H. F. MAXIM.

CONNECTOR FOR ELECTRIC CONDUCTORS.

APPLICATION FILED MAY 20, 1911.

1,039,424. Patented Sept. 24, 1912.

Fig. 1.

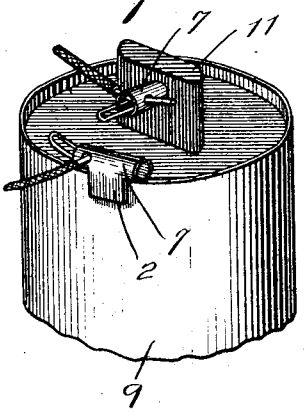


Fig. 2.

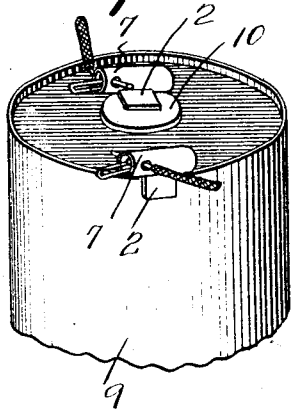


Fig. 3.

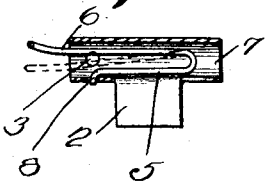


Fig. 4.

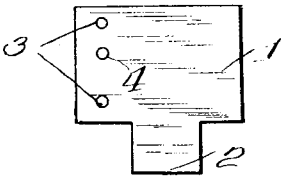
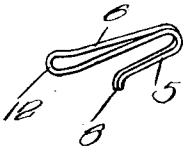


Fig. 5.



Witnesses

B. G. Brann

N. Curtis Lammond

Inventor

Hosea F. Maxim

By A. A. Bliss

Attorney

UNITED STATES PATENT OFFICE.

HOSEA F. MAXIM, OF NORFOLK, VIRGINIA, ASSIGNOR OF ONE-HALF TO OTTO WELLS, OF NORFOLK, VIRGINIA.

CONNECTOR FOR ELECTRIC CONDUCTORS.

1,039,424. Specification of Letters Patent. Patented Sept. 24, 1912.

Application filed May 20, 1911. Serial No. 628,492.

To all whom it may concern:

Be it known that I, HOSEA F. MAXIM, a citizen of the United States, residing at Norfolk, in the county of Norfolk and State of Virginia, have invented certain new and useful Improvements in Connectors for Electric Conductors, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to improvements in electrical terminals and in particular to those adapted to be fastened to the poles of a battery to receive the ends of connecting wires.

One object of the device is to provide a terminal in which the end of a wire may be quickly and easily inserted and securely held in place, its removal being correspondingly convenient.

The structure of the terminal is extremely simple being made up of a single stamped sheet of metal, the body of which is rolled in tubular form and within which is retained a spring finger adapted to engage the end of a connecting wire. Several modifications may be resorted to in order to facilitate attachment to various forms of conductors without, however, departing from the spirit of the invention.

In the drawings, Figure 1 is a perspective view of the top of a dry cell showing the application of two terminals, one being secured to the zinc shell and the other of tapered form inserted in a hole formed in an upright carbon element. Fig. 2 is a perspective view of the top of a dry cell showing two terminals, one secured to the cylindrical zinc shell and the other fastened to a metallic disk secured on the top of a carbon element. Fig. 3 is a vertical longitudinal sectional view through the terminal. Fig. 4 is a plan view of the terminal shell before being rolled into tubular form. Fig. 5 is a perspective view of the spring finger which when inserted within the tubular terminal is adapted to engage the end of the connecting wire.

Referring to the drawings, the numeral 1 indicates in general, the flat metallic plate which forms the body of the terminal. This plate is of substantially rectangular form provided with a tab 2 extending from one of the longer sides of the rectangle. Two apertures 3 are formed near one end of the rectangular portion 1 and are so spaced from each other that when the rectangular member is rolled into tubular form upon its longest axis, these apertures will be diametrically opposite. A third aperture 4 is formed in the rectangular portion approximately in line with and half way between the two apertures 3. After the plate has been formed and the apertures cut, as illustrated in Fig. 4, the rectangular portion 1 is rolled into substantially tubular form in such a manner, that the tab 2 will extend tangentially from the circumference of the tube.

Fig. 5 illustrates a spring finger 12 formed of wire bent upon itself or doubled, the element thus formed being then bent in substantially U-shaped form, one leg 5 being shorter than the other leg 6, and formed from the portion of the element comprising the two free ends of the wire. The end of the short leg 5 is bent downward at substantially right angles to the leg for a short distance, the end portion of the longer leg 6 being slightly curved upward in the same plane. The legs of the U-shaped spring finger are then pressed together and inserted within the tube, 7, in such a way that the bent extremity of the short leg 5 will snap into the hole 4, thereby retaining the finger securely in place. Since the leg 6 is considerable longer than the leg 5, the curved portion will extend for some distance without the tube.

In the form described, the terminal may be attached by solder or any other suitable means to the upright cylindrical zinc casing 9 of a dry cell, to the disk 10 attached to the upper end of a carbon element or to any other electrical conductor.

In order to adapt a terminal to be retained within a hole or opening, as within the upstanding carbon element 11 of Fig. 1, the tab 2 is omitted and the tube formed with a slight taper to facilitate its being forced into and securely retained within the aperture.

To attach a wire to the terminal, the finger 12 which extends without the tube is pressed by hand away from the oppositely alined apertures 3 and a wire inserted therethrough. The finger 12 is then released and the spring action, due to the U-shaped wire, will force the longer leg 6 of the U-shaped portion up against the wire and thereby securely hold it within the apertures 3. Fig. 3 shows in dotted lines the position taken

by the spring wire when depressed to allow the insertion of a wire within the oppositely alined apertures 3.

What I claim is:

1. In a device of the class described, the combination of a tube adapted to be attached to an electrical conductor and having near one end oppositely alined apertures together with another aperture in said tube located between the oppositely alined apertures, and a resilient finger of substantially U-shape, one leg being shorter than the other, the end of the short leg adapted to be retained by the last mentioned aperture, and the other leg adapted to normally press against a wire extending through the oppositely alined apertures and its end protruding outside the tube.

2. In a device of the class described, the combination of a tube adapted to be attached to an electrical conductor and having near one end oppositely alined apertures, a resilient finger of substantially U-shape, means for securing one leg of the U to the tube, the other leg adapted to normally press against a wire extending through the oppositely alined apertures, the end of the said last mentioned leg extending to points outside of the tube, and means for securing said tube to the electrical conductor.

3. In a device of the class described adapted to be attached to an electrical conductor, the combination of a tube comprising a rectangular shaped sheet of metal, a tab extending tangentially from one edge of the rectangular sheet and adapted to be fastened to an electrical conductor, the said tube provided near one end with oppositely alined apertures, and a movable finger mounted within the tube and adapted to normally press against a wire extending through the aperture, one end of the said movable finger extending to points outside of the tube.

4. In a device of the class described, the combination of a tube adapted to be attached to an electric conductor having near one end oppositely alined apertures, a resilient finger substantially U-shaped, means for securing one leg of the U to the tube, the other leg of the U extending to points adjacent the oppositely alined apertures and adapted to normally press against a wire extending through the said apertures.

In testimony whereof I affix my signature, in presence of two witnesses.

HOSEA F. MAXIM.

Witnesses:
C. B. JOHNSON,
A. BENGTSON.