

H. F. MAXIM.
 CONNECTOR FOR ELECTRIC CONDUCTORS.
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1,039,423.

Patented Sept. 24, 1912.

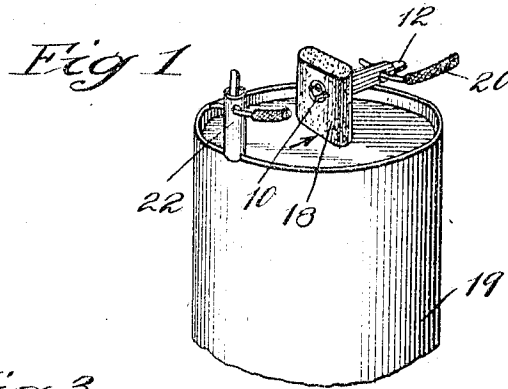


Fig. 3.

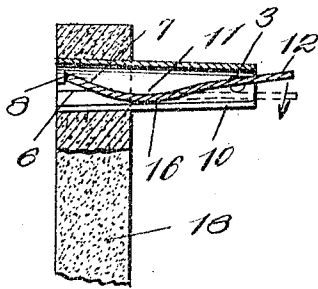


Fig. 2.

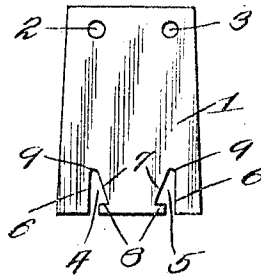


Fig. 6.

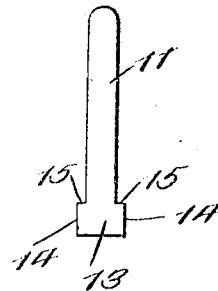


Fig. 4.

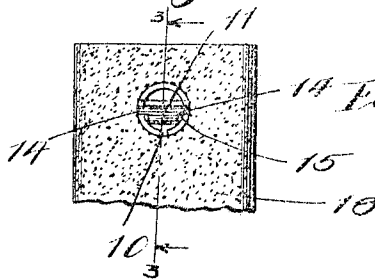


Fig. 5.

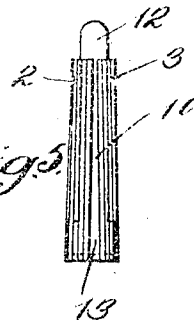
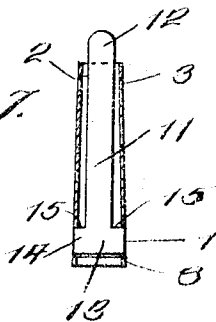


Fig. 7.



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CONNECTOR FOR ELECTRIC CONDUCTORS.

1,039,423.

Specification of Letters Patent.

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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 certain new and useful improvements in devices for holding or retaining conductor wires, such, for instance, as employed in connection with batteries, although, of course, adapted for any and all devices where it may be desired to provide simple and efficient means for quickly, yet securely affixing in position the end of a wire or wires, insuring their being firmly held but permitting of ready removal when desired.

The present invention has for its objects among others to provide a device of this character capable of manufacture at small cost, yet efficient in use and which will effectually hold the end of the wire and avoid the contacts becoming broken or disconnected and obviating the trouble heretofore existing by reason of the screw usually employed corroding and thus becoming fastened in its bearing so that it cannot be easily removed, as well as that resulting from the screws becoming loose and allowing the wires to get out of place.

Other objects and advantages of the invention will hereinafter appear and the novel features thereof will be particularly pointed out in the appended claims.

The invention is clearly illustrated in the accompanying drawings, which, with the numerals of reference marked thereon, form a part of this specification, and in which—

Figure 1 is a perspective view showing the application of the invention to a battery of known form. Fig. 2 is a view of the blank from which the body portion of the holder is formed. Fig. 3 is a section on the line 3—3 of Fig. 4 with a portion broken away. Fig. 4 is a detail in elevation looking in the direction of the arrow in Fig. 1. Fig. 5 is a view of the holder complete before its application to an electrode. Fig. 6 is an elevation of the spring employed, the same being removed. Fig. 7 is a longitudinal section through the holder, the section being taken at right angles to that of Fig. 3.

Like numerals of reference indicate like parts throughout the several views.

Referring to the drawings, 1 designates a blank of somewhat taper form cut from a sheet of material and provided near one end with openings 2 and 3 at equal distances from the central longitudinal line through the blank. When the blank is folded into its operative form, these two openings will come into alinement for a purpose which will soon appear. At the other end the blank is formed with two oppositely disposed slots 4 and 5 each having a substantially straight wall 6 parallel with the adjacent edge of the blank, the opposite wall being inclined, as shown at 7, forming a shoulder 8, as illustrated in Fig. 2. The inner ends of these slots are closed, as shown at 9, and when the blank is bent into its completed form, these slots will be diametrically oppositely disposed. The blank is rolled or otherwise bent to give it a tapered cylindrical form, as illustrated in Figs. 1, 3 and 5, the adjacent edges of the material being separated, as at 10 in Figs. 4 and 5, to allow of sufficient resiliency.

11 is a spring preferably in the form of a flat spring plate arranged in the conical body formed, as above described, with one end protruding as at 12, to form a thumb or finger piece whereby the spring may be readily manipulated. The opposite end of the spring is somewhat extended in width, as shown at 13 forming the lips 14 and the shoulders 15, as shown in Fig. 6. When this spring is inserted within the holder, as illustrated in Fig. 3, it is bent transversely to its length, as at 16, which bent portion has a bearing against the adjacent wall of the holder, the thumb portion 12 extending through the smaller end of the holder, and the opposite end engaged in the slots 4-5 of the holder. The extreme end of the spring bears against the shoulders 8, as shown in Fig. 3, the flanges 14 being disposed within the slots and bearing against the inclined wall 7. This serves to throw the free end of the spring toward and practically into contact with the inner face of the wall of the holder opposite that against which the bent portion of the spring bears as is evident from Fig. 3.

In use the holder is applied by forcing it through an opening in the member to which it is to be affixed. In this instance it is

shown attached to an electrode 18 of an ordinary battery 19. In Figs. 1 and 3 the holder is shown as forced into the opening in said member 18 and there held by friction owing to its taper form and the resiliency given it by reason of the slot 10 provided between the adjacent edges of the material from which the holder is formed. Thus applied, the device is ready for use.

To attach the end of a wire, as for instance 20, the spring is forced in the direction of the arrow in Fig. 3, which allows the end 21 of the wire to be readily inserted between the spring and the adjacent wall of the holder, the said end of the wire being passed through the coincident openings 2 and 3 of the completed holder. When pressure is removed from the portion 12 of the spring, the resiliency of the latter causes the same to automatically move toward the wire and to firmly clamp the latter between the spring and the walls of the said openings. Thus the wire is firmly clamped in position without employment of screws and all tendency to become detached is obviated. In Fig. 1 I have shown another holder at 22 embodying all of the essential features of construction of the one hereinbefore described except that it is not made of tapered form, although even this may be present, if desired. This is designed to be attached to the projecting metallic rim of the dry battery or to any other support in any suitable manner but as the mode of attachment is not claimed, it is not deemed necessary to specifically illustrate it.

Modifications in details may be resorted to within the scope of the appended claims without departing from the spirit of the invention or sacrificing any of its advantages.

What is claimed as new is:—

1. In a device of the class described the combination of a tubular element having near one end opposed alined apertures, and a movable finger mounted within the said tubular element and having its outer end extending to points outside of the tubular element, the said finger being resilient and adapted to press against a wire extending through the said alined apertures.

2. In a device of the class described the combination of a tubular element provided with opposite alined apertures, and a resilient finger within the tube adapted to engage with a wire extending through the said apertures.

3. In a device for the purpose described, a resilient tapered holder having a transverse opening near one end and a spring held within the holder at the opposite end, with its free end protruding through said holder and adapted to clamp a wire passed through said opening.

4. In a device for the purpose described, a tapered longitudinally split spring holder

having an opening near one end, and a spring extending lengthwise within the holder and secured thereto at one end with its free end protruding through the holder and adapted to clamp a member passed through said opening.

5. In a device for the purpose described, a holder having a transverse opening near one end and oppositely disposed slots near the other end with shoulders, and a spring extending lengthwise of the holder and having at one end flanges and shoulders co-operating with said slots and with the shoulders thereof.

6. A device of the class described, the combination of a tubular element provided near one end with alined apertures and near the other end with opposite alined slots and a resilient finger mounted at one end in the said slots and adapted to engage at the other end with a wire extending through the said apertures.

7. In a device of the class described the combination of a tubular element provided at one end with opposite alined apertures and at the other end with opposite alined slots, a finger mounted at one end in the said slots and adapted to normally engage at its other end with a wire extending through the said apertures and means for holding the said finger in the said slots.

8. In a device of the class described the combination of a tubular element provided near one end with two opposite alined apertures and at its other end with two opposite alined slots each provided with a notch, and a finger provided with transversely extending parts adapted to enter the said notches of the slots to hold the finger in place, the said finger being adapted to engage at its other end with a wire extending through the said apertures.

9. In a device of the class described the combination of a tubular element provided near one end with two opposite alined slots each provided with a notch and a finger provided at one end with transversely extending parts adapted to enter the said notches in the slots and provided near its center with parts adapted to engage the wall of the tubular element to prevent disengagement of the said transversely extending parts from the notches, the said finger being adapted to engage at its other end with a wire extending through the said apertures.

10. In a device of the class described the combination with a conducting holder provided with an opening of a tapering tubular element formed of resilient material and provided with an open slot along one side, the said element being adapted to be forced into the opening in the holder to be rigidly supported thereby and means for mechanically and electrically connecting a conductor wire with the said element at its smaller end.

11. In a device of the class described the combination with a conducting holder provided with an opening of a tubular element formed of resilient material and provided along one side with an open slot, the said element being adapted on account of its resiliency to engage with the walls of the opening in the holder and means for electrically and mechanically connecting a conductor wire with the holder near one end.

12. In a device of the class described, the combination of a tubular element having near one end opposed alined apertures, and a movable finger mounted within the tubular element, its outer end extending to points outside of the tubular element, and adapted to normally press against a wire extending through the said alined apertures.

13. In a device for the purpose described, a tapered holder having a transverse open-

ing near one end, and a spring held at one end within the holder and adapted to clamp a wire passed through the said opening, the free end of the said spring protruding from the holder, substantially as and for the purpose set forth.

14. In a device for the purpose described, a holder having a transverse opening and a spring held at one end within the holder and adapted to clamp a wire passed through the said opening, the free end of the spring protruding from the holder, substantially as and for the purpose set forth.

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

HOSEA F. MAXIM.

Witnesses:

MOE LEVY,

M. M. B. GOFFIGEN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."