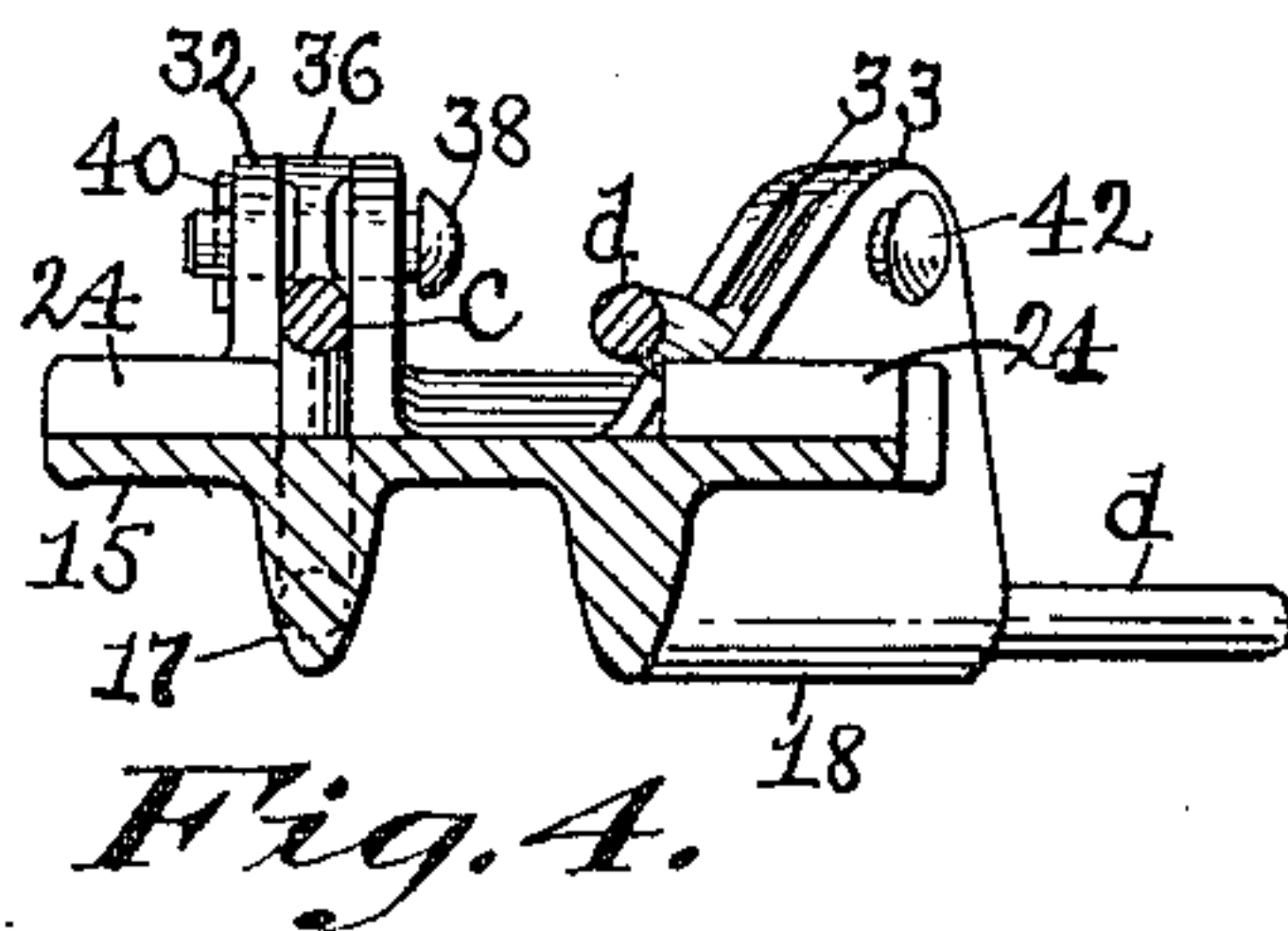
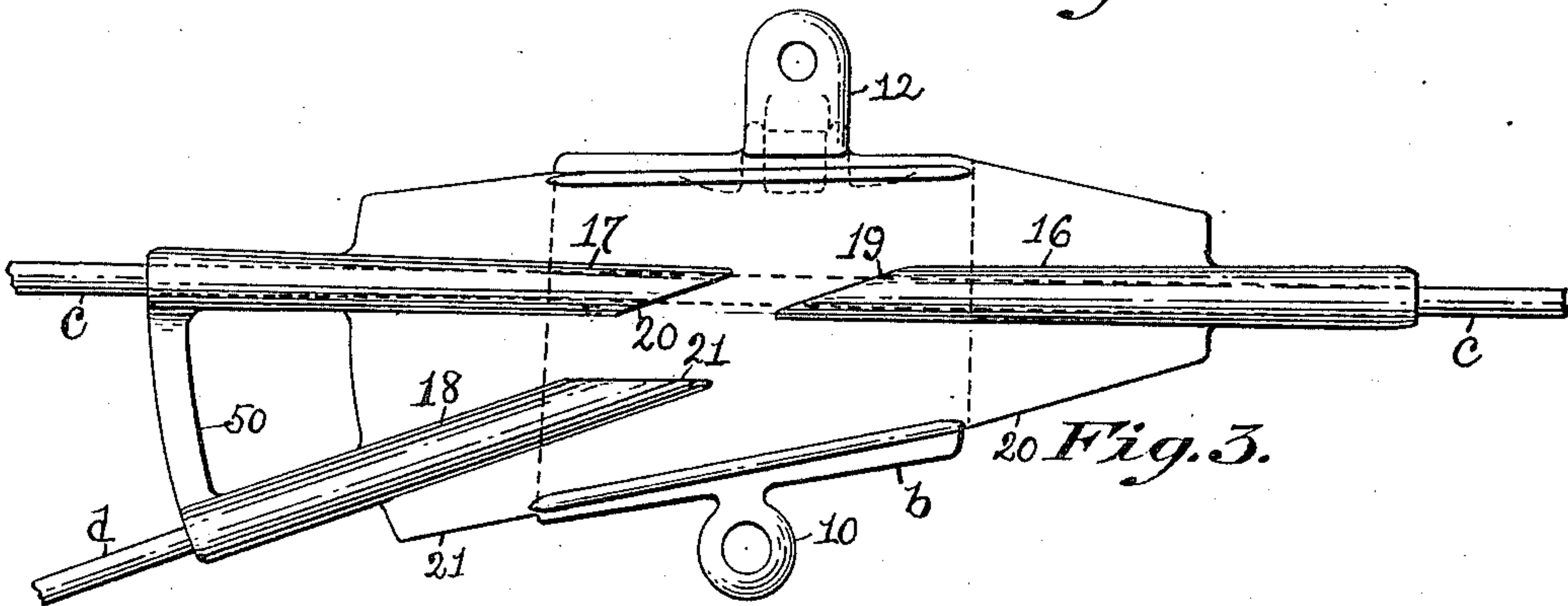
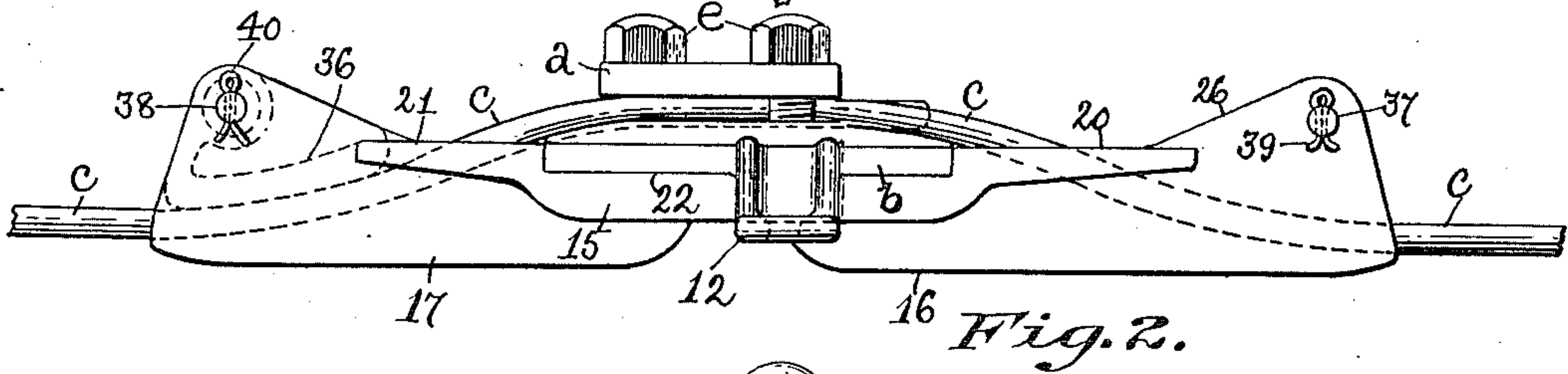
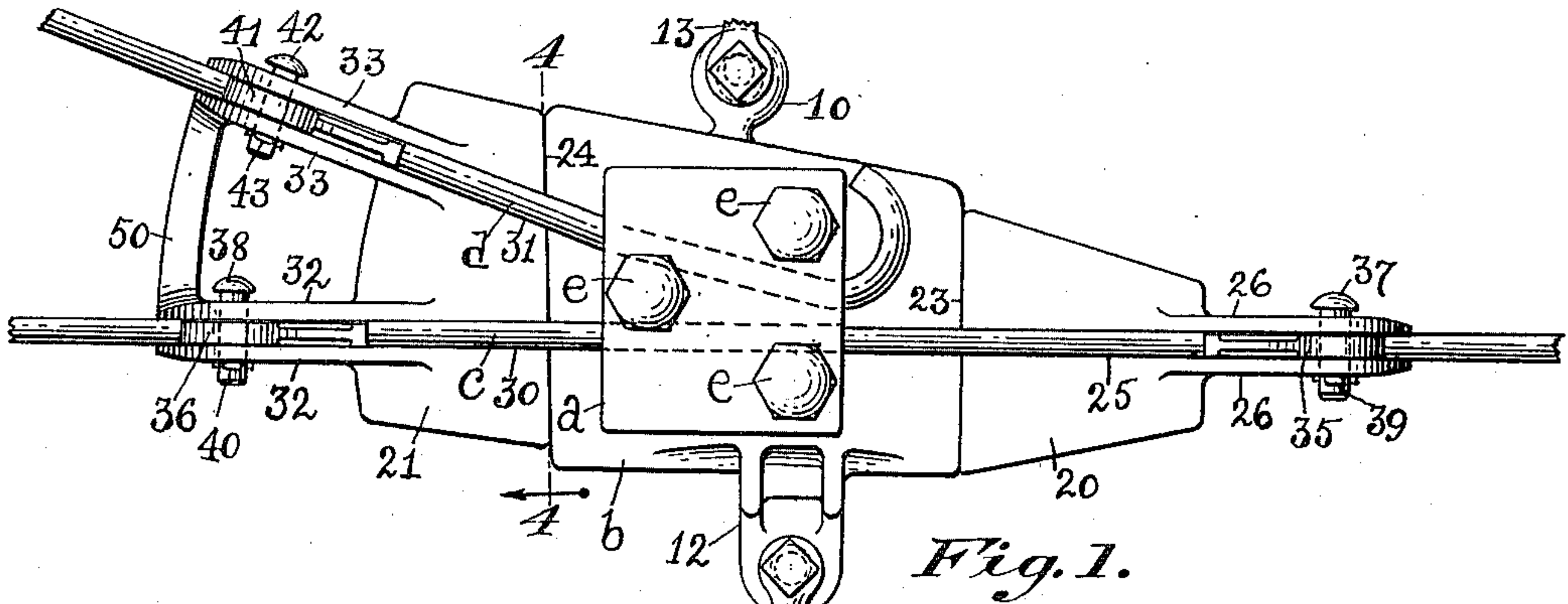


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ELECTRIC CONDUCTOR SUPPORT.  
APPLICATION FILED MAY 11, 1911.

998,766.

Patented July 25, 1911.



WITNESSES:  
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# UNITED STATES PATENT OFFICE.

WARREN E. FOOTE, OF EVERETT, MASSACHUSETTS.

## ELECTRIC-CONDUCTOR SUPPORT.

998,766.

Specification of Letters Patent.

Patented July 25, 1911.

Application filed May 11, 1911. Serial No. 626,496.

*To all whom it may concern:*

Be it known that I, WARREN E. FOOTE, a citizen of the United States, residing in Everett, county of Middlesex, and State of Massachusetts, have invented an Improvement in Electric-Conductor Supports, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention relates to an electric conductor support and is herein shown as embodied in a frog, switch or turn-out for the trolley wire of the overhead system of electric railways.

The present invention has for its object to provide a trolley support of the character described, in which a supporting member for the trolley wire or wires is adapted to be permanently secured in its operative position, and the switch member, by means of which the trolley wheel is guided in the proper direction, is disconnected from the said supporting member and is held in proper working relation thereto by the trolley wires, which engage locking devices carried by the switch member and readily removable therefrom when it is desired to renew or repair the switch member, which can be done without disturbing the supporting member for the trolley wire or wires.

The switch member coöperates with the supporting member as will be described so as to enable the support to be made of minimum weight and of malleable iron without danger of the switch member buckling under the strain or tension placed upon the trolley wire in service. These and other features of this invention will be pointed out in the claims at the end of this specification.

Figure 1 is a plan view of an electric conductor support embodying this invention. Fig. 2, a side elevation of the support shown in Fig. 1. Fig. 3, an underside view of the support shown in Fig. 1, and Fig. 4, a cross section on the line 4—4, Fig. 1.

The trolley line support embodying this invention is herein shown as a frog, and comprises a supporting member and a switch member.

The supporting member comprises two metal parts or plates *a*, *b*, which may be designated the upper and lower clamping plates of the said member, inasmuch as the main trolley wire *c* and the branch wire *d*

are firmly clamped between them by the bolts *e*, which extend through the upper plate *a* into threaded sockets in the lower plate *b*. The lower clamping plate *b* has extended from its opposite sides arms 10, 12, to which the span wires 13, 14, are secured.

The switch member is made as a metal plate or casting 15 preferably of malleable iron, and is provided on its underside with main guiding ribs 16, 17, and a branch guiding rib 18, which are preferably provided with beveled inner ends 19, 20, 21, arranged in substantially close proximity to one another. The switch member 15 is provided intermediate of its end portions 20, 21, with a transversely extended recess or depression 22, which forms with the end portions shoulders 23, 24, with which coöperate the end walls of the lower clamping plate *b*, for a purpose as will be described.

The end portion 20 is provided with a channel groove or slot 25 having upwardly extended side walls 26 and a bottom wall which extends downwardly toward the outer end of the guiding rib 16 so as to bring the under surface of the trolley wire *c* substantially in the same plane as the under surface of the guiding rib 16.

The end portion 21 of the switch member is provided with similar channels, grooves or slots 30, 31, having upwardly extended side walls 32, 33, and bottom walls which extend downwardly toward the end of the guiding ribs 17, 18.

The channels or grooves 25, 32 are in alinement and receive the main trolley wire *c*, which is continuous and is held down in firm engagement with the bottom walls of said channels by locking dogs 35, 36, which are mounted on pivot pins 37, 38, supported by the side walls or ears 26, 32, and are detachably secured thereto by cotter pins 39, 40, or otherwise.

The channel or groove 31 receives the branch trolley wire *d*, which is secured in firm engagement with the bottom wall of said groove by a locking dog 41, mounted on a pivot pin 42, which is supported by the side walls 32 and is detachably secured thereto by a cotter pin 43 or otherwise.

The locking dogs 35, 36, 41 serve to secure the switch plate to the supporting member, as the tension on the main trolley wire keeps the switch plate or member up in firm contact with the supporting member, and this construction enables the switch plate



or member to be placed into its operative position and to be replaced when worn out or damaged, in the least possible time, for when it is desired to renew the switch plate 5 or member 15, it is only necessary for the workman to remove the cotter pins 39, 40, 43, and the pivot pins 37, 38, 42, take out the locking dogs 35, 36 and 41, and allow the switch plate to drop away from the 10 trolley wire and the supporting member which remains clamped thereto.

The bottom plate 6 of the supporting member is made of substantially the same size as the recess or depression 22 in the 15 switch plate, so that the bottom plate may engage the shoulders 23, 24 and act as a strengthening member for the switch plate to prevent the latter buckling under the strains of use, and thereby enabling the 20 switch plate to be made light and of malleable iron or other metal.

The upper surface of the bottom plate 15 of the supporting member may be made rounding or curved in the direction of the 25 length of the frog and may be provided with shallow grooves for the reception of the trolley wires.

The adjacent ears 32, 33 for the main and branch wires may be connected by a tie 30 bar 50.

From the above description, it will be seen, that a simple, inexpensive and efficient conductor support is provided, in which the supporting member is permanently secured 35 in its operative position to the trolley wires, and the switch member is detachably secured to the trolley wires and is maintained in operative relation to the supporting member by the tension on the trolley wires, so 40 that when it is desired to remove the switch member, it is only necessary to release the switch member from the trolley wires.

I have herein shown the invention as embodied in a frog but it is not desired to limit 45 the invention in this respect, as it is equally applicable to cross overs and other forms of switches.

#### Claims.

1. The combination with a main and a 50 branch trolley wire, of a support therefor comprising a supporting member to which the trolley wires are firmly secured, and a switch member secured to the trolley wires and maintained in operative relation to the 55 supporting member by the tension on said trolley wires, and means to detachably secure said switch member to said trolley wires, substantially as described.

2. A conductor support of the character described, comprising a supporting member 60 for the trolley wires, means to secure the trolley wires to said member, a switch plate disconnected from said supporting member, and provided with channels for the recep- 65 tion of the trolley wires and having side walls forming ears, locking dogs pivoted to said ears and capable of engaging the trolley wires to secure the switch plate in operative relation to the supporting member, substan- 70 tially as described.

3. In a conductor support of the character described, in combination, a switch plate provided with channels for the reception of the trolley wires and with locking devices 75 for detachably securing said plate to said wires and having a depression intermediate of its ends forming shoulders, a supporting member fitted into said depression and co- 80 operating with said shoulders to resist buckling of the switch plate, and means to secure said trolley wires to said supporting mem- 85 ber, substantially as described.

4. In a conductor support of the character described, in combination, a switch plate provided with upwardly extended ears form- 85 ing channels for the reception of the trolley wires, locking dogs pivotally mounted between said ears to engage the trolley wires, said switch plate having a depression inter- 90 mediate of its ends forming shoulders, a supporting member for the trolley wire comprising a lower plate fitted into said de- 95 pression and cooperating with said shoulders and provided with laterally extended arms, and an upper plate secured to said lower plate to clamp the trolley wires thereto, and means to secure said upper plate to said 100 lower plate, substantially as described.

5. A conductor support of the character described, comprising a supporting member 100 for the trolley wires, means to secure the trolley wires to said member, a switch plate mechanically disconnected from said sup- 105 porting member, and means to secure said switch plate to said trolley wires to enable the latter to maintain the switch plate in operative relation to the supporting member by the tension on the trolley wires, substan- 110 tially as described.

In testimony whereof, I have signed my name to this specification in the presence of two subscribing witnesses.

WARREN E. FOOTE.

Witnesses:

JAS. H. CHURCHILL,  
J. MURPHY.