Nov. 11, 1952 H. HARDIE 2,617,113

WAISTBAND FOR GARMENTS

Filed June 15, 1950

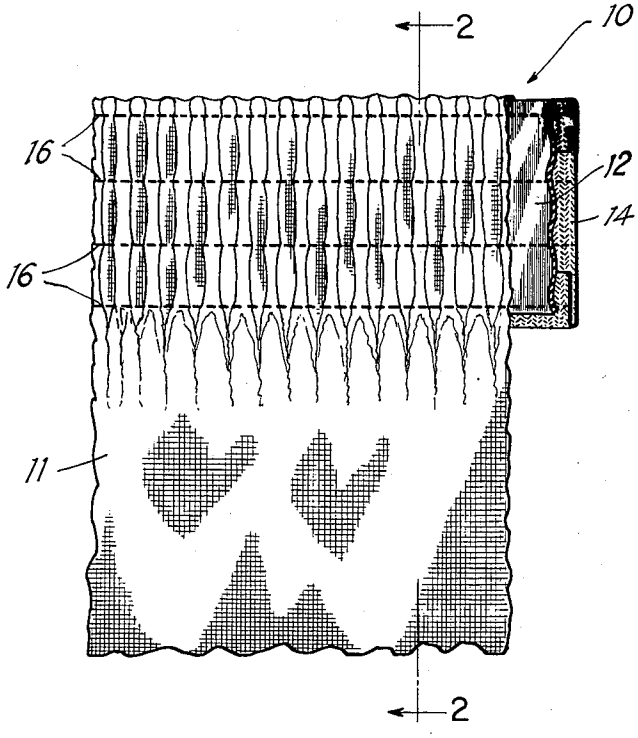



FIG. 1

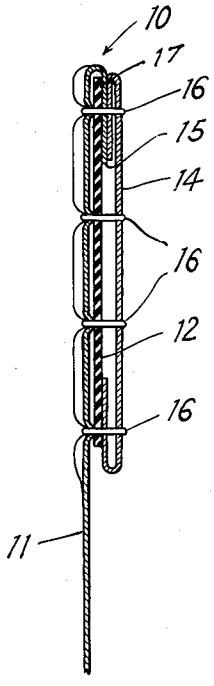



FIG. 2

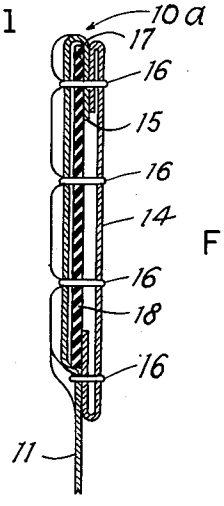



FIG. 3

INVENTOR
Harry Hardie
BY
Ramsey, Chisholm & Hilder
ATTORNEY

Patented Nov. 11, 1952

2,617,113

# UNITED STATES PATENT OFFICE

2,617,113

## WAISTBAND FOR GARMENTS

Harry Hardie, Baltimore, Md., assignor to The Nobelt Company, Baltimore, Md., a corporation of Maryland

Application June 15, 1950, Serial No. 168,242

3 Claims. (Cl. 2—237)

1

This invention relates to wearing apparel and more particularly to elastic bands of the type which are sewn onto a garment during manufacture and form an integral part of the garment.

Body openings of garments, such as torso or leg openings, are often provided with an elastic band or belt sewed to the edge of the opening for holding the garment in position on the wearer. The elastic band may extend either for only a portion of the length of the opening or completely about the opening and have its ends united to form an endless band surrounding the waist or limb of the wearer.

Such elastic bands are sometimes formed of a strip of thin, elastic sheet rubber covered with a textile sheath, the rubber and sheath being united and held in place on the garment by parallel rows of stitching penetrating the rubber strip. The garment band of the present invention is of this type.

The garment band of the present invention is adapted for garments formed of woven material. The garment material, adjacent to the edge zone thereof, is laid over the outer surface of the rubber strip so as to bring the pattern of the cloth to the very edge of the garment, the garment material being folded closely over the edge of the rubber strip at the mouth of the garment opening and the edge zone of the garment material being brought against the inner face of the rubber strip. The inner side of the rubber strip (towards the body of the wearer) is, in the embodiments of the invention shown in the drawings, covered by a knitted textile inner sheath, the edge of the inner sheath adjacent the mouth of the opening overlying the folded-over portion of garment material and the other edge of the inner sheath extending slightly beyond the edge of the rubber strip furthest from the mouth of the garment opening. These edges of the inner sheath are folded inwardly upon themselves to form hems along the edges of the inner sheath.

This band is assembled during manufacture of the garment, the rubber strip being stretched somewhat while the band is united by three or more parallel rows of stitching extending longitudinally of the band and penetrating the portion of the garment material forming the outer sheath and the inner sheath. At least two of the rows of stitching penetrate the rubber strip. When the band is released and allowed to contract, the portion of the garment material overlying the rubber strip and forming the outer sheath is evenly shirred by the rows of stitching.

Among the objects of the present invention are

2

to provide an improved elastic garment band which is particularly suited for a garment formed of woven material, which has a pleasing appearance, which is very comfortable to the wearer, and to generally improve garment bands of the type described.

Further objects and objects relating to details and economies, manufacture, and use will more definitely appear in the detailed description to follow.

My invention is clearly defined in the appended claims. Where parts are, for clarity and convenience, referred to on the basis of their oriented position shown in the accompanying drawing, no limitation as to positioning of the entire structure is to be implied, since it will be understood that the entire structure may be inverted or that it may be used in any inclined position. Also, in both the description and the claims, parts at times may be identified by specific names for clarity and convenience, but such nomenclature is to be understood as having the broadest meaning consistent with the context and with the concept of my invention as distinguished from pertinent prior art. The best form in which I have contemplated applying my invention is illustrated in the accompanying drawing forming part of this specification in which:

Fig. 1 of the drawings is an elevation of the outside of a garment having a band in accordance with the present invention, portions of the garment and band being broken away to show details of construction.

Fig. 2 is an enlarged diagrammatic cross section of the garment band taken on the line 2—2 of Fig. 1.

Fig. 3 is an enlarged diagrammatic cross section similar to Fig. 2 of a second form of the invention.

Referring now to the drawings, the elastic band 10 of the present invention is particularly well adapted for use as an elastic waistband for men's woven shorts or pajamas, in which instance it is applied to the upper edge of the woven garment material 11. It is very well suited for use as an endless elastic band formed by permanently joining the ends of the band as in the so-called "boxer" shorts, sufficient stretch being provided in the band, and by shirring the woven garment material, to provide for putting on and taking off the garment.

The elastic band 10 is formed of the garment material 11, a strip of thin, elastic sheet rubber 12, and an inner knit textile sheath 14, which are assembled and united by stitching, as will be

described. The edge of woven garment material 11 upon which the band is assembled may be either square cut or bias cut.

The rubber strip 12 is a thin strip of elastic sheet rubber (including rubber-like material) preferably having a width when unstretched in the order of an inch to an inch-and-a-half for a waistband and suitable thickness to provide the desired tension of the band when in position on the wearer, which tension is determined in part by the weight of the garment to be supported. The rubber strip is laid along the inner face adjacent to an edge zone of the garment material 11, with the garment material covering the outside face of the rubber strip and the edge 15 of the garment material projecting a short distance beyond the edge of the rubber strip adjacent the mouth of the garment opening. The edge 15 is then folded over the rubber strip, as will be explained.

The inner textile sheath 14 is preferably formed of knitted textile material having a substantial stretch in the direction of the band 10 in order to provide for stretch of the band and still not be substantially shirred when the band is in unstretched condition. Thus, there is no substantial shirring of the inner sheath when the garment is in position on the wearer and the soft flexible knitted material forms a comfortable, relatively smooth body-engaging surface of the band 10.

The edge of the inner sheath 14 adjacent the mouth of the opening terminates slightly short of the fold of the garment material so as to be invisible when the garment is in position on the wearer, and the other edge of the inner sheath projects slightly beyond the edge of the rubber strip 12 furthest from the mouth of the opening so as to completely cover and conceal this strip. The edges of the inner sheath 14 are folded in (between the sheath and the rubber strip 12) to form hems along the edges of the sheath.

The rubber strip 12 and the inner sheath 14 are held in assembled relation on the garment material by three or more rows 16 of parallel stitching running lengthwise of the band. One row 16 of stitching penetrates the garment material 11, the edge portion of the rubber strip 12 adjacent the mouth of the opening, the folded-over edge 15 of the garment material, and the hem of the inner sheath 14 adjacent the mouth of the opening. In the first form of the invention, shown in Figs. 1 and 2, the row of stitching 16 furthest from the mouth of the opening (lowest row in the drawings) penetrates the garment material 11, the other hem of the inner sheath 14, and the rubber strip 12.

The intermediate row or rows of stitching 16, preferably two in number, penetrate the garment material 11, the rubber strip 12, and the inner sheath 14. If desired, the folded-over edge 15 of garment material and the inwardly turned hem portions of the sheath 14 may extend to and be penetrated by the intermediate rows of stitching. While the garment material, rubber strip, and inner sheath are shown in both Figs. 2 and 3 as being somewhat separated for clarity of illustration, the rows of stitching hold these parts closely together.

The band 10 is assembled on the garment material 11 at the sewing point and then sewn while the rubber strip 12 is in stretched condition. The rubber strip 12 and inner sheath 14 are fed to the garment in strip form through suitable guides and folders, the rubber strip and inner sheath being stretched a predetermined amount and the outer woven sheath not being substantially stretched, particularly if square cut, rather than bias cut.



After assembly at the sewing point, the band is sewn while in stretched condition by a multiple-needle machine, so as to insert all of the rows of stitching simultaneously and provide stitches which coincide (the needle penetrations of the band opposite one another) thus producing a uniform shirring of the garment material covering the outer face of the rubber strip 12. Preferably a straight stitch is used, having a length when stretched of about ten stitches to the inch.

By sewing the band 10 when the rubber strip 12 is in stretched condition, it is not necessary to use elastic or zizag stitches, and the band may subsequently be stretched to the amount that it was stretched when sewn without unduly stressing the stitching. Further, the garment material 11, which is sewn in flat, unshirred condition, limits the stretch of the band, particularly if square cut.

Upon stretching, the rubber strip 12 contracts somewhat in width. Thus, by folding the edge 15 of the garment material fairly closely about the edge of the rubber strip 12 when it is in somewhat narrower stretched condition, the strip will expand laterally when relaxed so as to substantially fill the folded-over edge of the garment material and stiffen the fold to hold it against turning back along the adjacent row of stitching 16 and against the face of the band.

It has been found that if a slight clearance is left between the edge of the rubber strip 12 and the fold of the garment material 11 while the band is being sewn in stretched condition, the rubber strip, when relaxed, will still substantially fill the sheath so as to stiffen the folded edge of garment material 11. The clearance should be of such magnitude that the expansion of the portion 17 of the rubber strip above the adjacent row of stitching 16 will approximately fill this portion of the sheath when the band is in relaxed condition but will not press appreciably against the fold of the garment material 11. A band constructed in this manner will have less tendency to curl and will lie flatter when in relaxed condition. The clearance between the edge of the rubber strip and the fold of the garment material 11 is exaggerated in Figs. 2 and 3 for clarity of illustration.

Since the rubber strip 12 substantially completely fills the folded portion of the garment material 11 when the band is unstretched, the shirring of the garment material extends without change in appearance completely to the folded-over edge of the garment. This arrangement gives the band an improved appearance, facilitates ironing of the garment if desired, and stiffens the edge of the garment material to make ironing thereof unnecessary.

In the second form of the invention shown in Fig. 3, the row of stitching 16 furthest from the mouth of the opening does not penetrate the adjacent edge portion of the somewhat narrower rubber strip 18 but is located immediately beyond this edge of the rubber strip when the band is stretched during sewing. When the garment band is relaxed, lateral expansion of the rubber strip 12 causes the edge of the strip to abut and bear against the row of stitching 16. The band of this second form of the invention functions in substantially the same manner as the above-

described band of Figs. 1 and 2, and permits the use of a slightly narrower rubber strip and also assures that the inner sheath 14 will cover this edge of the rubber strip at all times. Otherwise the band of Fig. 3 is similar to the previously described band shown in Figs. 1 and 2.

If the garment material 11 is formed of square-cut woven material, there is no substantial lateral expansion of the sheath as it is relaxed from stretched condition, and the rubber strip 12 becomes inwardly arched between the rows of stitching 16 to form a series of pad-like flexible corrugations. However, if the garment material 11 is bias cut from woven material, the lateral expansion of the band (which is not substantially limited by the inner sheath of knit material) permits the rubber strip 12 to remain flat when relaxed from stretched condition. In the latter instance, the entire band 10 expands laterally somewhat when relaxed from stretched condition, the rubber strip remaining generally flat rather than arching inwardly between the rows of stitching.

I claim:

1. An elastic band extending about an opening in a garment of woven textile material to contract the margin of the opening about the wearer, said band comprising: a strip of thin elastic sheet rubber lying against the inner face of the garment material adjacent to an edge zone thereof, the garment material covering the outside face of the rubber strip and being folded over that edge thereof which is adjacent to the mouth of said opening; an inner textile sheath on the inside face of the rubber strip, said inner sheath everlying the folded-over portion of the garment material and extending beyond that edge of the rubber strip which is remote from the mouth of said opening, and the edges of the inner sheath being folded inwardly to form hems; and a plurality of parallel rows of stitching extending longitudinally of the band, such rows of stitching being sewn with the rubber strip in longitudinally stretched condition, said stitching including a row of stitching passing through the portion of garment material covering the outside face of the rubber strip, that edge portion of the rubber strip which is adjacent to the mouth of said opening, the folded-over portion of the garment material, and that hem of the inner sheath which is nearest the mouth of said opening, said stitching also including a row of stitching passing through at least the garment material covering the outer face of the rubber strip and that hem of the inner sheath which is furthest from the mouth of said opening, and said stitching additionally including at least one intermediate row of stitching passing through the garment material covering the outer face of the rubber strip, the rubber strip, and the inner sheath.

2. An elastic band extending about an opening in a garment of woven textile material to contract the margin of the opening about the wearer, said band comprising: a strip of thin elastic sheet rubber lying against the inner face of the garment material adjacent to an edge zone thereof, the garment material covering the outside face of the rubber strip and being folded over that edge thereof which is adjacent to the mouth of said opening; an inner textile sheath on the inside face of the rubber strip, said inner sheath overlying the folded-over portion of the garment material and extending beyond that edge of the rubber strip which is remote from the mouth of said opening, and the edges of the inner sheath being folded inwardly to form hems; and a plurality of parallel rows of stitching extending longitudinally of the band, such rows of stitching being sewn with the rubber strip in longitudinally stretched condition, said stitching including a row of stitching passing through the portion of garment material covering the outside face of the rubber strip, that edge portion of the rubber strip which is adjacent to the mouth of said opening, the folded-over portion of the garment material, and that hem of the inner sheath which is nearest the mouth of said opening, said stitching also including a row of stitching passing through the garment material covering the outer face of the rubber strip and that hem of the inner sheath and edge of the rubber strip which is furthest from the mouth of said opening, and said stitching additionally including at least one intermediate row of stitching passing through the garment material covering the outer face of the rubber strip, the rubber strip, and the inner sheath.

3. An elastic band extending about an opening in a garment of woven textile material to contract the margin of the opening about the wearer, said band comprising: a strip of thin elastic sheet rubber lying against the inner face of the garment material adjacent to an edge zone thereof, the garment material covering the outside face of the rubber strip and being folded over that edge thereof which is adjacent to the mouth of said opening; an inner textile sheath on the inside face of the rubber strip, said inner sheath overlying the folded-over portion of the garment material and extending beyond that edge of the rubber strip which is remote from the mouth of said opening, and the edges of the inner sheath being folded inwardly to form hems; and a plurality of parallel rows of stitching extending longitudinally of the band, such rows of stitching being sewn with the rubber strip in longitudinally stretched condition, said stitching including a row of stitching passing through the portion of garment material covering the outside face of the rubber strip, that edge portion of the rubber strip which is adjacent to the mouth of said opening, the folded-over portion of the garment material, and that hem of the inner sheath which is nearest the mouth of said opening, said stitching also including a row of stitching passing through the garment material covering the outer face of the rubber strip and that hem of the inner sheath which is furthest from the mouth of said opening, said row of stitching being located a slight distance from the edge of the rubber strip furthest from the mouth of said opening such that, when the band is in unstretched condition, the edge of the rubber strip presses lightly against such row of stitching, and said stitching additionally including at least one intermediate row of stitching passing through the garment material covering the outer face of the rubber strip, the rubber strip, and the inner sheath.

HARRY HARDIE.


REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

| Number | Name | Date |
|---|---|---|
| 2,059,103 | Hardie et al. | Oct. 27, 1936 |
| 2,132,616 | Hardie | Oct. 11, 1938 |
| 2,343,374 | Hargreaves | Mar. 7, 1944 |