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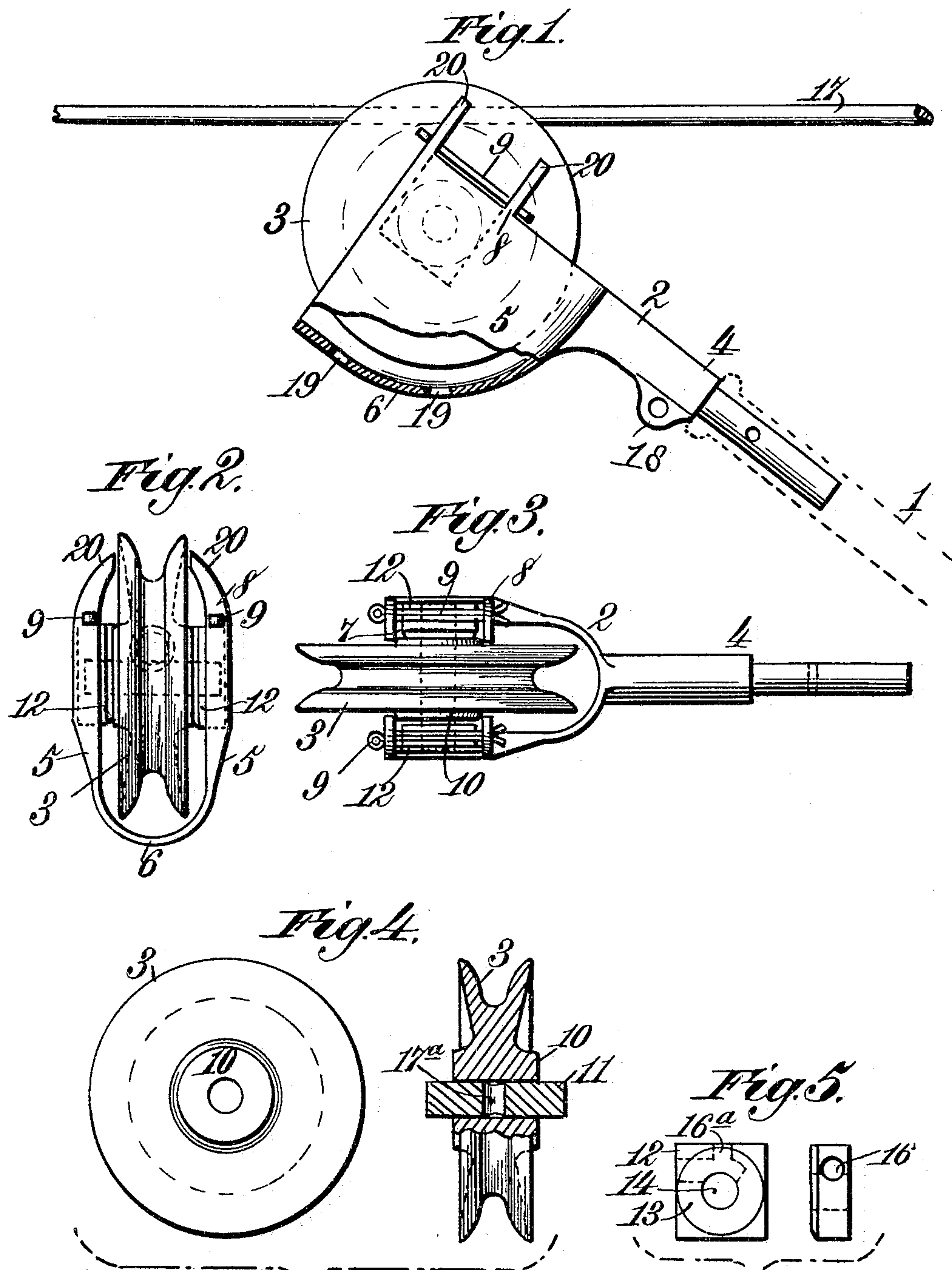
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J. B. KLINE.

TROLLEY SYSTEM FOR OVERHEAD ELECTRIC LINES.

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NO MODEL.



Witnesses.
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UNITED STATES PATENT OFFICE.

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TROLLEY SYSTEM FOR OVERHEAD ELECTRIC LINES.

SPECIFICATION forming part of Letters Patent No. 775,276, dated November 15, 1904.

Application filed February 1, 1904. Renewed October 19, 1904. Serial No. 229,175. (No model.)

To all whom it may concern:

Be it known that I, JAMES B. KLINE, a citizen of the United States, residing at Warren, in the county of Warren and State of Pennsylvania, have invented new and useful Improvements in Trolley Systems for Overhead Electric Lines, of which the following is a specification.

This invention relates to trolleys for overhead electric railways, and has for its object to provide novel means for preventing the trolley-wheel from engaging and hooking on the upper side of the trolley-wire when the trolley-wheel is pulled down to operatively engage the trolley-wire.

It also has for its object to provide improved means for mounting the trolley-wheel in its support.

To these ends my invention consists in the features and in the construction, combination, and arrangement of parts hereinafter described, and particularly pointed out in the claims following the description, reference being had to the accompanying drawings, forming a part of this specification, wherein—

Figure 1 is a view in side elevation of my improved trolley, showing it in operative engagement with the trolley-wire. Fig. 2 is an end view thereof. Fig. 3 is a top plan view of the same, and Figs. 4 and 5 are detail views of some of the parts.

Referring to the drawings, the numeral 1 indicates the trolley-pole, 2 the trolley-wheel support, and 3 the trolley-wheel. The trolley-wheel support comprises a cylindrical or tubular socket 4, which is fitted on the end of the trolley-pole in the usual manner, and a guide portion comprising two quadrant-shaped cheeks or sides 5, which are united on their under sides by a curved or rounded portion 6, said cheeks or sides and their uniting portions forming, substantially, a U-shaped quadrant.

Formed in the upper portion of each of the cheeks or sides 5 is a rectangular recess or mortise 7, adapted to receive the journal-box of the trolley-wheel, and formed on the upper edges of the cheeks or sides 5, on each side

of said mortises or recesses, are eyes or perforated lugs 8, adapted to receive locking-pins 9, as and for the purpose hereinafter explained.

The trolley-wheel 3 is grooved on its periphery and otherwise constructed as usual, said trolley-wheel being provided on its opposite sides with annular bosses 10, which are concentric with the axle 11 of the trolley-wheel.

The numeral 12 indicates the bearing-blocks, each of which consists of a metallic block rectangular in shape, as shown, and provided on its inner face with an annular boss 13, said blocks being centrally perforated, as at 14, to form bearings for the axle 11 of the trolley-wheel. The ends of the axle 11 of the trolley-wheel are journaled in the bearings 14 of the journal-blocks 12, and said blocks are slipped in the mortises or recesses 7, formed in the upper portions of the sides or cheeks 5 of the guide and holder 2. After the journal-blocks have been fitted in place cotter-pins 9 are fitted in the perforated lugs or eyes 8 and tightly hold the latter in their seats in the mortises or recesses. As thus arranged the quadrantal U-shaped guard 2 embraces the opposite faces and lower side of the trolley-wheel when the trolley is in position for use for the purpose hereinafter explained.

Formed transversely in each of the journal-blocks 12 is a cylindrical recess 16, which intercepts one side of the bearing 12 and is intended for the reception of grease or other suitable lubricant, so that the ends of the axle 11 will rotate in said lubricant, and the axle and its bearings will be thereby thoroughly lubricated, an additional recess 16^a being provided for the same purpose.

As shown most clearly in Fig. 1 of the drawings, as the trolley-wheel travels in operative contact with the trolley-wire 17 the U-shaped guard 2 will embrace the opposite faces and under side of the trolley-wheel for approximately one-fourth of the circumference of said wheel, thus permitting the wheel to freely contact with the trolley-wire under all conditions. It frequently happens that when a

trolley-wheel as ordinarily constructed jumps the trolley-wire and when it is endeavored to pull down the trolley pole and wheel so as to again place the trolley-wheel in proper engagement with the trolley-wire the trolley-wheel will engage and hook upon the upper side of the wire, and if allowed to remain in this position when a cross-wire is encountered the trolley will strike the same and either break the cross-wire or in some cases injure the trolley-wire itself. By providing my improved guard constructed in the manner described when the trolley pole and wheel are pulled down to place the trolley-wheel in proper engagement with the trolley-wire it is impossible for the trolley to hook upon the upper side of the wire, as the lower portion of said trolley-wheel is completely inclosed or incased and protected by the guard, and should the guard strike the wire it will merely, owing to its rounded under side, be deflected to one side of the trolley-wire and permit the trolley to be pulled down into position to engage the trolley-wire.

It will be noticed that the under side of the guard is curved and rounded, as before described, so that no part of this guard can hook upon the wire in the act of pulling the trolley-pole down, and it will also be noticed that there are no projections of any sort whatever projecting from the cheeks.

In practice the annular bosses 10 and 13, formed, respectively, on the trolley-wheel and journal-blocks, are in rotatable contact with one another, and the lubricant that is applied to the ends of the axle 11 will seek its way between said bosses and keep the same lubricated.

Formed centrally in the axle 11, upon which the trolley-wheel is arranged to rotate, is a transverse recess or aperture 17^a, which is for the purpose of holding grease to lubricate the axle and trolley-wheel.

Formed on the under side of the trolley-support 2 is a perforated lug 18, to which in practice the trolley-controlling cord or cable is attached, and formed in the curved under side 6 of the trolley-support are two or more apertures 19, which are for the purpose of permitting the escape of water, snow, slush, and the like which may accumulate inside the trolley support and protector.

The perforated lugs 8 are provided with upwardly-extending extensions 20, which are curved inward in such manner that their extremities lie in close proximity to the opposite sides of the trolley-wheel, whereby the

trolley-wire is prevented from wedging between the trolley-wheels and the trolley-support during the operation of placing the trolley-wheel in contact with the trolley-wire.

Having described my invention, what I claim is—

1. A trolley for overhead lines, comprising a guard and holder for the trolley-wheel consisting of a housing U-shaped in cross-section and provided with rectangular mortises in the upper edges of its opposite sides and perforated lugs on the said edges and on opposite sides of said mortises, rectangular journal-blocks seated in said mortises, cotter-pins passing through said lugs to hold the journal-blocks in their seats, and a trolley-wheel arranged in the housing and provided with an axle journaled at its ends in said journal-blocks, substantially as described.

2. A trolley for overhead lines, comprising a guard and holder for the trolley-wheel consisting of a housing U-shaped in cross-section and provided with rectangular mortises in the upper edges of its opposite sides, rectangular journal-blocks seated in said mortises, and a trolley-wheel arranged in the housing and provided with an axle journaled at its ends in said journal-blocks, substantially as described.

3. In a trolley for overhead lines comprising a guard and holder for the trolley-wheels, consisting of a housing U-shaped in cross-section and provided with means for attachment to a trolley-pole, and a trolley-wheel journaled in the housing, said housing extending beneath the under side of the trolley-wheel and provided on its under side with apertures for the escape of water, snow and the like, substantially as described.

4. In a trolley for overhead lines, comprising a guard and holder for the trolley-wheel, consisting of a housing U-shaped in cross-section and provided with means for attachment to a trolley-pole, and a trolley-wheel journaled in the opposite side of the housing, said housing being rounded on its lower edge, and upwardly-projecting lugs on the upper opposite edges of the housing, said lugs being curved inwardly at their extremities in proximity to the opposite sides of the trolley-wheel, substantially as and for the purpose specified.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

JAMES B. KLINE.

Witnesses:

C. E. BORDWELL,

WILLIAM R. LAVERY.