

June 2, 1931.

E. A. CLEMENTS

1,808,290

PROCESS OF AND PATTERN FOR MAKING UNDERWEAR

Filed Dec. 26, 1929

2 Sheets-Sheet 1

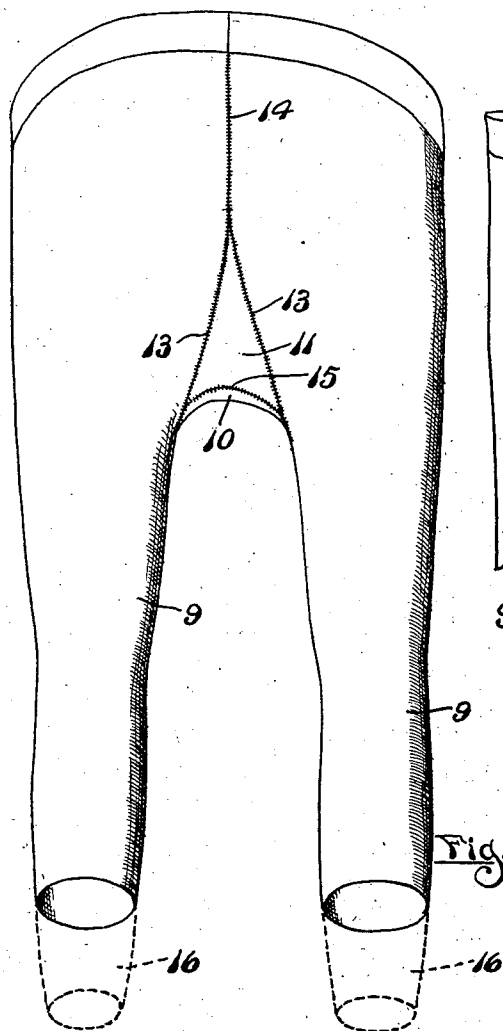


Fig. 1.

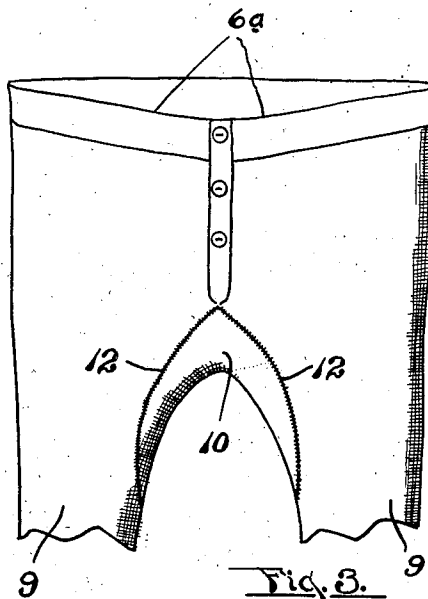


Fig. 3.

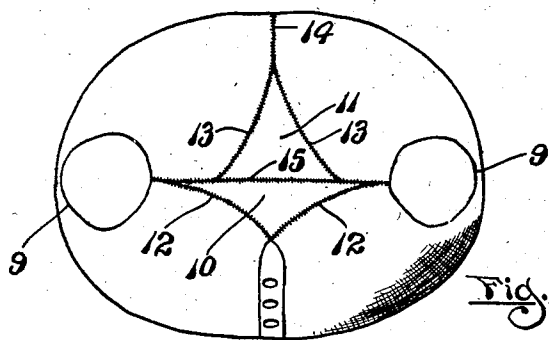


Fig. 2.

Inventor  
Eilert A. Clements

By *W. J. Liverance and*  
*Van Antwerp*  
Attorneys

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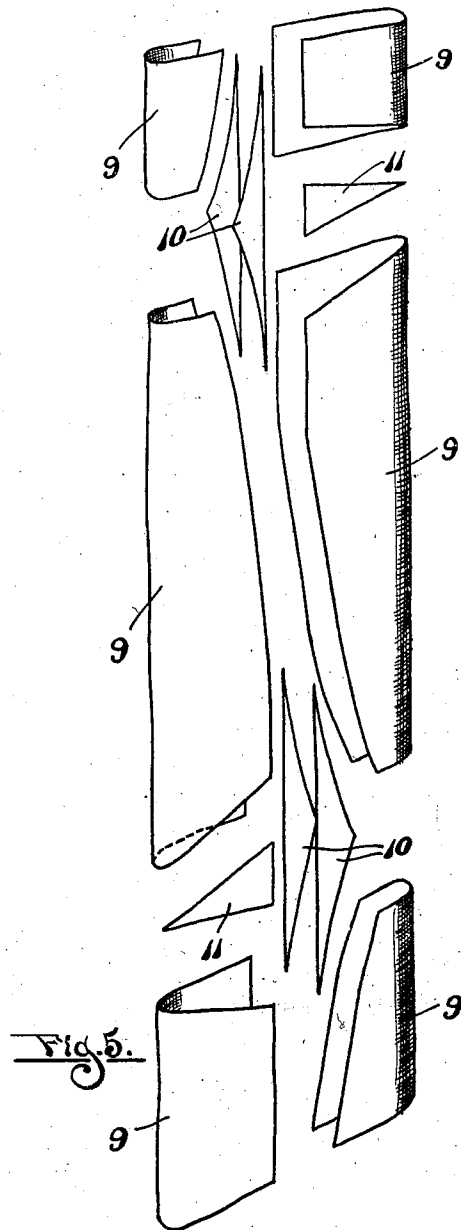
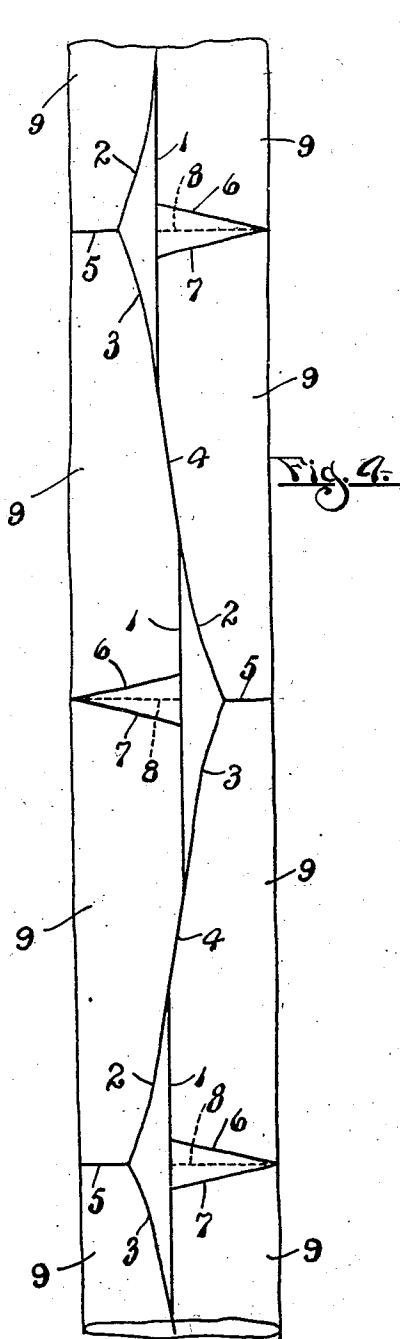
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Inventor  
Eliert A. Clements  
By - Linnance and  
Van Antwerp  
Attorneys

# UNITED STATES PATENT OFFICE

EILERT A. CLEMENTS, OF GRAND RAPIDS, MICHIGAN

PROCESS OF AND PATTERN FOR MAKING UNDERWEAR

Application filed December 26, 1929. Serial No. 416,474.

This invention relates to a pattern for and process of cutting underwear.

In the manufacture of underwear of knitted fabric, the fabric is knitted in an elongated tube which may be an indefinite number of feet in length, and from this tube the various parts which are used in making up the underwear are cut. Heretofore not only has the cutting operation been one of considerable difficulty in many respects but there has also been a considerable waste of material. Particularly in the matter of gussets and inserts which are used at the crotch of the garment, the cutting has been difficult as the fabric is of a yielding non-resistant character, stretching readily in one direction at least and therefore hard to control so as to obtain the proper outline of gusset or insert. This has resulted in a considerable expense both in the matter of cutting and in the matter of waste material which has to be thrown away and destroyed being of no value except as rags.

The present invention is concerned with a novel pattern whereby the process of cutting the tubular knitted fabric is very greatly facilitated and there is no waste of material. It is particularly of value in the matter of manufacturing drawers as a separate and distinct garment from the shirt, a large number of which are used in Army and Navy though of course the invention is in no sense restricted thereto.

An understanding of the invention may be had from the following description taken in connection with the accompanying drawings, in which,

Fig. 1 is a rear elevation of the garment which is to be made.

Fig. 2 is an underplan view of the garment shown in Fig. 1.

Fig. 3 is a fragmentary front elevation of the garment.

Fig. 4 is a plan illustrating the manner in which the pattern of cutting is used in conjunction with an elongated tube of knitted fabric, and

Fig. 5 is a perspective view of the parts produced by cutting the tube on the pattern lines indicated in Fig. 4.

Like reference characters refer to like parts in the different figures of the drawings.

The elongated tube of knitted fabric is laid flat with one thickness over the other and is cut on the various lines indicated at 1, 2, 3, 4, 5, 6, 7 and 8. The lines indicated at 1 parallel the edges of the tube of fabric and joining with said lines are the curved lines 2 and 3 extending away from the ends of the lines 1. Where one end of line 1 joins with the end of line 2, the pattern line 4 connects therewith and extends to the next consecutive line but at its opposite end where it joins with the end of the line 3. The lines 5 are for transverse cuts extending from the edges of the tube to the point of juncture of the curved lines 2 and 3. The lines 6 and 7 disposed substantially opposite to where the cuts on the lines 5 are to be made, come together at the opposed edge of the tube and diverge from each other until they join the line 1. The lines 8 of the pattern are directly below the sections defined by the diverging lines 6 and 7 and disposed midway between them in alignment with the cutting lines 5 at the opposite side of the tube.

This outline of pattern for cutting the tube may be repeated and continued for the full length of the tubular fabric and when the cuts are made on the lines indicated there is produced a plurality of leg portions 9; and for each pair of legs there will be produced a pair of inserts 10 and a single gusset 11. The wider or upper ends of leg portions where cut on the lines 6 and 8 and 7 and 8 provide for the "dip" at the upper end of the garment. That is, the upper edge of the front side of a pair of drawers is located in a plane below the upper edge of the rear side and inclines downwardly from the sides of the garment to the middle, this being caused by cutting out the gussets 11 on the lines 6 and 7 in the upper layer of fabric of the tube and cutting square across on the dotted lines 8.

In making up the garment two of the leg portions are used and disposed opposite each other. With these leg portions either one or two of the inserts 10 may be used and particularly in the lighter weight garments two

of said gussets will always be used. Their edges made at the cuts 2 and 3 are sewed by seams, indicated at 12, to the legs 9 at the inner sides thereof as shown best in Fig. 3.

5 The gusset 11 is disposed at the back of the garment and the sides thereof where cut at 6 and 7 are seamed to the adjacent edges of the leg members 9 at 13 which join with the back seam 14 where the upper portions of  
10 the legs are connected together as shown at Fig. 1. The lower side of the gusset 11 is connected by the seam 15 to the edge of the inserts 10 made by the cut at 1 for a portion of the length of the insert, the remaining  
15 portions of said inserts being seamed to the adjacent free edges of the fabric of the legs 9 until continued in the inner seams of the the legs where the free edges of the leg portions 9 are brought together at their inner  
20 sides. The garment is provided with the usual upper band and the like all of which are well known in garments of this character, and ankle portions indicated in dotted outline at 16, may be secured at the lower  
25 ends of the legs.

The "dip" of the garment at its upper end at the front as indicated at 6a in Fig. 3, is caused by the removal of the gusset 11 as previously described.

30 With this process of cutting and manufacturing an underwear garment, cutting of the knitted fabric is very greatly facilitated and the expense thereof greatly reduced for with a knife following the lines 1, 2, 3 and 4  
35 and with cross cuts on the lines 5 several thicknesses of the knitted fabric may be cut on these lines; and at the conclusion of the cutting operation the inserts 10 have been automatically provided. There remains then  
40 only the cutting on the straight lines 6 and 7 to remove the gussets 11 and then a further cut on the line 8 to separate the leg portions thus provided from each other. There is no waste unless it should be  
45 desired to use only one of the inserts 10 instead of both of them. By using both of the inserts 10 a better and more durable garment is provided particularly in those of the lighter weights.

50 The invention is exceptionally practical and has proved very satisfactory in all respects. It is defined in the appended claims and is to be considered comprehensive of all forms of structure coming within their scope.

55 I claim:

1. The process of manufacturing an underwear garment which consists in providing an elongated length of tubular fabric laid flat and cutting therefrom at spaced apart points  
60 substantially triangular spaced inserts in the body of and between the side edges of the tubular fabric, also cutting from the end of one insert to the adjacent end of the next insert and further cutting from one edge of  
65 the flat tubular fabric transversely inward

to the nearest angle of the inserts, and further cutting from the upper layer of tubular fabric directly opposite said transverse cut a triangular shaped gusset in the shape of an isosceles triangle the apex of which is at the opposite side edge of the flat tubular fabric and the base of which is coincident with one side of the upper of the inserts, next cutting the under layer of fabric from the side edge of the tube transversely across to said inserts and repeating the operation for as many times as the length of tubular fabric will permit, thus forming a series of units, i. e., two leg portions, two inserts, and one gusset, then seaming together the back edges of the two leg portions a distance from their upper end portions, next connecting the gusset between the diverging leg portions and finally connecting an insert between the gusset and the front edges of the leg portions.

2. The process of garment production which consists in cutting from a flat length of tubular knitted fabric, two leg portions one at each side of the fabric, the leg portions being in reversed position with respect to each other when cut from the fabric, whereby at the lower ends of said leg portions fabric pieces are left to provide parts of triangular spaced inserts, repeating said cutting of leg portions from the length of tubular fabric with the leg portions cut from each side of the fabric reversed with respect to each other, whereby the triangular shaped inserts are completely cut from the fabric in cutting said leg portions therefrom, separating the leg portions at their lower end parts by a transverse cut, cutting a gusset in a shape of an isosceles triangle from the upper layer of fabric at the upper ends of contiguous leg portions, and thereafter separating the contiguous leg portions at their upper ends by a transverse cut through the lower layer of fabric, then having the back edges of the two leg portions seamed together for a distance at their upper end portions, connecting a triangular shaped gusset at its sides to the back edges of said leg portions below said seam connecting the back edges of said leg portions at their upper ends, and having a triangular shaped insert connected at one side to the lower edge of said gusset for a part of the length of said side of the insert, and connected to the rear edges of said leg portions, said insert at its opposite sides being connected to the front edges of said leg portions, said insert extending from the upper ends of the seams connecting the edges of the leg portions at the inner sides and lower portions thereof.

3. A method of manufacturing underwear, which consists in laying a length of tubular knitted fabric flat with an upper side of the fabric over the lower side thereof, cutting the fabric lengthwise between the side edges to form triangular shaped inserts, separat-

ing the leg portions from each other by transverse cuts extending to the meeting points of said sides of the inserts, cutting a gusset between the ends of adjacent leg portions from the upper side of fabric opposite said transverse cuts, and cutting the lower side of the fabric to separate the leg portions from each other in alignment with said first mentioned transverse cuts, then assembling the several parts so that the portion of the leg adjacent which the gusset was originally located serves as a front edge of the underwear thereby providing a "dip" therefor.

In testimony whereof I affix my signature.

EILERT A. CLEMENTS.