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R. P. HANNA

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CONDUCTOR DEVICE

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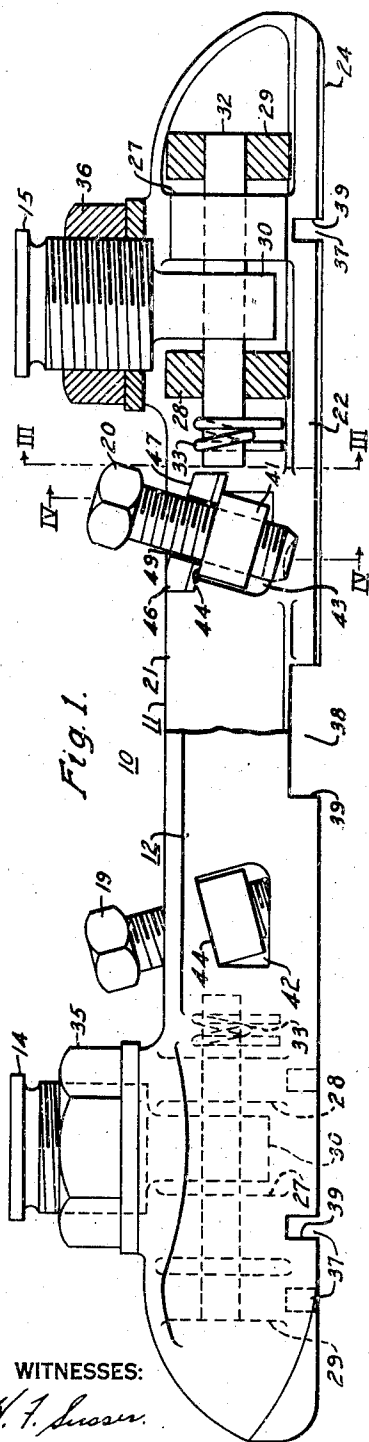


Fig. 1.

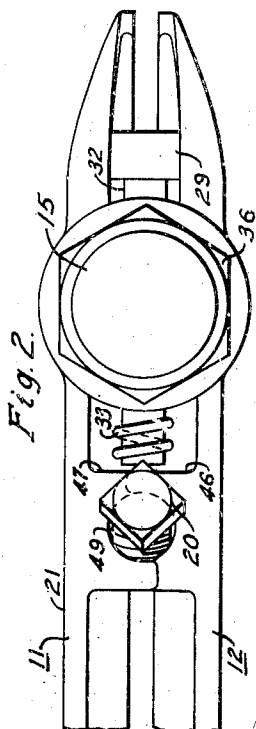


Fig. 2.

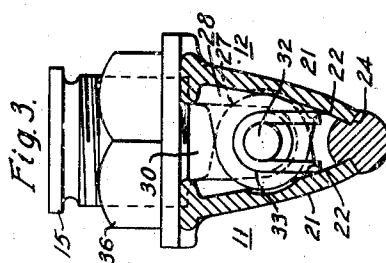


Fig. 3.

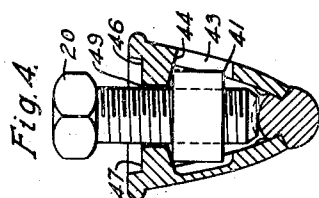


Fig. 4.

WITNESSES:

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CONDUCTOR DEVICE

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1

My invention relates, generally, to trolley conductor devices and it has reference, in particular, to trolley conductor splicers and clamp devices.

Generally stated, it is an object of my invention to provide a trolley conductor splicer or clamp device that is simple and inexpensive to manufacture and is easy to install and maintain.

More specifically, it is an object of my invention to provide an adjustable splicer or clamp device for securing different sizes of grooved or figure-eight trolley conductors.

Another object of my invention is to provide, in simple and effective manner, for firmly securing adjacent portions of trolley conductors of different sizes.

Yet another object of my invention is to provide for utilizing an adjustable trolley conductor clamp or splicer which is self-aligning.

Yet another object of my invention is to provide for increasing the holding power of trolley conductor splicers or clamp devices which have relatively movable jaws for securing trolley conductors.

Other objects will in part be obvious, and will in part be described hereinafter.

In practicing my invention, a pair of elongated jaw members having lip portions along the lower edges for clamping grooved trolley conductor sections are pivotally connected to each other and to depending ears of spaced support bosses positioned therebetween. Nuts threadably mounted on the support bosses engage the upper edges of the jaw members and actuate the lip portions to engage trolley conductors of different sizes. Longitudinal movement of the trolley conductor sections relative to the lip portions is prevented by means of set screws threaded through nuts loosely positioned between the jaws through transverse openings. Additional securing of the conductor against longitudinal movement is effected by providing slots in the lip portions of the jaw members, having abrupt edge portions which dig into the conductor.

For a more complete understanding of the nature and scope of my invention, reference may be made to the following detailed description, which may be read in connection with the accompanying drawing, in which:

Figure 1 is a partly sectioned side-elevational view of a trolley conductor splicer embodying the invention in one of its forms;

Fig. 2 is a partial plan view of the splicer shown in Fig. 1;

Fig. 3 is a sectional view taken along the line

2

III—III of Fig. 1; showing a section of grooved conductor between the jaw members; and

Fig. 4 is a sectional view taken along the line IV—IV of Fig. 1 showing a section of grooved conductor between the jaw members.

Referring to Fig. 1, the reference numeral 10 may denote, generally, a trolley conductor splicer for grooved or figure-eight trolley conductors, having a pair of similar jaw members 11 and 12 positioned one on each side of, and pivotally connected to spaced support bosses 14 and 15 for gripping adjacent ends of trolley conductor sections. Holding means comprising set screws 19 and 20 may be provided intermediate the support bosses for preventing longitudinal movement of the conductor sections between the jaw members.

The jaw members of the splicer may each comprise similar relatively flat elongated plate portions 21 having longitudinal grooves 22 adjacent the lower edges defining lip portions 24 disposed to be positioned in the grooves of a grooved trolley conductor as shown in Figs. 3 and 4. In order to provide for pivotally connecting the jaw members, means such as the transversely projecting ears 27 may be provided adjacent one end and intermediate the longitudinal edges, while a pair of spaced apart projecting ears 28 and 29 may be provided adjacent the other end. The ears 27, 28 and 29 may be so disposed that when the jaw members are placed in opposed relation, the ears may be interleaved, and provide spaces for depending ears 30 of the support bosses therebetween. Pins 32 may be positioned through aligned openings in the ears to pivotally connect the jaw members to each other and to the support bosses. Means such as the springs 33 may be positioned on the pins 32 to bias the lip portions of the jaw members away from each other. The lip portions 24 may be actuated to engage a trolley conductor by means such as nuts 35 and 36, which may be threadably positioned on the support bosses 14 and 15 for engaging the upper edges of the jaw members to force them apart.

In order to prevent longitudinal movement of the trolley conductor sections between the lip portions of the jaw members, a plurality of cuts or slots 37 and openings 38 may be provided in the lip portions 24. A plurality of relatively sharp edges or shoulders 39 may thus be provided, which tend to dig into the trolley conductor and prevent longitudinal movement thereof.

To provide for more effectively securing different sizes of trolley conductors between the jaw

3

members, the holding set screws 19 and 20 may be recessed at the ends to provide peripheral cutting edges, and they may be threadedly positioned in nuts 41, which may be loosely positioned between the jaw members as shown in Figs. 1 and 4 to provide for engagement of the cutting edges with the upper surface of a trolley conductor section positioned between the lip portions 24. The nuts 41 may be positioned in recesses or openings 42 and 43 in the jaw members, which have upper surface portions 44 that are downwardly inclined in a direction from the center towards the ends of the splicer. If desired, only the recesses 43 at one end of each jaw member may form an opening through the member, the other recesses 42 being on the inner side only, so that the nuts may be more readily positioned between the jaw members from one side. The set screws may be retained in position by means of projections 46 and 47 adjacent the upper longitudinal edges of the jaw members 11 and 12, having recesses 49 therebetween defining openings for receiving the set screws relatively loosely. In order to provide for centrally aligning the set screws with different sizes of trolley conductors, the upper surface portions 44 of the openings 43 and the lower surface portions of the projections 46 and 47 may be inclined upwardly from the outside toward the center of the splicer. Thus, when the set screws are tightened against a trolley conductor, the nuts 41 which engage the inclined surface portions 44 automatically tend to center themselves relative to a trolley conductor held between the lip portions of the splicer. Upon any tendency of the conductor to move longitudinally out from between the lip portions, the nut 41 rocks on the surface 44, wedging the set screw more tightly against the conductor.

From the above description and the accompanying drawing, it will be apparent that I have provided, in a simple and effective manner, for clamping or splicing both grooved and figure-eight trolley conductors. Since the jaw members are relatively movable, different sizes of trolley conductors may be readily accommodated and the same gripping force may be applied to any trolley conductor regardless of its size, and whether it is oversize or undersize its supposed gauge. By utilizing inclined set screws and nuts having a wedging action, a uniform holding force may be applied to the trolley conductor against longitudinal movement between the jaw members regardless of the size of the conductor.

Since certain changes may be made in the above-described construction and different embodiments of the invention may be made without departing from the spirit or scope thereof, it is intended that all the matter shown in the accompanying drawing and contained in the description shall be considered as illustrative, and not in a limiting sense.

I claim as my invention:

1. A trolley conductor device comprising, support means, a pair of similar jaw members pivotally connected to the support means and having lip portions along the lower edges, clamp means adjustable to force the lip portions into clamping engagement with a trolley conductor, and a bolt and nut loosely retained between the jaw members, the bolt being disposed to engage the trolley conductor and the jaw members having surfaces against which the nut reacts to force the lip portions into closer clamping engagement with the conductor.

2. A trolley conductor device comprising, a pair

4

of spaced support members, a pair of similar elongated jaw members pivotally connected to the support members, said jaw members having cooperating projections adjacent each end with recesses therein defining central openings and having lip portions along the lower edges, holding means adjustably mounted on the support members for actuating the jaw members to grip a trolley conductor between the lip portions, a nut loosely retained between and disposed to engage both of the jaw members adjacent each end in said central opening, and a bolt associated with each nut disposed to engage a trolley conductor gripped by the lip portions.

3. A trolley conductor splicer comprising, support means, a pair of identical jaw members pivotally connected to the support means in opposed relation, said jaw members having lip portions adjacent the lower edges for engaging adjacent ends of a trolley conductor and having cooperating projections defining an upwardly extending opening adjacent each end with a seat at the lower end, clamp means adjustable on the support means to actuate the jaw members to grip adjacent ends of the trolley conductor between the lip portions, and holding means comprising a set screw positioned in the opening and a nut bearing against the seating surface to secure the conductor ends against longitudinal movement between the lip portions and increase the clamping action of the jaw members.

4. A trolley conductor splicer comprising, a pair of spaced support members, a pair of similar elongated jaw members positioned in opposed relation and pivotally connected to the support members intermediate the upper and lower edges of the jaw members, said jaw members having lip portions along the lower edges for gripping adjacent ends of trolley conductors and spaced transverse openings with associated projections positioned in alignment and having recesses defining central openings, adjustable clamping means on the support members to effect clamping engagement of the lip portions of the jaw members with a trolley conductor, and holding means including a bolt positioned in one of said central openings and a nut positionable in one of said transverse openings to engage the projections of both jaw members for engaging the upper surface of the trolley conductor.

5. A self-aligning adjustable trolley conductor device comprising, a pair of identical opposed jaw members having lip portions for engaging a conductor and a recess therebetween having upper surfaces which are inclined downwardly in the outward direction relative to each other transversely of the device, said jaw members being angularly adjustable relative to each other and operatively connected to support means, rotatable means on the support means for actuating the lip portions into engagement with a conductor, and retaining means including a nut loosely positioned in the recess and disposed to bear against both upper surfaces thereof and a set screw threadedly associated therewith for engaging the conductor.

6. A trolley conductor splicer comprising, a pair of substantially identical pivotally associated jaw members having lip portions along adjacent edges for gripping adjacent ends of a trolley conductor with transverse slots through the lip portions to provide a plurality of relatively sharp shoulders for engaging the conductor, said jaw members having transverse openings above the lip portions with the upper edges defined by

5

aligned projections having recessed ends defining central openings, said upper edges being inclined downwardly toward the ends of the jaw members, clamp means operable to actuate the lip portions into lateral engagement with a trolley conductor, and a nut loosely positioned in each of said transverse openings to react against the aligned projections of both jaw members provided with a bolt positioned in one of said central openings for engaging the conductor at an acute angle to provide a wedging action for retaining the conductor against movement longitudinally of the lip portions, the reaction of the nut against the aligned projections operating to increase the gripping action of the lip portions on the trolley conductor.

7. A trolley conductor splicer comprising, similar pivotally connected jaw members having longitudinal edge portions for engaging a conductor and having aligned transverse openings with aligned projections associated therewith to define central openings and upper surface portions inclined upwardly towards the center longitudinally and transversely, rotatable clamp means for actuating the jaw members to clamp a conductor between the edge portions, and holding means including nuts loosely positioned in

6

said openings to bear against the inclined surface portions of the projections and bolts positioned in said central openings cooperative with said nuts to engage the conductor.

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