To all whom it may concern:

Be it known that I, Chester McNeil, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Methods of Manufacturing Stitched Articles, of which the following is a specification.

This invention relates to new and useful improvements in methods of manufacturing stitched articles.

The principal object of my invention is to provide a method for the above purpose which will materially increase the production, and at the same time proportionally reduce the cost of manufacture.

Although this method is capable of use in connection with the manufacture of stitched articles of various types, I have illustrated my improved method in the accompanying drawings in connection with the manufacture of fabric sacks.

In these drawings:

Figure 1 is a top plan view showing the method employed in stitching simultaneously both the opposed longitudinal edge portions of a plurality of pairs of sack blanks.

Fig. 2 is a top plan view showing a plurality of pairs of sack blanks thus stitched.

Fig. 3 is a view similar to Figure 1, but showing the method employed in stitching simultaneously the opposed transverse edge portions of a plurality of pairs of sack blanks.

Fig. 4 is a plan view showing a plurality of pairs of sacks which have been manufactured by my improved method.

Fig. 5 is a perspective view showing the columns of sacks folded prior to the clipping of the connecting enchained loops.

Fig. 6 is a plan view showing a single column of sacks manufactured by my improved method.

Fig. 7 is a transverse sectional view more or less diagrammatically shown illustrating the arrangement between the sack blanks and the stitching mechanism.

Fig. 8 is a detail sectional view showing a sack blank formed with a single hem; and

Fig. 9 is a similar view but showing a sack blank formed with a double hem.

In carrying out my improved method I preferably employ a two-line sewing machine, which includes a cloth plate 5, a pair of needles 6 and 7, a feed dog 8, and a guide 9, the latter being disposed in advance of the needles and in a plane therebetweem.

Any supplemental stitch forming mechanism may be employed but in this instance, I have indicated such supplemental stitch forming mechanism by two threaded loopers 10 and 11 which respectively cooperate with the needles 6 and 7 to form two lines of Grover and Baker double-locked stitches. Further description of an ordinary two-line sewing machine is deemed to be unnecessary as it is thought that any one skilled in the art will readily understand what is meant by a two-line machine.

I feed a plurality of pairs of sack blanks 12 and 13, 14 and 15, 16 and 17, 18 and 19, 20 and 21, 22 and 23, etc., through the sewing machine after first folding longitudinally the respective sacks of each pair so as to present the free longitudinal edges of the blanks of each pair of blanks in opposed relation. Thus, a plurality of pairs of sack blanks are positioned in double column formation and simultaneously therewith the opposed longitudinal edge portions are stitched by parallel lines of stitching 24 and 25 respectively. It will be noted that the guide 9, which is conventionally illustrated only, functions to guide the opposed longitudinal edges of the respective sacks of each pair of sacks to the needles.

In order to retain the two columns of sacks thus formed against displacement, both longitudinally and transversely, I first stitch a piece of fabric 26 by both needles and prior to the stitching of the sacks 12 and 13. This piece of fabric constitutes a tie. Similar ties 27 are stitched at suitable intervals between adjacent pairs of sack blanks until the entire double column is completed. In stitching the longitudinal edge portions of these blanks it is desirable to leave sufficient space between the respective pairs of blanks so as to permit the operator to properly adjust the blanks of one column to feed faster than the blanks of the other column.

After a double column of sack blanks has been stitched, as above described, it is desirable to stitch certain of the transverse portions of said blanks. In manufacturing sacks by my improved method, the longitudinal lines of stitching 24 and 25 serve to close the side edges of the sacks. Thus, it is necessary to close the bottoms of the sacks and by my improved method, I close the bottoms of four adjacent sacks in a single operation.
In other words, the column of sacks is presented to the sewing machine in a plane at right angles to the way in which the blanks were first stitched. I then proceed to simultaneously stitch the opposed transverse edge portions of certain of the blanks to form parallel lines of stitching 28 and 29. I preferably stitch the opposed edge portions of alternate pairs of blanks as shown in Fig. 4. During this operation, the columns of blanks are held from lateral displacement by the ties 26 and 27.

It will now be observed that I have manufactured a double column of sacks in which the side and bottom seams have been made, and that adjacent pairs of sacks are held together by two longitudinally extending lines of enchained loops 24 and 25, a transversely disposed tie 27 which is connected by said enchained loops, and two transversely extending lines of enchained loops 28 and 29. It is, therefore, necessary to sever these lines of enchained loops in order to separate the sacks. In order to sever these lines of enchained loops, I prefer to fold one column of sacks onto the other column as illustrated in Fig. 5. A pair of ordinary shears (not shown) or any other cutting implement may then be employed to sever these lines of enchained loops.

Under some circumstances it may be desirable to manufacture stitched articles in a single column, as shown in Fig. 6. In such a case, the same two-line sewing machine may be employed and it will only be necessary to unthread or remove one needle.

In manufacturing sacks of loosely woven material, it may be desirable to hem the longitudinal edge portions prior to the stitching thereof, and either of the hems shown in Figs. 8 and 9 may be formed. The hem in Fig. 8 is what might be termed a single hem, whereas the hem in Fig. 9 is what might be termed a double hem. Either of these hems will, of course, be formed simultaneously with the stitching by means of suitable hammers placed on the cloth plate in advance of the needles.

The blanks of each column are spaced apart to provide an opportunity for the operator to correct any uneven feeding of the blanks.

The needles are spaced a predetermined distance apart and the guide is so arranged relative to the needles that a suitable margin between the lines of stitching and the edges of the blanks will be obtained.

From the foregoing it will be seen that I have provided a new and useful method of manufacturing stitched articles in which one edge portion of a plurality of article blanks is stitched by a continuous line of stitching and subsequently two other edge portions of adjacent article blanks are simultaneously stitched.

I believe that I am the first to provide the method, as above noted for manufacturing stitched articles regardless of the type of articles to be manufactured.

I claim:

1. The method of manufacturing stitched articles consisting in successively stitching one edge portion of a plurality of separate and independent article blanks by a continuous line of stitching whereby the adjacent blanks will be connected by lines of enchained loops, then simultaneously stitching the opposed transverse edge portions of alternate pairs of blanks, and finally severing the enchained loops connecting the adjacent blanks.

2. The method of manufacturing sacks consisting in positioning a plurality of separate and independent sack blanks in column formation, the blanks being folded longitudinally with respect to the column to present the free longitudinal edges of the blanks in longitudinal alinement and their transverse edges in opposed relation, stitching said longitudinal edge portions of said blanks in succession and connecting adjacent blanks by a line of enchained loops, then simultaneously stitching the opposed transverse edge portions of certain of the blanks, and finally severing the enchained loops connecting the adjacent sacks.

3. The method of manufacturing sacks consisting in positioning a plurality of pairs of separate and independent sack blanks in double column formation, the blanks being folded longitudinally with respect to the column to present the free longitudinal edges of the blanks of each pair of blanks in opposed relation, and stitching simultaneously the longitudinal edge portions of both blanks of the respective pairs of blanks in succession to close the opposed longitudinal edges of the blanks of said column.

4. The method of manufacturing sacks consisting in successively positioning a plurality of pairs of separate and independent sack blanks in double column formation, the blanks being folded longitudinally with respect to the column to present the free longitudinal edges of the blanks of each pair of blanks in opposed relation and stitching simultaneously the longitudinal edge portions of both blanks of the respective pairs of blanks in succession to close the opposed longitudinal edges of the blanks of said column.

5. The method of manufacturing sacks consisting in positioning a plurality of pairs of separate and independent sack blanks in double column formation, the blanks being folded longitudinally with respect to the column to present the free longitudinal edges of the blanks of each pair of blanks in opposed relation, and stitching simultaneously and continuously the longitudinal edge portions of both blanks of the respective pairs.
of blanks in succession to close the opposed longitudinal edges of the blanks of said column.

6. The method of manufacturing sacks consisting in positioning a plurality of pairs of separate and independent sack blanks in double column formation, the blanks being folded longitudinally with respect to the column to present the free longitudinal edges of the blanks of each pair of blanks in opposed relation, stitching simultaneously the longitudinal edge portions of both blanks of the respective pairs of blanks in succession to close the opposed longitudinal edges of the blanks of said column, and securing ties between certain pairs of blanks.

7. The method of manufacturing sacks consisting in positioning a plurality of pairs of separate and independent sack blanks in double column formation, the blanks being folded longitudinally with respect to the column to present the free longitudinal edges of the blanks of each pair of blanks in opposed relation, stitching simultaneously the longitudinal edge portions of both blanks of the respective pairs of blanks in succession to close the opposed longitudinal edges of the blanks of said column, securing ties between certain pairs of blanks by both lines of stitching, and then simultaneously stitching the opposed transverse edge portions of certain of the blanks.

8. The method of manufacturing sacks consisting in positioning a plurality of pairs of separate and independent sack blanks in double column formation, the blanks being folded longitudinally with respect to the column to present the free longitudinal edges of the blanks of each pair of blanks in opposed relation, stitching simultaneously the longitudinal edge portions of both blanks of the respective pairs of blanks in succession to close the opposed longitudinal edges of the blanks of said column, and finally severing the enchain loops connecting the adjacent sacks.

9. The method of manufacturing stitched articles consisting in positioning a plurality of separate and independent rectangular-shaped article blanks in double column formation, stitching simultaneously the longitudinal edge portions of both blanks of the respective pairs of blanks in succession, securing ties between certain pairs of blanks by both lines of stitching, and then simultaneously stitching the opposed transverse edge portions of certain of the blanks.

10. The method of manufacturing stitched articles consisting in positioning a plurality of separate and independent rectangular-shaped article blanks in double column formation, stitching simultaneously the longitudinal edge portions of both blanks of the respective pairs of blanks in succession, securing ties between certain pairs of blanks by both lines of stitching, then simultaneously stitching the opposed transverse edge portions of certain of the blanks, then folding one column of articles onto the other column, and finally severing the enchain loops connecting the adjacent sacks.

In testimony whereof I affix my signature.

CHESTER McNEIL.