No. 693,866. Patented Feb. 25, 1902.

E. M. HULSE & A. F. SCHRAMM.

CLIP FOR SECURING WIRE TOGETHER.

(Application filed Oct. 8, 1901.)

(No Model.)

Fig. 2

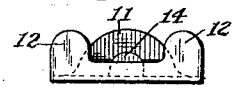
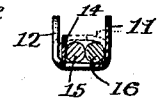


Fig. 4



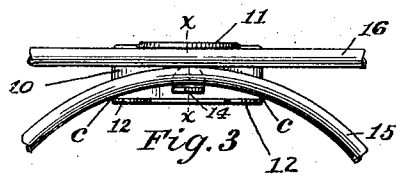


Fig. 3

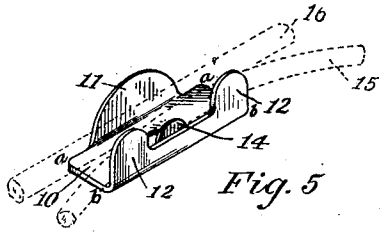


Fig. 5

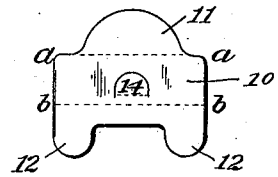


Fig. 1

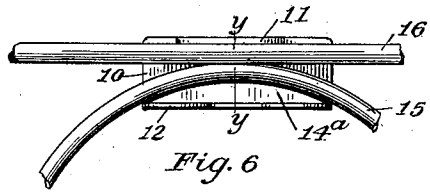


Fig. 6

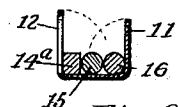


Fig. 8

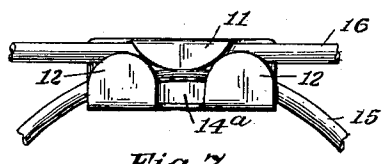


Fig. 7

Witnesses
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their Attorneys.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

EDWIN M. HULSE AND ADOLPH F. SCHRAMM, OF COLUMBUS, OHIO; SAID SCHRAMM ASSIGNOR TO SAID HULSE.

CLIP FOR SECURING WIRES TOGETHER.

SPECIFICATION forming part of Letters Patent No. 693,866, dated February 25, 1902.

Application filed October 8, 1901. Serial No. 77,979. (No model.)

To all whom it may concern:

Be it known that we, EDWIN M. HULSE and ADOLPH F. SCHRAMM, citizens of the United States, residing at Columbus, in the county of Franklin and State of Ohio, have invented certain new and useful Improvements in Clips for Securing Wires Together; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

In some forms of upholstering springwork it frequently becomes expedient to connect the coil of a wire spring or a wire ring with a straight wire or straight portion of a bent wire. To so connect a curved wire with a straight one as to avoid looseness and creaking or rattling is difficult and has given rise to various devices. One such device consisted of a clip having two tongued edges, one curved and the other straight. Another device for joining two wires consisted of a tube-like piece having its inner side furnished with a frictional material to engage the wires. Both these devices, it appears, are of costly construction, because perhaps in the first case of expensive tools and machinery employed in their manufacture, and in the second because of the frictional material added to the clip.

Our invention aims to provide a form of clip of simple and economical construction and perfectly efficient in securing such wires together.

Broadly stated, the invention consists of a clip having a base or bottom portion provided with edges adapted to be bent down upon the wires to embrace them, with a shoulder intermediate of the opposite edges of the clip to engage or afford a seat for the concaved side of the curved wire.

In the accompanying drawings, Figure 1 shows one form of the clip-blank as it appears cut and ready for bending. Fig. 2 illustrates an edge elevation after the blank, as shown in Fig. 1, has been bent ready for application to the wires to be secured together. Fig. 3 is a plan view showing the clip on the wires with the fastening-tongues not bent down thereon. Fig. 4 is a transverse sectional view taken on line *x x*, Fig. 3, the bent-down position of the fastening-tongues being indicated by broken lines. Fig. 5 is a perspective view of the form of clip as shown in Figs. 2 to 4, inclusive, the wires in this view being indicated by broken lines. Fig. 6 is a plan view of a modified form of the clip, the fastening-tongues thereof being not bent down on the wires. Fig. 7 is a similar view with the tongues bent down. Fig. 8 is a sectional view on the line *y y*, Fig. 6.

We will first describe the form of clip shown in Figs. 1 to 5, inclusive. In these views the clip is shown to be formed of a single piece of sheet metal cut to form a rectangular base or bottom portion 10, with a tongue 11 on one edge, two tongues 12 on the opposite edge, and a small tongue or shoulder 14 in the base or bottom portion 10. When the blank as shown in Fig. 1 is bent upward on the lines *a a* and *b b* and the tongue 14 struck up in the same direction, the clip is formed as depicted in Fig. 5—that is, with straight edges along *a a* and *b b* and an inner shoulder formed by the tongue 14. To apply the clip as shown in these views for the purpose of securing the wires together, the clip is placed on the curved wire 15 and the straight wire 16, where they are tangent to each other, so that they lie against the base or bottom 10 between the tongue 11 and the tongue or shoulder 14. The tongues 11 and 12 12 are then bent down on the wires with a proper tool, as indicated in Fig. 4. Because the curved wire is frictionally engaged at the corners *c c* (see particularly Fig. 3) and by the inner tongue or shoulder 14 the curved wire is securely held from slipping or turning.

In the form of our clip as depicted in Figs. 6 to 8, inclusive, the body of the clip is shown to be formed practically as represented in Fig. 5, except that the inner tongue 14 is omitted and in its stead there is shown and employed a segmental slug 14^a, which affords an inner shoulder to engage the concaved side of the wire. When this segmental slug 14^a is placed in the corresponding segmental pocket at the concave side of the curved wire and the tongues 12 of the clip bent down thereon, as indicated in Fig. 7, it is securely locked in place, because it is then held from movement in any direction by the body of the clip, the curved wire, and the said tongues.

We prefer the form of clip shown in Fig. 5 because it is shaped out of a single piece of sheet metal, and therefore does not involve the handling of more than one piece.

With our form of clip it will be observed that the metal is not strained unduly to obtain a curved edge to fit the concaved side of the curved wire. Hence when the tongues 11 and 12 are bent down there is no likelihood whatever of their being broken off. It is also obvious that the clip-blank can be cut and bent with very simple dies and bending-tools.

The number and form of the tongues 11 and 12 can be varied, and the shape of the tongue 14 and of the slug 14^a can also be varied.

What we claim, and desire to secure by Letters Patent, is—

1. In a sheet-metal clip for securing wires together, a base or bottom portion, edges thereon adapted to be bent down upon contiguous wires placed on said base or bottom, and a tongue or shoulder struck up out of the base or bottom of said clip intermediate of said edges.

2. A clip comprising a base or bottom 10, tongues 11 and 12 standing on the opposite edges of said base or bottom, and a tongue or shoulder 14 struck upward from said base or bottom between said edges.

3. A clip for securing a curved to a straight wire comprising a base or bottom 10, tongues 11 and 12, standing on opposite edges of said base or bottom, and a shoulder to engage or form a seat for the concave side of the curved wire intermediate of the tongues 11 and 12.

In testimony whereof we affix our signatures in presence of the same two witnesses.

EDWIN M. HULSE.
ADOLPH F. SCHRAMM.

Witnesses:
SAMUEL W. LATHAM,
GEORGE M. FINCKEL.