No. 628,174. Patented July 4, 1899.

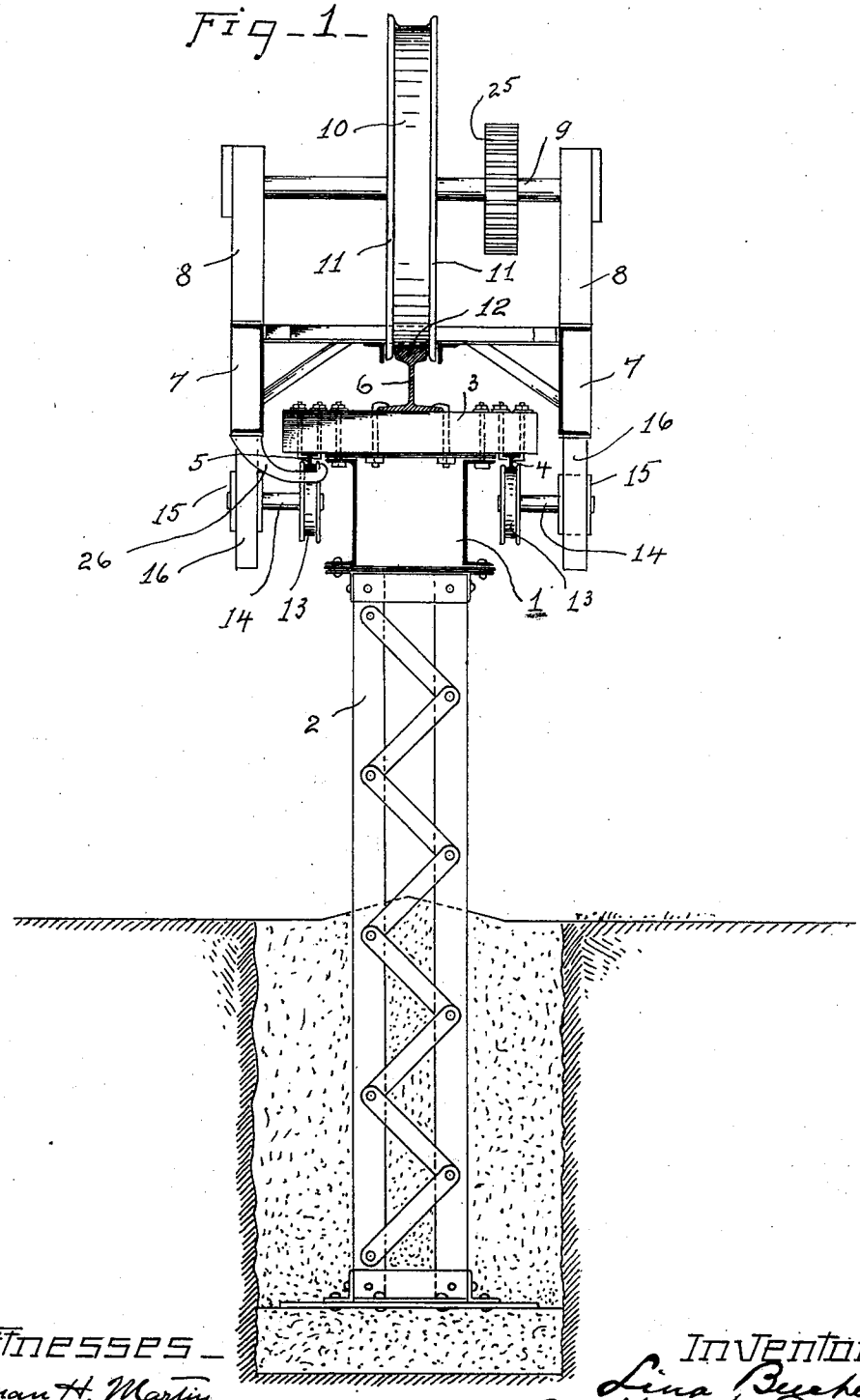
L. BEECHER.

MONORAILWAY SYSTEM.

(Application filed Oct. 28, 1898.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.



Witnesses—
Herman H. Martin
A. J. Terry

Inventor—
Lina Beecher
By Wm. K. Terry
Atty.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

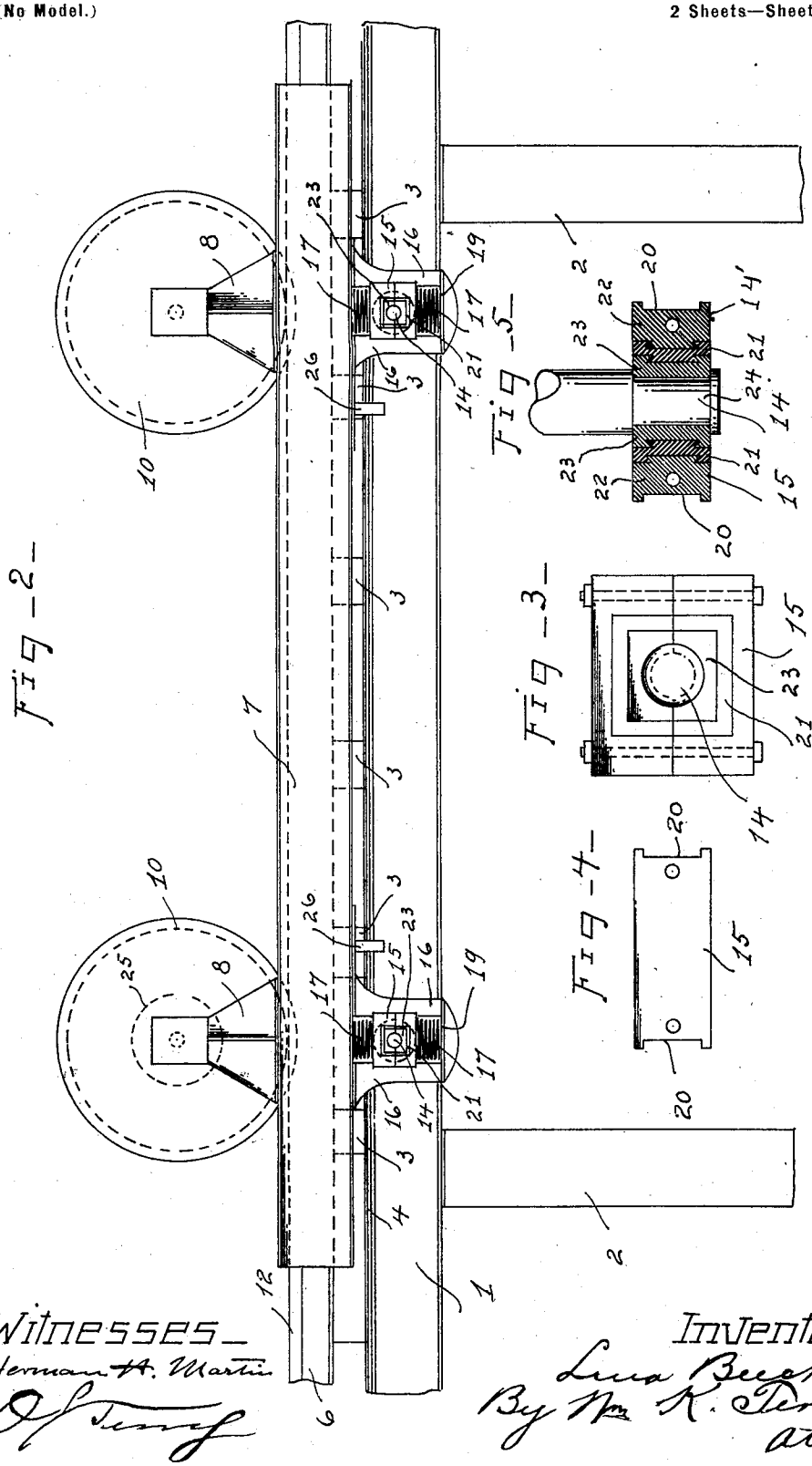
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Witnesses—
Herman H. Martin
O. Sherry

Inventor—
Luna Beecher
By Wm. K. Terry
Atty.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

LINA BEECHER, OF BATAVIA, NEW YORK.

MONORAILWAY SYSTEM.

SPECIFICATION forming part of Letters Patent No. 628,174, dated July 4, 1899.

Application filed October 28, 1898. Serial No. 694,770. (No model.)

To all whom it may concern:

Be it known that I, LINA BEECHER, of Batavia, State of New York, have invented new and useful Improvements in Monorailway Systems; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

My invention relates to a monorailway system; and it has for its object to provide guide-rails adapted to be pendently secured to ties mounted upon a longitudinal stringer and provide a car-frame having pendently secured thereto a plurality of bearings wherein are yieldingly journaled a plurality of wheels adapted to be held in continuous rolling contact with the said guide-rails.

I have found that in running a car constructed for a monorailway system having guide-wheels rigidly secured to a frame upon reducing the velocity of a running car or running at slow speed the car is swinging from side to side, causing the guide-wheels heretofore at rest to come in contact with the guide-rails provided therefor and creating friction by overcoming the inertia of the wheels, which is wholly eliminated by my invention, and I am thereby enabled to run a car at a lower velocity and with increased stability and less power running under high velocity, also reducing the wear and tear upon the apparatus to a minimum, and enhancing the enjoyment of the passengers by the easy and even running of the car.

A further object is to adapt the guide-rails for the electrical conductors if constructed for an electric system and obviate thereby the employment of a separate and distinct trolley or separate conductor-rail.

A further object is to provide a car-frame having a plurality of brackets secured thereto and pendent therefrom and journal therein a plurality of wheels held in yielding bearings, whereby any deflection of the rails, curvature, and the like is compensated for, insuring thereby a constant safeguard against derailment of the car from any cause, and provide a plurality of hooks pendently secured to the frame of the car adapted to engage the guide-rails upon breakage of the flanges of the guide-wheels.

A further object is to insulate the boxes wherein the guide-wheels are journaled in the electric system and make connections therewith with the motive power in the car.

In the drawings, Figure 1 is a transverse section through a monorailway system and car-frame constructed in accordance with my invention and disclosing the juxtaposition of the monorail and guide-rails. Fig. 2 is a side elevation of the car-frame in position upon the track system. Figs. 3, 4, and 5 are elevations and sections, respectively, of the insulated bearings for the axles, upon which are secured the guide-wheels in contact with the guide-rails.

In carrying out my invention 1 designates a built continuous longitudinal stringer resting upon the top of columns 2, spaced equidistant and of any desired height along the railway system. Upon the top stringer 1 there are mounted ties 3, projecting upon either side of the stringer and having pendently secured thereto, near the ends, rails 4 and 5, the purpose for which will be explained hereinafter.

6 designates the monorail, secured to the ties above the continuous stringer in a central position.

7 designates the frame of the car, having secured thereto or integral therewith a plurality of brackets 8, projecting upwardly, wherein are journaled the axles 9, having mounted thereon the driving-wheels 10. The frame of the car is thereby supported from the axles 9, and the body of the car (not shown) may be built of any length, form, and construction.

As will be seen from the drawings, the principle of riding a bicycle is employed and the car is adapted to be held upon the track by means of flanges 11, integral with the driving-wheels 10 and projecting beyond the head 12 of the monorail 6.

As a further precaution against derailment and swaying of the car at low velocity I have provided a plurality of double-flanged wheels 13, mounted upon axles 14, which are journaled in bearings 15, mounted in brackets 16 and pendently secured to the under side of

the car-frame 7. In order to secure a continuous contact of the guide-wheels 13 with the rails 4 and 5, the boxes 14′ are movably held in the hangers by means of springs 17, interposed between the under side of the frame and the top of the bearings and between the underside of the bearings and ledge 19, integral or secured to the hangers. 20 designates grooves formed upon the sides of the boxes 14′, adapted to guide the vertical travel or movement thereof in the brackets. It will be seen that by these means I have provided for a continuous and yielding contact of the guide-wheels with the rails 4 and 5 during the oscillation or swaying of the car from side to side at low velocity. The guide-wheels being held in continual yielding contact with the rails I may employ the rails advantageously for electrical conductors, and have therefore insulated the bearings of the guide-wheel and axles 14, as shown in Figs. 3 and 5, in which the insulating material 21 is dovetailed alternately with the metallic casing 22 and journal brasses 25, also providing thereby for a continual rolling contact and connection with the electrical conductors, and from which brasses or journals 24 the electrical fluid may be fed to the motive power in the car, and not shown, by any desired or preferred means.

25 designates a pinion secured to the axles 9, adapted to intermesh with the motor-gears.

As a further surety against derailment and accident in case of breakage of the flanges of the guide-wheels 13 I have provided a plurality of hooks 26, secured to the under side of the frame, adapted to engage the rails 4 and 5, respectively, and thereby are adapted to maintain the car upon the monorail upon the occurrence of accident and destruction of any of the wheels.

In the drawings I have shown the system as being adapted to an elevated electric railway. However, I wish it to be understood that I may employ the rails in juxtaposition in a surface railway system without departing from the spirit of my invention and may employ any motive force desirable to propel the cars.

What I claim is—

1. In a monorailway system, a monorail secured to ties mounted upon a continuous longitudinal stringer, the ties projecting therefrom upon either side, rails secured upon both sides of the monorail and, pendent from the ties, a car-frame supported from axles having mounted thereon the driving-wheels which are adapted to roll over the monorail, and a plurality of wheels pendently journaled in position from the frame of the car, adapted to be held in contact with the rails located upon either side of the monorail, whereby the car is held in position by the guide-wheels at low velocity or when at rest.

2. In a monorailway system, a continuous longitudinal stringer, ties secured thereto projecting upon either side of the stringer and having secured upon their tops in a central position, a continuous monorail; guide-rails secured to the ties upon either side of the monorail and, pendent from the under side of the ties, a car-frame supported from the axle of the driving-wheels, having secured thereto a plurality of brackets, wherein are movably mounted bearings having journaled therein, axles, wheels secured to the axles adapted to roll upon the guide-rails; a means for yieldingly holding, the guide-wheels in contact with the guide-rails during the oscillation of the car upon either side.

3. In a monorailway system, a monorail supported upon ties secured to a continuous longitudinal stringer, guide-rails pendent therefrom, adapted to conduct an electrical fluid to the motive power in the car; and a car-frame pendently secured to the axles of the driving-wheels and pendently secured to the frame, a plurality of hangers, axles journaled therein, having mounted thereon wheels adapted to be held in continual rolling contact with the electrical conductors.

In testimony that I claim the foregoing as my own I hereby affix my signature in presence of two witnesses.

LINA BEECHER.

Witnesses:
HERMAN H. MARTIN,
MYRTLE K. BURG.