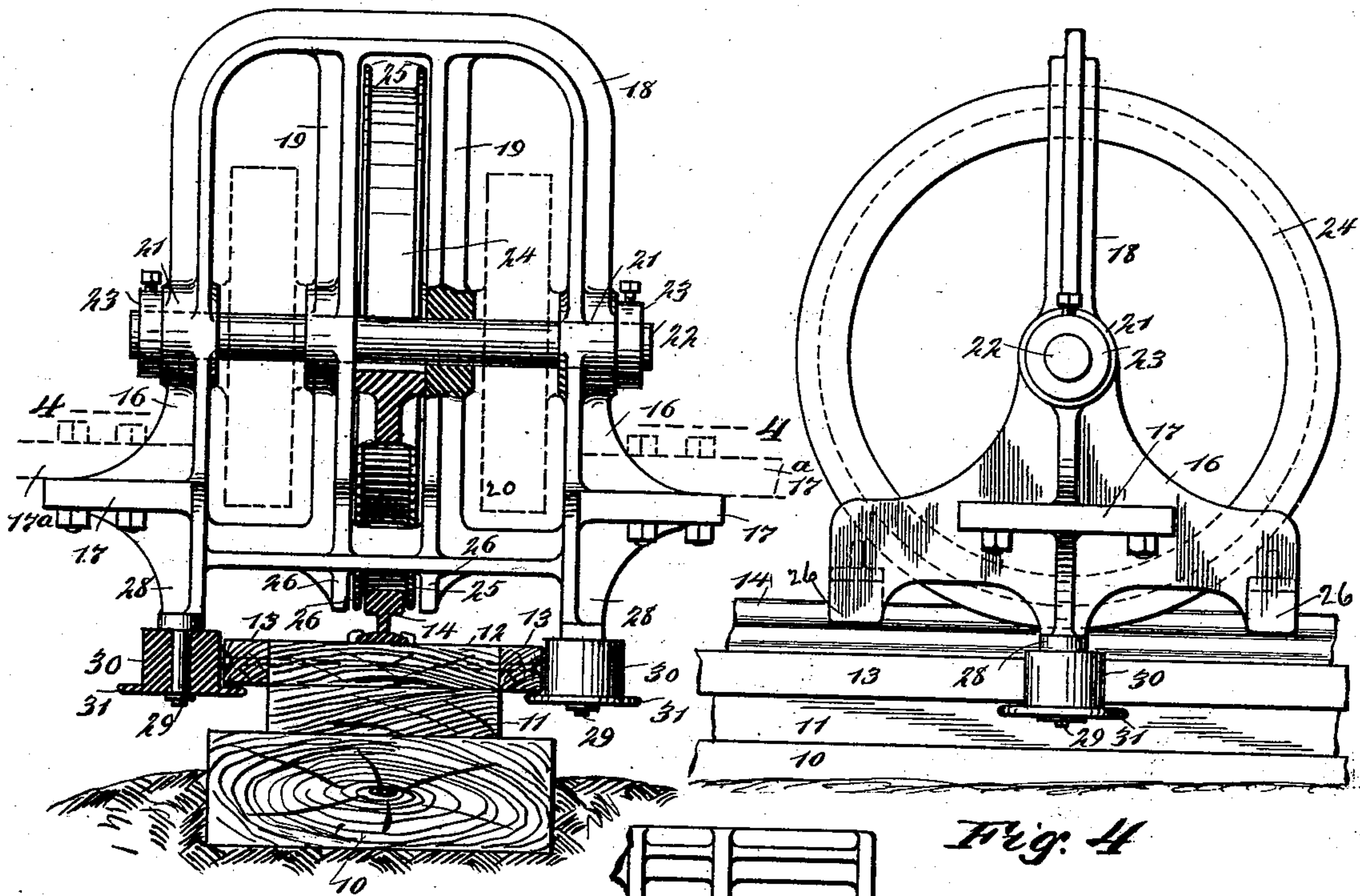
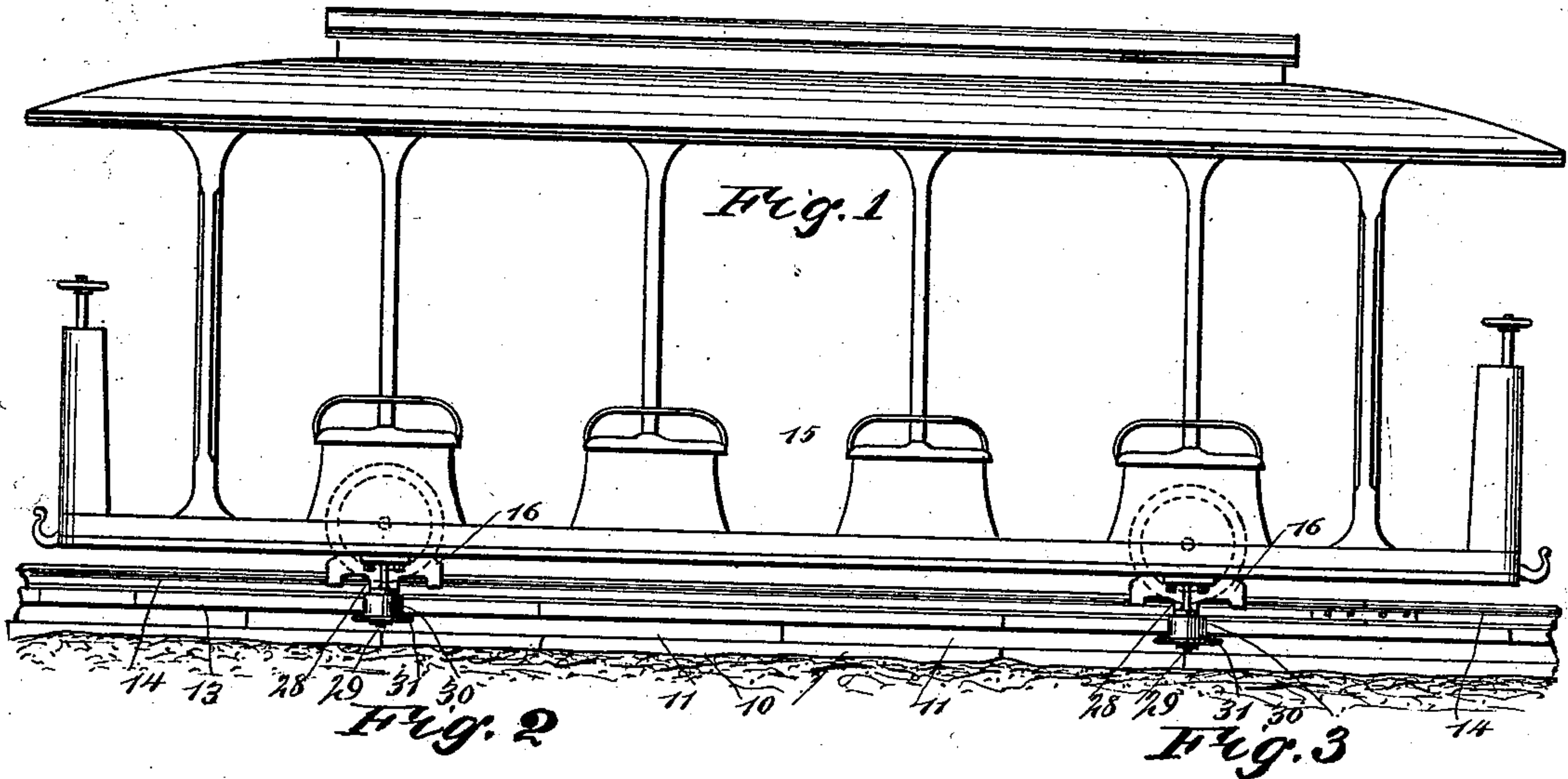


(No Model.)

L. BEECHER.
RAILWAY SYSTEM.

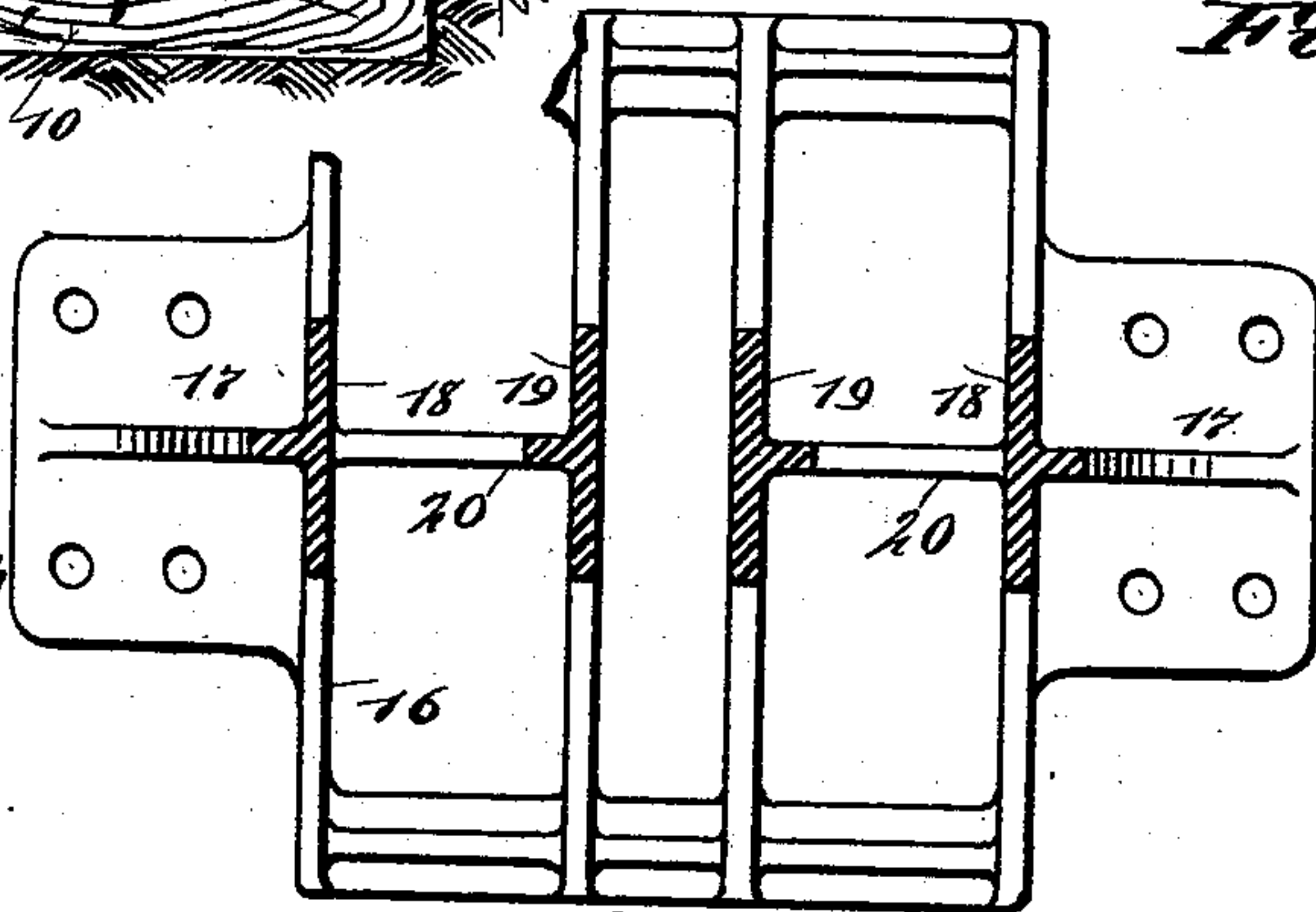
No. 507,402.

Patented Oct. 24, 1893.



WITNESSES:

J. A. Bergeton
C. Sedgwick



INVENTOR

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ATTORNEYS.

UNITED STATES PATENT OFFICE.

LINA BEECHER, OF BATAVIA, NEW YORK.

RAILWAY SYSTEM.

SPECIFICATION forming part of Letters Patent No. 507,402, dated October 24, 1893.

Application filed January 18, 1893. Serial No. 458,747. (No model.)

To all whom it may concern:

Be it known that I, LINA BEECHER, of Batavia, in the county of Genesee and State of New York, have invented a new and Improved Railway System, of which the following is a full, clear, and exact description.

My invention relates to improvements in railway systems and railway construction, and the object of my invention is to improve the construction of railways and cars for the same, to the end that an extremely strong and cheap railroad may be built, and that inexpensive rolling stock may be provided for the road and made to run with absolute safety.

A further object of my invention is to provide for using a single rail, thus greatly reducing the material necessary to build a road and to provide running gear for the cars.

In carrying out my invention, any desired kind of motive power may be used without affecting the principle of the invention.

To these ends, my invention consists in certain features of construction and combinations of parts, which will be hereinafter described and claimed.

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

Figure 1 is a side elevation of a car and road constructed in accordance with my invention. Fig. 2 is an enlarged detail cross section showing the particular construction of the road and the running gear of a car. Fig. 3 is a broken side elevation of the mechanism and construction shown in Fig. 2; and Fig. 4 is a broken sectional plan of the truck frame, on the line 4—4 in Fig. 2.

In constructing the foundation for the rail, or the single line of rails, heavy sleepers or stringers 10, are used, which are laid upon a suitable bed, and above and upon these stringers are laid other narrower sleepers 11 and 12, the three vertical layers or lines of stringers being arranged so as to break joints, and being firmly fastened together in any convenient way. On the sides of the upper sleepers 12, are secured projecting guard rails 13, which may be either of wood or metal, and these are also arranged to break joints with the sleepers 12, and consequently, the sleepers 10, 11 and 12 and the guard rails 13, consti-

tute practically a solid and continuous support for the track rails 14, which are like the ordinary railway rails and are laid in a single line, and upon the center of the sleepers 12, to which they are securely spiked.

The car 15 may be of any approved kind, and may be propelled in any desired way, such as by horses, electricity, or steam power, and secured beneath the car at suitable intervals, are truck frames 16, in which the car wheels are journaled. Each frame 16 is preferably, when viewed in plan as in Fig. 4, of a generally rectangular shape, and the frame has on opposite sides outwardly-extending flanges 17, which are adapted to be bolted to convenient supports 17^a, which are arranged beneath the car, and the frame has an upwardly-extending curved top 18, which is braced by the vertical braces 19 and 20, but the peculiar shape and the manner of bracing the frame may be varied without departing from the principle of my invention.

On opposite sides of the frame 16 are boxes 21, in which is journaled the car axle 22, and the boxes may be of any approved kind. As shown in the drawings, the axle is prevented from moving endwise by collars 23, which are secured to it and which contact with the boxes 21. The car wheel 24, is hung centrally in the frame 16 and on the axle 22, and the wheel has parallel flanges 25, which project from each side of its face or tread, so that the flanges are adapted to clasp both sides of the rail 14, as shown in Fig. 2, and it will be seen that this will prevent the wheel from running off the track.

On the under side of the frame 16, are parallel guides 26, which are also adapted to clasp the track rail 14, and in case the main wheel should break, these guides would prevent the car from leaving the track. On opposite sides of the frame 16, and in vertical alignment with the boxes 21, are depending arms 28, which support vertical axles 29, these extending downward opposite the guard rails 13, and on these axles are journaled horizontally-rotating wheels 30, which run on the guard rails 13, and which have stout flanges 31, arranged to project beneath the guard rails.

It will be seen that this construction prevents all lateral movement of the frame 16

and the car to which it is attached, so that it would be impossible for a car to tip over or to leave the track.

The construction described is especially adapted to make easy curves, and it will be seen that in case any part of the track or rail support settles, the other parts must settle in the same ratio, as the supports are all secured together, and consequently the car will, under any ordinary circumstances, run smoothly on the track.

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

1. In a railway of the character described the truck frame 16 formed with an upwardly extending arch 18 provided with vertical braces 19, 20 at right angles to each other, horizontally aligned bearings 21, outwardly extending attaching flanges 17, 17 at opposite sides of the frame, depending arms 28 below the said flanges and carrying the parallel vertical axles, and the guide flanges on the under side of the frame at opposite sides of the vertical wheel space, substantially as set forth.

2. A railway system, comprising a line of longitudinal sleepers, a single line of track rails supported upon the sleepers, guard rails secured to the upper portion of the sleepers and extending outwardly therefrom, vertically rotating wheels journaled on the car and held to run on the track rails, and horizontally-rotating wheels provided with flanges at their lower ends and arranged to run on the

sides or outer faces of the guard rails, substantially as described.

3. In a railway system, the track, comprising a longitudinal line of sleepers laid one upon another and bolted together so as to break joints, guard rails secured on opposite sides of the top-most layer of sleepers, and a line of track rails extending along the top of the sleepers, substantially as described.

4. In a railway system, the combination, with the single line track and the outwardly-extending guard rails arranged on opposite sides of the track rails, of a car, truck frames integral side flanges 17 secured to the under side of the car and provided with depending arms on their opposite sides, and with parallel intermediate guides 26 vertically rotating wheels journaled in the frames and held to run on the track rails, and horizontally-rotating wheels journaled on the depending arms of the frames and held to run on the outer faces of the guard rails, substantially as described.

5. In a railway system, the combination, with the single line track, of the truck frames carried beneath a car and provided with wheels to run on the track, and depending guides on the under sides of the frames, the guides being arranged to extend on both sides of the track, substantially as described.

LINA BEECHER.

Witnesses:

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