

Jan. 22, 1946.

A. C. SMITH

2,393,481

ELECTRICAL CONNECTOR

Filed April 17, 1944

Fig. 1.

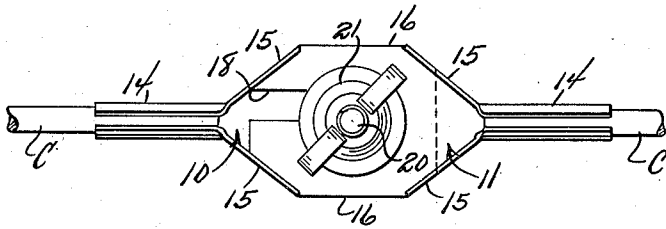


Fig. 2.

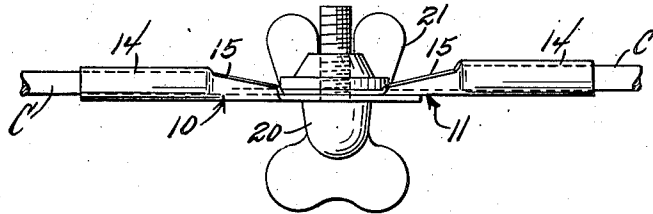


Fig. 3.

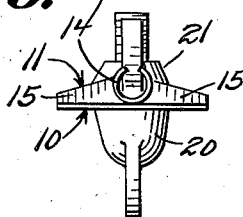


Fig. 4.

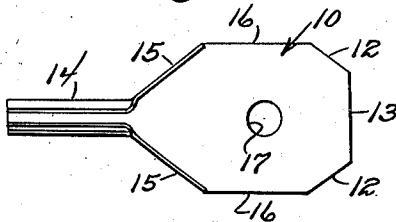
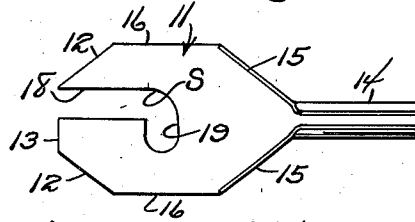


Fig. 5.



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ELECTRICAL CONNECTOR

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1 Claim. (Cl. 287-76)

The present invention relates to improvements in electrical connectors and has for an object thereof the provision of a connector device designed to provide improved means for connecting electrical conductors.

Another object of the invention is to provide a device which is highly efficient for connecting a pair of conductors in such manner as to maintain the conductors in aligned relation.

A further object of the invention is the provision of a connector constructed to firmly connect a pair of electrical conductors and to enable rapid disconnection thereof.

Still another object of the invention is the provision of a connector of the above said character which is relatively simple and inexpensive in construction and reliable in use.

Other objects and advantages of the invention will become apparent as the description progresses.

In the accompanying drawing forming a part of this specification and in which like numerals are employed to designate corresponding parts throughout:

Figure 1 is a top plan view showing the connector in closed wire connecting assembly,

Figure 2 is a side elevational view of the same,

Figure 3 is an end elevational view with the wires removed,

Figure 4 is a top plan view of one of the connector sections, and

Figure 5 is a top plan view of the complementary section.

Referring to the drawing, wherein for the purpose of illustration is shown a preferred example of the invention, 10 and 11 respectively designates the complementary sections of the connector, each embodying a flat elongated polygonal shaped plate of electric conductive material. At the inner end each of these plates is shaped to provide relatively short diagonal edges 12 joining a transverse inner edge 13. At the opposite outer end each plate is formed to provide a tubular longitudinally split wire engaging sleeve 14 of a diameter substantially smaller than the width of the plate and joining the same at the outer converging ends of relatively long oblique outer end edges of the plate at which are provided lateral webs 15. As shown to advantage at Figure 2, each of these flanges has a diminishing taper from its juncture with the inner end of the sleeve 14 to the longitudinal edges 16 of the plate body. As can be noted from Figures 1, 4 and 5 the sleeve of each section plate projects outwardly of the

body on its longitudinal center line while the oblique inclination of the webs 15, with reference to the longitudinal center line corresponds to that of the oblique inner end edges 12, for a purpose which will be hereinafter described.

The body of the section 10 is provided, in an approximately central position, with a round bolt receiving opening 17 while the body of the complementary section 11 is formed with an angular slot generally denoted at S. This slot is shaped to provide a relatively long entrant portion 18 which opens at the inner edge and extends inwardly therefrom to substantially the center portion of the plate where it joins a relatively short transversely directed portion 19. The longer longitudinally extending portion of the slot S is offset transversely with reference to the center line of the plate 11 and may advantageously be arranged so that its inner edge approximately coincides with the longitudinal center while the transverse portion is directed toward the opposite side of the plate.

In wire connecting assembly the sections are joined by a wing bolt 20 of conventional construction having its threaded shank of a diameter suitable to readily slide through the opening 17 and the angular slot S of the respective sections and is engaged by a wing nut 21 threadably fitted on the shank.

Thus, the sections are assembled in connecting arrangement by loosening the wing nut 21 on the shank of the bolt sufficiently to enable the longitudinal portion 18 of the slot S of section 11 to align with the bolt shank and enable longitudinal movement of the section 11 inwardly upon the section 10 and transverse adjustment of the section 11 to position the bolt shank in the transverse slot portion 19 at which time the oblique inner edges 12 of the slotted section will meet and align with the converging webs 15 of the section 10. Upon tightening the nut 21 on the bolt shank with the boss of the bolt bearing against the underside of the section 10 the body plates of the respective sections will be brought into tightly engaging overlapping relation with the oblique inner edges 12 of one section having wedge engagement with the complementary webs of the other section to fixedly maintain the sleeves 14 in alignment and positively preclude angular displacement or turning of the respective sections.

The sleeves 14 of the sections slidably receive therein substantial portions of a pair of wires or conductors C and are tightly clamped thereon.

The connection of the wires may be further strengthened by applying solder thereon between the divided longitudinal edges which form a groove between the side edges of the sleeve.

The device is particularly useful as a test device or clamp, for testing wires of a circuit at various points for locating wire trouble such as current interruption, although it is useful for many other purposes where a quickly detachable tightly connecting device is required.

It is to be understood that the form of my invention herewith shown and described is to be taken as a preferred example of the same and that various changes relative to the material, size, shape and arrangement of parts may be resorted to without departing from the spirit of the invention or the scope of the subjoined claim.

Having thus described my invention, I claim:

In a device for connecting a pair of electric conductors, a pair of sections, each of the said sections including a flat body having oblique outwardly converging edges at the ends, right an-

5 gularly projecting webs at the oblique edges at one end of the body, a conductor engaging sleeve at the outer end of the body, one of the said sections having an opening through its intermediate portion, a bolt extending transversely through the opening of the section, the complementary body having a longitudinally directed off-center slot opening at the inner end of the body and running into a transverse slot in the intermediate 10 portion of the body, the said slot being adapted for sliding the section over the bolt so that the bolt extends through the transverse slot portion, and a nut engageable with the bolt for releasably holding the sections in tightly contacting face to 15 face relation with the oblique edges at the end of one body in wedge engagement with the webs on the complementary body so as to preclude relative turning of the sections about the axis of the bolt when the sections are in contacting relation. 20

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