Jan. 3, 1950 W. J. KUEHNEL 2,493,675

SWEATER CONSTRUCTION

Filed April 3, 1947 2 Sheets-Sheet 1

Fig. 1.

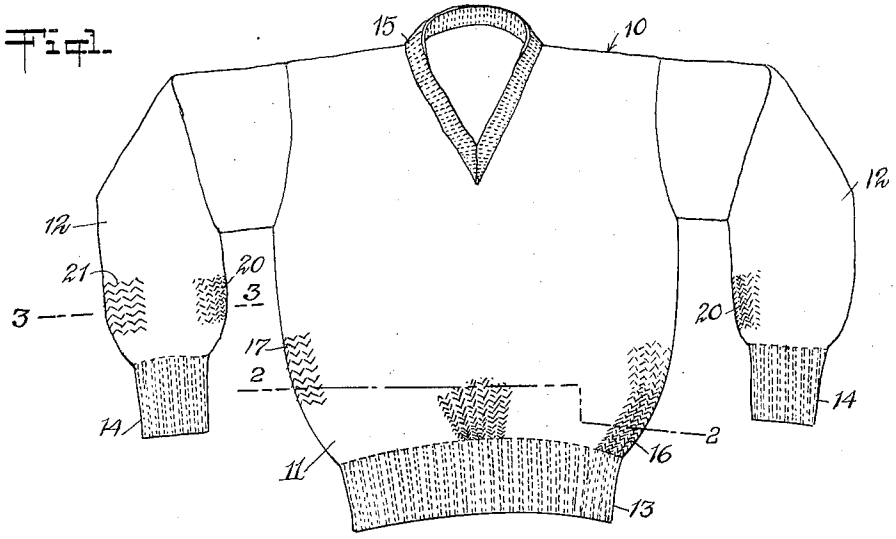


Fig. 2.

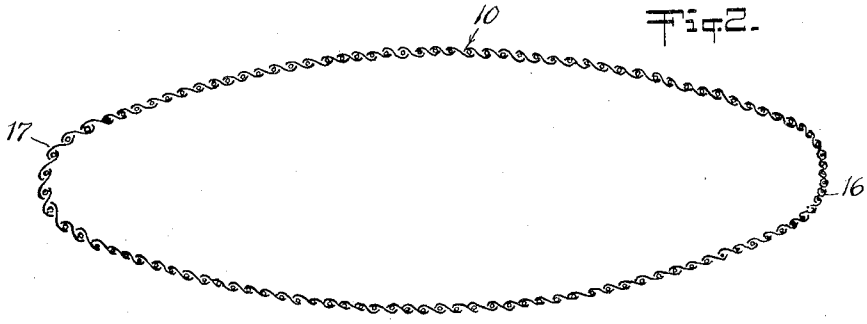


Fig. 3.

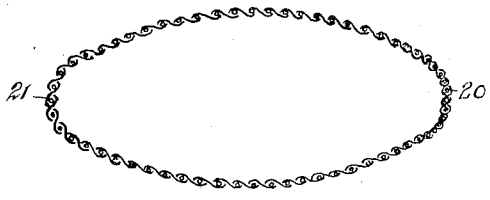
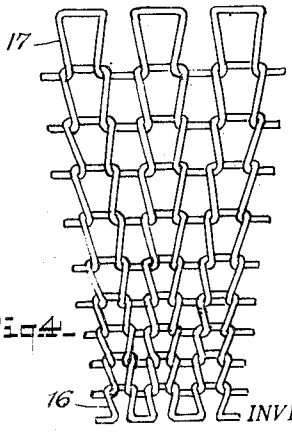


Fig. 4.



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Jan. 3, 1950 W. J. KUEHNEL 2,493,675

SWEATER CONSTRUCTION

Filed April 3, 1947 2 Sheets-Sheet 2

Fig. 5.

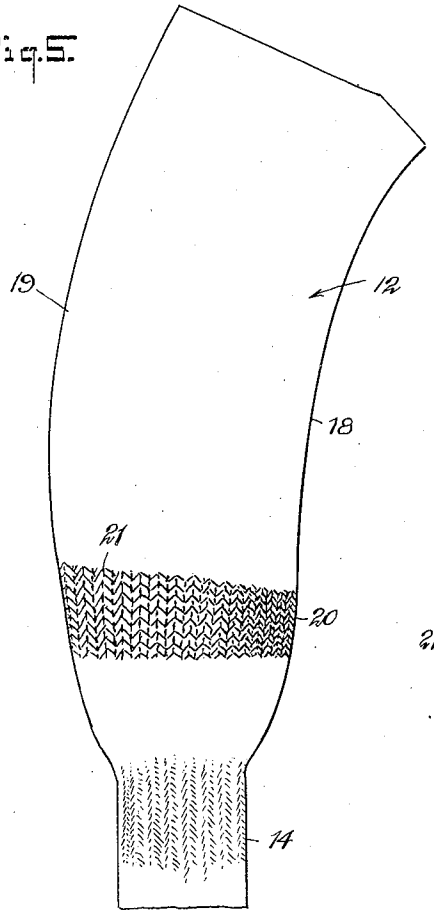
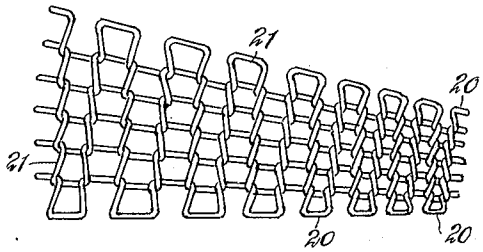


Fig. 6.



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SWEATER CONSTRUCTION

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Application April 3, 1947, Serial No. 739,064

3 Claims. (Cl. 66—176)

1

My invention relates to knitted fabrics and, more particularly, to a form fitting sweater construction.

My principal objective is to produce a sweater that will be form fitting in the sleeves as well as the body portion. Heretofore, body portions of sweaters have been made from fabric that has been knitted on flat machines, necessitating side seams and the cutting and shaping of the fabric to form a narrowing effect at the waist of the sweater. Likewise, sleeves have been knitted on circular knitting machines with the result that they have the same width at top and bottom necessitating trimming and cutting of the upper portions to conform to the body of the sweater.

An advantage of my knitting method is that the result is achieved solely through control of the movement of the needles. Heretofore, the size of stitches have been varied by controlling the yarn tension in addition to increasing or decreasing the number of strands in the yarn to obtain the size stitch desired. This latter procedure often resulted in a loose and poorly constructed garment. However, through my method, the wide and narrow portions of the garment each have the same number of stitches, the difference being solely in the size of the stitch.

A further advantage is that the gradual increase and decrease in the size of the stitch results in a smooth product that has no appearance of bagginess or coaarseness.

A further advantage is that the body or sleeve portion of a sweater knitted in accordance with my method requires no shaping or cutting to adapt them to each other resulting in considerable savings in time and material.

Another advantage is that in addition to gradually increasing the size of the stitch from the wrist portion to the upper portion of the sleeve to give a tapered effect, I also maintain a small stitch on the inner side of the sleeve from the wrist to the upper portion of the sleeve where it is attached to the sweater at the arm pit. This results in a sleeve in which the outer portion is longer and has greater stretching capacity than the inner portion which is a distinct advantage over present day sleeves that are either the same length on both the inner and outer portions or have to be cut on an angle in order to give some form and semblance of shape to the sweater. By such a construction, I am providing greater stretching capacity to the outside of the sweater sleeve where it is needed.

Another advantage is that the sweaters may be knitted in various sizes without the necessity

2

of shaping the sweaters on forms or other similar objects to obtain the final size desired.

Further advantages and unique features of my method will be apparent as I proceed with the specification.

With reference to the drawings—

Fig. 1 shows a front elevation of a sweater with sleeves and body portion knitted in accordance with my method;

Fig. 2 shows a sectional view of the stitches on line 2—2 of Fig. 1;

Fig. 3 shows a sectional view of the stitches on line 3—3 of Fig. 1;

Fig. 4 shows an enlarged view illustrating the gradual enlargement of the stitches in the body portion of the sweater;

Fig. 5 is a front elevation of a sleeve knitted in accordance with my method; and

Fig. 6 shows an enlarged view illustrating the gradual enlargement of the stitches in the sleeve of the sweater both in a horizontal and vertical direction.

In Fig. 1 I have shown a form fitting sweater 10 which is knitted in accordance with my method. The sweater 10 is comprised of a body portion 11 and arms or sleeves 12. Affixed to the lower part of the body portion 11 is the conventional ribbed waist section 13. Likewise affixed to the lower extremities of the sleeves are the ribbed wrist portions 14, and affixed to the upper part of the body portion 11 is the conventional ribbed section 15 for the neck of the sweater. The body portion 11 of the sweater is knitted on a circular knitting machine, the circular bed plates of which vary in size according to the size of the sweater to be knitted. It might also be pointed out that this type of construction may be utilized on a circular knitting machine knitting either a jersey or a rib stitch.

In knitting the body portion 11 of the sweater 10, the narrow part or waist portion is knitted first and by controlling the movement of the needles the size of the stitch may be increased or decreased as desired. The yarn remains the same size throughout the entire operation and the narrow and wide parts of the sweater both have the same number of rows and stitches. However, the difference in the overall size between the wide and narrow portions is due solely to the size of the individual stitches. In knitting the body portion 11 of the sweater 10, the size of the stitches is progressively increased from the waist to the upper portion of the sweater. When the body of the sweater nears completion near the upper portion, the size of the stitch is decreased due to the fact

that the breadth of the sweater is somewhat less at this point than it is through the central or chest portion. It can be seen by utilizing this method of stitch control a sweater having a form fitting tubular body portion is knitted without the necessity of having side seams which are present in all conventional sweaters. Furthermore, this sweater has a natural shape to which it will always return and there is no necessity of shaping or forming the sweater to conform to a particular size. Furthermore, in view of the fact that the number of wales will be the same in the wide as in the narrow portions, the sweater as a whole will present a neat, smooth and uniform appearance.

Figure 2 shows a sectional view of the stitching showing the smaller stitches **16** in the lower part of the sweater which gradually expand to the larger size stitches **17** as the knitting of the sweater progresses upward. Figure 4 illustrates an enlarged view of the stitching throughout the body portion **11** of the sweater **10** showing how the stitching starts off with a small stitch **16** at the lower part and gradually increases in size as the knitting of the body portion progresses. Provision to affix the sleeves **12** and neck portion **15** to the body portion **11** of the sweater **10** is made in the conventional manner.

Figure 5 shows a front elevation of the sleeve **12** knitted on a tubular knitting machine in accordance with my method. The sleeve portion is knitted in a manner similar to the body portion in that the size of the stitches is gradually increased as the knitting progresses upward along the sleeve from wrist to shoulder. However, in addition to controlling the size of the stitch vertically along the sleeve, I also control the size of the stitch on the inner portion **18** of the sleeve adjacent to the body portion of the sweater. As the inner edge **18** of the sleeve in a normal garment is shorter than the outer edge **19** of the sleeve, I have made provision to knit the sleeve in this form so that it will not be necessary to thereafter make a diagonal cut in the upper portion of the sleeve to have it conform to the body portion of the sweater.

As stated before, in knitting the body portion, I control the movement of the needles of the circular knitting machine through a series of cams and other devices. By controlling the retraction of the needle, I control the size of the stitch. That is, by retracting the needle a short distance, a small stitch is formed, while retracting the needle a greater distance will result in a larger stitch being formed. By controlling these changes in the needle position, minute increases or decreases in the size of the stitch may be made resulting in a tapering garment that has no appearance of roughness which is usually apparent when the size of the stitch is controlled by other means. However, in addition to controlling the stitch size in a vertical direction while knitting the sleeve, through the addition of another outside cam I also gradually vary the size of the stitch in a horizontal direction from the outer to the inner portion of the sleeve. Figure 6 is an enlarged view of the stitching in the sleeve **12** showing the stitches not only increasing in size from bottom to top, but also from right to left. As illustrated, through control of the knitting mechanism I maintain a small stitch **20** on the inside edge **18** of the sleeve **12** which is gradually increased horizontally to a larger stitch **21** on the outside edge **19** of the sleeve **12**. At the same time, the smaller stitches **20** are also increased gradually in a vertical direction to a larger stitch **21**. The result of this is a sleeve that has an inner edge portion **18** considerably shorter than the outer edge portion **19** which is a very desirable feature. This not only results in a form fitting sleeve, but results in a sleeve that can be immediately attached to the body portion of the sweater without further alterations or modifications thereof.

While the invention has been described in detail with respect to a present preferred form which it may assume, it is not to be limited to such details and form since many changes and modifications may be made in the invention without departing from the spirit and scope of the invention in its broadest aspects. Hence, it is desired to cover any and all forms and modifications of the invention which may come within the language or scope of any one or more of the appended claims.

I claim:

1. A tubular knit sweater having a body portion and sleeves, said sleeves being tapered from top to bottom and having the same number of wales throughout, the stitches being gradually enlarged progressively from the wrist to the upper portion of said sleeves and said stitches being gradually enlarged progressively from the inner to the outer portions of said sleeves.

2. A tubular knit sweater having a body portion and sleeves, said sleeves being tapered from top to bottom and having the same number of wales throughout, the stitches being gradually enlarged progressively from the wrist to the upper portion of said sleeves and said stitches being gradually enlarged progressively from the inner to the outer portions of said sleeves whereby the inner edges of said sleeves will be shorter than the outer edges of said sleeves.

3. A tubular knit sweater having a body portion and sleeves, said sleeves being tapered from the shoulder portion to the wrist and having the same number of wales throughout, the stitches being gradually enlarged progressively from the wrist to the shoulder of said sleeves and being gradually enlarged progressively from the inner to the outer portions of said sleeves whereby the inner edges of said sleeves will be shorter than the outer edges of said sleeves, said body portion being flared from the lower portion progressively upwardly with the stitches gradually enlarged until a point above the armpit and then progressively decreased from that point to the neck whereby the chest portion will be larger than the waist and larger than the neck portion.

WILLIAM J. KUEHNEL.

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