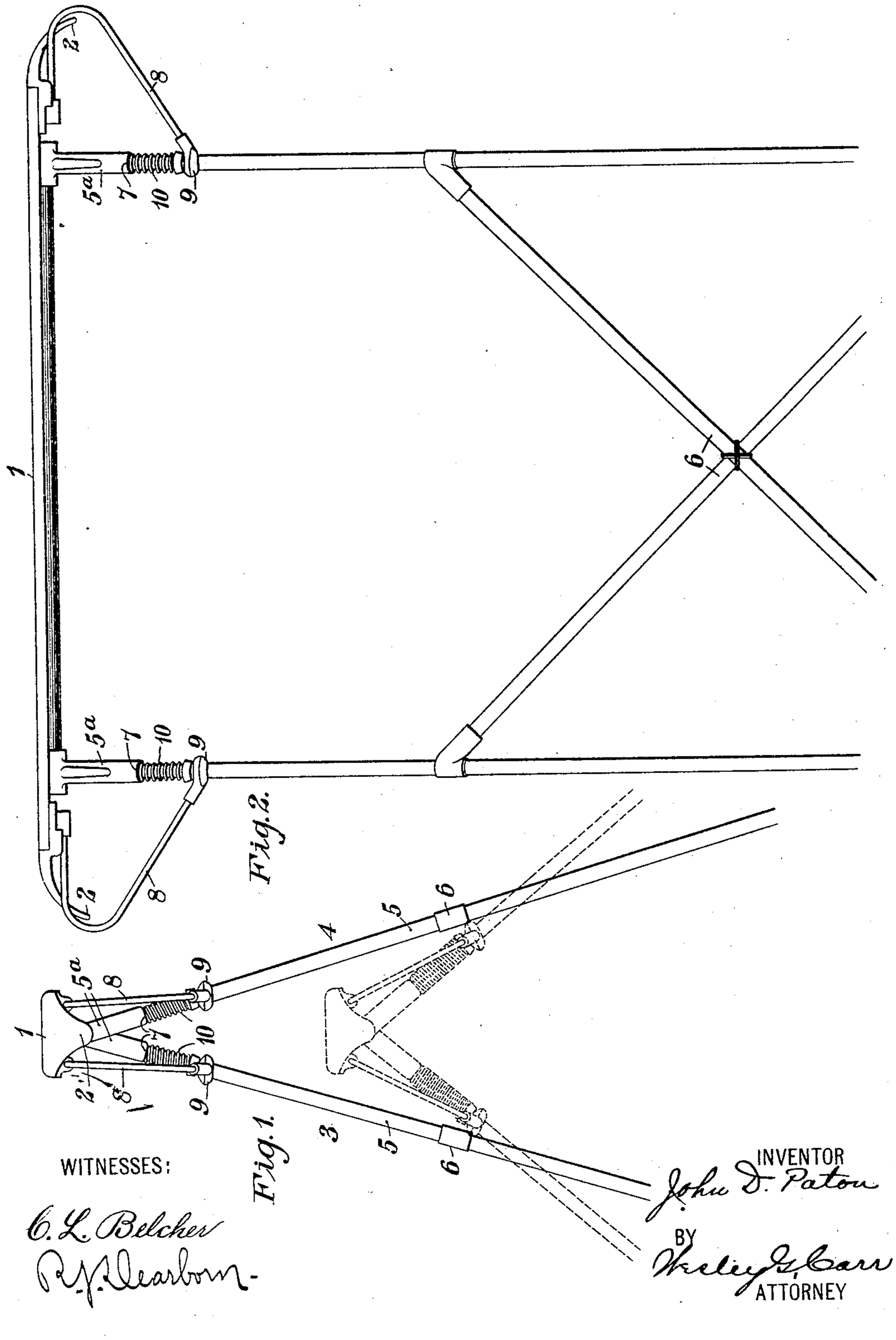
No. 824,201. PATENTED JUNE 26, 1906.

J. D. PATON.

TROLLEY FOR RAILWAY VEHICLES.

APPLICATION FILED JUNE 28, 1905.



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TROLLEY FOR RAILWAY-VEHICLES.

No. 824,201. Specification of Letters Patent. Patented June 26, 1906.

Application filed June 28, 1905. Serial No. 267,468.

To all whom it may concern:

Be it known that I, JOHN D. PATON, a subject of the King of Great Britain, and a resident of Edgewood Park, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Trolleys for Railway-Vehicles, of which the following is a specification.

My invention relates to devices employed in connection with electrically-propelled vehicles for making contact with overhead conductors, and particularly to devices of this character which embody sliding contact-shoes.

The object of my invention is to provide a simple, inexpensive, and reliable means for maintaining a substantially horizontal position for the contact-face of a shoe or a return to that position in case it is rocked into any other position by reason of irregularities in the trolley-conductor or otherwise.

In the accompanying drawings, Figure 1 is an end elevation of a contact-shoe and the upper portions of its support provided with my improvement. Fig. 2 is an elevation at right angles to that shown in Fig. 1 and showing the same parts.

Referring now to the structural details shown in the drawings, 1 is a shoe intended and adapted to make sliding contact with a trolley-conductor (not shown) and having downwardly-curved ends 2. The shoe is pivotally supported upon the upper ends of two downwardly-diverging frames 3 and 4, each of which comprises a pair of rods 5 and diagonal brace-rods 6. The rods 5 and 6 may be of any suitable size, form, and material; but it will generally be found expedient and desirable to make them of iron or steel pipe or tubing. The lower ends of the frames 3 and 4 may and preferably will be pivotally connected to other frames after the usual manner of lazy-tongs or pantograph structures, so that when the lower frames are swung outward the frames 3 and 4 will drop into the positions indicated in broken lines. Any suitable means, such as springs or compressed air, may be utilized for raising and lowering the pantograph structure. Since these features do not pertain to my present invention, I have not deemed it necessary to illustrate them in the drawings.

Adjacent to the upper ends of the frames 3 and 4 the rods 5 are provided with shoulders 7, which may be the lower ends of sockets 5^a, in which the upper ends of the rods are seated, or be otherwise formed, as may be desired. Pivotally attached to each side of the shoe 2 at one end is one end of an approximately U-shaped link 8, the other end of which is fastened to a collar 9, that is mounted upon the corresponding rod 5, so as to slide freely thereon.

Interposed between each of the collars 9 and the adjacent shoulder 7 is a coil-spring 10, which is under a certain degree of compression when the shoe is in its operating position, as indicated in the full lines in the drawings, so that in case the shoe is tilted upon its pivotal support the tilting movement will be resisted by one of the springs, and this resisting action will restore the shoe to its horizontal position as soon as the force which moved it from that position is withdrawn. The links 8, being of the form indicated in Fig. 2 and projecting outwardly at the sides of the shoe ends 2, serve not only the purpose above stated, but also as guards to prevent entanglement of the ends of the shoe with any portion of the overhead structure with which the road may be equipped.

The details of construction may of course be varied from what I have shown, and the contact-shoe may be supported upon any suitable structure without departing from my invention.

I claim as my invention—

1. The combination with a contact-shoe and a pair of supporting-frames pivoted thereto and diverging downwardly therefrom, of a pair of links depending from the ends of the shoe at each side thereof and having a sliding connection with the corresponding frame, and springs tending to oppose upward movement of said links.

2. The combination with a contact-shoe and two pairs of supporting-rods pivoted thereto and diverging downwardly therefrom, of two pairs of links the upper ends of which are pivoted to said shoe and the lower ends of which have collars that are mounted to slide upon the supporting-rods, and springs interposed between said collars and shoulders on the rods.

3. The combination with a contact-shoe and two supporting-frames pivotally connected to said shoe upon a single axis, of two pairs of bow-links pivotally connected to the shoe and having sliding connections with the supporting-frames, and springs tending to prevent upward movement of said links.

4. The combination with a contact-shoe having downwardly-curved outer ends and two pairs of supporting-rods pivoted to said shoe and diverging downwardly therefrom, of two pairs of U-shaped links that are pivotally connected to the shoe and project outwardly adjacent to the curved ends thereof, collars movably mounted upon the supporting-rods and attached to the lower ends of the links, and springs interposed between the collars and shoulders on the supporting-rods.

5. The combination with a contact-shoe and two downwardly-diverging frames upon which said shoe is pivotally supported, of a pair of curved links interposed between each end of the shoe and the frames and springs acting in opposition to said links.

6. The combination with a contact-shoe and two diverging frames to which the shoe is pivoted, of links having sliding connection with the frames and pivotal connection with the contact-shoe and springs coöperating with said links to hold the upper surface of the shoe substantially horizontal.

7. The combination with a contact-shoe and a supporting structure upon which the shoe is pivotally mounted, of links having a pivotal connection with the shoe and a sliding connection with the supporting structure and springs coöperating with said links.

8. The combination with a contact-shoe having a broad contact-surface and a supporting structure upon which the shoe is pivotally mounted, of two pairs of links that connect the sides of the shoe with the supporting structure and springs that oppose movement of said links.

9. The combination with a contact-shoe and a supporting-frame upon which said shoe is pivotally mounted, of links having sliding connections with said frame and pivotal connections with the sides of the shoe, and springs that oppose movement of said links.

In testimony whereof I have hereunto subscribed my name this 14th day of June, 1905.

JOHN D. PATON.

Witnesses:
THEODORE VARNEY,
BIRNEY HINES.