J. SCHADE, JR.

FASTENING DEVICE FOR ELECTRICAL CONDUCTORS.

APPLICATION FILED MAY 22, 1912.

1,163,371.

Patented Dec. 7, 1915.

Fig. 1

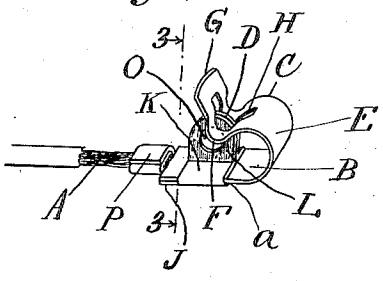
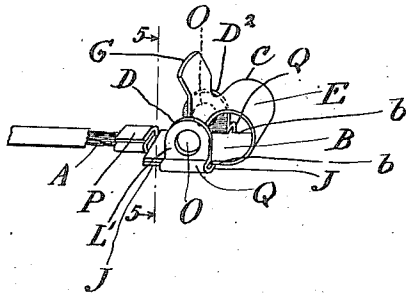


Fig. 4



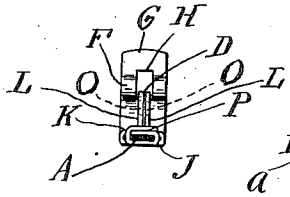


Fig. 2

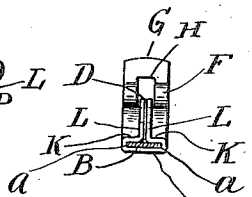


Fig. 3

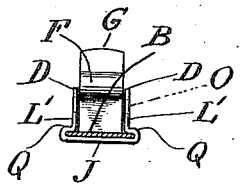


Fig. 5

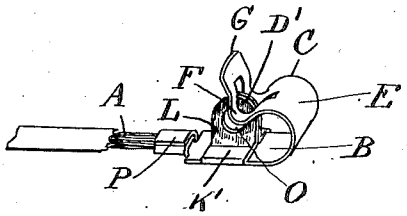


Fig. 6

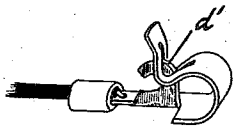


Fig. 8

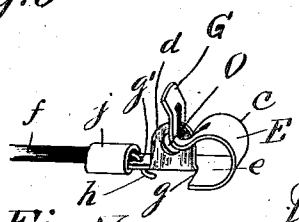


Fig. 7

WITNESSES

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UNITED STATES PATENT OFFICE.

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FASTENING DEVICE FOR ELECTRICAL CONDUCTORS.

1,163,371. Specification of Letters Patent. Patented Dec. 7, 1915.

Application filed May 22, 1912. Serial No. 698,982.

To all whom it may concern:

Be it known that I, JOHN SCHADE, Jr., a citizen of the United States, and a resident of the borough of Brooklyn, county of Kings, city and State of New York, have invented certain new and useful Improvements in Fastening Devices for Electrical Conductors, of which the following is a specification accompanied by drawings.

This invention relates to fastening devices for electrical conductors, but more particularly to fastening devices formed of bent spring metal, and adapted to hold and firmly grip a conductor or binding post.

The objects of this invention are to improve upon such devices, and provide an efficient device for use as a battery connector, so constructed that the battery terminal or binding post will be firmly held by the fastening device and will not jar loose when subjected to vibration.

Another object is to provide improved means for securing a connector to the fastening device.

This application is for substantially the same generic subject matter as that of United States Patent No. 1,049,609, granted December 10, 1912, for spring fastening device, the application for which was pending in the United States Patent Office at the time I filed my present application in the United States and the present application contains some additional features.

To all of these ends, the invention consists of the devices shown in their preferred embodiments in the accompanying drawings, in which—

Figure 1 is a perspective view of a device embodying the invention; Fig. 2 is an end elevation; Fig. 3 is a transverse sectional view on line 3—3 of Fig. 1, looking in the direction of the arrows; Fig. 4 is a perspective view of a modification; Fig. 5 is a transverse sectional view on the line 5—5 of Fig. 4 looking in the direction of the arrows; Fig. 6 is a perspective view of a modification, in which the device is made in one piece; Fig. 7 is a perspective view of another modification; and Fig. 8 is a perspective view of a further modification.

Referring to the form of the invention shown in Figs. 1, 2 and 3 of the drawings, a spring fastening device is shown provided with means for firmly gripping a conductor or battery terminal and also provided with means for attachment to a connecting wire A, so that the device may be used as a battery connector. In the form of the invention illustrated in these figures, the device is made in two parts, and while this and the forms shown in Figs. 7 and 8 are the preferred form of the invention, I am not to be understood as limiting the invention to such constructions, because the device may be made in one piece, as will be described in connection with Fig. 6.

The device comprises essentially a piece of spring metal preferably having greater width than thickness and bent into U-shaped form, one leg forming a body member B and the other leg forming an opposing spring member C normally separated from the body member. A resistant member D projects upward from the body member B and is provided with means for receiving a conductor or terminal.

The spring member C, as shown, projects upwardly from the body member, at the forward end E of the body member, then downwardly toward the resistant member D and in proximity thereto, then upwardly away from the body member, thereby forming a wire engaging portion F and a finger piece G. The retaining portion F of the spring member C is provided with a central slot H adapted to receive the resistant member D when the spring member is pressed toward the body member B.

In the preferred forms of the invention, the resistant member is formed of any suitable material, but preferably comprises a flat piece of sheet metal J having greater width than thickness, located between the body and spring members and so situated that its width extends substantially parallel with the length of said body and spring members. The resistant member may extend underneath the body member B and be provided with arms or wings K bent inwardly at each side over the body portion in holding recesses *a* in the edges of the body portion, and then upwardly at L toward the spring member, to form the resistant member D. These upwardly extending portions L are preferably provided with registering apertures O for the reception of a conductor or terminal.

The piece of metal J out of which the resistant member is formed is extended as shown beyond the body member B of the

fastening device and is provided with means for attachment to a connecting wire A. This attaching means may preferably take the form of foldable portions or flaps P adapted to be closed upon the end of the wire A and grip said wire. The resistant member is thus clamped to the body member B of the device in the recesses or notches *a* and restrained from longitudinal movement, while the connector A is also clamped to the resistant member.

The construction described is strong and efficient, because the bends of the body and spring members and the bends of the metal forming the resistant member extend across the grain of the metal, and do not extend lengthwise of the grain, which would form a weak construction. In the construction described, the resistant member has sufficient strength to withstand hard usage and constant attachment to different connectors, and the spring member and resistant member cooperate in such manner as to prevent loosening of the spring contact under vibration.

In the form of the invention shown in Figs. 4 and 5, the construction is substantially similar to that described, except that the slot H in the spring member C is omitted, and the portions L′ of the resistant member are crimped at Q over the edges of the body member B of the device and then turned upwardly and extend outside of the spring member C. The two parts forming the resistant member D^2 are therefore separated, but have the same function as the resistant member D shown in Fig. 1. In this form the metal is cut away at *b* to narrow the spring member.

In the form of the invention shown in Fig. 6, the device is formed in one piece and in this instance the resistant member D′ forms a part of the body member B and the wings or foldable portions K′ also form a part of the body member.

In Fig. 7 a modification is shown in which the resistant member *d* forms a part of the body member *e* and separate means are preferably provided for securing a connector *f* to the device. As shown, the body member is cut at *g* and the resistant member *d* is bent upwardly toward the spring member C. The body member is also preferably provided with the holding aperture *g′* through which the strands or wire portions *h* of the connecting wire are passed, and a split sleeve *j* binds the wire tightly to the device.

In Fig. 8, a modification is shown substantially like Fig. 7, except that the resistant member *d′* is in the form of a hook, and the conductor is adapted to be retained in the aperture of the hook.

I claim and desire to obtain by Letters Patent the following:

1. A fastening device for electrical conductors comprising a body member, a spring member and a resistant member, said resistant member comprising a flat piece of metal having greater width than thickness, said resistant member located between said body and spring members and so situated that its width extends substantially parallel with the length of said body and spring members, said resistant member having an aperture into which a conductor may be inserted and firmly clamped by the action of the spring member, said spring member being slotted to receive said resistant member.

2. A fastening device for electrical conductors comprising a body member, a spring member and a resistant member, said resistant member comprising a flat piece of metal having greater width than thickness, said resistant member located between said body and spring members and so situated that its width extends substantially parallel with the length of said body and spring members, said resistant member having an aperture into which a conductor may be inserted and firmly clamped by the action of the spring member, said spring member being slotted to receive said resistant member, and means for attaching a connecting wire to the device.

3. A fastening device for electrical conductors comprising a piece of resilient metal bent into U-shaped form, one leg of the U-shaped piece forming a body member, and the other leg forming an opposing spring member normally separated from the body member, said spring member being bent to form a V-shaped retaining portion, a resistant member comprising a flat piece of metal having greater width than thickness, located between the said body and spring members and so situated that its width extends substantially parallel with the length of said body and spring members, said resistant member having an aperture into which a conductor may be inserted and firmly clamped by the action of the spring member, said spring member being slotted to receive said resistant member.

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

JOHN SCHADE, JR.

Witnesses:
FRANK BRANSCH,
ERNEST B. FAHNESTOCK.