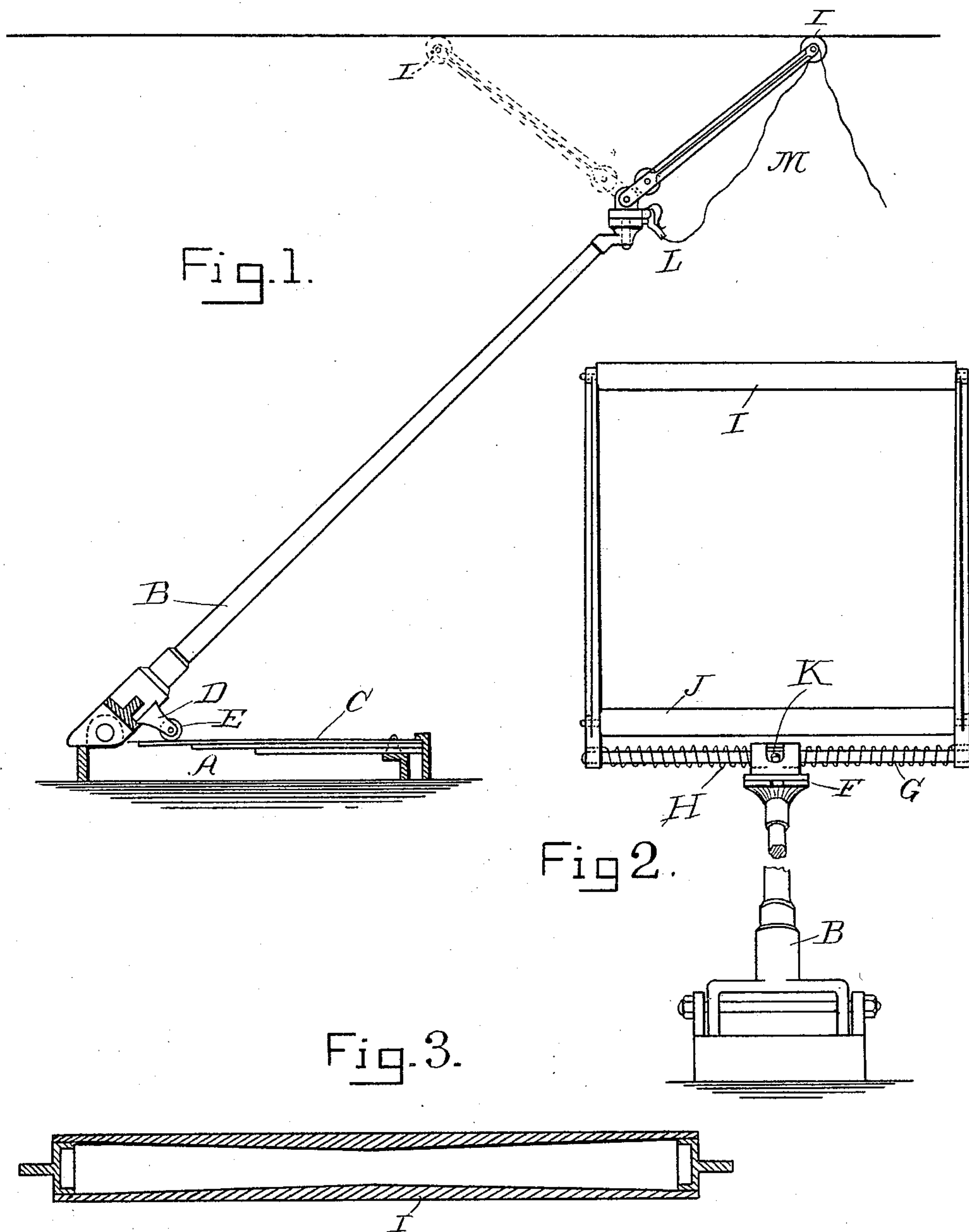


(No Model.)

E. M. BENTLEY.
ELECTRIC RAILWAY TROLLEY.

No. 584,918.

Patented June 22, 1897.



Witnesses.
L. T. Shaw
L. H. Latimer.

Inventor.
Edward M. Bentley

UNITED STATES PATENT OFFICE.

EDWARD M. BENTLEY, OF NEW YORK, N. Y.

ELECTRIC-RAILWAY TROLLEY.

SPECIFICATION forming part of Letters Patent No. 584,918, dated June 22, 1897.

Application filed June 4, 1896. Serial No. 594,201. (No model.)

To all whom it may concern:

Be it known that I, EDWARD M. BENTLEY, a citizen of the United States, residing at New York city, New York, have invented a certain new and useful Improvement in Electric-Railway Trolleys, of which the following is a specification, reference being made to the accompanying drawings, in which—

Figure 1 is a side elevation of the trolley I have invented. Fig. 2 is an end elevation thereof, and Fig. 3 is a longitudinal section of the contact-roller.

My invention in general consists of an inclined arm supported on the car on a transverse axis and upheld at a definite normal angle by an upwardly-pressing spring. To the outer end of this arm is pivoted a light frame carrying at its extremity a long transverse contact-roller adapted to bear on the under side of the conductor and receive the current therefrom. This frame has an upwardly-pressing spring and also a second contact-roller at its base, which comes into action at points where the conductor is so low as to be outside of the range of play of the first contact-roller, the latter being designed to operate only under the ordinary variations in level of the conductor.

The trolley as a whole may be constructed in such manner that it can be reversed and locked so as to trail in either direction; but I prefer to make only the end section or frame reversible.

By the described construction it is unnecessary to make the trolley movable laterally, since the length of the roller is such as to provide for any lateral inequalities in the position of the conductor with relation to the car, while it is equally unnecessary to provide a delicate spring-support for the whole weight of the trolley, since the frame and roller are light enough to be upheld against the conductor by a light spring and has not the inertia to make the action of the spring sluggish.

Referring to the drawings, A is a low base on top of the car in which is pivoted on a transverse axis the lower end of the trolley-arm B. A plate-spring C is fastened at one end to the base A and at its other end bears upward against the under side of a projection D from the lower end of arm B, in which projection is a friction-roller E. The part of

arm B below the pivot is so shaped as to bear against the base A when the arm revolves beyond a given angle and form a stop therefor, so that the upward movement of the arm is thereby limited.

On the outer end of arm B, which is of substantial dimensions, is a small turn-table on which rests a head F, forming bearings for the shaft G. This shaft together with the parallel side arms K make up the frame or end section above referred to, and two contact-rollers I and J are journaled in the arms K. A spring H is coiled around the shaft G and tends to hold the frame in a vertical position when the contact-roller is free from the conductor and to press the roller upward against the under side of the conductor when the device is in its operating position.

A slot in head F and a radial pin K, projecting from shaft G through the slot, serve to limit the movement of the frame, so that when it is depressed to a horizontal position the conductor will bear on both rollers I and J, and a further depression in the level of the conductor will cause the arm B to move downward against the pressure of spring C. The roller J will not be permitted to come in contact with any part of the structure and have its rotation interfered with. The rollers will preferably be made hollow and have their walls made thicker at the center, where the wear is greatest, as shown in Fig. 3.

For reversing the end section a cord M is provided, which is attached to a latch L, pivoted to head F and engaging a notch in the stationary part of the turn-table, and passes thence from said latch L to an eye in the outer end of one or both of the bars K and from that point extends down to the rear platform of the car in the usual manner. By means of this cord the end section can be simultaneously unlatched, depressed, and rotated, while after reversal the latch will automatically fall into its notch and relock the frame.

Although I prefer to have the inclined arm B provided with a stop for limiting its upward movement, this is not essential, as the stop may be omitted and the arm allowed to stand vertically so long as the roller I only is in contact with the conductor. In that case the spring C will be duplicated on the

other side of the arm, so that it may be depressed equally well in either direction.

What I claim as new, and desire to secure by Letters Patent, is—

5 1. The combination of a trolley-arm fixed laterally with relation to the car and normally held at a constant elevation, a pivoted end section thereon, a spring acting to move the end section with relation to said arm in an
10 upward direction against the conductor, a fastening between the end section and trolley-arm, holding the former against lateral movement relatively to the latter, and a contact-roller on the said end section having a
15 length equal to the lateral deviation of the conductor in both directions from a central position.

2. The combination with a pivoted trolley-arm normally held at a constant elevation of
20 a pivoted, inclined end section thereon, said arm and end section being each provided respectively with an individual upwardly-

pressing tension device and held against lateral movement, and a contact-roller in the said end section having a length equal to the
25 lateral deviation of the conductor in each direction from a central position.

3. The combination with a pivoted trolley-arm of a pivoted and reversible end section therefor having an upwardly-pressing tension device and a latch interposed between
30 said end section and trolley-arm for holding the former in either position.

4. The combination with pivoted arm B provided with a stop for limiting its upward
35 movement, of a movable end section thereon adapted to bear against the under side of the conductor and make contact therewith.

In witness whereof I have hereunto set my hand this 25th day of May, 1896.

EDWARD M. BENTLEY.

Witnesses:

L. T. SHAW,

L. H. LATIMER.