

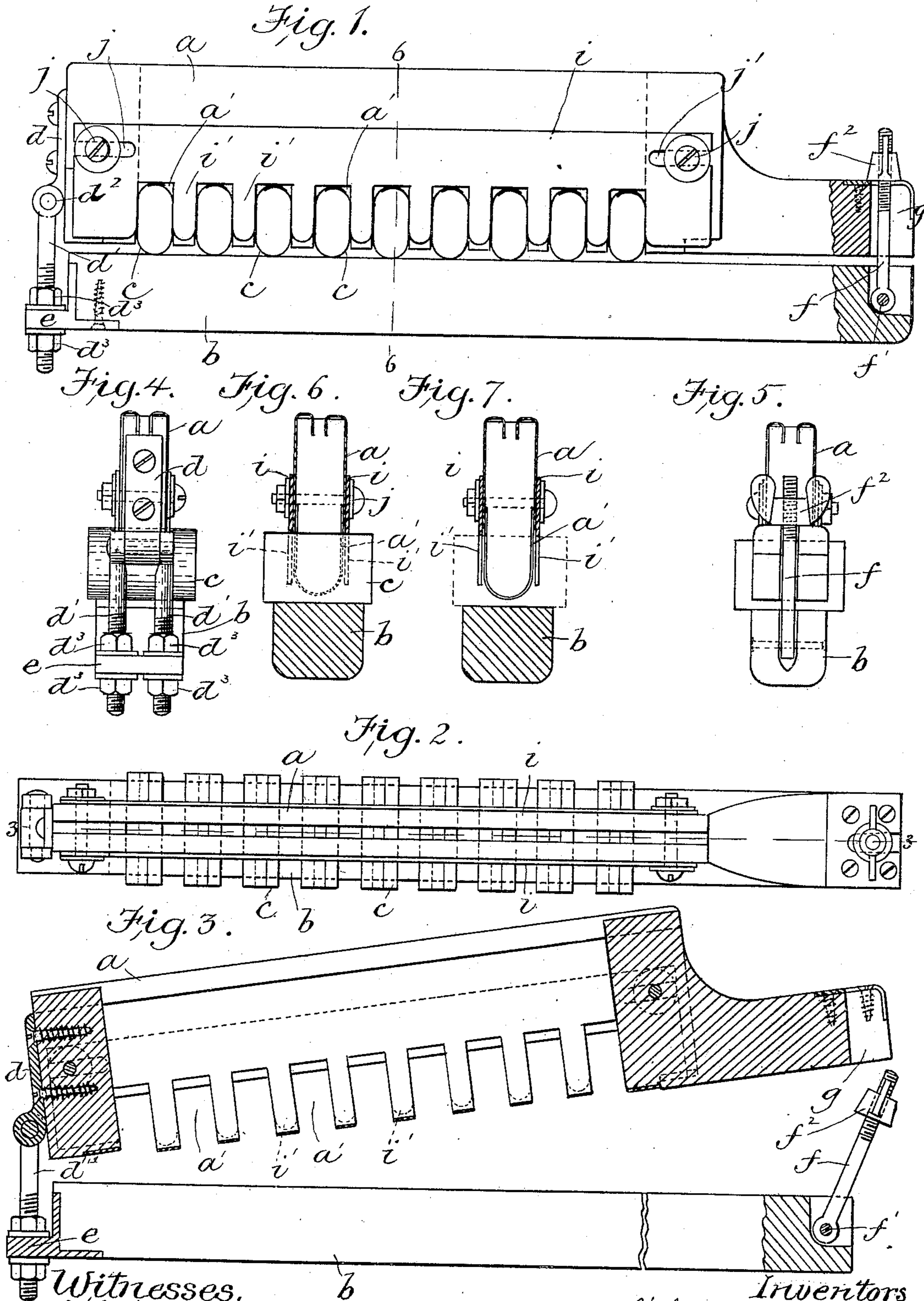
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FERRULE HOLDER OR CLAMP.

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# UNITED STATES PATENT OFFICE.

SAMUEL RICHARDS AND SAMUEL RICHARDS, JR., OF EVERETT,  
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## FERRULE HOLDER OR CLAMP.

No. 832,418.

Specification of Letters Patent.

Patented Oct. 2, 1906.

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*To all whom it may concern:*

Be it known that we, SAMUEL RICHARDS and SAMUEL RICHARDS, Jr., of Everett, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Ferrule Holders or Clamps, of which the following is a specification.

This invention relates to means for holding strips of sheet metal, bent to form rings or ferrules, while the ends of said strips are being secured by solder to make the ring or ferrule shape permanent.

The invention has for its object to provide a clamp adapted to receive and hold a number of unsoldered ferrules and to permit the soldering operation to be conveniently performed.

The invention also has for its object to enable ferrules of various sizes to be soldered by the aid of a single appliance, the latter being adjustable.

The invention consists in the improvements which we will now proceed to describe and claim.

Of the accompanying drawings, forming a part of this specification, Figure 1 represents a side elevation of a ferrule clamp or holder embodying our invention. Fig. 2 represents a top plan view of the same. Fig. 3 represents a section on line 3 3 of Fig. 2, showing the members of the clamp separated. Figs. 4 and 5 represent opposite end views. Fig. 6 represents a section on line 6 6 of Fig. 1. Fig. 7 represents a view similar to Fig. 6, the ferrule being shown in dotted lines.

The same reference characters indicate the same parts in all the figures.

In the drawings, *a* and *b* represent the general parts or opposed members of our improved ferrule-clamp. The member *a* is provided in its inner face with a plurality of recesses *a'*, adapted to receive a corresponding plurality of unsoldered ferrules *c*, the latter being formed by bending strips of sheet metal into rings, which may be flattened, as shown in the drawings, or circular, the ferrules bearing against the sides and bottoms of the recesses *a'* and projecting from the mouths of the recesses. The other member *b* has a flat inner face, adapted to bear simultaneously upon the projecting portions of all the ferrules inserted in the recesses *a'* and hold the ferrules in place in the recesses.

The members *a* and *b* are connected by a

hinge, which comprises a plate *d*, secured to one end of the member *a*, and screw-threaded bolts *d'* *d'*, connected by a pivot or pin *d<sup>2</sup>* with the plate *d*. The bolts *d'* pass through an ear *e*, affixed to the member *d*, and are adjustably connected with said ear by means of nuts *d<sup>3</sup>* *d<sup>3</sup>*. This construction provides an adjustable hinge, which adapts the members *a* and *b* to various sizes of ferrules. Means are provided for adjustably connecting the outer or swinging ends of the members *a* *b*, said means, as here shown, comprising a screw-threaded bolt *f*, pivoted at *f'* to the member *b* and adapted to swing into and out of a slot *g* in the member *a*, the said bolt having a thumb-nut *f<sup>2</sup>*, adapted to bear upon the back of the member *a*, as shown in Figs. 1 and 5. Means are thus provided for varying the distance between the inner face of the member *b* and the ferrule-supporting bottoms of the recesses *a'*, so that oval or elliptical ferrules of any desired size may be secured.

In order to provide means for holding ferrules of different widths, we provide means for simultaneously varying the operative width of the recesses *a'*, said means comprising plates or ears *i* *i*, applied to the sides of the member *a*, said plates having tongues *i'*, which are separated by recesses adapted to coincide with the recesses *a'*, the tongues *i'* being preferably of the same width as the portions of the member *a* between the recesses *a'*. The plates *i* are secured to the member *a* by screws *j* *j*, passing through slots *j'* *j'* in the plates *i*, said slots and screws permitting the plates *i* to be adjusted longitudinally, and thus cause the tongues *i'* to vary the operative width of the recesses *a'*, so that said recesses may fit either wide or narrow ferrules.

In using the described clamp or holder the ferrules are inserted in the recesses *a'* while the members are separated, the hinge connecting the members being adjusted to the size of the ferrule. When the member *a* has been charged with ferrules, the member *b* is brought to bear upon the projecting portions of the ferrules and is secured by the bolt *f* and nut *f<sup>2</sup>*. The operator now applies solder with a suitable tool to the joints or seams of the ferrules and then removes the soldered ferrules from the recesses.

We claim—

1. A ferrule-clamp comprising two opposed members, one having in its inner face a

plurality of ferrule-receiving recesses of uniform size, while the other has a flat inner face adapted to bear simultaneously on all the ferrules in said recesses, to hold said ferrules in place.

2. A ferrule-clamp comprising two opposed members, one having a plurality of ferrule-receiving recesses of uniform size in its inner face, and means for simultaneously varying the width of the recesses, while the other has a flat inner face, adapted to bear simultaneously on all the ferrules in said recesses.

3. A ferrule-clamp comprising two opposed members, one having a plurality of recesses of uniform size in its inner face, and the other having a flat inner face adapted to hold ferrules in said recesses, a hinge connecting said members at one end, and adjustably secured to one of the members to permit the adjustment of the members to the size of the ferrules, and means for adjustably connecting the outer ends of the members.

4. A ferrule-clamp comprising two op-

posed members, one having recesses, and the other adapted to hold ferrules in said recesses, a hinge comprising a plate affixed to one member, and threaded bolts pivoted to the plate and adjustably engaged with the other member, and a securing-bolt pivoted to the outer end of one of the members and adapted to enter a slot in the other member, said bolt having a clamping-nut.

5. A ferrule-holder comprising two opposed members, one having ferrule-receiving recesses, and the other adapted to hold ferrules in said recesses, and recessed plates or ears adjustably secured to the recessed member and adapted to vary the operative width of the recesses.

In testimony whereof we have affixed our signatures in presence of two witnesses.

SAMUEL RICHARDS.  
SAMUEL RICHARDS, JR.

Witnesses:

LOUIS BAER,  
C. F. BROWN.