

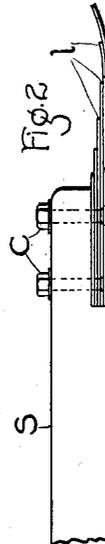
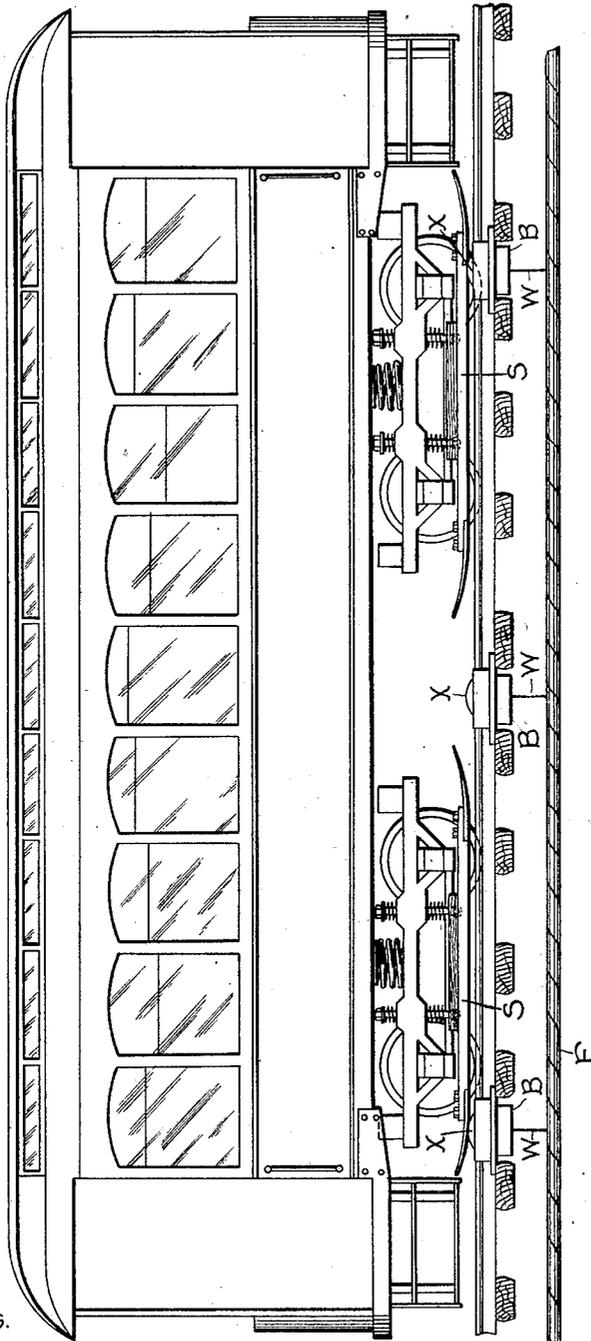
No. 729,173.

PATENTED MAY 26, 1903.

E. M. HEWLETT.
CONTACT DEVICE FOR ELECTRIC RAILWAYS.
APPLICATION FILED JAN. 31, 1900.

NO MODEL.

Fig. 1



Witnesses.

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UNITED STATES PATENT OFFICE.

EDWARD M. HEWLETT, OF SCHENECTADY, NEW YORK, ASSIGNOR TO THE
GENERAL ELECTRIC COMPANY, A CORPORATION OF NEW YORK.

CONTACT DEVICE FOR ELECTRIC RAILWAYS.

SPECIFICATION forming part of Letters Patent No. 729,173, dated May 26, 1903.

Application filed January 31, 1900. Serial No. 3,412. (No model.)

To all whom it may concern:

Be it known that I, EDWARD M. HEWLETT, a citizen of the United States, residing at Schenectady, in the county of Schenectady and State of New York, have invented certain new and useful Improvements in Contact Devices for Electric Railways, of which the following is a specification.

This invention relates to contact-shoes for electric railways.

Figure 1 is an elevation, partly in section, of a railway embodying my invention; and Fig. 2 is a detail showing the construction of a contact-shoe in accordance with my invention.

The object of the invention is to provide a shoe which will make a good electrical contact with the studs or rails of the closed-conduit system and at the same time avoid the disadvantages attendant upon the use of contact-shoes hitherto made by avoiding the strains on the various working parts. When a rigid contact-shoe is carried by a car into abrupt abutment against any object, a strain on the shoe-support results, and in the case of the shoe abutting against the contact-stud strains result to the structure of the stud. I avoid these and other difficulties hereinafter mentioned by constructing the ends of the contact-shoe so that the ends of the shoe will yield when the shoe is carried against any object.

In the drawings, S represents a shoe constructed in accordance with my invention, which shoe is mounted in any suitable manner, as shown, so that it is yieldingly supported by the car.

X represents the surface contacts, which may be connected with switch-boxes B, and branch wires W connecting these boxes with a feeder F. It has been customary to curve the ends of contact-shoes upwardly away from the direction in which contact is made with the surface contacts; but this was done by bending the strip of uniform cross-section at its ends, the result being merely that the end of the shoe would not catch on the contact-stud or other object.

My preferred construction of shoe, as shown in the figures of the drawings, has its ends formed of groups of laminae of steel, which

are resilient. Each group consists of strips of laminae *l* of graded lengths, the graded lengths arranged in the order of their lengths, the ends being in alinement at one end and forming a step-like structure at the other end. It is also desirable that the longer strips be curved at their free ends. The whole group may then be secured to the ends of the shoe S in any suitable manner, as by bolts C. The shoe may be mounted in any other way than the manner herein shown and is frequently mounted so that it may move freely in a forward and backward direction. In all cases, however, where a rigid shoe has been used the blow of the shoe in striking the stud or other object is so sudden that it cannot be taken up by the yielding support; but in the construction described herein this blow is first taken up by the yielding end of the shoe and then gradually transferred to the yielding support, so that no shock results to any part of the apparatus.

The invention is not limited in its application to railways of the particular class described herein, but may be applied to any other system, such as an overhead system or surface-contact system, wherein contact-rails are used instead of studs. In the latter case it sometimes happens that the end of one rail will be higher than the end of the adjacent rail, and it is desirable in this case to take up the shock independent of the yielding support of the shoe. In fact, the utility of the invention may be demonstrated in connection with any electric railway wherein there is a possibility of the contact-shoe abutting against any obstruction.

It is evident that the invention includes any means by which the ends of the shoe may be rendered resilient and is not limited to the precise construction herein described.

What I claim as new, and desire to secure by Letters Patent of the United States, is—

1. A contact-shoe comprising a rigid strip of conducting metal and a separate vertically-resilient conducting member mounted on each end.

2. A contact-shoe comprising a rigid strip of conducting material yieldingly supported on a car, said strip being provided with ends which yield vertically independently of the

yielding shoe-support whereby when the shoe is caused by the car to impinge against a conductor or other object the end of the shoe yields instantly prior to the movement of the
5 entire shoe on its yielding support.

3. A contact-shoe comprising a rigid strip of conducting metal and a group of resilient laminæ secured to said strip at each end.

4. A contact-shoe having its ends provided
10 with groups of resilient laminæ, arranged so that the degree of resiliency is the greatest at the free ends of the groups and becomes gradually less to the end of the shoe.

5. An end piece for contact-shoes, which
15 comprises a group of resilient laminæ of

graded lengths arranged in the order of their lengths and with one set of ends in alinement.

6. An end piece for contact-shoes which comprises a group of resilient laminæ of
20 graded lengths arranged in the order of their lengths, one set of ends being in alinement and the other set of ends being progressively curved.

In witness whereof I have hereunto set my hand this 29th day of January, 1900.

EDWARD M. HEWLETT.

Witnesses:

BENJAMIN B. HULL,
MABEL E. JACOBSON.