(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
9 June 2011 (09.06.2011)

PCT

(10) International Publication Number
WO 2011/067550 A1

(51) International Patent Classification:
A41D 27/24 (2006.01) *A41D 27/14* (2006.01)

(21) International Application Number:
PCT/GB2010/001607

(22) International Filing Date:
25 August 2010 (25.08.2010)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
0921347.1 4 December 2009 (04.12.2009) GB

(71) Applicant *(for all designated States except US)*: **TAL-TECH LIMITED**; Offices of Ansbacher (BVI) Ltd., P.O. Box 659, Road Town, TO (VG).

(71) Applicant *(for SD only)*: **JAEGER, Michael David** [GB/GB]; c/o Marks & Clerk, 90 Long Acre, London WC2E 9RA (GB).

(72) Inventor; and
(75) Inventor/Applicant *(for US only)*: **WONG, John** [—/MY]; 100, Lebuh Bakau, Penang 11600 (MY).

(74) Agent: **WHITE, Duncan Rohan**; Marks & Clerk LLP, 90 Long Acre, London WC2E 9RA (GB).

(81) Designated States *(unless otherwise indicated, for every kind of national protection available)*: AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PE, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States *(unless otherwise indicated, for every kind of regional protection available)*: ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— *with international search report (Art. 21(3))*

(54) **Title**: METHOD OF REINFORCING AN EDGE OF A GARMENT

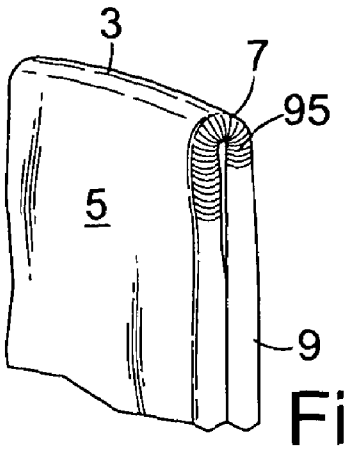

Fig. 12a

(57) **Abstract**: A method of reinforcing a folded edge of a garment comprises sewing one of the following stitches along a portion of fabric where an edge of the garment is to be formed: a bar tack stitch, a buttonhole eyelet stitch, a round eyelet stitch, a single line of stitches and a pair of spaced lines of stitches. Edges of garments that can be reinforced using this method include an upper edge (3) of a waistband (5), ends (9) of the waistband (5), an upper corner (7) of an end (9) of the waistband (5) where the end (9) of the waistband (5) meets the upper edge (3) of the waistband (5), a lower corner (8) of a waistband tab (10) forming an end (9) of the waistband (5), a top (11) of a belt loop (13), a longitudinal edge (15) of a belt loop (13), an edge (17) of a fly (19), an edge (21, 225) of a pocket (23, 227), a crease (25) running substantially the length of the garment, a lower edge (29) of the garment, a top edge (37) of a turn-up (39), an edge (201) of a shirt collar (203), points (205) of a collar (203), upper edge (207) of collar band (209), cuff edge (211), edges (213) of a cuff opening (215), outer edge (217) of a front placket (219), inner edge (221) of a front placket (219), bottom hem (223) of a shirt and an edge (229) of a buttoned side (231) of a shirt.

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METHOD OF REINFORCING AN EDGE OF A GARMENT

This invention relates to a method of reinforcing an edge of a garment to impede wear of the edge. In particular, this invention relates to reinforcing edges of cotton garments such as pants, skirts, shirts and blouses.

Garments experience wear as a result of normal use and the laundering process. Edges of garments forming extremities of the clothing suffer higher levels of wear than other parts of a garment due to their orientation, their smaller cross sectional area and, hence, the greater friction they experience when rubbing against other portions of the garment and other objects. This is especially the case where two edges meet to form a point or corner. Among other causes of wear, the actions of laundering and tumble-drying cause such rubbing. Furthermore, when clothing is subjected to detergents which contain enzymes, over time the resistance of the fabric to such abrasive rubbing decreases.

Wear of edges of garments initially takes the form of "frosting", where, because the dyestuff penetrates only the outer fibres of the fabric, the colour of the material fades as the outer fibres are abraded away due to repeated rubbing. Further wear can lead to fraying, where the fibres at the edge of the garment are worn to breaking point, resulting in loose fibre ends being presented at the edges and ultimately to the formation of holes in the material. It is apparent that these kinds of wear can lead to a degradation in the aesthetic qualities of garments, which can render such garments unsatisfactory for normal wear.

Clothing made from natural fibres, such as cotton, silk, wool, lyocell, rayon, cellulosic, linen, flax and ramie are more vulnerable to wear than those made from most synthetic materials, which tend to be harder wearing than natural fibres and hence are affected by abrasion to a lesser degree. Similarly, although garments made from natural/synthetic fibre mixes, e.g., a 65% polyester/35% cotton mix, are more hard wearing then 100% natural fibre garments, the natural fibres in natural/synthetic fibre mix garments are prone to wear more than the synthetic fibres.

In summary, certain portions of garments suffer from wear more than others, due to their mechanical prominence and some fibres are more prone to wear than others.

GB-A-779482 provides a method of preventing wear or fraying of garments, in particular in relation to turn-ups at the bottom of trouser legs, sleeve inturns and elbow portions of sleeves. GB-A-779482 identifies the lower edge of turn-ups at the bottom of trouser legs as being prone to rubbing against the wearer's shoes, and the inner trouser leg seams being vulnerable where these surfaces rub against each other as the person walks. GB-A-779482 addresses this problem by sewing parallel rows of stitches over the surface of the material of the trouser leg, preferably in a zig-zag formation.

CH 394085 discloses a method of protecting a bottom edge of a trouser leg by using a metal or a plastic part such as thread, a band, slide fastener-like teeth or a coating.

GB-A-1192266 discloses a method for preventing fraying of a garment made from a synthetic yarn by applying heat to an edge of an embroidered portion of the garment to melt the yarn and cut the fabric. The melted edge solidifies and the hardened edge resists fraying.

US-A-2488594 discloses a protector for the bottom edge of pants comprising a flat guard-plate having a rounded lower edge engageable with the lower edge of the pants leg.

Cotton garments are commonly sold as "easy care" or "non-iron" products, which are more crease-resistant and wrinkle-resistant than untreated cotton. Such garments are also known as "permanent press" garments. Easy care performance is achieved by treating the fabric with a resin, either prior to cutting or after the garment has been sewn. However, a side effect of the treatment is an increase in the fabric's susceptibility to wear, which amplifies the effect of abrasion to garments made from such material.

It is an object of this invention to provide an improved method of reinforcing folded edges of clothing so as to impede wear and prolong the useful life of garments whilst minimising the aesthetic impact which the reinforcement has on the garment.

Reference is made to Federal Standard No. 751a of Stitches, Seams and Stitchings of 25 January 1965 (hereinafter referred to as the "Federal Standard"), the contents of which are incorporated herein by reference.

According to a first aspect of the invention there is provided a method of reinforcing a folded edge of a garment to impede wear of the edge, comprising: stitching a portion of fabric where the fabric is to be or has been folded to form an edge of the garment, wherein the stitch is chosen from a bar tack stitch, a buttonhole eyelet stitch, a round eyelet stitch, a single line of stitches and a pair of spaced lines of stitches.

The stitches identified above have been shown to provide effective protection of garment edges. Further, the stitches identified above are compact so that they can be precisely applied to reinforce vulnerable folded edges of garments in an inconspicuous manner.

The term "an edge of a garment" refers to a periphery or perimeter of the portion of material forming part of the garment where the material is folded or creased (i.e., where the material changes direction).

The edge may be one of an upper edge of a waistband, either end of the waistband, an upper corner of either end of the waistband where the end of the waistband meets the upper edge of the waistband, a lower corner of a waistband tab forming an end of the waistband, a top of a belt loop, a longitudinal edge of a belt loop, an edge of a fly, an edge of a pocket, a crease running substantially the length of the garment, a lower edge of the garment, a top edge of a turn-up, an edge of a collar, an edge of a cuff, one or both edges of a shirt placket, a collar band edge, a sleeve opening edge of a short sleeve shirt, an front edge having buttons and a bottom hem.

The garment may be one of a pair of pants, a skirt, a shirt, a blouse, a jacket and an overcoat or other garment.

Where the garment is a pair of pants or a skirt, the edge to be reinforced may be one of the upper edge of the waistband, an end of the waistband, a longitudinal edge of a belt loop, the lower edge of the garment, the upper edge of a turn-up, the edge of the fly, the edge of a pocket, and a crease running substantially the length of the garment, and the stitch may be a single line of stitches.

Where the garment is a shirt or blouse, the edge to be reinforced is one of the edge of a collar, the edge of a cuff, one or both of the edges of a shirt placket, the collar band

edge, the sleeve opening edge of a short sleeve shirt, the front edge having buttons (right front) and the bottom hem, and the stitch is a single line of stitches.

In the case of a single line of stitches, the line may present itself as a single line of thread on an external surface of the garment or the single line of stitches may have a plurality of abutting or associated closely packed threads on an external surface of the garment.

Where the garment is a pair of pants or a skirt, the edge to be reinforced may be one of the upper edge of the waistband, an end of the waistband, a longitudinal edge of a belt loop, the lower edge of the garment, the upper edge of a turn-up, the edge of the fly, the edge of a pocket, and a crease running substantially the length of the garment, and the stitch may comprise a pair of spaced lines of stitches.

Where the garment is a shirt or blouse, the edge to be reinforced is one of the edge of a collar, the edge of a cuff, one or both of the edges of a shirt placket, the collar band edge, the sleeve opening edge of a short sleeve shirt, the front edge having buttons and the bottom hem, and the stitch comprises a pair of spaced lines of stitches.

In the case a pair of spaced lines of stitches, each of the lines of stitches may present itself as a single line of thread on an external surface of the garment or each of the lines of stitches may have a plurality of abutting or associated closely packed threads on an external surface of the garment.

The lines of stitches may be disposed on opposed sides of a zenith or nadir of the edge when the garment is fully assembled. When the edge comes close to another object one or both of the lines of stitches is interposed between the material of the edge and the other object.

Where the single line of stitches presents as a single line of thread on an external surface of the garment, the stitch may be one of Federal Standard No. 751a of Stitches, Seams and Stitchings of 25 January 1965 (referred hereinafter as Federal Standard) stitch types 301, 101, 201, 202, 401 and 701.

Where the single line of stitches has a plurality of abutting or associated closely packed threads on an external surface of the garment, the stitch may be one of Federal Standard stitch types 401, 101 and 203.

Where each of the lines of stitches presents as a single line of thread on an external surface of the garment, each of the lines of stitches may be one of Federal Standard stitch types 301, 101, 201, 202, 401 and 701 or the stitch may be one of Federal Standard stitch types 311, 102, 302, 309, 402 and 406.

Where each of the lines of stitches has a plurality of abutting or associated closely packed threads on an external surface of the garment, each of the lines of stitches may be one of Federal Standard stitch types 401, 101 and 203.

Where the garment is a pair of pants or a skirt, the edge to be reinforced may be one of the top of a belt loop, a portion of the bottom edge of the garment in a region of a seam and a junction of the bottom edge of the garment and a crease, and the stitch may be a bar tack stitch.

Where the edge to be reinforced is a portion of the bottom edge of the garment in the region of a seam, the bar tack stitch may be spaced from a junction of the bottom of the garment and the seam.

Wherein the edge to be reinforced is the top of a belt loop, the bar tack stitch may be stitched to cover the top of the belt loop.

Where the garment is a pair of pants or a skirt and the edge to be reinforced is the upper corner of either end of the waistband or the lower corner of the waistband tab forming one end of the waistband then the stitch may be a buttonhole eyelet stitch or a round eyelet stitch.

Where the edge to be reinforced is the upper corner and the stitch is a round eyelet stitch, the stitch may be sewn so as to run along the upper edge of the waistband to the corner of the waistband in the assembled garment.

Wherein the garment is a pair of pants or a skirt and the edge to be reinforced is the upper corner of either end of a waistband or the lower corner of the waistband tab forming one end of the waistband then the stitch may be a bar tack stitch.

The bar tack stitch may be stitched with a density of between 30 and 50 stitches per cm, or with a density of between 38 and 46 stitches per cm.

Where the edge to be reinforced is the upper corner, the bar tack stitch may be sewn so as to run along the upper edge of the waistband to the corner of the waistband in the assembled garment.

The bar tack stitch may be sewn so as to run along an end edge of the waistband to the upper corner of the end of the waistband in the assembled garment.

The method may further comprise the step of folding the portion of fabric along the stitch so that the stitch runs along and on the edge in the assembled garment, such that when the edge of the assembled garment abuts another object the reinforcing stitch is interposed between the material of the edge and the other object. The skilled person will understand that the stitch must be sufficiently close to the zenith or nadir of the edge to serve this function and that this function is not served by a stitch which runs close to but spaced from the edge, such as a stitch used as a seam to attach two pieces of material or as a design feature.

According to a second aspect of the invention there is provided a garment having a stitch sewn along and on a folded edge to reinforce the edge to impede wear of the edge, wherein the stitch is chosen from a bar tack stitch, a buttonhole eyelet stitch, a round eyelet stitch, a single line of stitches and a pair of spaced lines of stitches.

According to a further aspect of the invention there is provided a garment having a waistband, wherein an upper edge of the waistband is reinforced with a single line of stitches or a pair of spaced lines of stitches.

According to a further aspect of the invention there is provided a garment having a waistband, wherein an end of the waistband is reinforced with a single line of stitches or a pair of spaced lines of stitches.

According to a further aspect of the invention there is provided a garment having a belt loop, wherein a longitudinal edge of the belt loop is reinforced with a single line of stitches or a pair of spaced lines of stitches.

According to a further aspect of the invention there is provided a garment having a lower edge which is reinforced with a single line of stitches or a pair of spaced lines of stitches.

According to a further aspect of the invention there is provided a garment having a turn-up/pant's cuff, wherein an upper edge of the turn-up is reinforced with a single line of stitches or a pair of spaced lines of stitches.

According to a further aspect of the invention there is provided a garment having a fly, wherein an edge of the fly is reinforced with a single line of stitches or a pair of spaced lines of stitches.

According to a further aspect of the invention there is provided a garment having a pocket, wherein an edge of the pocket is reinforced with a single line of stitches or a pair of spaced lines of stitches.

According to a further aspect of the invention there is provided a garment having a crease which is reinforced with a single line of stitches or a pair of spaced lines of stitches. The crease may run substantially the length of the garment.

According to a further aspect of the invention there is provided a garment having a long sleeve, wherein an edge of the sleeve opening is reinforced with a single line of stitches or a pair of spaced lines of stitches.

According to a further aspect of the invention there is provided a garment having a cuff, wherein an edge of the cuff is reinforced with a single line of stitches or a pair of spaced lines of stitches.

According to a further aspect of the invention there is provided a garment having a collar, wherein an edge of the collar is reinforced with a single line of stitches or a pair of spaced lines of stitches. An edge of the collar band may be reinforced with a single line of stitches or a pair of spaced lines of stitches.

According to a further aspect of the invention there is provided a garment having a placket, wherein one or both edges of the placket is reinforced with a single line of stitches or a pair of spaced lines of stitches.

According to a further aspect of the invention there is provided a garment such as a shirt, blouse or jacket having a right front carrying buttons, wherein an edge of the right front is reinforced with a single line of stitches or a pair of spaced lines of stitches

According to a further aspect of the invention there is provided a garment having a bottom hem, wherein the bottom hem is reinforced with a single line of stitches or a pair of spaced lines of stitches.

The single line of stitches may present itself as a single line of thread on an external surface of the garment. In this case the single line of stitches may be one of Federal Standard No. 751a of Stitches, Seams and Stitchings of 25 January 1965 (referred hereinafter as Federal Standard) stitch types 301, 101, 201, 202, 401 and 701.

The single line of stitches may have a plurality of abutting or associated closely packed threads on an external surface of the garment. In this case the stitch may be one of Federal Standard stitch types 401, 101 and 203.

Each of the pair of lines of stitches may present itself as a single line of thread on an external surface of the garment. In this case each of the lines of stitches may be one of Federal Standard stitch types 301, 101, 201, 202, 401 and 701 or the pair of lines of stitches may be one of Federal Standard stitch types 311, 102, 302, 309, 402 and 406.

Each of the pair of spaced lines of stitches may have a plurality of abutting or associated closely packed threads on an external surface of the garment. In this case each of the pair of spaced lines of stitches may be one of Federal Standard stitch types 401, 101 and 203.

According to a further aspect of the invention there is provided a garment having a waistband, wherein an upper corner of an end of the waistband is reinforced with one of a buttonhole eyelet stitch and a round eyelet stitch.

According to a further aspect of the invention there is provided a garment having a waistband comprising a waistband tab, wherein one or both of upper and lower corners of an end of the waistband tab is reinforced with a bar tack stitch sewn along the end of the waistband tab to the respective corner of the end of the waistband tab.

According to a further aspect of the invention there is provided a garment having a plurality of belt loops, wherein a top of one or more of the belt loops is reinforced with a bar tack stitch which covers the top of the belt loop.

The garment may be one of a pair of pants/trousers, a skirt, a shirt, a blouse, a coat and a jacket or other garment.

In the method/garment as described above the fabric of the garment may comprise a natural material such as cotton and/or wool.

The fabric may be a treated to impart a wrinkle-free/permanent press finish.

The thread of the stitch may be the same colour as the fabric material so that the thread is substantially inconspicuous. Alternatively the thread of the stitch may be a different colour to the fabric material.

The thread may be made from a synthetic material such as spun, core spun, continuous filament and textured polyester or nylon.

In the following description of embodiments of the invention, reference is made to sewing thread "ticket numbers", which is an indication of the amount of raw fibre in the thread. References to the "tex" ticket number correspond to the ASTM D3823 standard value and references to the "tkt" ticket number correspond to the BS4134 standard for synthetic threads.

The invention will be further described by way of example, with reference to the accompanying drawings, in which:

Figure 1 shows edges of a pair of pants which are vulnerable to wear;

Figure 2 is a plan view of a strip of material used to form a waistband of a pair of pants;

Figure 3 is a schematic cross section through folded material bearing a single line of stitches along and on the fold line;

Figure 4 is a schematic cross section through folded material bearing a single line of stitches having two abutting threads along and on the fold line;

Figure 5 is a schematic cross section through folded material bearing a pair of spaced single lines of stitches along and on the fold line;

Figure 6 is a schematic cross section through folded material bearing a pair of spaced lines of stitches each having two abutting threads along and on the fold line;

Figure 7 shows an upper corner of a waistband reinforced with a bar tack stitch according to an embodiment of the invention;

Figure 8 shows an upper corner of a waistband reinforced with a buttonhole eyelet stitch according to an embodiment of the invention;

Figure 9 shows an upper corner of a waistband reinforced with a round eyelet stitch according to an embodiment of the invention;

Figure 10 shows a position on a strip of material from which a waistband will be formed where a bar tack stitch is sewn according to an embodiment of the invention;

Figure 11 shows a further position on a strip of material from which a waistband will be formed where a bar tack stitch is sewn according to an embodiment of the invention;

Figures 12a and 12b are views of ends of a waistband which have been reinforced with a bar tack stitch according to an embodiment of the invention;

Figure 13 shows a reinforced top of a belt loop according to an embodiment of the invention;

Figures 14a to 14d are schematic views of strips of material from which a belt loop is made;

Figure 15 shows reinforced edges of a belt loop according to an embodiment of the invention;

Figure 16 shows a reinforced fly edge according to an embodiment of the invention;

Figure 17 shows a reinforced pocket edge according to an embodiment of the invention;

Figure 18 shows a reinforced pants leg crease according to an embodiment of the invention;

Figure 19 shows a reinforced lower edge of a pants leg at the junction of a centre crease of the leg according to an embodiment of the invention;

Figures 20a and 20b are schematic representations of a cross section through respectively a pants leg seam and a pants leg seam at the turn-up/pant's cuff along lines a-a and b-b of Figure 19;

Figure 21 shows a reinforced lower edge of a pants leg in the region of the seam of the leg according to an embodiment of the invention;

Figure 22 shows a reinforced upper edge of a turn-up of a pants leg according to an embodiment of the invention;

Figure 23 shows edges of a shirt which are vulnerable to wear;

Figure 24 is a plan view of a fabric construction forming part of a collar of a shirt;

Figure 25 is a schematic cross section through layers of fabric making up a shirt collar and shirt cuff at one stage of manufacture;

Figure 26 is a schematic cross section through the layers of fabric of Figure 25 at a subsequent stage of a manufacturing process;

Figure 27 is a schematic cross section through layers of fabric making up a shirt collar and shirt cuff at one stage of an alternative manufacturing process;

Figure 28 is a schematic cross section through the layers of fabric of Figure 27 at a subsequent stage of manufacture;

Figure 29 is a plan view of a fabric construction forming part of a cuff of a shirt;

Figure 30 is a view of a cuff of a shirt of Figure 23;

Figure 31 is a plan view of a fabric construction forming a front placket of a shirt;

Figures 32a to 32f respectively show the structure of stitch types 301, 101, 201, 202, 401 and 701 of the Federal Standard which are used to form the single line of stitches of Figure 3;

Figure 33 shows the structure of stitch type 203 of the Federal Standard which is a stitch type used to form the single line of stitches having two abutting threads of Figure 4;

Figures 34a to 34f respectively show the structure of stitch types 311, 102, 302, 309, 402 and 406 of the Federal Standard which are used to form the pair of spaced single lines of stitches of Figure 5;

Figure 35 shows the structure of a bar tack stitch;

Figure 36 shows the structure of a buttonhole eyelet stitch; and

Figure 37 shows the structure of a round eyelet stitch.

Figure 1 shows a pair of pants 1 (known as trousers in the United Kingdom). Edges of the pants 1 which are prone to wear are marked on Figure 1 as follows:

- upper edge 3 of the waistband 5;
- ends 9 of the waistband 5; (only one end 9 shown);
- upper corner 7 of each end 9 of the waistband 5;
- lower corner 8 of a waistband tab 10 which extends beyond a fly 19;
- top edge 11 of a belt loop 13 and longitudinal edges 15 thereof;
- edge 17 of the fly 19;
- edge 21 of a pocket 23;
- crease 25 running substantially the length of the legs 27 of the pants 1, both front and rear (not shown);
- lower edge 29 of the pants legs 27, and in particular in the region 31 where the front 25 and rear creases meet the lower edge 29 and the region 33 where the side leg seams 35 meet the lower edge 29; and
- top edge 37 of a turn-up/pant's cuff 39.

Embodiments of the present invention provide a method of reinforcing the above listed vulnerable edges of pants, so as to impede wear of these edges. By impeding wear, the wear process is delayed so that the pants maintain a good appearance for a longer period of time than would be the case for pants without reinforcement under similar conditions of wear and laundering. An example of wear is "frosting" of the edges, where the dye colour in the fibres wears away until a point where the colour is lost. By reinforcing an edge, frosting is retarded and subsequent fraying of the edges of the garments as a result of wear and repeated launderings is thereby delayed or eliminated. By maintaining the appearance of the pants in this way, the usable life of the pants is extended.

In each of the embodiments described below, edges of the pants are reinforced by stitching with synthetic threads, such as spun threads, core spun threads, continuous filament threads and textured threads made from synthetics such as nylon and/or polyester. Synthetic threads are used because they are more wear resistant than natural fibres. Preferably, the colour of the thread is chosen to match as closely as possible the colour of the material forming the body of the garment, so that the reinforcement thread is as inconspicuous as possible. Alternatively, the thread may be coloured to contrast with the colour of the body of the material, so that the thread functions as a design feature of the garment.

The skilled person will understand that although the following embodiments of outer edge reinforcement are exemplified in relation to pants, they can be equally applied to other items of clothing, such as skirts, shirts, overcoats, cardigans, and jackets etc.. For example, in the case of skirts, edges to be reinforced include the edges of the waistband (top and ends), pocket, bottom, fly and skirt placket and for jackets edges to be reinforced include the edges of the collar, cuff, hem bottom and pockets.

<u>First embodiment – single line of stitches reinforced upper edge of a waistband</u>

In a first embodiment of the invention a reinforced upper edge 3 of a waistband 5 has a single line of stitches 45 running along its length, as shown schematically in cross section in Figure 3. Figure 3 only shows the external portion 47 of the reinforcing stitch 45 and does not show the internal portions of the thread.

The waistband 5 of a pair of pants or a skirt is constructed from a strip 41 of material, as shown in Figure 2. Initially, the ends 43 of the strip 41 are folded along lines Ia-Ia

Ib-Ib to form what will become the waistband ends 9. After this, the material is folded along two longitudinal lines IIa-IIa, IIb-IIb, which respectively become the bottom edge and the top edge 3 of the waistband 5.

To impede wear of the upper edge 3 of the waistband 5 a single line of stitches 47 is sewn along the line IIb-IIb of the strip of material where the strip will be folded to form the upper edge 3 of the waistband 5. Following sewing of the line of stitches 47, the material 41 is folded along the line of stitches IIb-IIb and the folded material 41 is subsequently assembled with the other parts of the pants to form a complete pair of pants.

Once the pants are assembled the line of stitches 45 presents itself as a single line of thread 47 running along and on the external side of the fold forming the upper edge 3 of the waistband 5 of the pants. Since only a single thread line 47 is disposed on the upper edge 3 of the waistband, this thread line 47 is advantageously inconspicuous and hence does not detract from the aesthetic properties of the pants.

The external line of thread 47 acts as a buffer or bumper to protect the upper edge 3 of the waistband 5 from abrasion, by distancing the upper edge 3 of the waistband 5 from other objects which come in contact with the line of thread 47. Thread of tkt 120/tex 27 and tkt 180/tex 18 and other weight thread can be used to stitch the single line of stitches 47 schematically shown in Figure 3.

A number of stitches can be used to form the single line of stitches 45 to reinforce the upper edge 3 of the waistband 5.

A stitch that is used according to a first embodiment of the invention is a single needle lock stitch which is Federal Standard stitch type 301, as shown in Figure 32a. The stitch is formed with one needle thread 301a and one bobbin thread 301b. A loop of the needle thread 301a is passed through the material and interlaced with the bobbin thread 301b. The needle thread 301a is subsequently pulled back so that the interlacing is midway between the surface of the material through which it is sewn.

Other stitch types that can be used to provide a single line of stitches along and on the fold line of the upper edge 3 of the waistband forming further embodiments of the invention are Federal Standard stitch types 101, 201, 202, 401 and 701.

Federal Standard stitch type 101 is a single needle thread chain stitch whose structure is shown in Figure 32b. The stitch is formed with one needle thread 101a which is passed through the material and interlooped with itself on the under surface of the material.

Federal Standard stitch type 201 is a two needle thread hand stitch whose structure is shown in Figure 32c. The stitch is formed with two needle threads 201a,b which are passed through the material in the same perforations from opposite directions without interlacing or interlooping.

Federal Standard stitch type 202 is a single needle thread hand stitch whose structure is shown in Figure 32d. The stitch is formed with one needle thread 202a which is passed through the material, brought forward two stitch lengths, passed back through the material and brought back one stitch length before being passed through the material a third time.

Federal Standard stitch type 401 is a single needle chain stitch with a single looper whose structure is shown in Figure 32e. Loops of thread 401a are passed through the material and interlaced and interlooped with loops of the other thread 401b. The interloopings are drawn against the underside of the bottom ply of material.

Federal Standard stitch type 701 is a two needle thread lock stitch formed from one continuous needle thread 701a whose structure is shown in Figure 32f. After the first needle penetration the thread is divided into two parts, namely a needle thread and a reel thread. In subsequent penetrations the needle thread is passed through the material and interlaced with the reel thread. The needle thread is pulled up so that the interlacing is midway between the surfaces of the material being sewn. This stitch type is identical to Federal Standard stitch type 301, whose structure is shown in Figure 32a, except for the initial stitch. Federal Standard stitch type 701 corresponds to stitch type 316 of ASTM standard D 6193-09, which is the successor to Federal Standard 751a and the contents of which are incorporated herein by reference.

As will be apparent from Figures 32a to 32f, the common feature of the stitch types shown therein is a single line of thread 47 on one side of the material where the line of stitches 45 penetrates a single line of perforations in the fabric. Each portion of thread between adjacent perforations is a continuation of and runs in substantially the same direction as the adjacent thread portions. Furthermore, it will be apparent that the path

of the portion of the thread on the other side of the fabric differs from one stitch type to another.

Figure 3 only shows the external portion 47 of the reinforcing stitch 45 and does not show the internal portion of the thread, which differs from one stitch type to another.

Second embodiment – single line of stitches having a plurality of abutting threads reinforced upper edge of a waistband

According to a second embodiment of the invention, a reinforced upper edge 3 of a waistband 5 has a single line of stitches 49 having a plurality of abutting threads 51 running along and on its length, as shown schematically in cross-section in Figure 4. Figure 4 only shows the external portion of the reinforcing stitch 49 and does not show the internal portions of the stitch. Furthermore, although Figure 4 shows three abutting threads 51, two, four or more abutting threads may be used to reinforce the upper edge 3, depending on the stitch that is used.

The threads are described as being 'abutting' because, as shown in Figure 4, each thread touches an adjacent thread. The skilled person will understand that the function of a plurality of abutting threads is to provide a wider 'buffer' than would be provided by a single thread whilst maintaining a low profile. The same function is achieved by a group of associated closely packed threads which are close together but where each thread is not necessarily touching an adjacent thread all the way along their length, for example where there is a gap between two threads. Similarly, 'abutting threads' should be understood in the same way throughout the description, for example with reference to Figure 6.

A stitch that is used according to the second embodiment of the invention is a single needle chain stitch with a single looper, which is Federal Standard stitch type 401, whose structure is shown in Figure 32e. The method of sewing Federal Standard stitch type 401 is described above.

In the second embodiment the Federal Standard stitch type 401 is inverted so that the abutting/grouped/bunched threads shown at the bottom of the stitch in Figure 32e are on the external side of the fold forming the upper edge 3 of the waistband 5.

To form the reinforced upper edge 3 of the waistband 5, a single needle chain stitch with a single looper 401 is sewn along the strip of material 41 where the strip will be folded to form the upper edge 3 of the waistband 5. The material is subsequently folded along the line of stitches 49 during assembly of the completed pair of pants.

The single needle chain stitch with a single looper 401 presents itself on the top edge of the waistband as three bunched threads 51 on the external side 53 of the fabric. The group of abutting threads provide a wider area of protection against abrasion than in the first embodiment, by providing an extended buffer/bumper to distance the upper edge 3 of the waistband 5 from objects which come in contact with the line of stitches 51. Similar thread is used to that which is used in the first embodiment.

Other stitch types that can be used to provide a single line of stitches having a plurality of abutting or associated threads along and on the fold line of the upper edge 3 of the waistband forming further embodiments of the invention are Federal Standard stitch types 101 and 203.

Federal Standard stitch type 101 is shown in Figure 32b and described above. To provide a pair of abutting threads to reinforce the upper edge 3 of the waistband, the Federal Standard stitch type 101 is inverted so that the abutting/grouped/bunched pair of threads shown at the bottom of the stitch in Figure 32b are on the external side of the fold forming the upper edge 3 of the waistband 5.

Federal Standard stitch type 203 is a single needle thread hand stitch whose structure is shown in Figure 33. The stitch is formed with one needle thread 203a which is passed through the material and immediately passed back through the same perforation to form a loop in the surface of the material. The needle is advanced one stitch length, passed through the material and the loop and immediately passed back through the loop and the same needle perforation, and a new loop is formed to receive the succeeding stitch. The stitch presents itself as a pair of abutting threads 203b,c on one side of the material through which it is sewn.

As will be apparent from Figures 32b (inverted), 32e (inverted) and 33, the common feature of the stitch types shown therein are a single line of a plurality of abutting or associated threads on one side of the material where the line of stitches penetrates a single line of perforations in the fabric. Each portion of thread between adjacent perforations is a continuation of and runs in substantially the same direction as the

adjacent thread portions. Furthermore, it will be apparent that the path of the portion of the thread on the other side of the fabric differs from one stitch type to another.

Figure 4 only shows the external portion of the reinforcing stitch and does not show the internal portion of the thread, which differs from one stitch type to another.

Third embodiment – a pair of spaced single lines of stitches reinforced upper edge of a waistband

According to a third embodiment of the invention, a reinforced upper edge 3 of a waistband 5 has a pair of spaced single lines of stitches 59 running along its length, as shown schematically in cross-section in Figure 5. Figure 5 only shows the external threads 61a,b of the reinforcing stitch 59 and does not show the internal portions of the thread.

A pair of stitches that are used according to the third embodiment of the invention are two rows of a single needle chain stitch with a single looper, which is Federal Standard stitch type 401, whose structure is shown in Figure 32e. The method of sewing Federal Standard stitch type 401 is described above.

To form the reinforced upper edge 3 of the waistband 5, the two spaced rows of single needle chain stitch with a single looper 401 are sewn along the strip of material where the strip will be folded to form the upper edge 3 of the waistband 5. The two rows of stitches 59 are preferably sewn at the same time on the same machine either side of the fold line, but are otherwise unconnected. Alternatively a first row of single needle chain stitch with a single 401 looper may be first sewn adjacent the fold line and a second row of single needle chain stitch with a single 401 looper may be subsequently sewn on the other side of the fold line. The material is subsequently folded along the line of stitches 59 during assembly of the completed pair of pants.

The pair of spaced single lines of single needle chain stitch with a single looper 401 presents themselves as two lines of thread 61a,b running along and on the top edge 3 of the waistband 5 on the external side 63 of the fabric. Unlike the stitches in the first and second embodiment, the lines of thread 61a,b do not run along the zenith 69 of the edge 3 but straddle the zenith 69, i.e., one line of thread 61a is on one side of and adjacent to the zenith 69 and the other line of thread 61b is on the other side of and

adjacent to the zenith 69. Although neither line of thread runs on the zenith 69, both lines of thread are sufficiently close to each other and the zenith 69 of the edge 3 that they effectively run along and on the edge 3.

The two external lines of thread 61a,b are spaced apart to provide separate buffers/bumpers to protect a wider portion of the upper edge 3 of the waistband 5. In order to prevent abrasion to the zenith 69 of the waistband that lies between the pair of external thread lines 61a,b, the thread thickness is increased to tkt 75/tex 40 or tkt 50/tex 60. This embodiment provides a preferable reinforcement than the first and second embodiments, particularly where relatively thick material is used to make the garments which results in a thicker waistband upper edge 3. Since the stitch lines 61a,b present themselves as single thread lines on the corners of the upper edge of the waistband, they are inconspicuous.

Other stitch types that can be used to provide a pair of spaced single lines of stitches along and on the fold line of the upper edge 3 of the waistband 5 forming further embodiments of the invention are Federal Standard stitch types 311, 102, 302, 309, 402 and 406.

A particularly preferred alternative embodiment comprises Federal Standard stitch type 311 which is a double needle lock stitch with a single bobbin, whose structure is shown in Figure 34a. The stitch is formed using two needle threads 311a,b and a single bobbin thread 311c. Loops of the needle threads 311a,b are passed through the material and interlaced with the bobbin thread 311c. The needle threads 311a,b are subsequently pulled back so that the interlacing is midway between the surfaces of the material through which it is sewn.

Federal Standard stitch type 102 is a two needle thread chain stitch whose structure is shown in Figure 34b. Both threads 102a,b are passed through the material and one thread is interlooped with itself and with the other thread.

Federal Standard stitch type 302 is a two needle thread lock stitch whose structure is shown in Figure 34c. The stitch is formed with two needle threads 302a,b and with one bobbin thread 302c. Loops of needle thread 302a,b are passed through the material and interlaced with the bobbin thread 302c. The interlacings are drawn up against the underside of the material.

Federal Standard stitch type 309 is a two needle thread lock stitch whose structure is shown in Figure 34d. The stitch is formed with two needle threads 309a,b and with one bobbin thread 309c. Loops of needle thread are passed through the material and interlaced with the bobbin thread. The interlacings are drawn up against the underside of the material.

Federal Standard stitch type 402 is a double needle chain stitch with a single looper whose structure is shown in Figure 34e. The stitch is formed with two needle threads 402a,b and with one bobbin thread 402c. Loops of needle thread 402a,b are passed through the material and interlaced and interlooped with loops of the bobbin thread 402c. The interloopings are drawn up against the underside of the material.

Federal Standard stitch type 406 is a double needle chain stitch with a single looper whose structure is shown in Figure 34f. The stitch is formed with two needle threads 406a,b and with one bobbin thread 406c. Loops of needle thread 406a,b are passed through the material and interlaced and interlooped with loops of the bobbin thread 406c. The interloopings are drawn up against the underside of the material.

Other stitch types that can be used to provide a pair of spaced single lines of stitches along and on the fold line of the upper edge 3 of the waistband 5 forming further embodiments of the invention are pairs of Federal Standard stitch types 301, 101, 201, 202 and 701 (either two of the same stitch type or two different stitch types).

A particularly preferred alternative embodiment comprises a pair of spaced rows of Federal Standard stitch type 301, which is a single needle lock stitch whose structure is shown in Figure 32a. The method of sewing Federal Standard stitch type 301 is described above.

Federal Standard stitch types 101, 201, 202 and 701 are respectively shown in Figures 32b, c, d and f and described above. Alternatively one row of Federal Standard stitch types 401, 101, 201, 202 and 701 may be sewn with one row of Federal Standard stitch type 301.

When two rows of Federal Standard stitch types 301, 401, 101 and 701 are used to reinforce the upper edge 3 of a waistband 5, each stitch may be sewn separately with two passes of a sewing machine or both stitches may be sewn simultaneously with a single pass of the sewing machine.

As is apparent from Figures 32a to 32f and 34a to f, a common feature of the stitch types used to produce the stitch shown schematically in Figure 5 is a pair of spaced single lines of thread on one side of the material where the lines of stitches penetrate a pair of lines of perforations in the fabric. Each portion of thread between adjacent perforations is a continuation of and runs in substantially the same direction as the adjacent thread portions. Furthermore, it will be apparent that the path of the portion of the thread on the other side of the fabric differs from one stitch type to another.

Figure 5 only shows the external portion of the reinforcing stitch and does not show the internal portion of the thread, which differs from one stitch type to another.

Fourth embodiment – a pair of spaced lines of stitches, each having a plurality of abutting threads, reinforced upper edge of a waistband

According to a fourth embodiment of the invention, a reinforced upper edge 3 of a waistband 5 has a pair 71 of spaced lines of stitches 73 running along the length of the upper edge 3, wherein each line of stitches 73 has a plurality of abutting threads 75a,b, as shown schematically in cross-section in Figure 6. Figure 6 only shows the external portion of the reinforcing stitches 73 and does not show the internal portions of the threads. Furthermore, although Figure 6 shows each line of stitches 73 having three abutting threads 75a,b, two, four or more abutting threads may be used in each line of stitches to reinforce the upper edge 3, depending on the stitch that is used.

A stitch that is used according to the fourth embodiment of the invention is a single needle chain stitch with a single looper, which is Federal Standard stitch type 401, whose structure is shown in Figure 32e. The method of sewing Federal Standard stitch type 401 is described above.

To form the reinforced upper edge 3 of the waistband 5 according to the fourth embodiment, the two spaced rows of Federal Standard stitch type 401 are sewn along the strip of material where the strip will be folded to form the upper edge 3 of the waistband 5. The stitches 73 are sewn inverted to that shown in Figure 32e, so that the abutting/grouped/bunched threads shown at the bottom of the stitch in Figure 32e are on the external side of the fold forming the upper edge 3 of the waistband 5.

The two rows of stitches 73 are preferably sewn at the same time on the same machine either side of the fold line, but are otherwise unconnected. Alternatively a first row 73 of Federal Standard stitch type 401 may be first sewn adjacent the fold line and a second row 73 of Federal Standard stitch type 401 may be subsequently sewn on the other side of the fold line. The material is subsequently folded between the lines of stitches 73 during assembly of the completed pair of pants.

The pair 71 of spaced lines of stitches 73 present themselves as two lines of three bunched threads 75a,b running along and on the top edge 3 of the waistband 5 on the external side 63 of the fabric. Unlike the stitches in the first and second embodiments, the lines of threads 75a,b do not run along the zenith 69 of the edge 3 but straddle the zenith 69, i.e., one line of grouped threads 75a is on one side of and adjacent to the zenith 69 and the other line of grouped threads 75b is on the other side of and adjacent to the zenith 69. Although neither line of threads 75a,b runs on the zenith 69, both lines of threads 75a,b are sufficiently close to each other and the zenith 69 of the edge 3 that they effectively run along and on the edge 3.

The two lines of grouped threads 75a,b are spaced apart to provide separate buffers/bumpers to protect a wider portion of the upper edge 3 of the waistband 5.

In order to prevent abrasion to the zenith 69 of the waistband 3 that lies between the pair of stitch lines 73, the thread thickness is chosen as tkt 75/tex 40. The density of the stitches along the circumference of the waistband is between 5 and 8 stitches/cm and preferably 6 stitches/cm.

This embodiment provides a preferable reinforcement than the first three embodiments. Since the stitch lines 73 present themselves at the corners of the upper edge 3 of the waistband 5, they are inconspicuous.

Other stitch types that can be used to provide a pair of spaced lines of stitches each having a plurality of abutting or associated threads, along and on the fold line of the upper edge 3 of the waistband 5 forming further embodiments of the invention are pairs of Federal Standard stitch types 101 and 203 (either two of the same stitch types or two different stitch types).

Federal Standard stitch type 101 is shown in Figure 32b and described above. To provide a pair of abutting of threads to reinforce the upper edge 3 of the waistband, the

Federal Standard stitch type 101 is inverted so that the abutting/grouped/bunched pair of threads shown at the bottom of the stitch in Figure 32b are on the external side of the fold forming the upper edge 3 of the waistband 5.

Federal Standard stitch type 203 is a single needle thread hand stitch whose structure is shown in Figure 33.

The method of sewing Federal Standard stitch types 101 and 203 is described above.

As will be apparent from Figures 32b (inverted), 32e (inverted) and 33, the common feature of the stitch types shown therein are a pair of lines of a plurality of abutting threads on one side of the material where each line of stitches penetrates a line of perforations in the fabric. Each portion of thread between adjacent perforations is a continuation of and runs in substantially the same direction as the adjacent thread portions. Furthermore, it will be apparent that the path of the portion of the thread on the other side of the fabric differs from one stitch type to another.

Figure 6 only shows the external portion of the reinforcing stitch and does not show the internal portion of the thread, which differs from one stitch type to another.

Fifth to ninth embodiments – reinforcement of the upper corner of the ends of a waistband

In the fifth to ninth embodiments of the invention, an upper corner 7 of ends 9 of a waistband 5 is reinforced to prevent wear. Since this portion of the garment forms a point and is relatively rigid it is particularly prone to wear, which can lead to the formation of a hole in this corner. Since this portion is in practice highly visible, for example by the wearer whilst closing the waistband, and by an observer, since it is located in the centre top point of the pants when worn, it is advantageous to provide a solution to this problem which will prolong the useful life of the pants.

A waistband has two ends, typically an end to which a button is attached and the other end in which a buttonhole eyelet is formed. The reinforcement of the upper corner of the end of the waistband can be applied to the upper corner of one or both ends of the waistband. Similarly, where the waistband 5 terminates with a waistband tab 10 which extends beyond the fly 19, the lower corner 8 of the waistband tab 10 can be reinforced in addition to the upper corner 7 of the waistband tab 10.

A number of stitches can be used to form the line of stitches to reinforce the upper corner of the end of a waistband. The following embodiments of reinforcement of the upper corner of the end of the waistband can be applied to one or both upper corners of the ends of the waistband.

Fifth embodiment – bar tack stitch (1) reinforced upper corner of an end of a waistband

In the fifth embodiment of the invention as shown in Figure 7, a bar tack stitch 83 is sewn from a point 85 on the upper edge 3 of the waistband 5 spaced from the upper corner 7 along the upper edge 3 up to and over the upper corner 7. This stitch 83 is sewn on the upper edge 3 of the waistband 5 after the waistband 5 has been formed, for example at the end of the assembly of the pants. The bar tack stitch has the structure shown in Figure 35.

As can be seen from Figures 7 and 35, the visible thread portion run substantially perpendicular to the direction of the bar tack stitch 83.

Sixth embodiment – buttonhole eyelet stitch reinforced upper corner of an end of a waistband

According to a sixth embodiment of the invention, a buttonhole eyelet stitch 87 is sewn along the strip of material 41 (as shown in Figure 2) from which the waistband 5 will be formed where the strip will be folded to form the upper edge 3 of the waistband 5, to result in the arrangement shown in Figure 8. The buttonhole eyelet stitch 87 has the structure shown in Figure 36.

The buttonhole eyelet stitch 87 is sewn from a point 89 which will be spaced from the upper corner 7 along a line which will be become the upper edge 3 of the waistband 5, up to and over where the corner 7 will be formed.

The end of the strip is subsequently folded to form what will become the waistband end 9. After this, the material is folded along the line IIb-IIb (as shown in Figure 2) which will become the top edge 3 of the waistband 5, to form the reinforced upper corner 7. Assembly of the pants continues as normal thereafter.

Seventh embodiment – round eyelet stitch reinforced upper corner of an end of a waistband

According to a seventh embodiment of the invention, a round eyelet stitch 91 is sewn on the material 41 (as shown in Figure 2) from which the waistband 5 will be formed, where the upper corner 7 of the waistband 5 will be formed, to result in the arrangement shown in Figure 9. The round eyelet stitch 87 has the structure shown in Figure 37.

The round eyelet stitch 91 is more compact than the more elongate buttonhole eyelet stitch 87 of the sixth embodiment.

The end of the strip 41 is subsequently folded to form what will become the waistband end 9. After this, the material 41 is folded along a line which will become the top edge 3 of the waistband 5, to form the reinforced upper corner as shown in Figure 9. Assembly of the pants continues as normal thereafter.

Eighth embodiment – bar tack stitch (1) reinforced upper corner of an end of a waistband

According to an eighth embodiment of the invention, a bar tack stitch 93 is sewn along the strip of material 41 where the strip will be folded to form the upper edge 3 of the waistband 5, as shown in Figure 10. The bar tack stitch has the structure shown in Figure 35 and is sewn from a point which will be spaced from the upper corner along line IIb-IIb, which will be become the upper edge up of the waistband, up to and beyond where the corner 7 will be formed.

The end 43 of the strip 41 is subsequently folded to form what will become the waistband end 9. After this, the material 41 is folded along line IIb-IIb which will become the top edge 3 of the waistband 5, to form the reinforced upper corner 7. Assembly of the pants continues as normal thereafter.

This embodiment provides a preferable reinforcement than the sixth and seventh embodiments and provides an inconspicuous reinforcement.

Ninth embodiment – bar tack stitch (2) reinforced upper corner of an end of a waistband

According to a ninth embodiment of the invention, a bar tack stitch 95 is sewn along the strip of material 41 where the strip will be folded to form the end 9 of the waistband 5. The bar tack stitch 95 has the structure as shown in Figure 35 and is sewn from a point which will be spaced from the upper corner 7, along line Ia-Ia which will be become the end 9 of the waistband, up to and beyond where the corner 7 will be formed. The bar tack stitch 95 has a length of 13mm, a width of 4mm and is made up of 56 stitches. In other words, the bar tack stitch 95 has a density of 46 stitches per cm. In order to provide effective reinforcement, the bar tack stitch should have a stitch density of between 30 and 50 stitches/cm and preferably between 38 and 46 stitches/cm.

The end 43 of the strip 41 is subsequently folded where the bar tack stitch 95 is present to form what will become the waistband end 9. After this, the material 41 is folded along line IIb-IIb which will become the top edge 3 of the waistband 5, to form the reinforced upper corner 7 as shown in Figure 12a. The other end of the waistband is reinforced in the same manner to produce the reinforced upper corner as shown in Figure 12b. Assembly of the pants continues as normal thereafter.

This embodiment provides a preferable reinforcement than the sixth to eighth embodiments and provides a particularly inconspicuous reinforcement.

Tenth embodiment – bar tack stitch reinforced upper edge of a belt loop

Belt loops are provided on pants and skirts as well as on jackets, coats and cardigans, to receive a belt.

A belt loop 11, which is typically disposed on the waistband 5, is prone to wear because the belt loop 11 projects from the surface of the waistband. In particular, the top edge 13 of the belt loop 11 and the longitudinal side edges 15 of the belt loop 11 are prone to wear. When the top 13 of the belt loop 11 is positioned to be flush with or project beyond the upper edge 3 of the waistband 5, then the top edge 13 of the belt loop 11 can suffer from excessive abrasion.

According to a tenth embodiment of the invention, a bar tack stitch 97 is sewn along the top edge 13 of a belt loop 11, as shown in Figure 13, after the belt loop 11 has been sewn to the waistband 5, with each stitch traversing the top edge 13 of the belt loop 11. The bar tack stitch 97 has the structure as shown in Figure 35 and the top of the bar tack stitch 97 extends beyond the belt loop 11 and is sewn directly into the waistband 5 so as to cover the top edge 13 of the belt loop 11. To facilitate this, when the belt loop 11 is attached to the waistband 5, the top of the belt loop 11 is displaced away from the upper edge 3 of the waistband 5 by around 1/16" (1.6mm), so that there is a portion of material between the belt loop 11 and the top edge 3 of the waistband 5, through which the belt loop reinforcement 97 is directly sewn.

The bar tack stitch 97 has a length substantially equal to the width of the belt loop (typically around 13mm), a height of around of 3mm and 64 stitches, i.e., a stitch density of 49 stitches/cm.

The bar tack stitch 97 covers the top 13 of the belt loop 11 so that when the top 13 of the belt loop 11 experiences rubbing, the threads of the bar tack stitch 97 absorb the abrasion and not the top 13 of the belt loop 11 itself. Since the thread of the bar tack stitch 97 is made from hard wearing synthetic material, the effect of the abrasion on the appearance of the garment is minimised.

Eleventh embodiment – single line of stitches reinforced longitudinal edges of a belt loop

A belt loop 11 is made of a piece of material 99 by folding the material in one of two ways, as shown in Figures 14a to d.

Figure 14a shows the folds lines along which a piece of material 99a is folded according to first method of forming a belt loop and Figure 14b shows the piece of material 99a after it has been folded. The material 99a is first folded along two longitudinal lines III-III so that the edges 101 overlap. The folded material is stitched along its length using a chain stitch to hold the material together. The material 99a is then folded along two lines IV-IV to form attachments flaps by which the belt loop 11 is attached to the pants.

Figure 14c shows the folds lines along which a piece of material 99c is folded according to second method of forming a belt loop and Figure 14d shows the piece of material after it has been folded. The material 99c is double folded by first folding along two longitudinal lines V-V and then folding along two longitudinal lines III-III, so that the edges 101 are concealed within the folded material. The seam of the folded material is stitched along its length using a binding stitch to hold the material together. The material 99c is then folded along two lines IV-IV to form attachments flaps by which the belt loop 11 is attached to the pants.

According to an eleventh embodiment of the invention, a single line of stitches 99 is sewn along the two lines III-III that will become the longitudinal edges 15 of the belt loop 11. The single line of stitches is a single needle lock stitch of Federal Standard stitch type 301 having the structure as shown in Figure 32a.

After the two lines of stitches 103 are sewn, the material 99 is folded along the lines of stitches 103 to form the belt loop 11, which is subsequently attached to the pants, as shown in Figure 15. The lines of stitches 103 along and on the longitudinal edges 15 of the belt loop 11 act as a buffer or bumper to protect the longitudinal edges 15 of the belt loop 11 from abrasion, by distancing the longitudinal edges 15 of the belt loop 11 from other objects which come in contact with the line of stitches 103.

Other stitch types that can be sewn along the two lines III-III to provide a single line of stitches along and on the longitudinal edges 15 of the belt loop 11 forming further

embodiments of the invention are Federal Standard stitch types 101, 201, 202, 401 and 701.

Federal Standard stitch type 101 is a single needle thread chain stitch whose structure is shown in Figure 32b.

Federal Standard stitch type 201 is a two needle thread hand stitch whose structure is shown in Figure 32c.

Federal Standard stitch type 202 is a single needle thread hand stitch whose structure is shown in Figure 32d.

Federal Standard stitch type 401 is a single needle chain stitch with a single looper whose structure is shown in Figure 32e.

Federal Standard stitch type 701 is a two needle thread lock stitch formed from one continuous needle thread whose structure is shown in Figure 32f.

The method of sewing Federal Standard stitch types 101, 201, 202, 401 and 701 is described above.

As will be apparent from Figures 32a to 32f, the common feature of the stitch types shown therein is a single line of stitches on one side of the material where the line of stitches penetrates a single line of perforations in the fabric. Furthermore, it will be apparent that the path of the portion of the thread on the other side of the fabric differs from one stitch type to another.

In alternative embodiments, a single line of stitches having a plurality of abutting threads, two of such lines of stitches or a pair of spaced single lines of stitches is sewn along the strip of material from which the belt loop 11 will be formed. This enhanced reinforcement may be used, for example, when the material is relatively thick material. These lines of stitches have the same structure as the stitches used in the second to fourth embodiments, as shown in Figures 4 to 6 respectively.

Twelfth embodiment – single line of stitches reinforced edge of a fly

A fly 19 is a portion of cloth which covers a releasable join in pants or a skirt, the releasable join typically being closed with a slide fastener or buttons. Similarly, on an overcoat the buttons of the coat are often covered by a piece of material which is referred to as a fly. Since the fly 19 forms an edge of the garment which can experience abrasion both in use and during laundering, and since the fly 19 is a highly visible portion of the garment, being in the centre of the garment, wear to the edge 17 of the fly 19 should by minimised to increase the usable life of the garment. In a pair of pants, a skirt and an overcoat, the fly 19 is part of the same piece of cloth which forms the main body of the garment.

According to a twelfth embodiment of the invention as shown in Figure 16, a single line of stitches 105 is sewn along a piece of material from which the fly 19 will be formed, along a line that will become the edge 17 of the fly 19. The single line of stitches 105 is a single needle lock stitch of Federal Standard stitch type 301 having the structure as shown in Figure 32a.

After the line of stitches 105 is sewn, the material is folded along the line of stitches 105 to form the edge 17 of the fly 19, and the remainder of the garment is assembled.

The line of stitches 105 along and on the edge 17 of the fly 19 acts as a buffer or bumper to protect the edge 17 of the fly 19 from abrasion, by distancing the edge 17 of the fly 19 from other objects which come in contact with the line of stitches 105.

Other stitch types that can be sewn along a piece of material along a line which will form an edge 17 of a fly 19 forming further embodiments of the invention are Federal Standard stitch types 101, 201, 202, 401 and 701.

Federal Standard stitch type 101 is a single needle thread chain stitch whose structure is shown in Figure 32b.

Federal Standard stitch type 201 is a two needle thread hand stitch whose structure is shown in Figure 32c.

Federal Standard stitch type 202 is a single needle thread hand stitch whose structure is shown in Figure 32d.

Federal Standard stitch type 401 is a single needle chain stitch with a single looper whose structure is shown in Figure 32e.

Federal Standard stitch type 701 is a two needle thread lock stitch formed from one continuous needle thread whose structure is shown in Figure 32f.

The method of sewing Federal Standard stitch types 101, 201, 202, 401 and 701 is described above.

As will be apparent from Figures 32a to 32f, the common feature of the stitch types shown therein is a single line of thread on one side of the material where the line of stitches penetrates a single line of perforations in the fabric. Furthermore, it will be apparent that the path of the portion of the thread on the other side of the fabric differs from one stitch type to another.

In alternative embodiments, a single line of stitches having a plurality of abutting threads, two of such lines of stitches or a pair of spaced single lines of stitches is sewn along the strip of material from which the fly 19 will be formed. This enhanced reinforcement may be used, for example, when the material is relatively thick material. These lines of stitches have the same structure as the stitches used in the second to fourth embodiments, as shown in Figures 4 to 6 respectively. A particularly preferred embodiment uses the Federal Standard stitch type 311, which is a double needle lock stitch with a single bobbin, whose structure is shown in Figure 34a. The method of sewing Federal Standard stitch type 311 is described above.

Thirteenth embodiment – single line of stitches reinforced edge of a pocket outer wall

Many garments have pockets, and the edge 21 of the outer wall of the pocket 23 is prone to wear, both when the edge 21 of the pocket 23 is angled relative to the primary axis of the garment and more particularly when the edge 21 of the pocket runs parallel to the primary axis of the garment.

According to a thirteenth embodiment of the invention as shown in Figure 17, a single line of stitches 107 is sewn along a strip of material from which the outer wall 109 of the pocket 23 will be formed, along a line that will become the edge 21 of the pocket 23.

The single line of stitches is a single needle lock stitch of Federal Standard stitch type 301 having the structure as shown in Figure 32a.

After the line of stitches 107 is sewn, the material is folded along the line of stitches 107 to form the edge 21 of the pocket outer wall 109, and the remainder of the garment is assembled.

The line of stitches 107 along and on the edge of the pocket 23 acts as a buffer or bumper to protect the edge 21 of the pocket 23 from abrasion, by distancing the edge 21 of the pocket 23 from other objects which come in contact with the line of stitches 107.

Other stitch types that can be sewn along a piece of material along a line which will form an edge 21 of a pocket 23 forming further embodiments of the invention are Federal Standard stitch types 101, 201, 202, 401 and 701.

Federal Standard stitch type 101 is a single needle thread chain stitch whose structure is shown in Figure 32b.

Federal Standard stitch type 201 is a two needle thread hand stitch whose structure is shown in Figure 32c.

Federal Standard stitch type 202 is a single needle thread hand stitch whose structure is shown in Figure 32d.

Federal Standard stitch type 401 is a single needle chain stitch with a single looper whose structure is shown in Figure 32e.

Federal Standard stitch type 701 is a two needle thread lock stitch formed from one continuous needle thread whose structure is shown in Figure 32f.

The method of sewing Federal Standard stitch types 101, 201, 202, 401 and 701 is described above.

As will be apparent from Figures 32a to 32f, the common feature of the stitch types shown therein is a single line of thread on one side of the material where the line of stitches penetrates a single line of perforations in the fabric. Furthermore, it will be

apparent that the path of the portion of the thread on the other side of the fabric differs from one stitch type to another.

In alternative embodiments, a single line of stitches having a plurality of abutting threads, two of such lines of stitches or a pair of spaced single lines of stitches is sewn along the strip of material from which the outer wall 109 of the pocket 23 will be formed. This enhanced reinforcement may be used, for example, when the material is relatively thick material. These lines of stitches have the same structure as the stitches used in the second to fourth embodiments, as shown in Figures 4 to 6 respectively. A particularly preferred embodiment uses the Federal Standard stitch type 311, which is a double needle lock stitch with a single bobbin, whose structure is shown in Figure 34a. The method of sewing Federal Standard stitch type 311 is described above.

Fourteenth embodiment – single line of stitches reinforced crease running the length of the garment

Many garments, such as pants and skirts, have a crease 25 which runs substantially the length of the garment. For example, pants forming part of a business or lounge suit, chino pants and other pants which can be considered as a smart casual form of clothing have a crease running the full length of the centre of each leg 27 up to the waistband 5, both at the front and at the rear of the pants leg 27. The crease 25 is formed by pressing the garment and in many cases the crease 25 is a permanent crease which remains after laundering.

Since the crease 25 forms an edge of the garment, the fabric at the crease 25 is prone to wear. Although the crease 25 does not experience heavy wear, the crease 25 can suffer from frosting, where the colour of the material fades. This is particularly a problem for the crease 25 at front of the garment, which is conspicuous when the garment is worn.

According to a fourteenth embodiment of the invention as shown in Figure 18, a single line of stitches 111 is sewn along the material from which the body of the garment will be made (e.g., the leg 27 of a pair of pants), along a line that will become the crease 25 of the garment. The single line of stitches 111 is a single needle lock stitch of Federal Standard stitch type 301 having the structure as shown in Figure 32a.

If the garment is to have more than one crease 25 (e.g., a crease at the front and at the back of each leg) then a line of stitches is sewn along the material at each portion where a crease 25 will be formed.

After the line of stitches 111 is sewn, the assembly of the garment is completed, including creasing the material along the line of stitches 111.

The line of stitches 111 along each crease 25 acts as a buffer or bumper to protect the edge 25 from abrasion, by distancing the crease 25 from other objects which come in contact with the line of stitches 111.

Other stitch types that can be sewn along a piece of material along a line which will form a crease forming further embodiments of the invention are Federal Standard stitch types 101, 201, 202, 401 and 701.

Federal Standard stitch type 101 is a single needle thread chain stitch whose structure is shown in Figure 32b.

Federal Standard stitch type 201 is a two needle thread hand stitch whose structure is shown in Figure 32c.

Federal Standard stitch type 202 is a single needle thread hand stitch whose structure is shown in Figure 32d.

Federal Standard stitch type 401 is a single needle chain stitch with a single looper whose structure is shown in Figure 32e.

Federal Standard stitch type 701 is a two needle thread lock stitch formed from one continuous needle thread whose structure is shown in Figure 32f.

The method of sewing Federal Standard stitch types 101, 201, 202, 401 and 701 is described above.

As will be apparent from Figures 32a to 32f, the common feature of the stitch types shown therein is a single line of thread on one side of the material where the line of stitches penetrates a single line of perforations in the fabric. Furthermore, it will be

apparent that the path of the portion of the thread on the other side of the fabric differs from one stitch type to another.

In alternative embodiments, a single line of stitches having a plurality of abutting threads, two of such lines of stitches or a pair of spaced single lines of stitches is sewn along the strip of material where the crease 25 will be formed. This enhanced reinforcement may be used, for example, when the material is relatively thick material. These lines of stitches have the same structure as the stitches used in the second to fourth embodiments, as shown in Figures 4 to 6 respectively. A particularly preferred embodiment uses the Federal Standard stitch type 311, which is a double needle lock stitch with a single bobbin, whose structure is shown in Figure 34a. The method of sewing Federal Standard stitch type 311 is described above.

Fifteenth embodiment – single line of stitches reinforced lower edge of the garment

The lower edge of a garment experiences different degrees of wear, depending on the type of garment. For example, the lower edge of the legs of (full length) pants experiences heavy wear due to rubbing on shoes of the wearer, as discussed in GB-A-779482.

To impede wear of the lower edge 29 of a garment a line of stitches is sewn along the strip of material where the strip will be folded to form the lower edge of the garment, in a similar manner to the armour for the upper edge of the waistband as was done for the first four embodiments of the invention. Following sewing of the line of stitches, the material is folded along the line of stitches and the folded material is subsequently assembled with the other parts of the garment to form a complete garment.

A number of stitches can be used to form the line of stitches to reinforce the lower edge of the garment.

A stitch that is used according to a fifteenth embodiment of the invention is a single needle lock stitch, which is Federal Standard stitch type 301, as shown in Figure 32a. The method of sewing Federal Standard stitch type 301 is described above. The single needle lock stitch 45 presents itself as a single line of thread running along and on the bottom edge 29 of the garment on the external side of the fabric. Since only a single thread line 47 is disposed on the lower edge 29 of the pants legs 27, this thread line 47

is advantageously inconspicuous and hence does not detract from the aesthetic properties of the pants.

The external line of thread 47 acts as a buffer or bumper to protect the lower edge 29 of the garment from abrasion, by distancing the lower edge 29 of the garment from other objects which come in contact with the line of thread 47, such as shoes in the case of the garment being a pair of pants. Thread of tkt 120/tex 27 and tkt 180/tex 18 and other weight thread can be used to stitch the single thread lock stitch 45 schematically shown in Figure 3.

As with the first embodiment, other stitch types that can be used to provide a single line of stitches along and on the fold line of the lower edge 29 of the garment forming further embodiments of the invention are Federal Standard stitch types 101, 201, 202, 401 and 701.

Sixteenth embodiment – single line of stitches having a plurality of abutting threads reinforced lower edge of the garment

According to a sixteenth embodiment of the invention, a reinforced lower edge 29 of a garment has a single line of stitches having a plurality of abutting threads running along and on its length, as shown schematically in cross-section in Figure 4. Figure 4 only shows the external portion of the reinforcing stitch and does not show the internal portions of the thread. Furthermore, although Figure 4 shows three abutting threads, two, four or more abutting threads may be used to reinforce the lower edge 29, depending on the stitch that is used.

A stitch that is used according to the sixteenth embodiment of the invention is a single needle chain stitch with a single looper, which is Federal Standard stitch type 401, whose structure is shown in Figure 32e. The method of sewing Federal Standard stitch type 401 is described above.

In the sixteenth embodiment the Federal Standard stitch type 401 is inverted so that the abutting/grouped/bunched threads shown at the bottom of the stitch in Figure 32e are on the external side of the fold forming the lower edge 29 of the garment.

The single needle chain stitch with a single looper 49 presents itself as three bunched threads 51 on the external side 53 of the fabric. The group of abutting threads provide a wider area of protection against abrasion than in the fifteenth embodiment, by providing an extended buffer/bumper to distance the lower edge 29 of the garment from objects which come in contact with the lines of thread 51. Similar thread is used to that which is used in the fifteenth embodiment.

As with the second embodiment, other stitch types that can be used to provide a single line of stitches having a plurality of abutting or associated threads along and on the fold line of the lower edge 29 of the garment forming further embodiments of the invention are Federal Standard stitch types 101, and 203.

Seventeenth embodiment – a pair of spaced single lines of stitches reinforced lower edge of the garment

According to a seventeenth embodiment of the invention, a reinforced lower edge 29 of a garment has a pair of spaced single lines of stitches running along its length, as shown schematically in cross-section in Figure 5. Figure 5 only shows the external portion of the reinforcing stitch and does not show the internal portions of the thread.

A pair of spaced stitch lines that are used according to the seventeenth embodiment of the invention are two rows of a single needle lock stitch, which is Federal Standard stitch type 301, whose structure is shown in Figure 32a. The method of sewing Federal Standard stitch type 301 is described above. The pair of single needle lock stitches 59 are sewn along the material where the material will be folded to form the lower edge 29 of the garment legs 27.

The pair of spaced rows of single needle lock stitch 59 present themselves as two lines of threads 61a,b running along and on the bottom edge 29 of the garment legs 27, on the external side 63 of the fabric. Unlike the stitches in the fifteenth and sixteenth embodiments, the lines of threads 61a,b do not run along the nadir 69 of the edge but straddle the nadir 69, i.e., one line of thread is on one side of and adjacent to the nadir 69 and the other line of thread is on the other side of and adjacent to the nadir 69. Although neither line of thread runs on the nadir, both lines of threads are sufficiently close to each other and the nadir of the edge 29 that they effectively run along and on the lower edge 29.

The two lines of threads 61a,b are spaced apart to provide separate buffers/bumpers to protect a wider portion of the lower edge 29 of the garment legs 27. In order to prevent abrasion to the nadir 69 of the lower edge 29 of the garment leg 27 that lies between the pair of external thread lines 61a,b, the thread thickness is increased to tkt 75/tex 40 or tkt 50/tex 60. This embodiment provides a preferable reinforcement than the fifteenth and sixteenth embodiments, particularly where relatively thick material is used to make the garments which results in a thicker garment lower edge 29. Since the stitch lines present themselves as single thread lines on the corners of the lower edge 29 of the garment, they are inconspicuous.

As with the third embodiment, other stitch types that can be used to provide a pair of spaced single lines of stitches along and on the fold line of the lower edge 29 of the garment legs 27 forming further embodiments of the invention are Federal Standard stitch types 311, 102, 302, 309, 402 and 406 and pairs of Federal Standard stitch types 401, 101, 201, 202 and 701 (either two of the same stitch types or two different stitch types).

When two rows of Federal Standard stitch types 301, 401, 101 and 701 are used to reinforce the lower edge 29 of a garment, each stitch may be sewn separately with two passes of a sewing machine or both stitches may be sewn simultaneously with a single pass of the sewing machine.

Eighteenth embodiment – a pair of spaced lines of stitches, each having a plurality of abutting threads, reinforced lower edge of the garment

According to an eighteenth embodiment of the invention, a reinforced lower edge 29 of a garment leg 27 has a pair of spaced lines of stitches running along the length of the lower edge 29, wherein each line of stitches has a plurality of abutting threads, as shown schematically in cross-section in Figure 6. Figure 6 only shows the external thread portion of the reinforcing stitches and does not show the internal portions of the threads. Furthermore, although Figure 6 shows each line of stitches having three abutting threads, two, four or more abutting threads may be used in each line of stitches to reinforce the lower edge 29, depending on the stitch that is used.

A stitch that is used according to the eighteenth embodiment of the invention is a single needle chain stitch with a single looper, which is Federal Standard stitch type 401, whose structure is shown in Figure 32e. The method of sewing Federal Standard stitch type 401 is described above.

To form the reinforced lower edge 29 of the garment leg 27 according to the eighteenth embodiment, the two spaced rows of Federal Standard stitch type 401 are sewn along the material where the material will be folded to form the lower edge 29 of the garment leg 27. The stitches are sewn inverted to that shown in Figure 32e, so that the abutting/grouped/bunched threads shown at the bottom of the stitch in Figure 32e are on the external side of the fold forming the bottom edge 29 of the garment leg 27.

The two rows of stitches 73 are preferably sewn at the same time on the same machine either side of the fold line, but are otherwise unconnected. Alternatively a first row 73 of Federal Standard stitch type 401 may be first sewn adjacent the fold line and a second row 73 of Federal Standard stitch type 401 may be subsequently sewn on the other side of the fold line. The material is subsequently folded between the lines of stitches 73 during assembly of the completed pair of pants.

The pair 71 of spaced lines of stitches 73 present themselves as two lines of three bunched threads 75a,b running along and on the lower edge 29 of the pants leg 27 on the external side 63 of the fabric. Unlike the stitches in the fifteenth and sixteenth embodiments, the lines of threads 75a,b do not run along the nadir 69 of the edge 3 but straddle the nadir 69, i.e., one line of grouped threads 75a is on one side of and adjacent to the nadir 69 and the other line of grouped threads 75b is on the other side of and adjacent to the nadir 69. Although neither line of grouped threads 75a runs on the nadir 69, both lines of threads 75a,b are sufficiently close to each other and the nadir 69 of the edge 3 that they effectively run along and on the edge 3. The two lines of stitches 75 are spaced apart to provide separate buffers/bumpers to protect a wider portion of the lower edge 29 of the pants legs 27.

In order to prevent abrasion to the nadir 69 of the lower edge 29 of the garment legs 27 that lies between the pair of stitch lines 73, the thread thickness is chosen as tkt 75/tex 40.

As with the fourth embodiment, other stitch types that can be used to provide a pair of spaced lines of stitches each having a plurality of abutting or associated threads, along

and on the fold line of the lower edge 29 of the garment forming further embodiments of the invention are pairs of Federal Standard stitch types 101 and 203 (either two of the same stitch types or two different stitch types).

Nineteenth embodiment – bar tack stitch reinforced junction of the lower edge of the garment with a garment crease

In addition to the bottom edge 29 of a garment, such as a pair of pants, being prone to wear by abrasion in general, certain portions of the bottom edge 29 are more prone to wear than other portions. Two of these portions are (i) the junction of a crease 25 running the length of the garment with the lower edge 29 of the garment and (ii) the junction of the seam 35 running the length of the garment with the lower edge 29 of the garment.

According to a nineteenth embodiment of the invention as shown in Figure 19, a bar tack stitch 113 is sewn, after formation of the lower edge, in the region 31 of the junction of the crease 25 and the lower edge 29 of the garment at a position straddling the crease 25 of the garment, the crease generally bisecting the bar tack stitch 113. The bar tack stitch has the structure shown in Figure 35.

To provide adequate reinforcement, a relatively low density bar tack stitch 113 is sewn. The bar tack stitch 113 has a length of around 13mm, a width of around 2.5mm and is made up of 16 stitches. In other words, the bar tack stitch 113 has a density of around 12 stitches per cm.

The bar tack stitch 113 covers the bottom corner of garment (for a pair of pants, the front and/or rear corners of the garment) so that when the bottom corners experience abrasion, the threads of the bar tack stitch 113 absorb the abrasion and not the material of the garment itself. Since the thread of the bar tack stitch 113 is made from hard wearing synthetic material, the effect of the abrasion on the appearance of the garment is minimised.

Alternatively, the bar tack stitch 113 may be sewn in the region 31 of the junction of the crease 25 and the lower edge 29 of the garment prior to formation of the lower edge 29 of the garment by folding.

Twentieth embodiment – bar tack stitch reinforced junction of the lower edge of the garment with seam of the garment

A second portion of the bottom edge 29 of a garment which is more prone to wear than other portions is the junction of the seam 35 running the length of the garment with the lower edge 29 of the garment.

In a pair of pants, for example, each leg 27 is made of two lengths of material which are joined at two seams 35, one which ultimately is located on the outside of the garment and the other which is located in the inside of the leg 27. The seam 35 is made by placing the two lengths of material one on top of the other and sewing along the longitudinal edges. The material is then turned inside-out and the edges are ironed to to produce a seam as shown in cross-section in Figure 20a.

Pants often have the bottom portion of the legs 27 turned up as an aesthetic effect and to add weight to the bottom of the leg 27, to help the drape of the pants. In some cases turn-ups 39 (known as a cuff in the US, Canada, Australia and other countries) are provided as separate pieces of material which are attached to the bottom of the trouser leg 27 to provide this effect. Figure 20b is a cross section through a turn-up at a leg seam 35 showing the layers of material at the inside of the trouser leg 115, the trouser leg 117, the inner part of the turn-up 119 and the outer part of the turn-up 121.

The folded material forming the seam 35 results in a bulky joint, particularly when:

- the material is heavy, and
- the garment has a turn-up/cuff;

Consequently, where the inner portions of the trouser leg bear against the outer fabric in the region of the seam, the outer fabric changes directions as it runs over the inner portions to produce a step-like edge 123 near the seam 35, and that edge 123 is prone to wear.

According to a twentieth embodiment of the invention, a bar tack stitch 125 is sewn along the material where the material will be folded to form the lower edge 29 of the garment at positions both sides of where the seam 35 of the garment will meet the lower edge 29, to produce the reinforcement shown in Figure 21. (Note, the bar tack stitch 125 is not sewn over the seam but it preferably should be sewn over the "steps"

described in the previous paragraph.) The material is subsequently folded along the bottom edge and the rest of the garment is assembled. Reinforcement can be applied to either one or both of the inner leg and outer leg junctions of the seams with the bottom of the pants leg.

To provide adequate reinforcement, each bar tack stitch 125 has a length of around 19mm a width of around 2.5mm and is made up of 56 stitches. In other words, the bar tack stitch 125 has a density of around 29 stitches per cm.

The bar tack stitch 125 covers the step 123 near the seam 35 at the lower edge 29 of the garment so that when these portions experience abrasion, the threads of the bar tack stitch 125 absorb the abrasion and not the material of the garment itself. Since the thread of the bar tack stitch 125 is made from hard wearing synthetic material, the effect of the abrasion on the appearance of the garment is minimised.

Twenty first embodiment – single line of stitches reinforced top edge of a turn-up/pant's cuff of a garment

The upper edge 37 of a turn-up/pant's cuff 39 is prone to abrasion and since this edge 37 is visible during use it is desirable to reduce the effect of abrasion on the appearance of the garment.

According to a twenty first embodiment of the invention as shown in Figure 22, a single line of stitches 127 is sewn along the material from which the turn-up 39 will be made (e.g., the leg of a pair of pants), along a line that will become the upper edge 37 of the turn-up 39. The single line of stitches is a single needle lock stitch of Federal Standard stitch type 301 having the structure as shown in Figure 32a.

After the line of stitches 127 is sewn, the assembly of the garment is completed, including creasing the material along the line of stitches 127 as shown in Figure 22.

The line of stitches 127 along the upper edge 37 acts as a buffer or bumper to protect the edge 37 from abrasion, by distancing the upper edge 39 from other objects which come in contact with the line of stitches 127.

As with the eleventh and twelfth embodiments, other stitch types that can be sewn along the upper edge of a turn-up to provide a single line of stitches along and on the upper edge of the turn-up forming further embodiments of the invention are Federal Standard stitch types 101, 201, 202, 401 and 701.

Reinforcement of shirt edges

Figure 23 shows a shirt/blouse. Edges of the shirt 200 which are prone to wear are marked on Figure 23 as follows:

- edge 201 of a collar 203;
- points 205 of a collar 203;
- upper edge 207 of collar band 209;
- cuff edge 211;
- edges 213 of a cuff opening 215, shown in Figure 30;
- outer edge 217 of a front placket 219;
- inner edge 221 of a front placket 219;
- bottom hem 223 of the shirt 200;
- edge 225 of an opening of a pocket 227; and
- edge 229 of a buttoned side 231 of the shirt 200.

Embodiments of the present invention provide a method of reinforcing the above listed vulnerable edges of a shirt, so as to impede wear of these edges. By impeding wear, the wear process is delayed so that the shirt maintains a good appearance for a longer period of time than would be the case for a shirt without reinforcement under similar conditions of wear and laundering. Frosting and subsequent fraying of the edges of the shirt as a result of wear and repeated launderings is thereby delayed or eliminated. By maintaining the appearance of a shirt in this way, the usable life of the shirt is extended.

As with the reinforcement of pant edges described above, synthetic threads are used to reinforce the edges.

Twenty second embodiment – single line of stitches reinforced edge of a collar

In a twenty second embodiment of the invention a reinforced edge 201 of a collar 203 has a single line of stitches running along its length, as shown schematically in cross section in Figure 3.

The collar 203 of a shirt or blouse is constructed from a number of pieces of material including a collar fall piece 233, shown in Figure 24, which in use forms the external fabric layer of the collar 203. In 'smart' shirts (known in the US as 'dress' shirts) and in some blouses an interlining piece 235, also shown in Figure 24, is attached to the collar fall piece 233. The interlining piece 235 is typically attached to the collar fall piece 233 by adhesive, for example using fusion, and serves to stiffen the collar 203 to provide a more rigid shape. The interlining piece 235 has a similar shape to the collar fall piece 233 but is smaller, so that the edge portion 237 of the collar fall piece 233 extends beyond the edge 239 of the interlining piece 235.

To reinforce the edge of the collar 203, a single line of stitches 243 is sewn along the collar fall piece 233 where the fabric will be folded, beyond the edge 239 of the interlining piece 235. The single line of stitches 243 is a single needle lock stitch of Federal Standard stitch type 301 having the structure as shown in Figure 32a.

With reference to Figure 25, after the single line of stitches 243 is sewn, a collar stay patch 245, having substantially the same shape as the collar fall piece 233, is placed behind the collar fall piece 233. The two collar pieces 233, 245 are sewn together using a line of top stitches 241 and the resulting construction is turned inside out as shown in Figure 26, so that the interlining piece 235 is between the two collar pieces 233, 245. The collar stay patch 245 subsequently becomes the inner surface of the collar 203 which faces the collar band 209 when the collar 203 is turned down, and the collar fall piece 233 becomes the outer, visible surface of the collar 203 when the collar 203 is turned down.

As can been seen from Figure 26, the line of reinforcing stitches 243 presents itself along the folded edge 201 of the collar 203 as a single line of stitches. The line of stitches 243 acts as a buffer or bumper to protect the edge 201 from abrasion, by distancing the folded edge 201 of the fabric from other objects which come in contact with the line of stitches 243.

In another embodiment as shown in Figures 27 and 28, a second lines of stitches 247 is provided along the edge 201 of a collar 203 by sewing a line of stitches 247 along the collar stay patch 245 inside where the line of the top stitch 241 will be sewn to attach the collar stay patch 245 to the collar fall piece 233, such that when the pieces 233, 245 are turned inside out the second line of stitches 247 runs along and on the folded edge 201 of the collar stay patch 245.

Other stitch types that can be sewn along the edge 201 to provide a single line of stitches along and on the edge 201 of the collar 203, forming further embodiments of the invention, are Federal Standard stitch types 101, 201, 202, 401 and 701.

In further embodiments, a pair of spaced single lines of stitches may be provided along one or both of the folded edges 201 of the collar pieces 233, 245, as shown schematically in cross-section in Figure 5.

In further embodiments, a pair of spaced single lines of stitches may be provided along one or both of the folded edges of the cuff pieces 233, 245, as shown schematically in cross-section in Figure 5.

Twenty third embodiment – single line of stitches reinforced edge of a cuff

In a twenty third embodiment of the invention a reinforced edge 211 of a cuff 251 has a single line of stitches running along its length, as shown schematically in cross section in Figure 3.

The structure of a cuff 251 is similar to that of a collar 203 described above. Namely, the cuff 251 of a shirt or blouse is constructed from a number of pieces of material including an upper cuff piece 253, shown in Figure 29, which in use forms the external fabric layer of the cuff 251. In 'smart' shirts (known in the US as 'dress' shirts) an interlining piece 255, also shown in Figure 29, is attached to the upper cuff piece 253. The interlining piece 255 is typically attached to upper cuff piece 253 by adhesive, for example using fusion, and serves to stiffen the cuff 251 to provide a more rigid shape. The interlining piece 255 has a similar shape to the upper cuff piece 253 but is smaller, so that the edge portion 257 of the upper cuff piece 253 extends beyond the edge 259 of the interlining piece 255.

To reinforce the edge 211 of the cuff 251, a single line of stitches 261 is sewn along the upper cuff piece 253 beyond the edge 259 of the interlining piece 255. The single line of stitches 261 is a single needle lock stitch of Federal Standard stitch type 301 having the structure as shown in Figure 32a.

With reference to Figure 25, after the single line of stitches 261 is sewn, an under cuff piece 263, having substantially the same shape as the upper cuff piece 253, is placed behind the upper cuff piece 253. The two cuff pieces 253, 263 are sewn together using a line of top stitches 265 and the resulting construction is turned inside out as shown in Figure 26, so that the interlining piece 255 is between the two cuff pieces 253, 263. The under cuff piece 263 subsequently becomes the inner surface of the cuff 251, and the upper cuff piece 253 becomes the outer, visible surface of the cuff 251 when worn.

As can been seen from Figure 26, the line of stitches 261 presents itself along the folded edge 211 of the cuff 251 as a single line of stitches. The line of stitches 261 acts as a buffer or bumper to protect the edge 211 from abrasion, by distancing the folded edge 211 of the fabric from other objects which come in contact with the line of stitches 261.

In another embodiment as shown in Figures 27 and 28, a second lines of stitches 267 is provided along the edge 211 of a cuff 251 by sewing the line of stitches 267 along the under cuff piece 263 inside where the line of top stitches 265 will be sewn to attach the under cuff piece 263 to the upper cuff piece 253 such that when the pieces 253, 263 are turned inside out, the second line of reinforcing stitches 267 runs along and on the folded edge 211 of the under cuff piece 263.

Other stitch types can be sewn along one or both of the cuff pieces 253, 263 which are folded to form the edge 211 to provide one or two single lines of stitches along and on the edge 211 of the cuff 251 to form further embodiments of the invention. Such alternative stitch types are Federal Standard stitch types 101, 201, 202, 401 and 701.

In further embodiments, a pair of spaced single lines of stitches may be provided along one or both of the folded edges 211 of the cuff pieces 253, 263, as shown schematically in cross-section in Figure 5.

The skilled person will appreciate that the method of reinforcing an edge 211 of a cuff 251 described above with reference to a single cuff can be used to reinforce a double

or French cuff (which is twice as long as a single cuff and which is folded back when worn).

Twenty fourth embodiment – single line of stitches reinforced edge of a front placket

In a twenty fourth embodiment of the invention one or both edges 217, 221 of a shirt front placket 219 has/have a single line of stitches running along its length, as shown schematically in cross section in Figure 3.

A front placket 219 of a shirt 200 is constructed from a front placket piece 269 and in 'smart' shirts an interlining piece 271 is attached to the front placket piece 269, as shown in Figure 31. The interlining piece 271 is typically attached to the front placket piece 269 by adhesive, for example using fusion, and serves to stiffen the front placket 219 to provide a more rigid shape. The front placket piece 269 is a long strip of material and the interlining piece 271 is a narrower strip of material of the same length, so that the edge portions 273 of the front placket piece 269 extend either side of the interlining piece 271.

To reinforce the edges 217, 221 of the front placket 219, a single line of stitches 275, 277 is sewn along the front placket piece 269 on one or both sides of the interlining piece 271. The single line of stitches 275, 277 is a single needle lock stitch of Federal Standard stitch type 301 having the structure as shown in Figure 32a.

After one or both of the single lines of stitches 275, 277 is/are sewn, the edge portions 273 of the front placket piece 269 are folded around the interlining piece 271 and the front placket is sewn to the front body piece of the shirt 200. The lines of stitches 275, 277 present themselves along the folded edges 217, 221 of the front placket 219 as a single line of stitches. The lines of stitches 275, 277 act as buffers or bumpers to protect the edges 217, 221 from abrasion, by distancing the folded edges 217, 221 of the fabric from other objects which come in contact with the lines of stitches 275, 277.

Other stitch types can be sewn along one or both sides of the front placket piece 269 to provide one or two single lines of stitches along and on the edge or edges 217, 221 of the front placket 219 to form further embodiments of the invention. Such alternative stitch types are Federal Standard stitch types 101, 201, 202, 401 and 701.

In further embodiments, a pair of spaced single lines of stitches may be provided along one or both of the folded edges 217, 221 of the front placket piece 219, as shown schematically in cross-section in Figure 5.

A pair of spaced stitch lines of stitches that are used according to further embodiments of the invention to reinforce the folded edges 201, 211, 217, 221 of a collar 203, cuff 251 or front placket 219 are two rows of a single needle lock stitch, which is Federal Standard stitch type 301, whose structure is shown in Figure 32a. Other stitch types that can be used to provide a pair of spaced single lines of stitches along and on the fold line forming further embodiments of the invention are Federal Standard stitch types 311, 102, 302, 309, 402 and 406 and pairs of Federal Standard stitch types 401, 101, 201, 202 and 701 (either two of the same stitch types or two different stitch types).

Similar techniques can be used to reinforce other folded edges of a shirt, such as the upper edge 207 of the collar band 209, the edges 213 of the cuff opening 215, the bottom hem 223 of the shirt 200, the edge 225 of the opening of the pocket 227, and the edge 229 of the buttoned side 231 of the shirt 200.

The skilled person will understand that features of the above embodiments of the invention can be interchanged and the reinforcement techniques described above can be applied to other areas of a garment. The skilled person will also appreciate that a single garment can include multiple embodiments of the invention described above. For example, a particularly advantageous effect is achieved when combining the reinforcement of the seventeenth, nineteenth and twentieth embodiments.

Benefits of the reinforcement methods described above are the effectiveness of the reinforcement to the wear resistance of the associated part of the garment and compact nature of the reinforcement, which does not unduly impinge on the aesthetic properties of a garment bearing the reinforcement.

Examples of reinforced edges of a garment

In order to demonstrate the effectiveness of the reinforcement techniques described above, tests were undertaken.

Eight pairs of pants were prepared and were subjected to durability washing. Each durability wash comprised a wash cycle and a drying cycle using a tumble dryer.

All eight pairs of pants were identical at the start of the test. The pants were made of cotton which had been "easy care" treated. Four pairs of pants were adapted as described below to include reinforcement and the other four pairs of pants were unadapted (non-reinforced) and used for control purposes.

Each of the four adapted pants was reinforced as follows:

- two spaced rows of single need chain stitch with a single looper (2x Federal Standard stitch type 401) reinforced upper edge of the waistband (the fourth embodiment of the invention);
- bar tack stitch on both ends of the waistband running up to the upper corner of the waistband (the eighth embodiment of the invention);
- bar tack stitch at the upper end of the belt loops (the tenth embodiment of the invention);
- single needle lock stitch (Federal Standard stitch type 301) running the length of the front of the legs of the pants (the twenty first embodiment of the invention);
- two spaced rows of single needle lock stitch (2x Federal Standard stitch type 301) reinforced lower edge of the pants legs (the seventeenth embodiment of the invention);
- bar tack stitch at the junction of the leg creases and the lower edge of the pants legs (the nineteenth embodiment of the invention); and
- bar tack stitch along the lower edge of the pants legs in the region of the junction of the leg seam (the twentieth embodiment of the invention).

The eight pairs of pants were grouped into four sets of two pairs, each set consisting of an adapted pair of pants and an unadapted pair of pants. The four sets of pants were then respectively subjected to 20, 30, 40 and 50 durability wash cycles. Each durability wash cycle comprised machine washing followed by tumble drying. For each set of

pants, the effect of the armouring was observed and the results are noted in the tables below.

20 durability wash pants

Part	Control	Reinforced pants
Upper edge of waistband	Mild frosting (colour fading) along most of its length	A few points of very mild frosting, only noticeable on detailed inspection
Upper corners of waistband	Heavy frosting (loss of colour) and minimal fraying	No frosting
Upper edge of belt loops	Mild frosting (colour fading) across width	No frosting
Leg front crease	Mild frosting (colour fading) along length	No frosting
Lower edge of leg	Mild frosting (colour fading) along most of its length	A few points of mild frosting
Junction of crease and lower edge	Medium frosting (noticeable colour fading)	Very mild frosting, only noticeable on detailed inspection
Junction of leg seam and lower edge	Medium frosting (noticeable colour fading)	Mild frosting

In summary, the reinforcement resulted in no frosting to the upper corners of the waistband, the upper edge of the belt loops, and the leg front crease, which suffered from mild to heavy frosting in the control pants; isolated mild frosting along the upper edge of the pants, which suffered from noticeable frosting along the majority of its length for the control sample; very mild frosting at the junction of the crease and lower edge of the legs; and only mild frosting where the junction of the leg seam and the lower edge had previously suffered. Hence, the reinforcement was demonstrated to be very effective after 20 durability washes.

30 durability wash pants

Part	Control	Reinforced pants
Upper edge of waistband	Medium /heavy frosting (noticeable colour fading and loss of colour) along length	A few points of very mild frosting, only noticeable on detailed inspection
Upper corners of waistband	Heavy frosting (loss of colour) and fraying	No frosting
Upper edge of belt loops	Medium/heavy frosting (noticeable colour fading and loss of colour) across width	No frosting
Leg front crease	Mild frosting (colour fading) along length	No frosting
Lower edge of leg	Mild frosting (colour fading) along length with some points of heavy frosting (loss of colour)	Mild frosting over some of its length
Junction of crease and lower edge	Medium frosting (noticeable colour fading)	Very mild frosting, only noticeable on detailed inspection
Junction of leg seam and lower edge	Medium frosting (noticeable colour fading)	Mild frosting

In summary, once again the reinforcement resulted in no frosting to the upper corners of the waistband, the upper edge of the belt loops, and the leg front crease, which suffered from average to heavy frosting in the control pants; a few points of very mild frosting along the upper edge of the pants, which suffered from heavy colour fading along its length for the control sample; very mild frosting at the junction of the crease and lower edge of the legs; and only mild frosting where the junction of the leg seam and the lower edge had previously suffered. Hence, the reinforcement was demonstrated to be very effective after 30 durability washes.

40 durability wash pants

Part	Control	Reinforced pants
Upper edge of waistband	Heavy frosting (loss of colour) and a few holes	A few points of very mild frosting, only noticeable on detailed inspection
Upper corners of waistband	Fraying and holes	No frosting
Upper edge of belt loops	Heavy frosting (loss of colour) across width	No frosting
Leg front crease	Medium frosting (colour fading) along length	Very mild frosting, only noticeable on detailed inspection
Lower edge of leg	Mild frosting (colour fading) along length with some points of heavy frosting (loss of colour)	Mild frosting over some of its length
Junction of crease and lower edge	Heavy frosting (loss of colour)	Mild frosting (colour fading)
Junction of leg seam and lower edge	Fraying	Mild frosting (colour fading)

In summary, the reinforcement resulted in no frosting to the upper corners of the waistband and the upper edge of the belt loops, which suffered from heavy frosting and fraying in the control pants; very mild frosting of the leg front crease; once again a few points of very mild frosting along the upper edge of the pants, which suffered from loss of colour and holes being formed along its length for the control sample; mild frosting at the junction of the crease and lower edge of the legs; and only mild frosting where the junction of the leg seam and the lower edge suffered heavily in the control pants. Hence, the reinforcement was demonstrated to be very effective after 40 durability washes.

50 durability wash pants

Part	Control	Reinforced pants
Upper edge of waistband	Heavy frosting (loss of colour) and a few large holes	A few points of very mild frosting, only noticeable on detailed inspection
Upper corners of waistband	Fraying and holes	Mild frosting
Upper edge of belt loops	Heavy frosting (loss of colour) across width	No frosting
Leg front crease	Medium to heavy frosting (colour fading/loss) along length	Very mild frosting, only noticeable on detailed inspection
Lower edge of leg	Mild frosting (colour fading) along length with some points of heavy frosting (loss of colour)	Mild frosting over some of its length
Junction of crease and lower edge	Heavy frosting (loss of colour)	Mild frosting (colour fading)
Junction of leg seam and lower edge	Fraying and hole formation	Mild frosting (colour fading)

In summary, the reinforcement resulted in no frosting to the upper edge of the belt loops, which suffered from heavy frosting in the control pants; mild frosting to the upper corners of the waistband, which suffered from heavy frosting and hole formation in the control pants; very mild frosting of the leg front crease; once again a few points of very mild frosting along the upper edge of the pants, which suffered from loss of colour and holes being formed along its length for the control sample; mild frosting at the junction of the crease and lower edge of the legs; and only mild frosting where the junction of the leg seam and the lower edge suffered heavily in the control pants. Hence, the reinforcement was demonstrated to be very effective after 50 durability washes.

Tests were undertaken to demonstrate the effectiveness of the reinforcement techniques described above in relation to reinforcing folded edges of a shirt.

Shirts were prepared and subjected to durability washing. Each durability wash comprised a wash cycle and a drying cycle using a tumble dryer. A first shirt had no edge reinforcement and a second shirt was reinforced along edges of the front placket 219, collar 203 and cuff 251.

After 48 wash cycles the collar edge 201 of the standard shirt showed noticeable frosting and after 55 wash cycles the placket edges 217, 221 and cuff edge 211 showed noticeable frosting. In contrast, after 70 wash cycles, the same edges of the reinforced shirt showed no frosting. Hence, the reinforcement was demonstrated to be very effective after 70 durability washes.

Various modifications will be apparent to those in the art and it is desired to include all such modifications as fall within the scope of the accompanying claims.

CLAIMS:

1. A method of reinforcing a folded edge of a garment to impede wear of the edge, comprising:

stitching a portion of fabric where the fabric is to be or has been folded to form an edge of the garment, so as to provide a line of stitches along and on the folded edge,

wherein the stitch is chosen from a bar tack stitch, a buttonhole eyelet stitch, a round eyelet stitch, a single line of stitches and a pair of spaced lines of stitches.

2. A method as claimed in claim 1, wherein the edge is one of an upper edge of a waistband, either end of the waistband, an upper corner of either end of the waistband where the end of the waistband meets the upper edge of the waistband, a lower corner of a waistband tab forming an end of the waistband, a top of a belt loop, a longitudinal edge of a belt loop, an edge of a fly, an edge of a pocket, a crease running substantially the length of the garment, a lower edge of the garment, a top edge of a turn-up/pant's cuff, an edge of a collar, an edge of a cuff, one or both edges of a shirt placket, a collar band edge, a sleeve opening edge of a short sleeve shirt, an front edge having buttons and a bottom hem.

3. A method as claimed in claim 2, wherein the garment is one of a pair of pants, a skirt, a shirt, a blouse, a jacket and an overcoat.

4. A method as claimed in claim 2 or 3, wherein:

the garment is a pair of pants or a skirt,

the edge to be reinforced is one of the upper edge of the waistband, an end of the waistband, a longitudinal edge of a belt loop, the lower edge of the garment, the upper edge of a turn-up, the edge of the fly, the edge of a pocket, and a crease running substantially the length of the garment, and

the stitch is a single line of stitches.

5. A method as claimed in claim 2 or 3, wherein:

the garment is a shirt or blouse,

the edge to be reinforced is one of the edge of a collar, the edge of a cuff, one or both of the edges of a shirt placket, the collar band edge, the sleeve opening edge of a short sleeve shirt, the front edge having buttons and the bottom hem, and

the stitch is a single line of stitches.

6. A method as claimed in claim 4 or 5, wherein the single line of stitches presents as a single line of thread on an external surface of the garment.

7. A method as claimed in claim 4 or 5, wherein the single line of stitches has a plurality of abutting threads on an external surface of the garment.

8. A method as claimed in claim 2 or 3, wherein:

the garment is a pair of pants or a skirt,

the edge to be reinforced is one of the upper edge of the waistband, an end of the waistband, a longitudinal edge of a belt loop, the lower edge of the garment, the upper edge of a turn-up, the edge of the fly, the edge of a pocket, and a crease running substantially the length of the garment, and

the stitch comprises a pair of spaced lines of stitches.

9. A method as claimed in claim 2 or 3, wherein:

the garment is a shirt or blouse,

the edge to be reinforced is one of the edge of a collar, the edge of a cuff, one or both of the edges of a shirt placket, the collar band edge, the sleeve opening edge of a short sleeve shirt, the front edge having buttons and the bottom hem, and

the stitch comprises a pair of spaced lines of stitches.

10. A method as claimed in claim 8 or 9, wherein each of the lines of stitches presents as a single line of thread on an external surface of the garment.

11. A method as claimed in claim 8 or 9, wherein each of the lines of stitches has a plurality of abutting threads on an external surface of the garment.

12. A method as claimed in any one of claims 8 to 11, wherein the lines of stitches are disposed on opposed sides of a zenith or nadir of the edge when the garment is fully assembled.

13. A method as claimed in claim 6, wherein the stitch is one of Federal Standard No. 751a of Stitches, Seams and Stitchings of 25 January 1965 (referred hereinafter as Federal Standard) stitch types 301, 101, 201, 202, 401 and 701.

14. A method as claimed in claim 7, wherein the stitch is one of Federal Standard stitch types 401, 101 and 203.

15. A method as claimed in claim 10, wherein each of the lines of stitches is one of Federal Standard stitch types 301, 101, 201, 202, 401 and 701.

16. A method as claimed in claim 10, wherein the stitch is one of Federal Standard stitch types 311, 102, 302, 309, 402 and 406.

17. A method as claimed in claim 11, wherein each of the lines of stitches is one of Federal Standard stitch types 401, 101 and 203.

18. A method as claimed in claim 2 or 3, wherein:

the garment is a pair of pants or a skirt,

the edge to be reinforced is one of the top of a belt loop, a portion of the bottom edge of the garment in a region of a seam and a junction of the bottom edge of the garment and a crease, and

the stitch is a bar tack stitch.

19. A method as claimed in claim 18, wherein the edge to be reinforced is a portion of the bottom edge of the garment in the region of a seam and the bar tack stitch is spaced from a junction of the bottom of the garment and the seam.

20. A method as claimed in claim 18, wherein the edge to be reinforced is the top of a belt loop and the bar tack stitch is stitched to cover the top of the belt loop.

21. A method as claimed in claim 2 or 3, wherein the garment is a pair of pants or a skirt, the edge to be reinforced is the upper corner of either end of the waistband or the lower corner of the waistband tab forming one end of the waistband and the stitch is a buttonhole eyelet stitch or a round eyelet stitch.

22. A method as claimed in claim 21, wherein when the edge to be reinforced is the upper corner and the stitch is a round eyelet stitch, the stitch is sewn so as to run along the upper edge of the waistband to the corner of the waistband in the assembled garment.

23. A method as claimed in claim 2 or 3, wherein the garment is a pair of pants or a skirt, the edge to be reinforced is the upper corner of either end of a waistband or the lower corner of the waistband tab forming one end of the waistband and the stitch is a bar tack stitch.

24. A method as claimed in claim 22, wherein the bar tack stitch is stitched with a density of between 30 and 50 stitches per cm.

25. A method as claimed in claim 23, wherein the bar tack stitch is stitched with a density of between 38 and 46 stitches per cm.

26. A method as claimed in claim 23, 24 or 25, wherein when the edge to be reinforced is the upper corner, the bar tack stitch is sewn so as to run along the upper edge of the waistband to the corner of the waistband in the assembled garment.

27. A method as claimed in claim 23, 24 and 25, wherein the bar tack stitch is sewn so as to run along an end edge of the waistband to the corner of the end of the waistband in the assembled garment.

28. A method as claimed in any one of the preceding claims, further comprising the step of folding the portion of fabric along the stitch so that the stitch runs along and on the edge in the assembled garment.

29. A garment having a waistband, wherein an upper edge of the waistband is reinforced with a single line of stitches or a pair of spaced lines of stitches.

30. A garment having a waistband, wherein an end of the waistband is reinforced with a single line of stitches or a pair of spaced lines of stitches.

31. A garment having a belt loop, wherein a longitudinal edge of the belt loop is reinforced with a single line of stitches or a pair of spaced lines of stitches.

32. A garment having a lower edge which is reinforced with a single line of stitches or a pair of spaced lines of stitches.

33. A garment having a turn-up, wherein an upper edge of the turn-up is reinforced with a single line of stitches or a pair of spaced lines of stitches.

34. A garment having a fly, wherein an edge of the fly is reinforced with a single line of stitches or a pair of spaced lines of stitches.

35. A garment having a pocket, wherein an edge of the pocket is reinforced with a single line of stitches or a pair of spaced lines of stitches.

36. A garment having a crease which is reinforced with a single line of stitches or a pair of spaced lines of stitches.

37. A garment as claimed in claim 36, wherein the crease runs substantially the length of the garment.

38. A garment having a sleeve, wherein an edge of the sleeve opening is reinforced with a single line of stitches or a pair of spaced lines of stitches.

39. A garment having a cuff, wherein an edge of the cuff is reinforced with a single line of stitches or a pair of spaced lines of stitches.

40. A garment having a collar, wherein an edge of the collar is reinforced with a single line of stitches or a pair of spaced lines of stitches.

41. A garment having a placket, wherein one or both edges of the placket is reinforced with a single line of stitches or a pair of spaced lines of stitches.

42. A garment as claimed in any one of claims 29 to 41, wherein the single line of stitches presents as a single line of thread on an external surface of the garment.

43. A garment as claimed in claim 42, wherein the single line of stitched is one of Federal Standard No. 751a of Stitches, Seams and Stitchings of 25 January 1965 (referred hereinafter as Federal Standard) stitch types 301, 101, 201, 202, 401 and 701.

44. A garment as claimed in any one of claims 29 to 41, wherein the single line of stitches has a plurality of abutting threads on an external surface of the garment.

45. A garment as claimed in claim 44, wherein the stitch is one of Federal Standard stitch types 401, 101 and 203.

46. A garment as claimed in any one of claims 29 to 41, wherein each of the pair of lines of stitches presents as a single line of thread on an external surface of the garment.

47. A garment as claimed in claim 46, wherein each of the lines of stitches is one of Federal Standard stitch types 301, 101, 201, 202, 401 and 701.

48. A garment as claimed in claim 46, wherein the pair of lines of stitches is one of Federal Standard stitch types 311, 102, 302, 309, 402 and 406.

49. A garment as claimed in any one of claims 29 to 41, wherein each of the pair of spaced lines of stitches has a plurality of abutting threads on an external surface of the garment.

50. A garment as claimed in claim 48, wherein each of the pair of spaced lines of stitches is one of Federal Standard stitch types 401, 101 and 203.

51. A garment having a waistband, wherein an upper corner of an end of the waistband is reinforced with one of a buttonhole eyelet stitch and a round eyelet stitch.

52. A garment having a waistband comprising a waistband tab, wherein one or both of upper and lower corners of an end of the waistband tab is reinforced with a bar tack stitch sewn along the end of the waistband tab to the respective corner of the end of the waistband tab.

53. A garment having a plurality of belt loops, wherein a top of one or more of the belt loops is reinforced with a bar tack stitch which covers the top of the belt loop.

54. A garment as claimed in any one of claims 29 to 53, wherein the garment is one of a pair of pants/trousers, a skirt, a shirt, a blouse, a coat and a jacket.

55. A method/garment as claimed in any one of the preceding claims, wherein the fabric of the garment comprises a natural material.

56. A method/garment as claimed in claim 55, wherein the natural material is one of cotton and wool.

57. A method/garment as claimed in claim 55, wherein the fabric is a treated to impart a wrinkle-free/permanent press finish.

58. A method/garment as claimed in any one of the preceding claims, wherein the thread of the stitch is the same colour as the fabric material.

59. A method/garment as claimed in claim 58, wherein the thread is substantially inconspicuous.

60. A method/garment as claimed in any one of the preceding claims, wherein the thread is made from a synthetic material.

61. A method/garment as claimed in claim 60, wherein the thread is made from one of spun, core spun, continuous filament and textured polyester or nylon.

62. A reinforced edge of a garment substantially as hereinbefore described with reference to any one of Figures 3 to 9, 12, 13, 15 to 19, 21 and 22.

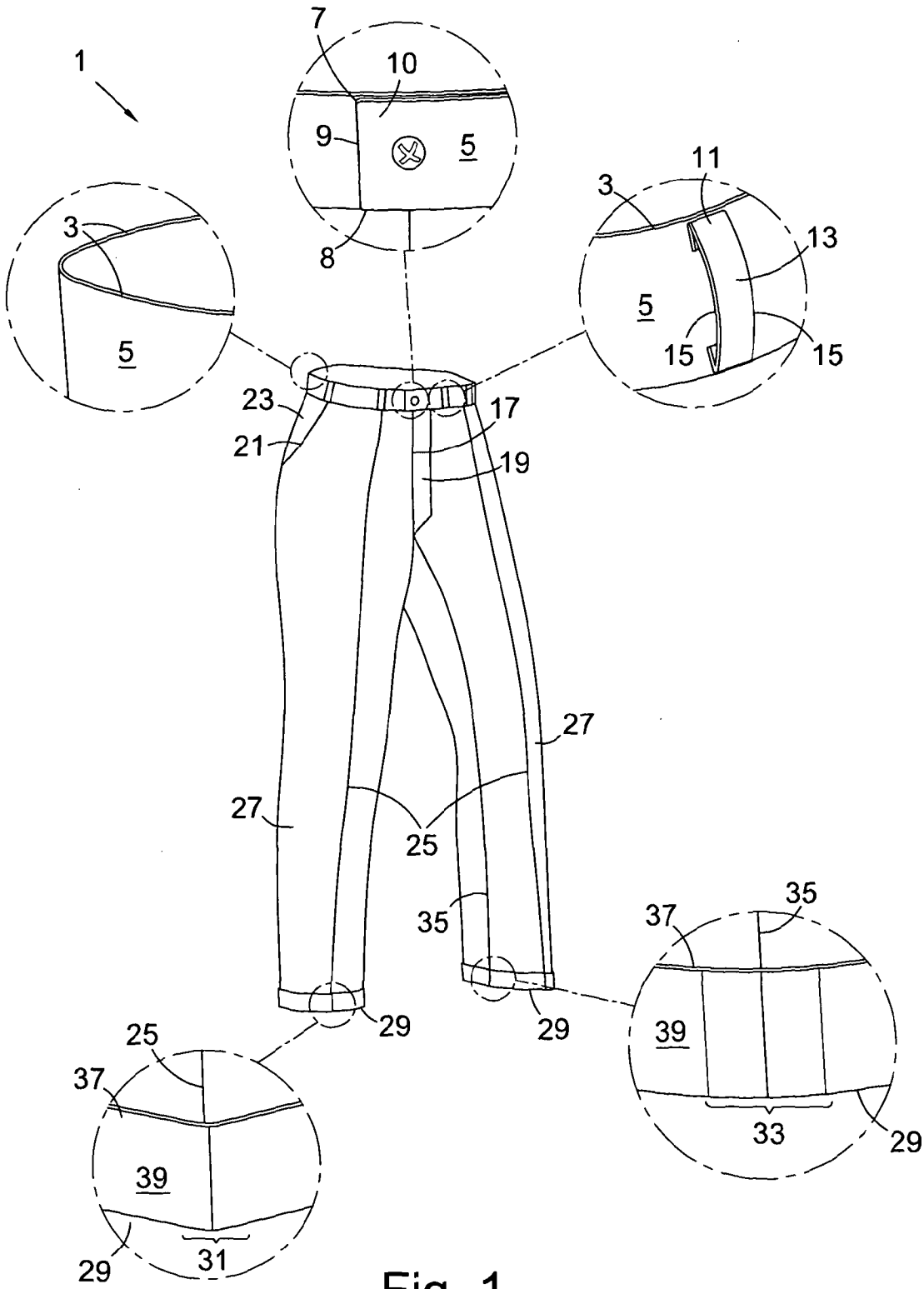
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Fig. 1

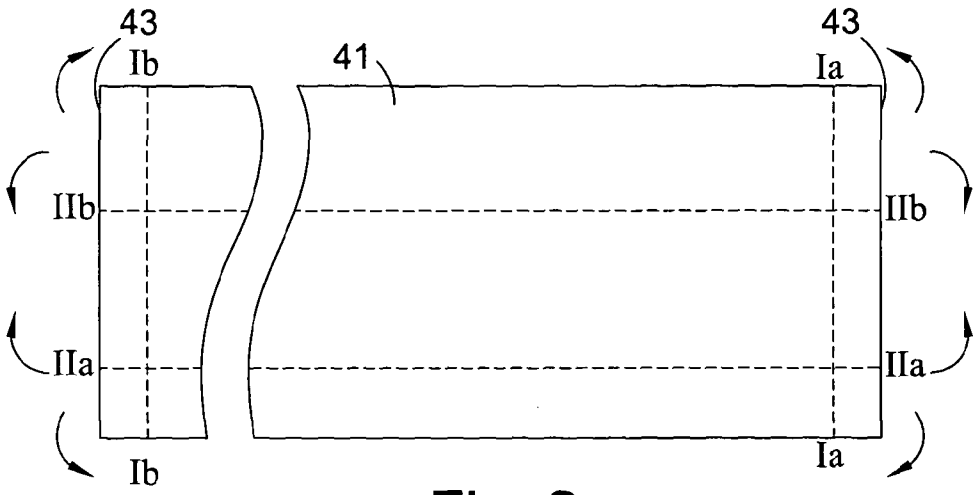

Fig. 2

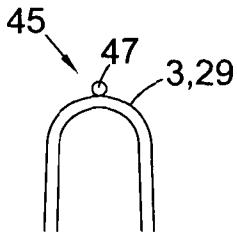

Fig. 3

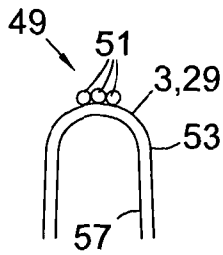

Fig. 4

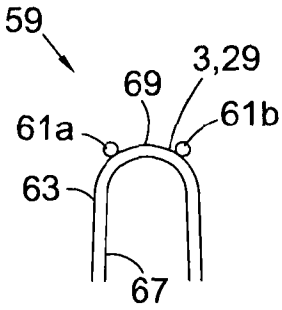

Fig. 5

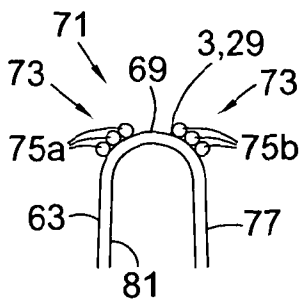

Fig. 6

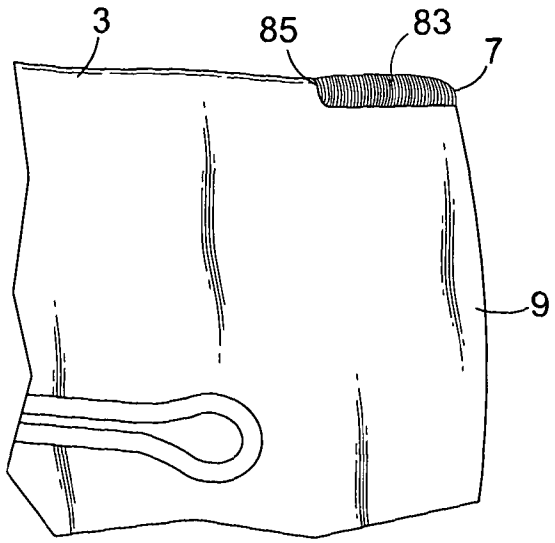

Fig. 7

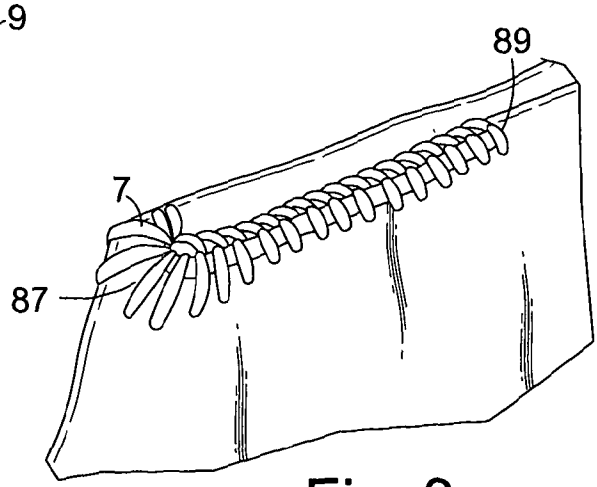

Fig. 8

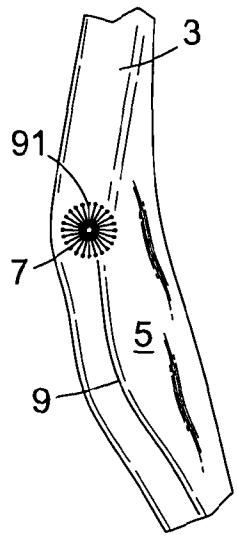

Fig. 9

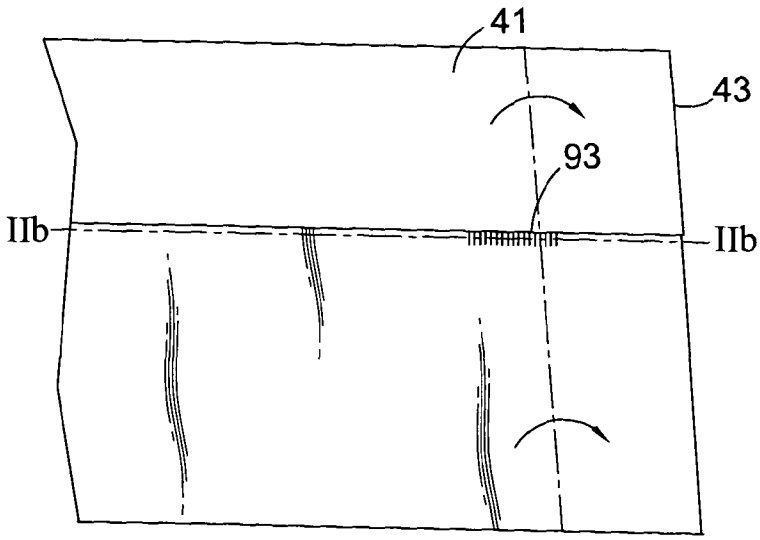

Fig. 10

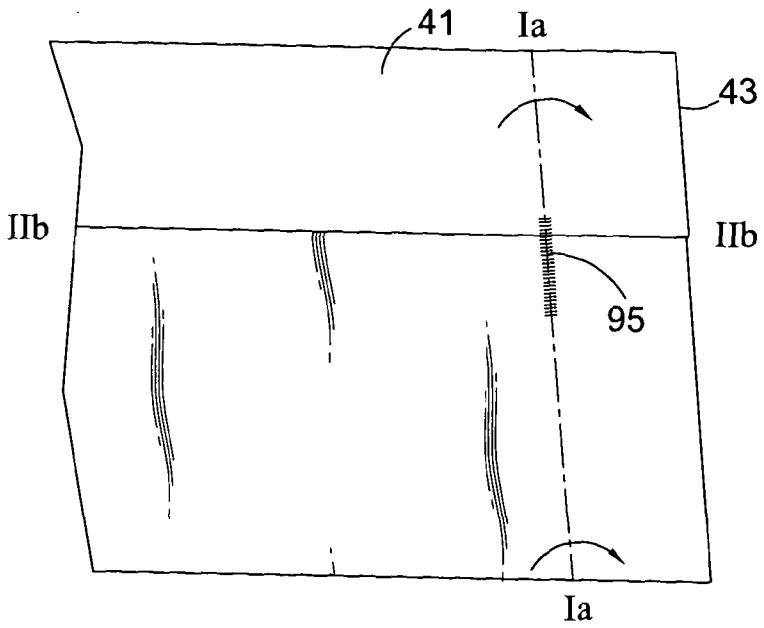

Fig. 11

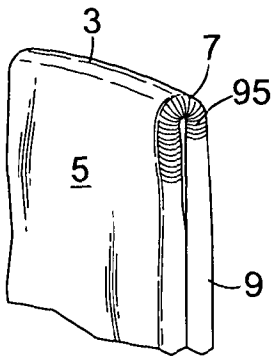

Fig. 12a

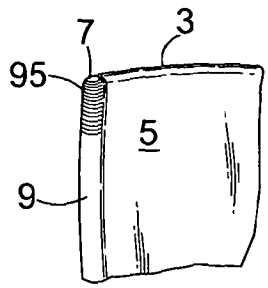

Fig. 12b

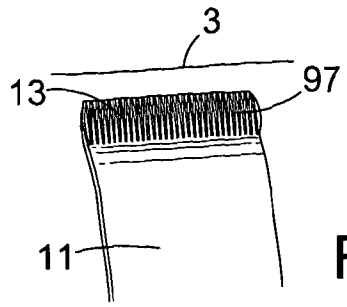

Fig. 13

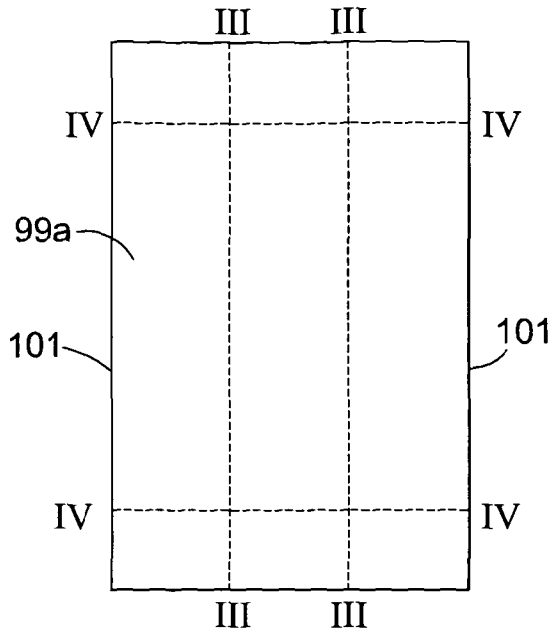

Fig. 14(a)

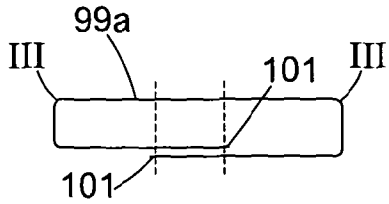

Fig. 14(b)

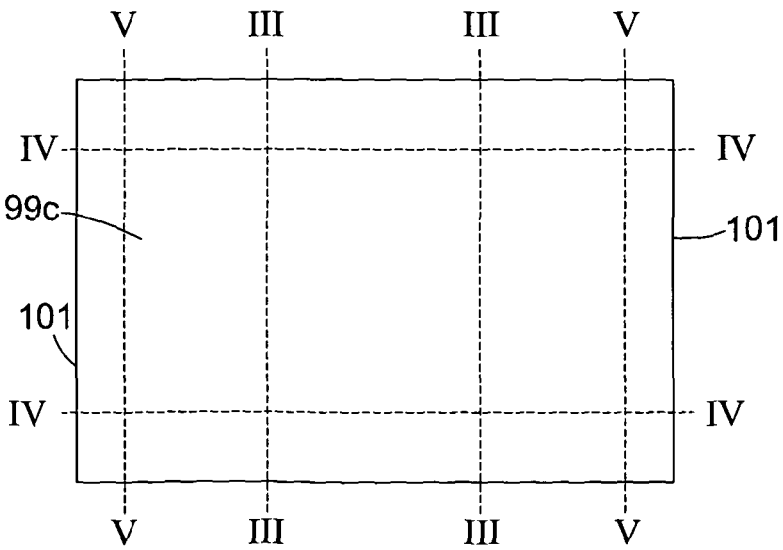

Fig. 14(c)

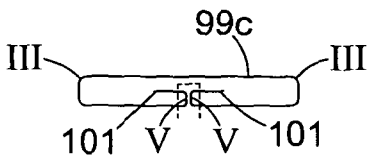

Fig. 14(d)

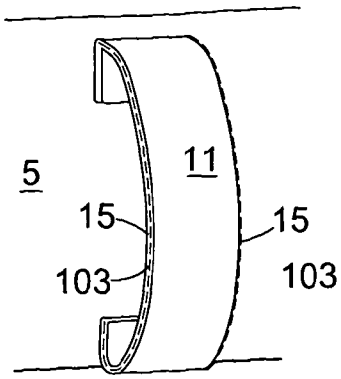

Fig. 15

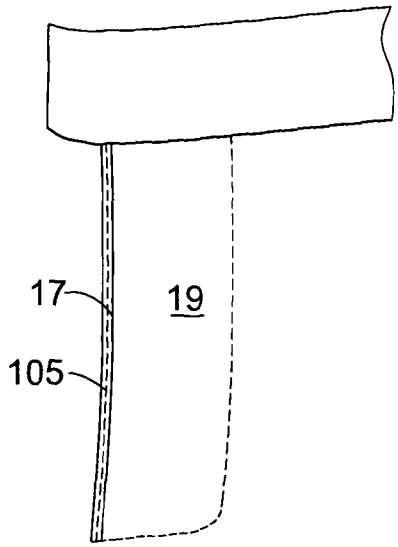

Fig. 16

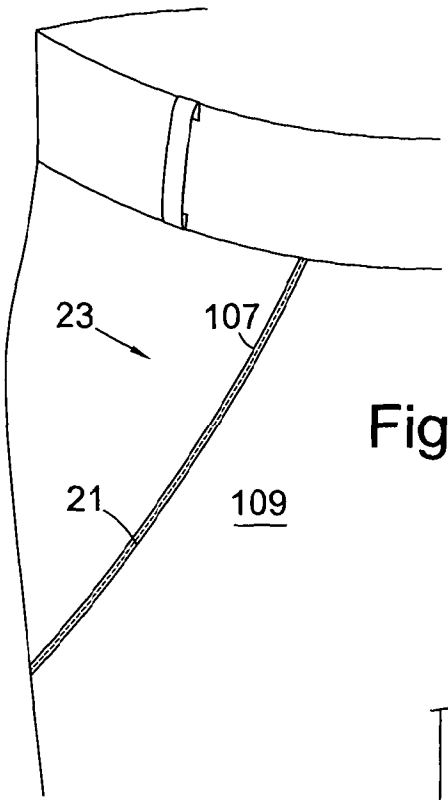

Fig. 17

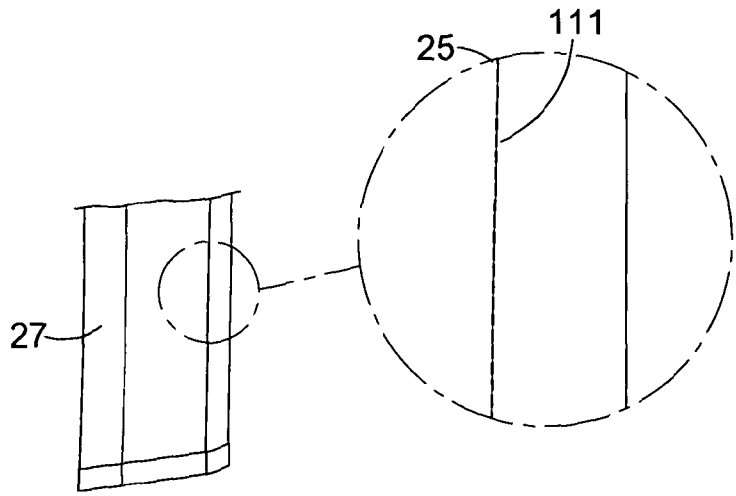

Fig. 18

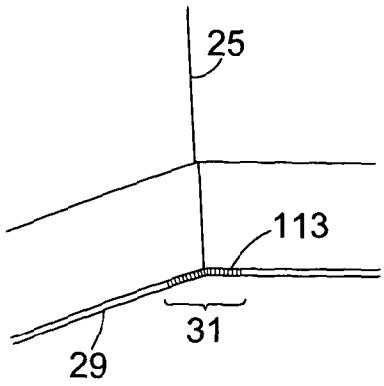

Fig. 19

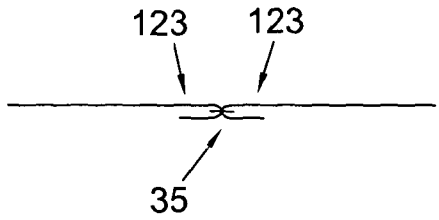

Fig. 20a

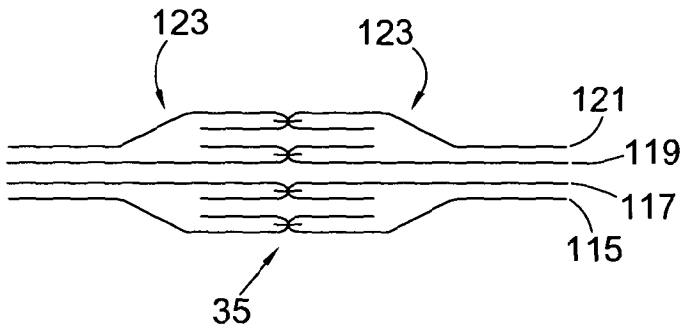

Fig. 20b

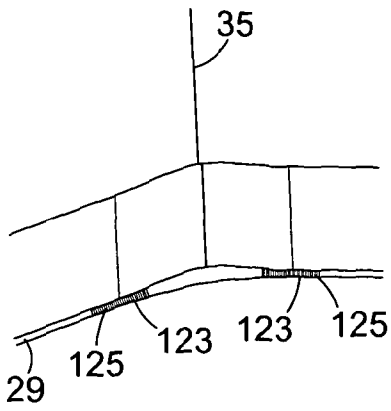

Fig. 21

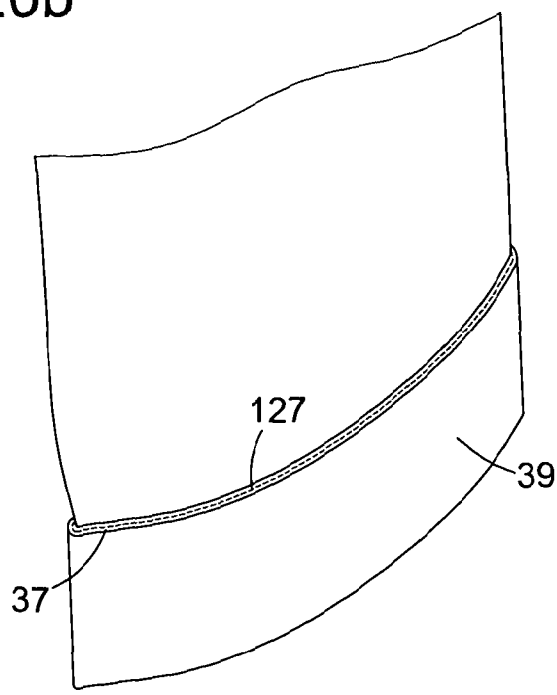

Fig. 22

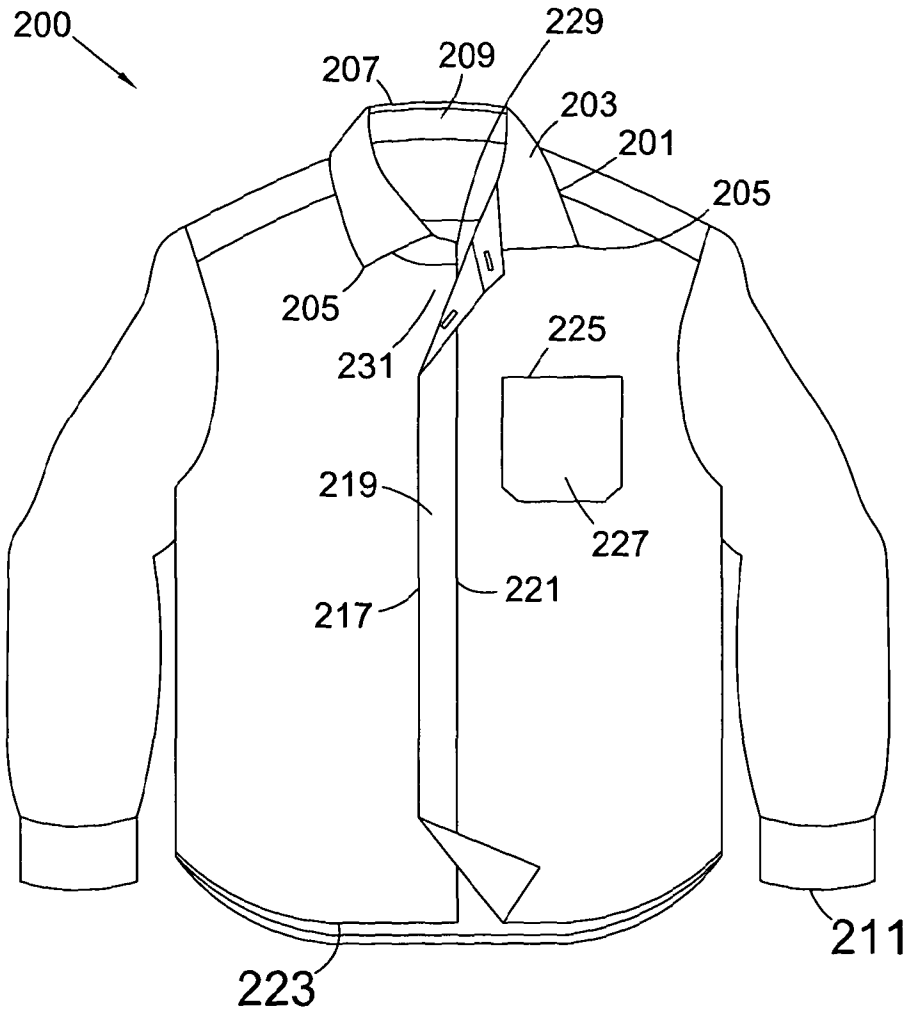

Fig. 23

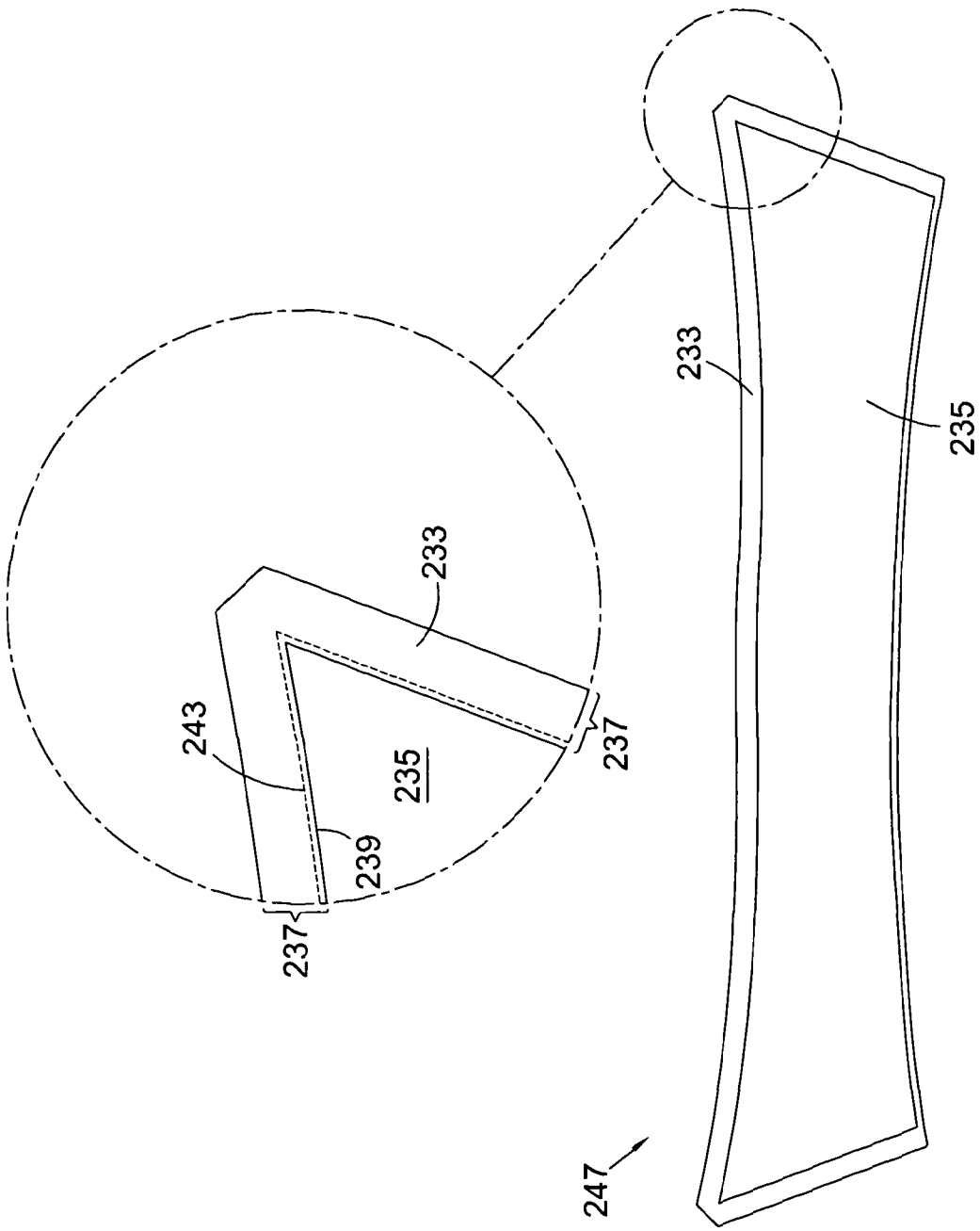

Fig. 24

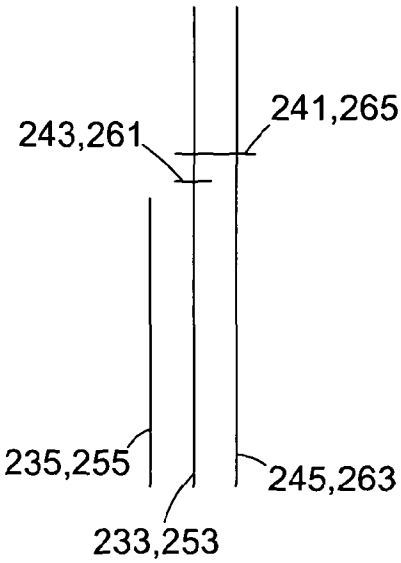

Fig. 25

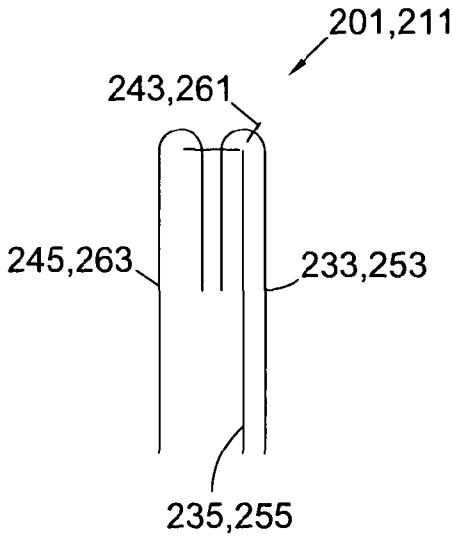

Fig. 26

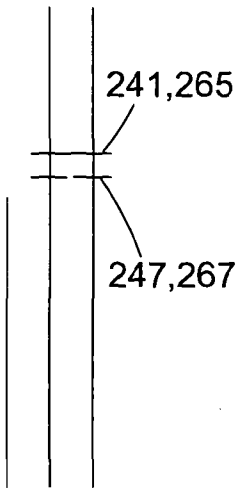

Fig. 27

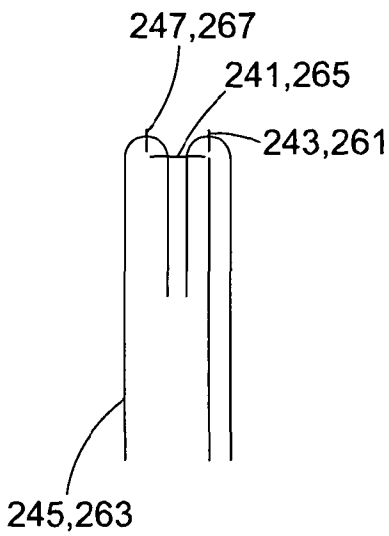

Fig. 28

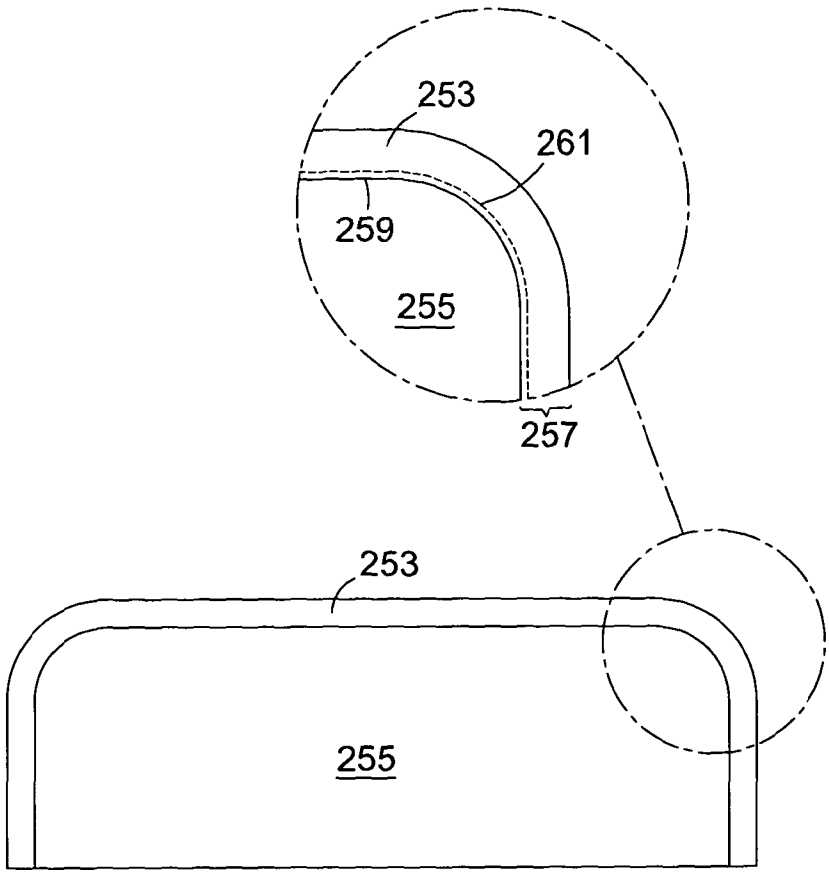

Fig. 29

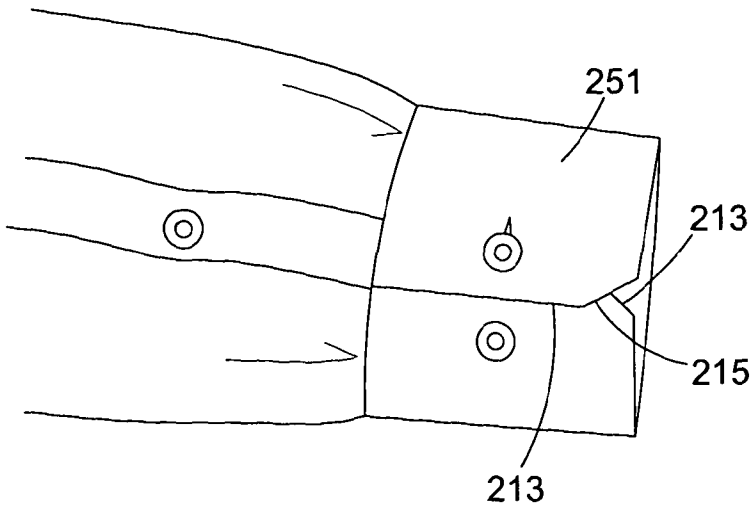

Fig. 30

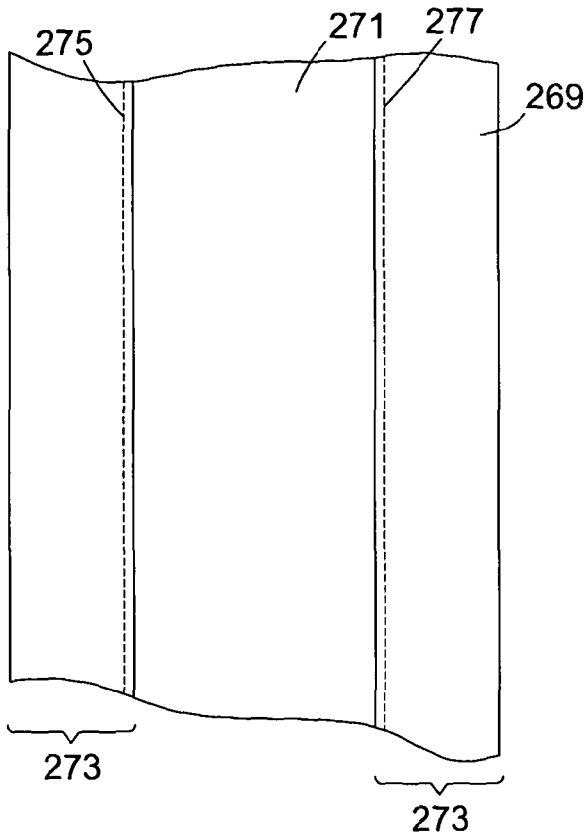

Fig. 31

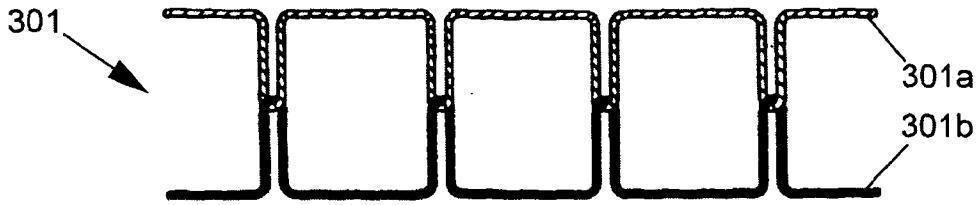

Fig. 32(a)

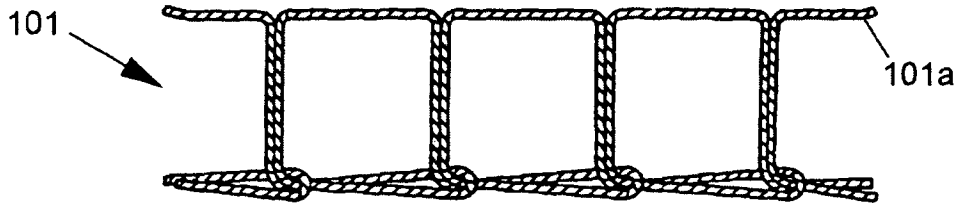

Fig. 32(b)

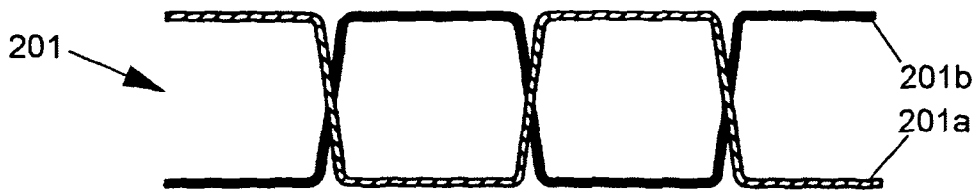

Fig. 32(c)

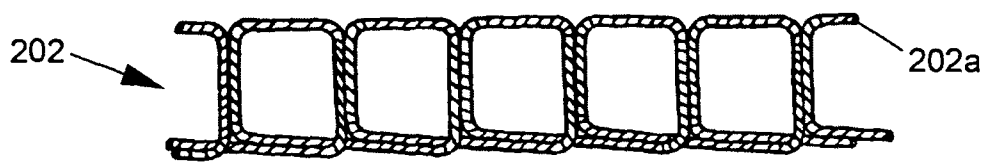

Fig. 32(d)

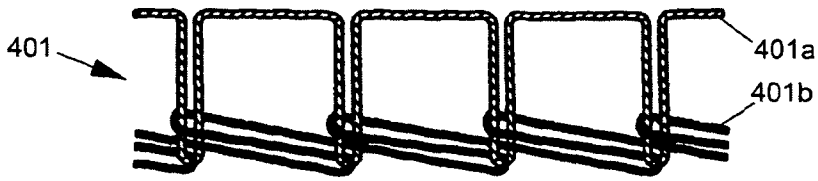

Fig. 32(e)

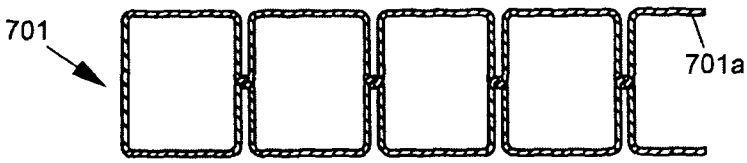

Fig. 32(f)

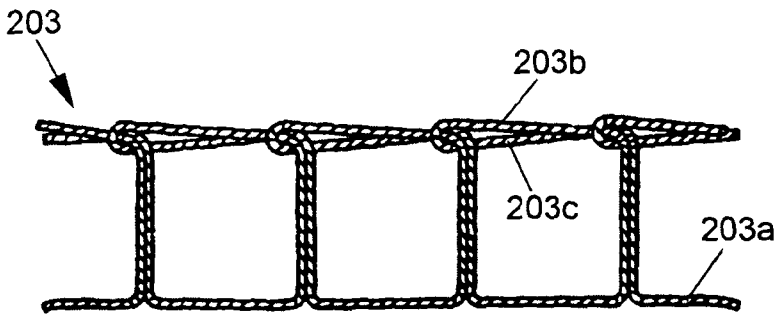

Fig. 33

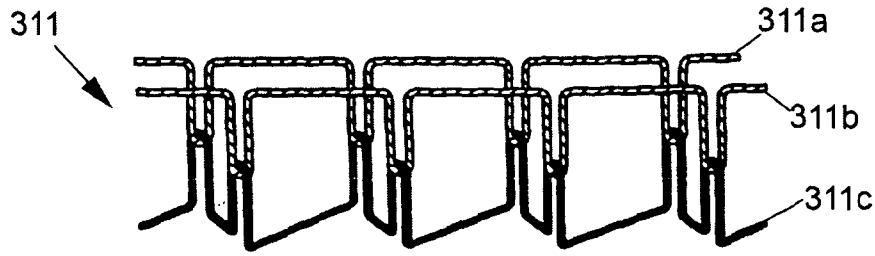

Fig. 34(a)

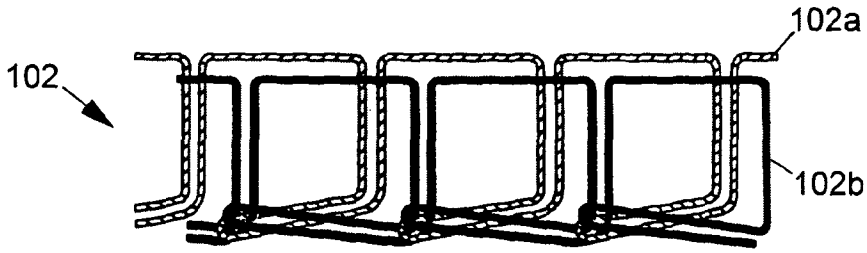

Fig. 34(b)

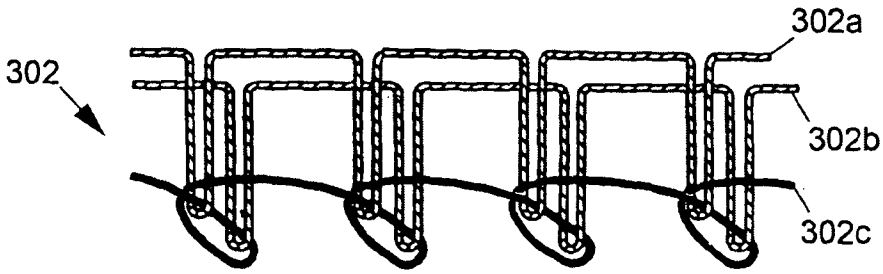

Fig. 34(c)

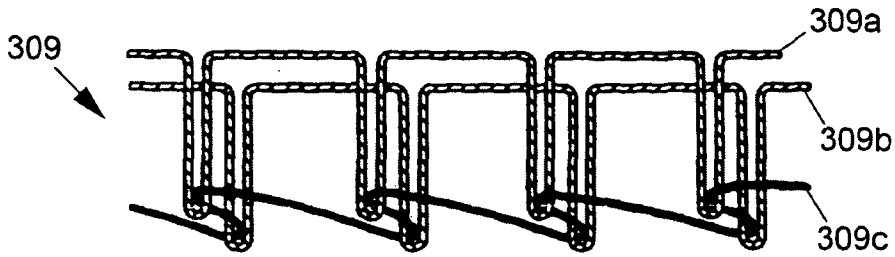

Fig. 34(d)

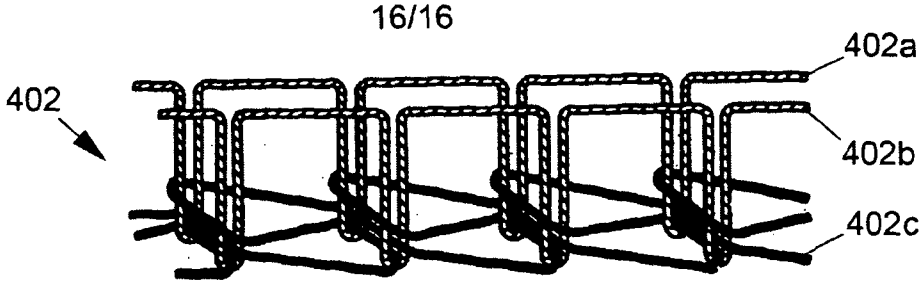

Fig. 34(e)

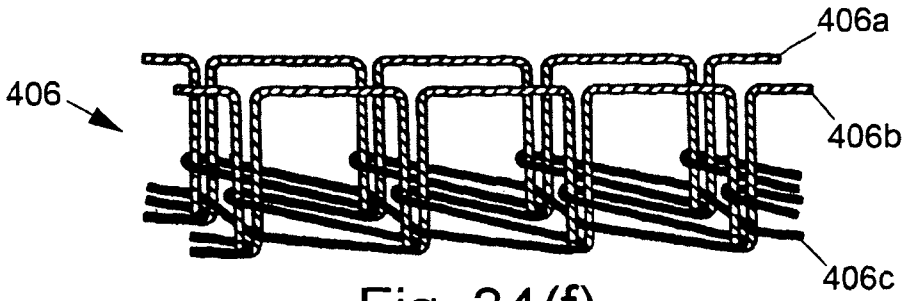

Fig. 34(f)

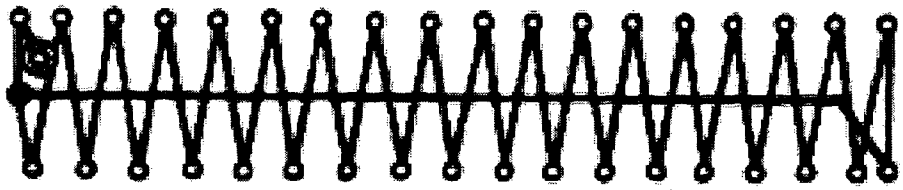

Fig. 35

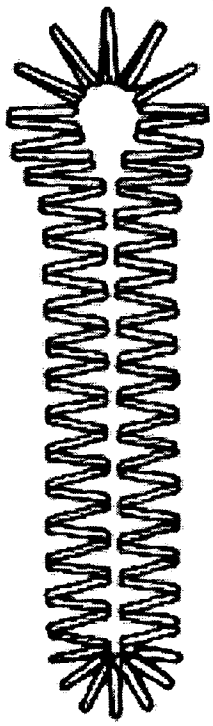

Fig. 36

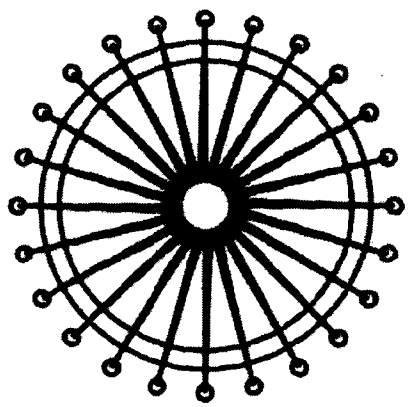

Fig. 37

INTERNATIONAL SEARCH REPORT

International application No
PCT/GB2010/001607

A. CLASSIFICATION OF SUBJECT MATTER
INV. A41D27/24 A41D27/14
ADD.

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
A41D A41B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)
EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	GB 779 482 A (ALEXANDER MACCOLL BENNETT) 24 July 1957 (1957-07-24) the whole document -----	1-62
X	US 356 624 A (HENRY C. CURTIS) 25 January 1887 (1887-01-25) the whole document -----	1-62
X	US 2 148 126 A (MCCREERY BENJAMIN F) 21 February 1939 (1939-02-21) page 1, line 1 - line 25; figures 5-7 page 2, line 54 - line 61 page 2, line 22 - line 44 sentence 64 - sentence 70 ----- -/--	1-62

[X] Further documents are listed in the continuation of Box C.

[X] See patent family annex.

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Date of the actual completion of the international search	Date of mailing of the international search report
18 February 2011	25/02/2011

Name and mailing address of the ISA/	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	da Silva, José

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INTERNATIONAL SEARCH REPORT

International application No
PCT/GB2010/001607

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	GB 1 138 176 A (BARTHELEMY JEAN ALCOVER) 27 December 1968 (1968-12-27) column 1, line 10 - line 21; figure 3 column 1, line 65 - line 68 column 2, line 51 - column 3, line 3 -----	1-62
X	GB 813 588 A (WESTCOT LTD; HERBERT EDWARD PETTIT) 21 May 1959 (1959-05-21) page 2, line 31 - line 33; figure 1 page 2, line 98 - line 99 page 4, line 71 - line 73 -----	1-62

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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No
PCT/GB2010/001607

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		CH 455470 A	15-07-1968
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