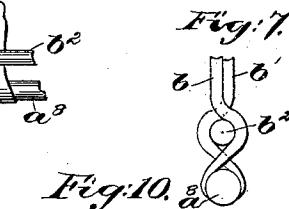
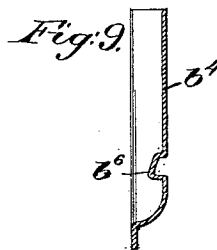
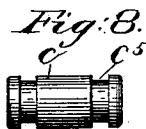
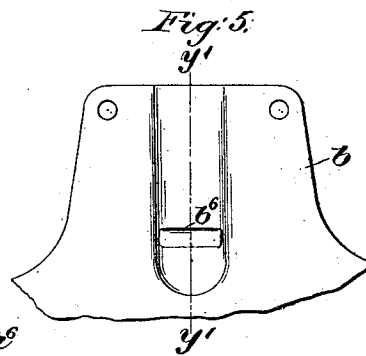
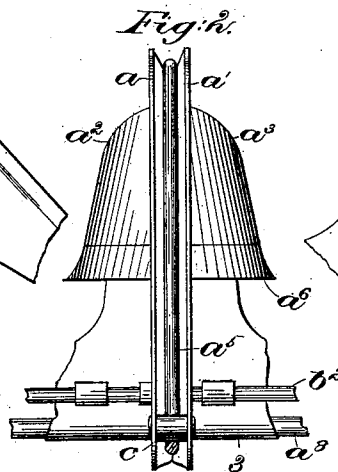
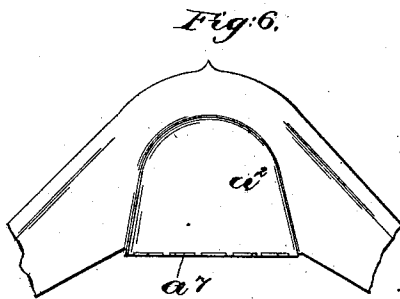
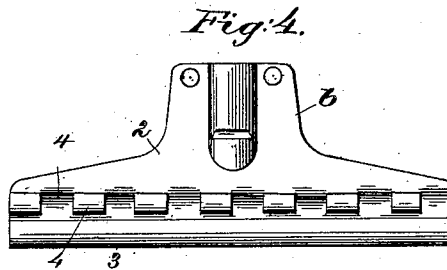
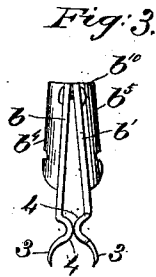
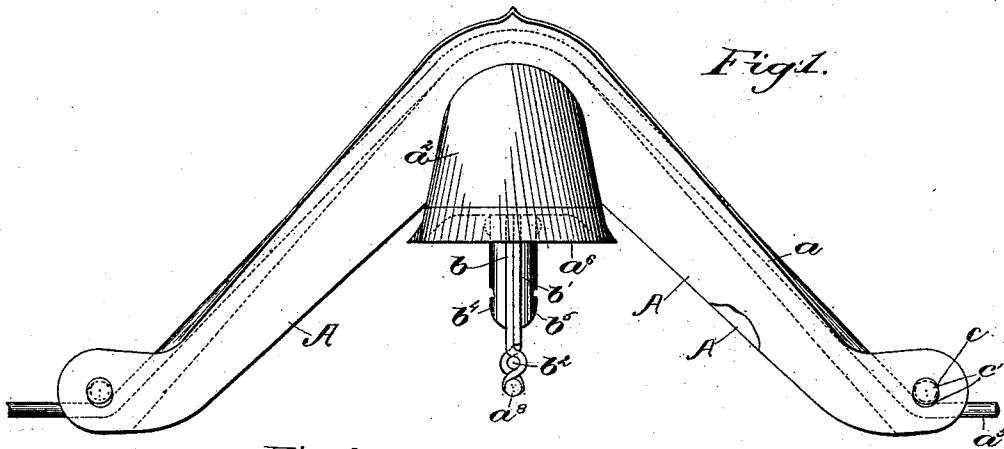


(No Model.)

A. ANDERSON.
TROLLEY WIRE INSULATOR.

No. 484,280.

Patented Oct. 11, 1892.



Witnesses.
Fred S. Greenleaf
Frederick L. Emery.

Inventor:
Albert Anderson,
by Crosby Simpson

UNITED STATES PATENT OFFICE.

ALBERT ANDERSON, OF BOSTON, MASSACHUSETTS.

TROLLEY-WIRE INSULATOR.

SPECIFICATION forming part of Letters Patent No. 484,280, dated October 11, 1892.

Application filed December 23, 1890. Serial No. 375,552. (No model.)

To all whom it may concern:

Be it known that I, ALBERT ANDERSON, of Boston, county of Suffolk, State of Massachusetts, have invented an Improvement in Trolley-Wire Hangers or Supports, of which the following description, in connection with the accompanying drawings, is a specification, like letters and figures on the drawings representing like parts.

10 This invention relates to a suspending device or hanger especially adapted to be used on the overhead system of electric railways to sustain the trolley-wire in operative position.

15 My invention has for its object to improve and simplify the construction of trolley-wire hangers, whereby the hanger may be readily secured to the span-wire without cutting the latter and after the span-wire has been put up and secured in place.

20 In accordance with my invention the hanger is preferably composed of two substantially-arch-shaped frames or pieces, preferably of sheet-steel struck up, which are riveted or otherwise secured together to form a channel or groove extended over the arch-shaped frame for the reception of the span-wire. Each arch-shaped frame has secured to or forming part of it a rounded or cup-shaped projection or portion, preferably provided on its inner side with teeth, constituting locking devices by which an insulator, preferably molded in the cup-shaped portions, after the arch-shaped frames have been secured together may be retained in place. The insulator supports a clamping or holding device for the trolley-wire, the said device being adapted to be locked to a pin or stud extended from the insulator, as will be described.

30 My invention therefore consists in the combination, with substantially-arch-shaped frames provided with enlarged portions to form a socket or insulator-receptacle, of an insulator in said socket and a clamping device secured to said insulator, substantially as will be described.

Other features of my invention will be pointed out in the claims at the end of this specification.

50 Figure 1 represents a trolley-wire hanger embodying my invention, the span-wire being broken off; Fig. 2, a side elevation of the

hanger shown in Fig. 1, with the trolley-wire and its clamping device partially broken off; Fig. 3, an end elevation of the clamping device, showing the members apart in position to engage the trolley-wire; Fig. 4, a side elevation of the clamping device shown in Fig. 3; Fig. 5, a detail, on an enlarged scale, of a portion of one part or half of the clamping device to more clearly show the locking projection; Fig. 6, a detail to more clearly show the locking-teeth on the inside of the cup-shaped portion of one of the arch-shaped frames; Fig. 7, a detail, on an enlarged scale, showing the trolley-wire as secured by the clamping device; Fig. 8, a detail to be referred to; Fig. 9, a sectional detail on line $y'y'$, Fig. 5; and Fig. 10, a detail to be referred to.

My improved hanger is composed, as herein shown, of two substantially-arch-shaped frames or pieces $A A'$, preferably made of sheet metal—such as sheet-steel—struck up to leave outturned flanges $a a'$, and substantially-cup-shaped portions or bosses $a^2 a^3$, the said frames being united together by rivets or in other suitable manner. The outturned flanges $a a'$ form a groove or channel when the pieces $A A'$ are joined together for the reception of the span-wire a^4 , and the cup-shaped portions $a^2 a^3$ form a substantially-bell-shaped socket for the reception of an insulator a^5 , which is preferably molded into the said bell-shaped socket and is retained therein, as herein represented, by locking projections or teeth a^7 on the inner surface of the cup-shaped portions $a^2 a^3$, as shown in Fig. 6. The insulator a^5 supports a clamping device for the trolley-wire a^8 , as will be described.

The clamping device referred to is preferably made as herein shown, it consisting of two parts or members $b b'$, preferably made of sheet-steel struck up to form a body portion 2, a shoe 3, longitudinally grooved or recessed to embrace the trolley-wire, and inwardly-projecting locking-bends 4, the metal between adjacent locking-bends being punched or cut out to leave openings. The locking-bends 4 of one member, as b' , register with the openings of the other member, as b , and vice versa, so that when the members $b b'$ of the clamping device are fitted together

to embrace or hold the trolley-wire the co-
operating locking-bends interlock and form a
groove or passage, into which may be inserted
a locking device or pin b^2 . In Fig. 4 the
5 bends 4 of the member b' are seen protruding
through the openings in the member b from
the back thereof. The body portions 2 of the
members $b b'$ are provided, as shown, with
substantially-tubular projections $b^4 b^5$, hav-
10 ing inwardly-projecting lugs b^6 (see Fig. 9) to
engage a groove or channel b^7 in a pin or post
 b^8 , (see Fig. 10,) extended into the insulator a^6 ,
the said pin or post being preferably embed-
ded in the said insulator; but, if desired, it
15 may be screwed or otherwise secured therein.
The members $b b'$ of the clamping device
may be fastened together near their upper
part in any suitable manner, they being herein
shown as loosely secured together by rivets b^{10} .
20 In operation the hanger may be placed in
position before or after the span-wire has
been put up. If before the span-wire is put
up the said wire may be made in two parts,
which may be fastened to the opposite ends
25 of the arch-shaped frames, preferably to studs,
rivets, or pins c , (see Figs. 1, 2, and 8,) in-
serted through the holes c' in the said frames;
but if it is desired to secure the hanger to
the span-wire after the latter has been put
30 up the said span-wire may be bent over the
arch-shaped frames and bent down, so as to
pass below the pins or studs c , which may then
be inserted into their holes and the span-wire
allowed to bear upward upon the said pins
35 or studs, the tension on the span-wire serving
to maintain the hanger in proper upright po-
sition. The holes c' are made large enough
to receive the pins c , and said pins are pref-
erably provided with annular grooves c^5 ,
40 which receive the edges of the holes as the
span-wire bears upward on the pins, and by
depressing said pins or relieving the tension
upon the span-wire they may be removed
when desired. The clamping device may
45 then be fitted upon the stud or post b^8 and
the shoes 3 made to partially encircle the trol-
ley-wire, as shown in Figs. 1 and 7, and the

parts may then be locked together by insert-
ing the pin or rod in the groove or passage
formed by the locking-bends.

The shoes 3 of the clamping device are pref-
erably made to embrace or encircle only a
portion of a trolley-wire, so that a portion of
the wire is left exposed to make contact with
the usual trolley-wheel without interrupting
55 the continuity of the circuit, and thereby
avoiding the creation of sparks.

The clamping device may be readily re-
moved from engagement with the trolley-wire
and with the stud or post by withdrawing the
locking-pin from the locking-bends.

The clamping device herein described may
be used with other forms of support for the
insulator.

I claim—

1. The combination, with substantially arch-
shaped frames provided with enlarged por-
tions to form a socket or insulator receptacle,
of an insulator in said socket and a clamp-
ing device secured to said insulator, substan-
tially as described.

2. The combination, with a hanger or sup-
port consisting of frames $A A'$ of sheet metal
struck up to form flanges $a a'$, and bosses or
projections $a^2 a^3$, of an insulator located within
said bosses or projections and means to sup-
port a trolley-wire secured to the said insu-
lator, substantially as described.

3. The combination, with a hanger or sup-
port consisting of substantially arch-shaped
frames $A A'$ of sheet metal struck up to leave
flanges $a a'$ and secured together, and pins or
studs in the ends of the said frames, of a span-
wire extended over the said frames and un-
der the said pins or studs, substantially as
described.

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

ALBERT ANDERSON.

Witnesses:

JAS. H. CHURCHILL,
EMMA J. BENNETT.