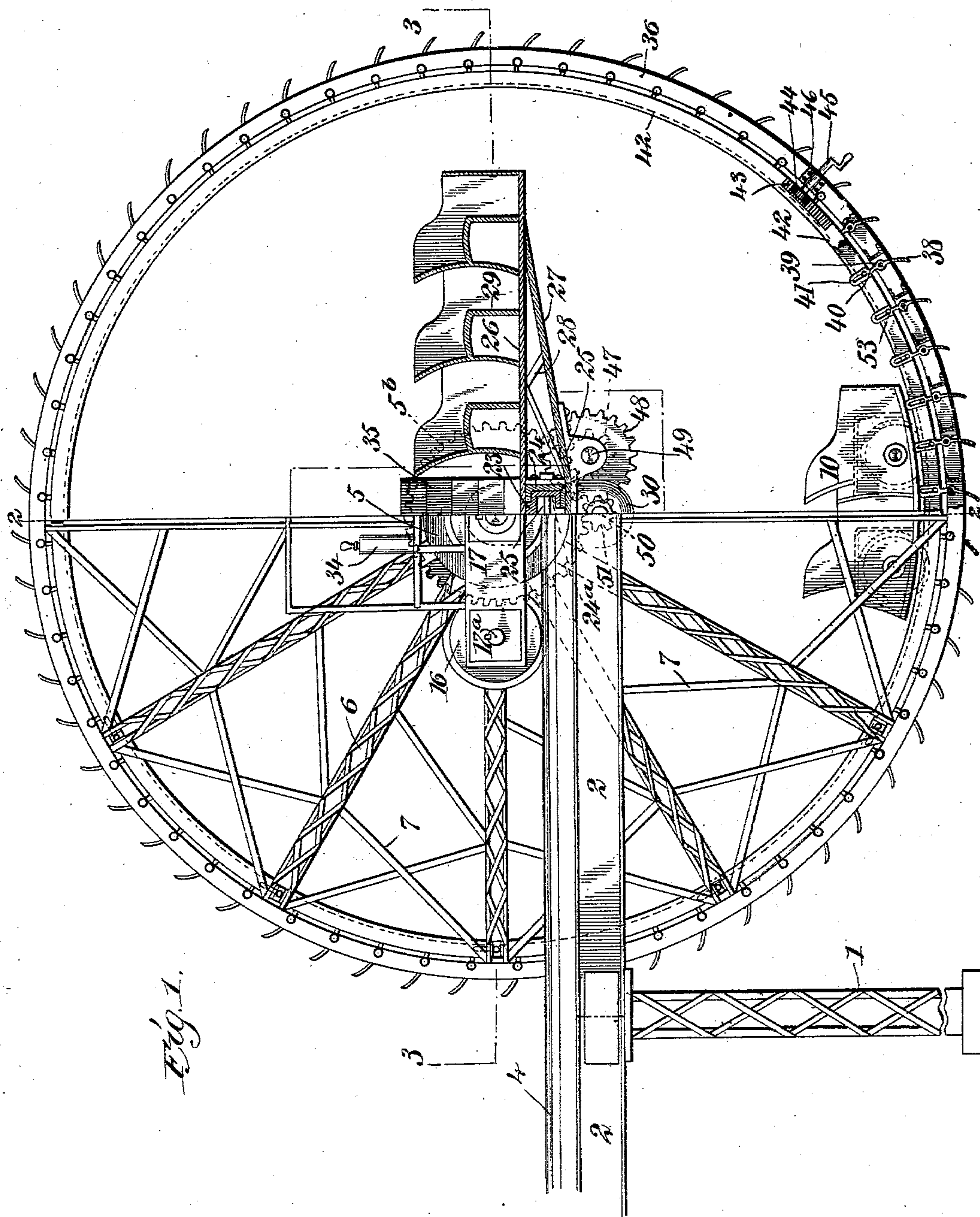


Fig. 1.

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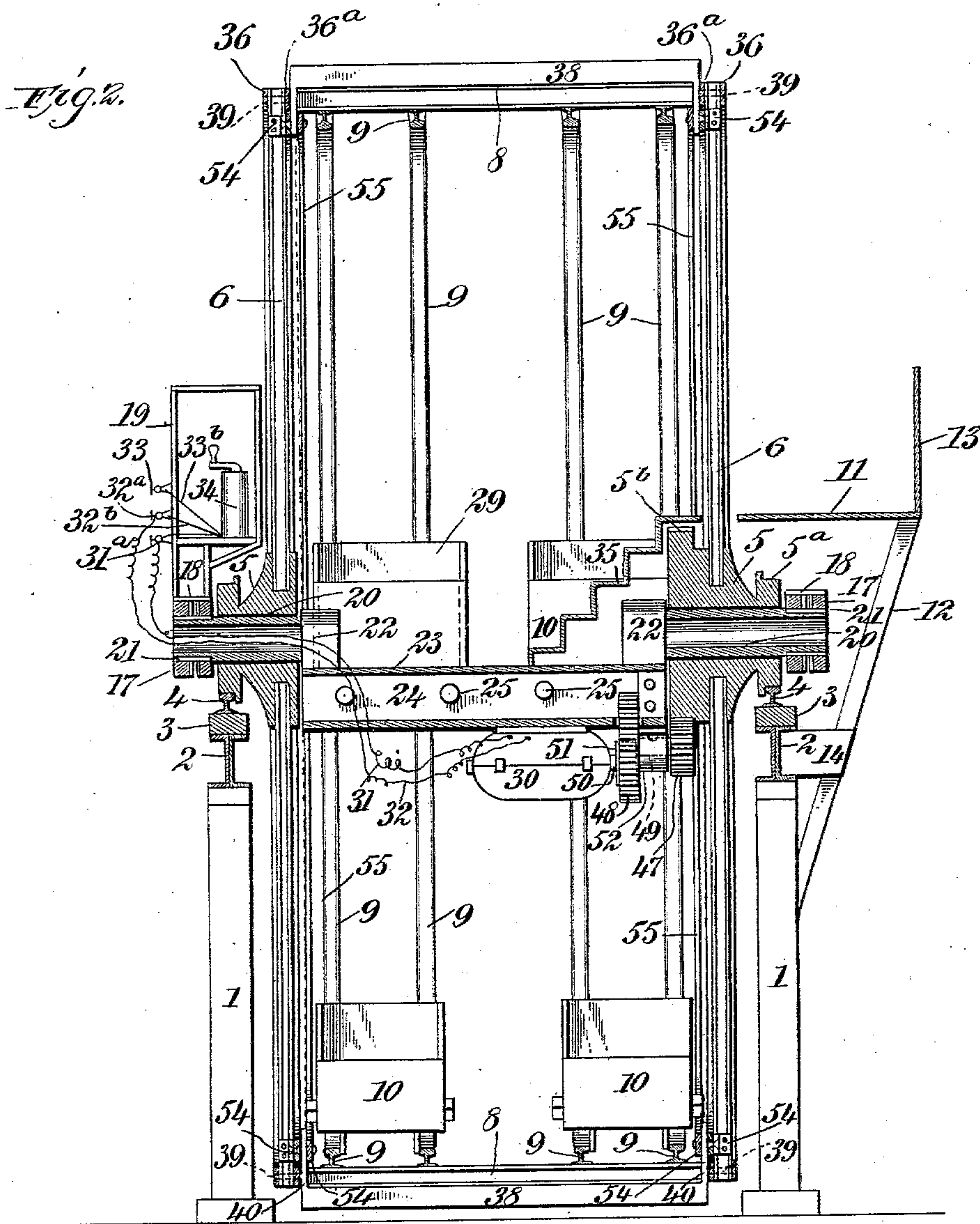
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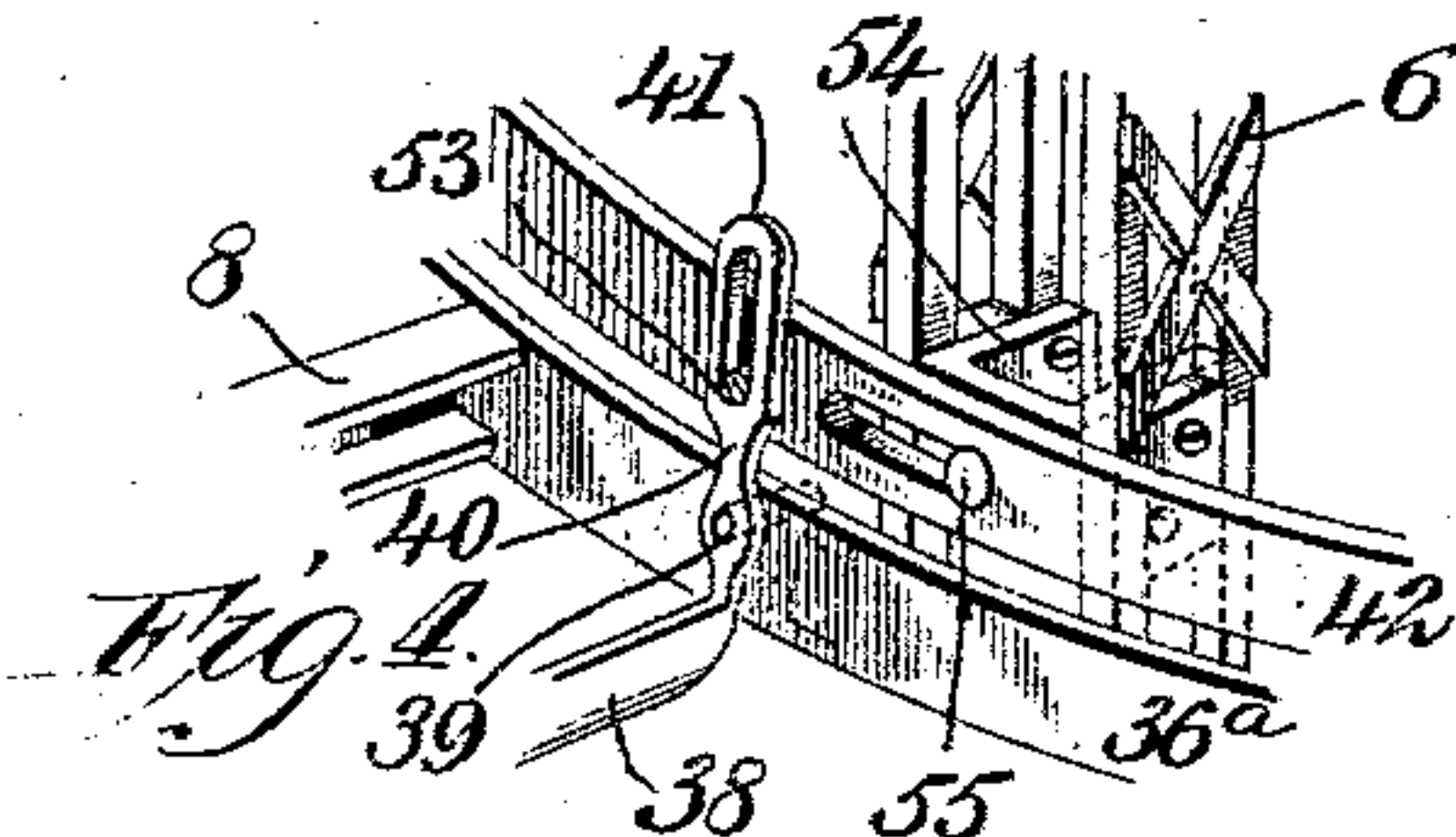
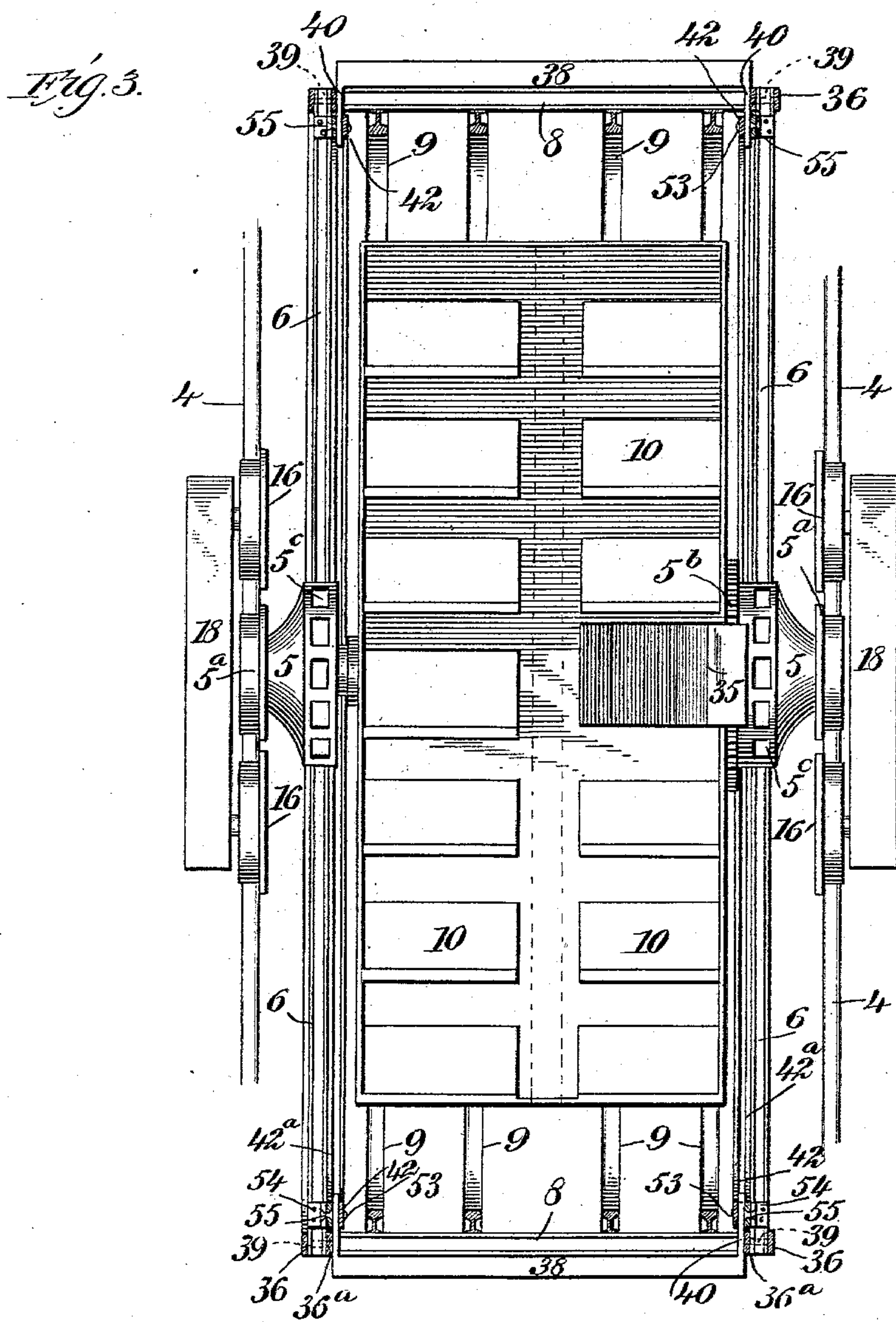
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3 SHEETS—SHEET 3.



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DAVID WESLEY BLAIR, OF PERTH AMBOY, NEW JERSEY.

OBSERVATION-WHEEL.

SPECIFICATION forming part of Letters Patent No. 753,037, dated February 23, 1904.

Application filed October 9, 1903. Serial No. 176,400. (No model.)

To all whom it may concern:

Be it known that I, DAVID WESLEY BLAIR, a citizen of the United States, and a resident of Perth Amboy, in the county of Middlesex and State of New Jersey, have invented a new and Improved Observation-Wheel, of which the following is a full, clear, and exact description.

My invention relates to observation-wheels, my more particular object being to produce such a type of wheel as will afford amusement and recreation and will particularly be adapted for public use.

My invention embodies certain general and specific features, as herein shown and described, and pointed out in the appended claims.

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, partly broken away and in section, showing my invention ready for use. Fig. 2 is a vertical section upon the line 2 2 of Fig. 1. Fig. 3 is a horizontal section upon the line 3 3 of Fig. 1, and Fig. 4 is a fragmentary detail showing the mounting of certain movable parts of the circumference of the wheel.

Upon the posts 1 are mounted a plurality of I-beams 2, arranged in pairs, as shown in Fig. 2, and connected together by longitudinal stringers 3, mounted thereon and parallel therewith. Disposed upon the stringers 3 are rails 4. The hubs of the observation-wheel are shown at 5 and are provided with wheels 5^a, integral therewith. The hubs 5 are further provided with gear-teeth 5^b and with spoke-holes 5^c, into which are secured the spokes 6, these spokes being connected together by means of braces 7. The outer ends of the spokes are connected together by means of bars 8, which serve both as connecting members for different parts of the wheel and as cross-ties for supporting the circular rails 9, which are rigidly mounted thereon. A series of observation-chairs are shown at 10. A platform 11, mounted upon rigid supports 12, is provided with a backboard 13, the platform being used for allowing the passengers

to embark and disembark. The supports 12 are connected by braces 14 with the I-beams 2 and are also connected directly with the posts 1. Wheels 16 are mounted upon either side of the wheels 5^a, as shown in Fig. 3, and are connected together by trucks 17, surmounted by top plates 18 and provided with fixed axlepins 17^a, upon which the wheels 16 revolve. It will be noted, therefore, that while all the wheels are free to revolve the trucks, the journals of the observation-wheel, and the platform within the observation-wheel have no revoluble movement.

Mounted within the hubs 5 are the hollow journals 20, upon which the trucks 17 are mounted, the outer ends of these journals being provided with keys 21, which engage the trucks, and thus prevent the journals from rotating. The inner ends of the journals 20 are rigidly connected with massive cranks 22, these cranks in turn being connected together by a rigid framework, consisting of a beam 23, upon either side of which are clamping-plates 24, held thereagainst by means of bolts 25, which pass entirely through the beam and the plates 24.

A platform 26 is provided upon its under side with a supporting-framework 27, this framework having numerous braces 28 for the purpose of strengthening it and carrying seats 29. An electric motor 30 is rigidly connected with the plates 24 and depends therefrom, as shown in Fig. 2. This motor is connected by means of wires 31 32, passing out through one of the hollow journals 20 to binding-posts 31^a 32^a, and another binding-post 33 is mounted adjacent to those just mentioned. The binding-posts 32^a 33 are connected, by means of wires 32^b 33^b, with the rheostat 34, which is mounted within a cab 19, from which the operator by manipulating the rheostat 34 may control the motor in the usual manner for controlling electric motors.

Steps 35 are provided for enabling the passengers to embark and disembark, the upper portions of the steps being on a level with the platform 11 for this purpose. The outer circumference of the wheel comprises a pair of large rings 36 36^a, connected together by pins 39, being thus arranged in pairs, as indicated

in Fig. 3. A number of fans 38 are pivoted to the pins 39, being thereby rendered movable relatively to the wheel. The spokes 6 are clamped upon either side by the rings 36 or 36^a, making a comparatively strong construction. The fans 38 are provided with stems 40, each having an eye 41, as shown more particularly in Fig. 4. A pair of rings 42 42^a are connected together by means of bolts 53, which bolts pass through the eyes 41. The rings 42 42^a are mounted upon brackets 54, these brackets being rigidly connected with the spokes 6 of the wheel. The rings 42 42^a are thus movable relatively to the other parts of the wheel. A rack 43 is mounted upon the ring 42 and is engaged by a pinion 44 upon a shaft 45, this shaft being revolvably mounted within a bearing 46. By rotating the shaft 45 the position of the rings 42 42^a may be shifted relatively to the position of the rings 36 36^a, so as to cause the fans 38 to assume different angles relatively to the general position of the observation-wheel. The fans can thus be brought into close proximity to the outer circumference of the wheel, and can thus be made to feather relatively thereto. The fans are for the purpose of creating a draft or breeze through the observation-wheel for the comfort of the passengers. Gear-wheels 47 and 48 are connected by a shaft 49. A shaft 50 constitutes the armature-shaft of the motor and rigidly carries a pinion 51, this pinion in turn engaging the gear-teeth 5^b. Motion is thus translated from the motor 30 through the gearing to the gear-teeth 5^b of the hub 5, thereby causing the wheel to rotate.

The parts inside of the observation-wheel and depending from the hollow journals 20 are prevented from turning, as above described, by the journals being keyed to the trucks in a horizontal position, as indicated in Fig. 1. No great difficulty attends this feature for the reason that the gearing, the motor, and the supports therefor are necessarily quite heavy, and the platform 26, with its metallic supports 27 28, is located below the center of gravity. Besides, if need be, the passengers can be so seated as to preserve an approximate balance.

My invention is used as follows: The motorman or conductor takes his station in the cab 19, the passengers embark from the platform 11, passing between the spokes 6 of the wheel and down the steps 35 to the chairs 10, being seated thereupon. The motorman by means of the rheostat 34 turns the current upon the motor 30, and thus sets the gearing into motion. The wheels 5^a having now a rotary motion act as driving-wheels and propel the observation-wheel along the rails 4, the wheel turning over and over at a comparatively rapid rate of speed—that is to say, one turn of the driving-wheels 5^a represents a turn of the entire observation-wheel, so that a considerable rotative effect of the wheel as

a whole is attained with comparatively little forward movement of the same. The passengers while perhaps going forward only a few yards have the sensation of traversing a great distance, the device thus acting to some extent as an illusion apparatus. The effect may be increased by adjusting the fans 38, as above described, so as to create a strong breeze, and thus all the passengers have the impression that the breeze is due to the great speed at which they are traveling. The large spokes moving successively past any given point of observation of the passengers necessarily creates the impression that the apparatus is moving with immense velocity. The majority of the passengers will of course be seated upon the chairs 29. Some few, however, may choose the chairs 10, these chairs tending, of course, to gravitate toward the lowest available point will remain substantially at the bottom and in the center of the wheel, as indicated in Fig. 1. With the passengers seated in these chairs 10 the illusion is quite as effective as with those seated in the chairs 29. The adjustment of the fans 38, as above described, may also be used to partially obscure the vision of the passengers, they being unable to see between the fans when the latter are closed, and this obstruction of vision may also be turned to advantage for the purpose of increasing the illusion.

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

1. In an observation-wheel, the combination of a hollow revoluble member, a platform mounted therein and suspended below the axis thereof, rails mounted within said revoluble member and connected thereto, and vehicles mounted upon said rails.

2. In an observation-wheel, the combination of a hollow revoluble member, means for accommodating passengers within the same, a stationary track upon said hollow revoluble member which is free to rotate, and electric mechanism carried by said hollow revoluble member for propelling the same.

3. In an observation-wheel, the combination of a hollow revoluble member of comparatively large diameter, wheels of comparatively small diameter connected rigidly thereto, truck-frames connected with said wheels, loose wheels connected with said truck-frame, and a track for engaging all of said wheels.

4. In an observation-wheel, the combination of a revoluble member provided at its outer circumference with rings rigidly connected thereto, other rings loosely connected therewith and movable in relation thereto, and members connected with said stationary and said movable rings, said members being adapted to feather.

5. In an observation-wheel, the combination of a hollow revoluble member provided adjacent to its outer circumference with a ring movable relatively thereto, manually-controlled mechanism for shifting the position of

said ring relatively to said circumference, and fan-like members connected with said outer circumference and said ring, said members being adapted to feather when said movable ring is moved relatively to said circumference.

5 6. In an observation-wheel, the combination of an elevated track, a hollow revoluble member provided with hubs supported directly upon said track and revoluble relatively thereto, trucks engaging said elevated track and maintained substantially level thereby, a platform mounted within said hollow revoluble member, and connections extending from said trucks to said platform for main-
15 taining the same substantially level.

7. In an observation-wheel, the combination of an elevated track, a hollow member disposed adjacent to said track and movable bodily in relation thereto, trucks mounted
20 upon said elevated track and movable bodily in relation thereto, and a platform mounted within said hollow member and connected with said trucks, said platform being maintained substantially level thereby.

25 8. In an observation-wheel, the combination of a hollow revoluble member provided adjacent to its outer circumference with cross-bars connecting opposite portions of said revoluble member together, annular rails mounted within said hollow member and connected
30 with said cross-bars, which thereby serve both as braces for said hollow revoluble members

and as cross-ties for said annular rails, and a vehicle mounted upon said annular rails and free to move relatively thereto.

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9. In an observation-wheel, the combination of a hollow revoluble member, vehicles loosely mounted therein so that said hollow revoluble member can move relatively to said vehicles, a platform disposed within said hollow revoluble member, and means for securing
40 said platform rigidly in a predetermined plane independently of the movements of said hollow revoluble member.

10. In an observation-wheel, the combination of a track, a hollow revoluble member free to revolve and also to move bodily along said track, vehicles disposed loosely within said hollow revoluble member and movable relatively thereto, a platform disposed within
50 said hollow revoluble member and movable bodily therewith in the general direction of travel thereof along said track, and mechanism connecting said platform with stationary mechanism outside of said wheel, thereby
55 maintaining said platform level.

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

DAVID WESLEY BLAIR.

Witnesses:

ARTHUR STONHAM,
EDGAR REED.