(No Model.)

J. BIGELOW.

METHOD OF WELTING OR HEMMING FABRICS.

No. 257,278. Patented May 2, 1882.

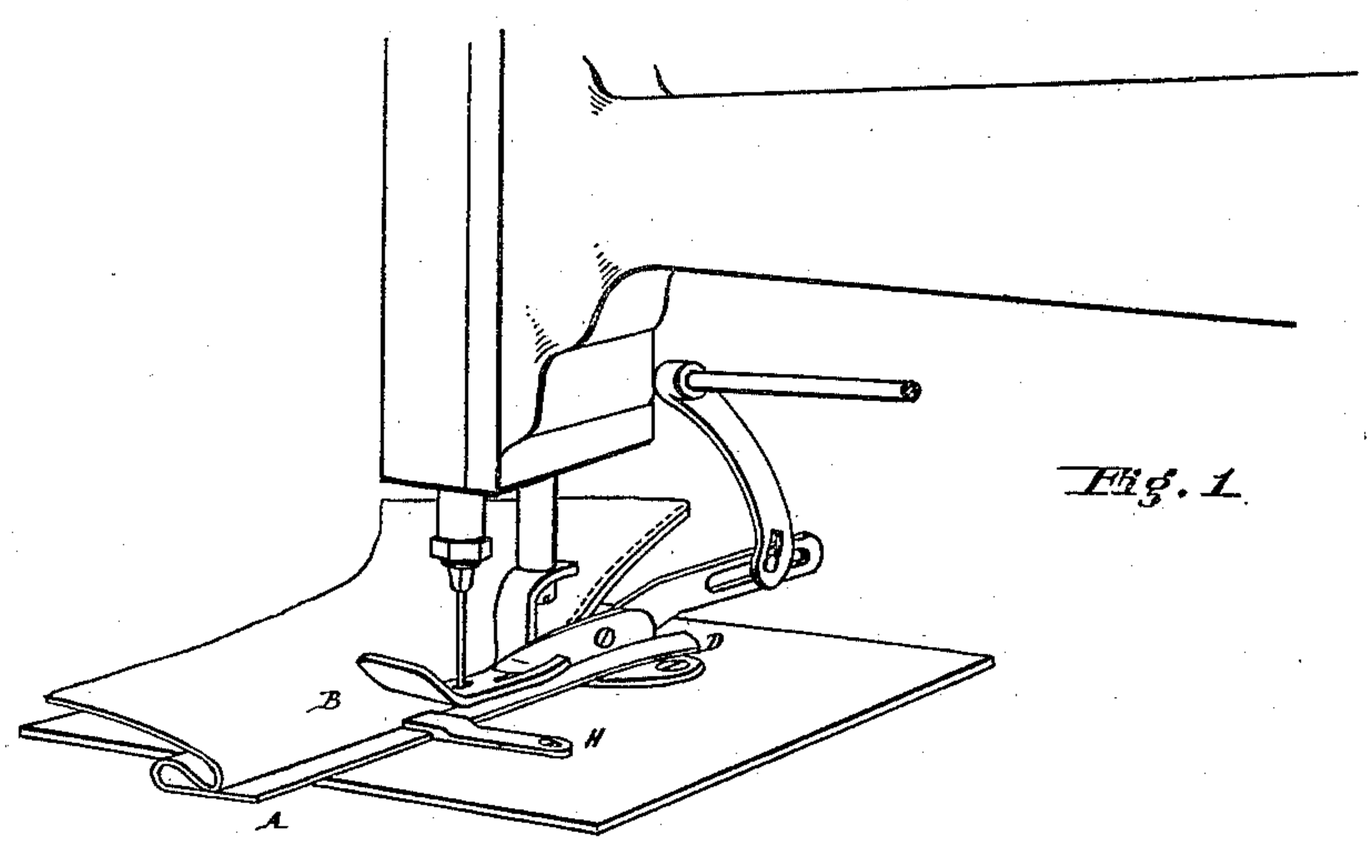


Fig. 1.

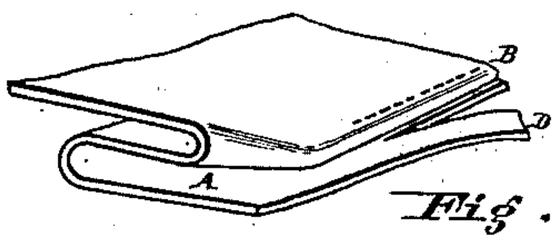


Fig. 2.

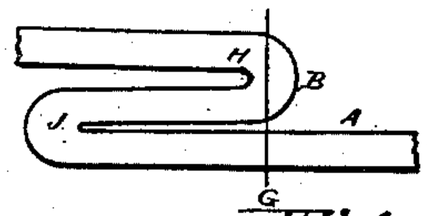


Fig. 3.

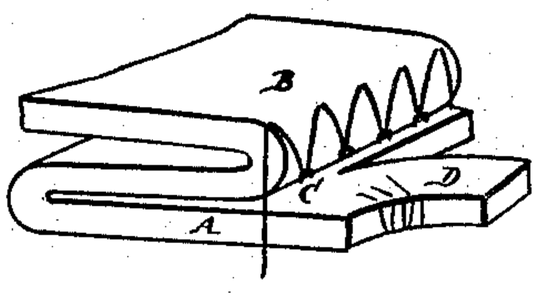
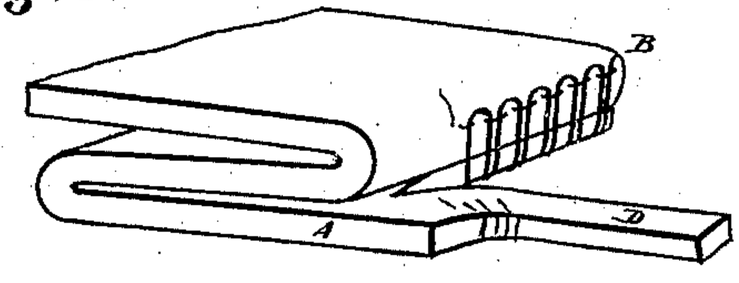


Fig. 4.

Fig. 5



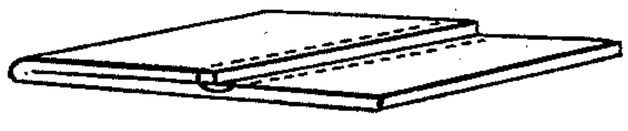


Fig. 6.

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METHOD OF WELTING OR HEMMING FABRICS.

SPECIFICATION forming part of Letters Patent No. 257,278, dated May 2, 1882.

Application filed February 27, 1882. (No model.)

To all whom it may concern:

Be it known that I, JOHN BIGELOW, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Methods of Welting or Hemming Knit Fabrics; and I 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, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

Figure 1 shows needle, presser-foot, work-plate, gage H, and a trimming device; also the method of folding the material back upon itself preparatory to being hemmed; also the hem as sewed and trimmed, and the surplus fabric D, which is removed. Fig. 2 shows the way in which the material to be hemmed is folded back upon itself, the line of stitching, and the surplus D, which is trimmed off. Fig. 3 is an enlarged sectional view, showing at F G the line of perforation of the needle. Fig. 4 is an enlarged section view of the hem when sewed with a zigzag stitch, the trimming being on a line with or after the sewing. Fig. 5 is an enlarged sectional view of the hem when sewed with a button-hole, over-edge, or whip stitch, the trimming being done in advance of the sewing. Fig. 6 shows the line of the stitch on the welt side when the fabric is opened or flattened out.

This invention relates to the formation of a welt or hem upon knit fabrics—such as the buttons of undershirts or the tops of hose—and other pliable material or fabrics, and is particularly designed to be used for cut or unfinished edges.

We use the words "welt" and "hem" as synonymous.

Heretofore cut knit goods have been welted or hemmed by simply folding the material back upon itself and securing the fold or bend by a line of ordinary straight stitching, which passed through the same at a suitable distance from the edge to prevent raveling, and through the body to the outside of the material. Hems or welts thus made were inelastic, bulky, wasteful of material, and uncomfortable.

Using an ordinary straight-stitch sewing-machine and without materially reducing its production, by my invention I am able to welt or hem the lower and cheaper grades of knit fabrics, known as "cut goods," with the stitches hidden or but slightly apparent on the outside of the fabric. On the inner or folded side, while the difference of manufacture is easily distinguishable from full regular-made hosiery by the fact that each loop is not secured, yet practically the merits will be the same because the seam is perfectly elastic, and there is but little surplus edge to the folded part beyond the seam, and there is no bulkiness or waste of material, and consequently no discomfort occasioned thereby to the wearer. The sewing may be done with a button-hole, whip, over-edge, or zigzag stitch sewing-machine equally well, as hereinafter explained.

In carrying out my invention I fold the part to be welted or hemmed back upon itself, as shown in all the figures except Fig. 6, and so present the same between the presser-foot and work-plate of the sewing-machine to the stitch-forming mechanism, Fig. 1, that the line of stitching F G will pass through the bend B, Fig. 3, and fabric A, same figure. By the means of a gage attached to the work-plate the depth of the fold between B and J, Fig. 3, can be made as desired, and by the means of another gage, also attached to the work-plate and entering the second fold at H, Fig. 3, the line of perforation F G by the needle in the bend or fold B can be made as desired. When the line of perforation F G passes through the bend B, as shown in Fig. 3, no stitches will show on the outside H when the hem is flattened out; but should the line of perforation pass through the bend B at H, then the stitches will show on the outside when the welt or hem is flattened out as parallel straight lines. In either instance it will be noticed that the needle, in perforating the bend B, passes in and out on the same side of the fabric, so that where the straight stitch is used and the material has been sewed and straightened out the threads connecting the points of perforation pass through the material, as shown in Fig. 6.

With a straight-stitch machine the stitch is made each time through the bend B and the fabric A, Figs. 2 and 3. With a zigzag or

irregular stitch machine it can be made to pass alternately through the bend B and outside of the same, but each time through the fabric A, Fig. 4, while on machines arranged to trim the fabric A at D in advance of the sewing an over-edge stitch can be used, which can be made, if a zigzag stitch is used, by the stitch passing alternately through the fold B and the fabric A, and then outside of the same, or, if a button-hole stitch is used, by the needle passing each time through the fold B and the fabric A, and a thread each time whipped over said fold and trimmed edge, as in Fig. 5. After the sewing the surplus edge of the fabrics A can be trimmed close to the line of sewing by hand; but for economy of manufacture I prefer to combine an automatic trimming device with the sewing mechanism. Such a combination capable of sewing either straight or zigzag and automatically trimming the surplus edge D, Figs. 2 and 4, on a line with or after the sewing, and in any desired contiguity thereto, is shown in my Reissue Letters Patent No. 9,112, dated March 9, 1880, while a combination capable of trimming in advance of the sewing, as in Fig. 5, is shown in my application of June 5, 1879. This last, of course, is required for button-hole, over-edge, or whip stitch machines, on which the surplus fabric must be first cleared away, so as not to interfere with the over-edge whipping or looping.

Having thus described my invention, what I consider new, and desire to secure by Letters Patent, is—

1. The method herein described for welting or hemming fabrics, which consists in folding the fabric back on itself, as shown, uniting the same by a line of stitching, which passes at each stitch or at each alternate stitch through the material and a bend or fold of the same, and simultaneously with the sewing trimming off the surplus fabric close to the line of the seam, substantially as set forth.

2. The method herein described for welting or hemming fabrics, which consists in folding the fabric back on itself, as shown, uniting the same by a line of stitching, which passes through the material and a bend or fold of the same, and trimming off the surplus fabric close to the line of the seam, substantially as shown and described.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN BIGELOW.

Witnesses:
E. S. HARLAN,
L. DEANE.