Jan. 5, 1937. L. C. DOANE 2,066,770

ELECTRICAL CONNECTER

Filed Feb. 16, 1932

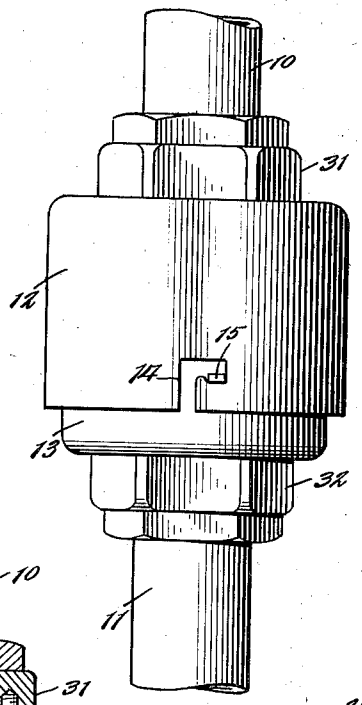


Fig. 1.

Fig. 2.

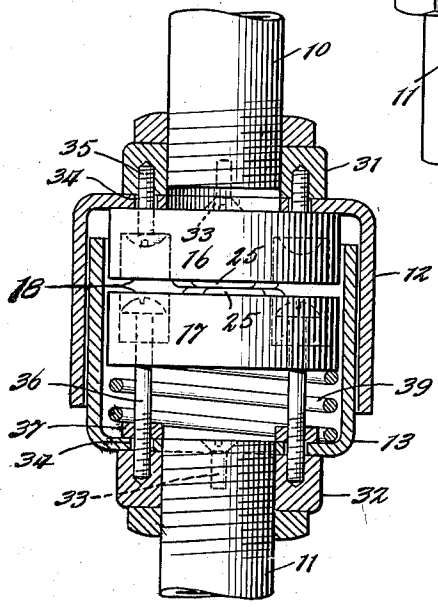
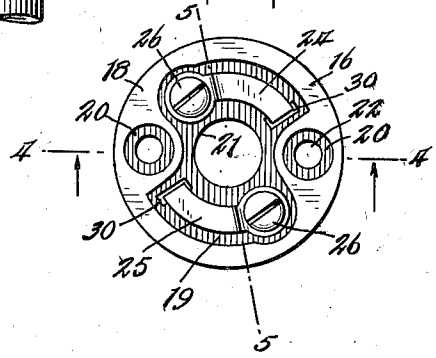


Fig. 3.



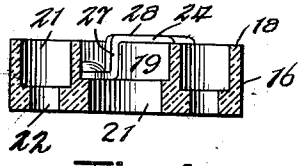


Fig. 4.

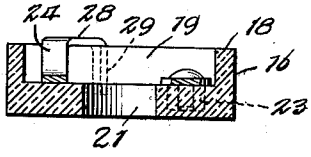


Fig. 5.

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ELECTRICAL CONNECTER

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7 Claims. (Cl. 173—328)

The present invention relates to electrical connecters and is more particularly directed to electrical connecters suitable for use as a detachable connecting member for mechanically and electrically connecting electrical apparatus.

The present invention contemplates an electrical connecter more particularly designed for supporting lighting fixtures, extension cables, and the like wherein a greater load is employed than can be held and supported by attachment plugs and similar friction connecters. The present invention contemplates a connecter for this purpose made out of rugged and substantial parts so as to reduce the likelihood of injury. It also contemplates a connecter for this purpose of suitable ornamental shape and appearance so that it may be used in locations where it is exposed to view.

The accompanying drawing shows, for purposes of illustrating the present invention, one of the many embodiments in which the invention may take form, it being understood that the drawing is illustrative of the invention rather than limiting the same. In this drawing:

Fig. 1 is a front elevational view of an electrical connecter;

Fig. 2 is a vertical sectional view through the same;

Fig. 3 is an elevational view showing the exposed face of one of the insulating bases with contacts mounted thereon; and

Figs. 4 and 5 are sections taken on the lines 4—4 and 5—5 respectively of Fig. 3.

The electrical connecter shown herein is adapted for use in detachably coupling together two lengths of conduit or other electrical apparatus such as shown at 10 and 11.

The outer casing of the connecter is in the form of two drawn sheet metal stampings 12 and 13 of cup shape, as indicated. The lower stamping 13 is of smaller diameter than the upper stamping and is telescopically received in it. One of the stampings is provided with a bayonet slot 14 while the other stamping is provided with a pin 15 adapted to traverse the slot as will be understood.

The casing encloses two insulating bases indicated at 16 and 17. These two bases may be identical and one of them will now be described. In the form shown, the insulating bases are of cylindrical shape with a flat face indicated at 18. This face is recessed to form a contact receiving cavity 19 and two screw receiving cavities 20. It has a central aperture 21 to accommodate wiring, and screw receiving holes 22. The insulating base is preferably made of molded insulating material and receives two threaded inserts 23. These inserts are employed to support two U-shaped contacts indicated at 24 and 25, binding screws 26 being employed to secure the contacts in place and to facilitate securing the wires. These contact members extend upwardly as indicated at 27, have flat faces indicated at 28 which extend beyond the face of the base, and downward extensions as indicated at 29. These extensions are adapted to enter small recesses as indicated at 30. These recesses hold the contact members in position.

The cup-shaped members 12 and 13 are secured to internally threaded rings 31 and 32 by screws indicated at 33. The bottoms of the stampings have a central aperture in line with the axis of the corresponding ring and have clearance holes indicated at 34 adapted to receive screws 35 and 36. The screws 35 are short and are employed in securing the upper insulating base 16 in the bottom of the stamping 12. The screws 36 are longer and are employed for non-rotatably but slidably supporting the lower insulating base 17 in place. These screws may be held in place by lock nuts 37 if desired. Before the insulating base 17 is secured in place, a compression spring 39 is inserted as indicated.

The casing part 12, together with its insulating base 16, may be secured to a conduit 10 by threading the parts together, and the other casing element 13 with associated parts may be similarly secured to the conduit or other device 11. The enclosed wiring may readily be secured to the binding posts. The part 13 may easily be placed inside the part 12 by merely passing the pin 15 through the bayonet slot. This operation will first bring the contacts on the lower part of the device against the contacts carried by the upper part of the device. Further pressure will cause the lower base 17 to slide along the screws 36, moving it below the heads of these screws and the partial turning will cause a wiping action which insures good contact. The spring 39 is thereby placed under compression in excess of the original compression so as to press the contacts toward one another and hold the pin 15 in the recessed part of the bayonet slot. The use of a single slot (or a plurality of asymmetrically located slots) will insure that the desired polarity is maintained when connecting the parts together so that the device acts as a polarity connecter.

It is obvious that the invention may be embodied in many forms and constructions, and I wish it to be understood that the particular form shown is but one of the many forms. Various modifications and changes being possible, I do not otherwise limit myself in any way with respect thereto.

What is claimed is:

1. An electrical connecter comprising two insulating bases facing one another, two contacts carried by each base and having faces extending beyond the adjacent face of the corresponding base,

two cup shaped casing parts, one telescopically received within the other, means to fixedly secure one base to the bottom of one of the casing parts, axially extending headed guides carried by the other casing part and extending through the other base for non-rotatably securing said base in said casing part for limited sliding movement, a spring pressing said second mentioned base outwardly, and held under compression, each cup shaped part extending beyond the contacts carried thereby, whereby either casing part with insulating base and contacts may be connected to a power line and protection is afforded by the casing to the contacts, and means to secure the two casing parts together with the movably secured base pressed back toward the bottom of the supporting cup shape part and the spring further deformed so as to press the faces of the contacts on the movable base against the faces of the contacts on the fixed base, the end of the smaller casing part receiving the insulating base on the larger casing part.

2. An electrical connecter comprising two insulating bases facing one another, two contacts carried by each base, each contact being of U-shape and having one end secured to the base and the other end bearing against the base, the intermediate portion being flat and having a face extending beyond the adjacent face of the corresponding base, two cup shaped casing parts, one telescopically received within the other, means to fixedly secure one base to the bottom of one of the casing parts, means to slidably and non-rotatably secure the other base in the other casing part, a spring pressing said second mentioned base outwardly, and means to secure the two casing parts together with the spring deformed so as to press the faces of the contacts on the movable base against the faces of the contacts on the fixed base.

3. In an electrical connecter, two metal cups having openings in the bottoms thereof, one cup being slidably received within the other to form an enclosing casing, an insulating base fixedly secured to the bottom of one cup, an insulating base slidably and non-rotatably secured within the other cup, the bases being of like diameter so that the side wall of the larger cup is spaced from the base therein, a compression spring underneath the second base for pressing it outwardly, the adjacent faces of the insulating bases carrying contacts adapted to be brought together to establish an electrical connection when one cup is slid into the other to close the casing, and locking means operative upon further sliding for securing the cups together, the spring being compressed in excess of the original compression so that the spring presses the contacts on one base against the contacts on the other base, the smaller cup extending beyond the contacts on the corresponding base and into the space about the insulating base in the larger cup.

4. In an electrical connecter, two metal cups having openings in the bottom thereof, one cup being slidably received within the other to form an enclosing casing, pin and bayonet slot connections between the cups for securing them together and resisting their separation, an insulating base fixedly secured to the bottom of one cup, an insulating base slidably and non-rotatably secured within the other cup, the bases being of like diameter so that the side wall of the larger cup is spaced from the base therein, a compression spring underneath the second base for pressing it outwardly, the adjacent faces of the insulating bases carrying contacts adapted to be brought together to establish an electrical connection while the pin is sliding in the straight portion of the slot, the contacts having flat faces to permit relative rotation of the bases while the pin is moved through a circumferential portion of the bayonet slot, the spring being compressed in excess of the original compression to press the contacts closer together and acting to hold the pin in the end of the bayonet slot, the smaller cup extending beyond the contacts on the corresponding base and into the space about the insulating base in the larger cup.

5. In an electrical connecter, an insulating base recessed from the front face to form a contact receiving cavity, two rigid U-shaped contact members each having a flat apertured end adapted to be secured against the bottom of the cavity, a free end adapted to enter a small recess in the bottom of the cavity, and an intermediate flat portion extending beyond the face, and means to secure the apertured ends of the contact members in place in the cavities.

6. In an electrical connecter, a flat cylindrical insulating base recessed from the front face to form a contact receiving cavity, two rigid U-shaped contact members each having a flat apertured end adapted to be secured against the bottom of the cavity, a free end adapted to enter a small recess in the bottom of the cavity, and an intermediate flat portion extending beyond the face and arc shaped about the axis of the base, and means to secure the apertured ends of the contact members in place in the cavities.

7. A quick detachable electrical connecter comprising two sheet metal cup shaped casing parts one larger than the other so as to be able to telescopically receive said other and form an enclosing casing, the bottom of each casing part being apertured, a co-axial threaded ring secured to the outside of each casing part so that each casing part may be connected to a threaded conduit, an insulating base fixedly secured in the bottom of one casing part, a second insulating base axially slidable and non-rotatably secured within the other casing part, a compression spring underneath the second base for pressing it outwardly, the bases being centrally apertured to afford a wireway and their adjacent faces carrying binding screws for the securement of wires and contacts extending beyond the faces of the insulating bases, the contacts being adapted to be brought together to establish an electrical connection when one cup is slid into the other to close the casing, and means operative upon further sliding for securing the cups together, the open end of the inner casing part receiving the insulating base carried by the other casing part, the spring being compressed in excess of the original compression so that the spring presses the contacts on one base against the contacts on the other base.

LEROY C. DOANE.