April 28, 1931. C. DREYFUS 1,802,634

PROCESS FOR THE MANUFACTURE OF HOSIERY

Filed Nov. 26, 1926

Fig. 1.

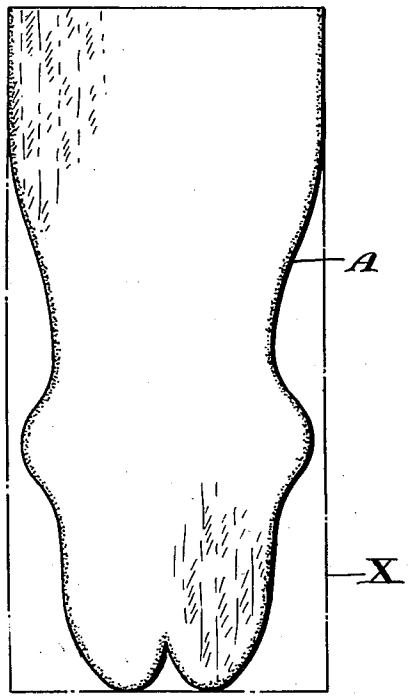


Fig. 2.

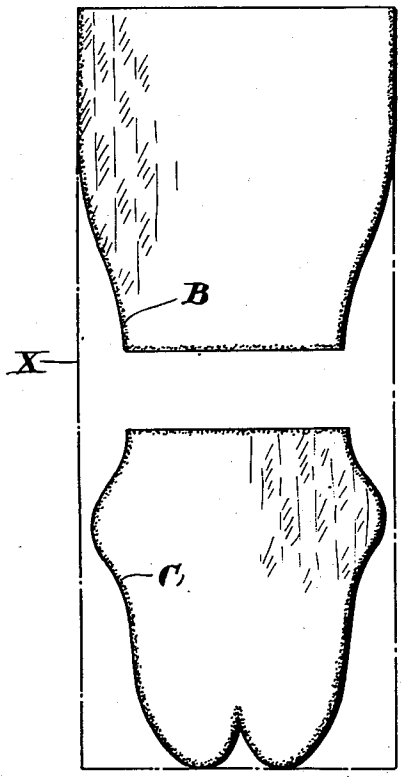


Fig. 3.

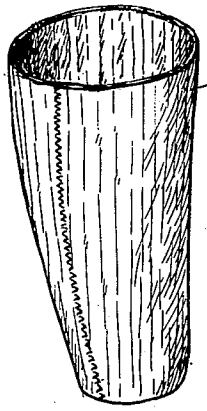
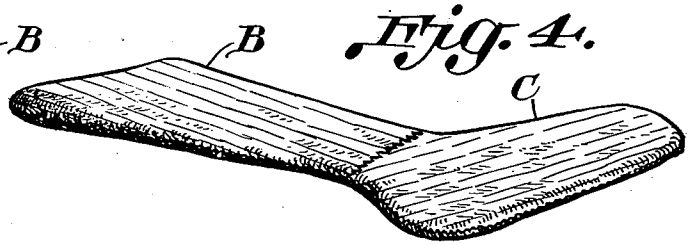


Fig. 4.



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UNITED STATES PATENT OFFICE

CAMILLE DREYFUS, OF NEW YORK, N. Y.

PROCESS FOR THE MANUFACTURE OF HOSIERY

Application filed November 26, 1926. Serial No. 151,023.

This invention relates to an improved process for the manufacture of hosiery from knitted fabric. The process is equally applicable to both circular knitted and warp knitted fabrics, the latter, however, resulting in a better product.

The invention is diagrammatically illustrated in the accompanying drawings in which

Figure 1 shows a blank for the manufacture of a stocking from a single piece.

Figure 2 shows a similar blank for the manufacture of a stocking from two pieces.

Figure 3 is a perspective view of the leg portion of a stocking formed from the blank in Figure 2.

Figure 4 is a perspective view of a completed stocking formed in two pieces.

Heretofore in the manufacture of plain hosiery it has been customary to knit the leg and ankle portion of the hosiery of uniform dimensions throughout their length. This portion of the stocking was then shaped to proper size on an appropriate stocking form. Each stocking is independently knitted. Such stockings are sometimes stitched in the rear to give the appearance of a seam, thereby simulating the more valuable full-fashioned stockings in appearance.

The above process is modified in the manufacture of full-fashioned hosiery, so called because it is so knitted as to actually conform to the outline of the leg and ankle. In the manufacture of such full-fashioned hosiery a flat piece of fabric or blank is knitted of such size and shape that when the two longitudinal edges of the same are sewn together the finished hose will conform to the shape of the leg without any "shaping" or "forming" being necessary.

In the manufacture of such hose as well as in the manufacture of ordinary hose each blank or stocking is individually knitted on machinery which is necessarily complicated. Such stockings must be dyed after their manufacture and it is quite a problem to obtain uniform dyeing and to carry out the dyeing process without destroying the shape of the stocking.

The applicant has now discovered a process whereby these difficulties can be overcome or avoided. He has found that full-fashioned hose can be made very economically and efficiently from knitted fabric by cutting or stamping from such fabric a blank which when sewed together will conform to the shape of the leg and ankle. The applicant's process consists in taking any knitted fabric of any material as the same is obtained from a circular knitting machine or warp knitting machine and marking thereon the various patterns or blanks which will vary according to the size and shape desired in the finished stocking. The fabric can then be cut out along the markings indicated in any desired manner. Or the blanks from which stockings are to be made may be stamped out directly from the fabric with any appropriate cutting die. This does away with the necessity of knitting each stocking individually and also eliminates the shaping of the same in such cases where such shaping has been necessary heretofore.

The illustration of the invention in the accompanying drawings is merely diagrammatic and is not intended to limit in any way the invention to any particular size or form of the stocking blank. In Figure 1 is disclosed one form of the invention in which a blank A is stamped or otherwise cut from a piece of material X. The stocking is of course formed by sewing the blank with a seam which will lie at the rear of the stocking. An alternative and from some points of view, a preferable form of the invention, is disclosed in Figure 2, in which two blanks B and C are stamped or otherwise cut from material X. The portion B will be formed into the leg part of the stocking, as shown in Figure 3, and the foot portion will also be properly formed and attached to the leg portion, as shown in Figure 4. As a matter of actual manufacture, the configuration of the joint between these two portions and the shape of the portions themselves may not be precisely that shown in the drawings, which are merely intended to be illustrative.

This improved process has numerous advantages. It does away with the large number of machines necessary where each stock-

ing is individually made as is the practice today. This results in a very great economy of floor space as well as a saving in expense and upkeep of machinery, as ordinary circular knitting or warp knitting machines can be utilized. Since the fabric from which the blanks are cut can be dyed before being stamped or cut up, the dyeing cost is also lower and the dyeing troubles usually encountered in hosiery dyeing are avoided. The production of finished stockings is very greatly increased as a result of this elimination of the individual machines and avoidance of dyeing difficulties.

This process is applicable to circular knit and warp knit fabrics. Stockings can be made in accordance with this process from fabrics made from any material such as, for example, cotton, wool, silk, rayon, artificial silks made from organic derivatives of cellulose, such as organic esters and ethers of cellulose or mixtures of any of these.

When this process is applied to circular knit fabrics made from organic derivatives of cellulose advantage can be taken of their characteristic "melting" property to prevent laddering at the edges. Thus when the blank is cut or stamped out from the fabric the knife or other cutting device can be kept hot in any desired manner so that it will not only cut the fabric but will also melt the edges of the blank and the fabric which come in contact with the cutting means. This melting will serve to coalesce the adjacent threads or filaments to effectively prevent any laddering at these edges of the fabric either during the subsequent sewing operations or while the same is being worn. This is especially valuable since it makes possible the use of a circular knit fabric for the manufacture of stockings according to this process. The use of circular knit fabric of silk, rayon, etc., is very objectionable because of the fabric's pronounced tendency to ladder at the cut edges.

Hitherto only circular knit stockings could be manufactured as only this type of material can be produced on stocking machines. This has been a very serious draw-back as all circular knit material ladders very readily once a hole is formed or a thread broken.

Warp knit fabric, in contradistinction to circular knit material, is ladder proof and is, therefore, particularly desirable for use in stockings. The employment of warp knit fabric for such purpose, however, has been impossible under the present methods of stocking manufacture for the reason previously pointed out. A remarkable feature of this invention is the fact that such warp knit fabric can now be utilized in hosiery manufacture. The ability to use warp knit fabric makes it possible to obtain an absolutely ladderless stocking, a result which has long been sought.

Where the warp knit fabric contains an organic ester or ether of cellulose, the blank can be cut out from the fabric by means of a hot knife or other hot cutting device. This will cause the threads or filaments along the edges of the fabric and the blank to melt, the resultant sealing of these threads serving to prevent the same from shifting or pulling out. This melting is desirable in warp knit fabric although it is not as imperative in this type of fabric as it is with circular knit material where it is necessary to prevent laddering at the cut edges.

The applicant's invention has an additional advantage in that it makes it possible for the foot portion of the stocking to be formed integral with the leg and ankle portions, in one operation. That is the blank can be so cut from the fabric that it includes the foot portion which can be sewn together in a manner similar to the leg portion. This is not, however, necessary, and where desired the foot portion of the stocking can be made separately and sewn in after the leg portion has been completed. Also where desired reinforcements for the heel and toe portions of the stocking can be added and this is to be construed within the scope of the claims.

Having described my invention what I claim and desire to secure by Letters Patent is:

1. A process of manufacturing stockings which comprises cutting out a blank from a piece of fabric containing organic derivatives of cellulose, simultaneously melting the edges of the cut out portions of the fabric as the same is being cut and subsequently joining the longitudinal edges of the blank by sewing the same.

2. A process of manufacturing hosiery which comprises cutting out a blank from a fabric containing organic derivatives of cellulose and simultaneously melting the edges of the cut out portions of the fabric as the same is being cut, subsequently joining the longitudinal edges of the blank by sewing the same and thereafter sewing in the necessary foot portions.

3. A process of manufacturing stockings which comprises cutting out a blank from a piece of fabric containing cellulose acetate, simultaneously melting the edges of the cut out portions of the fabric as the same is being cut and subsequently joining the longitudinal edges of the blank by sewing the same.

4. A process of manufacturing hosiery which comprises cutting out a blank corresponding to the leg portion from a fabric containing cellulose acetate and simultaneously melting the edges of the cut out portions of the fabric as the same is being cut, subsequently joining the longitudinal edges of the blank by sewing the same and thereafter sewing in the necessary foot portions.

5. A process of manufacturing hosiery

which comprises cutting out a blank from a knitted fabric containing cellulose acetate, simultaneously melting the edges of the cut out portions of the fabric as the same is being cut and subsequently joining the longitudinal edges of the blank by sewing the same.

6. A process of manufacturing ladderless hosiery which comprises cutting out a blank from a piece of warp knitted fabric containing cellulose acetate, simultaneously melting the edges of the cut out portions of the fabric as the same is being cut, subsequently joining the longitudinal edges of the blank by sewing the same and thereafter sewing in the necessary foot portions.

7. A stocking made from at least one blank of cut fabric containing organic derivatives of cellulose having fused edges.

8. A stocking made from at least one blank of cut fabric containing cellulose acetate having fused edges.

In testimony whereof, he has hereunto subscribed his name.

CAMILLE DREYFUS.