No. 705,825. Patented July 29, 1902.

W. A. E. DAVIS.

TROLLEY HEAD AND WHEEL.

(Application filed Dec. 18, 1901.)

(No Model.)

Fig. 1.

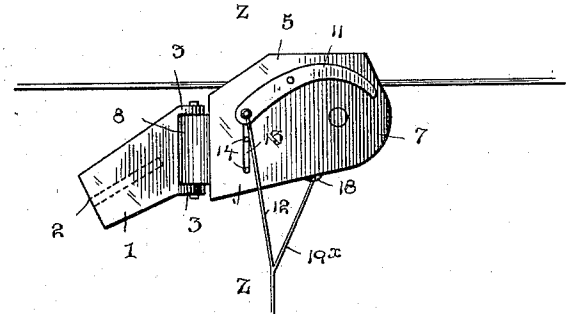


Fig. 2.

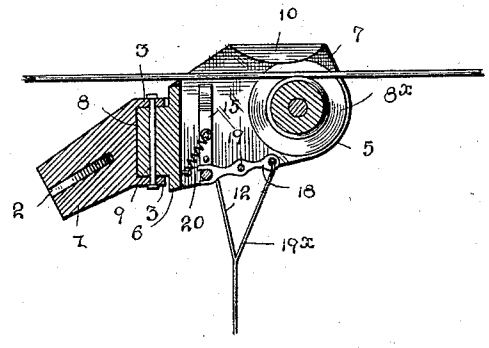


Fig. 3.

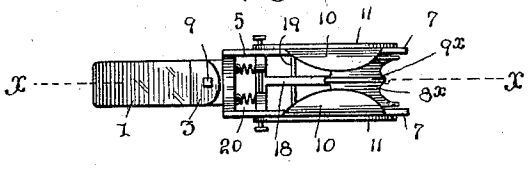
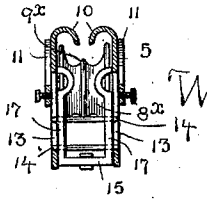


Fig. 4.



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UNITED STATES PATENT OFFICE.

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TROLLEY HEAD AND WHEEL.

SPECIFICATION forming part of Letters Patent No. 705,825, dated July 29, 1902.

Application filed December 18, 1901. Serial No. 86,377. (No model.)

To all whom it may concern:

Be it known that I, WALTER A. E. DAVIS, a citizen of the United States, residing at Toledo, in the county of Lucas and State of Ohio, have invented new and useful Improvements in Trolley Heads and Wheels, of which the following is a specification.

My invention relates to improvements in trolley-wheels and trolley-heads for electric railways, and especially relates to guards and appliances intended to prevent the accidental displacement of the trolley from the electric wire; and the object is to provide a device of the character mentioned and for the purpose intended which is simple in construction and practical and effective in operation.

A further object is to provide an improved guard which will securely hold the conducting-wire in position upon the trolley-wheel and which will automatically release the same when the trolley-rope is pulled upon to disengage the trolley from the wire.

To these ends my invention consists in the improved construction and aggroupment of parts, as more fully described in the following specification and the novelty of which will be particularly pointed out and distinctly claimed.

I have fully and clearly illustrated my invention in the accompanying drawings, wherein—

Figure 1 is a side elevation of my improved device. Fig. 2 is a longitudinal vertical section. Fig. 3 is a top plan view. Fig. 4 is a transverse vertical section.

Referring to the drawings, 1 designates a socket-piece made of any material to adapt it to the purposes for which it is intended and formed with a socket 2, adapted to receive the upper end of a trolley-pole (not shown) and be secured to the end of the pole by any approved means. At its rear portion this socket-piece is provided with upper and lower ears or lugs 3 3, said ears being formed with vertically-alining apertures or bearings, as shown.

5 designates the trolley-head, which consists of a block or plate 6, provided with rearwardly-extending parallel side plates 7 7 and having its front portion formed with a vertically-apertured extension 8, which engages in the space between the ears 3 3 and is pivotally secured therein by means of a bolt or pin 9, which extends through the alining apertures in the said ears and the aperture in the extension 8. The side plates 7 7 are formed with suitable alining apertures forming bearings for the journals of a trolley-wheel $8^{\times}$, said wheel having its circumferential grooves formed at its center with a ridge or bead 9, which separates the groove into two annular recesses, either one of which may engage the trolley-wire. At their upper portions the plates or arms 7 are provided with inwardly and downwardly bent flanges 10 10, the inner portions of which are intended to serve as guides to direct the wire into its seat within the trolley-head.

To the outer faces of the plates of the trolley-head are pivotally supported guide-arms 11, to the inner ends of which are attached cables or cords 12, the lower ends of which are connected to the trolley-rope, so that when it is desired or necessary to actuate the vertically-movable bracket the free ends of these guide-arms will be elevated above the trolley-head and serve the purpose of guides to the wire.

In the plates of the trolley-head are formed alining vertical slots 13, wherein extensions or lugs 14 on a vertically-movable bracket 15 slidingly engage. This bracket comprises a rectangular frame having a base-bar, from which rise oppositely-placed vertical standards 16 17, formed with inwardly-curved upper ends to engage the wire when it is desired to lift it out of the trolley and direct it between the turned-in flanges of the side plates of the trolley. To actuate the bracket 15, a lever 18 is fulcrumed on a bar 19, mounted in the trolley, the inner end of the lever engaging the base-bar of the bracket, and to the outer end of the lever 18 is connected the upper end of the trolley-rope $19^{\times}$, as indicated in Figs. 1 and 2 of the drawings. To draw the bracket down and back to normal position after having been raised or moved upward, retractile springs 20 are utilized, one end of the springs being secured to a fixed part of the trolley and the other end fastened to a cross-bar of the bracket, as indicated in Figs. 2 and 3 of the drawings.

It will be perceived from the foregoing description, taken in connection with the drawings, that when it is desired to apply the trolley to the wire all that is necessary to do is to draw down on the trolley-rope. This tilts the guide-arms and permits the wire to be readily found. Then as soon as the guide-arms straddle the wire stress on the rope can be removed and the trolley-head will spring upward and the wire will automatically pass between the turned-in flanges of the side plates and onto the sheave or sheaves of the trolley. The vertical bearing connection of the parts of the trolley gives a lateral yielding or swinging function to the trolley, so that the vibrations of the pole are less likely to deleteriously affect the connection between the wire and the trolley.

What I claim is—

1. In a trolley-head, the combination of a socket-piece formed with upper and lower bearing-lugs; a trolley-head formed with a vertical bearing-piece fitted between said lugs and pivoted thereto to swing laterally, said trolley-head having inwardly and downwardly turned flanges; a trolley-wheel journaled in the head, a vertically-sliding bracket disposed between the side plates of the head, having vertical standards terminating in curved upper ends, and a lever to actuate the bracket.

2. In a trolley-head, the combination of a socket-piece formed with upper and lower bearing-lugs, a trolley-head formed with a vertically-bearing piece fitted between said lugs and pivoted thereto to swing laterally, said trolley-head having inwardly and downwardly turned guide-flanges, a trolley-wheel journaled in the head, a vertically-sliding bracket disposed between the side plates of the head and formed with curved upper ends, a lever to actuate the bracket, guide-arms pivotally fixed to the sides of the trolley-head, a trolley-rope to move the lever, and connections between the rope and the guide-arms to move the arms.

In testimony whereof I affix my signature in presence of two witnesses.

WALTER A. E. DAVIS.

Witnesses:
KARL SCHRICHEL,
LILLIAN W. PARANT.