Nov. 5, 1940. W. E. RALSTON 2,220,277

KNITTED GARMENT

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Fig. 1

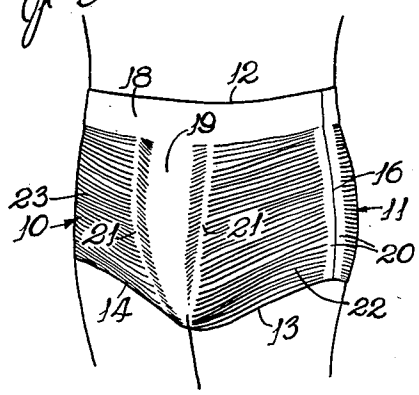


Fig. 2

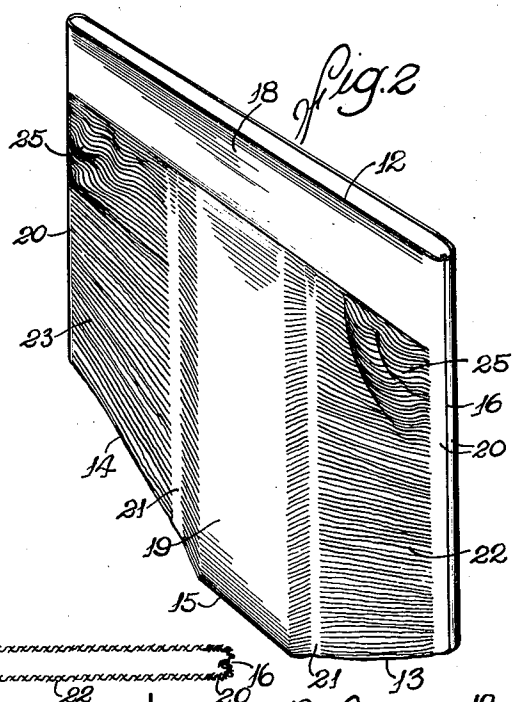


Fig. 3

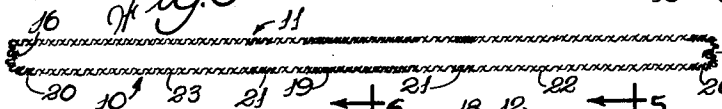


Fig. 4

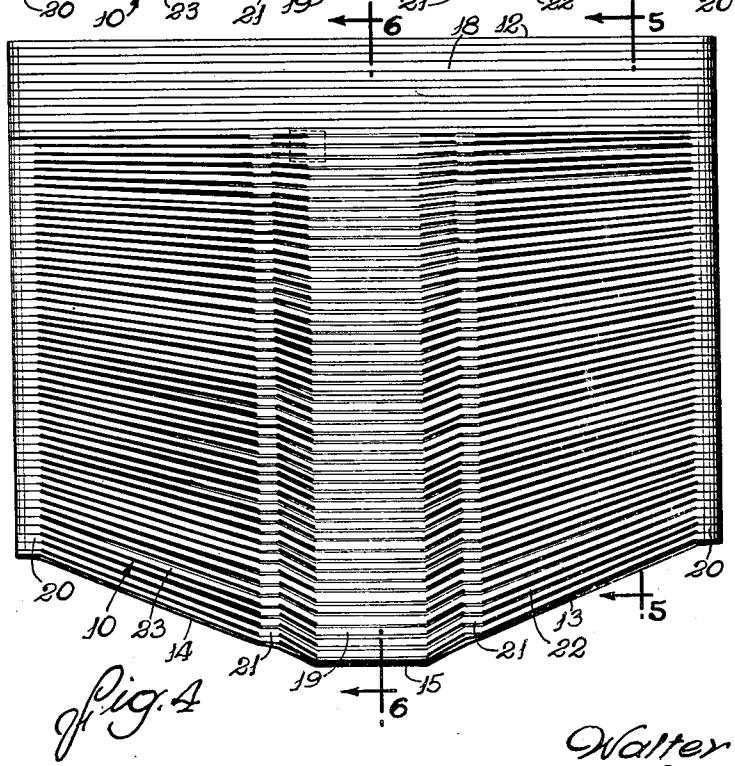


Fig. 5

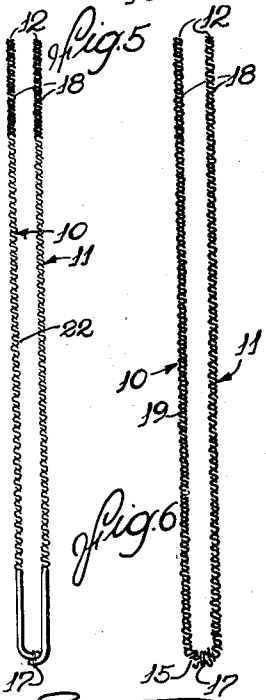


Fig. 6

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Fig. 7

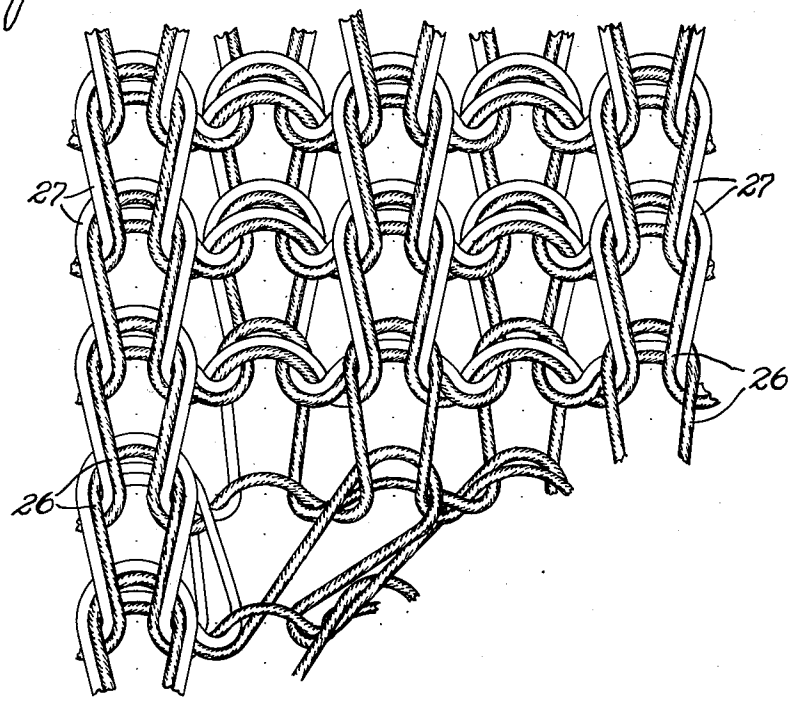
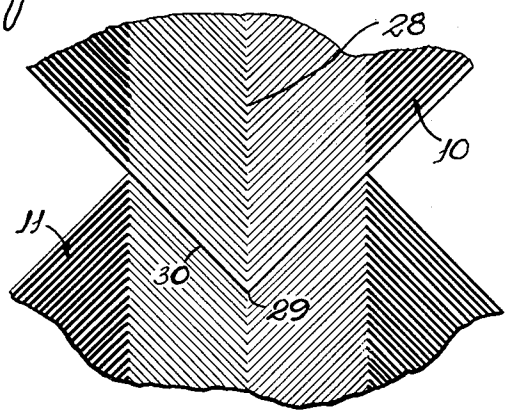


Fig. 8



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2,220,277

KNITTED GARMENT

Walter E. Ralston, Delavan, Wis.

Application September 24, 1938, Serial No. 231,549

12 Claims. (Cl. 66—176)

The invention relates to knitted garments and more particularly to men's trunks such as are used for swimming or for under garments.

One object of the invention is to provide a novel pair of knitted trunks having a reinforcing section knit into the front of the trunks as an integral part thereof and constituting a supporter.

Another object of the invention is to provide a novel pair of knitted trunks embodying a reinforced waist band and supporter loop extending through the crotch of the trunks and having the lower selvage edges of the trunk legs inclined at the proper angle relative to the waist band.

The invention also resides in novel features of construction which impart shape and reinforcement to the trunks and enable the same to fit the wearer's body nicely.

Further objects and advantages of the invention will become apparent as the following description proceeds, taken in connection with the accompanying drawings in which

Figure 1 shows a pair of trunks embodying the invention in place on a wearer.

Fig. 2 is an enlarged perspective view of the pair of trunks of Fig. 1.

Figs. 3 and 4 are respectively top and front elevations of the trunks.

Figs. 5 and 6 are respectively vertical sectional views along the lines 5—5 and 6—6 of Fig. 4.

Fig. 7 is an enlarged fragmentary view of a portion of the trunk fabric.

Fig. 8 is a fragmentary view of the crotch portion of a modified form of the trunks.

The invention has been shown herein as applied to a pair of men's bathing trunks, but it will be apparent that the invention is, in certain of its aspects, also applicable to other types of knitted garments. The particular pair of trunks chosen for illustration of the invention embodies similarly shaped front and rear pieces 10 and 11 of knit fabric, each having a straight upper selvage edge 12, side edges generally perpendicular to the upper edge, and lower selvage edge portions 13 and 14 converging downwardly and inwardly to a central edge portion 15 paralleling the upper edge 12 in the form of the invention shown in Fig. 4. Each front and rear section is knit as integral pieces of fabric and may, as shown in the present instance, be knit together integrally at one side edge. The other side edges are sewed together to form a compact seam 16 along the other hip. To complete the trunks, the central edge portions 15 are sewed together at a similar crotch seam 17. The inclination of the edge portions 13 and 14 relative to the upper or waist edge is such as to impart proper shape to the legs of the trunks.

The front and rear pieces 10 and 11 of the trunks are of generally similar shape although the rear piece is preferably somewhat wider. In fashioning the front piece 10, for example, the knitting is started with a course of stitches or loops at one side edge of the garment and the knitting carried on in continuous wales across the entire front portion of the garment. Preferably, though not necessarily, full or half cardigan stitches are employed depending on the elastic characteristics desired. Worsted or any other desired type of yarn may be employed.

The invention contemplates reinforcement of selected portions of the front and rear pieces 10 and 11 so as to form a straight elastic waist band 18 along the upper edges 12 and a band 19 preferably extending from the waist band 18 downwardly through the crotch and then upwardly along the center of the rear piece to the rear of the waist band. To assist in retaining the desired shape of the legs of the trunks, it may be desirable to provide narrow reinforcing bands 20 paralleling the supporter band and extending along each side edge of the front and rear pieces. For purposes of design or shaping, additional narrow reinforcing strips 21 may be knit in adjacent but spaced from the supporter band. The parts 22 and 23 of the front and rear pieces between the reinforcing bands extending downwardly from the waist band and terminating at the edge portions 13 and 14 are not reinforced and therefore are looser so as to stretch readily and conform to the contour of the wearer's body.

In the form shown in Fig. 4, the wales of the reinforced sections extend horizontally and parallel the selvage edge 12 constituting the upper edge of the waist band. In the other sections 22 and 23, the wales are inclined slightly as indicated by the shading in Fig. 4 so that the selvage edges 13 and 14 will define the lower end of the trunk legs. Cutting and seaming of the fabric to shape the legs is thus avoided.

Such inclination of the wales is effected by an operation known in knitting as knee-racking. One form of flat knitting machine by which this may be accomplished forms the subject matter of my copending application Serial No. 238,837 filed Nov. 4, 1938. As therein disclosed, the bank of needles by which the sections 22 and 23 are formed are racked in the course of knitting relative to the remaining needles knitting the waist band. The effect of such racking is to form the

wales at an incline controlled by the amount of racking so as to form a straight selvaged edge 13 which diverges from the waist band. By racking in the reverse direction, the reverse inclination of the edge 14 is obtained. The reinforcing bands 19, 20 and 21 are formed by knitting in the regular way without racking. In addition to imparting proper inclination to the lower ends of the trunk legs, the effect of the racking operation is to produce a substantial amount of fullness indicated at 25 (Fig. 2) in the unreinforced portions. This fills out and conforms readily to the wearer's body thereby contributing to the nicety of fit of the garment.

Reinforcement of the fabric to form the waist, supporter, and side bands 18, 19, and 20 may be effected in various ways as, for example, by using different weights of yarn in different sections as by using elastic yarn in knitting the reinforced section and worsted yarn in the other sections. It is preferred, however, to obtain somewhat greater reinforcement by using one yarn 26 (Fig. 8) throughout the front and rear pieces and adding elastic yarn 27 selectively in the sections which are to be reinforced. Such yarn includes a rubber strand encased in fine cotton, silk, worsted, or other threads. A characteristic full cardigan stitch coresponding to the area enclosed by dotted lines in Fig. 4 is shown on a magnified scale in Fig. 7. This also illustrates the effect of the racking operation above described.

Since the main supporting action is produced by the band 19 in the front piece 10, the band in the rear piece may, in order to reduce yarn costs and lessen the weight of the trunks, be reinforced to a lesser degree. This may be effected by adding reinforcing yarn 27 in alternate or even in every third or fourth round while the band 19 in the rear piece is being knitted.

By reinforcement in this manner, the bands 18 to 21 are heavier and more closely knitted. They impart the proper elasticity to the garment and form an effective supporter in the front piece. The support is thus knit in as an integral part of the front piece. In addition, the reinforced portions cooperate to retain the desired shape of the garment as a whole while permitting of the desired looseness and fullness in the other portions.

Instead of forming the supporter band 19 with straight horizontal wales and a flat bottom edge 15, the knee-racking action may be continued clear to the vertical center line of the front and rear pieces and the reinforcing yarn added in any selected portion. In such a case, the wales on opposite sides of the front pieces would converge to points 28 of intersection at the center of the piece as shown in Fig. 8. Thus, the inclined edges 13 and 14 would extend clear to the point 29 of intersection. The elastic yarn 27 would, of course, be knit into the central part to form the band or supporter as indicated by the shading. In order to avoid the necessity of cutting off the pointed end in forming the crotch seam, the racking would, during knitting of the rear piece, be carried on in such a manner as to form a V-notch at the center of its lower edge. This notch would be complemental to and interfit with the pointed end on the front section so that the two selvage edges may be sewed together forming a V-shaped seam 30.

With the construction above described, it is possible to very quickly and economically knit the front and rear portions as integral unitary pieces, each or both in one continuous operation. No subsequent cutting of the pieces or building in of a supporter are necessary. The only subsequent operations which need be performed are the sewing up of the sides of the garment and the lower ends of the supporter loop reinforcing sections to form the crotch. Despite this simplification of manufacturing procedure, a garment is provided which keeps its shape well and which affords good support to the wearer. Furthermore, the waist band fits snugly about the wearer's waist so that no belt is required and any tendency for the sides of the trunks to creep or roll up along the wearer's legs is reduced to a minimum.

The incorporation of the garment reinforcements into the fabric of the garment itself results not only in a simplification of construction, but also gives the trunks a pleasing appearance. The differentiation in appearance between the reinforced and unreinforced sections of the trunks has been disproportionately emphasized in the drawings in order to make clear the location of the reinforced sections. In the actual garment, the presence of the reinforcing strands is almost imperceptible, the principal difference of appearance in the reinforcing sections being due only to the fact that the stitches have an appearance of being somewhat more tightly knitted than in the remainder of the garment.

Although a particular embodiment and application of the invention have been shown and described in some detail, there is no intention to thereby limit the invention to such embodiment or application, but on the other hand, the appended claims are intended to cover all modifications in structure falling within the spirit and scope of the invention.

I claim as my invention:

1. A trunk type garment embodying front and back portions each of which is made of a continuous piece of knitted fabric having integrally incorporated into the fabric itself a reinforced section extending along the top edge thereof and a similarly formed supporter section extending downwardly through the crotch and to the centers of the front and rear portions of said reinforced top edge.

2. A trunk type garment embodying a front piece made of a continuous piece of knitted fabric having integrally incorporated into the fabric itself a reinforced section extending along the top edge thereof and a similarly reinforced section extending vertically to the crotch.

3. A trunk type garment made of knitted fabric and including one reinforced portion extending about the top thereof to form a waist band, another reinforcing portion forming a supporter loop depending from the waist band and other reinforced portions along the lateral side edges of the trunks all of said reinforced portions of the garment being formed by knitting additional resilient reinforcing strands into the selected areas of the trunk.

4. A pair of trunks embodying front and back layers of knitted fabric secured together at their side edges, each of said layers of fabric having a T-shaped reinforced section therein integrally incorporated into the fabric itself with the horizontal leg of each T lying along the top edge to form a waist band, the lower ends of the vertical legs of the T's being secured together to complete a supporter loop extending through the crotch of the garment, at least one of said layers of fabric also having reinforcing extending along

the side marginal edges thereof and integrally incorporated into the fabric itself.

5. A trunk type of garment having a front portion knitted as a continuous piece and comprising a reinforced waist band and reinforced vertical bands at the center and along the side edges thereof, the portions of the fabric below said waist band and adjacent said side bands being unreinforced and racked to incline the wales thereof relative to said waist band and define inclined selvage edges at the lower ends of the trunk legs.

6. A trunk type of garment having a front portion knitted as a continuous piece and comprising a waist band and a supporter band having elastic yarn knitted into the stitches thereof to reinforce the same, the side portions of said piece being knee-racked relative to said waist band so as to define selvage edges along the bottom of said piece converging toward the center of the piece and away from the waist band.

7. A trunk type of garment having front and rear portions knitted as integral pieces and having a reinforced waist band and vertical reinforcing bands at the hip sides of the garment and at the centers of said pieces, the wales of said bands extending horizontally, the sections of said pieces between said vertical bands being knee-racked and having wales converging toward said central bands and away from said waist band.

8. A trunk type of garment having front and rear portions knitted as integral pieces and having a reinforced waist band and vertical reinforcing bands at the hip sides of the garment, the wales of said bands extending horizontally, and the sections of the fabric between said vertical bands being knee-racked and having wales converging downwardly and toward each other, and reinforcing material knit into the central portion of said front piece so as to form a supporter.

9. A trunk type of garment comprising front and rear portions knitted as integral pieces defining a selvage edged waist band along the top margins with the wales thereof extending generally horizontally, the stitches forming the opposite margin of said pieces being racked relative to said waist band to form selvage edges converging to a crotch at the center of said portions with the wales correspondingly inclined relative to said waist band.

10. A trunk type of garment comprising front and rear portions joined at their vertical margins and at the center of the bottom to form a waist opening and leg openings on opposite sides of a crotch, each of said portions being knit as an integral piece with the wales thereof extending lengthwise of the edges of said openings and with selvage edges defining the leg openings and diverging away from the waist opening toward said crotch.

11. A trunk type garment comprising front and rear portions joined together to form a waist opening and leg openings on opposite sides of a crotch, each of said portions being knit as an integral piece with wales extending parallel to said openings and with a selvage edge defining said first opening, and other selvage edges defining said leg openings and converging toward said crotch and away from said first edge.

12. A trunk type garment comprising front and rear portions defining waist and leg openings and each knit as an integral piece with wales extending parallel to said openings having selvage edges defining said leg openings and converging toward each other and away from said waist opening, and a thread knit into selected parts only of said portions to form a reinforced waist band around said waist opening and a vertically extending supporter band in said front portion.

WALTER E. RALSTON.