T. G. GRIER & H. M. FISK.

SPRING CONNECTOR.

APPLICATION FILED APR. 8, 1912.

1,045,280.

Patented Nov. 26, 1912.

Fig. 1.

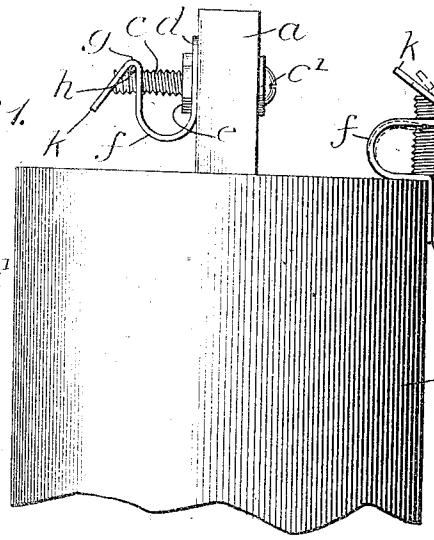


Fig. 3.

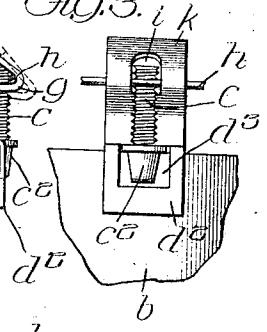


Fig. 5.

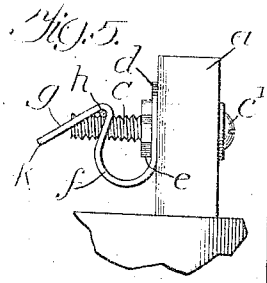


Fig. 6.

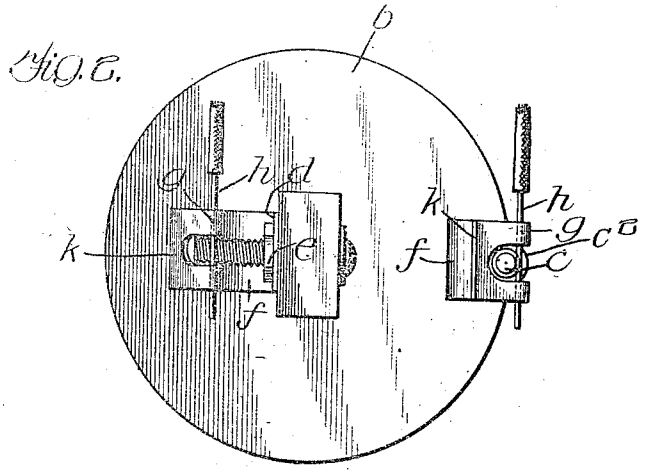
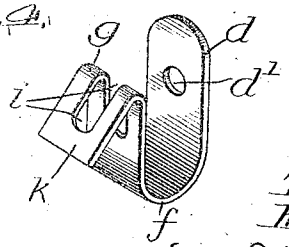


Fig. 4.



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UNITED STATES PATENT OFFICE.

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SPRING-CONNECTOR.

1,045,280. Specification of Letters Patent. Patented Nov. 26, 1912.

Application filed April 8, 1912. Serial No. 689,299.

To all whom it may concern:

Be it known that we, THOMAS G. GRIER and HENRY M. FISK, citizens of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Spring-Connectors, of which the following is a specification.

Our invention relates to spring connectors, or terminal connectors for electric batteries and other electrical devices, and the object of the invention is to provide a simple and efficient device for maintaining electric contact between the terminal and the conductor with which it is to be connected. We obtain this object by the mechanism illustrated in the accompanying drawings, in which;

Figure 1 is a front elevation of the upper portion of a so called "dry" battery equipped with two of our spring connectors. Fig. 2 is a plan view of the parts shown in Fig. 1. Fig. 3 is a side elevation of the parts shown at the right side of Fig. 1. Fig. 4 is a perspective view of the resilient strip which forms part of the connector, and Fig. 5 is an elevation of a connector in which the resilient strip is slightly modified in form.

Similar letters of reference denote like parts in the different views.

In general it may be said that our connector consists of two coöperating pieces, a post and a resilient strip adapted to coact therewith. While these parts may be somewhat modified to suit conditions, a typical condition is exemplified by the use in connection with a dry battery, and therefore for convenience in description, a dry battery has been selected to illustrate the invention.

The forms adapted for the center terminal of the dry battery are slightly different from the forms adapted for the side of the battery, and the former will be described first.

The central electrode *a* of the battery *b* is shown in the present instance to be rectangular in cross section, and forms a suitable base or support for the parts of the connector. The post *c* of our connector is of the usual form, and consists of an ordinary threaded screw which penetrates the electrode. The resilient strip which forms the remaining essential element of our device has a flat foot *d* adapted to rest upon the side of said electrode. This foot has a suitable aperture d^1 for accommodating the post *c*, and the post strip and electrode are rigidly secured together by a nut *e* or other suitable fastening means. At one end of the foot the strip has a spring bend *f* and, farther on, a hook bend *g* adapted to engage a wire *h* to hold the same forcibly against the side of post *c*. The strip has an aperture *i* at said hook bend for permitting the post to pass through the strip at this point. Beyond the hook bend is a tail or extension *k* which affords means whereby the device may be manipulated. So long as the parts remain assembled, the post projects through one or both layers of the strip.

The form shown in Fig. 5 is in all respects the same as the form shown at the middle of Fig. 1 except that the spring bend has slightly more curvature. The form shown in Fig. 3 and at the right side of Figs. 1 and 2 is adapted to be located at the side of the cell. In this form the post *c* instead of being provided with an ordinary screw head c^1 is provided with a lip c^2 for securing the post to the side of the battery can. The strip, similarly, is provided with a depending lip or flange, d^2 for engaging the side of the can, this lip having an aperture b^3 for accommodating the lip c^2.

In operation, after the post and strip are assembled in the manner shown in the drawings, the wire or other conductor *h* is inserted by the operator who presses his thumb or finger against the extension *k* and forces the hook bend *g* backward away from the post as indicated by the dotted lines at the right of Fig. 1. This leaves room for the wire to be passed between the hook bend and the side of the post after which the operator releases the strip, whereupon the resilience thereof holds the wire forcibly in contact with the side of the post. As batteries are ordinarily constructed, the posts are screw threaded, and the pressure of the spring strip therefore wedges the wire forcibly between two adjacent threads upon the screw which results in obtaining excellent contact and furthermore eliminates any tendency for the wire to slide longitudinally of the post.

From the foregoing it will be apparent that the construction of our device is extremely simple and that the device is easily

manipulated and yet holds the wire or other conductor very firmly and securely in place. It is also obvious that as far as dry batteries are concerned, no departure from standard construction is required, for the post which forms one of the elements of our combination remains the same as is already in use.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is:

1. A spring connector comprising a rectilinear post and a resilient strip, said strip having a spring bend and a second bend beyond the spring bend, the second bend forming a hook to thereby prevent excessive movement of a conductor lengthwise of the post.

2. A spring connector comprising a rectilinear post and a resilient strip, said strip having a spring bend and a second bend beyond said spring bend, the strip being apertured adjacent to the hook bend to permit the post to pass through the strip, and the hook bend curving in the opposite direction from the spring bend and having a curvature exceeding ninety degrees to thereby prevent excessive sliding movement of a conductor alongside of said post.

3. A spring connector comprising a threaded screw and a resilient strip, said strip having a spring bend and a second bend beyond the spring bend, the strip being apertured adjacent to the hook bend to permit the screw to pass through the strip, and a hook bend curving in the opposite direction from the spring bend and having a curvature exceeding ninety degrees whereby a hook is formed adapted to press a conductor into the threads on the screw and coöperate therewith to prevent movement of a conductor lengthwise of the screw.

4. A spring connector comprising a threaded screw adapted to be secured to an external object and a resilient strip having a foot adapted to be secured to an external object, said foot being apertured to permit the screw to pass through it, a spring bend in said strip beyond said foot, a hook bend in said strip beyond said spring bend, said bends curving in opposite directions, and the hook bend having a curvature exceeding ninety degrees, said strip being apertured at a point above the foot for receiving said screw at a point inside the hook bend, whereby a conductor may pass transversely to the screw between the side of the screw and the inside of the hook bend.

In witness whereof we have hereunto subscribed our names in the presence of two witnesses.

THOMAS G. GRIER.
HENRY M. FISK.

Witnesses:
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