Oct. 21, 1941. B. COX 2,259,800

ELECTRICAL CONNECTOR

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FIG. 1.

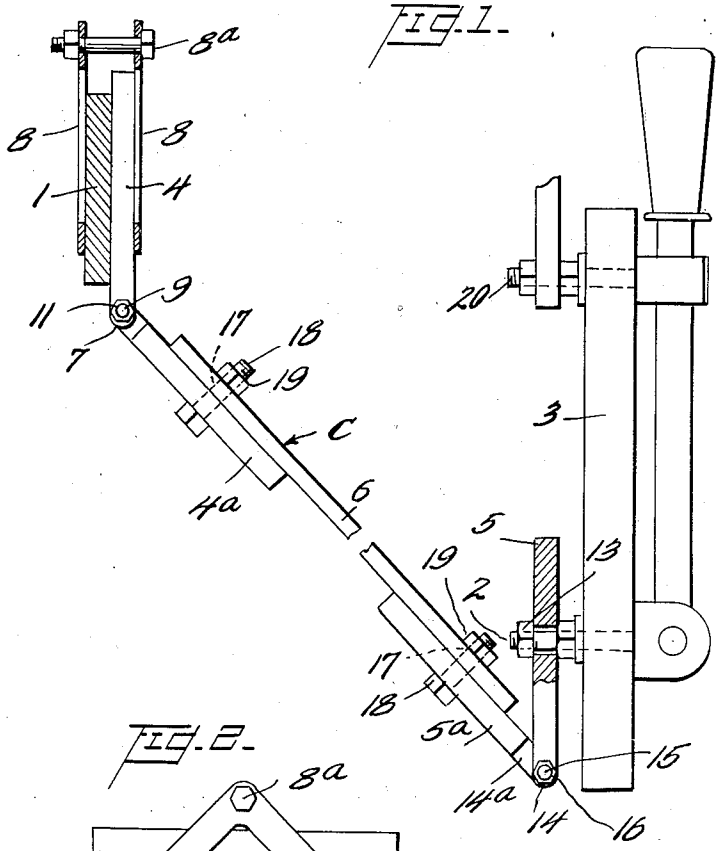


FIG. 2.

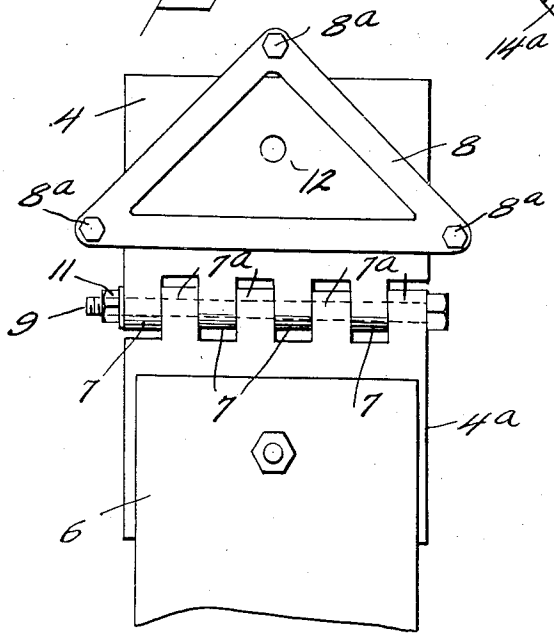
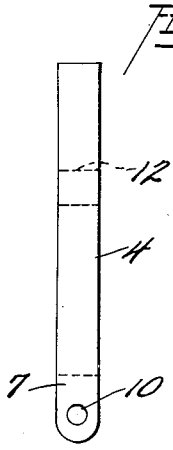


FIG. 3.



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2,259,800

ELECTRICAL CONNECTOR

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2 Claims. (Cl. 173—324)

This invention relates to electrical connectors, and aims to provide a connector which is particularly suited for connecting switch boards and similar equipment with bus bars and cables carrying heavy electrical loads.

An important object of my invention is to provide a connector of the above character which eliminates sharp bends and kinks such as frequently occur in connections made according to the customary practice of extending flexible conductors between the bus bars and the angularly offset switch boards to be connected therewith.

Other objects and advantages of the invention will be apparent from the following detailed description of a preferred embodiment of the invention, reference being had to the drawing in which:

Figure 1 shows in side view a connector extending between a bus bar and a switchboard;

Figure 2 illustrates a pair of companion interfitting terminal plates forming part of the connector of Fig. 1; and

Figure 3 is a side view of one of the terminal plates.

Referring to the drawing, in Fig. 1 is illustrated an electrical connector C leading off from a bus bar 1 to a binding post stud 2 of a switchboard 3. This connector comprises three major parts, namely a pair of interfitting terminal plates 4 and 4a providing a hinged connection with the bus bar 1, a second pair of interfitting terminal plates 5 and 5a identical with the pair of plates 4 and 4a and providing a hinged connection with the switchboard 3, and a bar 6 of conducting metal extending between corresponding inner plates 4a and 5a of the two pairs of hinged plates.

As best illustrated in Fig. 2, the terminal plates are of square or rectangular shape. Outer plate 4 is held in association with the bus bar 1 by means of a pair of clamps 8 fastened by tie bolts 8a. One edge of each plate is notched at regular intervals so as to provide a series of projecting fingers. The fingers 7 along the edge of plate 4 are so spaced that the fingers 7a upon the adjacent edge of plate 4a fit snugly therebetween. A tie bolt 9 passes through registering openings 10 provided in the fingers 7 upon both plates and a clamping nut 11 is threaded upon the end of the bolt which projects beyond one side of the pair of plates, this bolt serving to draw the fingers together into tight lateral contact. By this construction a hinged connection is provided between the plates so that the angularity of inner plate 4a with relation to outer plate 4 may be adjusted.

In the same manner the pair of terminal plates 5 and 5a are connected adjacent the switch board. All of the plates are centrally provided with openings 12, and this opening in the outer plate 5 is adapted to pass the binding post stud 2 upon switchboard 3, a nut 13 threaded upon the projecting end of the stud serving to clamp the plate to the switchboard. One edge of the plate 5 is provided with spaced apart fingers 14, and interfitting between these fingers are fingers 14a extending outwardly from the adjacent edge of inner plate 5a. A tie bolt 15 extends through registering openings in the fingers to provide in effect a hinged connection corresponding in all essential respects to the hinged connection formed between the plates 4 and 4a by the bolt 9. A nut 16 may be threaded onto the end of tie bolt 15 to clamp the fingers together in tight lateral contact.

The bar 6 is provided with openings 17 adjacent its ends, such openings adapted to register with the openings 12 in the contact plates 4a and 5a. Studs 18 are adapted to pass through these registering openings and clamping nuts 19 threaded onto the projecting ends of the studs secure the ends of the bar 6 in tight flat association with the inner plates 4a and 5a. The studs 18 also provide pivots at right-angles to the pivots provided by the tie rods 9 and 15, whereby the connector may be adjusted so as to suit itself to practically any condition likely to be encountered in practice when connections are to be made between a bus bar and a piece of electrical equipment. The other binding post 20 of the switchboard may be connected with a bus bar (not shown) constituting the other side of the circuit by the same kind of connector as that just described.

While the connector has been described for use in making connection between a bus bar and a switchboard, this is to be regarded simply by way of example, and manifestly the connector may be used, either singly or in pairs, for connecting other types of electrical apparatus.

By virtue of my invention I am enabled to avoid the use of flexible cables that tend to kink and buckle out of shape when employed for connecting electrical apparatus and in their place provide a rigid electrical connector which can be adjusted to practically any desired angularity. The connector is simple in construction, cheap in manufacturing cost, and is capable of meeting all the usual conditions encountered in electrical practice.

Obviously various changes in the form, con-

struction, arrangement, and combination of the several parts of my electrical connector may be made and substituted for those herein shown and described without departing from the nature and principle of my invention.

I claim:

1. An electrical connector comprising two pairs of interfitting hinged terminal plates, each of said pairs comprising an inner plate and an outer plate said inner and outer plates each having a series of fingers extending from one edge thereof and receivable within the spaces between the fingers on the adjacent plate, a rigid member of electrically conducting material extending between the inner plates, means connecting said member to the inner plates for pivotal adjustment about an axis at right angles to the hinged connections between the pairs of plates, the outer plate of one of said pairs being adapted as to be attached to a conductor and the outer plate of the other of said pairs being arranged to be attached to a binding post of a piece of electrical equipment, and means for clamping the hinged plates of each pair in fixed adjusted position.

2. An electrical connector adapted to provide an electrical connection between an electrical conductor and the binding post of a piece of electrical equipment, said connector comprising two pairs of hinged terminal plates, each of said pairs comprising an inner plate and an outer plate having their adjacent edges provided with a series of fingers, the fingers of one plate snugly interfitting between the fingers of the other plate, openings extending transversely through the fingers, a tie bolt extending through the aligned openings of the fingers, means upon the tie bolt to draw the fingers in tight laterally-abutting contact, a flat bar of electrically conducting material overlying the faces of the inner plates and extending between said plates, a pin pivotally connecting each end of the bar to one of the inner plates and means provided on the pins for clamping the bar in firm engagement with the faces of the inner plates, said outer plates being adapted for connection with either a high tension electrical conductor or the binding post of a piece of electrical equipment, and said inner and outer plates being of substantially identical construction so that only two different stampings are required for the manufacture of said connector.

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