(No Model.)

C. McINTIRE.

ELECTRIC TERMINAL.

No. 412,889. Patented Oct. 15, 1889.



Fig. 1.

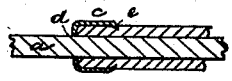


Fig. 2.



Fig. 3.

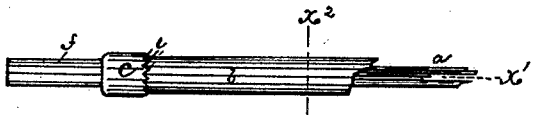


Fig. 4.

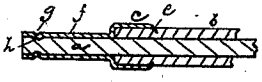


Fig. 5.



Fig. 6.

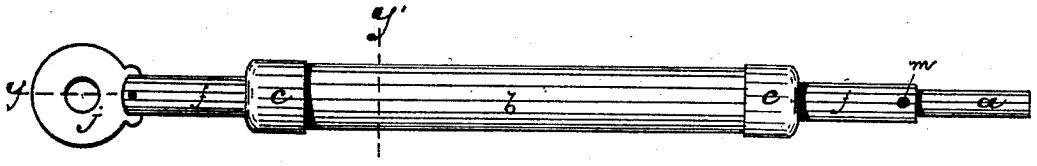


Fig. 7.

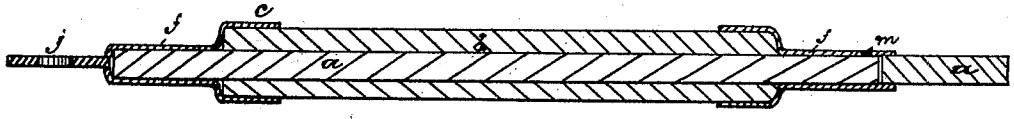


Fig. 8.



Fig. 9.

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UNITED STATES PATENT OFFICE.

CHARLES McINTIRE, OF NEWARK, NEW JERSEY.

ELECTRIC TERMINAL.

SPECIFICATION forming part of Letters Patent No. 412,889, dated October 15, 1889.

Application filed February 27, 1889. Serial No. 301,331. (No model.)

To all whom it may concern:

Be it known that I, CHARLES McINTIRE, a citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Electric Terminals; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

The object of this invention is to secure a more finished and durable terminal for insulated or covered conducting-wires, to prevent the covering for such wires from unraveling when the same is a woven fabric, to reduce the cost of such terminals, and to secure other detail advantages, such as will be hereinafter set forth in describing the construction.

The invention consists in the improved terminals for electric-conducting wires, and in the arrangements and combinations of parts, substantially as will be hereinafter set forth, and finally embodied in the clauses of the claim.

Referring to the accompanying drawings, in which like letters indicate corresponding parts in each of the several figures, Figure 1 is a view of a wire having my improvement or a certain part of my improvement thereon. Fig. 2 is a longitudinal section of the same, taken on line x. Fig. 3 is a detail side view of a cap for covering the end of the wire-insulation. Fig. 4 is a covering and cap in connection with an insulation and a collection of small conducting-wires. Fig. 5 is a longitudinal section on line x', and Fig. 6 a cross-section on line x^2. Fig. 7 is a preferred construction of terminal cap and conducting-wire; Fig. 8, a longitudinal section of the same, taken on line y; and Fig. 9, a transverse section on line y'.

In said drawings, a indicates the conducting-wire, which may be an individual strand, as in Fig. 1, or a collection of strands, as in Figs. 4 and 6. The said wire is covered with an insulation b, which may be of woven silk, wool, or other fiber, or of any other form or kind of structure. Heretofore where it has been necessary to uncover the metal strand to make a connection with an instrument or other conductor a rough and unfinished end of the insulation was formed which latter would unravel and expose a considerable part of the wire. In the improvement I provide a cap c to cover such unfinished end and prevent unraveling.

In the form shown in Figs. 1, 2, and 3 the head of the cap is perforated at d to allow the wire to extend therethrough, and at the opposite end is provided with teeth e e to be bent inward, as shown in Figs. 2 and 5, to enter the insulation, and thus prevent withdrawal. The teeth may be all uniformly bent and at one time by the use of a suitable tool, and a neat and substantial or durable finish be secured.

In Figs. 4 and 5, where the cap is employed with a collection of strands or wires, I provide the head of the same with a reduced tubular extension f, adapted to receive the wires extending through the perforation d and clamp the same together. The extension may be compressed with a tool or by the ordinary binding-screw of the instrument to which the terminal is secured, a compression-mark or indentation g, Fig. 5, being made, which forms on the inside of the tubular extension a tongue or projection h, which serves to prevent longitudinal movement of said tubular extension on the wires. The tubular extension is without a longitudinal joint or seam, such as would be formed by bending a metal plate into tubular form in the manner indicated in Patent No. 284,915, for example. By having the said extension jointless or seamless the same can be indented or compressed with or by a tool to hold the conducting-wires without danger of spreading the joint or so bending the metal as to cause the same to present rough edges to view. Thus more perfect strength and security may be attained in connection with said wires. Under some conditions, when the said extension is thus compressed or indented, the teeth e e may be dispensed with, as in Fig. 8, where the insulation is of a firm nature and not easily unraveled or disintegrated.

When the protecting-terminal is to be em-

ployed with a large cable or covered wire, I prefer to form the same in three pieces, all formed from sheet metal and soldered together. In this case the cap *c* is struck up and formed from one piece, the tube *f* from another, and the eye-plate *j* from still another. Thus when the said parts are secured together in a finished condition they will be free from irregularities such as would be made by drawing the metal down, and said metal will be less hard and more easily affected by the compressing or indenting tool than it would were it thus drawn or forced into the desired shape, as will be understood. The eye-plate, when the same is used, serves to receive and hold connecting-wires or conductors.

When the conducting-wires are soldered to the terminal, as they may be in the construction shown in Figs. 7 and 8, the tube *f* may be perforated, as at *m*, to receive the solder. After filling the perforation the flame is applied, the solder melted, and the latter flows down into or between the wires and the tube, filling the interstices, and, hardening, holds the parts firmly together.

Having thus described the invention, what I claim as new is—

1. In combination with the insulated conducting-wire, a cap *c*, for protecting the insulation, and teeth *e*, to bite into said insulation, substantially as and for the purposes set forth.

2. In combination with the insulated conducting-wire, a cap *c*, having perforation *d*, through which latter the wire extends, and the cap covering the insulation, the edges of said cap biting into said insulation, as at *e*, substantially as and for the purposes set forth.

3. The improved terminal herein described, combined with a cap *c*, adapted to cover the insulation of a conducting-wire, a seamless tubular extension *f*, secured to said cap and reduced in size to engage the uncovered end of said conducting-wire, and adapted to be indented or impressed into holding engagement with said wire, substantially as set forth.

4. In combination with the insulated conducting-wire, a cap *c*, having the reduced tubular extension *f* and eye-plate *j*, the said parts being arranged and adapted to operate substantially as and for the purposes set forth.

5. The improved electric terminal herein described, combining a cap, a reduced tubular extension, and an eye-plate, substantially as and for the purposes set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 9th day of February, 1889.

CHARLES McINTIRE.

Witnesses:
CHARLES H. PELL,
E. L. SHERMAN.