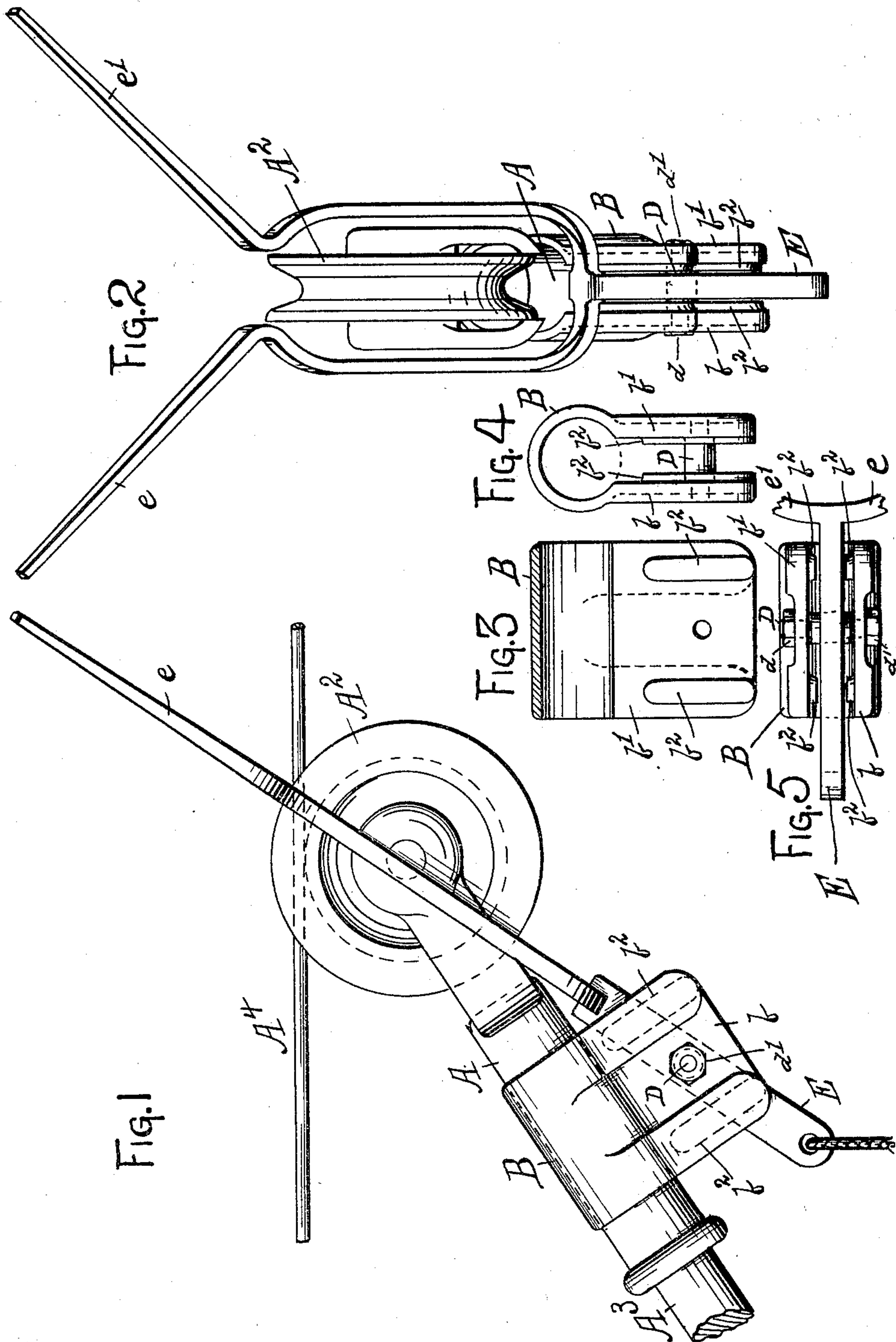


No. 706,338.

Patented Aug. 5, 1902.

L. C. NOLAN.
TROLLEY WIRE FINDER.
(Application filed Apr. 11, 1902.)

(No Model.)



WITNESSES.
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UNITED STATES PATENT OFFICE.

LOUIS CHARLES NOLAN, OF ST. PAUL, MINNESOTA.

TROLLEY-WIRE FINDER.

SPECIFICATION forming part of Letters Patent No. 706,338, dated August 5, 1902.

Application filed April 11, 1902. Serial No. 102,401. (No model.)

To all whom it may concern:

Be it known that I, LOUIS CHARLES NOLAN, a citizen of the United States, residing at St. Paul, in the county of Ramsey and State of Minnesota, have invented certain new and useful Improvements in Trolley-Wire Finders for Electric Railways, of which the following is a specification.

This invention has for its object the production of an attachment to the trolley-poles of electric-railway cars to assist in causing the trolley to positively engage the trolley-wire when the trolley is to be returned to the trolley-wire when for any reason it has been disengaged therefrom either at the ends of the "run," when the position of the trolley is to be reversed, or when the trolley becomes accidentally displaced or otherwise disengaged. To relocate the trolley under such circumstances is frequently a difficult matter, especially in the night-time or where the system of trolley-wires is complicated. By my attachment the finding of the trolley-wire is greatly facilitated.

The construction of my improved device will be readily understood from the accompanying drawings, wherein like letters of reference denote corresponding parts in all the figures, and in which—

Figure 1 is a side view of a trolley-head, a trolley-wheel, and a portion of the trolley-pole and a section of a trolley conductor-wire with my improved attachment clamped thereon. Fig. 2 is a rear view of the same. Figs. 3, 4, and 5 are detached detail views of the clamp portion of the device.

A represents the trolley-head, A² the trolley-wheel, A³ a portion of the trolley-pole, and A⁴ a section of the trolley conductor-wire, all these parts being of the usual structure.

The invention is applicable to any form of overhead trolley system in common use, and I have shown in the drawings a conventional trolley-head and trolley of approved form.

Encircling the trolley-head below the yoke portion, by which the wheel A² is supported, is a ferrule or band B, somewhat elongated and with plates *b b'* depending therefrom, with a space between the plates, as shown. The ferrule or band B conforms somewhat to the stock of the trolley-head and nearly incloses it, leaving only the width of the space be-

tween the plates *b b'* not in engagement with the "head," as indicated in Fig. 4.

Passing through the lower part of the plates *b b'* is a stud or bolt D, having nuts *d d'* on its outer ends and with the central portion enlarged, as shown, whereby shoulders are formed to limit the inward movement of the parts *b b'*. By this arrangement the compression of the nuts *d d'* will compress the band B upon the trolley-head and firmly clamp it thereto, as will be readily understood, but which cannot be clamped with undue force, owing to the pressure of the shoulders on the bolt D. As before stated, the band B is somewhat elongated, whereby extended ends are formed on the plates *b b'*, as shown, and preferably with inwardly-extending ribs *b²*, as shown, which serve to decrease the width of the space between the plates *b b'* at the ends.

The wire-finder consists of a flat bar E, pivoted centrally upon the bolt or stud D and with its ends extending beyond the ends of the plates *b b'* and between the inwardly-extending ribs *b²*, as shown. The bar E will fit loosely upon the stud D, so as to swing freely thereon, and will play loosely in vertical lines between the ribs *b²*, but will be thereby prevented from having any lateral movement. Upon the outer end of the bar *b²* are formed the fork-arms *e e'*, which are curved outward to avoid the outer ends of the yoke-arms of the trolley-head and then curve inward to a point in close proximity to the outer rim of the trolley, and thence outward again in widely-diverging lines, as shown. When thus arranged, the forks of the "finder" are free to rise upward on each side of the trolley-wheel and form a widely-extended forked guide to embrace the trolley-wire at points at considerable distance to either side of the trolley-wheel and effectually guide the trolley-wire into its proper place in the groove of the trolley-wheel.

By this simple device if for any reason the trolley becomes unshipped or disengaged from the trolley-wire it can be readily replaced by merely drawing downward upon the guide-cord F, which action will elevate the forked end *e e'* and cause it to embrace the trolley-wire and surely guide the trolley-wheel to the wire without the necessity of any nice adjustment or manipulation by the op-

erator, as the device is self-acting so far as guiding the trolley to the conductor-wire is concerned. The inwardly-projecting ribs b^2 serve an important purpose, as they not only
5 guide the bar E, but also present the minimum of friction-surface thereto, so as to lessen the force required to operate the device. The clamp is thus firmly held in place with one bolt only, while at the same time the
10 same bolt serves as the pivot on which the bar oscillates.

Having thus described my invention, what I claim as new is—

1. In a trolley-wire finder, the combination
15 of a trolley-head, a trolley-wheel carried by said head, an elongated band divided longitudinally and with elongated plates depending therefrom contiguous to said longitudinal division, inwardly-projecting ribs upon said
20 plates near their ends, a transverse bolt engaging said plates, and a wire-finder consisting of a central bar pivoted upon said bolt between said plates and with its ends extending beyond the ends of the plates and be-
25 tween said ribs, and with diverging extended forks adapted to guide the wire to the groove

of the trolley-wheel when said finder is actuated, substantially as and for the purpose set forth.

2. In a trolley-wire finder, the combination 30 of a trolley-head, a trolley-wheel carried by said head, an elongated band divided longitudinally and with elongated plates depending therefrom contiguous to said longitudinal division, inwardly-projecting ribs upon said 35 plates near their ends, a bolt passing transversely through said plates centrally thereof and with spaced shoulders thereon between said plates, nuts on the ends of said bolt outside said plates, and a wire-finder consisting 40 of a central bar pivoted upon said bolt between said plates and with its ends extending beyond their ends, and between said ribs, and with diverging forks adapted to guide the trolley-wire to the trolley-wheel, substan- 45 tially as set forth.

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

LOUIS CHARLES NOLAN.

Witnesses:

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