

(No Model.)

2 Sheets—Sheet 1.

S. W. KIMBLE.
TROLLEY WIRE HANGER.

No. 464,371.

Patented Dec. 1, 1891

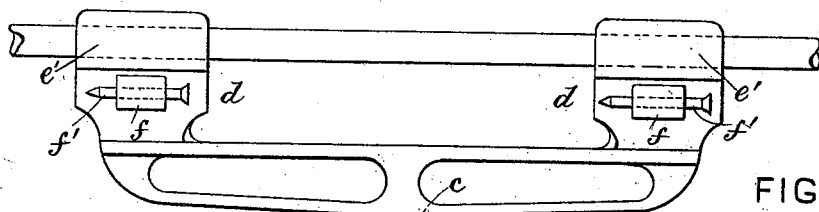


FIG. I.

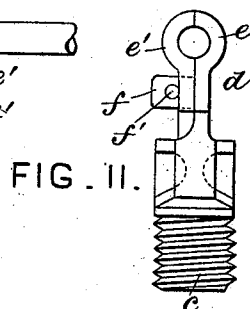


FIG. II.

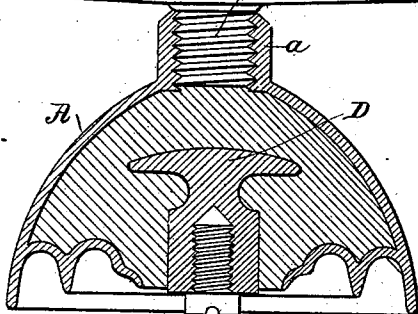


FIG. III.

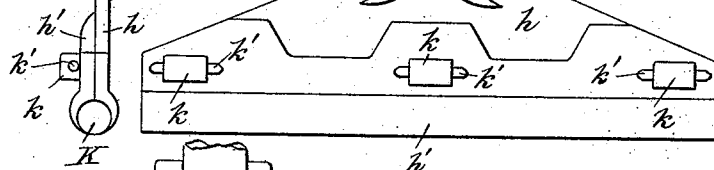
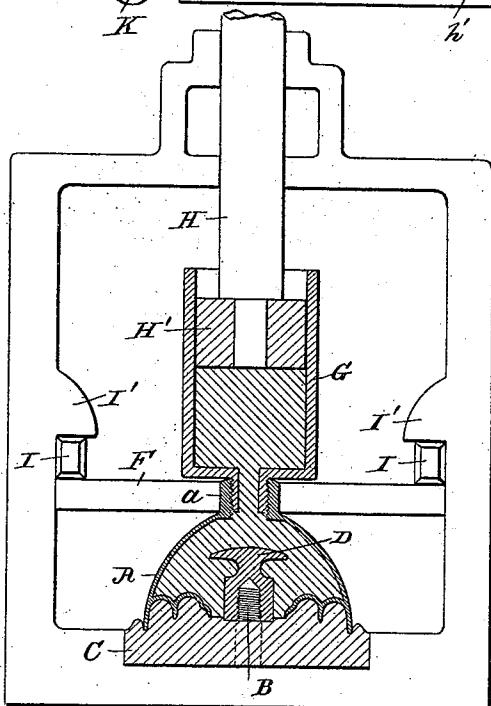


FIG. IV.



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Inventor:
Smith W. Kimble
by Collopy Mauro
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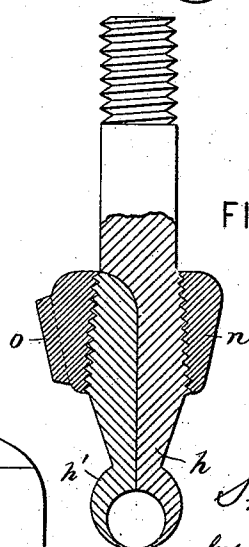
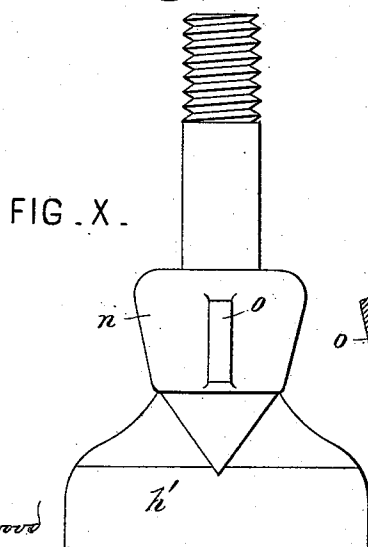
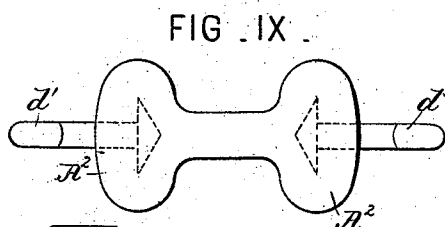
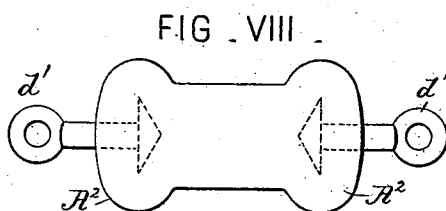
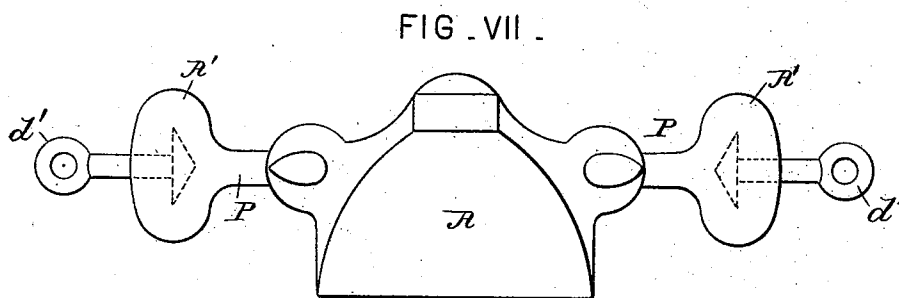
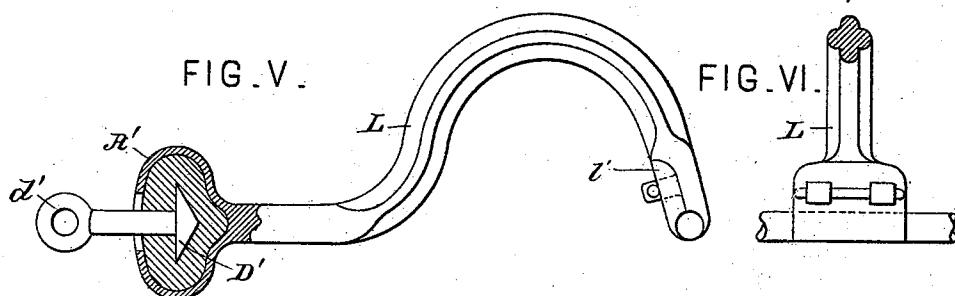
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2 Sheets—Sheet 2.

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TROLLEY WIRE HANGER.

No. 464,371.

Patented Dec. 1, 1891.



Attest:
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UNITED STATES PATENT OFFICE.

SMITH W. KIMBLE, OF DENVER, COLORADO, ASSIGNOR TO THE MICA
ASBESTITE INSULATING COMPANY, OF SAME PLACE.

TROLLEY-WIRE HANGER.

SPECIFICATION forming part of Letters Patent No. 464,371, dated December 1, 1891.

Application filed May 29, 1891. Serial No. 394,567. (No model.)

To all whom it may concern:

Be it known that I, SMITH W. KIMBLE, a resident of Denver, Arapahoe county, and State of Colorado, have invented a new and useful Improvement in Appliances for Trolley-Wire Railway Systems, which improvement is fully set forth in the following specification.

The present invention relates to the construction of trolley-wire hangers and analogous appliances for use in overhead electric-railway systems.

It comprises improvements upon the trolley-wire hanger described in my application filed February 26, 1891, Serial No. 382,870. As therein described, the bell or hanger consists of a body portion of molded insulating compound which has the property of setting and hardening firmly without cracking around metal parts and fittings set in said body portion for connection with the cross-wire and trolley-wire, respectively.

One object of the present invention is to produce a hermetically-sealed insulated trolley-hanger and analogous appliances in which substantially the same principles of construction are applied.

In carrying out the invention I take a metal shell or bulb having its lower edge turned under, and in the aperture in the bottom or lower end place a fastening device—such as a socket, hook, or eye—having an enlarged head, this device, which may for convenience be termed the “button,” being so placed as not to make contact with the shell or bulb at any point. I then force into the interior of the latter under considerable pressure a plastic insulating compound, such as mica, soluble glass, and asbestos, or equivalent substance. Heat is then applied and melted paraffine or other resinous substance poured in, which is absorbed, filling all the pores of the mass and rendering it impervious to moisture. If the article be a trolley-wire hanger, the upper part of the shell or bulb may have a screw-threaded socket, into which the suspending device, which is of special construction, as hereinafter described, is screwed. The clamp for the trolley-wire is attached to the button, which is firmly set in the compound

and completely insulated thereby from the shell.

Many analogous devices for electrical uses are or may be made in the same way—such, for example, as brackets, hooks, and other attaching devices in which the insulating compound filling the metal shell or bulb holds the eye, socket, or button embedded therein with great strength and insulates it perfectly.

Great economy and efficiency are obtained by this invention, and all screws, nuts, and like devices which have hitherto been used to fasten together the different parts of trolley-wire hangers are rendered unnecessary.

In order that the principle of the invention and the best mode contemplated for applying the same in practice may be fully understood by persons skilled in the art to which it relates or with which it is more nearly connected, I will describe the same more in detail, referring to the accompanying drawings, which form part of this specification.

Figure I is a view in elevation, partly in vertical section, of a trolley-wire hanger constructed in accordance with the invention. Fig. II is an end view of the suspending device for attachment to the cross-wire. Fig. III is a side view of the clamp for the trolley-wire. Fig. IV is a view in elevation and section, illustrating a mold and press for making the body portion of the hanger. Figs. V and VI are views in side and end elevations of a bracket or stay hook for use on curves. Fig. VII is a side view, partly in section, showing the hanger and mode of attachment of stay-wires. Figs. VIII and IX show double insulated hooks constructed in accordance with the invention. Figs. X and XI show in elevation and section a modified form of trolley-wire clamp.

The body portion of the trolley-wire hanger, Figs. I and IV, consists of a bell-shaped bulb or shell A, terminating at its narrow top in a screw-threaded socket *a* and having in the bottom a central opening. In filling the shell the pin B is screwed into the socket of the button D, which is inserted in the shell, the projecting end of pin B being set in a hole in the removable die C, which rests in the bottom of frame E. This accurately centers

button D and holds it firmly in place during the filling. Cross-bar F is then put over the top of the shell A, and the lower end or nipple of a cylinder G is screwed into the neck *a* of the shell. When the piston H and piston-head H' are drawn up to their highest point, the die C, shell A, cylinder G, and cross-bar F can be placed in the frame E, the cross-bar being held by keys I, inserted under the lugs I' on the frame. The cylinder G being filled with insulating compound such as described above, which has the property of setting and hardening under pressure alone, the piston and piston-head H H' are pressed down, forcing the composition through the neck of the shell A until it completely fills the same.

The button D is thus embedded in the compound and both insulated and firmly held in place. The shell is then removed from the press and pin B unscrewed, and it is next heated to, say, 250° Fahrenheit, and while hot melted paraffine is poured in, the object of this heating being to keep the paraffine from congealing too quickly and facilitating its penetration of the mass. This produces a hermetically-sealed insulated bell impervious to moisture and to the influence of fire and heat.

The suspender for attachment to the cross-wire has a threaded shank *c*, which fits into the neck *a* of the shell, and two clamping-arms *d*. Each clamp is in two parts *e e'*. The part *e'* is detachable and has a perforation through which the lug *f* of the fixed part *e* passes. The part *e'* is fastened by a key *f*, driven by a small hammer, which is the only implement required in applying the hanger. The trolley-wire clamp is constructed on similar principles. Its threaded shank *g* screws into socket D. The channel for the trolley-wire K is formed between the two plates *h h'*, the latter being held in place by the lugs *k* and keys *k'*.

The pull-over or curve bracket L, Figs. V and VI, has both the features of construction already described. The bulb A' incloses the button D', which is set in the insulating compound and terminates in an eye *d'* for attachment of the stay-wire. The clamp at the other end of the bracket is formed between the bracket and the movable plate *l'*, which is fastened by a key and lug, as before described.

Another application of the invention is shown in Fig. VII. The bell A has ears or flanges on opposite sides, and to these are connected the insulated hooks P, to which stay-wires are attached. These hooks are, as shown, formed with the metal bulb or shell A' and the embedded button terminating in an eye

d'. These devices are for use on single-track roads.

Figs. VIII and IX show a form of double-insulated hooks composed of a shell having a bulb A² at each end and a button *d'* embedded in the insulating material filling each bulb.

In Figs. X and XI is shown a modified form of clamp for trolley-wires. The wire is firmly held between the main piece *h* and the movable piece *h'*, these pieces being held together by the nut *n*, which is screwed down by a spanner catching on the lug *o*. These clamps may be made in several sizes to fit different sizes of wire.

It will be obvious from the foregoing description that many other devices analogous in construction and use to those described can be made in accordance with the invention.

The bulb or shell herein described is to be distinguished from a skeleton or open-sided frame, which has been heretofore combined with a mass of inclosed insulating material and a threaded nut held therein.

Having now fully described my said invention, what I claim is—

1. The combination of a continuous metallic bulb or shell tapering in form and flanged or turned under at its large end, so as to leave a small central opening therein, a mass of molded insulating material filling the bulb and held in place by the underturned edge thereof, and a metallic fastening attachment having its head embedded in said mass, the bulb being hermetically sealed at the mouth by water-proof material, substantially as described.

2. A clamp for attachment to the wires of an overhead-railway system, and comprising a stationary piece and a movable piece between which the channel for the wire is formed and a lug and key for fastening the two pieces together, substantially as described.

3. The method of constructing trolley-wire hangers and analogous devices by inserting a button or fastening device in a hollow shell or bulb, but out of contact therewith, forcing plastic insulating material into the shell or bulb until all the interstices are filled with compressed material, and heating and pouring in waterproofing material, such as melted paraffine, substantially as described.

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

SMITH W. KIMBLE.

Witnesses:

T. S. WATKINS,
JAMES RICE.