

[54] **TRIANGULAR CROTCHES FOR TROUSERS**

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[58] Field of Search..... 2/227, 228, 229, 2/78 R, 78 A, 78 B, 78 C, 79

[56]

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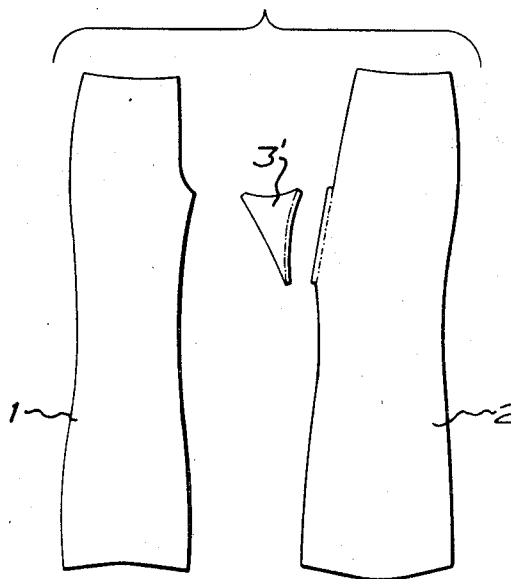
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[57]

**ABSTRACT**

A triangular crotch to be sewn to the crotch section of a pair of trousers has that edge thereof which is to be sewn on along a straight line of the rear trouser part curving inwardly and of the same length as the straight line.

**2 Claims, 6 Drawing Figures**

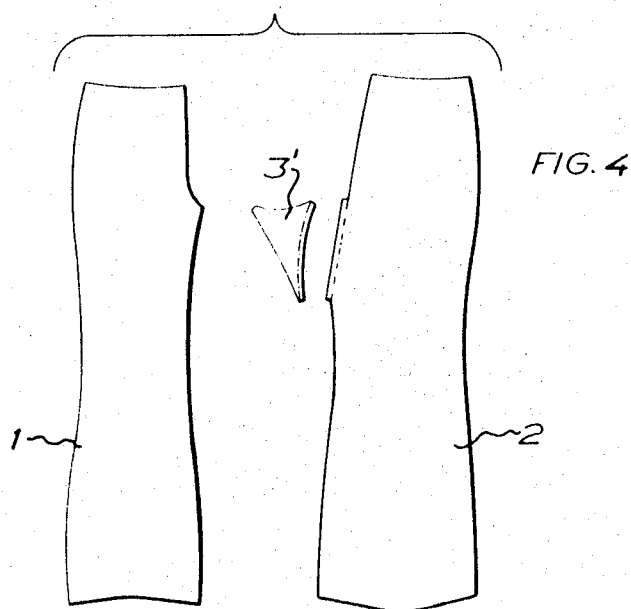
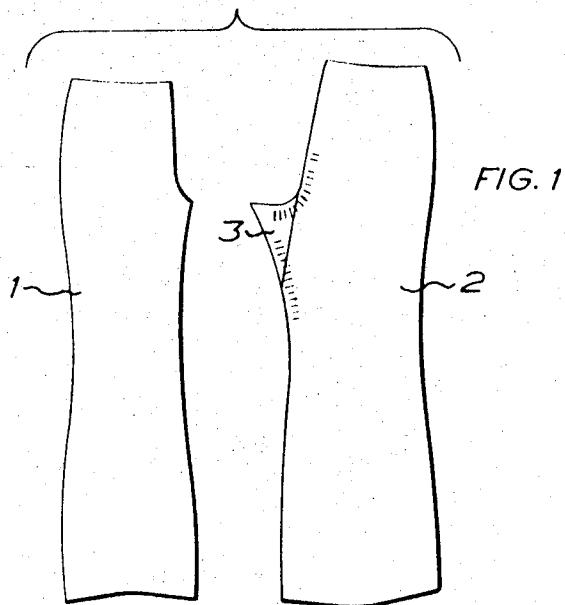


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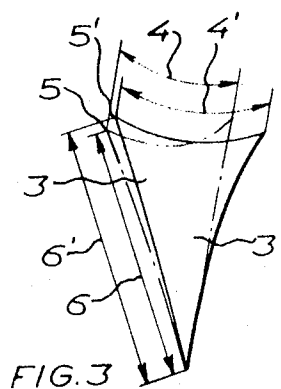
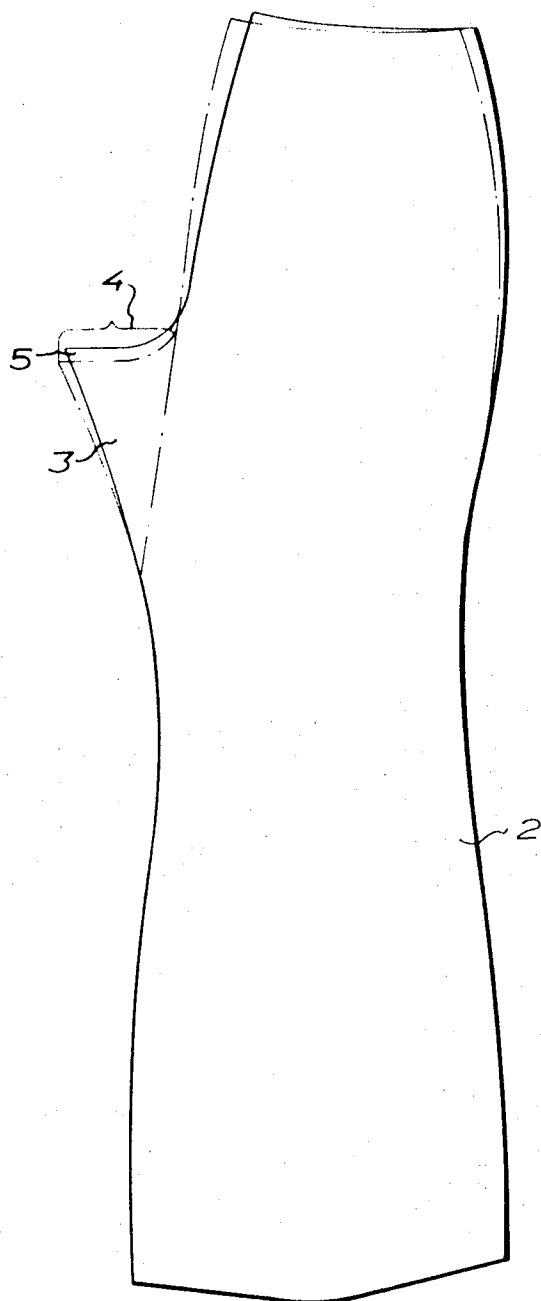
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PRIOR ART

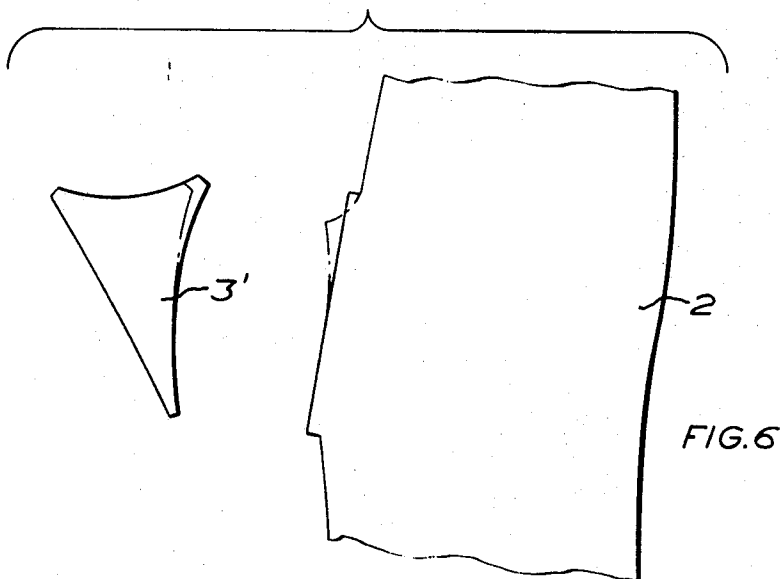
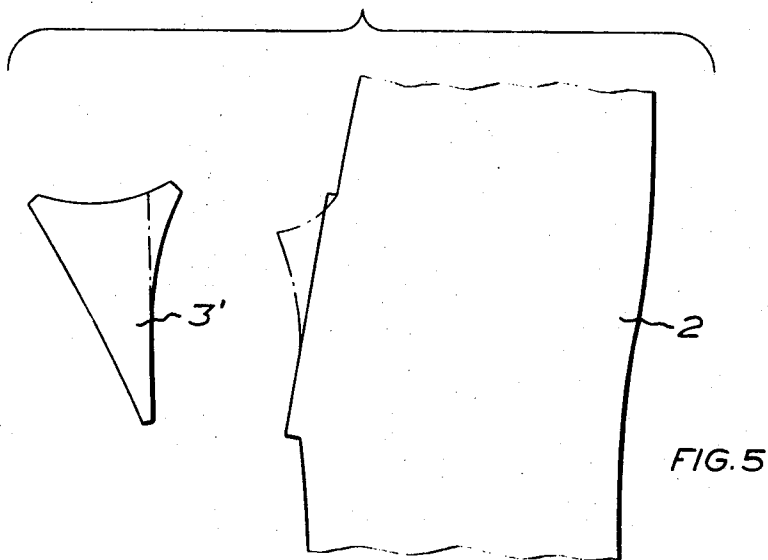


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FIG. 2



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# TRIANGULAR CROTCHES FOR TROUSERS

This invention relates to crotches for garments and more particularly to a triangular crotch to be sewn to the crotch section of a pair of trousers to provide an improved fit of tight trousers and to prevent them from cutting into the seat.

Each half of a pair of trousers consists of a front trouser part and a rear trouser part which are sewn together along the outer and inner sides of the legs as well as at the front (possibly with the formation of a fly) and at the back. To provide the requisite space for the seat and to ensure a correct transition between the trouser legs and the seat section, additional cloth must be provided in the crotch section of the trousers, which means that the two trouser halves, and particularly the rear trouser part, must have tapered projections in the crotch section. To exploit a given cloth length in the best economical manner possible in laying and cutting the trouser halves, the conventional procedure is to cut off the tapered projection of the rear trouser part along a straight line; this piece is termed "crotch" and could be cut out at a location of the cloth that is more convenient from the point of view of saving material.

To provide tightly fitting trousers which do not cut into the seat it is desirable to cut the trousers low at the crotch seam. By doing so, the inner seam of the rear trouser part will automatically become too short compared to the inner seam of the front trouser part. This must be compensated for in order that the two seams when sewn together shall be equally long. In hand-tailoring this problem can be solved by stretching with a flat-iron the cloth at the inner seam of the rear trouser part and the lower part of the crotch seam. This solution, however, is too expensive in ready-made clothing; in such clothing the normal procedure is for the operator to distribute the excess cloth between the crotch seam and an adjusting notch at the knee by stretching the inner seam of the rear trouser part and by holding the inner seam of the front trouser part. The result is not satisfactory. Some ready-made-clothing industries have tried to solve the problem with the use of finishing presses but have not been successful because different materials stretch differently much while some materials hardly stretch at all. Being unsatisfactory, this procedure has been abandoned.

It has now been found that this problem can be solved in ready-made trousers while retaining the economical advantage of having a separate triangular crotch to be sewn on in the crotch section of a pair of trousers along a straight line to each rear trouser part. According to the invention, this solution is characterised in that that edge of the triangular crotch which is to be sewn on along said straight line is curving inwardly and that said inwardly curved edge is of the same length as the straight line.

A crotch of such a configuration provides an improved fit that could not be attained hitherto in ready-made trousers or even in hand-tailored trousers. With the use of a triangular crotch according to the invention it is not necessary any more to hold the inner seam of the front trouser part from stretching, because the length of the inner seam of the rear trouser part will be the same as that of the front trouser part.

The invention will now be more fully described hereinafter with reference to the accompanying drawings in which:

FIG. 1 is a diagrammatic view of a conventional trouser half (front and rear trouser part, respectively);

FIG. 2 is a view showing the adjustment of a rear trouser part;

FIG. 3 is a view of a triangular crotch according to the invention;

FIG. 4 is a view of the finished trouser half;

FIGS. 5 and 6 are views of modifications of the triangular crotch and the rear trouser part.

A front trouser part 1 is shown in the left-hand portion of FIG. 1 and a rear trouser part 2 in the right-hand portion of the same Figure. To provide the requisite excess cloth in the crotch section the two trouser parts have tapered projections, the projection of the rear trouser part being the largest. Because of this projection it is difficult to attain an economical laying and cutting of the trousers. However, this problem can be solved by separately cutting a so-called crotch 3 of triangular shape and sewing it on to the rear trouser part. The cooperating edges of both the rear trouser part and the triangular crotch are straight, and the crotch has the only purpose of saving cloth. In FIG. 1 the crotch is shown sewn on to the rear trouser part.

As already explained in the foregoing, when two front trouser parts and two rear trouser parts (with or without crotches sewn thereonto) are sewn together to form a pair of trousers one meets the problem that, when the rear trouser part is cut low sufficiently, the inner seam of the rear trouser part is too short compared to that of the front trouser part. Hitherto one has tried to find a passable solution of this problem in the manufacture of trousers by stretching the cloth in the dotted area (FIG. 1) while being pressed. For ready-made clothing this procedure is not, however, sufficient partly owing to the inability of modern fibres to stretch and partly owing to the high costs associated with this procedure. Most manufacturers therefore utilise the definitely unsatisfactory solution of distributing, when sewing together the inner seam, the excess cloth of the front trouser part by stretching and holding, respectively.

FIG. 2 illustrates how the problem can be solved in an extremely simple way in accordance with the present invention. The rear trouser part 2 is modified (implying that excess cloth below the seat disappears) from the position shown by full lines to the position shown by dotted lines so that the rear trouser part will be cut low in the lower part 4 of the crotch seam (the crotch apex 5 of the rear trouser part is lowered by about 15 mm). The triangular crotch 3 is omitted in the modified structure. To restore the length of the rear trouser part at the inner seam which has been made about 15 mm shorter due to the adjustment, to cause the crotch apex to take its original position, and finally to give the crotch seam part 4 increased length. To achieve this end the crotch piece 3' as shown in FIG. 3 is provided with a concave right-hand edge with the result that the edge 4' is increased in length.

In this way a triangular crotch 3' is attained in which the crotch seam part 4' is longer than that of the original crotch 3, the inner seam part 6' is longer than that of the crotch 3, the crotch apex 5' has been shifted to a position favourable to the good fit of the trousers, and the edge that is to be sewn on along the straight line of the rear trouser part retains its length but will be curving inwardly.

FIG. 4 shows the finished trouser design with allowances for the seams.

By sewing together the straight edge of the rear trouser part and the curving edge of the triangular crotch and by increasing the length of the inner seam part and the crotch to compensate for the lowering of the rear trouser part, the length of the rear trouser part at the inner seam will coincide with that of the front trouser part. To retain the advantage of saving cloth the operator now only has to sew on the triangular crotch and after that, without any holding or stretching, to sew together the front and rear trouser parts to provide a pair of trousers of unsurpassable fit.

Having arrived on the basis of the above theories at a triangular crotch with an inwardly curving edge, others might choose to resort to minor modifications, accounted for hereinafter, in the endeavour to depart from the scope of the present invention. It should be stressed, however, that by reason of equivalence interpretation such modifications will actually fall within the scope of the invention.

Thus, as illustrated in FIG. 5, a straight edge may be formed on the crotch and a curving line on the rear trouser part or, as illustrated in FIG. 6, the curving configuration may be distributed so that both the crotch and the rear trouser part are given curving edges. In both cases the normal configuration is shown by full lines while the modified configuration is indicated by dotted lines. In neither case, however, the same favour-

able result is attained as with the use of the straight line on the rear trouser part and the curving edge of the crotch.

What I claim and desire to secure by Letters Patent is:

1. A trouser garment comprising right and left trouser halves sewn together by a middle seam within the trunk portion of the garment, said trouser halves each consisting of a front trouser part and a rear trouser part, said parts being sewn together by means of an outer leg seam and an inner leg seam, the latter extending up to the middle seam in the crotch area of the garment, each rear trouser part including a substantially triangular crotch piece which is sewn along one edge to its associated rear trouser part by means of a first crotch seam along a crotch seam line on said one edge of the crotch piece and a crotch piece seam line on the rear trouser part, the other sides of said crotch pieces form parts of the upper portion of the inner leg seams and a portion of the middle seam, each crotch piece seam line and the seam line of each rear trouser part to which it is joined are equally long when each crotch piece and trouser half is in a flat and non-distorted condition and at least one of the last said seam lines joined to form said first crotch seam is concave.

2. A trouser garment is claimed in claim 1 wherein that the first crotch seam line of each rear trouser part is straight.

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