Jan. 17, 1933. W. JACKSON 1,894,872

ELECTRICAL WIRE SWIVEL

Original Filed Dec. 28, 1929

Fig. 1.

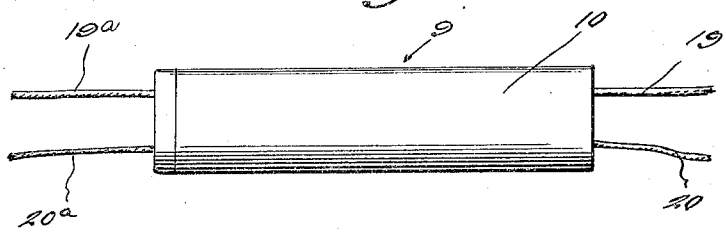


Fig. 2.

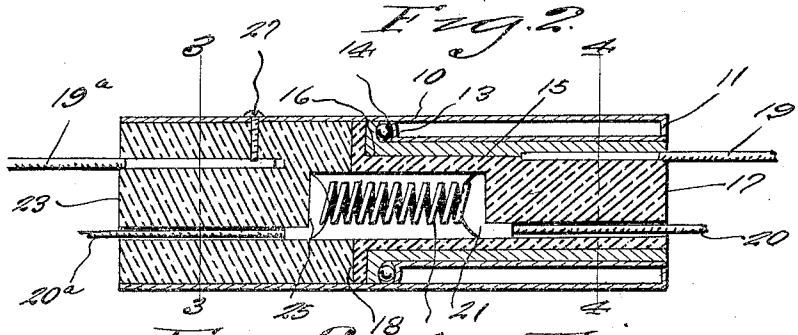


Fig. 3.

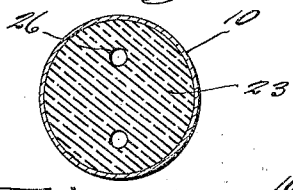


Fig. 4.

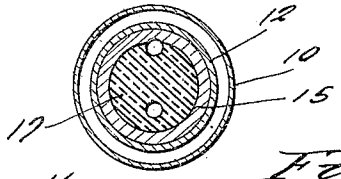


Fig. 5.

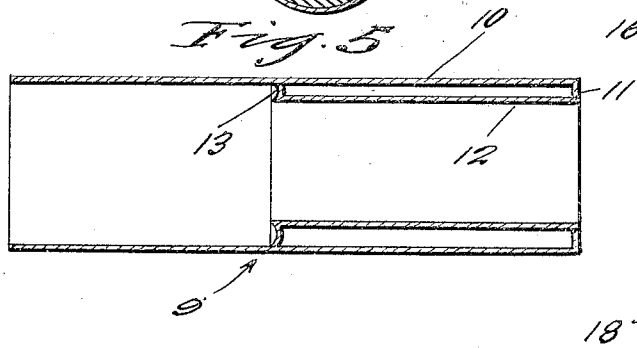


Fig. 7.

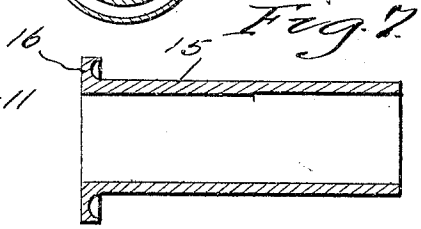


Fig. 8.

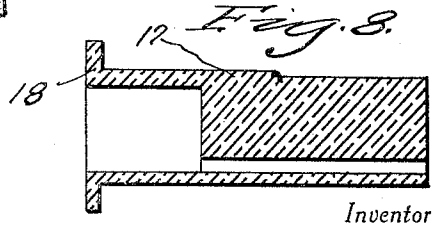
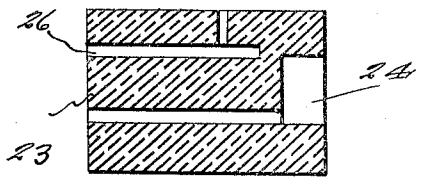


Fig. 6.



Inventor

Wayne Jackson

By Clarence A. O'Brien

Attorney

Patented Jan. 17, 1933 1,894,872

UNITED STATES PATENT OFFICE

WAYNE JACKSON, OF PAOLA, KANSAS

ELECTRICAL WIRE SWIVEL

Application filed December 28, 1929, Serial No. 417,107. Renewed September 13, 1932.

This invention relates to an improved electrical appliance or accessory generally referred to in the trade and in the art as a swivel, and it has more particular reference to a novel coupling device for wire-ends embodying relatively movable companion parts associated in a manner to permit the respective pairs of wire terminals to rotate with respect to each other to prevent entangling of wires.

The improvement is susceptible of general utility in incorporation in electrical cords of various kinds of house appliances, such as table lights, vacuum cleaners, irons, and the like, and the purpose of the invention is to generally improve upon coupling devices of this class by providing one which is characterized by unusual parts so constructed and arranged as to better fulfill the requirements of an appliance of this class.

In carrying the invention into practice, I have evolved and produced a simplified structural organization of details including a practical anti-friction ball bearing and race assembly which permits relative rotation of the companion parts without friction, thus adapting the device for unusually efficient operation.

The particular details and the method of mechanically joining the same to accomplish these improved results will become more readily apparent from the following description and drawing.

In the drawing:

Figure 1 is an elevational view of the improved swivel as constructed in accordance with the present invention.

Figure 2 is an enlarged longitudinal section through the same.

Figures 3 and 4 are cross sections on the line 3—3 and 4—4 respectively of Figure 2.

Figure 5 is a longitudinal sectional view of the cylindrical shell constituting the casing.

Figure 6 is a longitudinal section through the relatively fixed core section.

Figure 7 is a longitudinal section through a sleeve constituting one of the parts of the relatively movable core.

Figure 8 is a similar view of the body portion of said last named core section.

One of the principal parts of the device is the casing, generally designated by the numeral 9 in Figure 5. This comprises an open-ended cylindrical tube 10 of electricity conducting material having one end formed with an annular flange 11 carrying a concentric internal guide and bushing 12. The latter feature terminates at its inner end in a flange 13 forming one of the half-sections of the ball race for accommodating the anti-friction balls 14.

Fitted for rotation in this guide bushing is a sleeve 15 having a similar annular flange 16 at its inner end cooperating with the flange 13 in completing the ball race. This sleeve 15 is of electricity conducting material. Closely associated with the sleeve is an insert 17 (see Figure 8) in the nature of a suitably bored body and this fits snugly in the sleeve 15 and has a flange 18 at its inner end engageable with the flange 16 as shown in the assembly in Figure 2. The parts 15 and 17 are rotatable as a unit and constitutes a relatively movable section of the core section at the right hand end of the device.

In this connection, I invite attention to the numeral 19 which designates one of the wire ends, and 20 a complemental wire end, the latter being formed with a terminal 21 arranged in the socketed portion of the body 17 and integrally connected with a coiled spring 22.

The relatively stationary core section is represented by the numeral 23 and this fits snugly into the left hand end of the shell and abuts the flange 18. It has a socket at 24 to accommodate the substantially plano-convex terminal plate 25 on the wire end 20*a*. In addition, it has a bore as at 26 to accommodate the wire end 19*a*, the latter having its terminal end fastened by the screw 27 to the shell. The course of the current may be readily traced in Figure 2.

A careful consideration of the description in connection with the drawing will enable the reader to obtain a clear understanding of the construction, assembly, operation, and features and advantages of the improved

swivel coupling. Therefore, a more lengthy description is regarded as unnecessary.

Minor changes in shape, size, and rearrangement of elements coming within the field of invention claimed may be resorted to in actual practice if desired.

I claim:

A swivel coupling for electricity conducting wires comprising an open ended tube of electric current conducting material, an inturned annular flange on one end of the tube, a substantially cylindrical bushing rigidly mounted in one end portion of the tube in spaced, concentric relation thereto, the outer end portion of the bushing being mounted in the flange, a sleeve mounted rotatably in the bushing, opposed flanges on the inner ends of the bushing and the sleeve having grooves in their opposed sides constituting a ball race, bearing balls operable in the grooves, a core of insulating material fixed in the sleeve, a flange on the inner end of the core disposed in abutting engagement with the sleeve flange, a conductor wire connected with the sleeve and having electrical connection with the tube, a conductor wire anchored in the core and insulated from the tube, a core of insulating material fixed in the other end portion of the tube, a conductor wire anchored in the last named core and having electrical connection with the tube, a conductor wire anchored in the last named core and insulated from the tube, and means electrically connecting the insulated conductor wires together, the inner end portions of the cores having communicating sockets therein, said means comprising metallic, substantially plano-convex plates mounted in the sockets and connected with the insulated wires, and a coil spring interposed between the plates and having its ends engaged therewith.

In testimony whereof I affix my signature.

WAYNE JACKSON.