Nov. 22, 1927. 1,650,208

S. B. HANES

METHOD OF MAKING ELASTIC BANDS FOR UNDERWEAR

Filed April 29, 1927

Fig. 1.

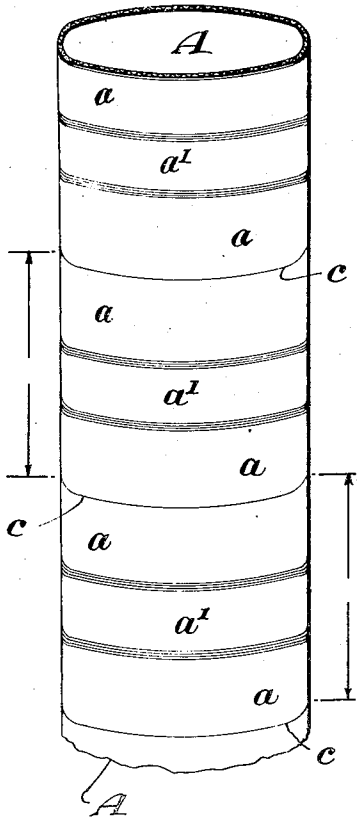


Fig. 2.

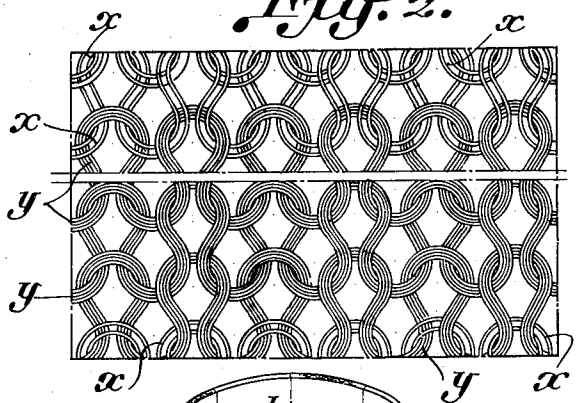


Fig. 3

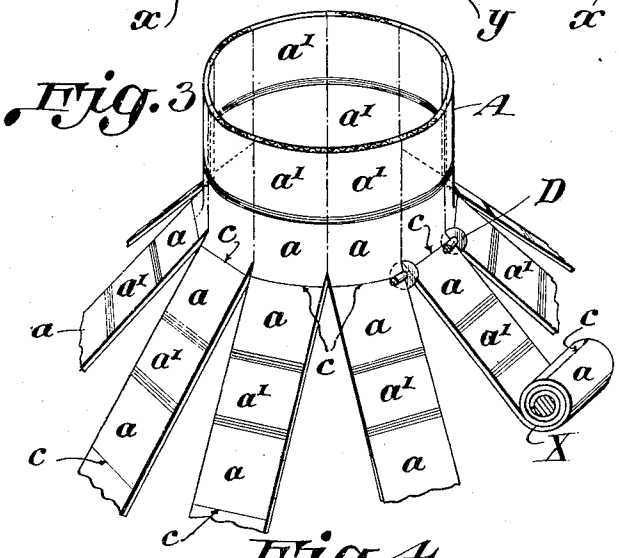


Fig. 4.

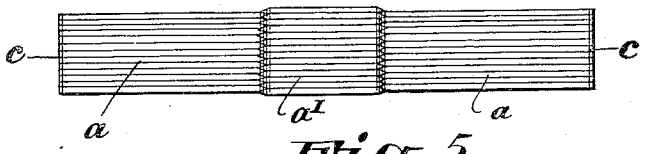
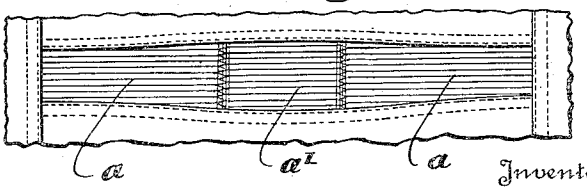


Fig. 5.



Inventor

Spencer B. Hanes

By Baldwin & Wight

Attorneys

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UNITED STATES PATENT OFFICE.

SPENCER B. HANES, OF WINSTON-SALEM, NORTH CAROLINA, ASSIGNOR TO P. H. HANES KNITTING COMPANY, OF WINSTON-SALEM, NORTH CAROLINA.

METHOD OF MAKING ELASTIC BANDS FOR UNDERWEAR.

Application filed April 29, 1927. Serial No. 187,575.

This invention relates to a method of making elastic bands for undergarments of the kind in which the upper and lower members of the garment are connected at the back by a band of knit goods having sufficient elasticity to relieve the strain on the garment while being worn, and when the body of the wearer is bent or so moved as to cause such strain as to tend to tear the material of which the garment members are made, or to permanently distort or stretch the band. Garments of this kind are now well known, and, as a rule, the elastic band has been reinforced or strengthened by applying to it midway between its ends a patch or piece of elastic material which resists to some extent the tendency of the garment to tear or of the band to become distorted.

I have found that superior results are obtained by reinforcing the band at the desired place by knitting into it additional yarns while the band is being formed. This results in thickening the middle portion of the band, and thus reinforcing it to the desired extent.

In carrying out my invention, I preferably employ a circular knitting machine, equipped with the desired number of needles, to knit both the end portions and middle portions of the bands with a plurality of yarns, and at the required intervals supply the needles with additional yarns to knit in connection with the yarns first mentioned the middle portions of the bands, to thicken and thus reinforce these portions.

When a circular knitting machine is employed, a tubular fabric of indefinite length is knitted with a plurality of yarns in such manner as to form the tube, and at marked intervals additional yarns are added to thicken and reinforce the tube at intervals to the desired extent. After the tube is thus formed, with the thickened portions spaced apart as above described, it is cut into lengths parallel with its major axis into strips of suitable width, and afterwards these strips are cut transversely to produce strips of suitable length to form the bands.

The places where the transverse cuts are to be made are indicated by marking yarns knit into the goods as the knitting operation proceeds.

In order that my invention may be better understood, reference is made to the accompanying drawings, in which:

Figure 1 is a perspective view of a tubular knit fabric with my improvement applied.

Figure 2 is a diagram indicating how the fabric is thickened at intervals.

Figure 3 is a perspective view indicating how the tubular fabric is cut into strips lengthwise of the tube.

Figure 4 is a detailed view of the band cut to the proper length.

Figure 5 illustrates how a band is secured to the garment members.

A indicates a tubular fabric knit by a suitable knitting machine. The portions *a* of the tube are preferably made by the use of two or more yarns *x* (Figure 2) and the portions *a'* by a larger number of yarns *y* (Figure 2), so as to thicken these portions *a'* of the fabric. Marking yarns *c* are introduced at suitable intervals to determine the length of the bands to be formed, and these yarns are located at suitable distances from the thickened parts *a'*, so that such thickened parts will be located midway between the ends of the bands, when the fabric is suitably cut to form the bands.

It will be understood that suitable patterns are employed to throw the needles into and out of operation at the proper times, as the work progresses.

The machine employed produces a tubular fabric of indefinite length, as indicated in Figure 1. This fabric is then cut into a plurality of strips by suitable mechanism, indicated diagrammatically at D (Figure 3). These strips may be rolled in the manner shown at X (Figure 3), and afterwards the strips are cut transversely along the marking lines *c* to obtain strips or bands of a length suitable for use in the garments.

It should be understood that the width of the reinforced bands *a'*, the length of the distance between the marking yarns, and the width of the strips cut by the cutting mechanism may be varied to obtain bands for garments of different sizes.

In my application for patent filed April 25, 1927, Serial No. 186,264, I have described and claimed an undergarment in which my improved elastic band is employed and the band used in such garment. The claims herein relate to the method of making the bands. In said application I have described some of the advantages obtained by the use of the elastic bands made in accordance with my invention, and reference is made to said

application for an explanation of these advantages.

While cotton yarns are preferably employed, I may use woolen, rubber, or other suitable material or combination of materials.

I claim as my invention:

1. The method hereinbefore described of making elastic waist bands for inelastic undergarments with reinforced portions between the ends of the bands, which consists in knitting a tubular fabric with a plurality of yarns to form a tube and with additional yarns at intervals in said tube to form thickened portions of the tube, and then cutting the tube at suitable intervals both longitudinally and crosswise to obtain elastic bands thickened and thus reinforced between their ends.

2. The method hereinbefore described of making elastic waist bands for inelastic undergarments with reinforced portions between the ends of the bands, which consists in knitting a tubular fabric with a plurality of yarns to form a tube of the desired thickness, and with additional yarns at intervals to form thickened portions of the tube disposed crosswise of the tube, inserting a marking yarn at intervals crosswise of the tube to determine the length of the bands to be obtained, and then cutting the thickened fabric both longitudinally and crosswise to obtain elastic bands of the desired dimensions.

3. The method hereinbefore described of making elastic waistbands for relatively inelastic undergarments with reinforced portions between the ends of the bands, which consists in knitting a fabric with yarn to form a fabric of the desired thickness, and with additional yarn at intervals in said tube to form thickened portions of the fabric, and then cutting the fabric at suitable intervals, both longitudinally and crosswise, to obtain waistbands of the desired dimensions, with centrally located thickened or reinforced portions.

In testimony whereof, I have hereunto subscribed my name.

SPENCER B. HANES.