

[54] **KNITTED TERMINAL EDGING**

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28/76 T

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Primary Examiner—Ronald Feldbaum

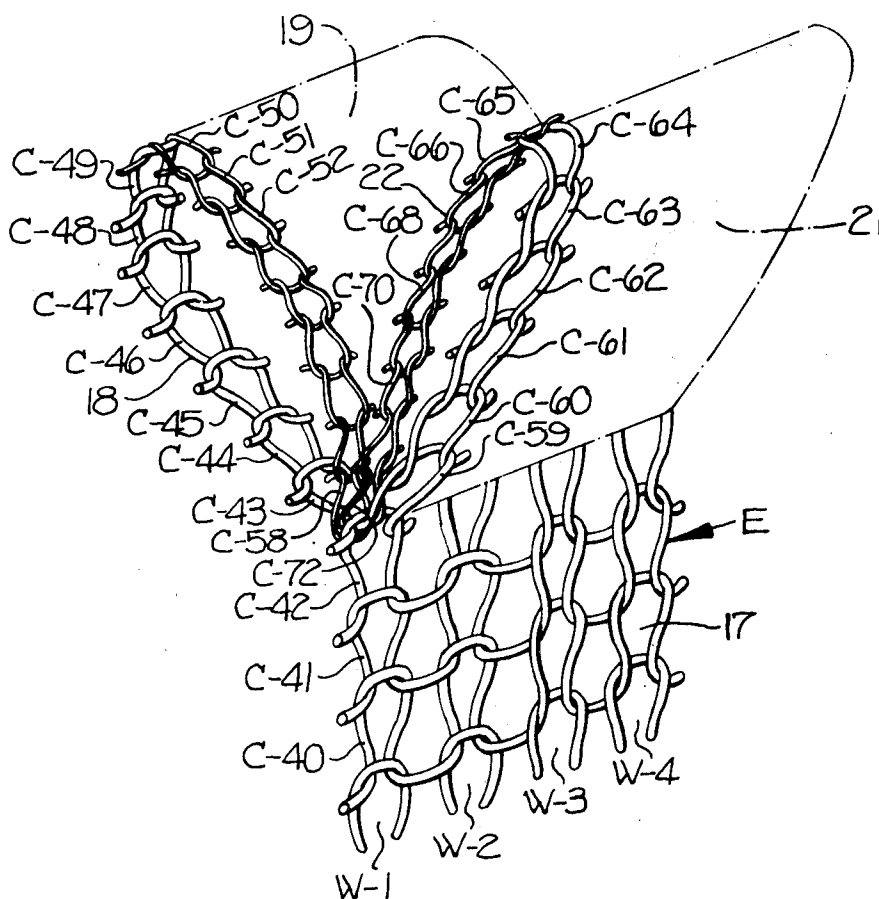
Attorney, Agent, or Firm—Allison C. Collard

[57]

ABSTRACT

The invention provides a terminal edging for a garment, the edging being formed by knitting so as to overlap the garment edge to which it is sewn on one or both sides thereof. The edging includes a single-ply base strip and one or more two-ply attaching tabs or turned welts, each having inner and outer plies with loose or tight stitches at their edges to enable them to readily fold along their joined edges. If the edging has two turned welts, these are joined at their bases to the single-ply base strip and the turned welts are placed one on each side of the garment edge, and sewn in position to secure the edging to the garment. The edging may be provided with one attaching tab including a two-ply turned welt and a single-ply attaching tab having an inwardly folded terminal edge portion.

8 Claims, 9 Drawing Figures



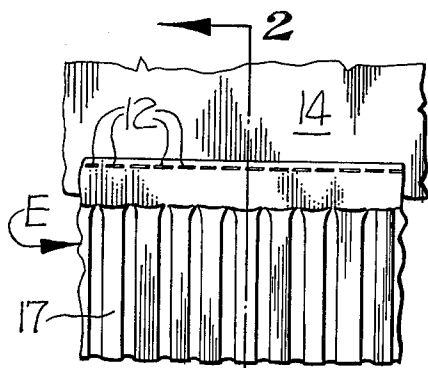


Fig-1

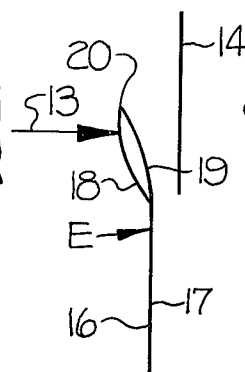


Fig-2

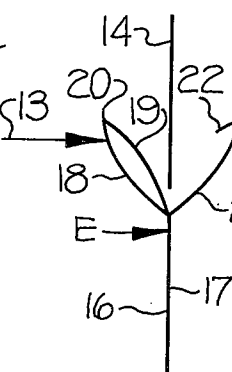


Fig-3

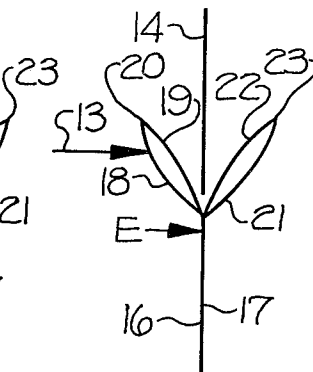


Fig-4

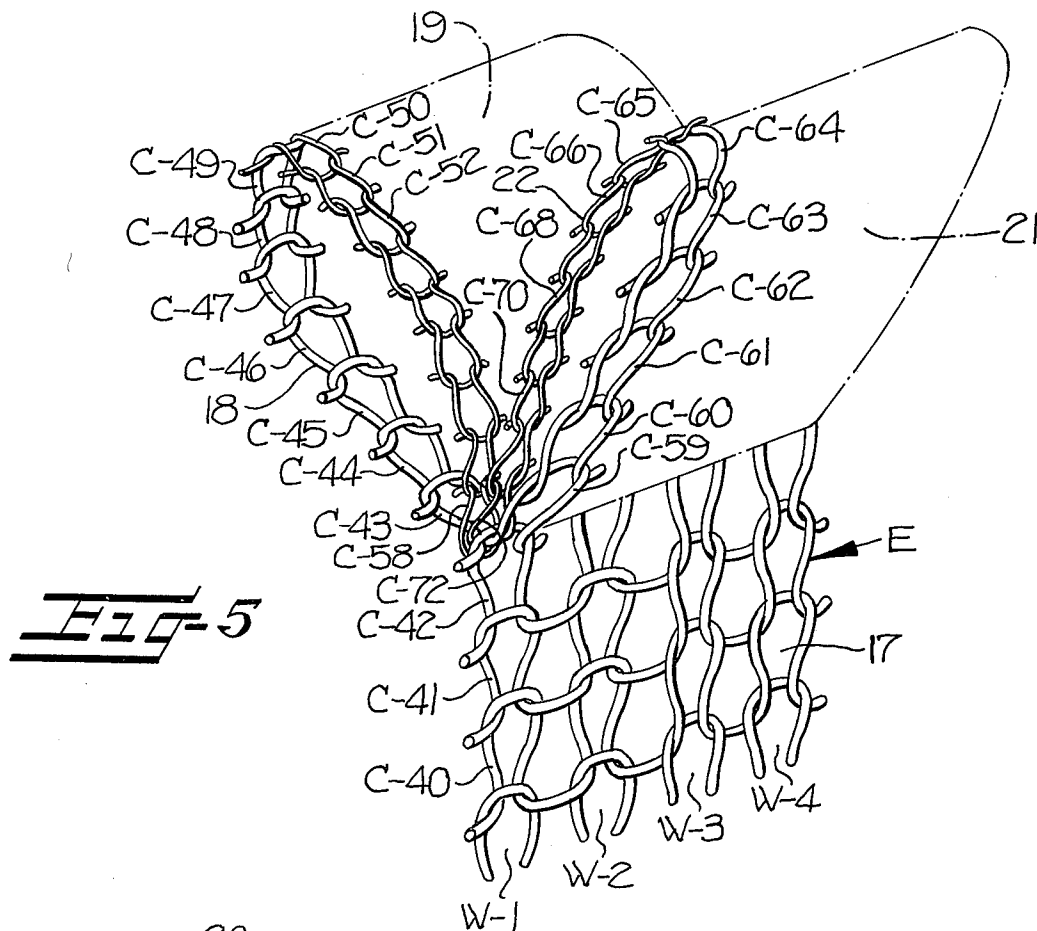
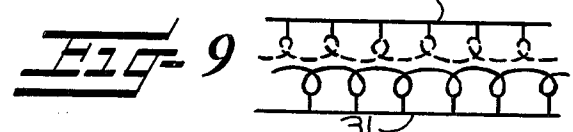
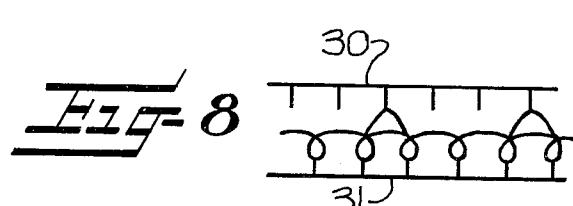
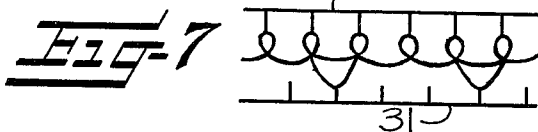
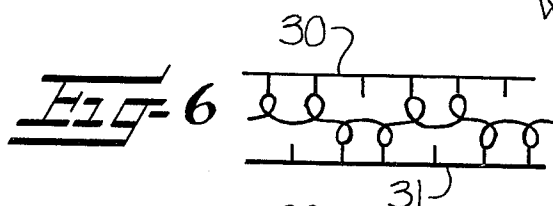


Fig-5



KNITTED TERMINAL EDGING

The invention relates to a knitted terminal edging to be attached to woven, non-woven, knitted or leather articles or garments. Such edgings often serve as decorations for the garments, but may also be used as attachment means.

Knitted and woven articles and garments have heretofore been trimmed with edgings knit on single or double bed machines and having a loose stitch course to provide a linking loop course or looper line adjacent one edge. For this purpose all the stitch loops of the linking loop course of the edging have to be cast on the needles of the ring of the looping machine and all of the linking loops along the edge of the garment must also be cast on the needles of the looping machine, in order to permit subsequent stitching to loop the edging to the garment. These looping operations require skilled operators and are also time consuming, so that to a considerable extent they affect the production costs of articles trimmed in this manner. It is known, for garments like pullovers, cardigans or the like, to provide a longitudinally folded edging and to loop this edging along an edge of the garment. For attachment to the garment, first one side of the folded edging has to be cast on the needles of the looper, the edge of the garment is then placed on the looper needles and in accurate register with the stitches already on the looper needle ring, then the other side of the folded edging must be accurately cast on the needles of the looper ring, in order to enable the two side edges of the folded edging and the edge of the garment held therebetween to be subsequently sewed together. These linking or looping operations, however, are very time consuming and require trained operators.

It is an object of the present invention to provide a knitted terminal edging having one or more two-ply turned welt tabs which may be economically attached along the edge of a garment by a simple sewing operation, carried out by a relatively unskilled operator.

According to the present invention there is provided a knitted terminal edging for attaching to woven, non-woven knitted or leather articles or garments, the edging including one or more two-ply turned welt attaching tabs which are joined to the single-ply base strip by one or more rib knit courses.

It should be understood that "tubular fabric courses" mean plain or jersey courses which are knitted on the needles of one needle bed of a flat two-bed knitting machine while at least certain needles of the other needle bed retain stitch loops thereon without knitting. Also, "rib knit" courses mean courses which are knitted on alternating needles of both needle beds so that alternating wales have stitch loops facing each side of the single ply fabric.

In such edging, the terminal rib knit course and end loops closing the tubular fabric are concealed on the inside of the edging. During the subsequent sewing operation the open loops are concealed and held beneath the turned welt or tubular attaching tabs of the edging. Due to the production of several tubular fabric courses followed by a tubular fabric course of tight or loose stitches, joined in turn to one or more additional tubular fabric courses, the tubular loops fold over in the form of a two-ply turned welt towards the inside of the edging. These tubular courses are followed by one or more rib knit courses to close the tubular fabric and form a two-ply turned welt thereof. Hence an edging is

obtained which has selvage edges at the beginning and end of the edging.

According to a preferred embodiment of the invention the plain knit tubular fabric courses are followed by rib knit courses, to provide a plain knit tubular fabric course in front of the first rib knit course. Instead of knitting the two-ply attaching tab in the form of a turned welt by knitting tubular fabric courses, it is also possible to knit each ply of the attachment tab on separate needle beds and to join them together by a rib knit course. These measures provide a firmer and flatter finish to the two-ply attaching tab.

The invention may also provide a terminal edging which includes at least one two-ply turned welt attaching tab formed by knitting a plurality of tubular fabric courses followed by a tubular fabric course with loose or tight stitches, followed by a second plurality of tubular fabric courses. By knitting a loose or very tight tubular fabric course, the subsequent turned welt is more readily folded along the juncture of the two plies to one side.

The invention also includes a terminal edging including a two-ply turned welt formed by knitting a plurality of tubular fabric courses, knitting one loose or tight tubular fabric course, again knitting a plurality of tubular fabric courses, transferring the held loops back to the needle bed on which the tubular fabric courses are knit, and then knitting a single rib knit course. A single-ply attaching tab is then formed by knitting several loop courses of optional knit, and then knitting several plain jersey loop courses, the first of these plain jersey courses being transferred so that an inwardly folded edge is formed along the single-ply tab.

Such an edging has a V-shaped attaching or edge pocket formed along one edge and between the inside surfaces of which an edge of the garment is inserted and secured in a single sewing operation. The tying of the open terminal loops of the previously transferred plain jersey loop courses at the extreme end of the substantially V-shaped edge is particularly important. These plain jersey loop courses at the end of the edging are automatically folded over inwards and may therefore be tied during sewing, and the transferred course assumes a loop formation along the outside edge of the attaching tab which appear to be identical to known linking or looping stitches.

A further embodiment of a terminal edging in accordance with the invention includes a pair of two-ply turned welt attaching tabs which are formed by knitting a plurality of tubular fabric courses, knitting one loose or tight tubular fabric course, again knitting a plurality of tubular fabric courses, and then knitting a rib knit loop course to complete one two-ply turned welt attaching tab. The other two-ply turned welt attaching tab is then formed by knitting a plurality of tubular fabric courses, knitting one loose or tight tubular fabric course, again knitting a plurality of tubular fabric courses, and then knitting a rib knit loop course.

It is preferred that the inner plies of the attaching tabs be knit with a thin yarn. This enables the joint between the edging and the garment to be kept thin. The tubular fabric courses in the inner plies of the attaching tabs may be knitted with yarn which is soluble in water. After securing the edging to the garment the inside plies of the attaching tabs may be dissolved during a washing operation, so that the attaching tabs become quite thin.

At both end edges of the substantially V-shaped attaching edge or pocket a true material fold is formed. In the case of the transferred plain loop course at the upper end of the attaching tab, the edging fold is visible on the right side of the edging so that it appears to be identical to the loop formation formed by the linking or looping stitch formed in the conventional looping operation.

Reference is now made to the accompanying drawings in which

FIG. 1 is a fragmentary elevation of the edging of the present invention, attached to the edge of a garment;

FIG. 2 is a schematic vertical sectional view taken along the line 2—2 in FIG. 1 and showing an edging with a single two-ply turned welt attaching tab;

FIG. 3 is a view similar to FIG. 2 but showing an edging with one two-ply and one single-ply attaching tabs;

FIG. 4 is a view similar to FIGS. 2 and 3 but showing an edging with two two-ply turned welt attaching tabs;

FIG. 5 is a somewhat schematic isometric view of the type of edging shown in FIG. 4; and

FIGS. 6-9 are schematic plan views of portions of a two-bed knitting machine and illustrating the manner in which various parts of the edging are knit.

In FIGS. 2-4 the direction of sewing the line of stitching 12 (FIG. 1) is shown by the arrow 13, the right side or outside surface of the garment by 14, and the right side or outside surface of the edging E by 16.

The type of edging shown in FIG. 2 includes a single-ply base strip 17 including successive weft knit courses of stitch loops extending longitudinally thereof and with a selvage along the lower edge of the base strip 17 which is formed by any suitable form of knitting and is usually of rib knit construction. Adjoining the base strip 17 is an attachment tab which includes an outer ply 18 and an inner ply 19 which are integrally knit along an upper fold line 20 extending along corresponding edge portions of the outer and inner plies. By knitting the course along the fold line 20 as a loose or tight tubular fabric course, the subsequent tubular fabric courses of the inner ply 19 of the attachment tab readily fold over and lie against the outer ply 18. The lower edge of the inner ply 19 and the lower edge of the outer ply 18 are both integrally knit with the upper edge of the base strip 17, in a manner to be presently described, to form the two-ply turned welt attaching tab. The edging E is attached to the edge of the garment 14 by means of a subsequent sewing operation in which the line of stitching 12 (FIG. 1) is formed along the upper edge of the attaching tab.

The type of edging shown in FIG. 3 includes a two-ply turned welt attaching tab which is identical to the attaching tab shown in FIG. 2 and includes an inner ply 19 and an outer ply 18. Both plies 18, 19 are formed by tubular fabric courses and the upper edges are joined by knitting one loose or tight tubular fabric course along the fold line 20. The lower edge of the inner ply 19 is joined to the lower edge of the outer ply 18 and a second attachment tab is knit. This second attachment tab includes a single ply 21 with an inwardly folded edge portion 22 which is joined to the upper end of the ply 21 along a fold line 23 to provide a substantially V-shaped edge pocket. Loops of the needles of the needle bed which knit the inner ply 19 may be transferred to the needles of the other bed to knit the ply 21. A course of loose or tight stitches may be formed along the fold line 23 so that the edge portion

22 folds inwardly. Also, the stitch loops of the needles in the needle bed which knit the ply 21 may be transferred to the needles of the other needle bed to knit the edge portion 22 so that the edge portion 22 automatically folds over inwardly into the V-shaped edge pocket.

In the embodiment shown in FIG. 4, a two-ply turned welt, including an outer ply 18 and an inner ply 19, is formed to provide a first attachment tab. Then a second two-ply turned welt attachment tab is formed to provide a V-shaped edge pocket. The second attachment tab includes an outer ply 21 and an inner ply 22 which are joined along their upper ends along a fold line 23. The lower ends of the plies 21, 22 of the second two-ply attachment tab are joined to each other and to the upper edge of the base strip 17 of the edging E. The method of knitting the attachment tabs will be presently described.

The edge of the garment 14 (FIG. 1) is inserted in the V-shaped pocket of the edging E formed according to FIGS. 3 and 4. Thereafter the upper edge portions of the attachment tabs are sewn to the garment 14 edge by the row of stitches 12 from the direction indicated by arrow 13 (FIGS. 3 and 4).

Each type of terminal edging E may be knitted in continuous succession with draw thread courses. By pulling out the draw threads, separation of the edgings occurs. It is advantageous to produce the courses in the inner plies of the attachment tabs from a substantially thinner yarn than used in the outer plies and in the base strip 17 of the edging E.

In order to make the securing region at the end of the attachment tabs still thinner, the inner plies may be knitted from a water-soluble yarn which, after the edging is sewn to the garment, is washed out.

METHOD OF KNITTING

The edging E of the present invention will be described as being knit on a two-bed knitting machine of the type schematically illustrated in FIGS. 6-9. The knitting of each type of edging will be described in relationship to the schematic edging shown in FIG. 5.

In each embodiment of the edging, the base strip 17 is provided with a lower selvage edge and includes successive weft knit courses of stitch loops extending longitudinally thereof, as illustrated in courses C-40 through C-42 of FIG. 5. The base strip 17, as illustrated in FIG. 5 is knit in a 2 × 2 rib knit construction with the stitch loops in wales W-1 and W-2 being knit on adjacent needles of the rear needle bed, indicated at 30 in FIG. 6, and the stitch loops in wales W-3 and W-4 being knit on adjacent needles of the front needle bed, indicated at 31 in FIG. 6.

The outer ply 18 of the attachment tab is knit on the needles of the rear needle bed 30 (FIG. 7) while certain of the stitch loops of the last course C-42 are held on needles of the front needle bed 31. Thus, plain or jersey tubular fabric courses of stitch loops are formed in the outer ply 18, as indicated in courses C-43 through C-49. A loose or tight course is then knit to form the fold line and a light weight yarn is exchanged for the heavier yarn used to knit the outer ply 18. The inner ply 19 is then knit of the light yarn (courses C-50 through C-58) while certain of the stitch loops continue to be held by needles in the front needle bed 31, as illustrated in FIG. 7. The lower edge of the inner ply 19 is then joined and integrally knit with the lower edge of the

outer ply 18 and the upper edge of the base strip 17 by forming one or more rib knit courses in which stitch loops are formed on selected needles in the front and rear needle beds. This completes the knitting of the single two-ply turned welt attachment tab, as illustrated in FIG. 2, and a draw thread course may then be formed before beginning the knitting of the next edging.

To knit the type of edging E shown in FIG. 3, the first two-ply attachment tab is knit as described above for knitting the two-ply attachment tab of FIG. 2. After the rib knit course joining the lower edge of the inner ply 19 to the base strip 17 is knit, all stitch loops are transferred to the front needle bed 31 and the single ply 21 is knit with plain or jersey courses on the needles of the front needle bed 31, in the manner indicated in solid lines in FIG. 9, and as illustrated in courses C-59 through C-64 of FIG. 5. A loose or tight course is knit along the fold line 23 and the inwardly folded edge 22 is knit of light yarn and on the needles of the front needle bed. If desired, the inwardly folded edge 22 may be knit on the needles of the rear bed 30 by transferring the stitch loops of the course C-64 from the front bed to the rear bed. This produces a more definite fold line, causing the edge 22 to fold in flat against the inner surface of the ply 21 and providing an upper edge which has an appearance like the stitch formation provided by the conventional looping operation. To complete the edging of FIG. 3, a rib course may be formed after the desired number of courses are formed in the inwardly folded edge 22, say at course C-68, and a draw thread course may be knit before starting the next edging E.

To knit the type of edging E shown in FIG. 4, the first two-ply attachment tab is knit as described above for knitting the corresponding two-ply attachment tabs of FIGS. 2 and 3. After the rib knit course joining the lower edge of the inner ply 19 to the base strip 17 is knit, all stitch loops are transferred to the needles of the front needle bed 31 while certain stitch loops are retained and held on certain needles of the rear needle bed 30, in the manner indicated in FIG. 8. The outer ply 21 is then knit with the heavy yarn and on the needles of the front needle bed 31, as illustrated in courses C-59 through C-64 of FIG. 5. A loose or tight course is knit along fold line 23 and the inner ply 22 is knit of a light yarn and on the needles of the front needle bed 31 (in the manner shown in FIG. 8) while certain stitch loops are held on needles of the rear needle bed 30. After courses C-65 through C-72 are knit (FIG. 5) a rib knit course is knit to complete the two-ply turned welt and join the lower edges of the inner ply 22 and the outer ply 21 to the base strip 17.

Both of the two-ply turned welts illustrated in FIG. 5 are described and illustrated as being knit while knitting on one needle bed and holding stitch loops on certain needles, without knitting, of the other needle bed, as schematically illustrated in FIGS. 7 and 8. However, one or both two-ply attachment tabs can be knit by double bed knitting, in the manner illustrated by the solid and dotted lines in FIG. 9. Thus, one ply of the two-ply attachment tab is knit on one needle bed, as illustrated in dotted lines on the rear needle bed 30 of FIG. 9, and the other ply is knit on the other needle bed, as illustrated in solid lines on the front needle bed 31 of FIG. 9. The upper ends of these two separately knit plies can then be joined by knitting a rib knit course followed by plain or jersey knit courses which fold to the inside so that the open stitch loops will be

held by the line of stitching 12 (FIG. 1). For example, the inner ply 22 and the outer ply 21 can be knit by double bed knitting with the outer ply 21 being knit on the needles of the front bed 31, as illustrated in solid lines in FIG. 9, while the inner ply 22 is knit on the needles of the rear bed 30 as illustrated in dotted lines in FIG. 9. The upper ends to the inner ply 22 and the outer ply 21 can then be joined by knitting a rib knit course on needles of both beds. Following this rib knit course, the stitch loops can be transferred to the needles of the rear bed 30 and several plain or jersey courses are then knit on the rear bed to form a terminal edge which automatically folds inwardly against the inner ply 22.

In the drawings and specification there has been set forth preferred embodiments of the invention, and although specific terms are employed, they are used in a generic and descriptive sense only and not for purposes of limitation.

I claim:

1. A knitted edging for attachment to garments and the like and comprising

a. a single-ply base strip including successive weft knit courses of stitch loops extending longitudinally thereof with a selvage edge along one side thereof,

b. a two-ply tab for attaching said knitted edging to the garment, said attaching tab including inner and outer plies being joined along a fold line extending along corresponding one edge portions of said inner and outer plies, the other edge portions of said inner and outer plies being integrally knit with the other side of said base strip, said fold line providing a non-ravel edge for facilitating the sewing of said turned two-ply tab to the garment, and

c. a single-ply attaching tab integrally knit along one side with the other side of said base strip and including an inturned edge portion joined along a fold line to the upper edge of said single-ply attaching tab so that the portion of the garment to be attached to said knitted edging is placed between said two-ply tab and said single-ply tab for attaching the same to the garment.

2. A knitted edging according to claim 1 wherein said inner ply of said two-ply tab is knit of a thinner yarn than the yarn knit in said outer ply.

3. A knitted edging according to claim 2 wherein said thin yarn used in knitting said inner ply is water-soluble.

4. A knitted edging for attachment to garments and the like and comprising

a. a single-ply base strip including successive weft knit courses of stitch loops extending longitudinally thereof with a selvage edge along one side thereof,

b. a first two-ply tab for attaching said knitted edging to the garment, said attaching tab including inner and outer plies being joined along a fold line extending along corresponding one edge portions of said inner and outer plies, the other edge portions of said inner and outer plies being integrally knit with the other side of said base strip, said fold line providing a non-ravel edge for facilitating the sewing of said turned two-ply tab to the garment, and

c. a second two-ply attaching tab including inner and outer plies being joined along a fold line extending along corresponding one edge portions of said inner and outer plies, the other edge portions of said inner and outer plies being integrally knit with

said other side of said base strip, the fold lines of said first and second two-ply attaching tabs providing non-ravel edges for facilitating the sewing of said knitted edging to an edge portion of the garment with one of said two-ply attaching tabs on each side thereof.

5. A knitted edging according to claim 4 wherein said inner plies of both said first and second two-ply tabs are knit of a thinner yarn than the yarn knit in said outer plies of said tabs.

6. A knitted edging according to claim 5 wherein said thin yarn used in knitting said inner plies of both said first and second two-ply tabs is water-soluble.

7. A method of knitting an edging for attachment to garments and the like on a two-bed flat knitting machine, said method comprising the steps of

- a. knitting a plurality of successive weft knit courses on selected needles of both knitting beds to form a single-ply base strip having a selvage edge along one side thereof,
- b. knitting a plurality of tubular fabric courses integral with the last course of said base strip and on one needle bed while holding selected stitch loops on the other needle bed without knitting to form outer and inner plies of a two-ply attaching tab,
- c. knitting one or more courses on needles of both knitting beds to form at least one rib knit course for joining the terminal edge of the inner ply to the beginning edge of the outer ply and to the last course of said base strip to complete the knitting of said two-ply attachment tab, and
- d. knitting a plurality of courses on the needles of one knitting bed to form a single-ply attaching tab extending upwardly from said base strip with an intumed upper edge portion so that said single-ply tab with said intumed edge portion and said two-ply tab may be placed on opposite sides of the gar-

ment to facilitate the attachment of the edging thereto.

8. A method of knitting an edging for attachment to garments and the like on a two-bed flat knitting machine, said method comprising the steps of

- a. knitting a plurality of successive weft knit courses on selected needles of both knitting beds to form a single-ply base strip having a selvage edge along one side thereof, and
- b. knitting a plurality of tubular fabric courses integral with the last course of said base strip and on one needle bed while holding selected stitch loops on the other needle bed without knitting to form outer and inner plies of a first two-ply attaching tab,
- c. knitting one or more courses on needles of both knitting beds to form at least one rib knit course for joining the terminal edge of the inner ply to the beginning edge of the outer ply and to the last course of said base strip to complete the knitting of said first two-ply attachment tab,
- d. knitting a plurality of tubular fabric courses integral with the last course of said base strip and on said other needle bed while holding selected stitch loops on said one needle bed without knitting to form outer and inner plies of a second two-ply attaching tab, and
- e. knitting one or more courses on the needles of both knitting beds to form at least one rib knit course for joining the terminal edge of the inner ply to the beginning edge of the outer ply and to the last course of said base strip to complete the knitting of said second two-ply attaching tab so that said first and second two-ply tabs may be placed on opposite sides of the garment to facilitate the attachment of the edging thereto.

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