(No Model.)

C. P. BORTON.

MANUFACTURE OF SEWED GARMENTS.

No. 456,467. Patented July 21, 1891.

FIG. I.

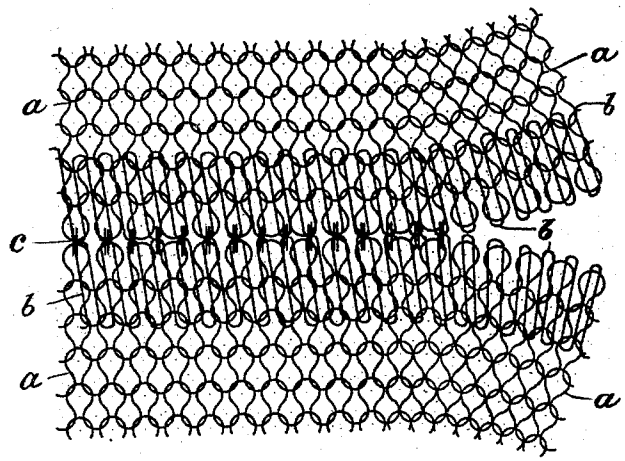
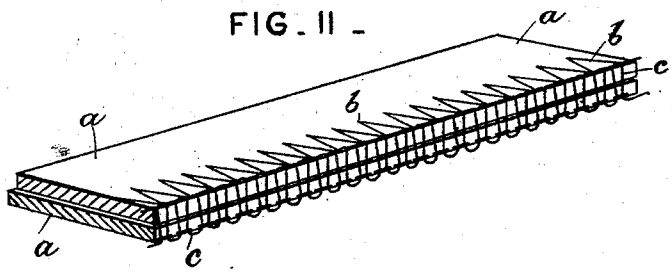


FIG. II.



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UNITED STATES PATENT OFFICE.

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MANUFACTURE OF SEWED GARMENTS.

SPECIFICATION forming part of Letters Patent No. 456,467, dated July 21, 1891.

Application filed April 22, 1890. Serial No. 348,977. (No specimens.)

To all whom it may concern:

Be it known that I, CHRISTINA P. BORTON, of Providence, in the State of Rhode Island, have invented a new and useful Improvement in the Manufacture of Articles from Cut, Knitted, or other Fabrics, which improvement is fully set forth in the following specification.

This invention has special reference to the manufacture of garments and other articles from looped or knitted fabric, and more particularly to the uniting of the cut edges of said fabric by means of sewing-machine stitches.

In the best quality of knit goods the several parts are formed with selvage edges and the loops on the meeting edges are united by an interlocking thread, so that the resulting seam is flat and presents no ridge or welt. This result has been approximated by sewing together two pieces cut from knitted goods by means of chain stitches substantially equal in length to the gage of the fabric and trimming off the surplus margin as close as possible to the seam. Though the ridge resulting in this case is comparatively slight, this method cannot be resorted to in the manufacture of all parts of cut hosiery. Moreover, by placing the seam close to the edge its strength and durability are diminished. The raw edges of knit goods have also been united by overseaming-machines and machines making a zigzag stitch; but while the product in these cases is a comparatively strong seam the formation of an objectionable ridge or welt along the line of stitching is the result.

In uniting the raw cut edges of knitted goods the strength of the resulting seam depends largely upon the direction of the cut edge with respect to the wales of the fabric. The strongest seam is made when the cut is parallel with the wales; but when the cut is made across the wales, as in the case of the shoulder-seam in undershirts, or at an oblique angle thereto, the tendency to raveling is very great.

This invention has for its object the production of hosiery and other articles from pieces of knitted or other fabric in which the seams uniting the proximate cut edges are without ridge or welt and are strong and durable, irrespective of the direction in which the fabric has been cut. This object is attained in the following way: The pieces having been cut to the desired shape, which may be done without reference to the character of the raw edge produced thereby, the edges are prepared for sewing by forming along each, separately, a row of stitches preferably by means of a suitable overedge sewing-machine. This results in the expeditious production of what may be termed an "artificial selvage edge." It is difficult, owing to the curl of knit goods, to produce a line of stitching exactly at the edge of the fabric. It is therefore preferred to perform this operation by means of an overedge sewing-machine provided with a trimming attachment, which acts on the goods directly in advance of the stitch-forming mechanism. Such a machine is described in Letters Patent No. 263,650, granted August 29, 1882, for the invention of Stockton Borton. By this means the line of stitching is accurately placed, so that the edge presents a series of loops formed by the sewing-thread, which holds securely to the fabric, owing to the fact that the needle enters the goods some little distance from the edge, as well understood. The two meeting edges having been thus prepared, the pieces to be joined are placed one on the other, or edge to edge, and again passed through an overedge or other suitable machine (without a trimming attachment) in such manner that the third line of stitching, or the threads which form the seam proper, interlock with the loops formed by the preliminary lines of stitching. It will be understood that the seam thus formed does not depend for its strength upon the hold which its threads take upon the fabric, as this may be slight, but that it is retained mainly by the loops of what is herein termed the "artificial selvage." Consequently when the operation is performed and the goods straightened out the united edges meet or abut, as in the regular-made goods, and do not overlap at the seam. The slight additional thickness imparted by the extra threads is not sufficient to produce discomfort to the wearer of the goods. The new seam is of particular advantage in the manufacture of un-

dershirts. The trunks of these garments are usually knitted on a circular-knitting machine, the fabric being cut across the wales, presenting raw edges to be joined over the shoulders. At this point the formation of any ordinary seam is inadmissible, and consequently the practice is to pick up each individual loop upon points and unite the meeting edges by what is known as a "turning-off" machine. This operation is tedious, and of course adds considerably to the cost of manufacture. The ribbed cuff portions, which are separately knitted, are ordinarily joined to the sleeves, and the finishing-band to the lower edge of the garment in the same way. The new seam herein described can be successfully applied to these as well as to all other seams of the garment, and the manufacture thereof greatly expedited and cheapened.

For the purpose of a better understanding of the said invention reference may be had to the accompanying drawings, which represent on an enlarged scale two pieces of knit fabric united by a seam embodying or made in accordance with the said invention.

Figure 1 is a plan view showing two pieces of knit fabric with their meeting edges prepared with overedge stitches and the uniting seam of overseam stitches partially completed, and Fig. 2 a perspective view showing artificial selvage edges formed by zigzag stitches united by an overseam.

The two pieces of fabric to be joined are designated by the letter *a*. They are cut to proper shape, and their raw edges are provided with the lines *b* of overedge sewing-machine stitches, constituting an artificial selvage or anchorage. These stitches present a series of loops at the edge of the cut fabric, which, as already stated, is preferably trimmed in advance of the sewing, so that the loops may be accurately placed. The two edges are joined by the threads *c*, the stitches passing through or interlocking with the loops of the threads *b*, so that the seam holds mainly by the threads *b* instead of altogether by the thread or loops of the fabric itself. As shown, the seam formed in this manner is flat and presents but one thickness of fabric.

While the invention is of peculiar utility in connection with the manufacture of knitted goods, it may obviously be used in connection with woven or other fabric. It is also obvious that the invention may be used to join together two pieces of fabric, one of which has a regular selvage edge. In that case it will be necessary to form the artificial selvage in the manner pointed out only on the edge of the piece that has been cut.

Having now fully described my said invention, the part or improvement which I claim as new is—

1. In the art of manufacturing articles, such as garments, from suitable fabric, such as knit goods, the improvement consisting in forming along each flat cut edge a line of stitches, as specified, so that each cut edge will be provided with an artificial selvage, and then uniting the edges of the contiguous pieces by a line of stitches interlocking with the selvage stitches, thereby producing a flat seam without ridge, hem, or welt, substantially as described.

2. The process of uniting the edges of fabric in the manufacture of articles, such as garments, which process consists in first forming separately along each flat cut edge an artificial selvage by means of overedge stitches, and then uniting the edges of contiguous pieces by another line of stitches interlocking with and holding by the loops of the first-named stitches, thereby producing a flat seam without ridge, hem, or welt, substantially as described.

3. The combination, with two pieces of cut knit goods having their edges abutted, of a continuous row of loops constituting an artificial selvage for each edge, and an interlocking thread or threads continuously meeting the opposite loops of said rows or selvages, substantially as described.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

CHRISTINA P. BORTON.

Witnesses:
S. BORTON,
CHRISTO. RHODES.