

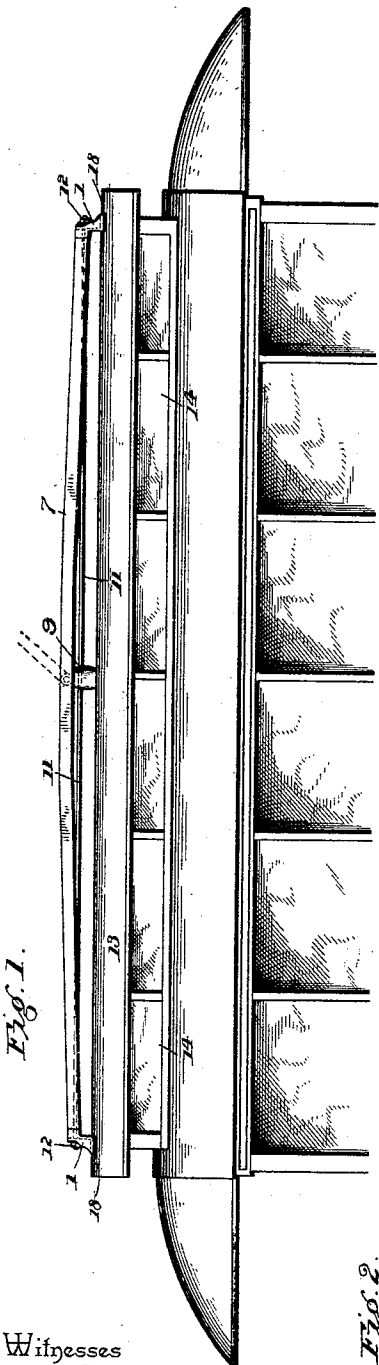
(No Model.)

H. COCHRAN.

TRUSSED TROLLEY BOARD FOR ELECTRIC CARS.

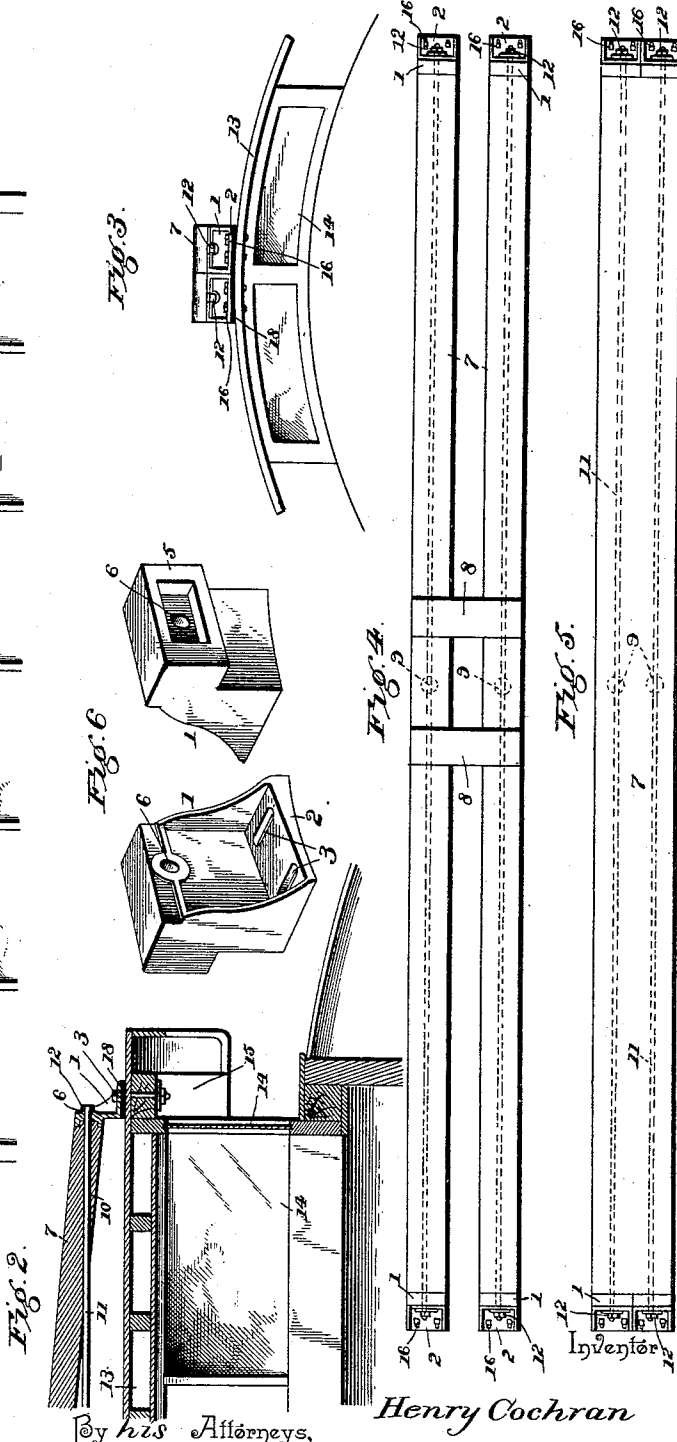
No. 499,871.

Patented June 20, 1893.



Witnesses

M. Johnson
J. N. Diggers



By his Attorneys,

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UNITED STATES PATENT OFFICE.

HENRY COCHRAN, OF CHESTER, PENNSYLVANIA.

TRUSSED TROLLEY-BOARD FOR ELECTRIC CARS.

SPECIFICATION forming part of Letters Patent No. 499,871, dated June 20, 1893.

Application filed January 16, 1893. Serial No. 458,495. (No model.)

To all whom it may concern:

Be it known that I, HENRY COCHRAN, a citizen of the United States, residing at Chester, in the county of Delaware and State of Pennsylvania, have invented a new and useful Trussed Trolley-Board for Electric Cars, of which the following is a specification.

My invention relates to improvements in trolley-boards or bridges for electric cars of that class employed in overhead-trolley systems; and the objects in view are to so support the board by means of a truss-rod so as to avoid the whole weight of the same being thrown upon the roof of the car and thus straining the same; to prevent any excessive vibration of the bridge upon the roof to the detriment of the latter; and to absorb all vibrations of the trolley and its arm during travel of the car.

With these several objects in view, the invention consists in certain features of construction of a trussed trolley board or bridge hereinafter specified and particularly pointed out in the claims.

Referring to the drawings: Figure 1 is a side elevation of a car provided with a trussed trolley board or bridge, constructed in accordance with my invention. Fig. 2 is a vertical longitudinal sectional view of a portion of the car. Fig. 3 is an end elevation thereof. Fig. 4 is a plan of the trolley-board when made "double." Fig. 5 is a similar view of the trolley-board, the same being what is termed "single." Fig. 6 is a detail, in perspective, of two of the end castings or standards for supporting the board.

Like numerals of reference indicate like parts in all the figures of the drawings.

The standards 1, for supporting the trolley-board, as shown, are provided with lower flanged bases 2, having elongated bolt-receiving openings 3, and from said bases rise the vertical portions or webs of the standards which terminate at their upper ends, or have formed therein, oblong sockets 5, in the centers of which perforations 6 are formed. The bases of the standards are curved, and as they are used in pairs, they are curved in reverse directions, so that they may fit the upper curved surfaces of the bulk-heads or transoms of the cars.

Into the sockets 5 are inserted the ends of the trolley boards or bridges 7, they being preferably employed in pairs, and these trolley-boards are connected at each side of their centers by cross-strips 8. Rubber plugs or posts 9 are located under the centers of the boards, and the said boards have their end-
portions provided with diagonal grooves or perforations 10. Truss-rods 11 are passed through the grooves 10 at each end of each of the boards and have their extremities threaded and passed through the perforations 6 of the standards, in which the ends of their respective boards are situated. The plugs or posts 9 are strung on the rods. Upon the ends of these rods, nuts 12 are threaded, and after the parts are in position, by running the nuts down upon the rods the boards are bowed, as shown, so that they form the truss. The arching or bowing of the board or bridge is the salient feature of this invention. This completes the construction of the trolley-board, and I will refer to so much of the construction of the car proper as is necessary to operate in connection therewith.

The roof 13 of the car is provided with the usual transom 14, or what might be termed a bulk-head, and located under the end-eaves of said transom is the usual curved timber, above which, upon the roof, are located the standards 1, and to which, by means of the bolts 16 passed through the openings 3 in said standards, the latter are secured. Non-conducting mats 18 may be interposed between the bases of the standards and the roof of the transom for the purpose of insulation. The soft rubber posts 9 rest upon the roof of the car and absorb the vibrations of the trolley-boards, as caused by the trolley running in contact with the overhead wire, so that the vibrations are not transmitted by said trolley-board to the roof of the car. Furthermore, the greater part of the weight of the trolley-board, and its fixtures or supports, is not transmitted directly to the roof, but to the timbers 15 at the ends of the transom, so that, as a whole, the roof is relieved of that excessive and constant strain, as well as vibrations, all of which it is now subjected to, and thus it remains unimpaired and its durability greatly increased.

As shown in Fig. 5 of the drawings, instead of employing two trolley-boards, I may employ a single board 17, though I prefer, as before stated, the use of the two boards.

5 Changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

10 Having described my invention, what I claim is—

1. In a trolley-bridge for electric cars, the combination of an arched resilient board with a truss-rod connecting the opposite ends
15 of said board and supporting devices, separate from the truss rod, at the ends of the board, substantially as specified.

2. The combination with the roof of a car, of an arched board located thereon, supports
20 for the ends of the board, a truss-rod connecting the ends of the board, and an elastic cushioning device interposed between the roof of the car and the center of said arched board, substantially as described.

25 3. A trolley-bridge for electric cars consisting of an arched board or boards, provided at the ends with rigid supports, a truss rod connecting the supports and sustaining the board or boards in an arched position solely
30 by the tension of the rod, and means for adjusting the tension of said rod, as set forth.

4. The combination with a pair of standards having perforations, of a trolley-board having its ends terminating against the
35 standards, and a truss-rod connecting said standards and provided with nuts, substantially as specified.

5. In a trolley-board, the combination with a pair of standards provided with sockets
40 having perforations, of a trolley-board having its ends received in the sockets and grooved adjacent thereto, and a truss-rod passed through the grooves of the board and the perforations of the sockets and provided

beyond the same with nuts, substantially as 45 specified.

6. In a trolley-board, the combination with opposite end-standards, having sockets formed with perforations, of a bowed truss-board having its ends received in the sockets and
50 provided with grooves, a truss-rod passed through the grooves and perforations in the sockets and provided with nuts, and an elastic post located under and supporting the center of the bowed board, substantially as 55 specified.

7. The combination with a car provided with a transom and having the timbers 15 under the eaves thereof, of the standards situated above the timbers and bolted thereto 60 and to the roof, and provided with sockets having perforations; the bowed board received in the sockets, the truss-rod passed through the sockets and perforations and provided with nuts, and the rubber post or plug in- 65 terposed between the aforesaid board, at the center thereof, and the roof of the car, and strung on the truss-rod, substantially as specified.

8. The combination with the opposite pairs 70 of standards having sockets, and also provided with curved bases, the car having the transom, and the non-conducting mats interposed between the bases of the standards and the roof of the car, of the bowed truss-boards 75 received in the sockets and secured together between their ends, the soft rubber post or plug interposed between the roof of the car and the bowed boards, the rods passing through the perforations of the opposite standards, and 80 nuts therefor, substantially as specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

HENRY COCHRAN.

Witnesses:

HARRY R. CRESSMAN,
C. E. CANFIELD.