

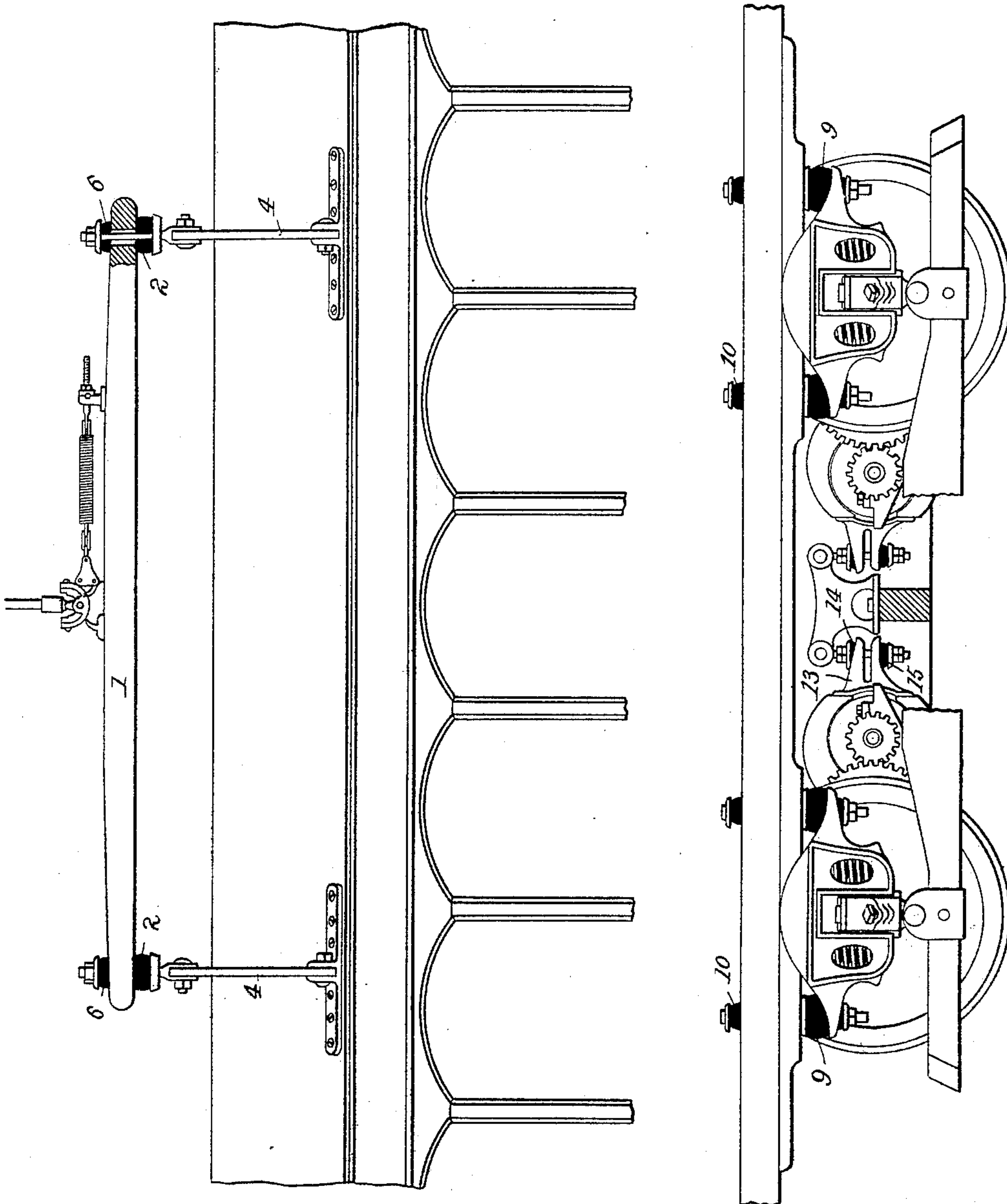
(No Model.)

3 Sheets—Sheet 1.

J. STEPHENSON.
INSULATED ELECTRIC CAR.

No. 450,846.

Patented Apr. 21, 1891.



WITNESSES

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Ch. S. McArthur

Fig. 1.

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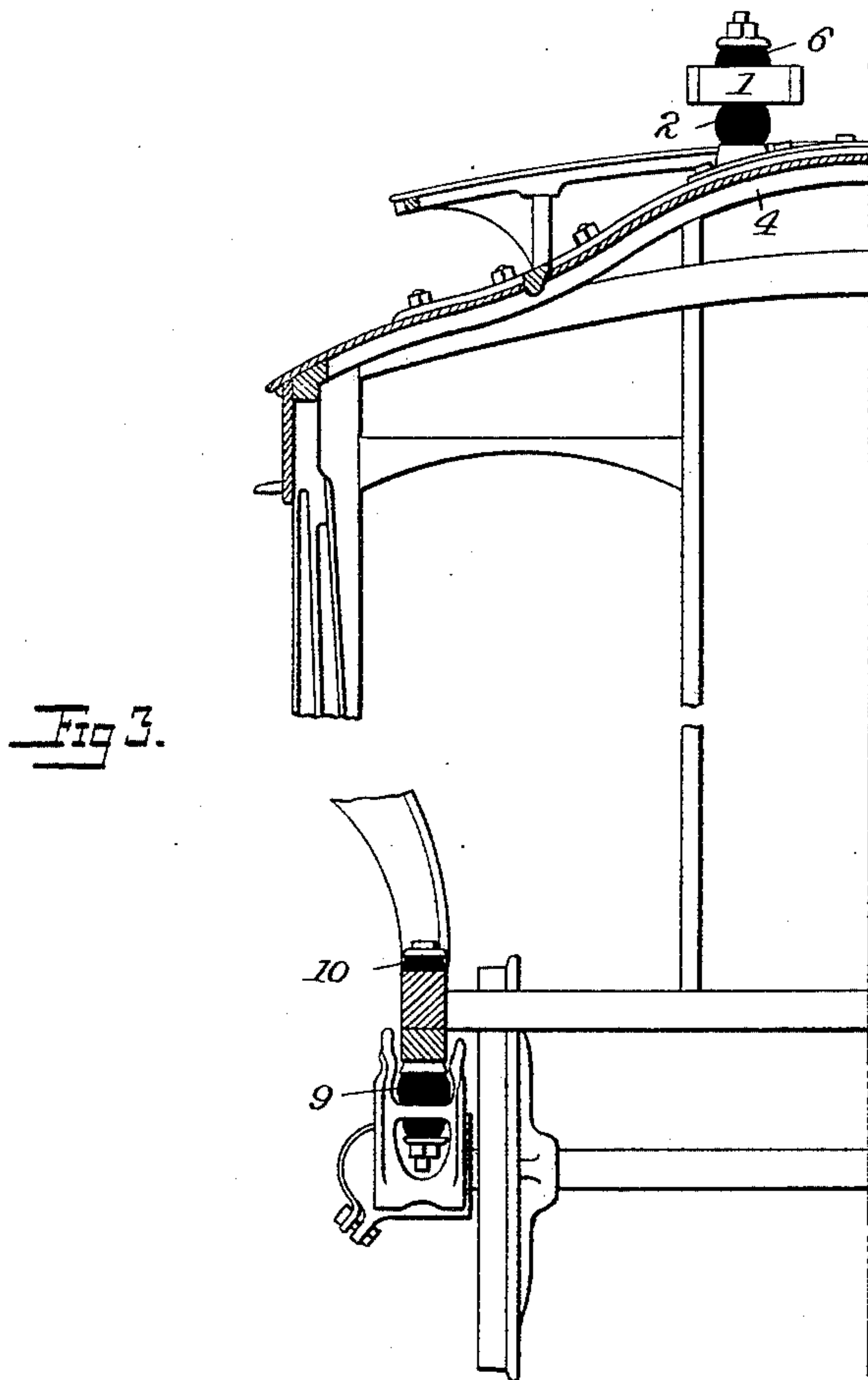
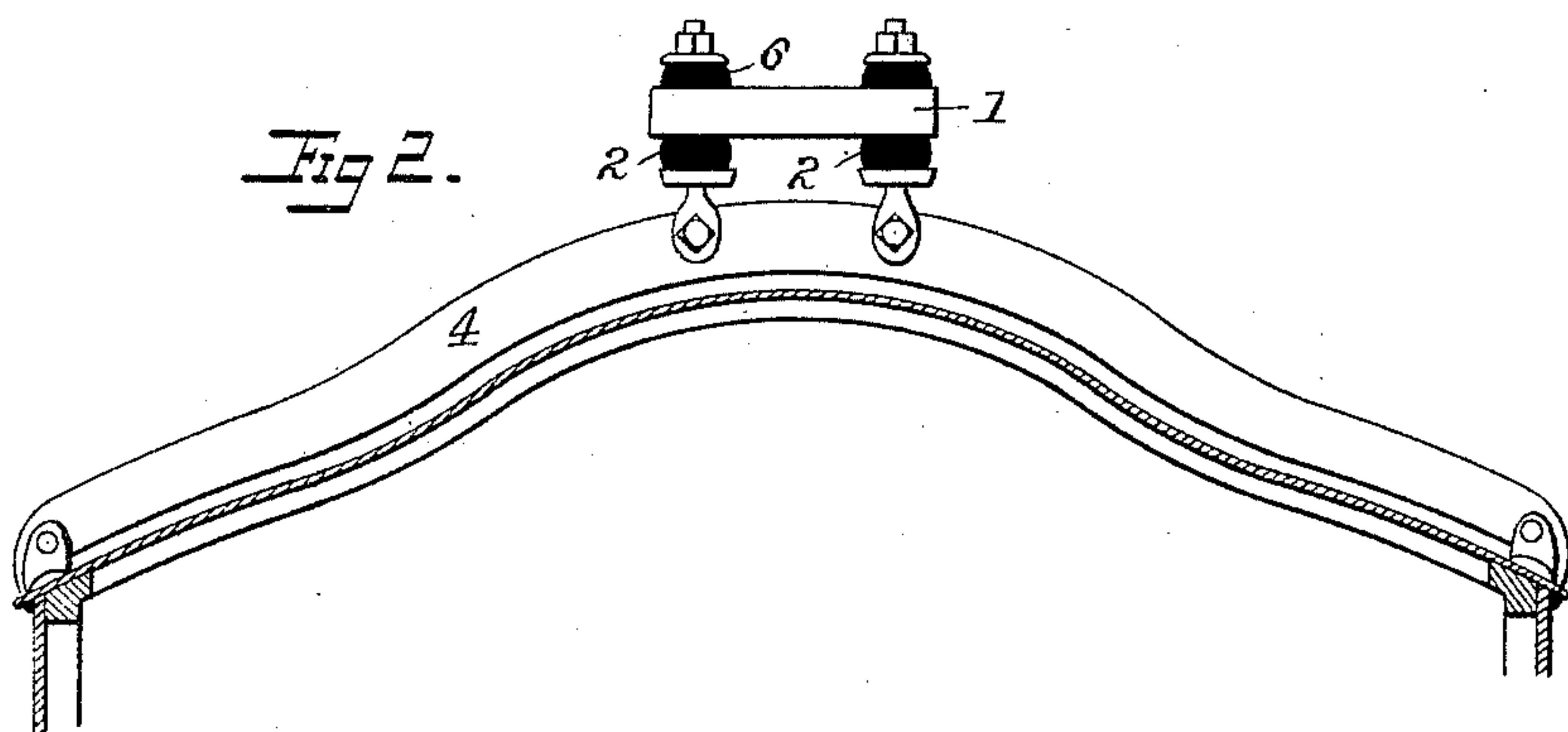
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WITNESSES

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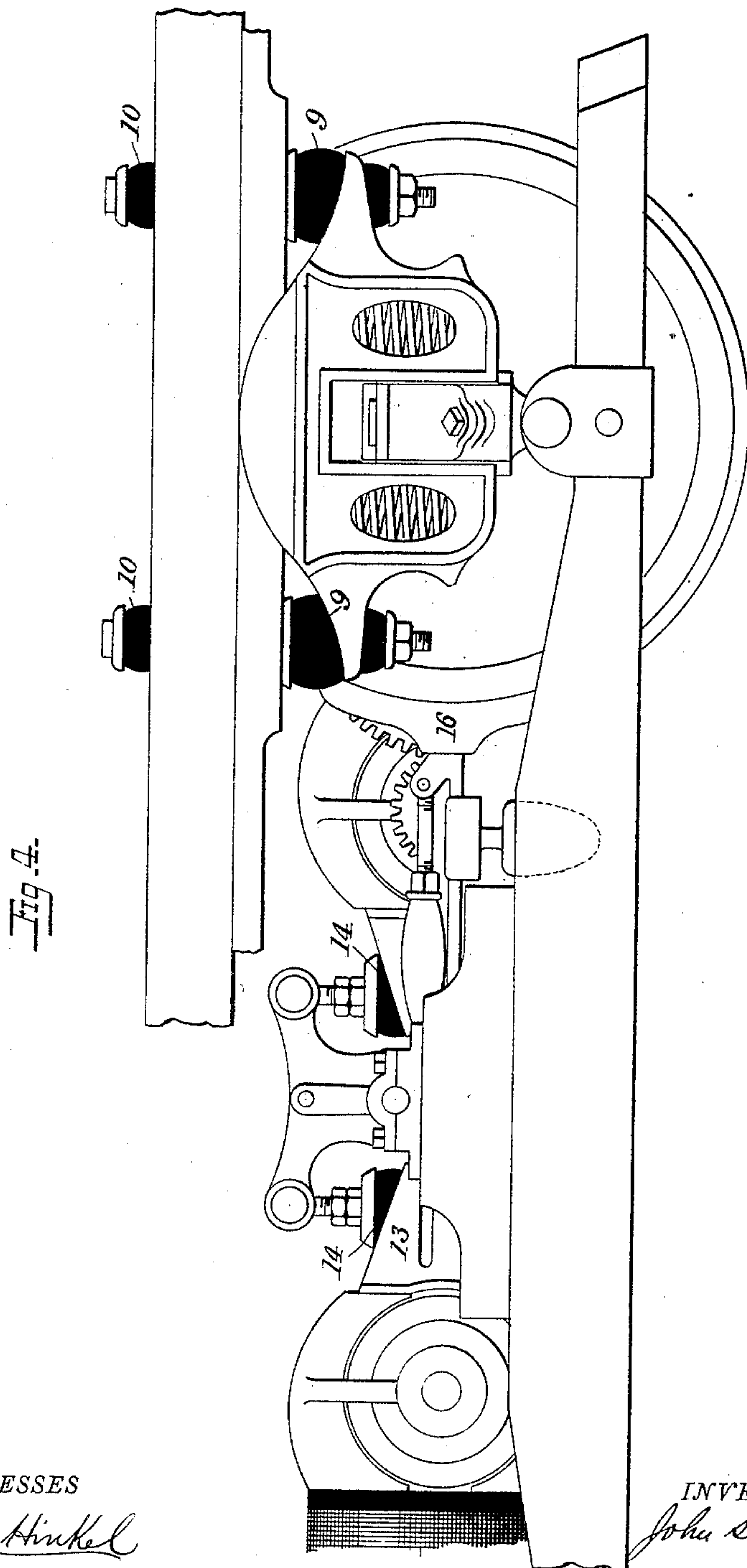
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UNITED STATES PATENT OFFICE.

JOHN STEPHENSON, OF NEW YORK, N. Y.

INSULATED ELECTRIC CAR.

SPECIFICATION forming part of Letters Patent No. 450,846, dated April 21, 1891.

Application filed July 5, 1890. Serial No. 357,848. (No model.)

To all whom it may concern:

Be it known that I, JOHN STEPHENSON, a citizen of the United States, residing in the city, county, and State of New York, have invented certain new and useful Improvements in Insulated Electric Cars, of which the following is a specification.

The body of an electrically-propelled car receiving an electric current from overhead or otherwise arranged conductors becomes so affected by the electricity that persons entering or within the car frequently receive electric shocks or are otherwise affected, and watches are deranged.

My invention consists in means for remedying these effects by insulating the car-body with its passengers from all parts of the car in circuit or liable to be affected by the electric current, which I accomplish as set forth hereinafter, and as illustrated in the accompanying drawings, in which—

Figure 1 is a part side elevation of a city railway-car with my improvements. Fig. 2 is a transverse section of part of the roof. Fig. 3 is a transverse sectional elevation showing a modified form of roof-support. Fig. 4 is a side view, partially in section, showing the manner of supporting the motors and brake device.

My invention may be used with overhead or underground conductors. As shown, the car is adapted to be propelled from an overhead conductor, and the trolley which contacts with the overhead conducting-wire I secure to a bridge or plank 1 above the car, the bridge reaching to and over opposite walls of the car-body, the bridge ends resting on or being confined between insulators 2, secured to the top of the car-walls; or bridges of less length may be used by constructing the car-roof with girder-rafters 4, either above the roof-boards, as in Figs. 1 and 2, or under the same, as in Fig. 3, the ends of such rafters being secured to the body top rails by plates or blocking, bolted or otherwise fastened to the top rails of the car-body; or two arch-bars may be used to cross from side to side of the car-body above the car-roof, except that the ends of the arch-bars are made of T shape or other suitable form, bolted or otherwise secured to the side top rails of the car-body at required distance of separation.

The central part of these arch-bars have secured to them the insulators 2, carrying the ends of the shortened trolley-bridge 1, Fig. 1, 55 while other insulators 6 are interposed between the bridge and its connections, so that it is electrically insulated from the roof.

As the electric current passes from the motors through the axles and wheels to the rails, 60 the axles, boxes, and pedestals on which the car-body rests would become conductors of electricity to the car-body; but I prevent such conduction by placing insulators 9 10 between the pedestals and the car-body sills, and between the body or sill and the bolts holding 65 the pedestals to the car-body.

To prevent the electric motor from communicating electricity to the car-truck, I insulate from the truck by placing above and 70 below the motor-nose 13 insulators 14 15, through which passes the suspending bolt or fixture carrying the nose end of the motor, the other end being on the car-axle, as usual.

As the car-axles, with their wheels, axle-boxes, and pedestals, are in circuit with the 75 return-current of electricity to the rails, and as wood is approximately a non-conductor of electricity, I make the car-truck of wood, paper, or other non-conductor, to more effectively 80 sever the car-brakes 16 and other metallic parts of the truck from the influence of electricity.

The foregoing insulators separate the car-body from all parts of the car structure liable 85 to conduct or be charged with electricity.

Without limiting myself to any special form or arrangement of conductors, I claim—

1. An electric car having a bridge mounted upon its upper surface and an electric trolley 90 supported on the bridge, and having electric insulators interposed between the bridge and the upper surface of the car-body, substantially as described.

2. An electric car carrying an electric motor 95 having a nose, the motor being supported on the axle of the car at one end, and its nose at the other end being supported by the truck of the car, and a mass of insulating material interposed between the nose of the motor and 100 its support, substantially as described.

3. An electric car consisting of the car-body and the running-gear, an electric motor or motors mounted on the running-gear, and

electric insulators interposed between the running-gear and the car-body, substantially as described.

4. An electric car-body provided with a
5 trolley-bridge supported upon the roof of the
car-body, and having electric insulators interposed between the trolley-bridge and car-roof, and also provided with a running-gear
carrying one or more electric motors, and hav-
10 ing insulators interposed between the car-

body and the running-gear, substantially as described.

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

JOHN STEPHENSON.

Witnesses:

STUART A. STEPHENSON,
JOSEPH B. STEPHENSON.