No. 741,392. PATENTED OCT. 13, 1903.

J. E. BLAKESLEY.

SHOE FOR THIRD RAILS.

APPLICATION FILED APR. 27, 1903.

NO MODEL.

Fig. 1.

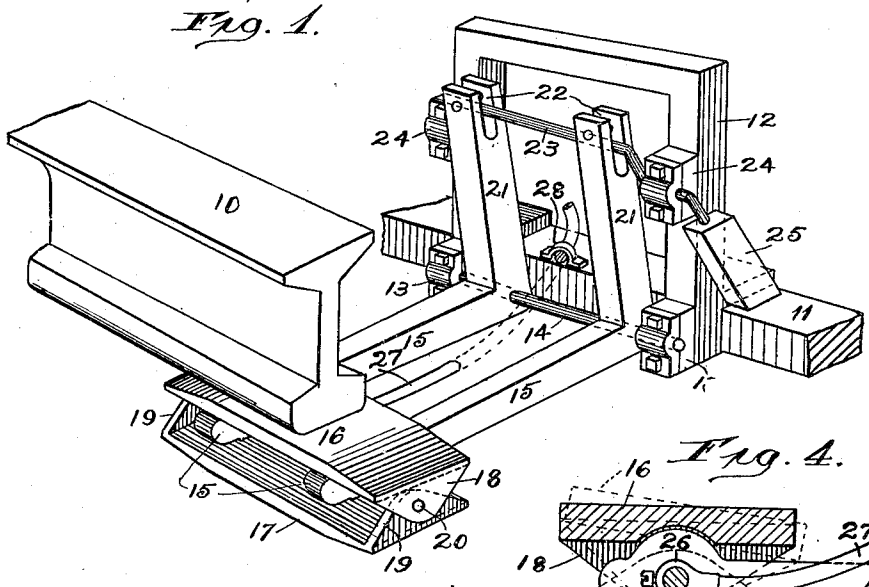


Fig. 4.

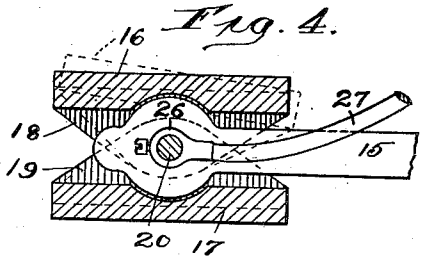


Fig. 2.

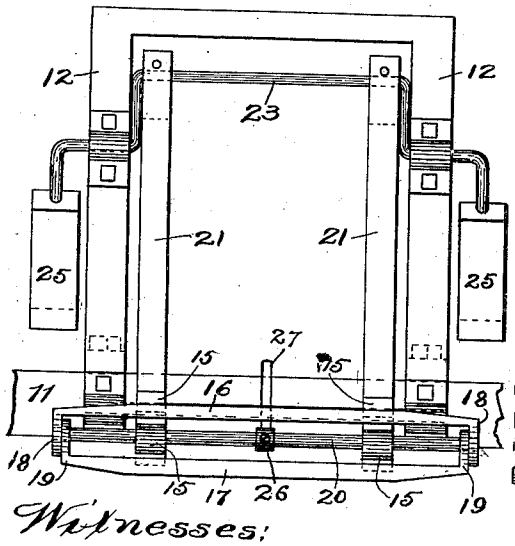
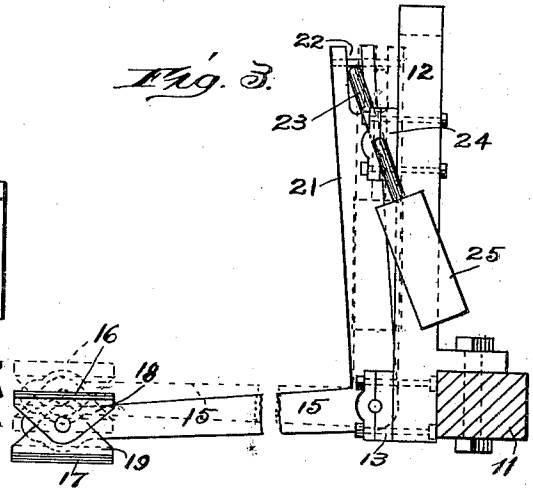


Fig. 3.



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No. 741,392. Patented October 13, 1903.

UNITED STATES PATENT OFFICE.

JAMES E. BLAKESLEY, OF CHICAGO, ILLINOIS.

SHOE FOR THIRD RAILS.

SPECIFICATION forming part of Letters Patent No. 741,392, dated October 13, 1903.

Application filed April 27, 1903. Serial No. 154,562. (No model.)

To all whom it may concern:

Be it known that I, JAMES E. BLAKESLEY, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Shoes for Third Rails, of which the following is a specification.

This invention relates to improvements in a shoe to be carried by cars employed in that class of electric railways known as "third-rail systems" to contact with the electrically-charged or third rail; and it consists in certain peculiarities of the construction, novel arrangement, and operation of the various parts thereof, as will be hereinafter more fully set forth and specifically claimed.

The principal object of the invention is to provide a shoe of the above-named character which is more especially intended to contact with the third rail when the latter is supported in an inverted position, but which is also applicable (by obvious and slight changes in the arrangements of its parts) for use on such rails when supported in the ordinary manner and which shall be so constructed and supported that it will be automatic in its operation, so as to afford positive contact at all times, especially in curves and at the juncture of third rails, where unevenness sometimes occurs.

In order to enable others skilled in the art to which my invention pertains to make and use the same, I will now proceed to describe it, referring to the accompanying drawings, in which—

Figure 1 is a perspective view of a shoe and support therefor embodying my invention, showing it in contact with a portion of a third rail and illustrating the support mounted on a portion of the car-truck. Fig. 2 is a face view of the shoe and support therefor. Fig. 3 is an end view thereof, showing by dotted lines the different positions the parts of the shoe and support therefor will assume when out of contact with the third rail; and Fig. 4 is a cross-sectional view of the shoe, showing a part of one of the supporting-arms in elevation.

Like numerals of reference refer to corresponding parts throughout the different views of the drawings.

The reference-numeral 10 represents a third rail, which may be supported by any suitable means, but in the present instance is shown in an inverted position.

Mounted on a bar or arm 11, which should be insulated from the truck, (not shown,) is a frame 12, which is provided on the lower portion of its upright parts with journal-boxes 13, in which is horizontally journaled a shaft 14, on which are mounted two bell-crank levers, the longer arms 15 of which support the members 16 and 17, comprising the shoe. As shown in Figs. 1 and 4 of the drawings, the ends of each of the members 16 and 17 are provided with inward extensions 18 and 19, respectively, which extensions are provided with openings to receive a rod 20, which passes through suitable openings in the outer portions of the arms 15 of the bell-crank levers, thus pivotally supporting the members 16 and 17 on said arms. By reference to Figs. 1 and 2 of the drawings it will be seen that the upper surface of the member 16 is downwardly beveled at each of its ends, while the lower surface of the member 17 is upwardly beveled at each of its ends. The shorter arms 21 of the bell-crank levers are each provided in their upper ends with openings 22 to receive a throw crank-shaft 23, which is journaled near each of its ends in boxes 24, secured to the frame 12 at each of its sides. The outer ends of the throw crank-shaft 23 are downturned and have secured thereon weights 25, used for counterbalancing the shoe and longer arms of the bell-crank levers, so that the former may be automatically held in contact with the lower portion of the third rail, as is clearly shown in Fig. 1 of the drawings. In passing from one third rail to another, especially at a broken circuit, it is evident that the shoe will be raised as soon as it is liberated from one of the rails by reason of the counterbalancing-weights 25, as is shown by dotted lines in Fig. 3 of the drawings. By beveling the ends of the members 16 and 17 of the shoe it is evident that as the car progresses said beveled portions will contact with the adjacent third rails in a positive and suitable manner. It is further evident that as the members of the shoe are pivotally secured on the longer arms of the bell-crank levers they will have an oscillating or rocking movement thereon, as shown by dotted

lines in Fig. 4, which movement will be advantageous on curves.

The electric conductor or flexible cable 27, which leads from the car, is supported on the arm or bar 11 by means of a clip 28 and extends between the arms 15 of the bell-crank levers and is connected at its outer end with the shaft 20 by means of a collar 26, which may be rigidly secured thereon by means of a set-screw or otherwise.

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

1. The combination with a weighted throw crank-shaft suitably journaled, of a bell-crank lever fulcrumed near said shaft and having its shorter arm in engagement therewith, and a shoe member loosely secured transversely on the outer portion of the longer arm of said lever, substantially as described.

2. The combination with a weighted throw crank-shaft suitably journaled, of two bell-crank levers fulcrumed in parallelism near said shaft and having their shorter arms in engagement therewith, and a shoe member loosely secured transversely on the outer portions of the longer arms of said levers, substantially as described.

3. The combination with a throw crank-shaft suitably journaled, of a weight on each end thereof, two bell-crank levers fulcrumed near said shaft and having their shorter arms in engagement therewith, shoe members loosely and transversely mounted on the outer portions of the longer arms of said levers, one of said members being located on the upper surface of the said arms and the other on the lower surface thereof, substantially as described.

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