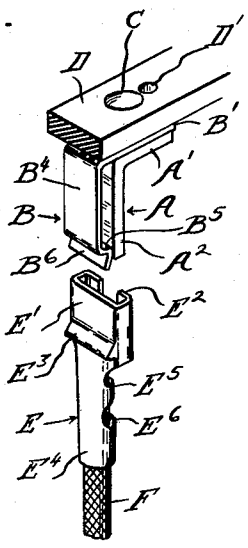
Nov. 24, 1936. C. H. CULVER ET AL 2,061,961

CONNECTER FOR ELECTRIC CIRCUITS

Filed Sept. 4, 1934

Fig. 1.



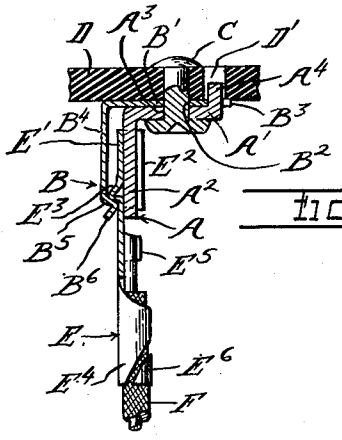


Fig. 2.

Fig. 3.

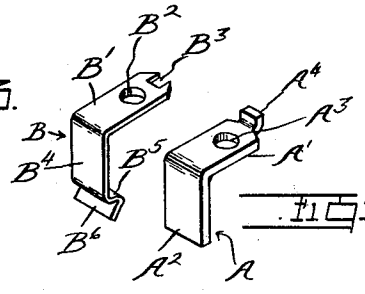


Fig. 4.

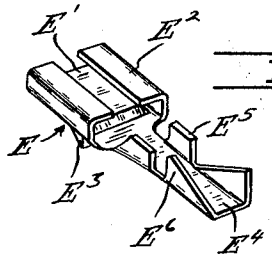


Fig. 5.

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CONNECTER FOR ELECTRIC CIRCUITS

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5 Claims. (Cl. 173—328)

The invention relates to connecters for electric circuits and has for its primary object the obtaining of a construction that may be quickly attached and securely held against accidental displacement. It is a further object to obtain a construction formed of stampings adapted for quick assembly and to maintain good electrical contact in engaged position. With these objects in view the invention consists in the construction as hereinafter set forth.

In the drawing:

Fig. 1 is a perspective view of the cooperating members of the connecter in position ready for engagement;

Fig. 2 is a central longitudinal section through the connecter in coupled position;

Figs. 3, 4 and 5 are perspective views of the several elements of the assembly.

For certain electrical installations, such for instance as the equipment on motor vehicles, it is highly desirable to provide electrical connecters which can be quickly engaged and securely fastened. This is particularly desirable where motor cars are assembled on a traveling carrier and where it is necessary for each workman to complete his task in a relatively short interval of time. Thus with the type of connecters which are fastened by screws, it has been found difficult for a single workman to make all of the different electrical connections during the time available. On the other hand, connecters which are not fastened with screws but are held in place by friction, frequently become accidentally detached or loosened so as to interrupt the electrical circuits.

With this improved construction connection may be quickly made by sliding one member into engagement with its cooperating member, and provision is also made for automatically locking the parts in engaged position and for pressing the cooperating contacts in close contact with each other.

The improved construction consists essentially of a post stationary contact member, a cooperating contact member secured to the flexible electrical conductor having a telescopic engagement with said post and a latch locking member for holding said contact members from displacement when once fully engaged.

For cheapness in manufacture all of these parts are preferably formed of metal stampings and the construction is also such that a single rivet is sufficient to secure two of the members to each other and to the insulator support therefor, while the third member is readily attachable to the flexible conductor. In detail, A is the post contact member which is in the form of an angle bar having the base portion A′ and the projecting contact portion A^2. The base portion has an aperture A^3 for receiving a rivet and is further provided with a projecting tongue A^4 for engagement with a recess in the insulator support so as to prevent turning on the rivet. B is a spring latch lock member which is also of angle form having a base portion B′ with a rivet aperture B^2 and a bifurcated extension B^3 for engagement with the tongue A^4. The outwardly projecting portion B^4 is formed with a locking shoulder B^5 and a flaring projection B^6. The members A and B are assembled by registering the apertures A^3 and B^2 and a single rivet C then serves to secure these members to each other and to an insulator support D. As before stated, the tongue A^4 projects into a recess or aperture D′ in the insulator support so as to prevent turning on the rivet into engagement between the bifurcated portion B^3 and said tongue also prevents turning of the member B.

E is the contact member which is engaged with the flexible conductor. This is formed with a flat face E′ for engagement with the post A and angle flanges E^2 on opposite sides thereof for embracing the post to hold the portion E′ in contact therewith while permitting of telescopic engagement. The portion E′ has also a struck-out portion E^3 which forms a locking shoulder for engagement with the spring latch. Beyond these portions is a shank portion E^4 initially bent into U cross sectional form with separate prongs E^5 and E^6 for respectively closing over the bared wire and the insulated portion of the flexible conductor F. Thus to attach the member E to the flexible conductor F it is only necessary to bare the end portion of the wire and then place it in the U-shaped shank E^4, turning down the prongs E^5 and E^6 respectively on the bare wire and the insulator covering. As soldered electrical connections are usually required, this may be quickly accomplished by dipping the member E into a solder pot and to a sufficient depth to cover the prongs E^5.

With the construction as described, the flexible conductor with the contact member E attached thereto can be quickly telescopically engaged with the post contact A. As soon as the struck out portion E^3 is pressed past the latch shoulder B^5, the latter will engage therewith and will not only prevent disengagement but will also serve to press the surface E′ in firm contact with the post. This insures good electri-

cal connection. The construction is also one which can not be loosened by jar or vibration, or even limited mechanical stresses on the flexible conductors. This is for the reason that the post A is comparatively rigid and can not be laterally displaced by any stress to which it is normally subjected. The member E is also held from lateral displacement by its telescopic engagement with the post A and by reason of the hooked or angle flanges E^2. Thus no stress can be placed by either of these members upon the resilient and flexible member B and consequently when the latch shoulder B^5 has once engaged with the projection E^3, it is impossible to disengage the members E and A by a pull upon the conductor F. When, however, it is desired to detach the connecter by inserting a screw driver or other like tool between the post A and the member B, the latter may be sprung outward so as to disengage the shoulder B^5 from the projection E^3 whereupon the connecter may be readily pulled off from the post A.

What we claim as our invention is:

1. The combination of a pair of angle members, one being substantially rigid and the other flexible and resilient, an insulator support, a fastener passing through registering apertures in the base portion of said angle members and said insulator support to secure the same to each other, a tongue projecting from said rigid angle member entering a recess in said insulator support, a bifurcated portion on said resilient member for embracing said tongue, a flexible insulated conductor, a terminal contact for said conductor having a portion for clinching engagement with the insulating cover therefor and a portion for clinching engagement with the bared wire, said contact being adapted for telescopic engagement with the projecting portion of said rigid angle member and having a struck out portion for forming a locking shoulder, and a hooked shoulder on the projecting portion of said flexible angle member for engaging said struck out portion when said terminal member is telescopically engaged with said post to hold the same from disengagement.

2. The combination of a pair of angle members, one being substantially rigid and the other flexible and resilient, an insulator support, a securing rivet passing through registering apertures in the base portions of said angle members, and said insulator support to hold the same to each other, a tongue projecting from said rigid angle member entering a recess in said insulator support, a bifurcated portion on said flexible angle member for embracing said tongue whereby both of said angle members are held from turning on said rivet, a flexible insulated conductor, a terminal contact for said flexible conductor having a shank portion provided with a plurality of projecting prongs, certain of said prongs adapted for clinching engagement with the insulator cover of said flexible conductor, and one or more of said prongs being adapted for clinching engagement with the bared end portion of said conductor, said terminal contact being provided with angle flanges on its opposite sides for embracing and telescopically engaging the projecting portion of said rigid angle member and being further provided with a struck-out shoulder portion, and a hooked shoulder on the projecting portion of said flexible angle member adapted for latching engagement with said struck-out shoulder to retain said terminal contact and said post from disengagement.

3. The combination of a pair of angle members, one being substantially rigid and the other flexible and resilient, an insulator support, a fastener passing through registering apertures in the base portions of said angle members and said insulator support to secure the same to each other with the flexible member clamped between the rigid member and support, a tongue projecting from said rigid angle member passing through an aperture in said resilient member and entering a recess in said insulator support, a contact member secured to and forming a terminal for a flexible conductor, said contact member being fashioned to embrace and telescopically engage the projecting portion of said rigid angle member and being also provided with a struck-out shoulder, and a hook on the projecting portion of said flexible angle member adapted for latching engagement with said struck-out shoulder to retain said terminal contact and said post from disengagement.

4. The combination of a pair of angle members, one being substantially rigid and the other resiliently flexible, an insulator support, a rivet passing through registering apertures in the base portions of said angle members and insulator support to secure the same to each other, a tongue projecting from the base portion of said rigid angle member and through an aperture in the base of said flexible angle member into a recess in said insulator support to hold said members from turning, and a contact member forming the terminal of a flexible conductor telescopically engaging said rigid angle member and locked in engagement by said resilient member.

5. The combination of a pair of angle members, one being substantially rigid and the other resiliently flexible, an insulator support, a rivet passing through registering apertures in the base portions of said angle members and insulator support to secure the same to each other, a tongue projecting from the base portion of said rigid angle member and through an aperture in the base of said flexible angle member into said recess in said insulator support to hold said members from turning, a contact member forming the terminal of a flexible conductor telescopically engaging said rigid angle member, and cooperating detents on said flexible angle member and contact member permitting a latch engagement thereof and preventing accidental disengagement.

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