J. F. SMART.

CONNECTOR.

APPLICATION FILED NOV. 7, 1916.

1,239,531.

Patented Sept. 11, 1917.

Fig. 1.

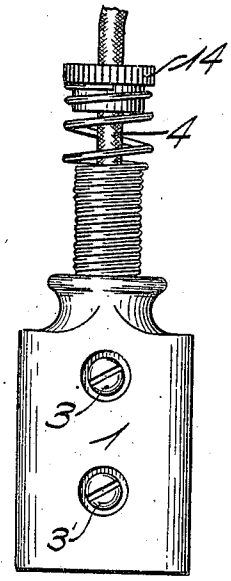


Fig. 3.

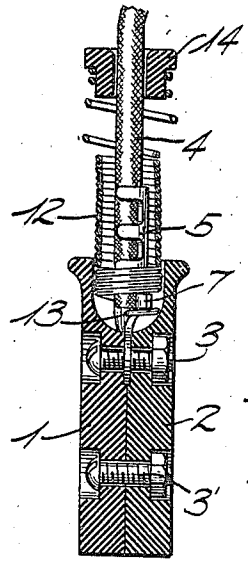


Fig. 2.

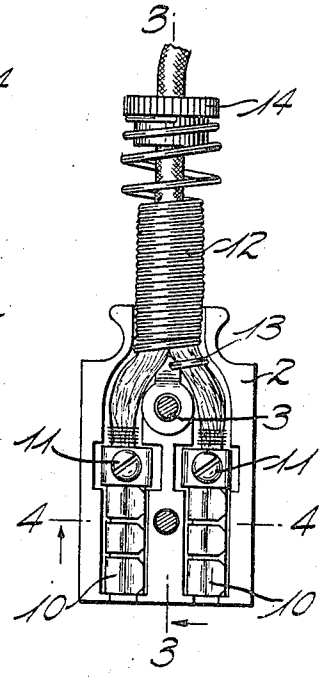


Fig. 5.

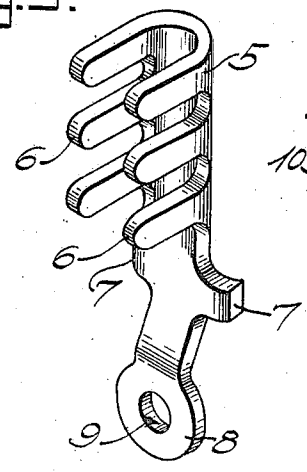


Fig. 4.

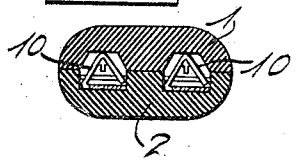
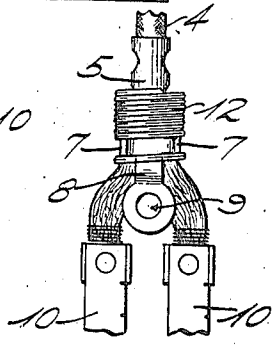


Fig. 6.



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UNITED STATES PATENT OFFICE.

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CONNECTOR.

1,239,531. Specification of Letters Patent. Patented Sept. 11, 1917.

Application filed November 7, 1916. Serial No. 129,918.

To all whom it may concern:

Be it known that I, JOSEPH F. SMART, a citizen of the United States, residing at New Britain, county of Hartford, State of Connecticut, have invented a certain new and useful Improvement in Connectors, of which the following is a full, clear, and exact description.

My invention relates to improvements in connectors and has for its object to provide a flexible connector composed of a plurality of cables having contacts secured to their ends and incased in a suitable plug casing, and means for connecting the flexible conductor to the plug casing in such a manner that a pull upon the flexible conductor will not produce a strain upon the terminals. It further has for its object to provide such a structure with a spiral protecting device adjacent to the plug and so connected that a pull upon the spiral protecting device will be transmitted to the plug casing without causing damage or injury to the flexible conductor.

Referring more particularly to the drawings,

Figure 1 is a side elevation of a portion of a connector embodying my invention, showing a flexible conductor having on its end a terminal plug casing;

Fig. 2 is a similar view with one of the two separable halves of the plug casing removed;

Fig. 3 is a transverse section on the line 3—3, Fig. 2;

Fig. 4 is a section on the line 4—4, Fig. 2;

Fig. 5 is an enlarged perspective detail of one of the elements before it is clamped upon the cord; and

Fig. 6 is a detail view showing parts of my device removed from the plug casing, the spring portion being partly broken away.

Referring more particularly to the drawings, 1—2 are the halves of a divided plug casing secured together by bolts 3—3′. 4 is a flexible conductor composed of two cables suitably insulated from one another and held together in the ordinary fashion. 5 is a metallic clamp having clamping fingers 6 bent around the conductor 4 so as to secure the clamp firmly thereto. This clamp is located at the end of the sheath surrounding both of the cables and is provided with projections 7 and a tang 8 having a perforation 9 so as to constitute a loop, through which passes the upper bolt 3. This results in securing the sheathed end of the cord 4 to the plug casing so that any pull upon the cord is transmitted to the plug casing through the bolt 3. The two cables of the cord are connected to terminals 10 by binding screws 11 in the ordinary manner. Because the strain produced by a pull upon the cord 4 is taken up by the clamp 5 engaging the bolt 3, it can produce no harmful effect upon the terminals 10—10 nor their binding posts 11—11.

12 is a spiral spring-guard for protecting the flexible conductor and is similar to spring-guards heretofore used except for its manner of connection with the plug casing. In order to connect my spring-guard with the plug casing, I utilize the lateral projections 7—7 of the clamp 5, causing them to project between two helices of the spring, as shown in Figs. 3 and 6. This results in producing a positive connection between the lower end of the spring and the plug casing, through clamp 5, tang 8 and bolt 3, so that a pull upon the spring is transmitted to the plug casing through the aforementioned parts. In this way the clamp 5 serves as a means for connecting both the flexible conductor 4 and the spring protector 12 to the plug casing in a positive and definite manner and so as to relieve from strain all parts which otherwise would be liable to be injured.

The end 13 of the last helix is bent down so as to partly surround one cable and prevent the spring from being turned so as to be withdrawn from the projections 7. 14 is the ordinary bushing used with protecting springs.

As will be evident to those skilled in the art, my invention permits of various modifications without departing from the spirit thereof or the scope of the appended claims.

What I claim is:

1. In a connector, a divided plug casing, terminals carried thereby, a flexible conductor having a plurality of cables connected to said terminals, and a clamp secured to said flexible conductor adjacent to the cable ends connected to said terminals, said clamp having a loop in combination with a securing bolt passing through said loop and said casing.

2. In a connector, a divided plug casing, terminals carried thereby, a flexible con-

ductor having a plurality of cables connected to said terminals, and a clamp secured to said flexible conductor adjacent to said terminals, said clamp having a loop and a lateral projection above said loop, in combination with a bolt passing through said loop and said casing, and a protecting spring surrounding the end of said flexible conductor and between helices of which said projection extends.

3. In a connector, the combination of a divided plug casing, terminals carried thereby, a flexible conductor having a plurality of cables connected to said terminals, and a clamp secured to said flexible conductor adjacent to said terminals, said clamp having a loop and two lateral projections above said loop, in combination with a bolt passing through said loop and a protecting spring surrounding the end of said flexible conductor and between helices of which said projections extend.

4. In a connector, the combination of a divided plug casing, terminals carried thereby, a flexible conductor having a plurality of cables connected to said terminals, a clamp secured to said flexible conductor adjacent to said terminals, said clamp having a loop and a lateral projection above said loop, said plug in combination with a bolt passing through said loop and a protecting spring surrounding the end of said flexible conductor and between helices of which said projection extends, the end of the last helix of said spring being bent about one of the cables of said conductor.

JOSEPH F. SMART.