

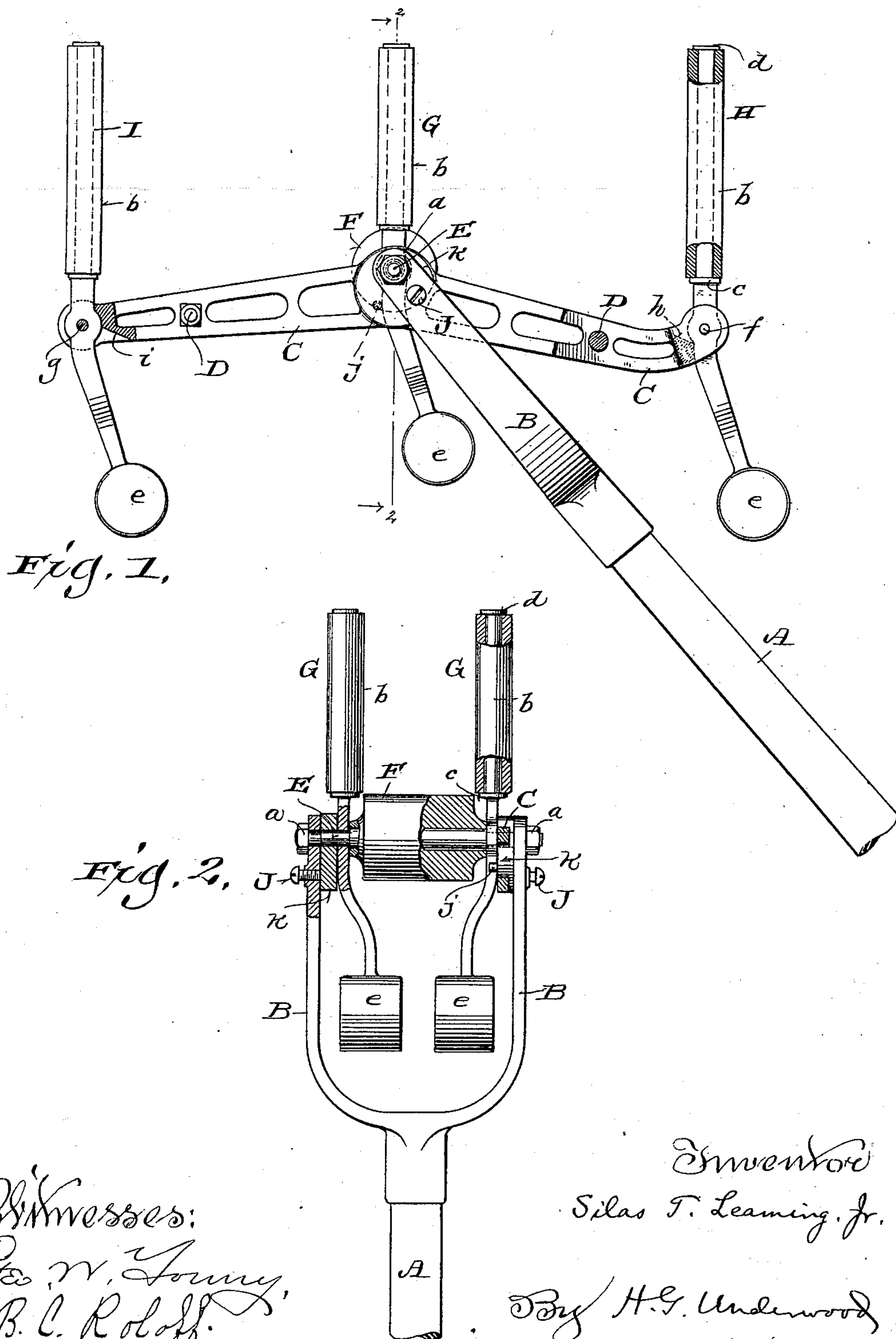
No. 622,813.

Patented Apr. 11, 1899.

S. T. LEAMING, JR.  
TROLLEY.

(Application filed Aug. 16, 1897.)

(No Model.)



Witnesses:  
Geo. W. Young,  
B. C. Roloff.

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# UNITED STATES PATENT OFFICE.

SILAS T. LEAMING, JR., OF WAUWATOSA, WISCONSIN, ASSIGNOR OF ONE-HALF TO SILAS T. LEAMING, OF SAME PLACE.

## TROLLEY.

SPECIFICATION forming part of Letters Patent No. 622,813, dated April 11, 1899.

Application filed August 16, 1897. Serial No. 648,358. (No model.)

*To all whom it may concern:*

Be it known that I, SILAS T. LEAMING, JR., a citizen of the United States, and a resident of Wauwatosa, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Trolleys; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention relates to the overhead contact devices or trolleys of electric railways; and it consists in certain peculiarities of construction and combinations of parts, as will be fully set forth hereinafter and subsequently claimed.

In the drawings, Figure 1 is a side elevation of a device embodying my present invention, partly broken away or in section to better illustrate certain details of construction. Fig. 2 is a transverse vertical sectional view of the same, taken on the plane indicated by the line 2 2 in Fig. 1.

The object of my invention is the production of a contact or trolley device of such construction as will prevent the escape of the same from the overhead wire, while readily yielding to temporary obstructions, such as cross-wires, and automatically righting itself after the obstruction is passed.

Referring to the drawings, A represents a trolley-pole, and B B the forked upper end or head thereof.

C C are the side pieces of the trolley-frame, connected together by the transverse bolts or brace-rods D D. This frame C D is suspended within the forked branches B B of the trolley-pole on a transverse journal E, which serves also as the journal of the cylinder or roller F, which constitutes the contact device proper in place of the ordinary trolley-wheel. This roller F is not grooved; but on each side thereof are suspended weighted fingers, also supported on the journal E, said journal, after passing through the fork branches B B, side pieces C C, fingers G G, and roller F, being secured, as by nuts *a a*, on its outer projecting ends. At each end of the trolley-frame there are suspended a pair of the described weighted fingers, (marked H I, respectively,) of practically the same construction as the fingers of the central pair G,

each finger being a round rod projecting vertically upward above its pivotal point and carrying a metallic sleeve *b*, resting on a collar *c* and kept in place on the finger by upsetting the top thereof or the formation of a suitable stop *d*, while below the pivotal point the lower part of each finger is bent obliquely at a slight forward-projecting angle and is weighted at the lower end, as shown at *e*. In the construction illustrated in the drawings the ends of the side pieces C C of the trolley-frame are forked and the outer fingers H I supported between them on pivots *f g*, the metal between the forked ends being cut away to form upper beveled stops *h* at one end and lower beveled stops *i* at the other end of the frame to permit and limit the backward movement of the upper ends of the fingers H H and I I, respectively, as hereinafter described, while the movement of the central pair of fingers G G is limited by stops *j j*, projecting inward from the central disk-like parts *k* of the side pieces C.

J J are set-screws passing through the forked branches B B of the trolley-pole and adapted to bear against the said central disk portions *k* of the side pieces C, so as to keep the trolley-frame C D stationary with the trolley-pole fork when properly adjusted.

The operation of my device will be readily understood from the foregoing description of its construction, taken in connection with the accompanying drawings. The normal angles of inclination of the trolley-poles differ with different cars, and it is intended that my trolley-frame shall be adjusted so that it shall be practically horizontal, with the tops of the several pairs of fingers G G, H H, I I all substantially on the same plane, and then the set-screws J J are tightened against the side pieces of the trolley-frame, as described. The overhead wire is received between the fingers of each opposing pair and is in contact with the roller F, the said fingers thus obviating any necessity for a grooved flange in said roller and guarding against the escape of the wire, while affording plenty of room for lateral movement. If the fingers encounter any obstruction, such as a cross-wire, they are promptly bent back thereby as each pair of



fingers meet with the same and instantly right themselves, owing to their bent and weighted lower ends, as soon as the obstruction is passed, and in the case of a cross-wire, for example, there will always be two pairs of fingers in normal upward projection while one pair is bent backward, and hence the danger or possibility of the escape of the wire laterally from the contact device at such times is reduced to a minimum.

While I have shown a practical and efficient construction of my device in the accompanying drawings, I do not limit myself to the precise details described, as the same may be varied in many ways without departing from the spirit of my invention.

With my device in going around corners the overhead wire may have contact with the metallic roller F for the entire length of the same between the opposed fingers G G, which will ordinarily afford sufficient play, and if said wire comes in contact with said fingers (or with any of the fingers of my device) then the described sleeve b will obviate friction and prevent binding, while at the same time, as all the parts of my device are metallic and non-insulated, the electric circuit will not be broken so long as the overhead wire is in contact with any part of said device.

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

1. A contact device for overhead-trolley electric railways, comprising an adjustable trolley-frame, a revoluble contact-roller carried thereby and a series of upward-project-

ing weighted fingers pivotally attached to said frame at each side thereof.

2. In a contact device for overhead-trolley electric railways, the combination with a trolley-pole and a trolley-frame carried thereby, of a revoluble cylindrical contact-roller; a pair of upward-projecting and downward-extending disconnected independent fingers pivoted on the journal of said contact-roller, one at each end of the latter; weights at the lower ends of said fingers, and vertical revoluble metallic sleeves on the upper ends of said fingers.

3. In a contact device for overhead-trolley electric railways, the combination with a trolley-pole, of a trolley-frame carried thereby, said frame being forked at each end, and the material of said frame between the forked ends being cut away to form upper beveled stops at one end and lower beveled stops at the other end; a pair of independent disconnected upward-projecting and downward-extending weighted fingers pivoted between the forked ends of said frame, at each end thereof; a like pair of fingers pivoted on a journal at the center of said frame, and a cylindrical contact-roller revolubly supported on said central journal of said frame.

In testimony that I claim the foregoing I have hereunto set my hand, at Milwaukee, in the county of Milwaukee and State of Wisconsin, in the presence of two witnesses.

SILAS T. LEAMING, JR.

Witnesses:

H. G. UNDERWOOD,  
B. C. ROLOFF.