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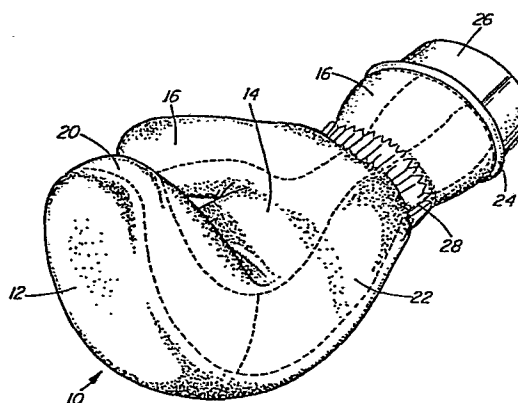
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**Cheltenham Gloucestershire GL50 1JJ(GB)**(54) **Ski mitt.**

(57) An insulated ski mitt having a mitt shell with a wrist opening, said mitt shell being comprised of attached panels (12,14,18) selectively dimensioned such that upon assembly of the panels of the mitt shell and insertion of an insulative material liner the mitt is inherently in the substantial configuration of a closed fist whereby compression of the insulative material across the back of the hand of a wearer during use of the mitt is minimized.

**FIG. 2****EP 0 056 007 A1**

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"Ski Mitt"

This invention relates to insulated ski mitts shaped inherently in the substantial configuration of a closed fist whereby compression of the insulative material across the back of the hand of a wearer during use is minimized.

5       Conventional insulated ski mitts typically employ a mitt shell having substantially planar, opposed back and palm panels such that a mitt, upon assembly, is inherently in the substantial configuration of an open hand. A wearer, when gripping a ski pole with such a conventionally designed  
10 mitt, thus appreciably stretches the material of the back panel across the back of the hand and knuckles with attendant compression of the insulative material in those areas and resultant decrease in the thermal efficiency of the insulative material.

15       The present invention minimizes compression of the insulative material across the back of the hand and knuckles of a wearer during use, and hence does not substantially alter the thermal efficiency of the insulative material, by providing a ski mitt which is inherently in the substantial  
20 configuration of a closed fist. Thus, a wearer of a mitt according to the present invention does not significantly alter the inherent configuration of the mitt while gripping a ski pole.

In one particular aspect the present invention provides  
25 an insulated ski mitt having a mitt shell with a wrist opening, said mitt shell being comprised of attached panels

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selectively dimensioned such that upon assembly of the panels of the mitt shell and insertion of an insulative material liner the mitt is inherently in the substantial configuration of a closed fist whereby compression of the  
5 insulative material across the back of the hand of a wearer during use of the mitt is minimized.

In another particular aspect the present invention provides an insulated ski mitt having a mitt shell with a wrist opening, said mitt shell including a back panel, palm/inner  
10 thumb panels, and, intermediate to and attached substantially to the respective outer edges of said back panel and palm/inner thumb panels, a gusset panel, which includes an outer thumb section, and which extends substantially peripherally about the mitt shell, said panels being dimensioned such that upon  
15 assembly of the mitt shell and insertion of an insulative material liner the mitt is inherently in the substantial configuration of a closed fist whereby compression of the insulative material across the back of the hand of a wearer during use of the mitt is minimized.

20 In drawings which illustrate aspects of the invention:

Fig. 1 is a perspective view of one embodiment of a ski mitt according to the present invention;

Fig. 2 is another perspective view of the ski mitt of Fig. 1 in which, however, the finger portion of the mitt is  
25 illustrated in an artificially open configuration to more effectively show particulars of the palm/inner thumb construction; and

Figs. 3a through 3f represent cutting/sewing patterns

for the component panels of a ski mitt of the embodiment illustrated in Figs. 1 and 2.

Referring now to Fig. 1, which illustrates an embodiment of a ski mitt in its substantially as-manufactured closed first configuration, and to Fig. 2, which illustrates the same embodiment in an artificially open configuration, it may be seen that the ski mitt 10 includes a back panel 12, a palm/inner thumb panel 14, a thumb insert panel 16, a gusset panel portion 18 which includes an outer thumb section, a fingertip gusset panel portion 20, and an ulnar gusset panel portion 22, the various panels being defined by the stippled lines.

The embodiment illustrated in Fig. 1 and 2 additionally includes a number of features which are conventional in the prior art and which are useful in association with, but not essential to, the present invention. Specifically, the embodiment illustrated includes a border 24 attached circumferentially to the panel free edges about the wrist opening, a knitted wristlet 26 interiorly attached circumferentially in association with the border 24, a tucked wrist 28 formed by attaching a band of elastic material (not shown) to the inside of the mitt shell circumferentially about a wrist portion, and a D-ring 30 adapted for engagement with a counterpart snap in a complementary mitt (not shown) for the other hand.

The bulky appearance of the embodiment illustrated in Figs. 1 and 2 is primarily attributable to the insulative material liner (not shown) contained within the mitt shell.

The insulative material liner can be made of any number of well known materials and can be in the form, by way of example only, of a down-filled, fabric bodied inner mitt. While down seems to have particular appeal to skiers due undoubtedly to its widely publicized insulative properties, down does display a tendency to detrimentally migrate within linings. Thus, while down can be employed as the insulative material in the present invention, insulative material in the form of batting, generally in association with a fabric body which envelopes the batting to provide an insulative material liner in the form of an inner mitt, is preferred since insulative material migration is minimal and since batting of different thicknesses can be employed in different areas of the liner. For example, the thickness of the insulative material batting can be reduced in the palm and inner thumb areas, as compared to the back of the hand and thumb, since heat loss from the palm and inner thumb areas occurs at a relatively lower rate and since ski pole feel and control is generally enhanced as the insulative material thickness in the ski pole gripping palm and inner thumb areas decreases.

Referring now to Figs. 3a through 3f, which are patterns of the component panels of a ski mitt of the embodiment illustrated in Figs. 1 and 2, the solid, peripheral lines represent the nominal cutting lines, whereas the lines appearing as dots-and-dashes represent actual sewing lines for attachment of the respective panels, as will subsequently be defined in greater detail. It should be appreciated however that the actual peripheral cutting lines are relatively unimportant, so long as the component panels are cut of

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sufficient size to overlap the sewing lines, since further trimming of excess material from the mitt shell can be effected, if necessary or desired, following assembly.

As will be appreciated by those skilled in the art, the relative sizes of the panels can be proportioned to produce mitts of different hand sizes.

The component panels are typically sewed together while inside-out, and the mitt shell subsequently everted prior to inserting the insulative material liner and attending to the finalizing details such as attachment of the border and/or knitted wristlet 26, etc.

While assembly of the panels can be effected in various panel orders, a particularly logical and convenient sequence, typically employing leather panels which are sewed together inside-out, will now be described.

First, the gusset panel portions 18, 20 and 22 are assembled to form a generally continuous gusset which ultimately will extend substantially peripherally about the mitt shell, and which includes an outer thumb section. This is accomplished by sewing gusset panel portion 18 to gusset panel portion 20 along the sewing lines between the points A-A<sub>1</sub> of Figs. 3b and 3c, and by sewing gusset panel portion 20 to gusset panel portion 22 along the sewing lines between the points B-B<sub>1</sub> of Figs. 3c and 3e.

The thumb insert panel 16 is next sewed to the outer thumb section of gusset panel portion 18 along the sewing lines between the points C-C<sub>1</sub> of Figs. 3f and 3b.

The palm/inner thumb panel 14 is then sewed to the thumb insert panel 16 along the sewing lines between the

points D-D<sub>1</sub> of Figs. 3d and 3f; next to gusset panel portion 18 along the sewing lines between the points E-E<sub>1</sub> of Figs. 3d and 3b; thereafter to fingertip gusset panel portion 20 along the sewing lines between the points F-F<sub>1</sub> of Figs. 3d and 3c; and finally to ulnar gusset panel portion 22 along the sewing lines between the points G-G<sub>1</sub> of Figs. 3d and 3e.

The basic mitt shell is then completed by sewing the back panel 12 to the ulnar gusset panel portion 22 along the sewing lines between the points J-J<sub>1</sub> of Figs. 3a and 3e; to the fingertip gusset panel portion 20 along the sewing lines between the points H-H<sub>1</sub> of Figs. 3a and 3c; and finally to the gusset panel portion 18 along the sewing lines between the points I-I<sub>1</sub> of Figs. 3a and 3b.

The thus assembled mitt shell is totally enclosed except for a wrist opening defined circumferentially by the free wrist panel edges, and any excess panel material can be trimmed, if necessary or desired.

If a tucked wrist 28, as illustrated in Figs. 1 and 2, is desired, a band of elastic material, in stretched condition, is sewed circumferentially about the wrist portion of the mitt shell prior to eversion.

The insulative material liner can now be inserted through the wrist opening of the everted mitt shell and, if desired, be attached circumferentially about the wrist opening in association with a border 24 and/or knitted wristlet 26 which, as stated previously, are simply features conventional to the prior art.

Leather, due to its durability, is the preferred material for the component panels of the mitt shell, and, if desired,

different weights of leather can be used for different panels. For example, a heavier weight of leather can be employed for the palm/inner thumb panel 14 and thumb insert panel 16 to provide increased durability in the ski pole gripping areas.

Particularly attractive mitts can be manufactured by employing complementary or contrasting colors of leather for various of the panels. For example, the use of one color of leather for each of the gusset panel portions 18, 20 and 22 which complements or contrasts with the color or colors of leather used for the remaining panels provides a mitt having an aesthetically attractive substantially peripheral stripe.

Materials other than leather can also be used to form the component panels, for example nylon or other synthetic materials, but generally are not as durable as leather, and hence are generally not as desirable.

Panels can also be interattached by means other than sewing, e.g. by gluing, heat bonding or the like, dependant upon the material, although sewing is generally preferred for purposes of durability.

It is even possible to mold or cast a unitary mitt shell, inherently in the substantial configuration of a closed fist, particularly from curable synthetic polymeric materials used for example as imitation leathers, in which case individual panels need not be cut and assembled.

However, synthetic polymeric imitation leathers tend to lack the suppleness and durability of real leather at low temperatures, such as are commonly encountered when skiing.

Other variations and modifications falling within the

true broad spirit and scope of the invention will be obvious to a person skilled in the art, and the present disclosure accordingly should not be construed limitatively.

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CLAIMS

1. An insulated ski mitt having a mitt shell with a wrist opening, said mitt shell including a back panel (12), palm/inner thumb panels (14), and, intermediate to and attached substantially to the respective outer edges of said back panel and palm/inner thumb panels, a gusset panel (18), which includes an outer thumb section, and which extends substantially peripherally about the mitt shell, said panels being dimensioned such that upon assembly of the mitt shell and insertion of an insulative material liner the mitt is inherently in the substantial configuration of a closed fist whereby compression of the insulative material across the back of the hand of a wearer during use of the mitt is minimised.

2. An insulated ski mitt according to Claim 1, wherein said panels are formed from leather and are assembled together by sewing.

3. An insulated ski mitt according to Claim 2, wherein the thickness of the insulative material in the insulative material liner is reduced in the palm and inner thumb areas as compared to the remainder of the insulative material liner.

4. An insulated ski mitt according to Claim 3, wherein said panels are sewed together while inside-out, and the so formed mitt shell is subsequently everted prior to insertion of the insulative material liner.

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5. An insulated ski mitt according to Claim 2, 3 or 4, including a band of elastic material (28) attached to the insides of said panels circumferentially about a wrist portion to provide a tucked wrist.

6. An insulated ski mitt according to Claim 2, 3 or 4, including a band of elastic material (28) attached to the insides of said panels circumferentially about a wrist portion to provide a tucked wrist, and also including a border (24) attached circumferentially about the free wrist edges of said panels.

7. An insulated ski mitt according to Claim 2, 3 or 4, including a band of elastic material (28) attached to the insides of said panels circumferentially about a wrist portion to provide a tucked wrist, and also including a border (24) attached circumferentially about the free wrist edges of said panels, and further including a knitted wristlet (26) interiorly attached circumferentially in association with said border.

8. An insulated ski mitt having a mitt shell with a wrist opening, said mitt shell being comprised of attached panels (12, 18, 14) selectively dimensioned such that upon assembly of the panels of the mitt shell and insertion of an insulative material liner the mitt is inherently in the substantial configuration of a closed fist whereby compression of the insulative material across the back of the hand of a wearer during use of the mitt is minimized.

9. An insulated ski mitt according to Claim 8,

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wherein said panels are formed from leather and are assembled together by sewing.

10. An insulated ski mitt according to Claim 9, wherein the thickness of the insulative material in the insulative material liner is reduced in the palm and inner thumb areas as compared to the remainder of the insulative material liner.

11. An insulative ski mitt according to Claim 10, wherein said panels are sewed together while inside-out, and the so formed mitt shell is subsequently everted prior to insertion of the insulative material liner.

12. An insulated ski mitt according to Claim 9, 10 or 11, including a band of elastic material (28) attached to the insides of said panels circumferentially about a wrist portion to provide a tucked wrist.

13. An insulated ski mitt according to Claim 9, 10 or 11, including a band of elastic material (28) attached to the insides of said panels circumferentially about a wrist portion to provide a tucked wrist, and also including a border (24) attached circumferentially about the free wrist edges of said panels.

14. An insulated ski mitt according to Claim 9, 10 or 11, including a band of elastic material (28) attached to the insides of said panels circumferentially about a wrist portion to provide a tucked wrist, and also including a border (24) attached circumferentially about

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the free wrist edges of said panels, and further including a knitted wristlet (26) interiorly attached circumferentially in association with said border.

15. An insulated ski mitt having an insulative material liner in the form of an inner mitt within a mitt shell having a wrist opening, said mitt being inherently in the substantial configuration of a closed fist whereby compression of the insulative material across the back of the hand of a wearer during use of the mitt is minimized.

16. An insulated ski mitt according to Claim 15, wherein the thickness of the insulative material in the insulative material liner is reduced in the palm and inner thumb areas as compared to the remainder of the insulative material liner.

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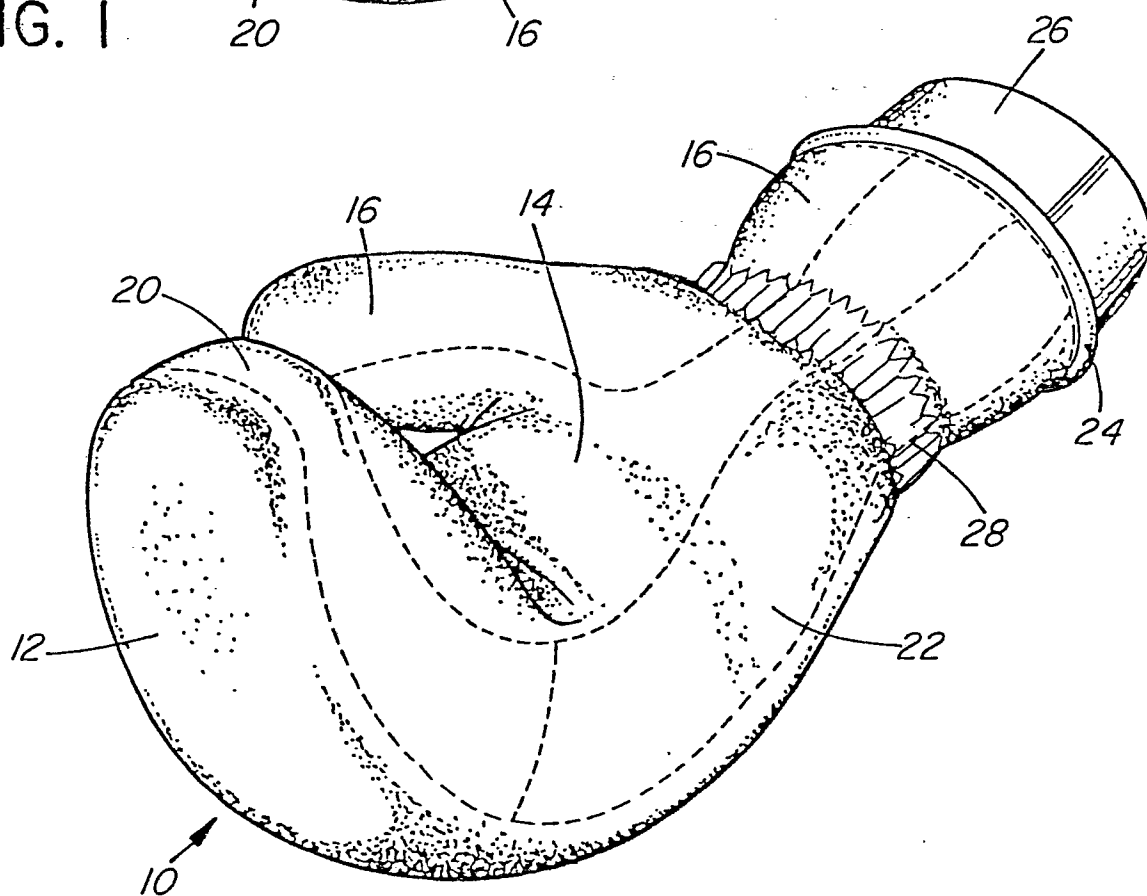
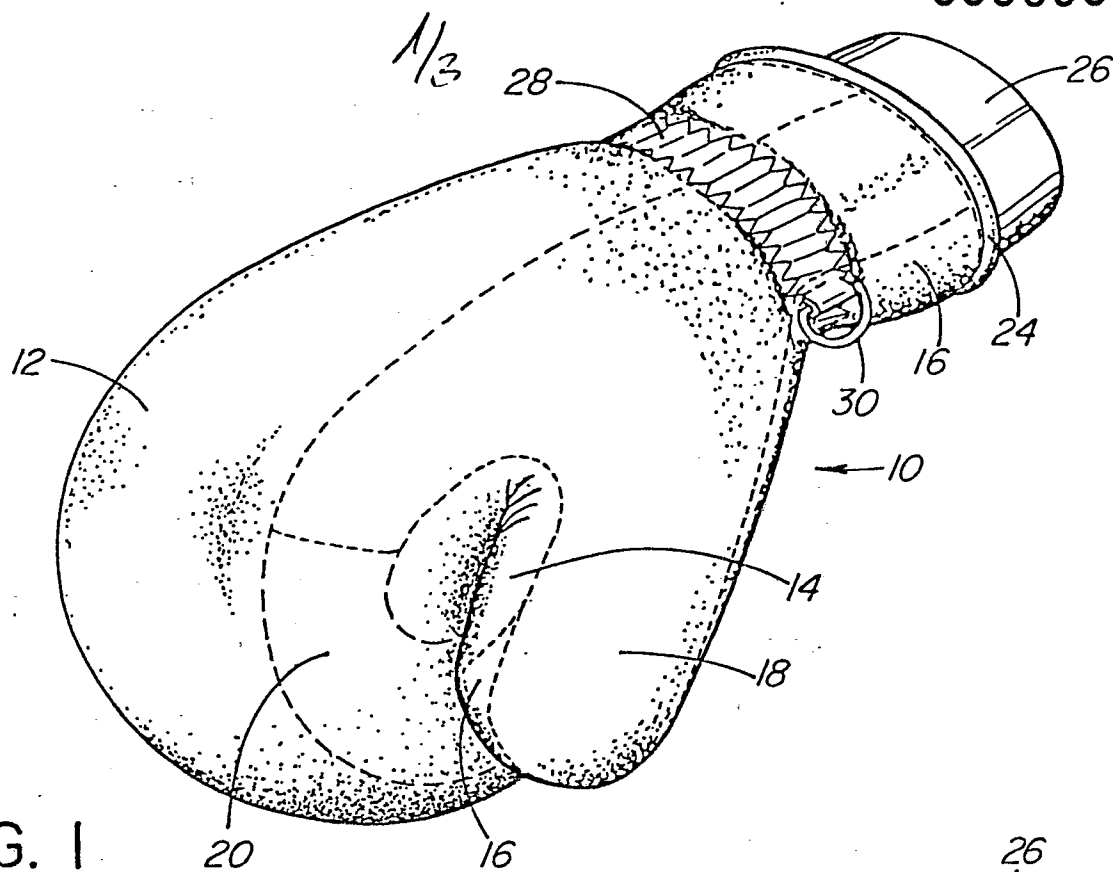


FIG. 3a

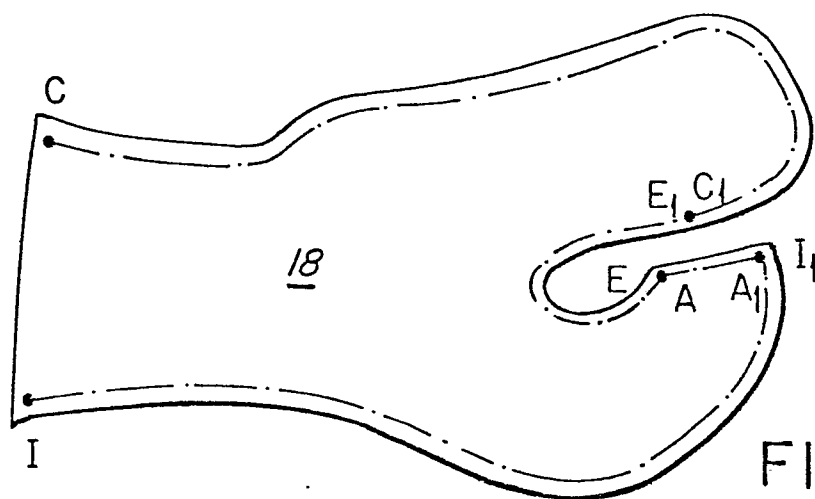
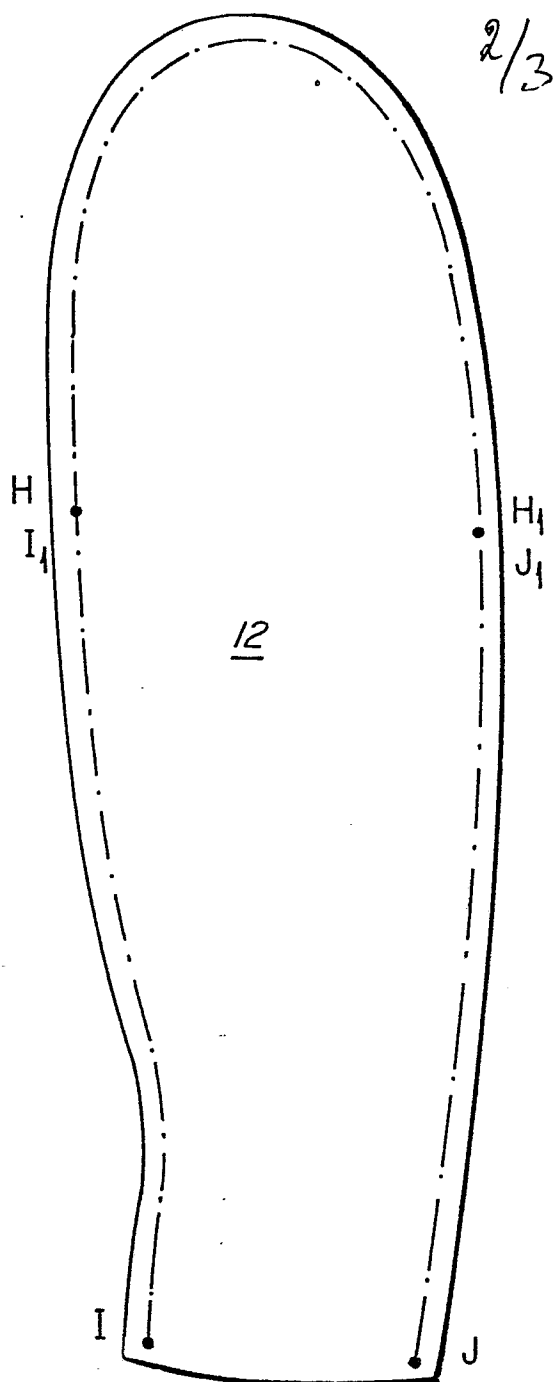


FIG. 3b

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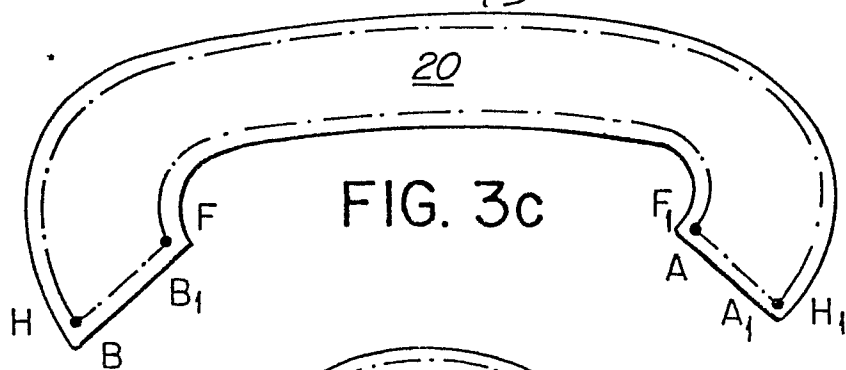


FIG. 3d

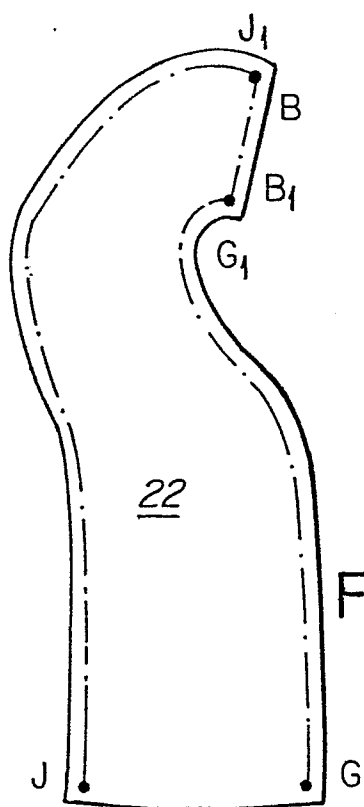
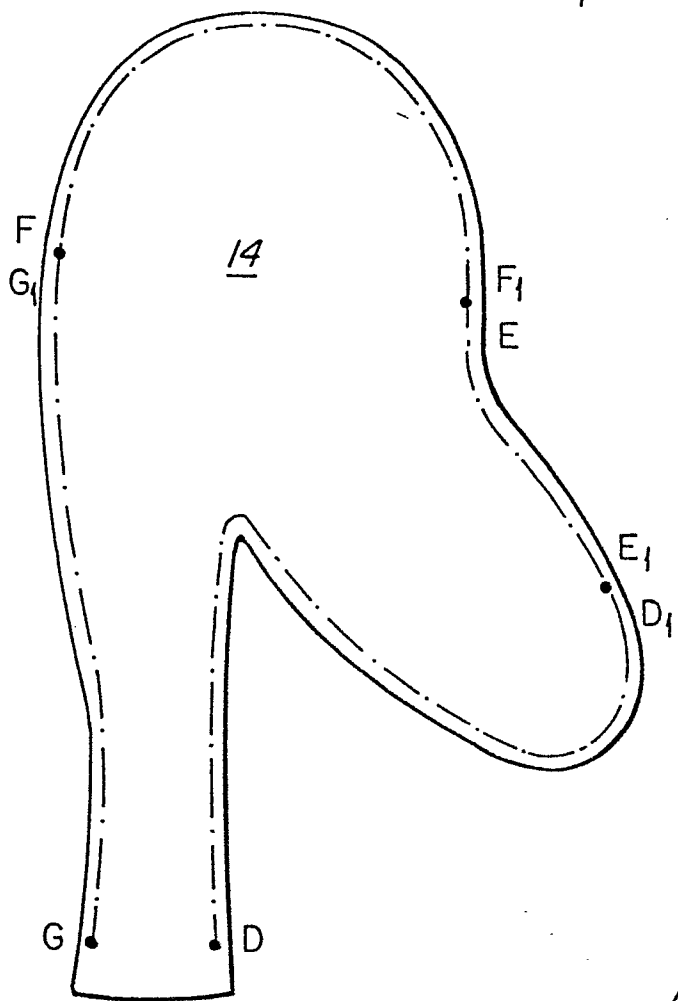
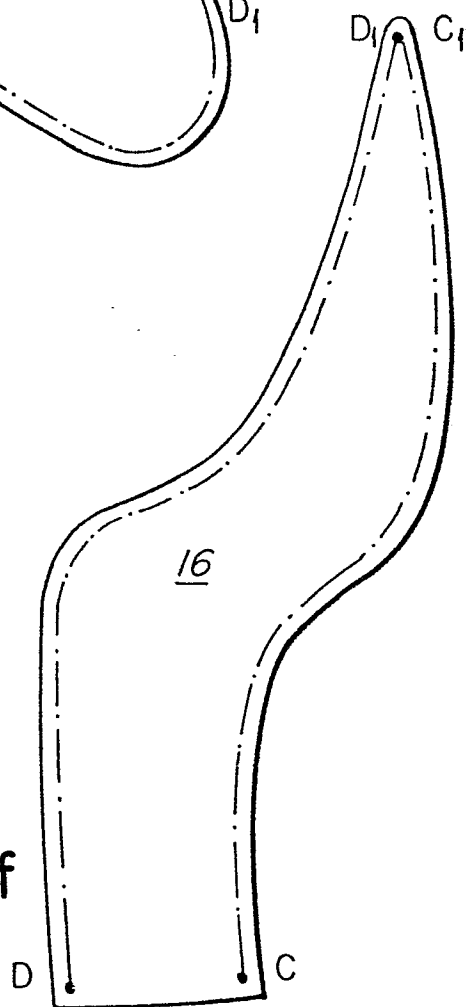


FIG. 3f





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# EUROPEAN SEARCH REPORT

0056007

Application number

EP 82 30 0016

| DOCUMENTS CONSIDERED TO BE RELEVANT                                                            |                                                                                                                          |                                                    | CLASSIFICATION OF THE APPLICATION (Int. Cl. <sup>3</sup> )                                                                                                                                                                                                                                                                                                                                                                                                |
|------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Category                                                                                       | Citation of document with indication, where appropriate, of relevant passages                                            | Relevant to claim                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| X                                                                                              | US - A - 2 632 172 (O. HAGSTROM)<br>* Column 3, lines 11-44; figures 10-15 *                                             | 8,9                                                | A 41 D 19/00<br>19/02                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Y                                                                                              | ---                                                                                                                      | 1,2                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Y                                                                                              | FR - A - 847 940 (H.E. ABEL)<br>* Page 1, lines 1-7; page 3, lines 82-104; page 4, lines 33-35, 64-80; figures 7 and 8 * | 1                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| X                                                                                              | US - A - 4 104 740 (CONFORT PRO-<br>DUCTS INC.)<br>* Column 1, lines 10-30, 33-54;<br>column 2, lines 4-61 *             | 2,3,8,<br>9,10,<br>15,16                           | TECHNICAL FIELDS<br>SEARCHED (Int.Cl. <sup>3</sup> )<br><br>A 41 D<br>A 63 B                                                                                                                                                                                                                                                                                                                                                                              |
| A                                                                                              | FR - A - 829 795 (TERRAY & CIE)<br>* The whole document, figures *                                                       | 5,7,<br>12,14                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| A                                                                                              | FR - A - 1 109 306 (CUIR-SIC)                                                                                            |                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| A                                                                                              | US - A - 2 283 561 (E.C. LINDFELT)                                                                                       |                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| A                                                                                              | CH - A - 167 788 (S.L. HANHART)                                                                                          |                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| -----                                                                                          |                                                                                                                          |                                                    | CATEGORY OF<br>CITED DOCUMENTS                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                                                                                                |                                                                                                                          |                                                    | X: particularly relevant if<br>taken alone<br>Y: particularly relevant if<br>combined with another<br>document of the same<br>category<br>A: technological background<br>O: non-written disclosure<br>P: intermediate document<br>T: theory or principle<br>underlying the invention<br>E: earlier patent document,<br>but published on, or after<br>the filing date<br>D: document cited in the<br>application<br>L: document cited for other<br>reasons |
| <input checked="" type="checkbox"/> The present search report has been drawn up for all claims |                                                                                                                          |                                                    | &: member of the same patent<br>family,<br>corresponding document                                                                                                                                                                                                                                                                                                                                                                                         |
| Place of search<br><br>The Hague                                                               |                                                                                                                          | Date of completion of the search<br><br>25-03-1982 | Examiner<br><br>GARNIER                                                                                                                                                                                                                                                                                                                                                                                                                                   |