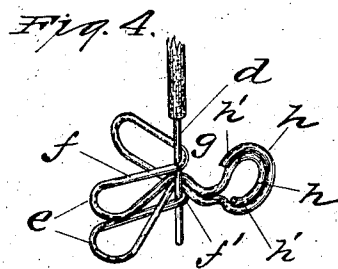
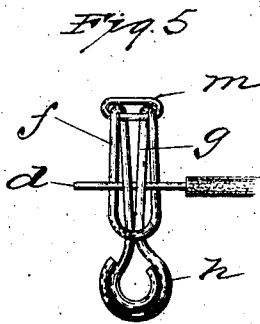
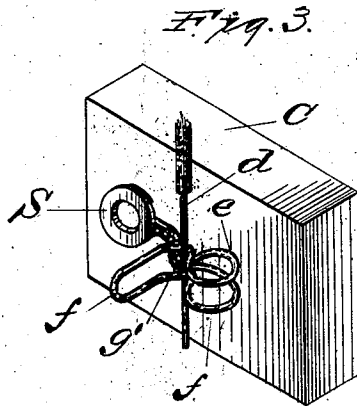
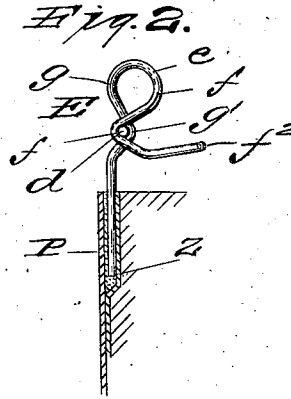
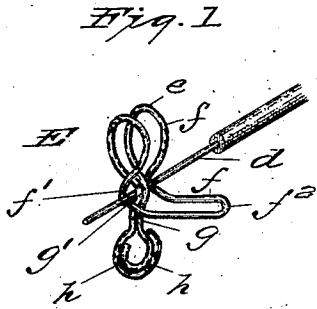


C. E. AVERY.
 TERMINAL CLIP FOR ELECTRIC BATTERIES.
 APPLICATION FILED JULY 17, 1911.

1,011,710.

Patented Dec. 12, 1911.



Witnesses:
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UNITED STATES PATENT OFFICE.

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TERMINAL CLIP FOR ELECTRIC BATTERIES.

1,011,710.

Specification of Letters Patent.

Patented Dec. 12, 1911.

Application filed July 17, 1911. Serial No. 638,959.

To all whom it may concern:

Be it known that I, CHARLES E. AVERY, a citizen of the United States of America, and residing at Jersey City, in the county of Hudson and State of New Jersey, have invented a certain new and useful Improved Terminal Clip for Electric Batteries, of which the following is a specification.

My invention relates more particularly to that class of spring clamps or terminal clips which are made of spring wire bent up to the desired shape to be secured to the electrodes of batteries, particularly dry batteries, to receive and grip the bared ends of the conductor wires, etc. An example of a wire clamp or terminal clip of this character is illustrated and described in the Young Patent No. 311,630, dated Feb. 3, 1885.

The main object of my invention is to so construct the device that it may be attached with strength and security to either electrode of the battery, and used with great convenience for the connection or disconnection of the conductors.

In the accompanying drawing, Figure 1 is a perspective view of one form of my improved terminal clip; Fig. 2 is a side view showing the manner of securing the clip to the zinc electrode of a dry battery, which is partially indicated in section; Fig. 3 is a perspective view of one of my clips shown secured to the carbon electrode of a dry battery; Fig. 4 is another perspective view of the same clip, detached; Fig. 5 is an elevation of a modification.

In the particular form of clip illustrated in the drawings, the clamping portion is in essential respects, substantially the same as shown in the above mentioned Young patent, that is to say, the wire *E* is first doubled, and the doubled portion is then turned or bent so as to form a spring bow *e*, the downwardly extending portions *f, f* of which are separated sufficiently to enable them to receive the portions *g, g* between them; in the portions *f, f*, is formed a sharp bend *f¹*, and in the portions *g, g* is formed a reverse bend *g¹*. The elasticity of the spring bow *e* causes the portions *f, f* to tend to spring outward, but when the said portions *f, f* are pressed inwardly, the bend *f¹* is caused to pass the

bend *g¹* and together they form an eye or socket for the reception of the line-wire *d*, which is finally clamped by the tensioning of the portions *f, f* to spring outwardly. Each of the portions or legs *g, g* at the end of the wire is continued down to form an eye *h, h*, one concentrically within the other, thus forming a double-eye, as shown in Figs. 1, 4 and 5. This double eye provides a strong means of attachment of the clip to either electrode. In the case of the zinc, it may be riveted or soldered, while in the case of the carbon electrode, *C*, Fig. 3, the double eye provides a strong securing means by the aid of the usual screw *S*, washer and nut. In Fig. 2, I have indicated the terminal clip as soldered to the zinc case *Z*, and if desired this zinc case may be suitably indented to receive the securing end of the clip on the outside of the case, as indicated in the figure. *P* is the usual paper inclosure. In the case of the terminal clip to be thus attached to the zinc, I prefer to give the looped bent free end of the portions *f, f*, an upward bend *f²*, so that it will not contact with the top of the battery when pressed down for the insertion or removal of the line wire.

In each terminal clip, but more particularly that intended to be secured to the carbon electrode, I form a backwardly projecting sharp point *h¹*, Fig. 4 on the end of the wire forming one of the eyes or on each wire end, to be embedded into the carbon and prevent the clip from swinging around on the securing screw *S*. If desired, a strengthening band *m* may be secured around the bends forming the loop *e*, as shown in Fig. 5.

I claim as my invention:—

1. A battery clip formed of bent spring wire and having at its securing end concentric rings forming an eye.
2. A battery terminal clip formed of bent spring wire, the ends of the wire being coiled into concentric rings to form a securing eye.

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

CHARLES E. AVERY.

Witnesses:

M. G. KEIR,
L. H. GROTE.