

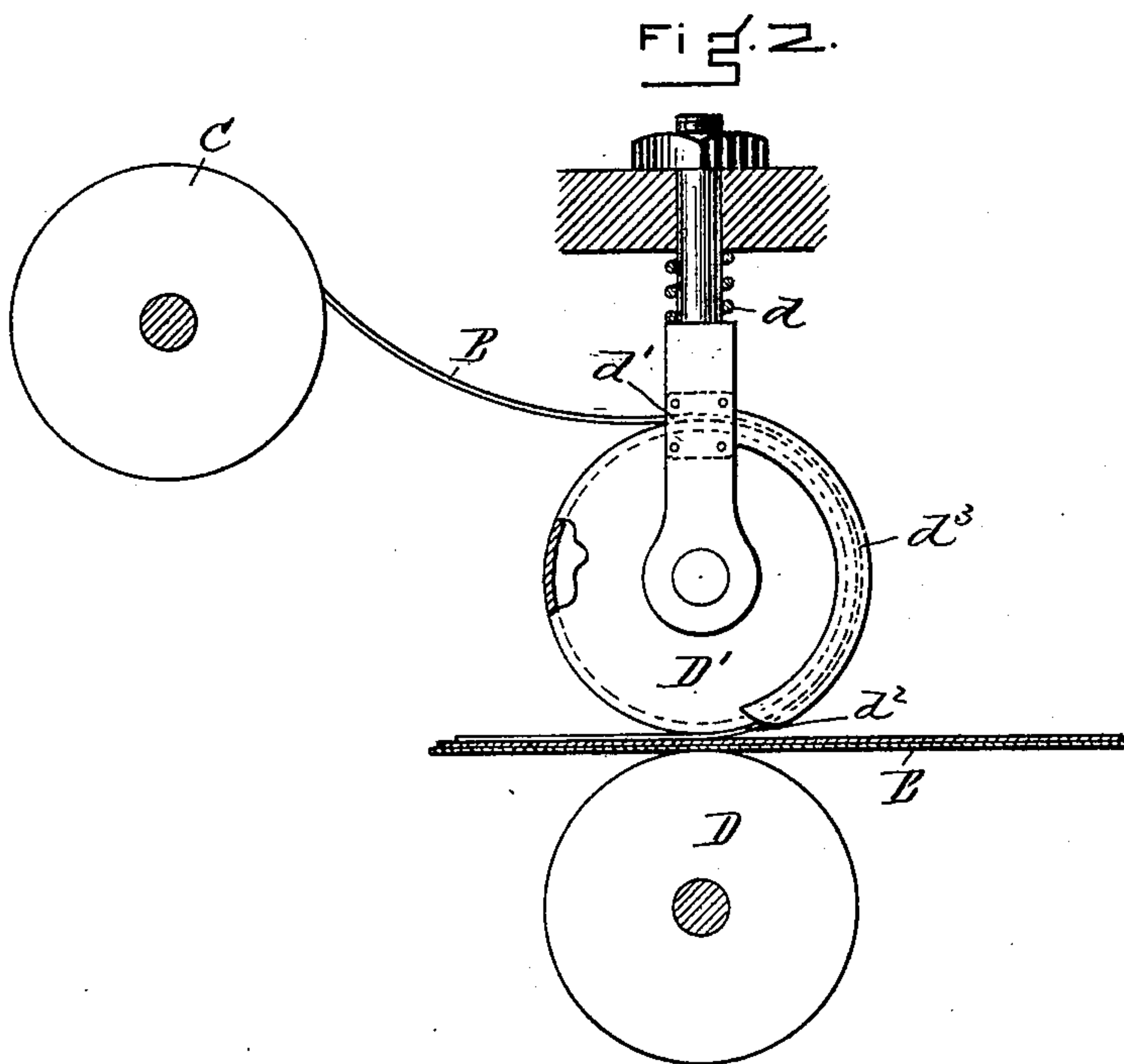
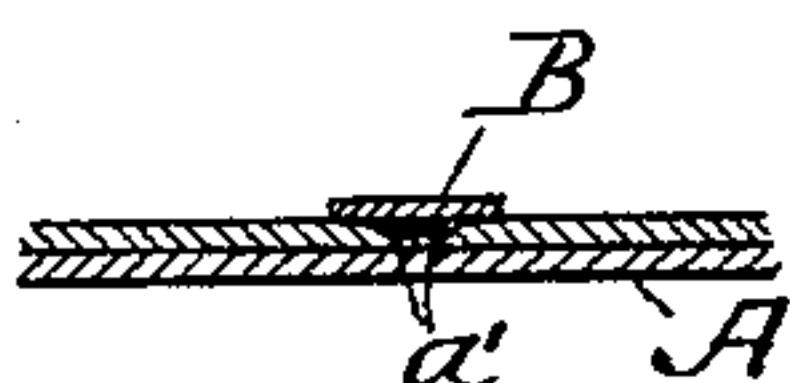
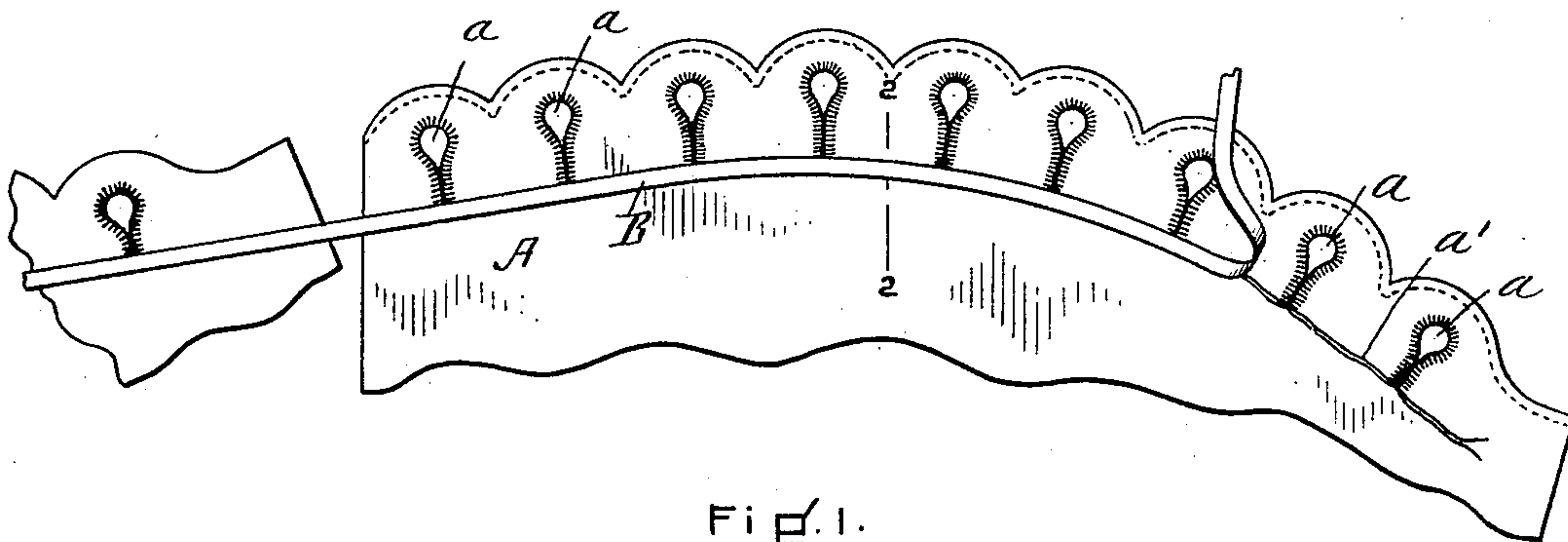
**No. 626,888.**

**Patented June 13, 1899.**

**C. A. DAHL & H. I. ILLINGWORTH.**  
**MEANS FOR FINISHING BUTTONHOLES.**

(Application filed Feb 21, 1898.)

(No Model.)



WITNESSES:

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# UNITED STATES PATENT OFFICE.

CHARLES A. DAHL AND HARRY I. ILLINGWORTH, OF LYNN,  
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## MEANS FOR FINISHING BUTTONHOLES.

SPECIFICATION forming part of Letters Patent No. 626,888, dated June 13, 1899.

Application filed February 21, 1898. Serial No. 671,019. (No model.)

*To all whom it may concern:*

Be it known that we, CHARLES A. DAHL and HARRY I. ILLINGWORTH, citizens of the United States, residing at Lynn, in the county of Essex and State of Massachusetts, have invented a new and useful Improvement in Means for Finishing Buttonholes, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification, in explaining its nature.

The invention relates to means for finishing buttonholes, especially applicable to the buttonhole-pieces of boots and shoes, which consists in applying to the inner surface of the buttonhole-piece in line with the extreme inner ends of the buttonholes worked therein a covering piece or strip of flexible material which is applied to the piece in a manner to cover the threads which connect the inner ends of the buttonholes upon the inner or under side of the piece, and which strip or piece is united by adhesive material to the inner surface of the buttonhole-piece and to the threads. The said strip also acts when thus applied as a bar in reinforcing or strengthening the inner ends of the buttonholes and to prevent the tearing or opening of the buttonhole-piece at the inner ends of the buttonholes.

Figure 1 represents in plan a buttonhole-piece and a finishing-strip partially applied to it and also the end of another buttonhole-piece to which the finishing-strip has been fully applied. Fig. 2 is a view in cross-section upon the dotted line 2 2 of Fig. 1. Fig. 3 is a view, principally in elevation, of a mechanism adapted to apply the finishing-strip to the buttonhole-pieces and other articles.

A represents a buttonhole-piece, *a* the buttonholes stitched therein, and *a'* the threads connecting the inner ends of the buttonholes.

B is the finishing-strip. It is made of any suitable thin flexible material, such as cloth or paper, and of a width to completely cover the connecting-threads *a'* and is prepared for use by being coated upon one surface with an adhesive substance which may be previously applied to the strip, in which case an adhesive substance is used which is non-ad-

hesive at ordinary temperature and which is made adhesive in the act of applying to the buttonhole-piece by moistening or by heat or by pressure or by a combination of these instrumentalities. The strip is of any desired length, and when previously coated with the adhesive substance is wound upon a spool C with its coated surface outward, although this is immaterial, as it may be wound either way—that is, with the adhesive coating upon the inner side, if desired. It may be of any desired length, preferably of a very considerable length in order that it may be continuously fed to a number of buttonhole-pieces in succession, as represented in Fig. 1.

In Fig. 3 of the drawings the strip is represented as applied to the buttonhole-piece B by means of the rolls D D', the lower roll D acting as a support or bed roll for the buttonhole-piece, the upper roll D' acting as a pressure-roll, being forced toward the roll D by a spring *d*, and thereby pressing upon the threads and buttonhole-piece the finishing-strip B, which is fed, with the buttonhole-piece, between the two rolls.

The adhesive substance when previously applied to the strip may be made sufficiently adhesive to unite the strip to the buttonhole-piece and to the threads *a'* by pressure alone or by pressure and heat or by pressure and moisture, and the roll D' may be used in either way—that is, it may be simply a pressure-roll or a heated pressure-roll—and in Fig. 3 we have represented it as a heated pressure-roll, the roll being hollow and adapted to be filled with a heating medium and the strip B being led around it for a distance sufficient to permit the heating of the adhesive substance before the strip is applied to the finishing-piece, the strip being fed to the roll at *d'* with its coated surface outermost and being held to the roll at or near the point *d''*, where it is pressed upon the button-piece by its tension and by the cover and guide *d'''*.

We would not be understood as confining ourselves to the specific means for applying the prepared covering-strip herein described, but may use any suitable instrumentalities for attaching it to the threads and to the buttonhole-piece, as above specified, by pres-



sure alone or by heat and pressure, or by moisture and pressure. The adhesive substance may be applied to a surface of the strip by a roll, sponge, brush, or any other device  
 5 while it is being applied to the buttonhole-piece and in advance of the point where it is forced into contact with the buttonhole-piece.

In use in connection with buttonhole-pieces we prefer to run the buttonhole-pieces continuously, or practically so, through the strip-applying devices, the strip running from one buttonhole-piece immediately upon another, as represented in Fig. 1.

By means of a prepared finishing-strip of this character not only are the connecting-threads covered and attached to the inner surface of the buttonhole-piece by a covering which is very solidly and firmly united to the buttonhole-piece and the inner ends of the  
 20 buttonholes also reinforced or strengthened by a bar, especially when the strip is made of cloth or material of some strength; but means are provided whereby great speed of application is attained and the button-pieces  
 25 very rapidly finished.

When the finishing-strip is also used as a reinforce, it is desirable that it be formed from woven fibrous material in which the threads run continuously the length of the  
 30 strip.

In the application of the strip to the buttonhole-piece the adhesive material, being adhesive between the two rolls D D', unites the strip to the buttonhole-piece upon each side  
 35 of the threads and to the threads at that

time, and immediately after it passes this point the adhesive substance becomes fixed or set.

It will be understood that the adhesive substance is so applied to the finishing-strip that only the required amount necessary for properly attaching it to the buttonhole-piece is employed, and this prevents its exuding on either side of the finishing-strip during its application to the buttonhole-piece, thereby  
 45 insuring a neat desirable finish.

Having thus fully described our invention, we claim and desire to secure by Letters Patent of the United States—

1. As a new article of manufacture, a sewed buttonhole-piece having buttonholes and connecting-threads joining their inner ends and a flexible connecting-strip running the length of said piece and united thereto and covering and protecting said threads, as set forth.  
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2. A sewed buttonhole-piece having buttonholes and threads connecting their inner ends and a flexible strip of the kind described, covering said threads and located along the inner ends of said buttonholes and  
 60 adjacent thereto whereby any tendency to stretch said buttonholes out of shape will be withstood by said strip, as and for the purposes set forth.

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