

G. W. OAKES.
SWIVEL CONNECTOR.
APPLICATION FILED OCT. 10, 1912.

1,098,291.

Patented May 26, 1914.

Fig. 1.

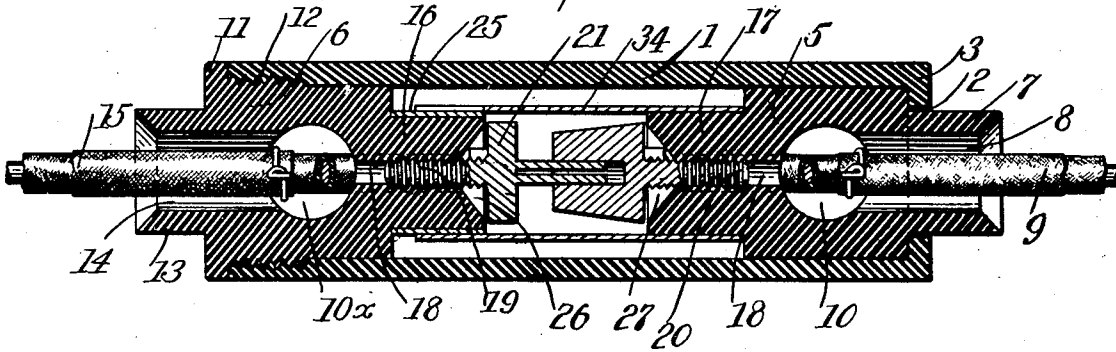


Fig. 2.

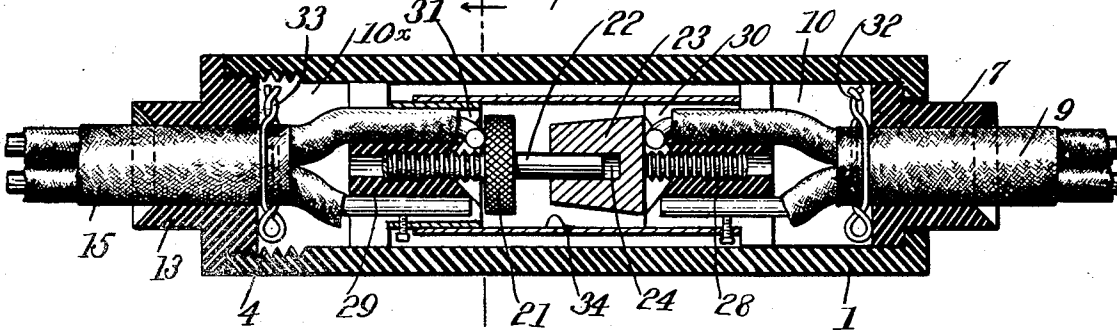
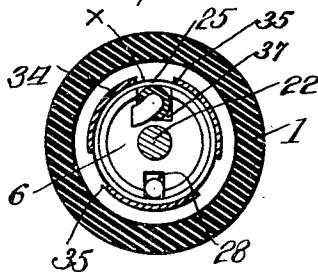


Fig. 3.



WITNESSES

George Bamby.
J. J. Gallagher

INVENTOR

GEORGE W. OAKES,
BY Munn & Co.
ATTORNEYS

UNITED STATES PATENT OFFICE.

GEORGE W. OAKES, OF KOKOMO, INDIANA.

SWIVEL-CONNECTOR.

1,098,291.

Specification of Letters Patent.

Patented May 26, 1914.

Application filed October 10, 1912. Serial No. 724,959.

To all whom it may concern:

Be it known that I, GEORGE W. OAKES, a citizen of the United States, and a resident of Kokomo, in the county of Howard and State of Indiana, have invented a new and Improved Swivel-Connector, of which the following is a full, clear, and exact description.

This invention relates generally to swivel connectors adapted to be placed in electrical conductors in order to prevent tangling of the conductors in moving about apparatus to which the conductors are attached.

The principal object of the invention is the provision of a new and improved swivel connector characterized by simplicity of construction, the parts of which may be quickly assembled, and which will perform the functions intended in an efficient manner.

Reference is to be had to the accompanying drawings forming a part of this specification, in which like characters of reference indicate corresponding parts in all the views, and in which—

Figure 1 is a longitudinal sectional view of the conductor; Fig. 2 is a similar view at right-angles to Fig. 1; while Fig. 3 is a sectional view on the line 3—3 of Fig. 2.

The preferred embodiment illustrated comprises a casing 1, one end of which is provided with an opening 2, of lesser diameter than the interior of the casing, whereby a shoulder 3 is provided. The other end of the casing is open and the interior is provided with a number of screw threads 4. Fixed within the ends of the casing are the substantially cylindrical elements 5—6, one end of the insulating block 5 being provided with a projection 7 extending through the opening 2 in the casing, which projection has a bore 8 extending therethrough adapted to receive a pair of conductors 9, the element being provided with a transversely extending passageway 10, as shown particularly in Fig. 1. The other element 6 is provided with a shoulder 11 intermediate its ends, and also provided with a number of screw threads 12 adjacent the shoulder adapted to cooperate with the threads 4 in the interior of the casing. This element 6 is provided with an extension 13 having a bore 14 extending therethrough adapted to receive the conductors 15, the said bore communicating with a passageway 10*, as particularly shown in Fig. 1. The inner ends of the said elements 5—6 are provided with substantially cylindrical pro-

jections 16—17 having passages 18 extending therethrough, the interior of which are screw-threaded and adapted to receive the threaded ends 19—20 of binding screws; these binding screws, as shown particularly in Fig. 2, are adapted for electrical engagement with each other, one of them being provided with a knurled enlarged portion 21 intermediate its ends and an extension 22 which may be split if so desired, as shown particularly in Fig. 1, the other screw being provided with a head 23 having a recess 24 therein into which the extension 22 of the first screw is adapted to be positioned and at all times to be in electrical contact therewith. The outside of the cylindrical projection 16 is preferably provided with a metallic covering 25, and the outer end of the passageway 18 therein is countersunk as at 26, the particular purpose of which will be later set forth. It is also to be noted that the outer end of the extension 17 is also countersunk as at 27, the purpose of which is similar to the countersink 26.

Referring particularly to Fig. 2, it will be noted that the outside of the cylindrical elements 5—6 are provided with longitudinally extending channels 28—29 adapted to receive the bared ends of one of the wires forming the pairs of conductors 9—15. Other channels 30—31 are also provided in these elements separate from the first-mentioned channels 28—29, adapted to receive the other ends of some of the wires of the pairs of conductors 9—15, the relation being particularly brought out in Fig. 2. These pairs of conductors 9—15 are entered into the passageways or bores 8—14, and the inner ends being separated or spread within the passageways 10—10*, separation of the conductors from the connector after the parts are assembled may be conveniently prevented by twisting a piece of wire 32—33 around the conductors and within these passageways, so that any force applied to the conductors will bring these bent wires against the side walls of the said passageways, thereby preventing the ends of the wires from being separated from their contacting parts. It will be noted in Fig. 2 that the bared end of one wire of each conductor is in electrical contact with a conducting element 34, preferably cylindrical in form, which engages the extensions 16—17 on the inner ends of the said cylindrical elements 5—6. If so desired, the ends of these cylin-

drical elements may be slotted as at 35, in order to provide a number of separated portions, providing greater flexibility, thereby tending to better electrical contact. It will be remembered that the inner end of the extension 16 is covered with a conducting element 25, so that one conducting element 34 is positioned thereon. These elements are in contact with the bared end of the wire, as shown; the other extension 17 is not covered with any conducting element save the element 34, with which the bared end of one of the wires of the double conductor 9 contacts, so that an electrical pad is provided for one side of the circuit through the connector. The ends of the other wires of the pairs of conductors are positioned within the channels 30—31, the outer ends being slightly bent into the countersunk portions 26—27, being maintained in such position by tightening the screws 19—20, which screws are in adjustable electrical contact with each other.

It will be obvious now that with the parts assembled as shown in Fig. 2, one pair of conductors may be turned relatively to the other since the cylindrical element 5 may be turned relatively to the casing 1 and the cylindrical element 6, so that whatever the relative position of the elements and the wires carried thereby the electrical circuit is unbroken.

The particular material of which the different parts are made may, of course, be varied without departing from the inventive idea disclosed; it may be said, however, that the casing 1 and the elements 5 and 6 will preferably be made of non-conducting material which is susceptible of being molded to suitable form.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:—

1. A swivel connector comprising a casing, a stationary insulating block secured at one end to said casing, a rotatable insulating block carried by the casing at the other end, each of said blocks being provided with a longitudinal passage and a transverse passage communicating with said longitudinal passage, said passage being arranged to receive a conducting cable, and each of said insulating blocks having reduced portions extending toward each other, a conducting ring carried by the reduced portion of said stationary block, a conducting sleeve carried by the reduced portion of said rotatable block and arranged to bear on the exterior surface of said conducting ring, a binding screw carried by the reduced portion of said rotatable block, a second binding screw carried by the reduced portion of said stationary block, both of said binding screws being disposed within said sleeve, and one of said binding screws being provided with a spring connection for keep-

ing said binding screws in electrical engagement during the relative movement of said screws, certain of the terminals of said cables being secured between said binding screws and said insulating blocks, and the other terminals being in electrical connection with said conducting ring and said conducting sleeve respectively.

2. A swivel connector comprising a casing, a stationary insulating block carried at one end of said casing, an insulating block disposed within the other end of the casing and being rotatable with respect thereto, a conducting ring carried by said stationary block, a sleeve carried by said rotatable block and arranged to bear on said conducting ring, a binding screw carried by said rotatable block within said sleeve, a second binding screw carried by said stationary block within said sleeve and having a slidable electrical connection with said first named binding screw, each of said insulating blocks having passages for conducting cables, certain of the ends of each of said conducting cables being secured by said binding screws between said screws and said blocks, and the other cable terminals being in electrical connection with said conducting ring and said conducting sleeve respectively.

3. A swivel connector comprising a casing, a stationary insulating block carried at one end of said casing, an insulating block disposed within the other end of the casing and being rotatable with respect thereto, a conducting ring carried by said stationary block, a sleeve carried by said rotatable block and arranged to bear on said conducting ring, a binding screw carried by said rotatable block within said sleeve, and a second binding screw carried by said stationary block within said sleeve and having a slidable electrical connection with said first named binding screw, each of said insulating blocks having passages for conducting cables, certain of the ends of each of said conducting cables being secured by said binding screws between said screws and said blocks.

4. A swivel connector comprising a casing, a stationary insulating block carried at one end of said casing, an insulating block disposed within the other end of the casing and being rotatable with respect thereto, a conducting ring carried by said stationary block, a sleeve carried by said rotatable block and arranged to bear on said conducting ring, a binding screw carried by said rotatable block within said sleeve, and a second binding screw carried by said stationary block within said sleeve and having a slidable electrical connection with said first named binding screw.

5. A swivel connector comprising a casing, a stationary insulating block carried at

one end of said casing, a conducting member carried by said stationary insulating block an insulating block disposed within the other end of the casing and being rotatable with respect thereto, a conducting member carried by said rotatable block and arranged to bear on the conducting member of said stationary block, a binding screw carried by each of said blocks, and means carried by one of said binding screws for engaging the other binding screw and maintaining an electrical connection therewith during a relative movement of the two binding screws, each of said insulating blocks being provided with passages arranged to receive a conducting cable, one of the terminals of each of said cables being secured by one of said binding screws and the other terminals of said cable being in electrical connection with the conductors carried by the respective blocks.

6. A swivel connector comprising a cas-

ing, a stationary insulating block carried at one end of said casing, a conducting member carried by said stationary insulating block an insulating block disposed within the other end of the casing and being rotatable with respect thereto, a conducting member carried by said rotatable block and arranged to bear on the conducting member of said stationary block, a binding screw carried by each of said blocks, and means carried by one of said binding screws for engaging the other binding screw and maintaining an electrical connection therewith during a relative movement of the two binding screws.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

GEORGE W. OAKES.

Witnesses:

J. E. VAILE,

LLOYD McCLURE.