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(54) Method of pleating garments and pleated garments.

(57) A method of pleating a garment, wherein an unfinished garment (14), prepared by sewing cloth parts (11R, 11L, 12FR, 12FL, 12B) together, is folded, rolled and twisted, and then attached to a holder. The holder holding the garment (14) is placed in a heat-treatment apparatus (20), and the unfinished garment (14) is heat-treated and pleated at the same time in the heat-treatment apparatus (20) filled with saturated steam.

FIG. 1(A)

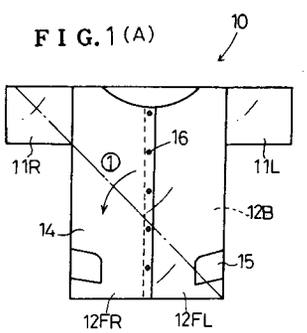
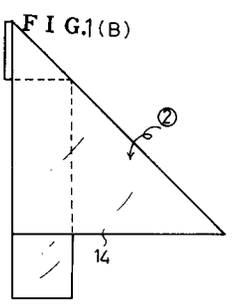


FIG. 1(B)



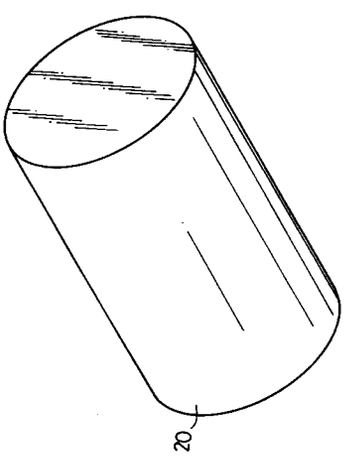


FIG. 1(C)

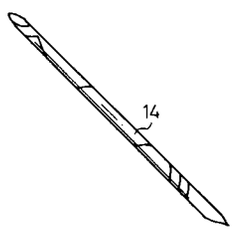


FIG. 1(D)

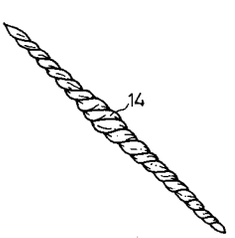
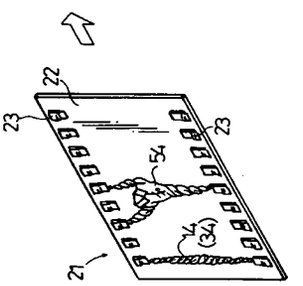


FIG. 2



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This invention relates to a method of pleating unfinished garments, thereby to manufacture pleated garments such as pleated skirts, pleated dresses, pleated blouses, and pleated slacks.

Methods of manufacturing pleated garments such as pleated skirts, are known. Skirts having pleats are classified into flared skirts, gathered skirts, and pleated skirts. Processes of forming pleats on skirts, dresses, blouses, slacks, and the like are generally called "pleating."

When pleated, garments attain appropriate shades and visual effects, or a specific aesthetic impression. Further, the pleats impart a garment flexibility, which makes for comfort for the wearer and enables the wearer to move well, even if the nominal size of the garment is too small for the wearer.

The pleated garments, such as pleated skirts, pleated dresses, pleated blouses, and pleated slacks, are usually manufactured in the following steps, in most cases:

(1) First, selected cloth is cut into several parts having predetermined shapes and sizes (cutting).

(2) The parts, thus prepared, are pressed in preparation for the next step, i.e., pleating (pressing).

(3) The parts are pleated by a pleating machine or by human labor (pleating).

(4) The pleated parts are placed in a heat-treatment apparatus, and heated with saturated steam, thus fixing the pleats (heat treatment).

(5) The parts, each now having fixed pleats, are seamed together by means of a sewing machine, thereby production a pleated garment (sewing).

As described, a pleated garment is produced, usually by first cutting cloth into parts, then pleating the cloth parts, and finally sewing these parts together. In some cases, however, it is made by first pleating cloth, then cutting the pleated cloth into parts, and finally sewing the parts together. In either case, buttons are fixed during the sewing step.

Recently, it has been proposed to sew cloth parts together into an unfinished garment, and then the unfinished garment is processed to have pleats. This process of forming pleats on an unfinished garment, which can be called "post pleats process," is disclosed in Published Unexamined Japanese Patent Application 2-269866.

In the post pleats process, cloth parts are first sewed together, and then the resultant unfinished garment is pleated. Hence, the finished product, i.e., the pleated garment has sufficient flexibility, and can have various designs, acquiring different aesthetic impressions.

As pointed out, the conventional method of manufacturing pleated garments comprises many steps, i.e., cutting, pressing, pleating, heat-treating, and sewing. The method may further comprise the step of placing the pleated garment in a package case. Much time is required to manufacture pleated garments by the conventional method. Obviously, the method fails to meet great demand for pleated garments.

The pleating process consists of clamping a cloth part to be sewed to another part, or an unfinished garment (i.e., cloth parts sewed together), between an upper mold having grooves and a lower mold having projections complementary to the grooves of the upper mold. Most upper and lower molds, generally known as "pleats molds," are made of metal. A pair of molds are attached to a pleating machine, which is operated to form pleats on unfinished garments.

Ordinary pleats, or simple pleats, can be formed by the pleating machine equipped with metal pleats molds. Complex pleats, such as tapered-side pleats, accordion pleats, pattern-matching pleats, and the like, cannot be formed by the machine, however. They are formed manually, with assistance of pleats molds made of paper. As is well understood, much time is consumed to form complex pleats.

No matter whether pleats are formed by the machine or hand, pleats molds need to be used. Inevitably, pleats can have but limited designs. Consequently, it is difficult to produce garments having pleats of various designs, in large quantities.

To form pleats of any new design, a pair of pleats molds, i.e., an upper mold and a lower mold, must be prepared. In the case where an unfinished garment needs to be pleated at a time, it is necessary to make an upper mold and a lower mold, either consisting of many mold elements. Needless to say, it takes a long time to prepare such pleats molds, which hinders efficient large-scale manufacture of pleated garments.

It is therefore an object of the present invention to provide a method of pleating unfinished garments at high speed, thereby to manufacture garments having various types of pleats.

The present invention aims to provide garments having various types of pleats.

To achieve the object, in a method according to the present invention, no pleats molds (neither an upper mold nor a lower mold) are used; an unfinished garment is first rolled, then twisted, and finally heat-treated.

As the twisted unfinished garment is heat-treated, it acquires pleats having specific shapes depending on the way the garment has been twisted. Hence, the unfinished garment can be pleated and heat-treated at the same time.

The invention will now be described in more detail, by way of example only, with reference to the accompanying drawings, in which:

Figs. 1(A) to 1(D) are diagrams, depicting how an unfinished garment is folded, rolled, and twisted;

Fig. 2 is a diagram, depicting how the unfinished garment, twisted as shown in Fig. 1(D) is inserted into a heat-treatment apparatus;

Fig. 3 shows the pleated garment (a blouse) made by unfolding the unfinished garment after the garment has been heat-treated by the heat-treatment apparatus;

Figs. 4(A) to 4(E) are diagrams, depicting how an unfinished garment is folded, rolled, and twisted in a different way;

Fig. 5 shows the pleated garment (blouse) made by unfolding the garment twisted as shown in Fig. 4(E) after this garment has been heat-treated;

Figs. 6(A) and 6(B) are diagrams, depicting how a sleeved unfinished garment is twisted in a specific way;

Fig. 7 shows the pleated garment (shirt) prepared by unfolding the garment twisted as shown in Fig. 6(B) after the twisted garment has been heat-treated;

Figs. 8(A) to 8(F) are diagrams, depicting how an unfinished garment is folded, rolled, wrapped with an urethane-resing sheet, and then twisted;

Fig. 9 shows the pleated garment (dress) made by unfolding the garment twisted as shown in Fig. 8(F) after the twisted garment has been heat-treated; and

Fig. 10(A) shows a unfinished garment to be pleated;

Fig. 10(B) is a diagram showing how the garment shown in Fig. 10(A) is sewed temporarily before it is pleated; and

Fig. 10(C) shows the pleated garment prepared by unfolding the temporarily sewed garment which has been twisted and heat-treated.

A method of pleating a blouse 10 shown in Fig. 1A, which is a first embodiment of the invention, will be described first. The blouse 10 comprises two sleeves 11L and 11R, two front parts 12FL and 12FR, and a back part 12B - which have been cut of cloth and sewed together by a sewing machine. The blouse 10 has two pockets 15 sewed to the front parts 12FL and 12FR, respectively, and several buttons 16 sewed to the left front part 12FL.

The blouse 10, i.e., an unfinished garment 14, is folded at the dot-dash line as indicated by arrow ① in Fig. 1(A). Next, the unfinished garment 14, thus folded, is rolled as indicated by arrow ② in Fig. 1(B), forming a roll which illustrated in Fig. 1-(C). Then, the rolled garment 14 is twisted, as shown in Fig. 1(D). Alternatively, the unfinished garment 14 shown in Fig. 1(A) can be rolled, without being folded as shown in Fig. 1(B). Further, the rolled garment 14 (Fig. 1(C)) can be twisted to have a node or nodes.

Thereafter, the twisted garment 14 is attached to a holder 21, and the holder 21 is inserted into a heat-treatment apparatus 20, as illustrated in Fig. 2. The holder 21 comprises a rigid plate 22 and two sets of clips 23, secured to the opposing two sides, respectively. An end of the twisted garment 14 is clamped by one of the clips 23 of the first set, whereas the other end of the garment 14 is clamped by one of the clips 23 of the second set. The holder 21, which holds the twisted garment 14, is suspened in the heat-treatment apparatus 20. The holder 21 can be replaced by any other type that can hold the unfinished garment 14 and maintain it in its twisted condition.

The heat-treatment apparatus 20 is of the known type, which is filled with saturated steam. The saturated steam permeates deep into the twisted garment 14. As a result, the unfinished garment 14 acquires permanent folds, or pleats, which have specific patterns and lengths, according to the way the garment 14 is folded, rolled, and twisted.

Finally, the holder is removed from the heat-treatment apparatus 20, and the heat-treated, twisted garment 14 is detached from the holder 21. The twisted garment 14 is untwisted, unrolled, and unfolded, thus obtaining a finished garment 14 shown in Fig. 3. As evident from Fig 3, the finished garment 14 (i.e., the blouse 10) has permanent pleats.

A method of pleating another blouse 30 shown in Fig. 4(A), which is a second embodiment of the invention, will be now described. The blouse 30 comprises two sleeves 31L and 31R, two front parts 32FL and 32FR, and a back part 32B -- which have been cut of cloth and sewed together by a sewing machine. The blouse 30 has several buttons sewed to the left front part 12FL.

First, the left sleeve 31L and the right sleeve 31R are folded onto the left front part 32FL and the right front part 32FR, respectively, as indicated by arrows ① in Fig. 4(A). The blouse 30, i.e., an unfinished garment 34, thus folded is further folded double as indicated by arrow ② in Fig. 4(B). Next, the unfinished garment 34, thus folded, is rolled as indicated by arrow ③ in Fig. 4(C), forming a roll illustrated in Fig. 4(D). Then, the rolled garment 34 is twisted, as shown in Fig. 4(E).

Thereafter, the twisted garment 34 is attached to the holder 21, and the holder 21 is inserted into a heat-treatment apparatus 20 (Fig. 2). In the apparatus 20, the saturated steam permeates deep into the twisted garment 34. As a result, the unfinished garment 34 acquires pleats of specific patterns and lengths, according to the way the gar-

ment 34 is folded, rolled and twisted.

Next, the holder 21 is removed from the heat-treatment apparatus 20, and the heat-treated, twisted garment 34 is detached from the holder 21. The twisted garment 34 is untwisted, unrolled, and unfolded, thus obtaining a finished garment 34 shown in Fig. 5. As evident from Fig. 5, the finished garment 34 (i.e. the blouse 30) has permanent pleats.

In the conventional pleating process, either a cloth part to be sewed to other cloth parts or an unfinished garment is first clamped between an upper mold having grooves and a lower mold having projections, then is subjected to pleating, and finally is heat-treated, whereby the cloth part or the garment is permanently pleated.

By contrast, in the present invention, the twisted garment 14 or 34 is heat-treated, thereby having pleats having specific shapes and lengths, according to the way the garment is folded, rolled, and twisted. The heat treatment and the pleating process are accomplished at the same time. Obviously, the method of the invention comprises fewer steps than the conventional method, and thus serves to pleat unfinished garments at higher speed. Hence, the method according to the present invention meet the demand that pleated garments be manufactured in large quantities.

The pleat molds used in the conventional method, i.e., the upper mold and the lower mold, are large and cannot be prepared quickly or at low cost. In contrast, no pleat molds are used in the method of the present invention. In view of this, too, the method of the invention makes it possible to manufacture pleated garments in large quantities.

In the conventional method, cloth parts or unfinished garments are clamped, one by one, between the upper mold and the lower mold. Clearly, the cloth parts or the unfinished garments cannot be pleated at high speed. The process of pleating unfinished garments, thus time-consuming, would inevitably decrease the efficiency of manufacturing pleated garments. In contrast, in the method of this invention, the unfinished garment 14 or 34 can be twisted manually at high speed. Further, since the unfinished garment is pleated at the same time as it is heat-treated, it is unnecessary to heat the garment longer than otherwise. Thus, the pleating step makes no bar to high-speed manufacture of pleated garments.

Moreover, since the pleating step is carried out after the sewing step, the pleats can be designed, not restricted by the conditions of sewing cloth parts together. Rather, by changing the position at which to start rolling the unfinished garment, the direction in which to roll the garment, the degree to which to twist the garment, and the force with which to twist the garment, the unfinished garment can have various visual effects, or various aesthetic impressions, as evident from the pleated blouses 10 and 30 shown in Figs. 3 and 5. Hence, the garment pleated by the method of the invention acquires an added value easily.

Since the cloth parts are sewed together before they are subjected to the pleating step, the restoring force of the cloth need not be taken into account, and the cloth parts need not be held while being sewed together into a garment. This makes it possible to sew the cloth parts at high speed. Also, since the cloth parts are sewed before they are pleated, they do not overlap greatly. Therefore, they can easily be sewed by a sewing machine.

Since the cloth parts are sewed together before they are pleated, the pleated garment has flexibility as high as is demanded of pleated garments.

In the conventional method, cloth parts are clamped between the upper mold and lower mold. If the cloth parts have buttons sewed to them before they are subjected to pleating step, there is the possibility that the buttons are clamped by the pleat molds and subsequently broken. Hence, the buttons must be sewed to the garment after the garment has been pleated.

By contrast, buttons can be sewed to unfinished garments before the garments are subjected to pleating step. This is because, the unfinished garments, whether having buttons or not, are pleated by being folded, rolled and twisted and by being heat-treated, using no pleat molds whatever. For the same reason, pockets can be sewed to the unfinished garment before the garment is pleated. If buttons and pockets are sewed to the unfinished garment before the garment is pleated, the garment can be put on sale immediately after it has been heat-treated and packaged.

A method of pleating a shirt 50 shown in Fig. 6(A), which is a third embodiment of the invention, will be now described. The shirt 50 comprises two sleeves 51L and 51R, a front part 52F and a back part 52B -- which have been cut of cloth and sewed together by a sewing machine. The shirt 50 has a pocket 55 and three buttons 56 sewed to the front part 12F.

First, the left sleeve 51L and the right sleeve 51R and the lower half of the shirt 50, or the unfinished garment 54, are twisted, leaving the collar 58 and the upper half untwisted, as shown in Fig. 6(B). Then, the ends of the three twisted parts of the unfinished garment 54 are clamped by three clips 23 of the holder 21. This done, the holder 21 is inserted in the heat-treatment apparatus 20 (Fig. 2). In the apparatus 20, the saturated steam permeates deep into the garment 54. The unfinished garment 54 thereby comes to have pleats of specific patterns and lengths, according to the way the

three parts of the garment 54 are twisted.

Next, the holder 21 is removed from the heat-treatment apparatus 20, and the heat-treated, twisted garment 54 is detached from the holder 21. The twisted garment 54 is untwisted, unrolled and unfolded, thus obtaining a finished garment 54 shown in Fig. 7. As evident from Fig. 7, the finished garment 54 (i.e. the shirt 50) has permanent pleats.

The conventional method of pleating garments cannot be used to pleat an unfinished garment which has, like a shirt, a part or parts that should not be pleated. In other words, such a garment cannot be pleated by a pleating machine; it needs to be pleated by hand. In the method of the present invention, an unfinished garment can easily be pleated, except for a specific part or parts, by twisting and heat-treating the other parts of the garment.

A method of pleating a dress 70 shown in Fig. 8(A), which is a fourth embodiment of the invention, will be now described. The dress 70 comprises two sleeves 71L and 71R, a front part 72F, and a back part 72B -- which have been cut of cloth and sewed together by a sewing machine.

First, the left sleeve 71L and the right sleeve 71R are folded onto the front part 72F, as indicated by arrows ① in Fig. 8(A). Then, the lower half of the dress 70, or the unfinished garment 74, is folded minutely and gathered as shown in Fig. 8-(B). Next, as illustrated in Fig. 8(C), the unfinished garment 74 is laid on a soft sheet 76 made of air-permeable material such as urethane resin. Further, the sheet 76 is rolled, taking in the unfinished garment 74, as shown in Fig. 8(D). The roll of the sheet 76 containing the garment 74 is twisted as shown in Fig. 8(E), and is further twisted and tied with strings 77 and 78 at the ends as illustrated in Fig. 8(F).

Thereafter, the ends of the twisted garment 74 wrapped with the sheet 76 are clamped by the clips 23 of the holder 21. The holder 21 is inserted into the heat-treatment apparatus 20 (see Fig. 2). In the apparatus 20, the saturated steam permeates deep into the twisted garment 74. The unfinished garment 74 thereby acquires pleats of specific patterns and lengths, according to the way the three parts of the garment 74 are folded, gathered, and twisted.

Next, the holder 21 is removed from the heat-treatment apparatus 20, and the heat-treated, twisted garment 74 is detached from the holder 21. The twisted garment 74 is untwisted, unrolled, and unfolded, thus obtaining a finished dress 70 shown in Fig. 9. As evident from Fig. 9, the dress 70 has permanent pleats.

In the fourth embodiment, the unfinished garment 74 is wrapped with a soft sheet 76 made of air-permeable material such as urethane resin, and is heat-treated, with the wrapping tied with the strings 78. Therefore, the garment 74 has such complex pleats as shown in Fig. 9. Since the lower half of the unfinished garment 74 is gathered and folded as shown in Fig. 8(B), it will have straight pleats. By contrast, the sleeves and upper half of the garment 74 will have complex pleats since they are folded, rolled, and twisted.

Thus, the garment 74 has complex pleats since some parts of its have been folded, rolled together with the soft sheet 76 (e.g., an urethane resin), thereby wrapped with the sheet 76, and twisted, whereas the other part of it is gathered, folded, together with the soft sheet 76, and twisted. In the first to third embodiments, too, some part of the unfinished garment can be gathered, folded, rolled together with a soft sheet, and twisted.

Any narrow part of a garment, such as an waist, is formed of a cloth part smaller than the other cloth parts. The more narrow parts the garment has, the more difficult it will be to cut cloth and sew cloth parts together to form the garment. According to the present invention, a garment having some narrow parts can easily be manufactured by pleating an unfinished garment in a specific manner which will be described below.

A method of pleating a raincoat 90 in Fig. 10-(A), which is a fifth embodiment of the invention, will be now described. In the first step, as shown in Fig. 10(B), the unfinished garment 94 are temporarily sewed at both shoulders, at the middle of either sleeve, and at both cuffs. Further, it is temporarily sewed at the waist, and the two portions below the waist. As shown in Fig. 10(C), the threads forming the temporary stitches 97 are pulled thereby narrowing the shoulders, the middle portion of either sleeve, both cuffs, the waist, and the two portions below the waist. Then, the unfinished garment 94 is pressed by a press machine, rolled around a hollow cylinder 98, and heat-treated. As a result, the garment 94 has permanent pleats. After the garment 94 is heat-treated, the stitches 97 are cut, and the threads are pulled from the garment 94. Even after the threads have been removed from the garment 94, the narrowed portions thereof remain narrowed or squeezed. Thus, the raincoat 90 is pleated and has narrowed portions as illustrated in Fig. 10(C).

As described above, the unfinished garment 94 can have any desired portion narrowed or squeezed, by temporarily sewing that portion, pulling the thread forming the temporary stitches, heat-treating the garment, thereby pleating it, and cutting the temporary stitches. That portion can be narrowed as much as desired, merely by pulling the thread by the proportional distance. In the fifth embodiment, each desired portion of the garment 94 is temporarily sewed all around -- from the front

to the back. Alternatively, the portion can be temporarily sewed partly only, and will, therefore, be pleated partially.

In the method explained with reference to Figs. 10(A) to 10(C), any portion of a garment can be narrowed no matter which cloth parts the portion consists of. No particular measures need to be taken in cutting cloth into parts, or to sew the resultant cloth parts together into the unfinished garment. That is, the unfinished garment can be squeezed at any portion and to any desired degree. This ensures a variety of designs for pleated garments.

The unfinished garment 94 is pressed and rolled around the hollow cylinder 98 in the method according to the fifth embodiment. The raincoat 90 can be packaged before it is unrolled from the cylinder 98. If this is the case, the raincoat 90 can be put to sale at once. Rolled around the cylinder 98, it remains intact, not slackening, while being transported. Hence, its pleats remain neat and steady.

In the embodiments described above, the blouses 10 and 30, the shirt 50, the dress 70, and the raincoat 90 were pleated. Nonetheless, the method of the invention can be applied to the manufacture of other types of pleated garment, such as T-shirts, skirts, slacks, cocktail dresses, and the like.

The specific ways of folding, rolling, twisting, tying with strings, temporarily sewing unfinished garments --all performed in the embodiments described above -- are nothing more than examples. According to the present invention, the unfinished garments can be folded, rolled, twisted, string-tied, and temporarily sewed in other various possible manners.

The invention is not limited to the embodiments described above, which are no more than examples.

Various changes and modifications can be made, without departing the spirit and scope of the invention.

As described above, according to the present invention, as a twisted unfinished garment is heat-treated, it has pleats having sizes and shapes determined by the way it has been twisted. Obviously, any method of the invention comprises fewer steps than the conventional method wherein the pleating step and the heat treatment are carried out sequentially. The method of the invention can thus serve to pleat unfinished garments at a higher speed, meeting the demand that pleated garments be manufactured in large quantities.

In the method of the invention, the unfinished garment can be twisted by hand, both easily and quickly. Although the garment is pleated while it is being heat-treated, the time required for the heat treatment is not so long. Further, no pleat molds are used, unlike in the conventional method. Hence, the method of the invention has no bar to mass-production of pleated garment.

Since the pleating step is carried out after the sewing step, the pleats can be designed, not restricted by the conditions of sewing cloth parts together. Rather, by changing the way of rolling the unfinished garment, the way of twisting the garment, and the way of folding, if necessary, the garment before it is rolled, the garment can have various visual effects, or various aesthetic impressions. Hence, the garment pleated by the method of the invention acquires an added value easily.

As pointed out, the cloth parts are sewed together before they are subjected to the pleating step. Hence, the restoring force of the cloth need not be taken into account, and the cloth parts need not be held while being sewed together into a garment. This makes it possible to sew the cloth parts at high speed. Also, since the cloth parts are sewed before they are pleated, they do not overlap greatly. They can therefore be sewed easily by a sewing machine.

Since the cloth parts are sewed together before they are pleated, the pleated garment has flexibility as high as is demanded of pleated garments.

In the method of the invention, buttons can be sewed to unfinished garments before the garments are subjected to the pleating step. This is because the unfinished garments, whether having buttons or not, are pleated by being folded, rolled and twisted and by being heat-treated, not using no pleat molds whatever. If buttons and pockets are sewed to the unfinished garment before the garment is pleated, the garment can be put to sale, immediately after it has been heat-treated and packaged.

According to the present invention, an unfinished garment can easily be pleated, except for a specific part or parts, by twisting and heat-treating the other parts of the garment.

Further, an unfinished garment can have complex pleats in a specific method, in which some parts of it are folded and twisted, whereas the other part of it is gathered, folded, and twisted. As a result, the garment will have pleats of complex design.

In still another method of the invention, an unfinished garment is wrapped with a soft sheet made of air-permeable material such as urethane resin, and is heat-treated, with the wrapping tied with the strings. Therefore, the garment has pleats which are complex due to the string-tying process.

In another method according to the invention, an unfinished garment can be narrowed at any portion by temporarily sewing that portion and pulled the thread forming the temporary stitches. Hence, as the garment is heat-treated, it will have

pleats at the squeezed portion, which have sizes and shapes determined by how much the thread has been pulled. This ensures a variety of designs for pleated garments.

As described above, in the method of the invention, an unfinished garment is not only twisted before it is heat-treated, but also wrapped with a soft sheet of, for example, urethane resin, and then tied with strings, or folded and rolled, or temporarily sewed at any desired portion to squeeze that portion. The garment can therefore be pleated in various designs, at high speed. The method of the invention can, thus, provide pleated garments which are utterly different in concept from the pleated garments hitherto manufactured.

Claims

1. A method of pleating a garment, comprising the steps of: rolling an unfinished garment (14, 34) prepared by sewing cloth parts (11R, 11L, 12FR, 12FL, 12B, 31R, 31L, 32FR, 32FL, 32B) together, twisting the rolled garment (14, 34), placing the twisted garment (14,34) into a heat-treatment apparatus (20), and heat-treating the twisted garment (14, 34) in the heat-treatment apparatus (20) filled with saturated steam, thereby pleating the garment (14, 34).

2. A method according to claim 1, further comprising the step of folding the unfinished garment (14, 34) before the garment (14, 34) is rolled.

3. A method of pleating a garment, comprising the steps of: twisting an unfinished garment (54) prepared by sewing cloth parts (51R, 51L, 52F, 52B) together, except for a part (58) thereof, and heat-treating the partly twisted garment (54) in a heat-treatment apparatus (20) filled with saturated steam, thereby pleating the garment (54).

4. A method of pleating a garment, comprising the steps of: wrapping an unfinished garment (74), prepared by sewing cloth parts (71R, 71L, 72F, 72B) together, with an air-permeable, heat-resistant soft sheet (76), twisting the garment (74) and the soft sheet (76) together, forming a roll, tying the resultant roll with strings (77, 78), placing the tied roll into a heat-treating apparatus (20), and heat-treating the roll in the heat-treating apparatus (20) filled with saturated steam, thereby pleating the garment (74).

5. A method according to claim 4, further comprising the step of folding the unfinished garment (74) before the garment (74) is wrapped with the soft sheet (76).

6. A method according to claim 4 or 5, further comprising the step of rolling the unfinished garment (74) before the garment (74) is wrapped with the soft sheet (76).

7. A method of pleating a garment, comprising the steps of: temporarily sewing any desired part of an unfinished garment (94) prepared by sewing cloth parts together, thus forming temporary stitches (97), pulling the thread forming the temporary stitches (97), thereby squeezing the part of the garment (94), pressing the unfinished garment (94), rolling the pressed garment (94) around a cylinder (98), forming a roll, placing the cylinder (98) containing the rolled garment (94) into a heat-treating apparatus (20), and heat-treating the roll in the heat-treating apparatus (20) filled with saturated steam, thereby pleating the garment (94).

8. A pleated garment produced by the method of claim 1, claim 3, claim 4 or claim 7.

FIG. 1(A)

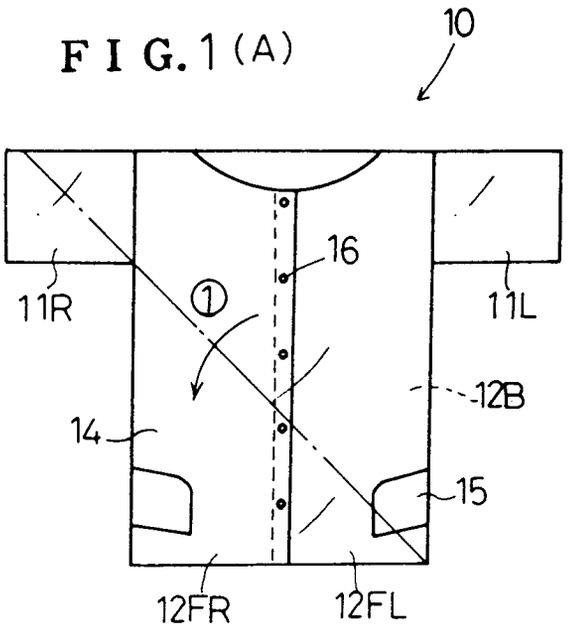


FIG. 1(B)

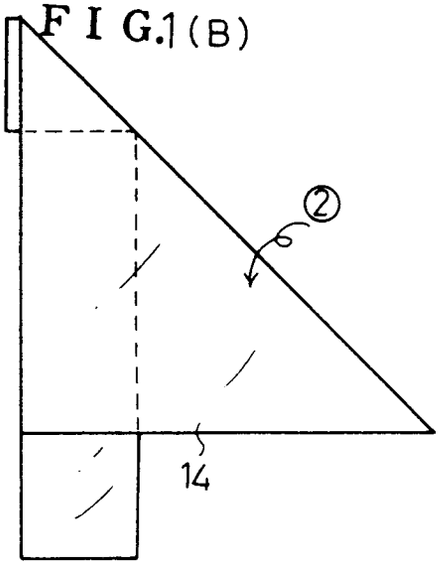


FIG. 1(C)

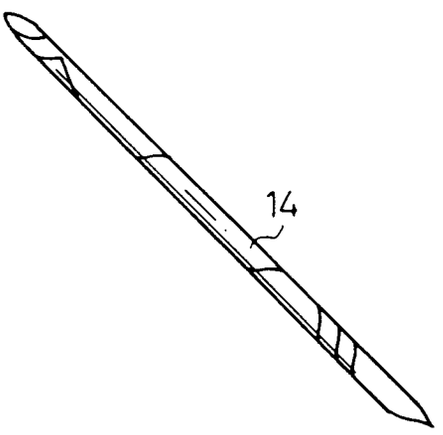
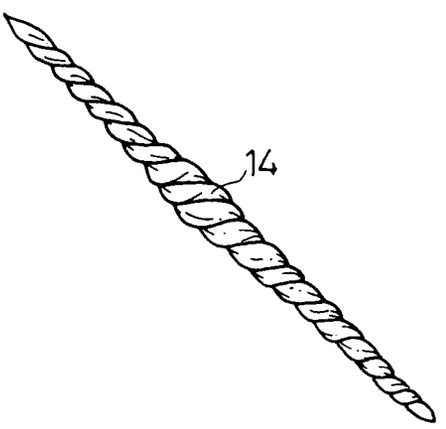


FIG. 1(D)



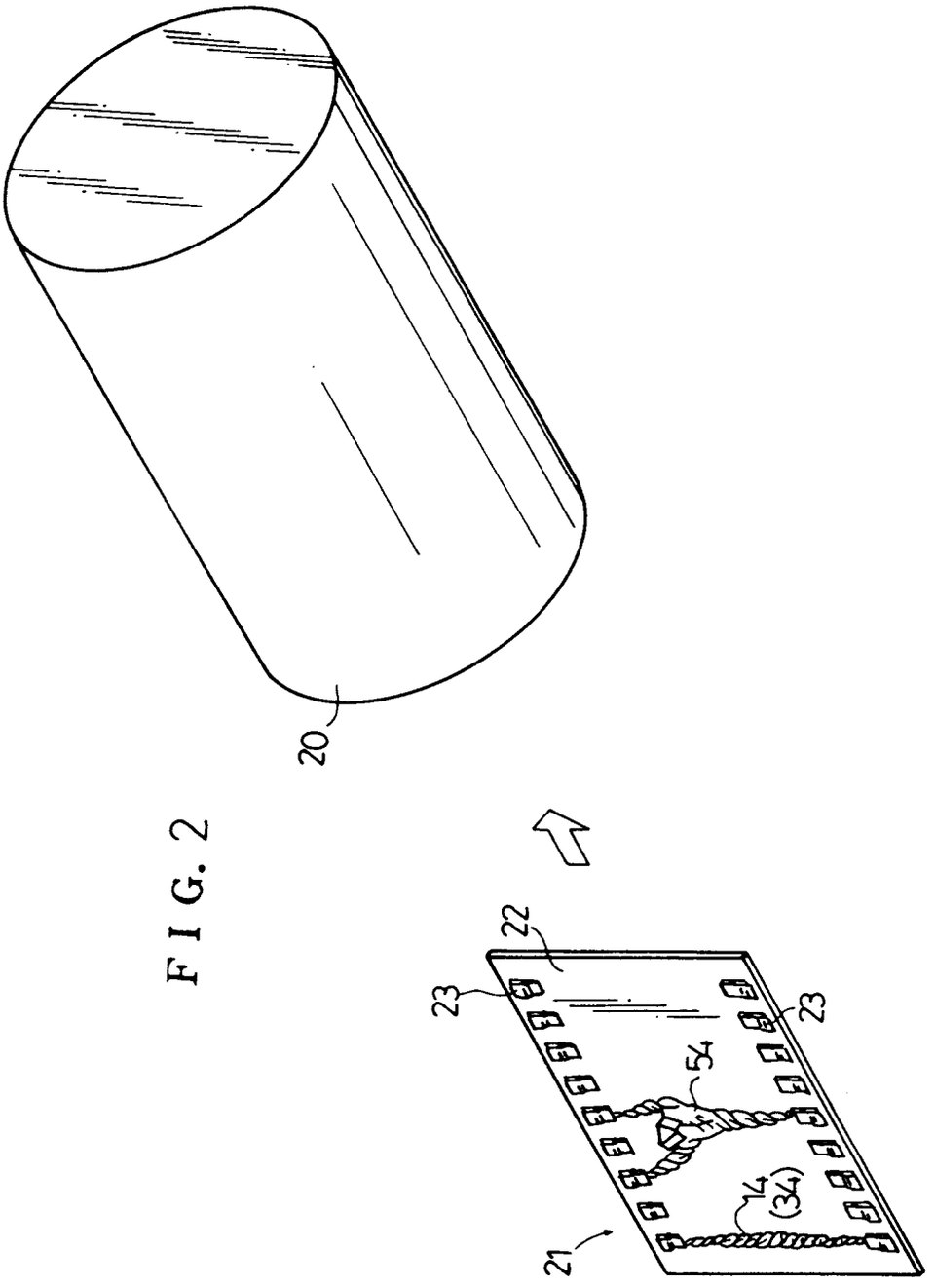


FIG. 2

FIG. 3

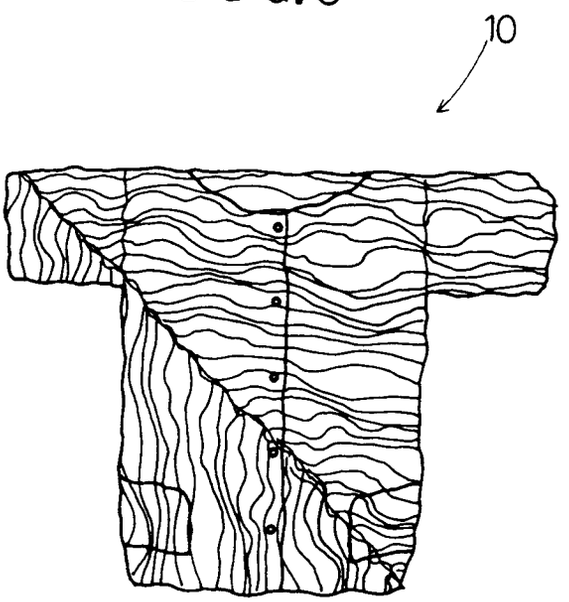


FIG. 4 (A)

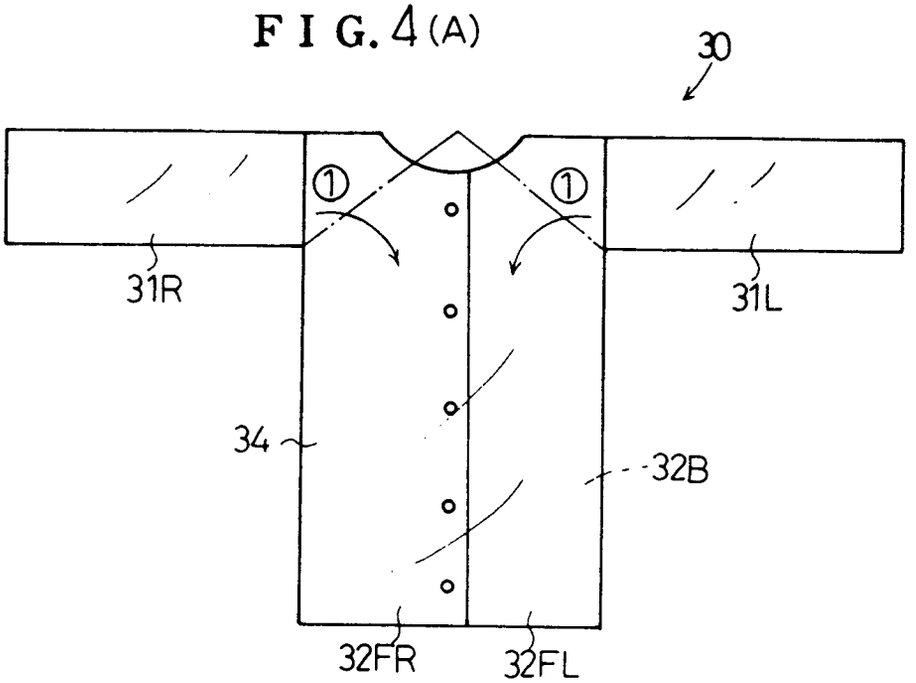


FIG. 4 (B)

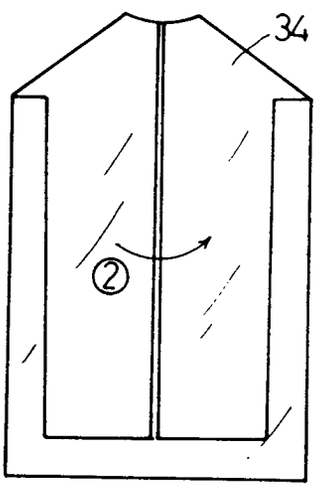


FIG. 4(C)

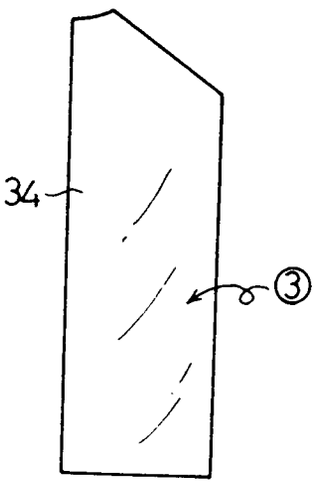


FIG. 4(D)

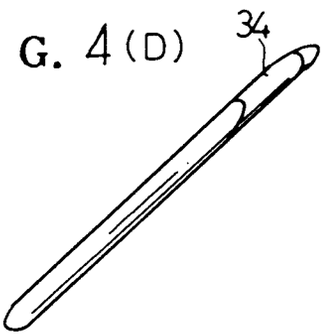


FIG. 4(E)

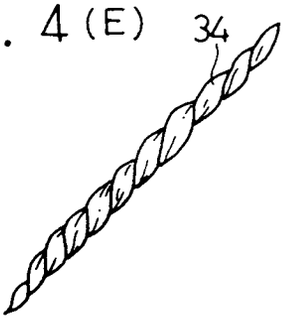


FIG. 5

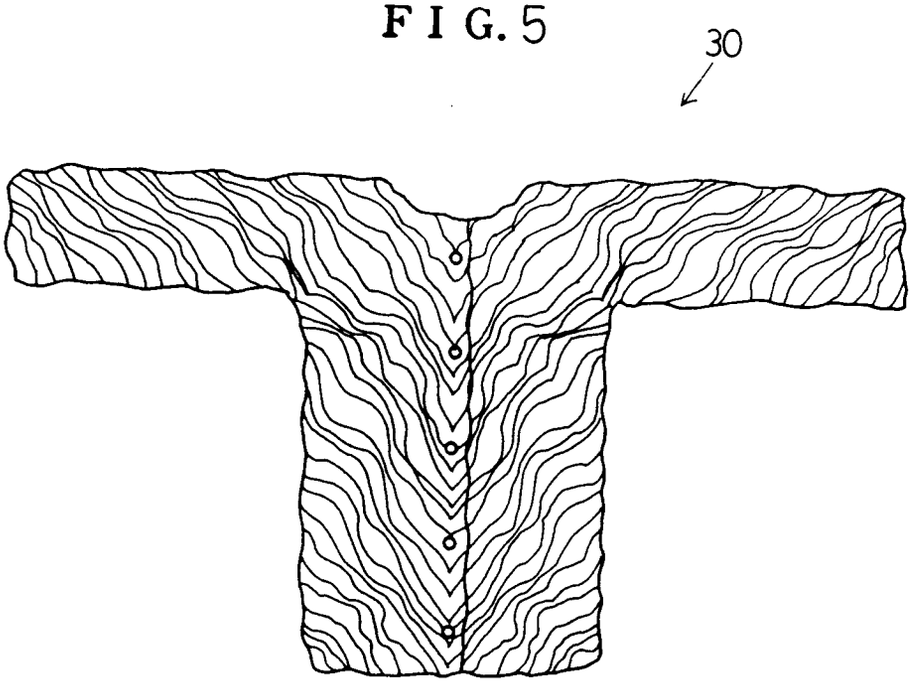


FIG.6 (A)

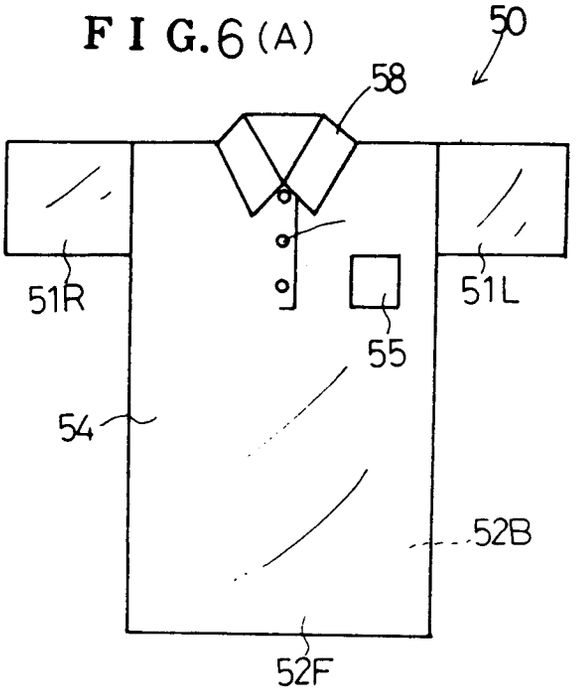


FIG. 6 (B)

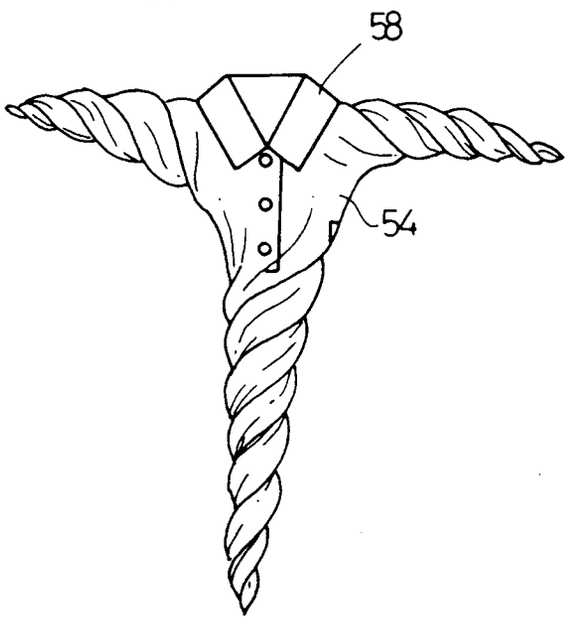


FIG. 7

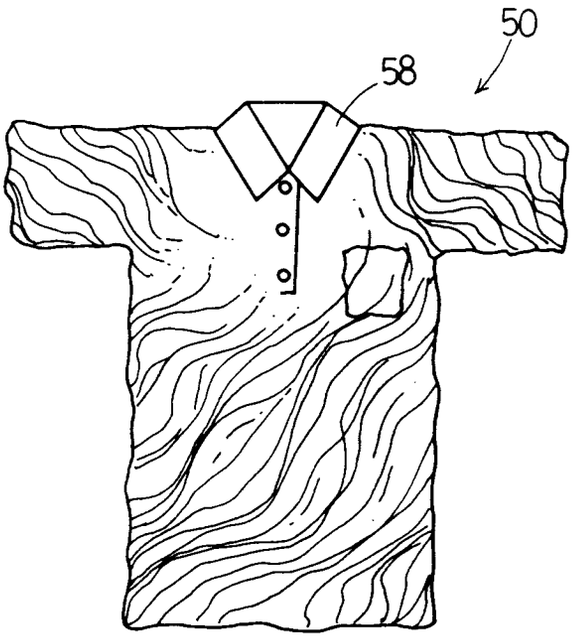


FIG.8(A)

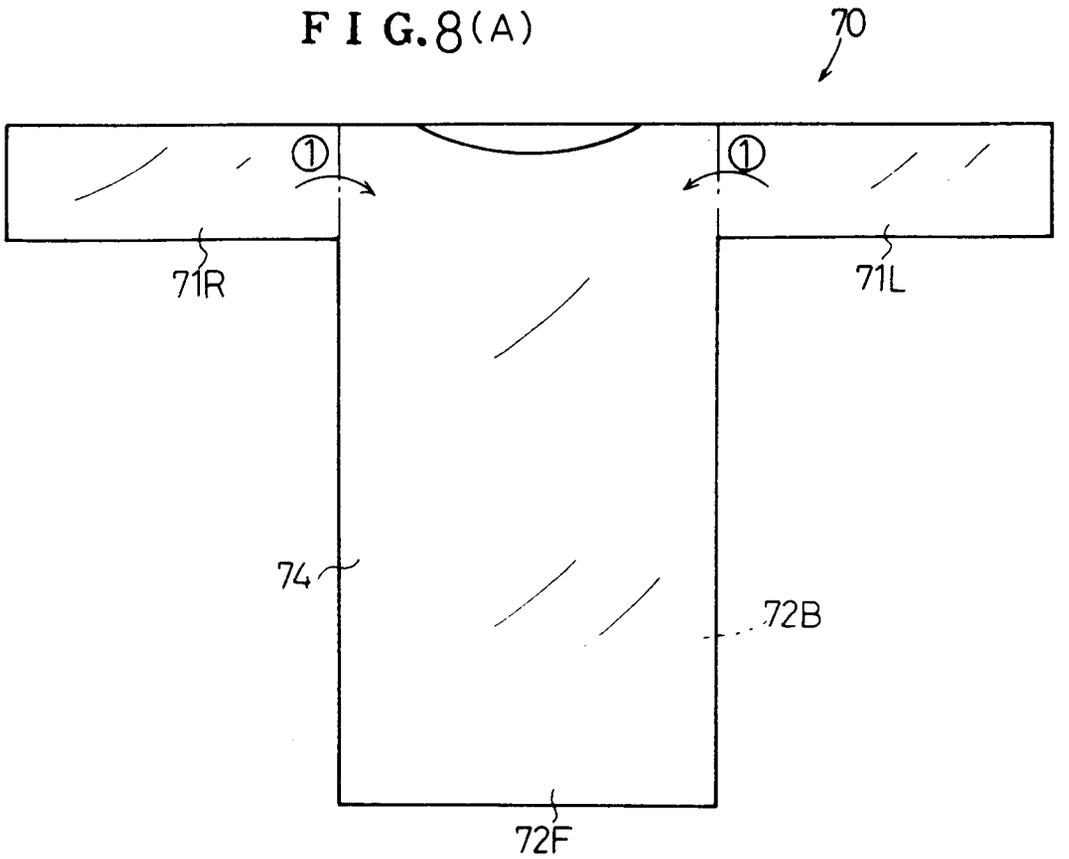


FIG. 8(B)

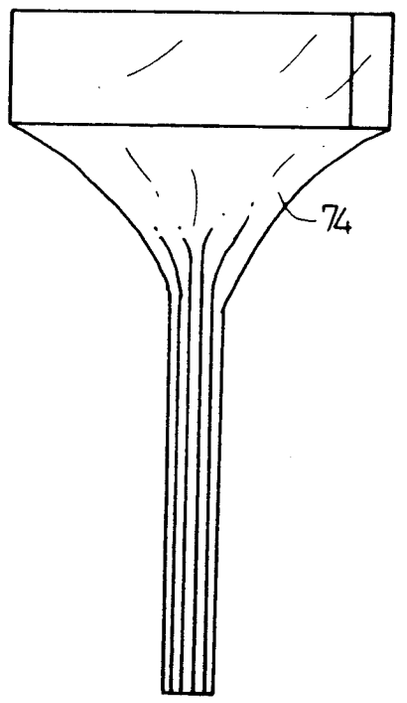


FIG. 8(C)

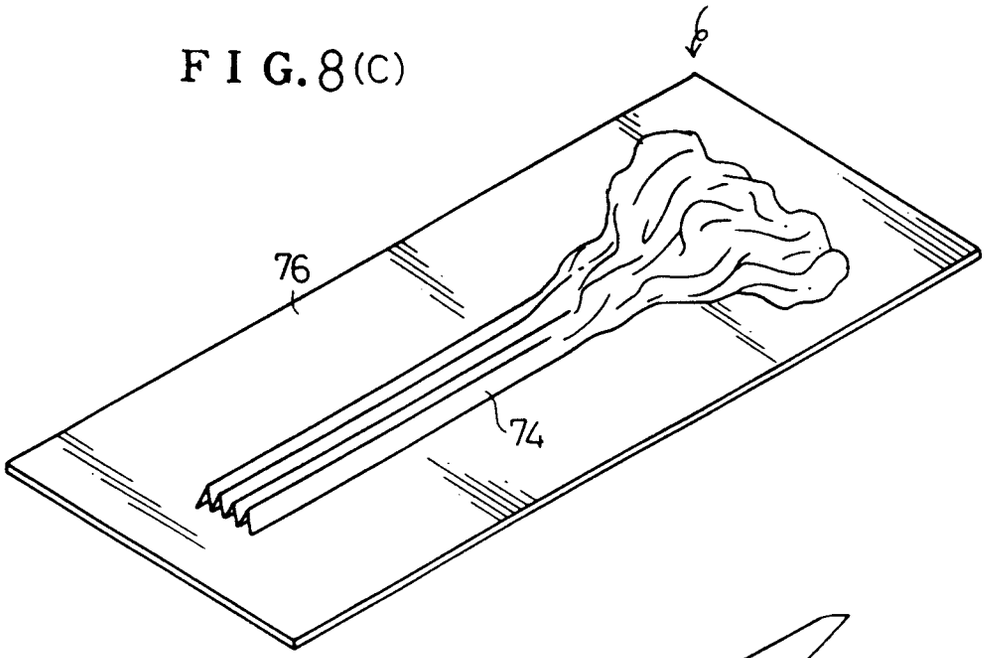


FIG. 8(D)

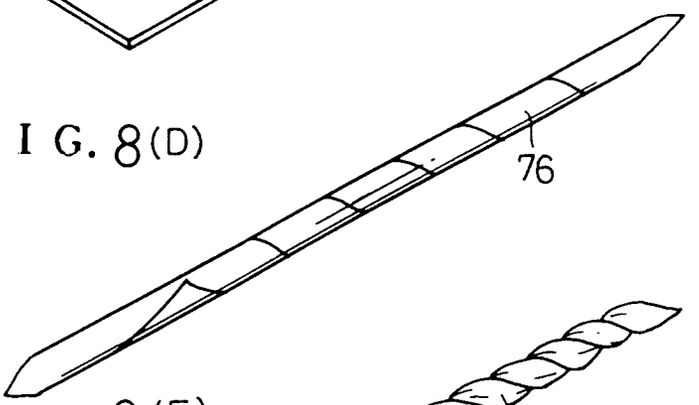


FIG. 8(E)

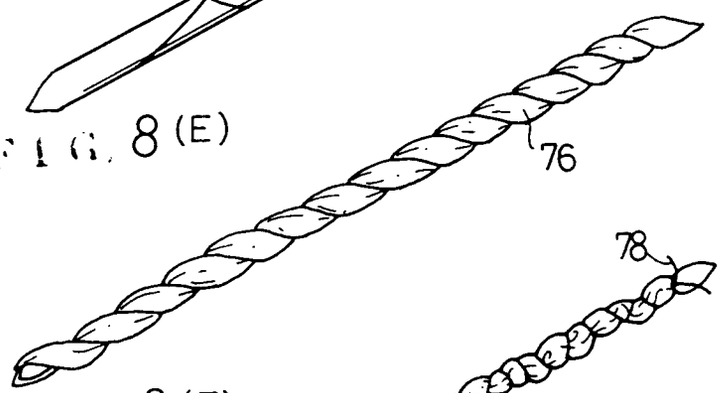


FIG. 8(F)

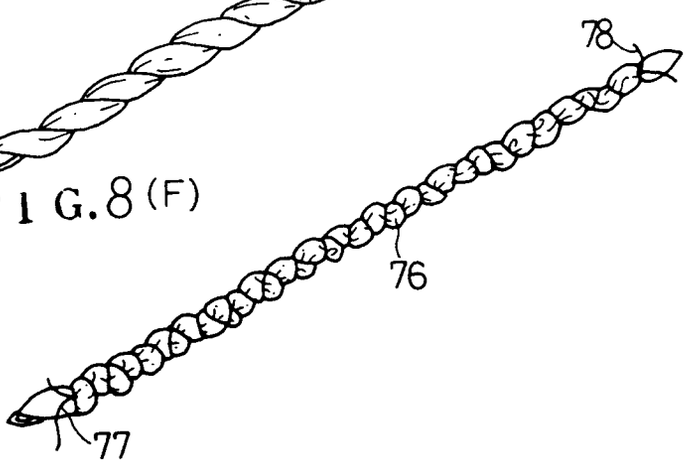
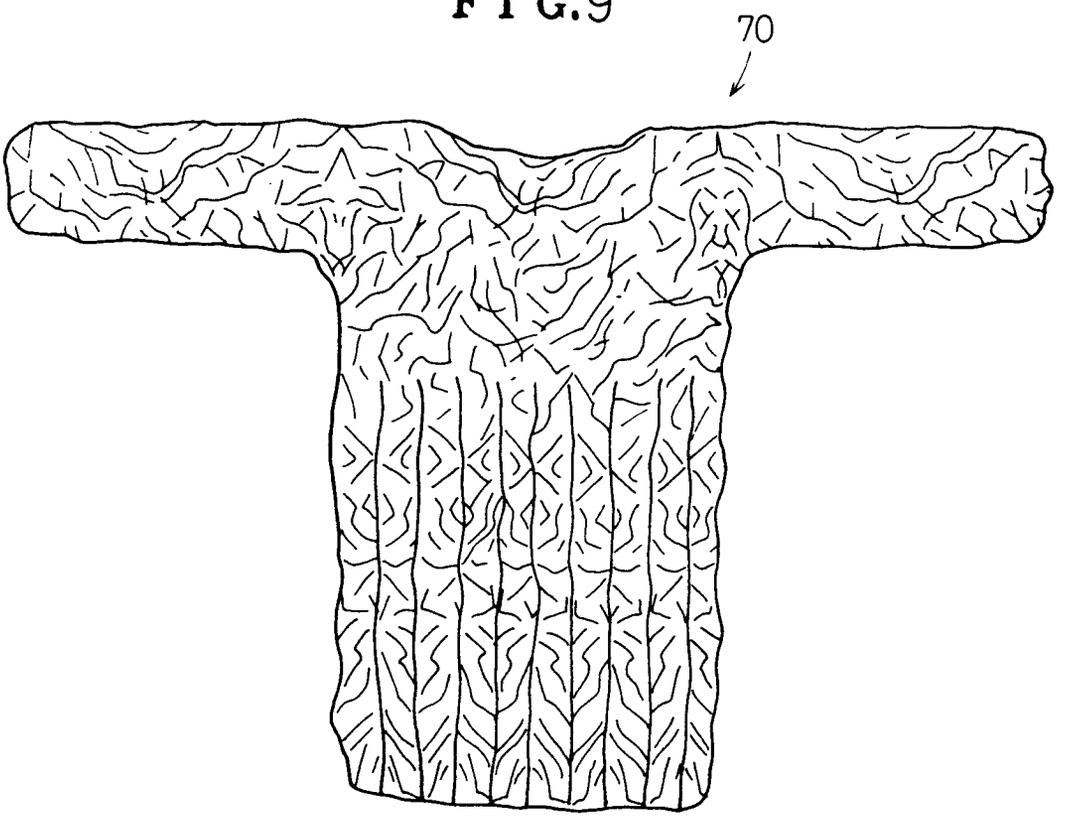


FIG.9



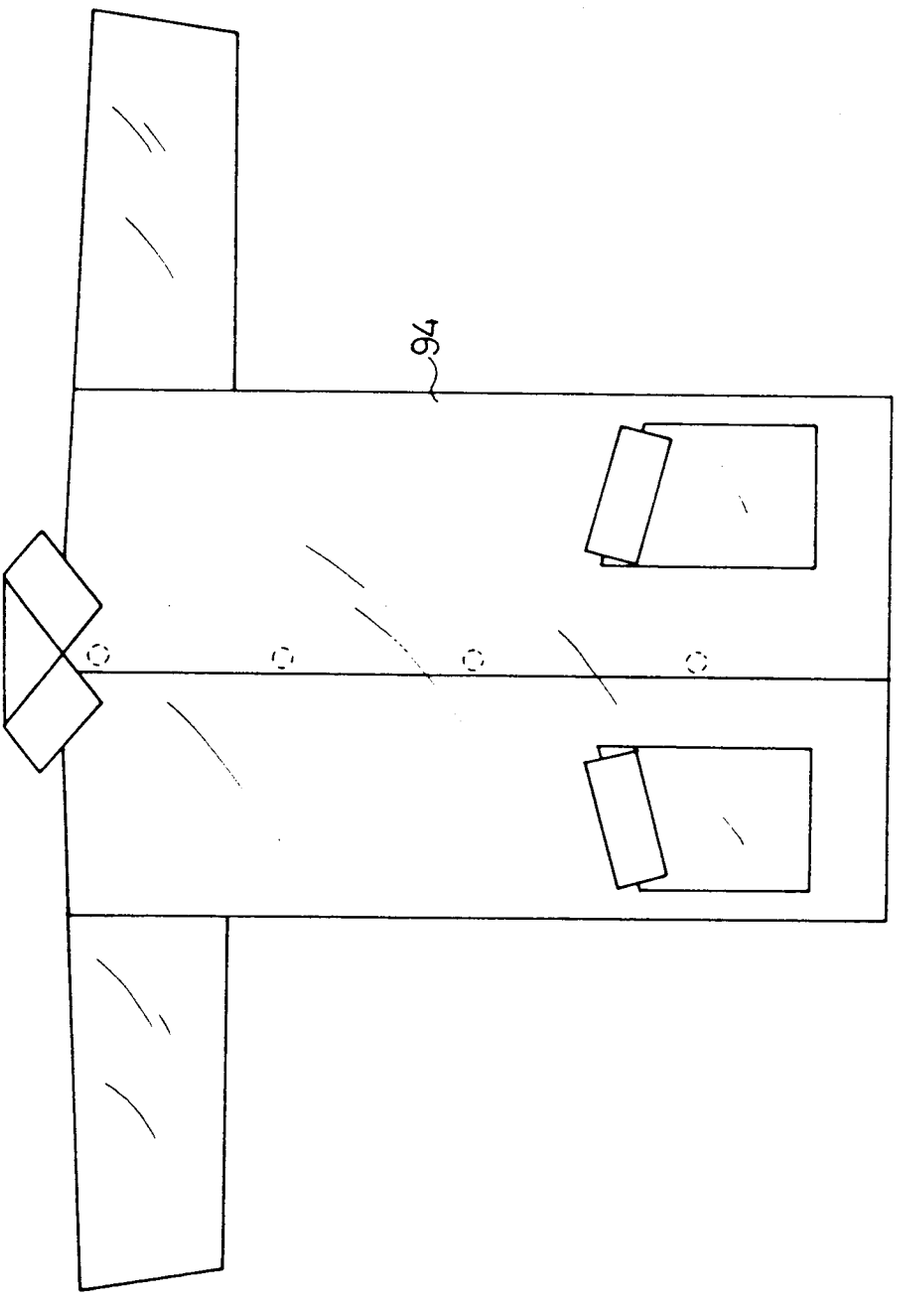


FIG.10(A)

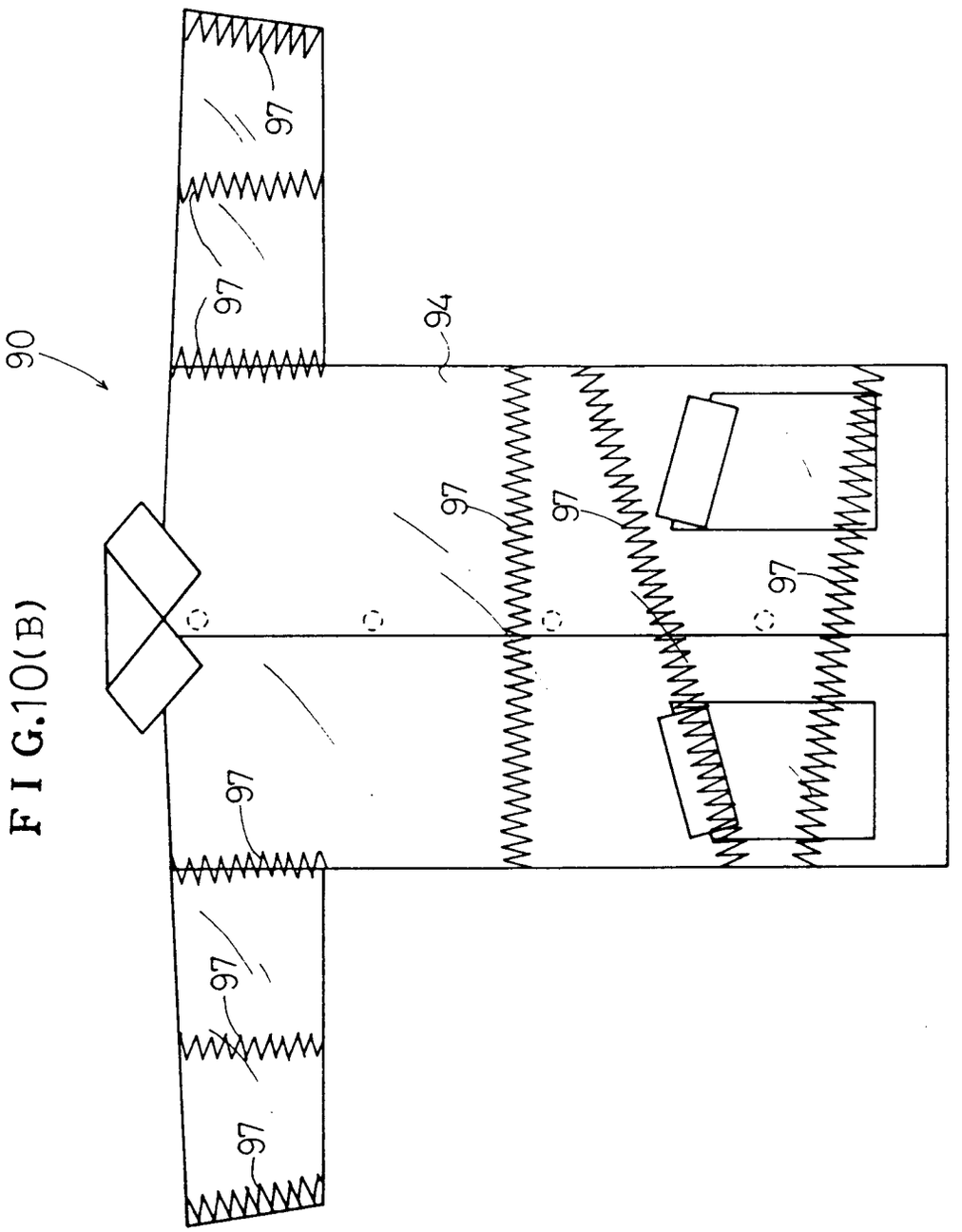


FIG.10(B)

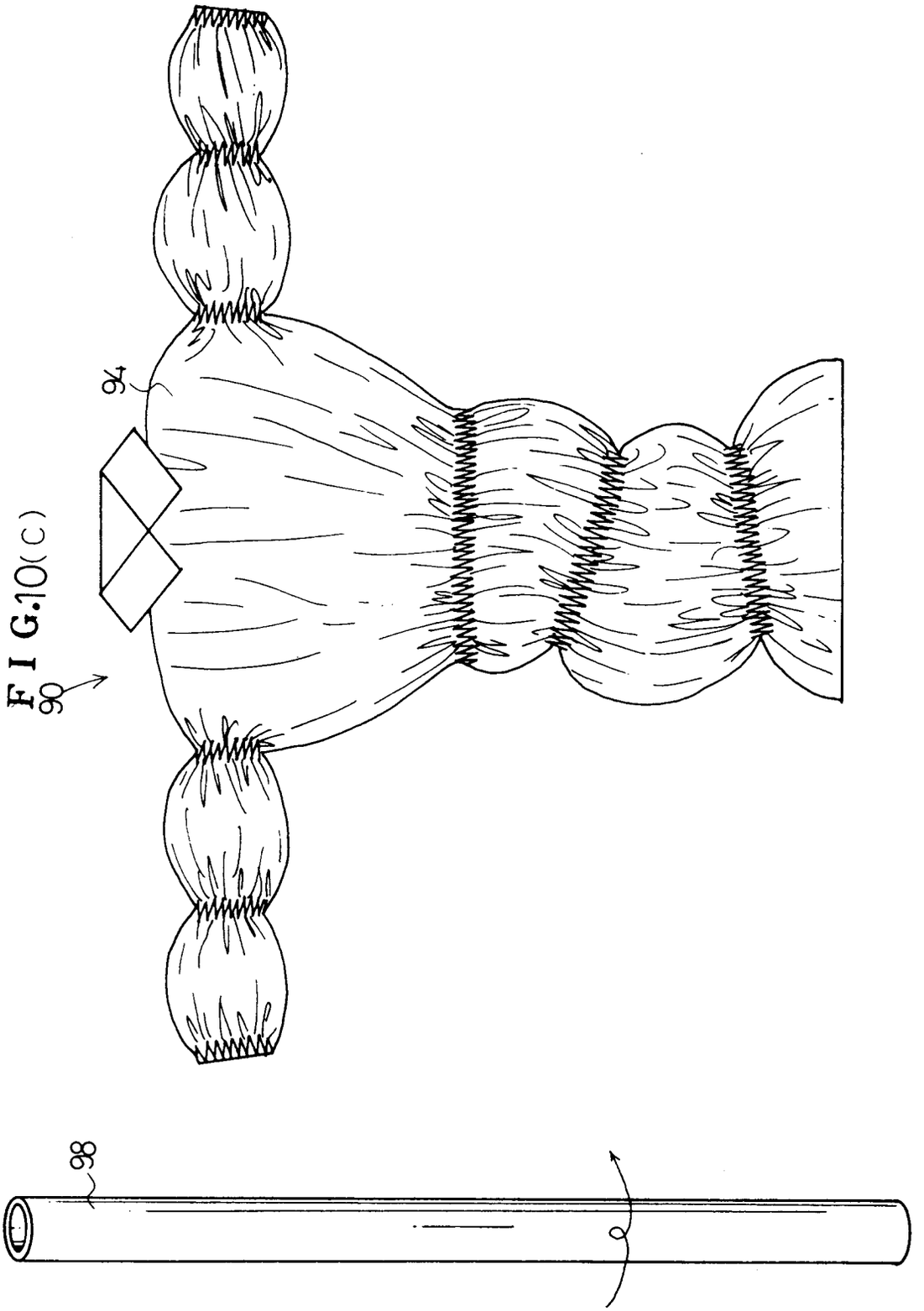


FIG.10(C)

European Patent Office

EUROPEAN SEARCH REPORT

Application Number

EP 92 30 4417

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
A	US-A-3 823 452 (L.B. HARROW) * column 3, line 42 - line 68 *	1,3	D06J1/12 D06B11/00
A	DE-A-3 118 380 (K. KLEBER) * page 6, line 13 - page 7, line 11 *	1,4	
D,A	PATENT ABSTRACTS OF JAPAN vol. 15, no. 34 (C-799)28 January 1991 & JP-A-22 69 866 (MIYAKE DESIGN JIMUSHO KK) * abstract *		
A	FR-A-2 476 705 (B. DELERUE; A. MAIRE; R. RAYNAUD)		
A	FR-A-334 223 (SOC. DEFLANDRE, BASTIEN & CIE)		
A	US-A-3 987 519 (S.J. POTOSNAK; C.J. RUSSO)		

TECHNICAL FIELDS SEARCHED (Int. Cl.5)

D06J
D06B
D06C

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	04 DECEMBER 1992	D HULSTER E.W.F.

CATEGORY OF CITED DOCUMENTS

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