May 4, 1926.

1,583,444

D. E. COE

SPLICING TOOL

Filed Jan. 16, 1925

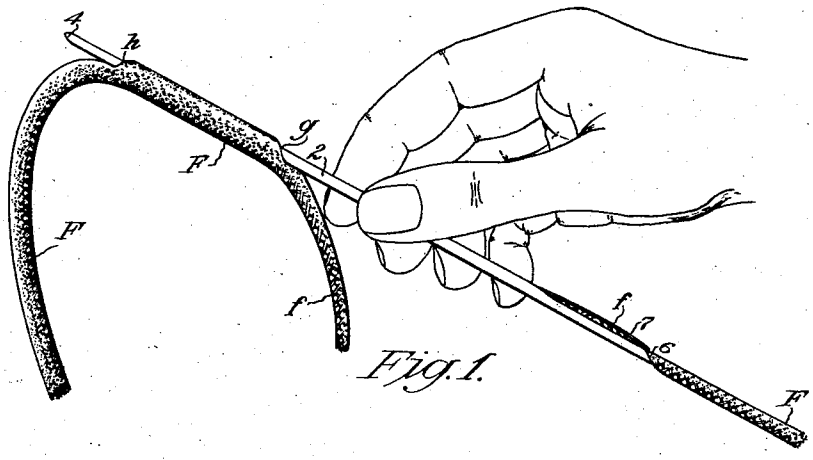


Fig. 1.

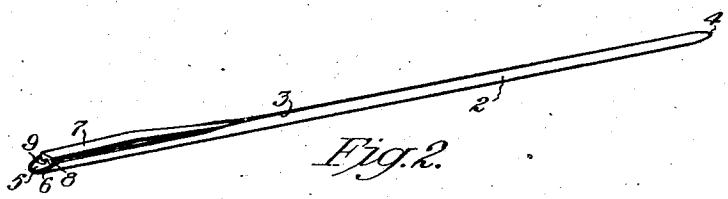


Fig. 2.

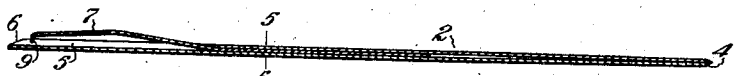


Fig. 3.

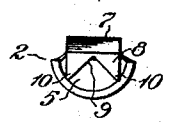


Fig. 4.



Fig. 5.

Fig. 6.

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UNITED STATES PATENT OFFICE.

DANIEL EDGAR COE, OF HOLBROOK, MASSACHUSETTS.

SPLICING TOOL.

Application filed January 16, 1925. Serial No. 2,944.

To all whom it may concern:

Be it known that I, DANIEL EDGAR COE, a citizen of the United States, residing at Holbrook, in the county of Norfolk, State of Massachusetts, have invented certain new and useful Improvements in Splicing Tools, of which the following is a specification.

This invention relates to an improved tool or implement for splicing the ends of transmission bands and belts, or for other purposes.

The principal object of the improvement is to provide a tool or implement in the nature of a needle or bodkin for use in inserting the ends of the band or belt into the tubular strip to form the splice, and further for sewing strands of the material through the splice to finish off the joint.

Another object of the improvement is to provide a tool or implement of the character described having means for automatically gripping the end of the band or belt which is to be threaded through the interior of the tubular fabric.

Another object of the improvement is to provide a tool or implement of the character described which is light in weight, convenient to handle and easy to operate.

Another object of the improvement is to provide a tool or implement of the character described which is simple in construction, economical to manufacture and strong and durable in use.

Further objects of the improvement are set forth in the following specification which describes a preferred embodiment of the invention as illustrated by the accompanying drawings. In the drawings:

Fig. 1 is a general view of the improved tool or implement, showing the manner of its use in splicing together the ends of a fabric band or belt;

Fig. 2 is a perspective view of the improved tool or implement;

Fig. 3 is a sectional view of the same taken in a plane extending longitudinally through its axis;

Fig. 4 is an enlarged end view of the tool or implement showing the construction of its spring-latch;

Fig. 5 is an enlarged cross-sectional view taken on the line 5—5 of Fig. 3 and illustrating the arrangement for holding the spring-latch in the body of the tool; and

Fig. 6 is a view showing another method of using the tool or implement for sewing the strands or threads through the splice in the band or belt.

My improved tool or implement takes the form of an elongated needle or bodkin 2, preferably constructed from thin sheet-metal. A strip of sheet-metal is bent or rolled into tubular form, with the edges of the strip meeting in a seam 3 extending longitudinally along one side thereof, and tapering to a blunt point 4 at one end, see Fig. 2. At the opposite end of the tool or needle 2 the seam 3 is opened and the sides spread apart to form a shallow groove or recess 5 extending approximately one-quarter the whole length of the needle. Preferably, the end of the hollow recessed portion 5 of the tool or needle 2 is beveled or cut off at an angle as indicated at 6 in Fig. 2.

Overlying the recessed portion or groove 5 of the tool or needle 2 is a spring-latch 7 having a portion of its length held within the confines of the main tubular body of the needle. The latch 7 comprises a relatively narrow strip of spring-metal arranged with its end inserted into the tubular part of the needle which is flattened or "mashed" down thereagainst, as illustrated in Figs. 3 and 5, to hold the latch firmly in place. The projecting portion of the latch 7 is arched upwardly at its center and bent down at its end to provide a projection 8, preferably notched at 9 to form points or teeth 10, see Fig. 4. The teeth 10 are received within the hollow trough-like groove or recess 5 of the tool or needle 2 to adapt them to grip the strands of the fabric banding inserted thereunder. The method of using the improved tool or implement in splicing the ends of the fabric strip to form the band or belt is as follows:

In splicing the strip of tubular fabric to form an endless band or belt by the method shown and described in my co-pending application, Serial No. 2943, filed January 16, 1925, the ends of the fabric F are reduced in thickness and preferably tapered toward the tip as shown at *f* in Fig. 1 of the present drawings. One of the tapered ends *f* is inserted into the side of the tubular fabric F at a point back from the tip of the other tapered end *f* and drawn through the tube so as to extend along its interior to form one lap of the splice. After the first end of

the banding has been inserted into the strip as above described the second end is drawn into the first end in the same manner to extend along its interior in the opposite direction. A smooth, even splice is thus formed with the ends lapped one within the other to adapt the tubular outer fabric to grip the lengths inserted therein. Before inserting the ends of the banding one within the other the tapered portions are usually waxed or otherwise treated to stiffen the fabric and amalgamate the strands to prevent them from unraveling or fraying out. In inserting the ends of the strip of banding into the sides of the tubular fabric it is desirable to use a needle or bodkin to draw the lengths through the interior of the tube, and my present tool or implement is most convenient and efficient for this purpose. The tapered end *f* of the fabric is attached to the end of the needle 2 by simply lifting the latch 7 and placing the strip thereunder. When the latch 7 is released it will spring back into place to cause its teeth 10 to grip the fabric F to hold the end of the strip within the groove 5 at the end of the needle. As the tool or needle is pierced through the side of the fabric F at *g*, pushed through the interior thereof and pierced outwardly again at *h*, it is caused to draw the tapered end *f* of the fabric into place within the tube F in the manner more fully explained in my companion application previously referred to. As the needle is drawn through the interior of the tube F the latch 7 acts as a guard to prevent the outer fabric from sticking or clinging to the end *f* being drawn into place on the interior of the tube. After the needle 2 has been withdrawn at the point *h* the latch 7 is released so that the needle can be pulled through and the end *f* of the fabric F left within the spliced portion of the band.

In some cases, after the mill-banding has been spliced in the manner above described, it is desirable to sew one or more strands of the fabric through the splice to prevent the joint from spreading where one end enters the other. My present improved tool or implement is most convenient for this purpose, one or more strands *s* being pulled out from the fabric and sewed through the splice as illustrated in Fig. 6. Usually the needle is pierced through the fabric first and the end or ends *s* then caught under the latch 7 so as to be sewed through the fabric when the needle is drawn clear through.

It will be observed that my improvement provides a particularly simple, convenient and efficient tool or implement for the purpose specified, and one which may also be used for other purposes in various arts. The construction of the needle is especially simple and makes for economy in the cost of its manufacture, besides rendering the device light in weight and therefore more convenient to handle.

Various modifications may be made in the form and structure of my improved tool or implement without departing from the spirit or scope of the invention. Therefore, without limiting myself as to the exact details herein illustrated and described, I claim:

1. A tool or implement consisting in a tubular needle pointed at one end and provided at the opposite end with a recess extended longitudinally thereof, with a resilient spring-latch overlying the recess to adapt it to grip the material held therein.

2. In a device of the type specified, a tubular needle having a point at one end and a groove at its opposite end, and a resilient spring-latch held in the tubular portion of the needle and overlying the groove at its end to adapt it to grip a strip of material held in said groove.

3. An implement of the type specified constructed from sheet-metal rolled into tubular form and pointed at one end, the opposite end of the tube having its sides spread apart to form a longitudinal recess, and a spring-latch inserted into the tubular portion of the needle with its free end extending above the open part thereof to adapt it to grip a strip of material held in the recess.

4. In a device of the type specified, a tubular needle formed from sheet-metal rolled with its edges meeting in a seam extending longitudinally of the needle, the edges of the seam being spread apart at one end of the needle to form a trough-like recess, and a spring-latch comprising a thin strip of metal having one end inserted into the tubular portion of the needle and held by the walls thereof and its projecting end overlying the recessed portion of the needle and formed with teeth for the purpose specified.

In testimony whereof I affix my signature.

DANIEL EDGAR COE.