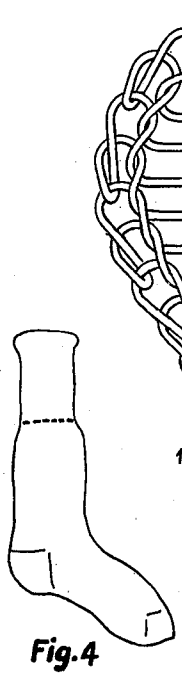
Aug. 13, 1940. M. NEBEL 2,211,475

STOCKING

Filed April 13, 1937



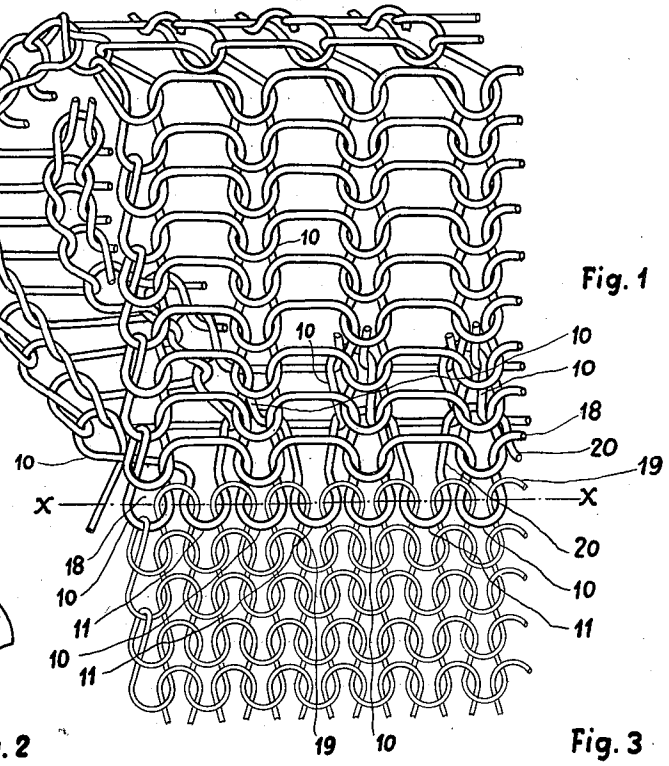


Fig. 1

Fig. 2

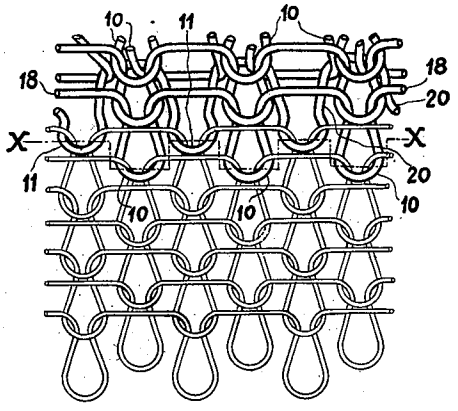
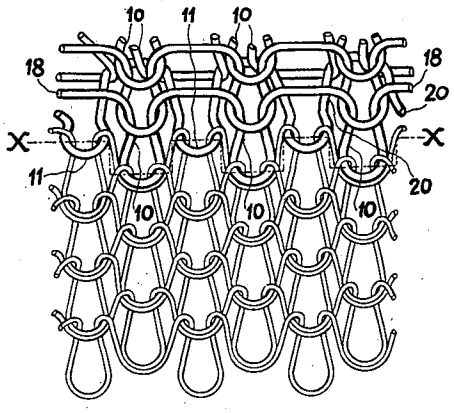


Fig. 3



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STOCKING

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4 Claims. (Cl. 66—173)

This invention relates to the border edge or top of stockings made on a flat knitting frame and to the method of producing same.

The top or border edge of stockings made on a flat knitting frame is usually produced by enclosing the first and last courses of the top with the first course of the leg connecting with the top. This means that the loops of the first course of the leg are knocked off over two loops each, so that at the point of transition between top and leg double-threaded loop heads are formed, whereby the elasticity and extensibility of the structure at this point are reduced. Furthermore, the production of this top is bothersome and requires much time, since after completion of the top courses the initial course thereof has to be hung over by hand on the needles when the last top course is finished so as to be able to knock off these two courses together over the first course of the leg. This method involves also a downwardly limited width of the top and makes it impossible to form a narrow double-sided finishing border in the manner of the known top.

It has been proposed to employ mechanical devices to eliminate transferring by hand, but they are so complex that they have not been introduced into practical operation. To avoid the time-consuming operation of transferring, it has further been proposed to work the top differently and thus to simplify the mechanical means employed for forming the top. According to this proposal, only single loops of the initial course together with all loops of the end course of the top are worked with the first course of the leg in such manner that during the formation of the first course of the top some meshes remain inoperative on their needles which are to be kept operative after completion of the first course, so that they are not knocked off during further working but after completion of the top are brought together with the last-worked course thereof and knocked off with the latter.

In this known top the first course is therefore connected only with individual loops in the end course whilst the interposed loops of the initial course are secured by the long meshes disposed like a weft but not connected with the other face of the goods. The top is thus not fully closed at its connection, and the long meshes that have to be formed in the initial course interfere, moreover, with elasticity and extensibility.

The long thread portions acting like wefts are due to the method of working this top, which requires that at least every fourth loop on the needle in the initial course has to be retained, which is then brought together with the end course of the top and knocked off with the initial course of the leg.

In circular knitting machines it is known to retain, after working a firm initial course, a loop on every fourth needle for a certain number of rounds so as to obtain a double-sided border edge. This top, however, also shows at the transition to the plain leg, owing to the working of the firm edge in two rounds on a circular knitter or by working a weftlike positioned thread in the first or second course, a thread positioned like a weft, which interferes with the requisite elasticity and extensibility at the point of transition from the top to the leg and does not provide connection of all loops.

The invention eliminates these drawbacks by working the fabric of the top on alternate needles so that the needle wales in the top are spaced twice the distance of those in the leg and the loops of the initial course and of the end course of the top together form a closed course which is knocked off over the first course of the leg, the loops of the initial course of the top being knocked off over every second loop of the first course of the leg, and the loops of the end course of the top over the other loops of the first course of the leg. When a top according to the invention is formed, the upper portion of the leg connecting with the top may have any desired width and consist of plain spliced fabric, backed or tuck pattern, and preferably of the latter, as they impart greater strength to the upper portion of the leg than plain fabric.

The knitted web of the top according to the invention possesses therefore, as particularly shown in Fig. 1, needle wales spaced twice the distance of those in the leg, which for the purpose of increasing closeness and extensibility in the top can be worked from stronger thread and larger than the loops of the connecting fabric worked in normal gauge.

The number of top-forming courses, wherein the needle wales are spaced twice the distance of the wales in the leg is not limited downwardly. To form a border edge or top only one course need be worked with the needle wales spaced twice the distance of those in the leg.

A further feature of the invention is that the courses of the top having needle wale loops arranged as mentioned are worked from special threads, such as covered rubber threads. These threads need not be stronger than the textile threads usually employed for tops, since fabric

worked partly or entirely from such rubber threads always contracts somewhat after completion. The high degree of elasticity and extensibility, particularly the great elasticity, thus obtained may be produced also by working only a few rubber courses into the top so that some of the courses of the welt consist of covered rubber threads while other courses consist of textile threads.

By way of example, the top according to the invention is illustrated in the accompanying drawing, in which Figure 1 is a diagrammatic view of the new top, Figs. 2 and 3 show the connecting portion of the top with connecting upper leg portion of spliced or tuck fabric and Fig. 4 shows a stocking embodying a top according to the invention.

Referring to the drawing, and first to Fig. 1, the knitted web of the top according to the invention possesses loops or meshes 10 which are spaced twice the distance of the needle wale loops in the leg. The rear side of the fabric of the top is outside. During transition from the top to plain work, closing is effected by working the nooses 11 of the first course 20 and the meshes 10 of the last course 18 together into loops in the first plain course X—X. After this plain course X—X normal plain fabric 19 is worked in the structure shown in Fig. 1.

This top or closing border may be repeated and thus worked in like a ruche.

If, as indicated in Fig. 2, in connection with the top 1+1 fabric is worked as splicing for the upper leg portion, only the nooses 11 of the initial course of the top are knocked off over the loops of the first course of the leg and the loops 10 of the last course of the top over the second course of the leg. The procedure is the same if, as shown in Fig. 3, 1+1 tuck pattern is knit in the portion of the leg connecting with the top.

I claim:

1. A flat knit stocking, comprising a foot, a leg connecting with the foot, and a turned welt connecting with the leg, the needle wales in said welt being spaced twice the distance of those in the leg, the needle wales of the first course of the leg having the full number of loops alternately connected with the loops of the first and last course of the welt, the upper portion of the leg connecting with the welt consisting of 1+1 backed fabric.

2. A flat knit stocking, comprising a foot, a leg connecting with the foot, and a turned welt connecting with the leg, the needle wales in said welt being spaced twice the distance of those in the leg, the needle wales of the first course of the leg having the full number of loops alternately connected with the loops of the first and last course of the welt, the upper portion of the leg connecting with the welt consisting of 1+1 tuck pattern.

3. A flat knit stocking, comprising a foot, a leg connecting with the foot, and a turned welt connecting with the leg, the needle wales in said welt being spaced twice the distance of those in the leg, the needle wales of the first course of the leg having the full number of loops alternately connected with the loops of the first and last course of the welt, the meshes of said turned welt being formed of covered rubber threads.

4. A flat knit stocking, comprising a foot, a leg connecting with the foot, and a turned welt connecting with the leg, the needle wales in said welt being spaced twice the distance of those in the leg, the needle wales of the first course of the leg having the full number of loops alternately connected with the loops of the first and last course of the welt, some of the courses of said welt consisting of covered rubber threads and the other courses of textile threads.

MAX NEBEL.