June 2, 1942. W. A. BURKEY 2,285,012

ELASTIC-BELT GARMENT AND MAKING SAME

Filed Nov. 19, 1938

Fig. 2

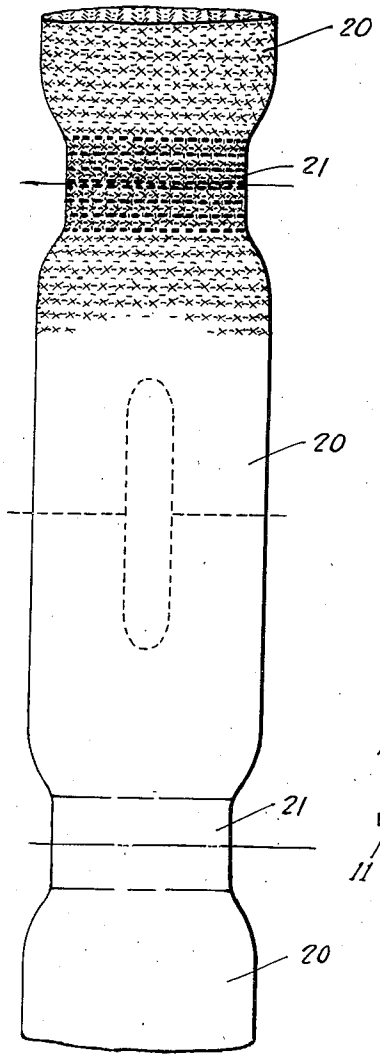


Fig. 1

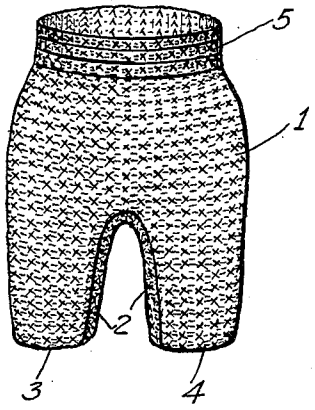


Fig. 3

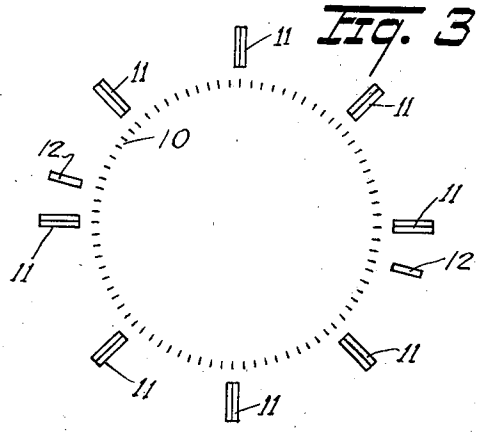


Fig. 4

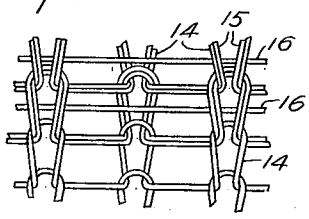


Fig. 5



William A. Burkey

INVENTOR

BY

ATTORNEYS

Patented June 2, 1942 2,285,012

UNITED STATES PATENT OFFICE

2,285,012

ELASTIC-BELT GARMENT AND MAKING SAME

William A. Burkey, Hamburg, Pa., assignor to Burkey Underwear Company, Inc., Hamburg, Pa., a corporation of Pennsylvania

Application November 19, 1938, Serial No. 241,355

2 Claims. (Cl. 66—176)

My invention relates to improvements in garments and to the economical making of the same from blank lengths cut from a continuous specially-formed circularly-knitted fabric tube, my main object being to produce a simplified garment in which the elastic belt is formed from an integral portion of the cut blank so as to materially reduce the manufacturing costs of finishing the same, and provide greater wearing comfort and an enhanced appearance.

The nature of my improved garment, the special formation of the circularly-knitted fabric-tube from which it is cut, and the method of making the same, with their resulting advantages, will be more fully described in the following specification and in connection with the accompanying drawing, and the novel features specifically defined in the appended claims.

In the drawing,

Fig. 1 is a conventional perspective front view of a bifurcated garment embodying my invention.

Fig. 2 is a conventional side view of a circularly-knitted tubular fabric specially formed for economically cutting fabric blanks for making the garment shown in Fig. 1.

Fig. 3 indicates diagrammatically the needle circle of a large diameter knitting machine with a plurality of thread guides and a preferred disposition of added thread guides for introducing elastic thread in certain fabric band areas.

Fig. 4 is an enlarged detail view of the loop construction of conventional rib-knitting, showing two courses reenforced with added interknitted thread, and both courses having unknitted elastic thread laid in between the plain and rib stitches in a manner well known and understood in the art.

Fig. 5 is a diagrammatic detail cross-sectional view of the fabric, showing the unknitted elastic thread laid in between the plain and rib stitches.

My invention is particularly applicable to undergarments, though it is not to be understood as limited thereto, and in making a garment, such as the bifurcated undergarment indicated in Fig. 1, it has heretofore been common practice, where an elastic belt is desired, to sew on a separately formed belt piece. Such added belt piece ordinarily comprised a properly cut length of suitable width elastic fabric which had to be seamed to form a circle as well as requiring special seaming to the cut top edge of the knitted blank to prevent runs in the knitted loops of the latter and adequately unite it to the garment without constriction of its elastic stretching ability. These operations involved skilled work and entailed added expense for both material and labor, and it is the main object of my present invention to eliminate such added expense and labor and economically produce an improved garment both as to wearing comfort and enhanced appearance.

In the illustrative garment indicated in Fig. 1, the main portion 1 is tubular and formed from circularly knitted fabric, shown as bifurcated at its lower end by an inserted crotch piece 2 to form separate leg portions 3 and 4. The upper belt end 5 embodies my improvements and is formed by an integral portion of the circularly knitted fabric 1, into which portion has been introduced, during its knitting fabrication, spiral courses of elastic thread to make it free to stretch and retract so as to act as a supporting belt. Such integral belt 5 portion requires no seaming operations, its elastic thread may be proportioned for adequate and more comfortable stretch than the usual added elastic belt heretofore employed, it forms a complete tubular belt without a junction line, and it continues the knitted fabric looping without break into such belt portion to enhance the appearance of the garment. The top edge of belt 5 and bottom ends of legs 3 and 4 may of course be finished in any usual manner, as by an overcast binding or the like. My invention is applicable to other garments having belt portions, and such belt portion need not necessarily be at a top edge, but may be intermediately located in some cases.

Another object of my invention is to provide for the simple and economical manufacture of garments having the essential nature of that indicated in Fig. 1, and employing the heretofore known and desirable method of fabricating the same from suitable sections cut from a tube of circularly knitted fabric continuously produced in usual manner on a large diameter, or underwear knitting machine. Fig. 3 diagrammatically indicates the large needle circle 10 of such well known machine having a usual plurality of thread guides 11, each adapted to feed a main thread 14, and, when desired, an added thread 15 for reenforcing purposes as heretofore and well understood, and producing any usual plain or fancy knitting, that known as rib-knitting and having plain and rib wales indicated in Figs. 4 and 5 being preferred as particularly suitable for my present purpose. And further Fig. 3 indicates two additional thread guides 12, though the number may be varied, carrying elastic thread 16, as lastex, and shiftable into and out of

feeding position, either manually or automatically, to introduce said elastic into selected courses, preferably unknit, and held between the plain and rib wales of the preferred rib-knitting, in a manner heretofore known and well understood and forming spaced spiral wefts to produce elastic stretch and retraction to the fabric proportionate to the initial tension imparted to said elastic thread and the number of spiral coils introduced. Such elastic knitting is not in itself new, as seen in Figs. 4 and 5, but is believed novel for my present purposes and forms a particularly suitable elastic fabric band for forming the belt portion **5** of the garment illustrated in Fig. 1.

In Fig. 2 I have indicated a flattened tube of fabric circularly knitted in the manner above described and particularly adapted for the simple and economical production of the particular garment indicated in Fig. 1, for such purpose comprising alternate bands or sections **20** of preferred rib-knitted courses of loops, with intermediate narrower bands or sections **21** of the same knitting but having introduced thereto in the manner before described spiral courses of elastic thread, giving a normal retracted diameter to the tube, as shown, and providing suitable material for forming the integral elastic belt portions of garments cut therefrom.

Suitable garment forming lengths may be most advantageously and economically cut from this tube by midway transverse separation of each band **20** and **21**, as shown by the dotted lines indicating the cutting lines, such cutting line for band **20** preferably extending longitudinally in opposite directions from its midway transverse line to remove upper and lower surface oblong pieces, each of which may be used to form a crotch piece **2** to close the legs **3** and **4**. Thus cut there is no waste fabric, each band **20**, with one-half of its adjacent bands **21**, **21** forming two garment blanks, and the two portions cut from band **20** furnishing the material for the crotch pieces of said two blanks. The garment of Fig. 1 is simply finished by seaming in the crotch piece **2** and binding the edges of legs **3** and **4** and belt **5**, requiring a minimum of labor and no extra material.

For economy in cutting out lengths for other garments than that shown in Fig. 1, it may be desirable and more economical to vary the arrangements and lengths of bands **20** and **21**, as in some cases a cut length might conceivably require the whole of one band **20** with an entire adjoining band **21**, or the whole of a band **21** may be required with portions of its two adjoining bands **20** and **20** where an intermediate belt garment is to be made.

From the foregoing description it will be readily seen that my invention is applicable to a variety of garments, not necessarily undergarments, having improved integral elastic belt portions of great comfort and pleasing appearance, and that such garments may be simply cut with little or no waste material from suitably knitted tubes of fabric, and completed into a finished garment with a minimum of labor and without the addition of separately fabricated material.

What I claim is:

1. The method of producing an integral elastic-belt bifurcated undergarment, which consists in circularly knitting a continuous tube of rib-knitted courses in alternating bands of relatively longer plain rib-knitted lengths, and shorter belt-forming lengths, the latter having added inter-knitted inelastic thread and added elastic thread incorporated unknit between the plain and rib wales thereof, flat-folding said tube, removably cutting from both thicknesses of said folded plain rib-knitted bands longitudinally extending midway portions to form separate crotch-forming pieces for two garment-forming blanks, and transversely cutting said bands midlength of said removed portions to form bifurcated ends for each of two garment-forming blanks, finishing said ends by seaming and sewing to each one of said crotch-forming pieces, cutting said tube again transversely midway of said belt-forming bands, and seaming each such cut-end to form the top edge of an integral elastic garment belt.

2. The method of producing underwear garments having integrally formed elastic belt bands at one end thereof, which consists in circularly knitting a continuous strip of tubular fabric, throughout circular band portions spaced lengthwise of said tube intruding a spiral coil of elastic thread held unknitted in said fabric, transversely severing said tube midway of each of said spaced band portions and also midway between the spaced bands, loosely securing the cut edges of said spaced elastic bands to form the top edge of an integral elastic garment belt, and finishing the cut edges between said band portions to form the bottom edge of an underwear garment.

WILLIAM A. BURKEY.