(No Model.)

U. H. BALSLEY.

CABLE HEAD FOR ELECTRIC WIRES.

No. 456,611. Patented July 28, 1891.

FIG. 2.

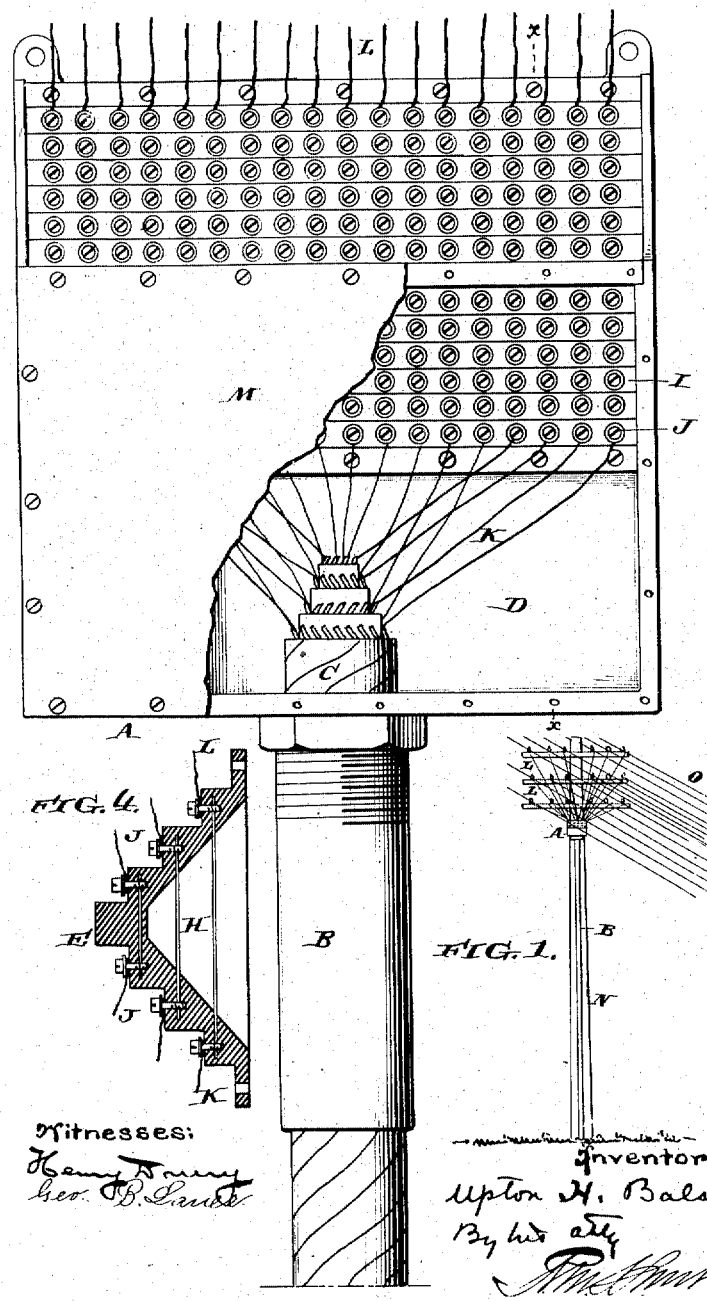


FIG. 3.

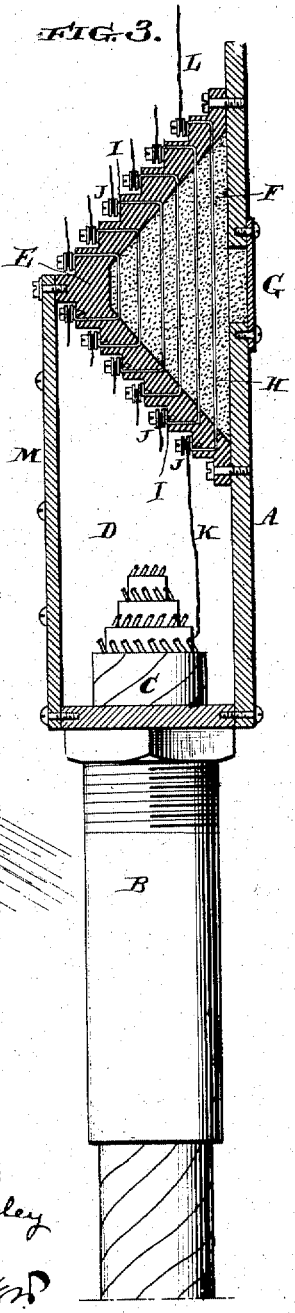
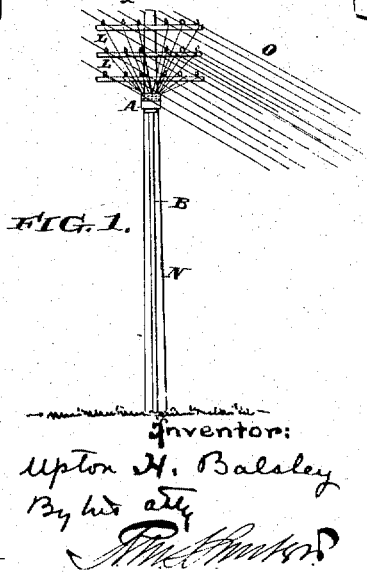


FIG. 4.

FIG. 1.



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UPTON H. BALSLEY, OF PHILADELPHIA, PENNSYLVANIA.

CABLE-HEAD FOR ELECTRIC WIRES.

SPECIFICATION forming part of Letters Patent No. 456,611, dated July 28, 1891.

Application filed January 12, 1891. Serial No. 377,400. (No model.)

To all whom it may concern:

Be it known that I, UPTON H. BALSLEY, of the city of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented an Improvement in Cable-Heads for Telegraph and Telephone Work, of which the following is a specification.

My invention has reference to cable-heads for telegraph and telephone work; and it consists of certain improvements, which are fully set forth in the following specification and shown in the accompanying drawings, which form a part thereof.

In many cases of telephone and telegraphic work the circuits are run under ground in various lengths and at their terminals are brought upward and distributed from poles. This requires the cable to be led from the conduit up the side to the top of the pole, where the terminal wires of the cable are connected by the terminal head with the various wires which terminate at the top of the pole; also, in many cases cables enter telephone-exchanges, and the wires at the end of the cable are connected to the distributing-board. In either case it is important that the arrangement be such that while the wires constituting the cable shall be easily accessible for making connections the end of the cable proper shall be sealed, so that moisture shall be entirely excluded.

My improvement relates to the head fitted to the end of the cable, whereby the end of the cable is properly sealed, and yet ready access may be at all times had to the ends of the conductors of the said cables.

My improved construction is clearly illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view illustrating the attachment of my improved terminal head to a telegraph-pole. Fig. 2 is a front elevation of my improved cable-head with a portion of the cover broken away. Fig. 3 is a vertical sectional elevation on line $x\,x$ of Fig. 2; and Fig. 4 is a sectional side elevation of a portion of the cable-head, showing a modification thereof.

The cable-head consists of a box A, which is secured upon the end of the pipe or tube B, through which the cable C passes into the chamber D of the cable-head box. The pipe or tube B commonly extends down to the ground to protect the cable. The upper part of the box A is fitted with a hard-rubber frame E, upon which the terminals are fixed, each series being raised a short distance above the other and sloping away from each other, so as to keep the wires as widely separated as possible. An end view of the hard-rubber frame has the appearance of a side elevation of a pyramid, or a general view of the side frame has the appearance of two stairways meeting at the apex. The steps I of this frame E are fitted with the terminal binding-screws J, and the screw of the step I within the compartment D is connected by means of a conductor H with the corresponding screw and similar step I upon the upper and outer portion of the frame E, and this latter binding-screw has connected to it the wire leading from the pole or the distributing-board, as the case may be.

The space in the rear of the frame E and between it and the back of the box A contains a series of parallel conductors H, which are in practice formed of bare metal and unite electrically the binding-screws above and below the hard-rubber frame E.

To insure perfect insulation and prevent the passage of moisture, I prefer to vulcanize the conductors H in the frame and to fill the space in the rear of the frame E with paraffine or any suitable insulating compound, which may be poured through the door G, which door may be afterward sealed. The chamber or compartment D may be made tight by a cover M, screwed fast to the terminal head and to the upper step or apex of the frame E. The construction is such that the compartment D is moisture-tight and the upper portion of the frame E is exposed to the atmosphere and for connection with the various wires of the telegraph-pole or distributing-board.

B represents the conduit or the case of the cable, and may or may not be used, as desired; but in any event the entrance of the cable C within the compartment D of the terminal head is made moisture-tight.

K represents the wires leading from the cable C to the contact-screws J upon the lower part of the frame E.

L represents the wires leading to the telegraph-pole or to the distributing-board.

In the construction shown in Fig. 4 the conductors H are formed of metallic strips vulcanized within the body of the frame E, and

the binding-screws J are inserted in the frame, passing through the strips H and making contact therewith beneath the outer surface of the frame E. These conductors H may, if desired, be made of fusible material in whole or in part.

I do not limit myself to the minor details of construction shown, as they may be somewhat modified without departing from the principles of my invention.

What I claim as new, and desire to obtain by Letters Patent, is—

1. A terminal head for electric cables, consisting of a box into which one end of the cable passes, a frame at the top of the box above the end of the cable, one portion of which is inclosed within the box and the other portion exposed on the outside of the box, and permanent electrical connections through the said frame, terminating upon the outside of the box for connections with external wires and terminating at the inside of the box for connection with the wires of the cable, whereby the exposed end of the cable within the box is entirely sealed against atmospheric changes.

2. A terminal head for electric cables, consisting of a box into which one end of the cable passes, a hollow frame at the top of the box above the end of the cable, one portion of which is inclosed within the box and the other portion exposed upon the outside of the box, permanent electric connections in said frame, extending through the hollow portion, terminating upon the outside of the box for connections with external wires and terminating on the inside of the box for connection with the wires of the cable, and insulating material filling the hollow portion of the frame and entirely surrounding the permanent electrical connections therein and preventing displacement thereof, whereby the exposed end of the cable is entirely sealed against atmospheric changes.

3. A terminal head for the end of a cable of electrical wires, consisting of a closed box into which the end of the cable extends, one of the interior walls of said box being provided with a series of binding-screws and one of the exterior walls of the box also being provided with corresponding binding-screws, and said binding-screws upon the interior and exterior of the box being electrically connected in pairs by permanent electrical connections, the wires of the cable being adapted for connection to the binding-screws upon the interior of the box and the external wires being adapted to connection with the external binding-screws.

4. A terminal head for the end of a cable of electrical wires, consisting of a closed box into which the end of the cable extends, one of the interior walls of said box being provided with a series of binding-screws arranged one above the other on the different planes and arranged in rows transversely across the box, similar binding-screws arranged upon the exterior of the box and electrically connected in pairs with the internal binding-screws by permanent electrical connections, the wires of the cable being adapted for connection to the binding-screws upon the interior of the box and the external wires being adapted to connection with the external binding-screws.

5. A cable or terminal head for electrical wires, consisting of a box A, having a frame E, and cover M, forming a compartment D, into which the end of the cable extends, the frame E being formed, substantially as shown, like two steps meeting at the apex, in combination with binding-screws J, arranged in rows upon the respective steps both inside and exterior to the box, electrical connections H, permanently connecting the binding-screws in pairs, whereby the interior of the binding-screws may be connected to the wires of the cable and the exterior binding-screws connected to the wires for distribution.

6. A cable or terminal head for electrical wires, consisting of a box A, having a hollow frame E, and cover M, forming a compartment D, into which the end of the cable extends, and compartment back of the frame E, the said frame E being formed, substantially as shown, like two steps meeting at the apex, in combination with binding-screws J, arranged in rows upon the respective steps both inside and exterior to the box, electrical connections H, permanently connecting the binding-screws in pairs and extending through the compartment at the back of the frame E, insulating material filling the compartment at the back of the frame E, insulating the electrical connections therein, whereby the interior binding-screws may be connected to the wires of the cable and the exterior binding-screws connected to the wires for distribution.

7. A terminal head for electrical cables, consisting of a box into one end of which the cable passes, a frame of vulcanized hard rubber having one portion inclosed by said box and the other portion exposed beyond it, and permanent electrical connections through said frame for connecting, respectively, the exposed wires upon the outside of the box and the inclosed wires on the inside.

8. A terminal head for electric cables, consisting of a box into one end of which the cable passes, a frame of vulcanized hard rubber having one portion inclosed by said box and the other portion exposed beyond it, and permanent electrical connections through said frame for connecting, respectively, the exposed wires upon the outside of the box and the inclosed wires on the inside, said electrical connections being vulcanized in said hard-rubber frame, whereby perfect insulation is obtained and the frame is made moisture-proof.

In testimony of which invention I have hereunto set my hand.

UPTON H. BALSLEY.

Witnesses:
ERNEST HOWARD HUNTER,
JOHN K. BRAMLEY.