(No Model.) 2 Sheets—Sheet 1.

W. D. CRONIN.

CYCLOIDAL CHARIOT.

No. 567,581. Patented Sept. 15, 1896.

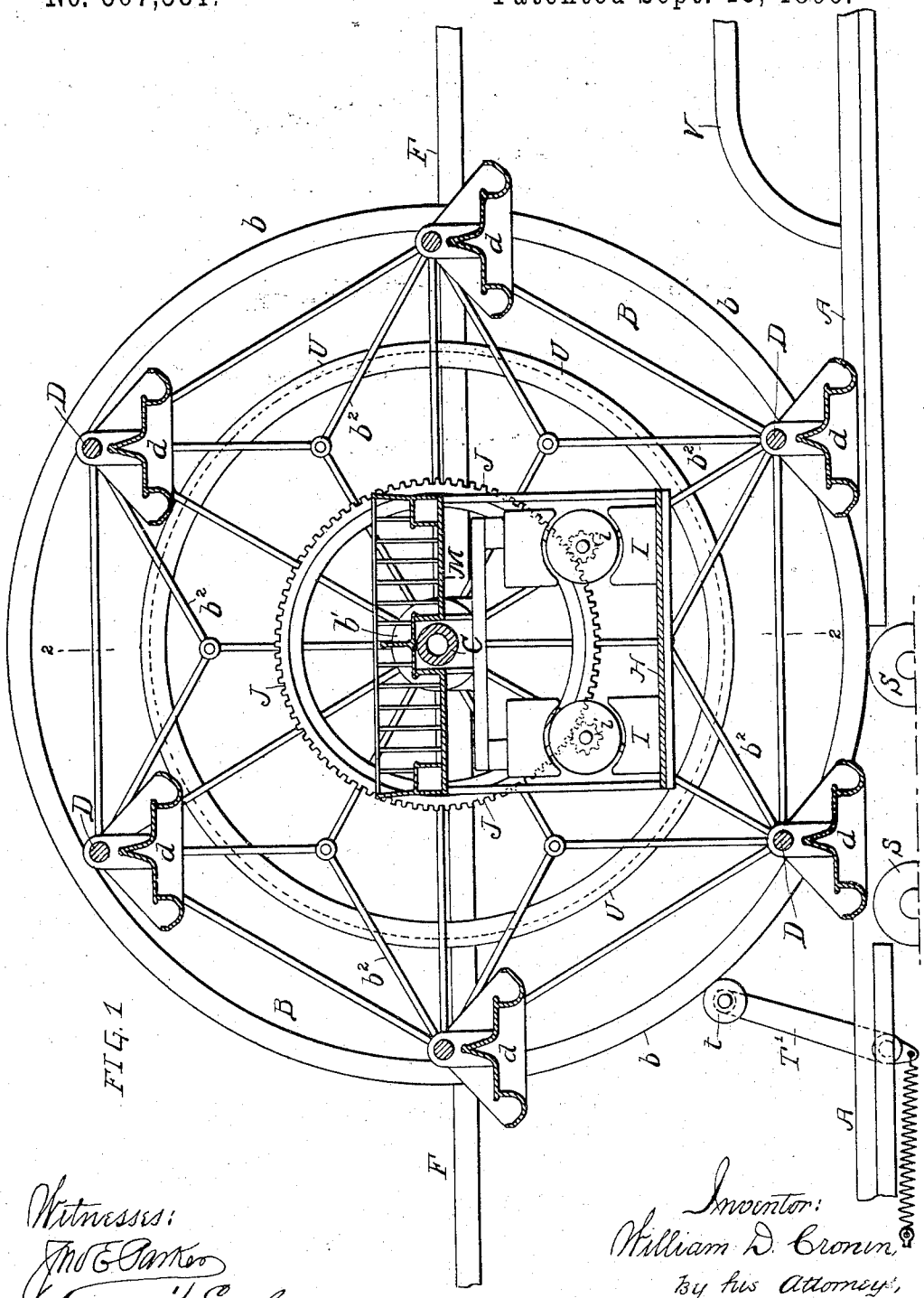

FIG. 1

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(No Model.) 2 Sheets—Sheet 2.

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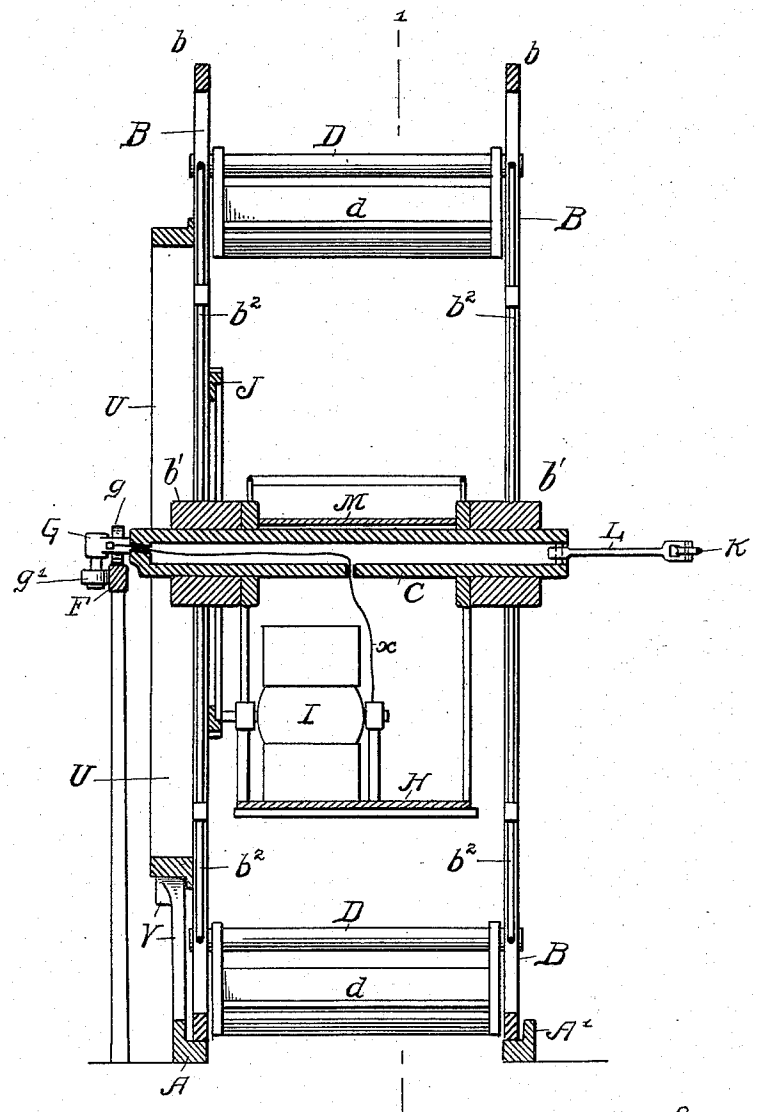
FIG. 2



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UNITED STATES PATENT OFFICE.

WILLIAM D. CRONIN, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO THE CYCLOIDAL TRANSIT AMUSEMENT COMPANY, OF NEW JERSEY.

CYCLOIDAL CHARIOT.

SPECIFICATION forming part of Letters Patent No. 567,581, dated September 15, 1896.

Application filed November 23, 1895. Serial No. 569,958. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM D. CRONIN, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Cycloidal Chariots, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to certain improvements in that class of amusement devices forming the subject of an application for patent filed by me on the 24th day of December, 1894, Serial No. 532,792; and it consists principally in certain improvements in details of construction and in the method of operating the apparatus, as more fully set forth hereinafter.

In the application above referred to I have described a form of cycloidal chariot in which a pair of wheels of large diameter are secured to a common axis and carry a series of passenger carriages or coaches which, as the wheels revolve and travel on suitable tracks, are traveled in an epicycloidal line, alternately raising and lowering, and at the same time describing a circular and forward movement.

The principal objects of the present invention are to provide for the application of suitable motive power for the operation of the wheel, and, further, to so construct and arrange the wheels with suitable supporting-tracks that the wheels may be enabled to describe a circle, or, if necessary, travel in a continuous circular line in place of traveling in a straight line, as described in the above-mentioned application.

In the accompanying drawings, Figure 1 is a longitudinal sectional elevation on the line 1 1, Fig. 2, of an apparatus constructed in accordance with my invention; and Fig. 2 is a transverse section on the line 2 2, Fig. 1.

Referring to the drawings, A A′ represent the supporting-tracks arranged on a suitable foundation, and preferably flanged for the purpose of aiding in keeping the wheels in position.

The wheels B B are formed of suitable rims b and central hubs b', the hubs being united to the rims by tension-rods b^2, and both wheels being mounted upon, but not secured to, a central axis or shaft C, the ends of which preferably project for some distance beyond the lines of the wheels. At various points near the periphery of the wheel are transverse rods or bars D, which serve to carry the various passenger-carrying carriages d and at the same time brace and support the large wheels and serve to keep them in proper relative position. At a point parallel to the line of travel of the shaft C, and preferably slightly below the center of said shaft, is arranged to one side of the pair of wheels a guiding-track F, which may be provided with a suitable electrical conductor or may itself be formed of metal suitable for the purpose of conducting a current from a dynamo. On that end of the shaft nearest the guiding-track F the shaft C is secured to a frame G, carrying two wheels g, placed one on either side of the center of the shaft and adapted to bear upon the guiding-track, so that as the wheels travel these small guiding-wheels will be traveled along the guiding-track and will keep the shaft from rotating. To this frame G is also hung a wheel g', which travels against that face of the track F opposite the supporting-wheels and serves to keep such wheels in position.

On the central shaft C is hinged frame H, on which are mounted two electric motors I, the shafts of which carry pinions i, intermeshing with the teeth of a large gear-wheel J, secured to one of the large supporting-wheels, so that the revolving movement of the armatures of the motors may be transmitted to the supporting-wheels to drive the same.

From the motors extend conducting-wires x to the wheels g, which rest upon the track F and serve as a means for conducting a current of electricity from the track to the motor, or an ordinary contact-brush may be employed for the purpose.

In some cases, where it is not desired to place the conductor on the track F, a supplemental conductor K may be employed at the opposite sides of the wheel, and the central shaft C is in such case provided with an arm L, carrying a trolley-wheel at its outer end which bears upon the conductor.

Above the frame H is a platform M, pro-

vided with suitable seats in which passengers may ride, although it is preferred to utilize this central position for a band of musicians to add to the enjoyment of the ride.

The chariots *d* are each pivotally hung upon the rods D in such manner that the weight of the chariot will always insure its remaining in a position immediately below the bar to which it is attached.

In order to provide for the loading and unloading of the various passenger-carrying chariots, the tracks A A' are interrupted at intervals, say at the various stations along the line of travel of the wheel, and at these points are arranged a pair of supporting-wheels S, so disposed that the upper portion of their periphery will be immediately on a level with the tracks, so that the carrying-wheels may run from the tracks onto these smaller wheels and be free to turn thereon, the operator in the central car H so operating the rotating mechanism as to slowly revolve the wheels and bring each of the passenger-carrying carriages down to a position on a level with the ground or a suitably-arranged platform, so that the passengers may be loaded or unloaded.

As the momentum of the wheel is such that some difficulty is experienced in immediately stopping it at these stations, I preferably provide a swiveled lever T', carrying a wheel *t*, adapted to come into contact with the periphery of the large carrying-wheel and acted upon by a tension-spring which will tend to move the lever in a direction opposite to the line of travel of the larger wheel, and thus as the lever is moved back and the tension of the spring is gradually increased the travel of the wheel will be stopped. Normally the lever is in a horizontal position, so that it will not interfere with the forward movement of the carrying-wheels, and is only moved to the stopping position when it is desired to stop the supporting-wheels at that particular station. Normally the supporting-tracks A A' are extended in a straight line, but as in some cases it may be desirable to curve the tracks to travel the wheel in a circular line I provide on one of the larger carrying-wheels a flange U, forming a supporting-wheel, the diameter of this latter wheel being much less than the diameter of the larger wheels, the relative proportions of the two being increased or decreased in proportion to the radius of the curved track upon which it is desired to travel. The curved portion of the track V is on a plane considerably higher than the plane of the main tracks A A', so that the smaller wheel may travel directly upon such curved track V and leave the main supporting-track without in any manner altering the position of the main carrying-wheel, and after the curve has been traveled the wheel V leaves this curved supporting-track, and at the moment of leaving the periphery of the main supporting-wheel again comes into contact with the main supporting-track.

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

1. In combination, a pair of supporting-wheels, passenger-carrying chariots pivoted between said wheels, a central stationary shaft upon which said wheels may turn, a guiding-track for said shaft, a motor-carrying frame hung from said shaft, a motor carried thereby, and gearing connecting said motor to the wheels, substantially as specified.

2. In combination, the carrying-wheels, supporting-tracks therefor, passenger-carrying chariots pivotally hung to said wheels, a gear-wheel secured to one of said carrying-wheels, a central stationary shaft upon which said wheels may turn, a motor-frame depending from said shaft, and a motor carried by said frame and geared to said gear-wheel, substantially as specified.

3. The combination of the supporting-wheels, a track therefor, a stationary shaft upon which said wheels may turn, a guiding-track extending on a line parallel to the line of travel of the wheel, and guiding-wheels carried by the shaft and in contact with said guiding-track, substantially as specified.

4. The combination of the carrying-wheels, supporting-tracks therefor, passenger-carrying chariots pivotally hung to said wheels, a stationary hollow shaft on which said wheels may turn, an electric motor supported by said shaft and operatively connected to the supporting-wheels, an electric conductor, a trolley-arm carried by the hollow shaft, and conducting-wires extending from the trolley-arm through the hollow shaft, and from thence to the electric motor, substantially as specified.

5. The combination of the wheels, passenger-carrying chariots carried thereby, supporting-tracks for said wheels, said supporting-tracks being interrupted at the stations at which it is desired to stop, and supporting-wheels provided at such interrupted portions of the track to receive and support and permit the free rotation of the chariot-carrying wheels, substantially as specified.

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

WILLIAM D. CRONIN.

Witnesses:
FRED. TAYLOR PUSEY,
MARY S. SILK.