

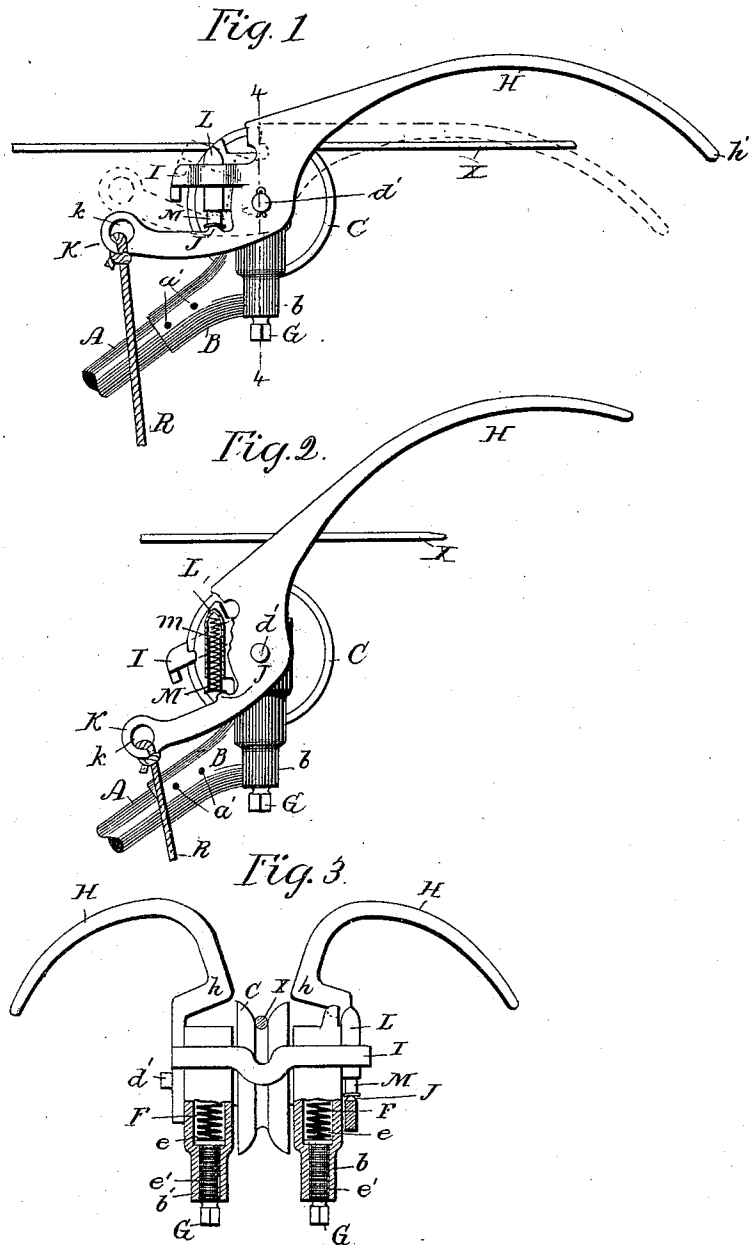
(No Model.)

2 Sheets—Sheet 1.

J. B. SCRANTON.
AUTOMATIC SAFETY TROLLEY.

No. 544,774.

Patented Aug. 20, 1895.



Witnesses:
Chas. B. Shumway
Samuel Ayer

Inventor
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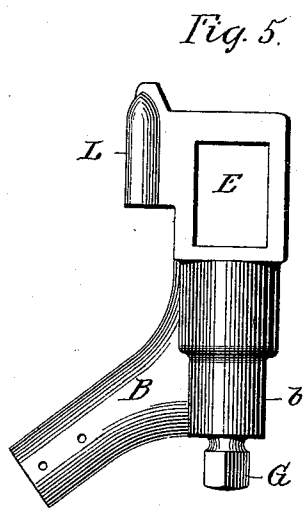
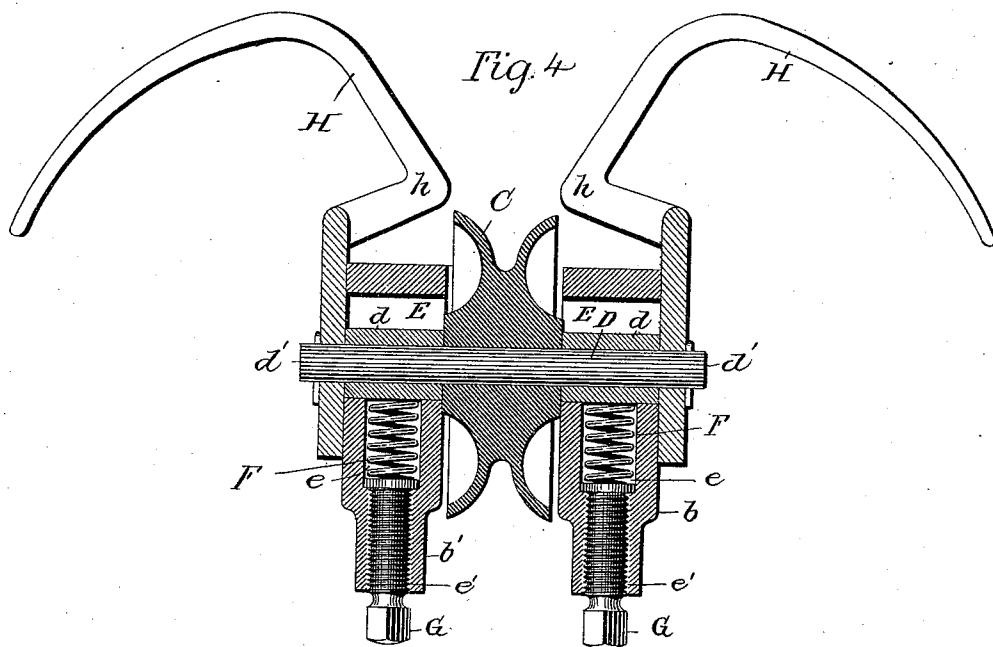
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2 Sheets—Sheet 2.

J. B. SCRANTON.
AUTOMATIC SAFETY TROLLEY.

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UNITED STATES PATENT OFFICE.

JAMES B. SCRANTON, OF NEW HAVEN, CONNECTICUT.

AUTOMATIC SAFETY TROLLEY.

SPECIFICATION forming part of Letters Patent No. 544,774, dated August 20, 1895.

Application filed March 30, 1895. Serial No. 543,848. (No model.)

To all whom it may concern:

Be it known that I, JAMES B. SCRANTON, a citizen of the United States, and a resident of the city of New Haven, county of New Haven, State of Connecticut, have invented a new and useful Improvement in Trolley-Wire Finders, which is fully set forth in the following specification, taken in connection with the drawings which form a part thereof, and in which the same letters of reference represent like parts in all the figures.

Figure 1 is a side elevation of a finder embodying my invention; Fig. 2, a corresponding view with fingers raised, partly broken away to show spring attachment with the head of trolley-arm; Fig. 3, an end elevation, partly cut away to show the screws and spring; Fig. 4, a transverse vertical section in the lines 4-4 of Fig. 1; Fig. 5, a detail view of one of the forks of the trolley-arm.

This invention relates to overhead trolleys where an arm extends from the electric car, carrying a wheel which engages with an overhead wire. When the wheel of the trolley-arm for any cause is released from engagement with the wire, it is sometimes a difficult and tedious task, especially at night, to replace the wheel again in engagement with the wire.

This invention consists of an appliance to be attached to the trolley-arm to form a simple means for readily adjusting the wheel to the wire. Although various means have already been devised for accomplishing this result, they have proved too complicated or too expensive for practical use.

It is, therefore, the object of this invention to provide a simple, cheap, and thoroughly effective apparatus for adjusting the trolley-wheel to the wire, and the object is accomplished by means of diverging fingers pivotally attached to the bifurcated head of the trolley-arm, forming an angle at the vertex of which is the trolley-wheel. The pivotal attachment of the diverging fingers is such that normally the fingers are in a practically upright position, but upon the engagement of the wheel with the wire they will be automatically depressed to pass under any obstruction above the wire.

A further feature of this invention is a spring attachment between the fingers and

forked head of the trolley-arm to permit the further depression of the fingers to pass beneath switches, &c., in the same horizontal plane as the overhead wire, the details of which construction will be more fully described and claimed, together with minor improvements, hereinafter.

In the drawings, A represents the trolley-arm, which is connected to the car in well-known manner. The head B of the trolley-arm, adapted to fit over the end of the arm, to which it may be secured by screws or bolts *a'*, is bifurcated to receive the scored trolley-wheel C. The axle D of the wheel C projects at either end into rectangular blocks *d*, which are capable of a limited vertical sliding movement in the transverse rectangular slots E in the forks *b* and *b'* of the head B. Recesses *e* extend vertically downward from the slots E for the reception of spiral springs F, which bear with their upper ends against the sliding blocks *d*. Narrower cylindrical prolongations *e'* of the recesses *e* are internally threaded to receive the screws G, bearing against the lower end of the springs F. By means, therefore, of the screws G and the springs F the sliding blocks *d* are normally pressed upward against the upper side of the slots E. When the wheel is engaged with the wire X, the pressure of the trolley-arm upward and of the wire downward, overcomes the tension of the springs F and forces the sliding blocks *d* to the bottom of the recesses E. The axle D extends laterally beyond the blocks *d*, forming the studs *d'*, on which are pivoted the fingers H, connected by the cross-bar I, and one of which has the extension K with the eye *k* for the rope R for drawing down the trolley. The free ends of the fingers H have elbows *h*, which extend inwardly to the edge of the wheel C, and from the elbows diverge to form an angle, the vertex of which is the central point of the score on the trolley-wheel.

On the outer side of one of the forks *b* of the head B is an abutment L, recessed from the bottom to form a socket into which extends the cartridge-shaped casing M, holding a spiral spring *m*. Against the flanged head of the casing M bears the end of the vertical stud J on the extension K of the finger H. The weight of the free ends of the fingers (which are pivoted at *d'*) tends to press the

vertical stud J against the casing M, with its inclosed spiral spring *m*, (bearing with its upper end against the closed end of the recess of the abutment or socket L,) and the tension of the spring is sufficient to hold the fingers in the position shown in Fig. 1 when the wheel is running on the wire. When the fingers come in contact with cross-wires, switches, or other obstacles, the tension of the spiral spring *m* is overcome and the fingers depressed to the position shown in the dotted lines, Fig. 1.

Upon the release of the wheel from engagement with the wire, as has been shown above, the sliding blocks *d* are pressed upward against the top of the slots E, and the studs *d'*, being connected therewith, raise the fingers, turning them about the stud J (the upward movement of which is limited by the contact of the flanged head of the casing M with the socket L) as a center to the position shown in Fig. 2. The angle made by the fingers when in this raised position is usually sufficiently wide to retain the wire, which is thereby caused to again slip into contact with the scored wheel C.

Where the trolley and fingers have been entirely removed from the wire and it is necessary for the motorman (or other person) to place the wheel in contact with the wire, power exerted on the rope R as it draws the head B of the trolley-arm downward will turn the fingers about the pivot *d'*, so that the free ends assume a substantially upright position and offer a still greater angle for the reception of the wire. The free ends of the fingers H are curved, Fig. 1, so that when the wheel is running on the wire the extreme ends *h'* will be below the wires, and upon the rearward movement of the trolley the fingers will pass below any cross-wire or other obstacle in the same horizontal plane with the wire upon which the wheel is running.

Having now described this invention, the details of which may be varied without departing from the spirit of the invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination with an overhead conductor; of a car; a forked trolley arm on the car; a trolley having its axle bearing in said arm and capable of a limited vertical movement therein; springs in said trolley arm adapted to force said axle upward when the trolley wheel is not in contact with the over-

head conductor; and a finder pivoted on said axle, one end of which is so connected with said trolley arm that the free ends will be raised, when the trolley wheel is forced upward by said springs, substantially as described.

2. A trolley wire finder consisting of a forked trolley arm having blocks therein capable of a limited vertical movement, and springs tending to force said blocks upward; a trolley wheel, the axle of which bears in said blocks; and diverging fingers pivoted on said axle and having one end so connected with said trolley arm, that the free ends of said fingers will be raised and depressed as said blocks are forced upward or downward in said trolley arm, substantially as described.

3. A trolley wire finder consisting of a trolley arm; a trolley wheel, the axle of which bears in the head of said arm, and is capable of a limited vertical movement therein; springs in said head tending to force said axle upward; diverging fingers pivoted on said axle, and a spring in said trolley arm bearing against one end of said fingers, substantially as described.

4. The combination with a forked trolley arm having blocks capable of a limited vertical movement therein and springs tending to force said blocks upward; of a trolley wheel, the axle of which bears in said blocks; a finder pivoted on said axle; and vertical screws in said arms adapted to adjust the tension of said spring, substantially as described.

5. The combination with an overhead conductor; of a trolley arm; diverging fingers pivotally attached to the head of said trolley arm; a socket in said head having a spring therein against which one end of said fingers is adapted to bear to hold the free ends thereof normally above the conductors, substantially as described.

6. The combination with a trolley arm; of a finder pivotally attached to the head of said trolley arm, and held in position by yielding connections with said head above and below said finder, substantially as described.

In witness whereof I have hereunto set my hand this 28th day of March, 1895.

JAMES B. SCRANTON.

Witnesses:

SAMUEL A. YORK, Jr.,
SAMUEL H. FISHER.