

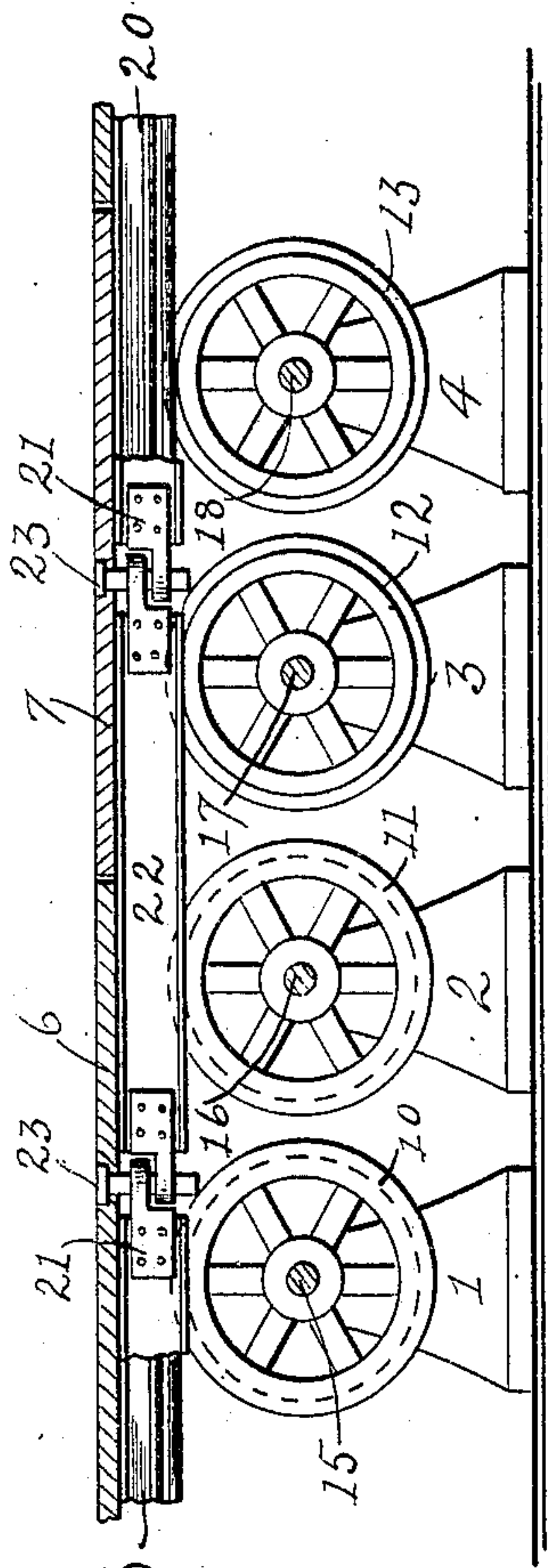
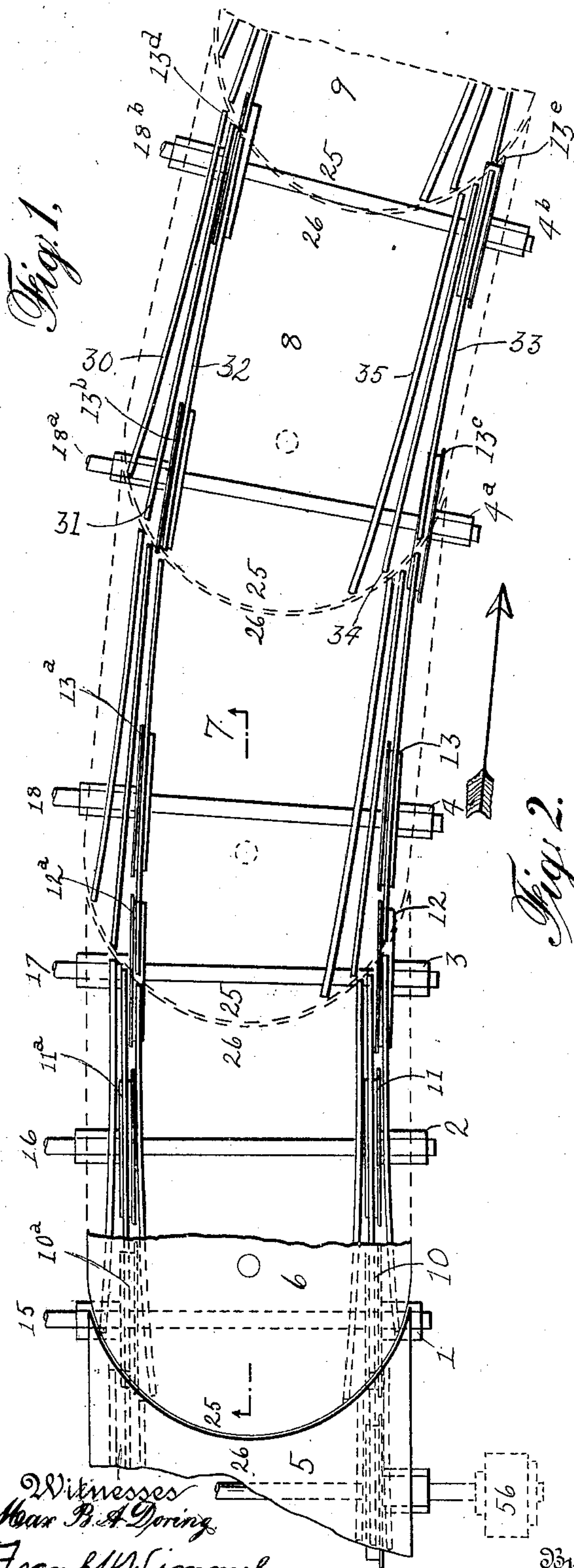
No. 830,733.

PATENTED SEPT. 11, 1906.

L. McHARG.  
MULTIPLE SPEED RAILWAY.

APPLICATION FILED JUNE 18, 1904.

2 SHEETS—SHEET 1.



Witnesses  
Near P. A. Doring  
Frank H. Wimmel

Leslie Mc Harg  
Inventor

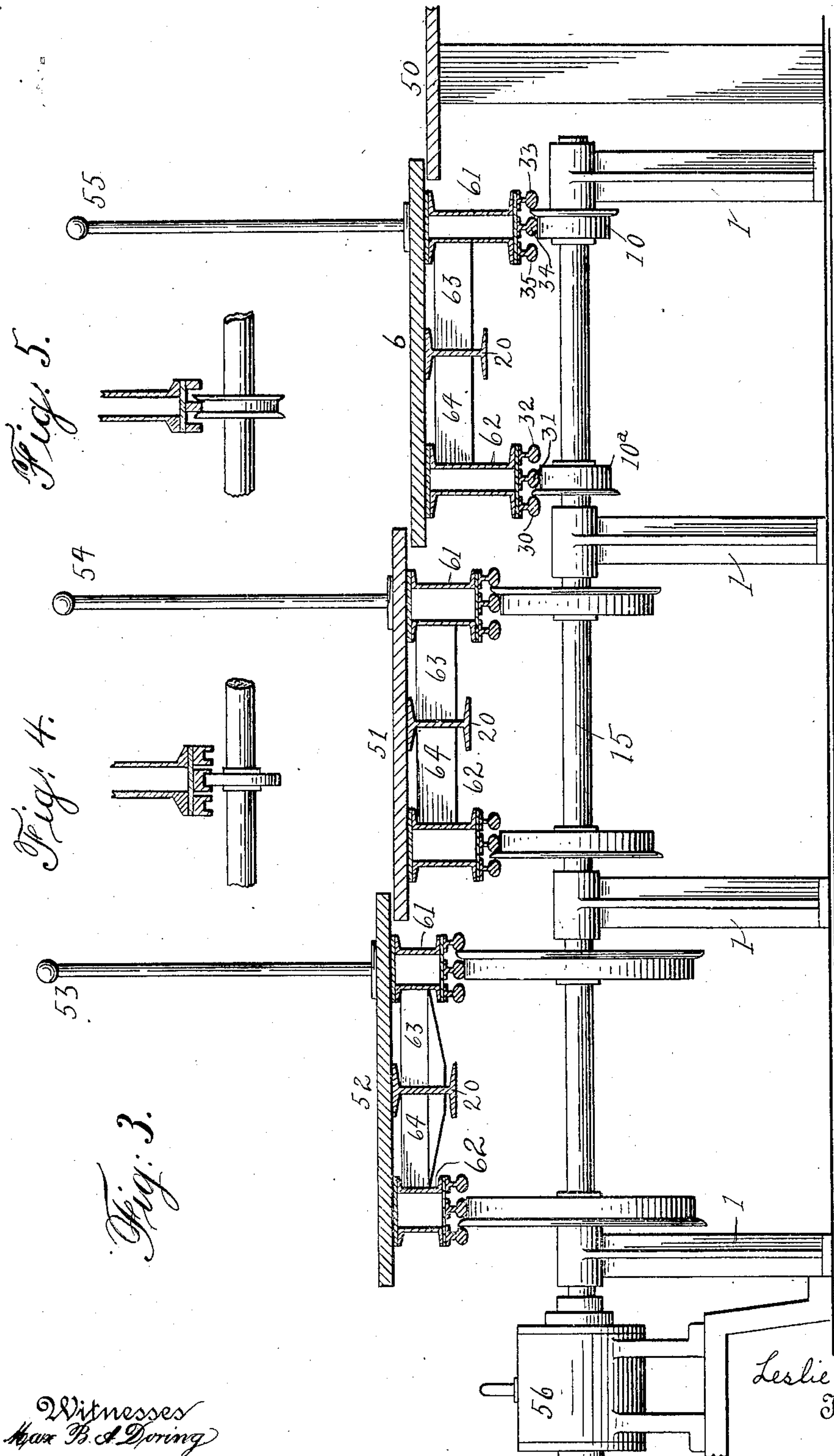
By his Attorney  
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Witnesses  
Max B. A. Doring  
Frank H. Wimmel

By his Attorney

Leslie Mc Harg  
Inventor

D. A. Carpenter



# UNITED STATES PATENT OFFICE.

LESLIE McHARG, OF NEW YORK, N. Y.

## MULTIPLE-SPEED RAILWAY.

No. 830,733.

Specification of Letters Patent.

Patented Sept. 11, 1906.

Application filed June 18, 1904. Serial No. 213,188.

*To all whom it may concern:*

Be it known that I, LESLIE McHARG, a citizen of the United States, and a resident of the city, county, and State of New York, have invented a certain new and Improved Multiple-Speed Railway, of which the following is a full, clear, and exact description.

My invention relates to multiple-speed railways or "moving sidewalks," and my objects are to so construct the same that only a minimum number of strong and simple parts will be used, thereby cheapening the cost of construction and maintenance and minimizing the danger of accidental derangement.

Reference is to be had to the accompanying drawings, in which similar reference-numerals relate to similar parts in all the views.

Figure 1 is a fragmentary plan view of one series of platforms, the same being partly broken away. Fig. 2 is a central section on the line  $x x$  of Fig. 1, looking in the direction of the arrows. Fig. 3 is a transverse section of a number of platform series arranged in parallel. Figs. 4 and 5 are fragmentary views of modifications of the rails and tracks.

Upon a number of pedestals 1 2 3 4 4<sup>a</sup> 4<sup>b</sup> are mounted the shafts 15 16 17 18 18<sup>a</sup> 18<sup>b</sup>, carrying the wheels or pulleys 11 11<sup>a</sup> 12 12<sup>a</sup> 13 13<sup>a</sup> 13<sup>b</sup> 13<sup>c</sup> 13<sup>d</sup> 13<sup>e</sup>. These wheels, shafts, and pedestals are located at suitable intervals along the way, the shafts being placed in the straight portion at right angles to the line of travel and radially on the curved portions.

A series of platform-sections 5 6 7 8 9 are each provided with the centrally-disposed rib 20, the ends of the rib being provided with the draw-heads 21. The heads on successive sections are connected by means of the draw-bar 22 and coupling-pins 23, so as to give flexibility to the structure for the purpose of enabling it to turn corners and to enable damaged platform-sections to be quickly and easily removed and replaced. Each platform-section is provided with convex and concave ends, the convex end 25 of one closely fitting the concave end 26 of the adjacent section. A number of pairs of rails 31 and 34, 30 and 32, 33 and 35, are rigidly secured upon the bottom of each platform-section, the beams 61 and 62 being preferably employed for framing up the sections and carrying the rails. The rails 31 and 34 are

straight and 30 32 and 33 35 oppositely curved, each being continued to the end of the platform-section to which it is secured. The adjoining rails may be made integral or connected by webs at suitable intervals, whereby their proper position with respect to each other is at all times maintained.

In my preferred form the wheels 10 10<sup>a</sup> 11 11<sup>a</sup> 12 12<sup>a</sup> 13 13<sup>a</sup> 13<sup>b</sup> 13<sup>c</sup> 13<sup>d</sup> 13<sup>e</sup> are flanged, as shown, and the rails 30 31 32 33 34 35 are of the ordinary T type used on railroads.

Transverse ribs 63 64 are provided on the under side connecting the beams or sills 61 62 to the central rib 20, thereby providing great strength without material increase in weight.

Any suitable number of series of platform-sections 6 51 52 may be mounted on the same or different shafts parallel to each other. Fig. 3 shows an arrangement of three series on the same shaft.

The wheels are mounted on the shafts, so that the flanges will come outside the straight rails on the straight portion of the way; but at the beginning of the curve the flanges are disposed so as to engage opposite sides of the rails for the purpose of guiding the curved rails into engagement with the next pair of wheels, and when the curved rails are fully engaged the flanges come on the outside of the rails.

While I prefer the T rails and single-flanged wheels just described on account of their cheapness and simplicity, the rails may be channeled and the wheels have a flat tread, as shown in Fig. 4, or the wheels may be doubled flanged, as shown in Fig. 5.

A stationary platform 50 may be located adjacent to the inner series of moving platform-sections for use as a station for the accommodation of passengers.

Suitable motors 56 are connected with certain of the shafts for the purpose of driving the shafts and wheels, thereby moving the platform, while the intervening wheels support and guide the platform.

As shown in Fig. 3, the wheels gradually increase in size under the adjacent platform-sections, so that a greater peripheral speed is attained for the same number of revolutions of the driving-shaft, enabling the platform series to be run at various speeds by the same shaft.

The structure is in substance a reversal of the ordinary railroad practice, in that the



rails are secured to the vehicles, while the wheels are mounted on the way and constitute the road-bed.

Having described the mechanical features, I will proceed to explain the method of operation. The motors 56 are started and the power is applied to the platform series at intervals along its entire length, the series gliding over the idler-wheels and driving-wheels like a belt conveyer in the direction of the arrow in Fig. 1. As long as the travel is on the straight portion of the way the flanged wheels engage the straight rails 31 34. If a right-hand curve is encountered, as shown in Fig. 1, a platform-section will be pulled slightly to the right by those preceding it, assuming a different angle from those immediately before and behind it. The flanged wheels 12 and 12<sup>a</sup> on the shaft 17 being on a line slightly inside the line of the wheels on the straight part of the way will engage the curved rails 32 33, the flanges acting on the curved rails to turn the platforms still farther to the right. After the curve is passed, the wheels on the straight way will again engage the straight rails. If a left-hand curve is encountered, the oppositely-curved rails 30 35 are brought into operation in the same manner as are the rails 32 33 when curving to the right.

The essential feature of my invention and that which differentiates it from all other multiple-speed railways is that the driving and supporting wheels coöperating with rigid rails act also as the guiding means both on straight and curved portions of the way, thereby obviating the necessity for all special devices for this purpose. These guides of the prior structures have been the weak points of the platform systems and have been the principal source of trouble in their operation, as well as one of the principal items in the cost of construction.

As the power is applied to the series at substantially regular intervals, there is practically no limit to their length.

A passenger may step from the stationary platform 50 onto the slow-moving series 6, (see Fig. 3,) thence onto the middle-speed series 51, thence onto the high-speed series 52, which may be provided with seats and a canopy. Handles 53 54 55 may be provided to facilitate progress from one to another of the platform series.

My invention may be used on pleasure-carousels, on bridges, in tunnels, or on structures of different character where it is desired to have cars pass continuously in both directions.

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

1. A multiple-speed railway, comprising a series of platform-sections; rigid straight and curved rails secured to the platform-sections;

driving and supporting wheels engaging the rails; said wheels and rails constituting the guiding means for the platform-sections.

2. A multiple-speed railway, comprising movable vehicles; straight and curved rails mounted upon said vehicles; revoluble members for engaging said straight and curved rails, thereby supporting said vehicles; and means for actuating divers of said revoluble members.

3. A multiple-speed railway, comprising movable vehicles; straight and curved rails mounted upon said vehicles; revoluble members for engaging said straight and curved rails; and means for actuating divers of said revoluble members.

4. A multiple-speed railway, comprising a plurality of vehicles free to move on straight lines and on curves; straight and curved rails mounted on said vehicles for supporting the same; revoluble members for engaging said straight and curved rails respectively; and mean for actuating divers of said revoluble members.

5. A multiple-speed railway, comprising a plurality of vehicles free to move on straight lines and on curves; straight rails mounted upon said vehicles for supporting the same when moving on straight lines; curved rails for supporting said vehicles when moving on curves; revoluble members engaging said rails; and means for actuating divers of said revoluble members.

6. A multiple-speed railway, comprising a plurality of vehicles, each provided with straight and curved rails; revoluble members arranged in straight rows for engaging said straight rails only; revoluble members disposed radially for engaging said curved rails only; said radially-disposed revoluble members and curved rails coacting to change the general direction of said vehicles.

7. A multiple-speed railway, comprising a plurality of vehicles each provided with straight and curved rails; revoluble members arranged in straight rows for engaging the straight rails only; and revoluble members disposed radially for engaging said curved rails only.

8. A multiple-speed railway, comprising a series of unitary carriers consecutively coupled by a draw-bar secured to a draw-head on each by coupling-pins; each of said carriers being provided with rigid, laterally-disposed, straight and curved rail members, adapted to respectively aline with the corresponding members on the adjacent carriers; and having downwardly-presented treads.

9. A multiple-speed railway, comprising a series of unitary carriers consecutively coupled by a draw-bar secured to a draw-head on each by coupling-pins; each of said carriers being provided with rigid, laterally-disposed, straight and curved rail members adapted to aline with the corresponding



members on adjacent carriers and having downwardly-presented treads; in combination with a series of wheels disposed beneath said carriers so that the treads of said wheels shall coact with the treads of said rails to propel said carriers when said wheels are rotated.

10. A carrier-platform, comprising a series of unitary carriers consecutively coupled by a draw-bar secured to a draw-head on each by coupling-pins; each of said carriers being provided with rigid, laterally-disposed, straight and curved rail members adapted to aline with the corresponding members on adjacent carriers and having downwardly-presented treads; in combination with a series of wheels rotatable in stationary bearings disposed beneath said carriers so that the treads of said wheels shall coact with the treads of said rails to propel said carriers when said wheels are rotated.

11. A carrier-platform comprising a series of unitary, platform-bearing, carriers consecutively coupled by a draw-bar secured to a draw-head on each by coupling-pins; each of said carriers being provided with rigid, laterally-disposed, straight and curved rail members adapted to aline with the corresponding members on adjacent carriers and having downwardly-presented treads; the adjacent ends of the platform-sections being curved, the one concavely and the other convexly.

12. A carrier-platform, comprising a series of unitary, platform-bearing, carriers consecutively coupled by a draw-bar secured to a draw-head on each by coupling-pins; each of

said carriers being provided with rigid, laterally-disposed, straight and curved rail members adapted to aline with the corresponding rail members on adjacent sections, and having downwardly-presented treads; the ends of the adjacent platforms being curved, the one concavely, the other convexly; in combination with a series of wheels disposed beneath said carriers so that the treads of the wheels shall coact with the treads of the rails to propel said carriers when said wheels are rotated.

13. A carrier-platform, comprising a series of unitary, platform-bearing, carriers consecutively coupled by a draw-bar secured to a draw-head on each by coupling-pins; each of said carriers being provided with rigid, laterally-disposed, straight and curved rail members adapted to aline with the corresponding rail members on adjacent sections, and having downwardly-presented treads; the ends of adjacent platforms being curved, the one convexly, and the other concavely; in combination with a series of wheels rotatable in stationary bearings disposed beneath the carriers so that the treads of said wheels shall coact with the treads of said rails to propel the carriers when said wheels are rotated.

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

LESLIE McHARG.

Witnesses:

HENRY IVES,  
O. GRANT ESTERBROOK.