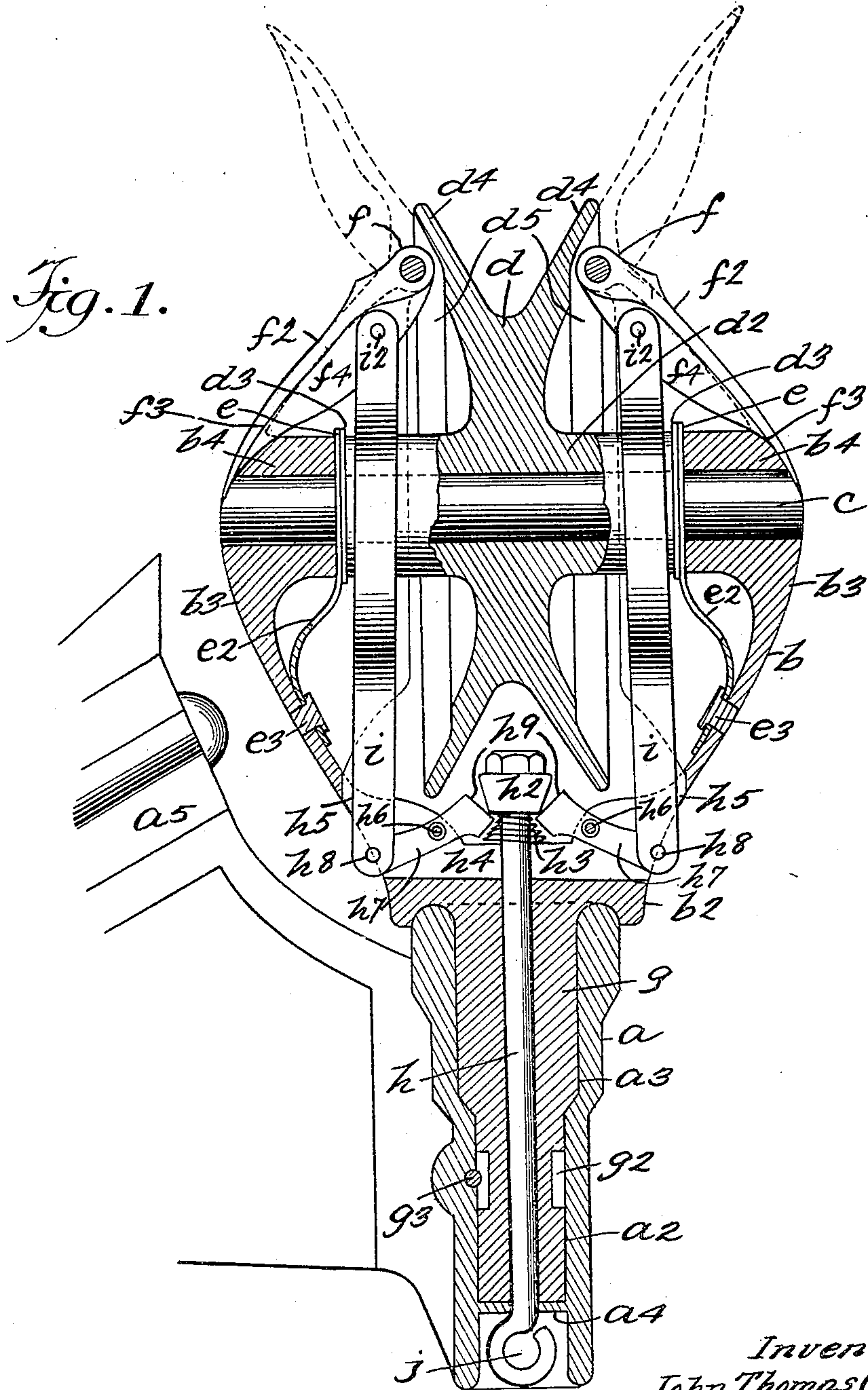


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ELECTRIC TROLLEY HEAD.

APPLICATION FILED MAR. 28, 1905.

2 SHEETS—SHEET 1.



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No. 808,139.

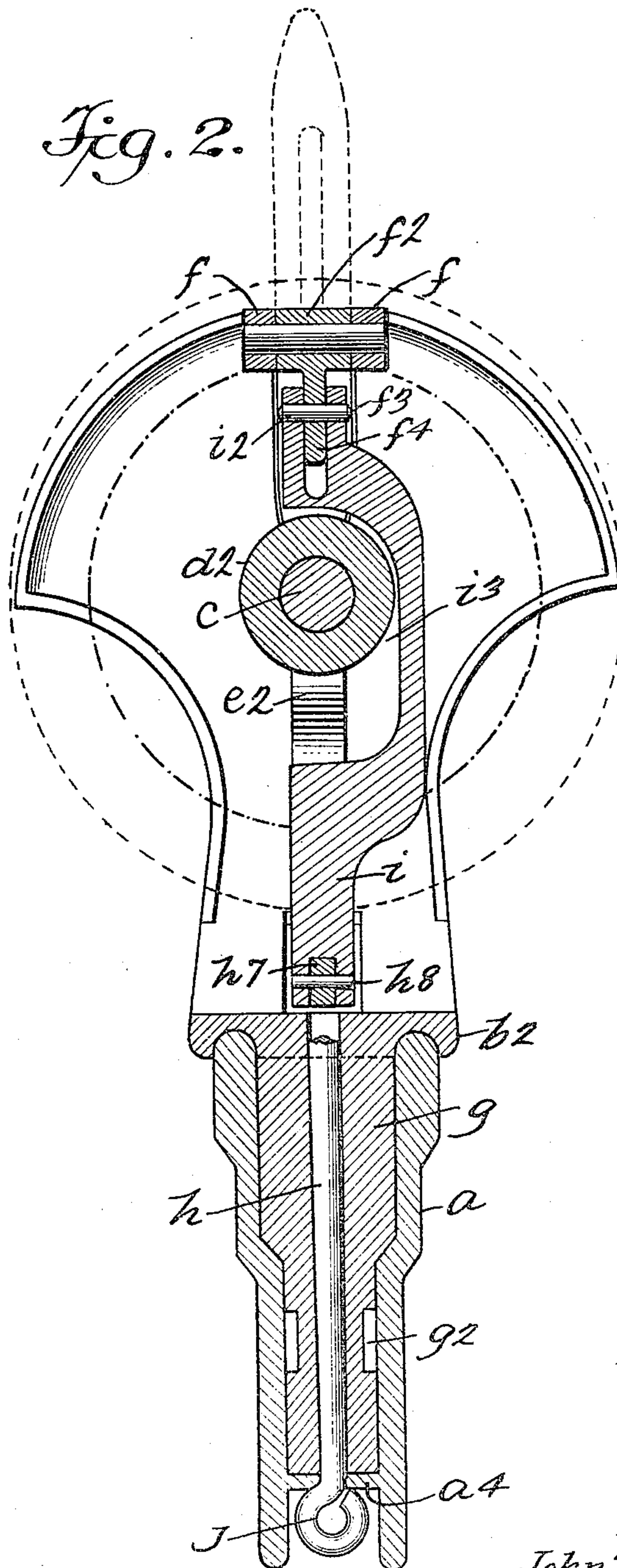
PATENTED DEC. 26, 1905.

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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

JOHN THOMAS CHERRY AND EDWARD HENRY CLIVE, OF PLYMOUTH,
ENGLAND.

ELECTRIC-TROLLEY HEAD.

No. 808,139.

Specification of Letters Patent.

Patented Dec. 26, 1905.

Application filed March 28, 1905. Serial No. 252,465.

To all whom it may concern:

Be it known that we, JOHN THOMAS CHERRY and EDWARD HENRY CLIVE, subjects of the King of Great Britain, residing at Plymouth, county of Devon, England, have invented certain new and useful Improvements in Electric-Trolley Heads, of which the following is a specification, such as will enable those skilled in the art to which it appertains to make and use the same.

This invention relates to trolley devices for trolley-cars; and the object thereof is to provide an improved electric-trolley head adapted to be connected with the ordinary trolley-arm in the usual or any desired manner and by means of which the trolley-wheel may be conveniently and easily placed in contact with the trolley wire or conductor at all times or whenever said parts have by accident or otherwise become disconnected.

This invention is an improvement on that described and claimed in United States Patent granted to us March 29, 1904, No. 755,999, and is fully disclosed in the following specification, of which the accompanying drawings form a part, in which—

Figure 1 is a sectional side view of our improved electric-trolley head, and Fig. 2 a partial sectional view at right angles to the section shown in Fig. 1.

In the practice of our invention we provide a support comprising a socket member a , which is tubular in form or provided with a longitudinal bore a^2 , which in the form of construction shown is enlarged at the upper end, as shown at a^3 ; but this enlargement may or may not be employed, and said socket member is provided at or near its lower end with a transverse partition a^4 , and said socket member is also connected with or formed integrally with a side bracket or frame a^5 , with which in practice the trolley-arm is connected in the usual or any desired manner. We also provide a fork-shaped frame b , which in connection with the operative parts mounted therein constitutes the trolley-head proper and which comprises a cross-head bottom portion b^2 and upwardly-directed side members b^3 , the central portions of which are substantially cup-shaped in cross-section or of any other pre-

ferred form, and said side members b^3 are provided slightly above the transverse center of the fork-shaped frame with inwardly-directed axle boxes or bearings b^4 , in which the trolley-wheel axle c is mounted.

Mounted centrally on the axle c is the trolley-wheel d , which in the form of construction shown is provided with a hub d^2 , which fits between the axle boxes or bearings b^4 and the ends of which in the form of construction shown are provided with annular flanges, ribs, collars, or similar devices d^3 , and mounted on the axle boxes or bearings b^4 are copper washers e , which bear on the flanges, ribs, collars, or similar devices d^3 and which are provided with downwardly-directed spring-arms e^2 , secured to the opposite sides of the fork-shaped frame b , as shown at e^3 , and these washers aid in conducting the electric current through the separate parts of the trolley-head.

The trolley-wheel d in the form of construction shown is provided with a deep annular groove formed by outwardly-flared side flanges d^4 , on the outer sides of which are annular grooves d^5 , and the top portions of the sides b^3 of the fork-shaped frame b are provided with inwardly-directed bearings at f , which enter the grooves d^5 and are adapted to move loosely and freely therein, and to or in which are pivoted wire-finders f^2 , which are shown in their normal positions in full lines in Figs. 1 and 2 and in their operative position in dotted lines in said figures, and in their normal positions the wire-finders f^2 occupy slots f^3 in the top portions of the sides b^3 of the fork-shaped frame b .

The upper end of the socket member a fits in an annular groove in the bottom of the head b^2 of the fork-shaped frame b , and said head b^2 is provided with a downwardly-directed shank g , which fits in the socket member a , and said fork-shaped frame b rests on and is rotatable on the socket member a , and the shank g rotates in said socket member, and said shank is provided in the form of construction shown with an annular groove g^2 , and passing through the socket member a is a pin g^3 , which also passes through said groove, and by means of this construction the fork-shaped frame and shank g are held in connection with

the socket member a , and the groove g^2 in the form of construction shown is of such vertical width as to permit of a slight vertical movement of the trolley-head member, consisting of the fork-shaped frame b and the shank g connected therewith.

Passing vertically through the shank g and into the trolley-head member is a shaft or rod h , provided at its upper end with a beveled head h^2 , between which and the cross-head b^2 of the fork-shaped frame b is a spring h^3 , which holds the rod or shaft h in its highest position, as shown in Fig. 1, and in the top portion of the cross-head b^2 of the fork-shaped frame b is a transverse slot or opening h^4 , which opens outwardly at h^5 through the opposite side portions b^3 of the fork-shaped frame b , and pivoted in the opposite side portions of the slot or opening h^4 at the opposite sides of the rod or shaft h or the head thereof, as shown at h^6 , are rock-levers h^7 , the outer ends of which are pivoted at h^8 to upwardly-directed and vertically-movable link members i , which are pivoted at their upper ends, as shown at i^2 , to longitudinal ribs f^4 on the bottom of the wire-finders f^2 , this connection being made slightly below and outwardly of the pivotal supports of said wire-finders at f , and the link members i are provided in their inner faces with vertical recesses i^3 , as shown in Fig. 2, to form a space for the hub of the trolley-wheel d , and the rock-levers h^7 are provided at their inner ends with beveled heads h^9 , in connection with which the head h^2 of the shaft or rod h operates.

In practice the rope, cord, or similar device by which the trolley-arm is manipulated is connected with the lower end of the rod or shaft h at j , this connection being made in such manner as to insulate said rope, cord, or other device, and it is evident that when the rod or shaft h is pulled downwardly against the operation of the spring h^3 the head h^2 thereof will operate in connection with the rock-levers h^7 to throw the link members i upwardly, and said link members will operate to throw the wire-finders f^2 upwardly into the position shown in dotted lines in Fig. 1, and the said wire-finders will remain in this position as long as a pull is exerted on the shaft or rod h , and by manipulating the trolley-head and trolley-arm by means of the rope, cord, or similar device connected with the shaft or rod h the trolley-wire or conductor may be easily found and guided into the groove in the wheel d , and when the pull on the rod or shaft h is released the operative parts of the trolley-head will assume the position shown in full lines in Fig. 1. It will be understood that not only the wire-finders f^2 may be thus operated whenever it is desired to connect the wheel d with the trolley-wire or conductor, but the trolley-arm with which the trolley-head is con-

nected and by which the trolley-head is connected with a car is also operated by said rope, cord, or other device.

This device is exceedingly simple in construction and will not get out of order, so as to frequently need repair, and by means thereof the trolley-head or the trolley-wheel thereof may be quickly and easily placed in connection with the trolley-wire or conductor whenever desired, whether in the day-time or night-time, simply by manipulating the ordinary rope, cord, or other device by which the trolley-arm is operated and which in practice is connected with the rod or shaft h .

Having fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a trolley device, a socket member adapted to be connected with a trolley-arm, a fork-shaped frame mounted on said socket member and rotatable thereon, a trolley-wheel mounted between the opposite sides of the fork-shaped frame, a spring-supported rod passing vertically through the socket member and provided with a head in the bottom portion of the fork-shaped frame, rock-levers pivoted at the opposite sides of the head of the rod and adapted to be operated thereby, vertically-arranged link members pivoted to the outer end of said levers, and wire-finders pivoted at the top of the opposite sides of the fork-shaped frame, said link members being also pivoted to said wire-finders, substantially as shown and described.

2. In a trolley device, a socket member designed to be connected with a trolley-arm, a fork-shaped frame mounted on said socket member and rotatable thereon, a trolley-wheel mounted between the sides of the fork-shaped frame, a spring-supported rod passing vertically through the socket member and into the bottom of said frame and the upper end of which is provided with a head, wire-finders pivoted in the top of the side portions of the fork-shaped frame, levers pivoted in the bottom of the fork-shaped frame and adapted to be operated by the head of said rod and link devices in operative connection with said levers and said wire-finders, substantially as shown and described.

3. In a trolley device, a socket member, a fork-shaped frame mounted thereon and provided with a shank which enters said member, said frame being rotatable on said socket member, a trolley-wheel mounted between the sides of the fork-shaped frame, a vertically-movable spring-supported rod passing upwardly through the socket member and through the shank of the fork-shaped frame into the bottom portion of said frame, wire-finders pivoted to the top of the opposite side portions of the fork-shaped frame, levers pivoted in the bottom of the fork-shaped frame

and adapted to be operated by the downward movement of said rod and devices in operative connection with said levers and said wire-finders whereby the downward movement of
5 said rod will raise said wire-finders, substantially as shown and described.

In testimony that we claim the foregoing as our invention we have signed our names, in

presence of the subscribing witnesses, this 13th day of March, 1905.

JOHN THOMAS CHERRY.
EDWARD HENRY CLIVE.

Witnesses:

ELI PILLAS,
ANITA STRONG.