Feb. 11, 1941. F. E. MEHR 2,231,366

ELECTRICAL CONNECTOR

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Fig. 1.

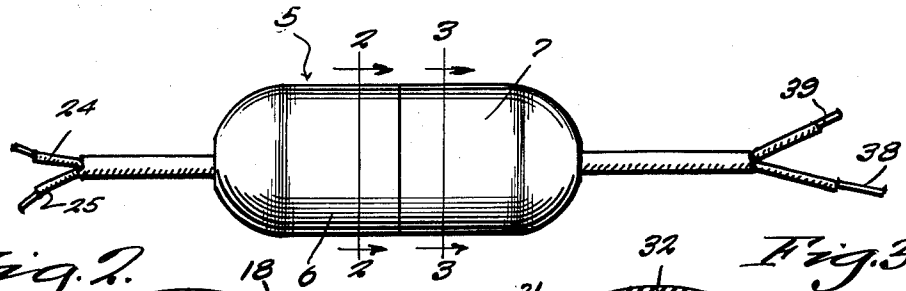


Fig. 2.

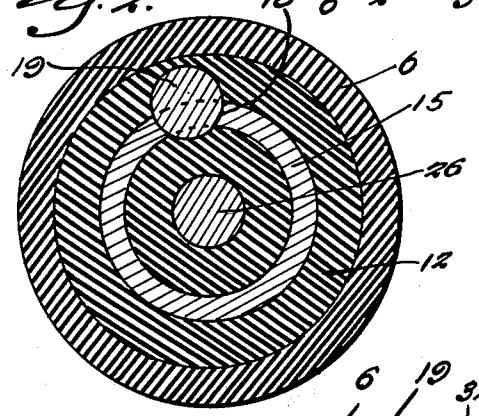
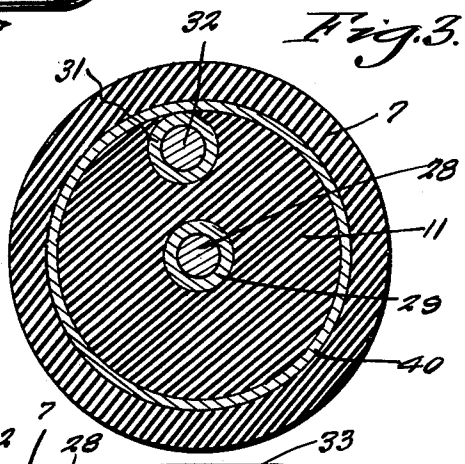


Fig. 3.



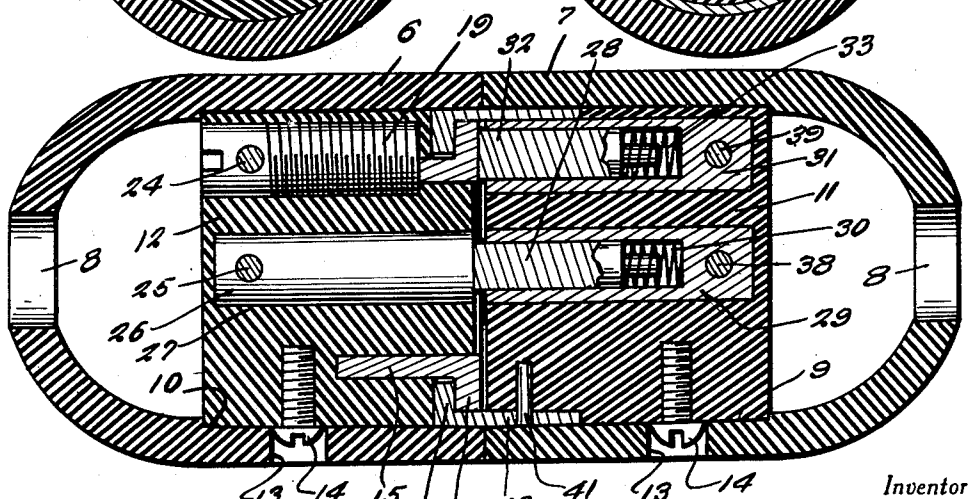


Fig. 4.

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Fig. 5.

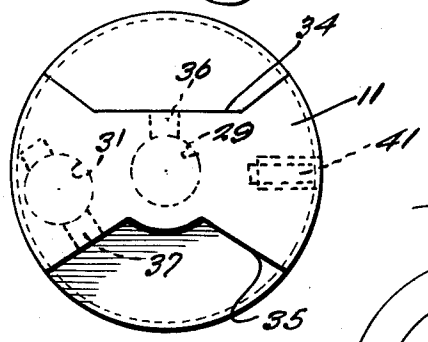


Fig. 7.

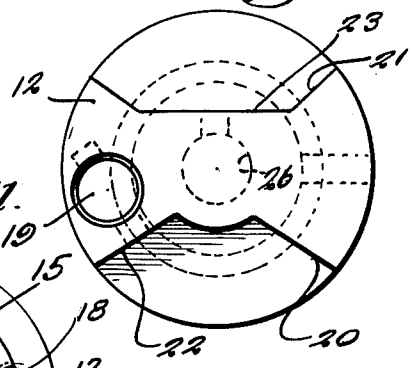


Fig. 11.

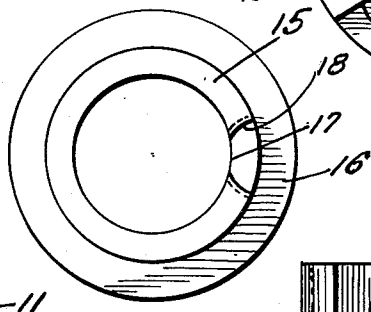


Fig. 6.

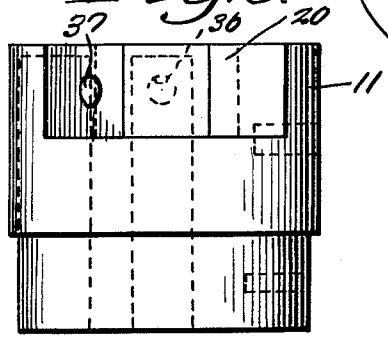


Fig. 8.

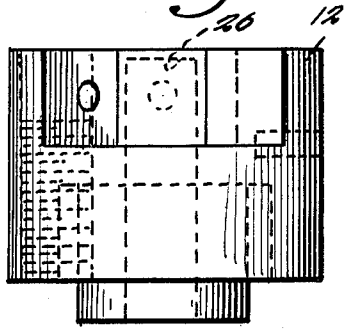


Fig. 9.

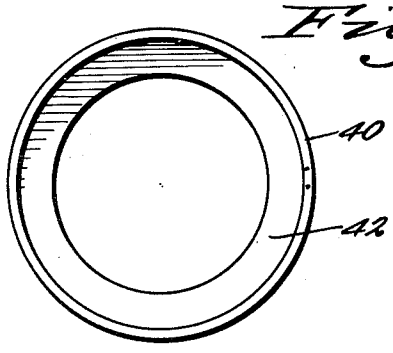


Fig. 12.

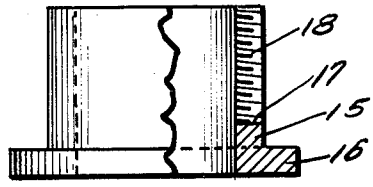
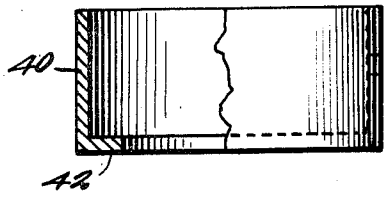


Fig. 10.



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UNITED STATES PATENT OFFICE

2,231,366

ELECTRICAL CONNECTOR

Frederick Earl Mehr, Harvey, Ill.

Application July 15, 1939, Serial No. 284,770

1 Claim. (Cl. 173—324)

This invention appertains to new and useful improvements in electrical connectors and more particularly to a connector of the swivel type, the same being an improvement on Patent No. 2,070,211.

The principal object of the present invention is to provide a swivel type electrical connector wherein the parts are assembled in such a manner that the device is substantially fool-proof as regards complete electrical connection between the sections of the connector.

Another important object of the invention is to provide a swivel connector in which supports are constructed in such a manner that conductors can be connected to the conducting elements thereof in a quick and convenient manner.

These and various other important objects and advantages of the invention will become apparent to the reader of the following specification.

In the drawings:

Figure 1 represents a side elevational view of the connector.

Figure 2 is a section on the line 2—2 of Figure 1.

Figure 3 is a cross sectional view on the line 3—3 of Figure 1.

Figure 4 is a longitudinal sectional view.

Figure 5 is an outer end elevation of the spring contact carrying plug.

Figure 6 is a side elevational view of the plug shown in Figure 5.

Figure 7 is an inner end elevation of the stationary contact carrying plug.

Figure 8 is a side elevational view of the plug shown in Figure 7.

Figure 9 is an elevational view of the flanged annulus carried by the spring projecting contact carrying plug.

Figure 10 is a sectional view of the annulus shown in Fig. 9.

Figure 11 is a plan view of the annulus of the stationary contact carrying plug.

Figure 12 is a side elevational view, partly in section showing the annulus of Figure 11.

Referring to the drawings wherein like numerals designate like parts, it can be seen that the connector generally referred to by numeral 5 consists of the cylindrical shells 6 and 7, each having a rounded end portion through which a conductor receiving opening 8 is formed.

Each of these shells 6 and 7 has an inwardly disposed and tapered counterbore 9 for accommodating the slightly tapered contact carrying plugs 11 and 12.

The shells 6 and 7 are formed with openings 13 through which screws 14 can be disposed for securing the plugs 11 and 12 against displacement. The shells 6 and 7, and the plugs 11 and 12 are of some suitable insulating material.

The plug 12 is slotted in an annular manner to receive the annular conductor ring 15. This ring is flanged outwardly at its outer end as at 16, and is slotted as at 17 longitudinally with the side portions of the annulus 15 at the slot formed with threads 18 with which the binding screw 19 cooperates. This screw 19 has threads and is disposable into a bore of the plug 12, and feeds along the slot 17 to abut the annulus 15 at the inner end of the slot 17. As can be seen in Figure 7, the inner end of the plug 12 has cut away portions 20 and 21 defining walls 22 and 23 through which openings are formed and through which conductor elements 24—25 are disposable for insertion into openings in the screw 19 and contact member 26. This contact member 26 is disposed in a bore 27 which extends inwardly from the outer end of the plug 12 and with this engages the brush 28 which is spring-pressedly mounted in the hollow barrel 29 which is located axially in the plug 11. A spring 30 in this barrel 29 serves to urge the brush 28 toward and against the contact member 26 when the shells 6 and 7 are properly related.

In the off-center shell 31 is the brush 32 which constantly engages and wipes the outside face of the flange 16. A spring 33 in the barrel 31 urges the brush 32 against the flange 16.

The inner end of the plug 11 is formed to define the cut out portions 34 and 35 through which openings 36 and 37 are formed to permit conductors 38 and 39 to be inserted into openings in the shells 29 and 31.

The plug 11 has the annulus 40 circumscribing the same and held in place by pins 41. This annulus 40 has the internal flange 42 which interlaps the flange 16 of the annulus 15, thus establishing a swivelled connection between the two sections of the connector.

While the foregoing specification sets forth the invention in specific terms, it is to be understood that numerous changes in the shape, size and materials may be resorted to without departing from the spirit and scope of the invention as claimed hereinafter.

Having described the invention, what is claimed as new is:

A swivel type connector comprising a pair of shell sections having tapered counterbores there-

in, tapered plugs removably housed in the sections and seated in said tapered counterbores, one of said plugs being provided with a conductor annulus flanged outwardly at its end opposed to the other plug, said conductor annulus having a longitudinal slot cut therein the side edges of which have screw threads formed thereon, a screw mounted in said first mentioned plug and engaged in said screw threaded slot, the other of said plugs being provided with an annulus flanged inwardly at its end opposed to the first-mentioned plug and embracing the flanged end of the first-mentioned annulus, a pin passing through said second-mentioned annulus and engaged in said second-mentioned plug to hold said second-mentioned annulus in position thereon, a stationary contact in the first-mentioned plug, a pair of spring pressed brushes on the other plug for wiping engagement with the contact and flanged annulus of the first mentioned plug, each of said shell sections having openings formed therein, and screws engaged in said tapered plugs and certain of said shell openings to hold said tapered plugs and said shell sections assembled.

FREDERICK EARL MEHR.