

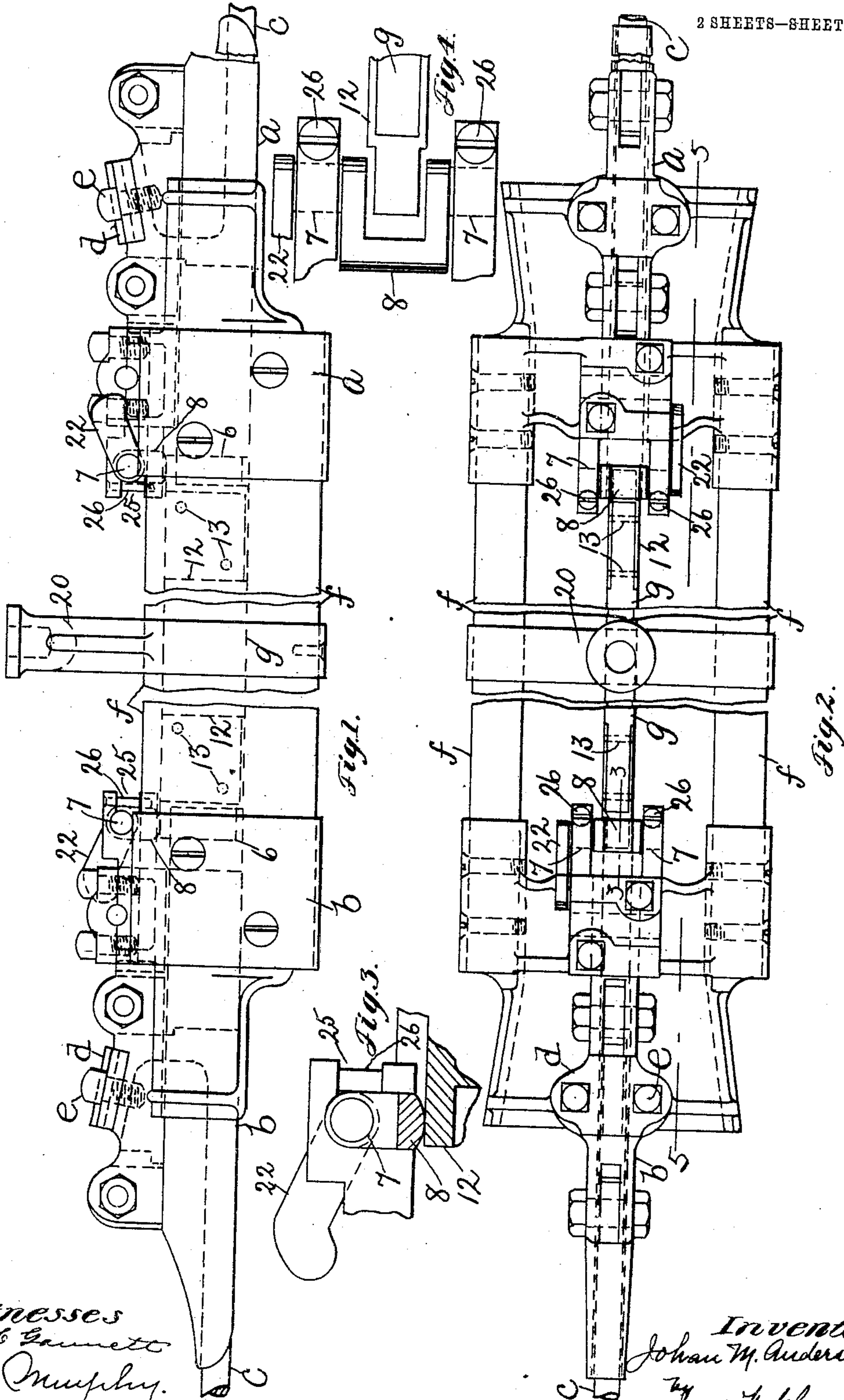
No. 785,700.

PATENTED MAR. 28, 1905.

J. M. ANDERSEN.
ELECTRIC CONDUCTOR SUPPORT.

APPLICATION FILED JAN. 5, 1905.

2 SHEETS—SHEET 1.



Witnesses
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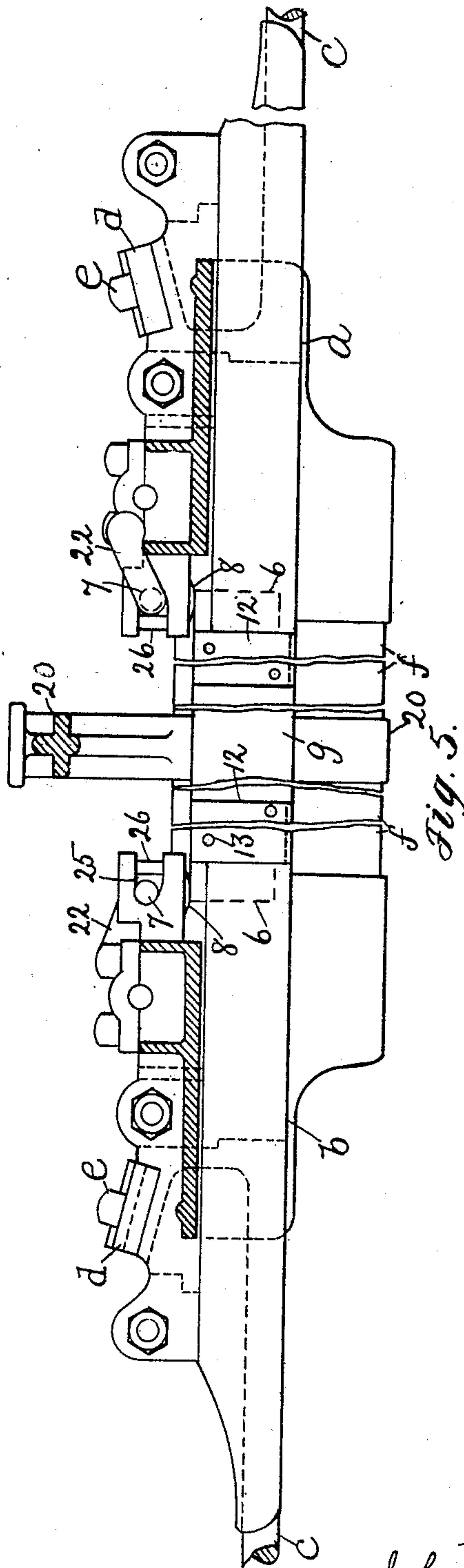
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UNITED STATES PATENT OFFICE.

JOHAN M. ANDERSEN, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO ALBERT AND J. M. ANDERSON MANUFACTURING COMPANY, OF PORTLAND, MAINE.

ELECTRIC-CONDUCTOR SUPPORT.

SPECIFICATION forming part of Letters Patent No. 785,700, dated March 28, 1905.

Application filed January 5, 1905. Serial No. 239,712.

To all whom it may concern:

Be it known that I, JOHAN M. ANDERSEN, a citizen of the United States, residing in Boston, in the county of Suffolk 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 characters on the drawings representing like parts.

This invention relates to an electric-conductor support, and is herein shown as embodied in a section-line insulator for use in the overhead electric-railway systems.

This present invention has for its object to improve and simplify the construction of section-line insulators, so that the piece or bridge of insulating material which separates the line-terminals may be secured to said terminals by means as will be described, which permits said bridge to be secured to and removed from the line-terminals substantially in an instant and with a minimum of labor and trouble. These and other features of this invention will be pointed out in the claims at the end of this specification.

Figure 1 is a side elevation, with parts broken away, of a section-line insulator embodying this invention; Fig. 2, a plan view of the insulator shown in Fig. 1; Figs. 3 and 4, details, on an enlarged scale, to be referred to; and Fig. 5, a longitudinal section on the line 5 5, Fig. 2.

Referring to the drawings, *a b* represent metallic line-terminals, to which sections of the trolley-wire *c* are secured by the clamps *d*, fastened to said terminals by screws *e*. In the present instance the line-terminals are connected by bars or rods *f*, of insulating material, and by a bridge-piece *g*, of insulating material, which is secured to the line-terminals *a b* in a manner as will permit said bridge-piece to be quickly and easily fastened to and removed from the line-terminals substantially in an instant and with the least possible trouble. For this purpose provision is made for enabling the bridge-piece to be moved bodily up away from the line-terminals and for se-

curing said bridge in its lowered position substantially in an instant. To this end the line-terminals are provided with sockets 6, (see Fig. 5,) which are open at their upper end, so that the ends of the bridge-piece may be dropped or lowered into said sockets, after which said bridge may be firmly secured to the line-terminals against upward movement by one or more locking devices, preferably one for each end of said bridge-piece. The locking devices may be made as herein shown, and each consists of a rotatable cam, which may be made as herein shown and comprises a shaft 7, having a double crank 8, (see Figs. 3 and 4,) the cranks of which are separated from each other by a space greater than the thickness of the end of the bridge *g*. The bridge *g*, of insulating material, may and preferably will be provided with metal end pieces 12, which are secured to said bridge by pins or screws 13 (indicated by dotted lines in Fig. 2) or in any other suitable manner, said metal end pieces constituting auxiliary terminals to save wearing away of the line-terminals by the arcs formed between the trolley-wheel and the terminals when said trolley-wheel passes from the metal to the auxiliary bridge. The line-terminals form bearings for the shaft 7 above and substantially in line with said open sockets or pockets 6, and by reason of the double crank 8 being offset with relation to said shaft said crank is capable of being moved out of engagement with the upper surface of the end piece 12, so as to leave a free space for the upward movement of said end piece until the latter has been lifted out of its pocket or socket, after which the bridge can be moved longitudinally to withdraw it from beneath the center hanger or piece 20, which engages the strain insulating rods or bars *f* and serves as a means for attaching the section-line insulator to the usual supporting-wire. (Not shown.) To facilitate turning the shaft 7, the latter is provided with a crank lever or handle 22, which may be made of sufficient length and weight to hold the locking device in its operative position against accidental displacement or movement of the locking device out of its operative position. If

desired, the lever 22 may be weighted at its outer end, which may be effected, as herein shown, by enlarging the free end of said lever. It will be understood that the central hanger
 5 is open on its under side in line with the insulating-bridge a sufficient distance above the said bridge, as shown in Fig. 5, to permit the bridge to be lifted bodily, so as to clear the line-terminals, after which the said bridge
 10 may be moved longitudinally to withdraw it from beneath the said hanger. To facilitate placing the rotatable clamping device in its operative position, the line-terminals are provided with circular bearings, from which extend lateral slots 25, (see Fig. 3,) through
 15 which latter the shaft 7 may be passed into the circular bearings and retained therein by pins 26, which close the lateral slots 25, as represented in Fig. 3.

20 In Figs. 1 and 2 the locking device is shown in its operative or what may be termed its "closed" position, also clearly represented in Fig. 3, and when in this position it will be observed that the double crank 8 is located above
 25 the bridge *g* and securely locks the same in its pocket in the line-terminal and prevents the bridge being forced upward out of said pocket when the trolley-wheel (not shown) engages the insulating-bridge. If it is desired
 30 to remove the insulating-bridge, the lever 22 is turned through an arc of substantially one hundred and eighty degrees, and the locking device or crank 8 is moved out of engagement with the bridge-piece, as represented in Fig.
 35 4, thereby leaving the bridge-piece free to be lifted up out of its pocket or socket, after which it may be moved longitudinally from under the center hanger 20, and a new bridge can be placed in its operative position and
 40 then secured to the line-terminals by simply turning the lever 22 back into the position shown in Figs. 1 and 3. By reference to Fig. 4 it will be seen that when the locking device 8 is moved out of line with the end of the
 45 bridge *g* the space between the cranks is of sufficient width to permit of the unobstructed upward movement of the bridge.

From the above description it will be seen that the insulating-bridge may be removed
 50 and replaced by a new one substantially in an instant and with the least possible trouble to the linemen working on the usual tower-wagon stationed in the street, and this is especially true in severe or cold weather, as the
 55 delay and annoyance attending the use of screws, bolts, and like fastening devices is entirely avoided.

I have herein shown one construction of locking device for the insulating-bridge which
 60 I may prefer; but I do not desire to limit my invention to the particular construction shown. If desired, the shaft 7 may be positively restrained from rotating in any suitable manner.

65 I may prefer to employ a locking device at

each end of the bridge; but I do not desire to limit my invention in this respect, as a single locking device carried by the center hanger and cooperating with the upper surface of the bridge to prevent its movement up out
 70 of its sockets in the line-terminals may be used to advantage; but the construction herein shown is preferred.

I claim—

1. In an electric-conductor support, in combination, line-terminals, interposed strain-insulators connected to said line-terminals, a hanger connected with said strain-insulators, an insulating-bridge interposed between said
 75 line-terminals and provided with metallic end pieces, and rotatable shafts supported by said line-terminals above the end pieces of said bridge and provided with cranks which are adapted to be brought into engaging and dis-
 80 engaging position with relation to said end pieces by rotation of said shafts, substantially as described.

2. In an electric-conductor support, in combination, line-terminals, an interposed bridge-piece of insulating material, and crank-shafts
 90 provided with cranks separated to permit the passage of said bridge between them when said shafts are turned into one position and adapted to be brought into line with said bridge when said shafts are rotated in an-
 95 other direction, substantially as described.

3. In an electric-conductor support, in combination, line-terminals, an interposed bridge-piece movable bodily in a vertical direction with relation to said terminals and supported
 100 thereby, and a device cooperating with said bridge to secure the same to said line-terminals against upward movement when said device is in one position and to permit of said upward movement when said device is in an-
 105 other position, substantially as described.

4. In an electric-conductor support, in combination, line-terminals, an interposed insulating-piece cooperating with said line-terminals, and rotatable locking devices cooperating
 110 with said insulating-piece to secure the same to said line-terminals against upward movement with relation to said line-terminals, substantially as described.

5. In an electric-conductor support, in combination, a line-terminal, an insulating-piece cooperating therewith and bodily movable upward therefrom, and a locking device carried
 115 by said line-terminal and cooperating with said insulating-piece to secure it to said line-terminal, substantially as described.

6. In an electric-conductor support, in combination, a line-terminal, an insulating-piece cooperating therewith and bodily movable upward therefrom, and a rotatable locking device
 125 carried by said line-terminal and cooperating with said insulating-piece to secure it to said line-terminal, substantially as described.

7. In an electric-conductor support, in combination, line-terminals, an interposed insu-
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lating-piece cooperating with said terminals and bodily movable upward therefrom, and locking devices carried by said terminals and cooperating with the upper surface of said insulating-piece to secure said insulating-piece to said terminals, substantially as described.

8. In an electric-conductor support, in combination, a line-terminal, an insulating-piece cooperating therewith to form an extension thereof and movable bodily in a vertical direction to disengage it from said line-terminal, and a locking device located above said insulating-piece and cooperating therewith to hold said insulating-piece down against upward movement, substantially as described.

9. In an electric-conductor support, in combination, a line-terminal provided with a pocket or socket open at its upper end, an insulating-piece having its end fitted into said pocket, and a locking device to close the open upper end of said socket and secure said insulating-piece to said line-terminal, substantially as described.

10. In an electric-conductor support, in

combination, a line-terminal, an insulating-piece extended therefrom, and a rotatable locking device for said insulating-piece and comprising a shaft having a double crank adapted to engage the said insulating-piece, substantially as described.

11. In an electric-conductor support, in combination, line-terminals, an interposed piece forming a path for the trolley-wheel between said line-terminals and bodily movable from said terminals in a direction substantially at right angles thereto, and locking devices cooperating with the upper surface of said interposed piece to secure the same to said terminals against bodily movement, substantially as described.

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

JOHAN M. ANDERSEN.

Witnesses:

JAS. H. CHURCHILL,
J. MURPHY.