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INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 5 :
A61F 13/00, 13/06, 13/10, A47G 9/02

A2

(11) International Publication Number: **WO 94/23677**

(43) International Publication Date: 27 October 1994 (27.10.94)

(21) International Application Number: PCT/GB94/00767

(22) International Filing Date: 12 April 1994 (12.04.94)

(30) Priority Data:

9307540.6	13 April 1993 (13.04.93)	GB
9311959.2	10 June 1993 (10.06.93)	GB
9323861.6	19 November 1993 (19.11.93)	GB
9403762.9	26 February 1994 (26.02.94)	GB

(71)(72) Applicant and Inventor: MILLS, Nicholas, John [GB/GB]; Kingsbank Farmhouse, Kingsbank Lane, Beckley, Near Rye, East Sussex TN31 6RU (GB).

(81) Designated States: AT, AU, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, ES, FI, GB, GE, HU, JP, KP, KR, KZ, LK, LU, LV, MG, MN, MW, NL, NO, NZ, PL, PT, RO, RU, SD, SE, SI, SK, TT, UA, US, UZ, VN, European patent (AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG).

Published
Without international search report and to be republished upon receipt of that report.

(54) Title: THERMAL COVERINGS/WOUND DRESSINGS

(57) Abstract

A laminate of a reflective foil of metallised polyester and a heat-softenable polyethylene film is perforated to allow transmission of water vapour and is used as a thermal covering or jacket for animals and humans. The laminate may form a large sheet overprinted with advisory shapes for cutting out to wrap specified body parts. The laminate may also be used as a support for wound dressing with an overprinted camouflage pattern. The laminate may be secured to itself or other surfaces such as under/over blankets or under garments by heat bonding. The reflective metallised film reflects back the body's own heat which is advantageous in wound/burn healing and incorporates a method for visualising the underlying wound/burn.

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THERMAL COVERINGS/WOUND DRESSINGS

This invention relates to thermal jackets and covers used to prevent heat loss from body parts of humans and animals, especially injured areas.

It is known that up to two thirds of heat loss from a human body can occur by radiation. To prevent heat loss in extreme conditions, it is known to use reflective plastics "space blankets" as a body wrapping. For the same reasons, sleeping bags have been constructed from similar material.

A problem with these applications is the trapping of perspiration and water vapour within the impermeable wrapping. This is also a problem with use of impermeable materials to cover injuries such as sprains and wounds.

The present invention provides a thermal jacket or cover for a body part, comprising a sheet of reflective metal foil or metallised plastics film, the sheet being perforated to allow water-vapour transmission, and means for securing the sheet to a body part or other surface.

The jacket or cover may be used generally to prevent heat loss, or to shield injuries or wounds in both animals and humans. For example the perforated sheet may be secured to a horse blanket or human underwear to prevent loss of body heat, or used to preserve body temperature in neonates. Alternatively it may be wrapped round limbs subject to bruising or sprains to retain body heat or to retain heat generated by a rubefacient or poultice applied under the perforated sheet. Similarly it may be used as a cover for anti-arthritic compositions applied topically or parenterally. It may also be used to shield wounds and maintain the wound surface at body temperature to assist healing. In all these applications, the reflective material prevents heat loss, while the perforations prevent build up of water vapour.

The effects of reflecting back the patient's (human or animal) own infra-red ratiation are to increase tissue temperature, cause vasodilation and thus increase the local circulation which aids the delivery of needed tissue nutrients and the removal of tissue waste products.

The jacket may be used to prevent "cold-start" strains. It has an enhancing effect when used prior to massage and exercise. It may also be applied after an acute injury to decrease swelling, pain and muscle spasm.

When a metal foil, such as aluminium foil, is used, the foil is preferably laminated to one or more supporting plastics films, the perforations passing through the whole laminate. Most conveniently a metallised plastics film is used, preferably an aluminised polyester film.

The jacket or cover may be used in sheet form, or more preferably is shaped so as to fit comfortably around a body part, such as parts of human or animal limbs. The jacket or cover may be provided ready shaped, or as a sheet printed with a guideline shape for the user to cut out. In sheet form it may also be used as an underblanket for bedding.

In an advantageous form of the invention a rectangular sheet is printed with the outlines of several appropriate shapes for

different body parts, allowing the user to cut out whichever is needed.

The securing means may be an adhesive tape, such as conventional surgical tape, which may simply be wrapped around the jacket once it is in position on a body part. Double-sided adhesive tape is especially suitable, as it may be used to secure the reflective sheet directly to an existing body cover such as an animal blanket or human underwear. For example a suitably shaped sheet may be secured to underside of a horse or dog blanket by double-sided adhesive tape, between the blanket and the animal. Alternatively it may be attached to a human under-vest, between the vest and outer clothing, or to a T-shirt, or secured in shoes as insole.

Double-sided tape may also be used to secure overlapping sheet portions when the reflective sheet is wrapped round a limb. On occasion it may be possible to secure the reflective sheet directly to a body using double-sided tape. The adhesive

tape is preferably hypo-allergenic if it is likely to come into direct contact with the skin.

Since the tape may block perforations provided to allow passage of water vapour, the perforations are preferably arranged in discrete bands across the jacket in a ratio of perforated to unperforated bands that will allow an appropriate transmission of water vapour in most configurations. Then the adhesive tape may be applied to unperforated areas and thus not impede the vapour permeability.

In a situation where an impermeable jacket is required extra lengths of adhesive tape may be applied across the perforation bands to seal the perforations. Also in some situations it may be advantageous to omit the perforation altogether.

The reflective film or foil may be printed on its external surface with instructional material, or decorative or promotion material.

As indicated above, for convenience, especially when intended for use as a heat loss jacket, the foil or film may be provided in large sheets for the user to cut to shape as desired, preferably with over printed shapes as guidance to useful application. This would suit use by, for example, a veterinary practitioner with a non-predictable workload. However for known regularly occurring uses it will be convenient to provide pre-shaped jackets, and in this situation it may be useful to attach ribbons or straps as sealing means. Alternatively adhesive tape can be preaffixed, with protective strips covering adhesive surfaces.

In an advantageous embodiment the foil or film comprises a laminate of aluminium foil or a metallised film and a heat-softenable polymer film, for example of polyethylene. In this embodiment the reflective film may be secured to an underlying substrate, such as an animal blanket or human undergarment, by heat-pressing. Most conveniently this is achieved by placing the polymer coating against the substrate

and applying a domestic iron or other heat source to the metallic side of the laminate, taking care to avoid as much as possible the perforated regions so that the porosity is not reduced by blocking the perforations with softened polymer. By heat bonding the sheet to a layer of absorbent paper, the foil or film may advantageously be used as a protective sheet for use on a medical examination couch.

In a further advantageous embodiment the perforated reflective film is used as backing material for a conventional wound dressing, providing protection and preventing heat loss while allowing the wound to "breathe". A conventional wound dressing composition or pad may be adhered to the reflective film, or the reflective film may be placed on top of a pre-applied dressing. If waterproofing is needed, adhesive tape can be used to seal the perforations.

When used as a support for wound dressing, the cover is

preferably provided in shapes suited to a specific application, so that they can be applied immediately when needed.

The wound dressing aspect of this invention may advantageously be applied to military use, since the film or foil may be overprinted on its external surface with a camouflage pattern or a high-visibility recognition pattern or a radar reflective pattern. Therefore in a battle situation, protective clothing can be cut away from a wound, and replaced by a wound dressing having a perforated reflective film backing with the over-printed surface facing outwards.

In a situation where impermeable protection is needed, for example where chemical attack is anticipated, the porous bands can be sealed completely with adhesive tape as described above, and tape can be used to seal the overlap of dressing and clothing completely. Advantageously charcoal is

incorporated in the dressing, or as a layer interposed between the dressing and the backing film, as an absorbent for chemicals. In a medicated wound dressing system it may be advantageous to omit perforations to ensure impermeability.

The perforations required by many embodiments of the invention may be conveniently formed by needle punching the reflective foil or film, or alternatively perforations may be formed by punching out small slits or slots. In a preferred embodiment rows of perforations at the same spacing are staggered to give a quasi-hexagonal effect with a perforation in the centre of the hexagon. This effect may be provided over the whole sheet, or overall except for edge areas, or in the bands described above.

The perforation for passage of water vapour are most conveniently formed by needle punching, typically by passing the foil or film over a roller studded with protruding needles at the desired spacing and pattern. Advantageously the needles

are inclined to the roller surface, typically at about 5° from the vertical.

To increase permeability it may be advantageous to punch out circles rather than increase the needle size, since larger needle-punched holes may close up in use. In punching out circles care must be taken not to remove too much material overall, since this will reduce the reflective area.

As a means for increasing permeability while retaining reflectivity, a sheet of this invention, perforated or unperforated, may be sliced into strips, and the strips woven together to form a sheet of overlapping strips. The strips may be heat bonded to each other at spaced contact points, providing greatly increased permeability through the weave structure, while retaining substantially full overall reflectivity.

In a variation of this embodiment, the strips may be stamped

out of a sheet, forming open slots but leaving an untouched edge strip, which mantains the integrity of the sheet. The stamped-out strips can be woven back into the sheet transverse to the material left between the slots. Alternatively two slotted sheets can be overlapped and heat bonded together at spaced contact points.

In a further application of the invention, the perforated metallised film may be used as a jacket for a composting system. The jacket reflects the infra-red radiation produced by the decomposing vegetation while the perforations allow excess moisture to escape.

The invention is further illustrated by the accompanying drawings in which:

Fig. 1 : is a schematic side view of a needle punching system.

Fig. 2a and 2b : each show a perforated film or foil.

Fig. 3a and Fig. 3b : each show a sheet of film or foil with

printed shapes to assist the user: (a) for veterinary use

(b) for human use.

Fig. 4 : shows a section through another emodiment of battlefield dressing.

Fig. 5 : shows a section through another embodiment of battlefield dressing.

Fig. 6 : shows a perspective view of a method of storing a battlefield dressing.

Fig. 7 : shows a perspective view of a wound dressing or poultice 32 which is heat-bonded or joined by a peelable lacquer to a perforated layer 33 which in turn is bonded to a non-perforated layer.

Fig. 8 : shows a schematic view of a burns dressing which incorporates alternating metallised 36 and transparent 35 areas.

Fig. 9 : shows an arrangement wherby a wound contact layer 39

is bonded to a transparent polyester/polythene film which in turn is joined by a specialised peelable lacquer to a reflective metallised film, 41.

Fig. 10 : shows a reflective metallised film layer 41 which is bonded by suitable peelable lacquers to a transparent polyester/polythene layer which is produced in the form of a glove.

Referring to Fig. 1 of the accompanying drawings, a driven roller 20 is drilled to receive needles 21 which cover the surface longitudinally and circumferentially. The needles are held in position by an adhesive.

A film or foil requiring to be perforated is passed over the roller and needles, and auxillary roller 23,24 press the film 22 into contact with the needles. The needles pass through the film to form perforations. As shown in the enlarged area the needles are preferably inclined to the roller surface at

approx. 5° to the radius. This allows easier separation of the needles from the film after perforation and has been found to form perforations that are less likely to close up during use.

Using a roller of approx. 76mm diameter, it has been that the needles protruding by about 5mm and 0.75mm diameter give a satisfactory perforation. Typically the needles are spaced approx. 10mm from each other. The positioning of the needles can be adjusted to achieve desired perforation patterns.

As shown in Fig. 2a, a heat-loss cover or jacket of this invention is based on a sheet 1 of polyester film metallised with aluminium by vapour deposition to produce a reflective coating. The laminate is perforated by needle punching as described above. The perforations may be disposed in staggered rows give a hexagonal layout as shown in the enlarged section 1. Typically the perforations are at a spacing of approximately 1cm. As shown in Fig. 2b the perforations may be concentrated in discrete bands 4 at spaced intervals over the sheet.

Fig. 3a shows a sheet of metallised film or foil printed appropriately for veterinary use. The over-printing provides advisory shapes to be cut out for use as heat-loss protection under horse blankets and dog jackets, and for use in treatment of limb injuries.

Fig. 3b shows a sheet similarly over-printed with advisory shapes for human use.

The cut-out shapes may be adhered to the intended substrate using double-sided adhesive tape. When the sheet is a laminate of metal foil or a metallised film and polyethylene or another softenable plastic film, the sheet may be adhered by application of a heated iron, applying the iron to the metal side. When the perforations are bonded the heat bonding may be restricted to in the unperforated regions so as to maintain the desired porosity.

A suitable film for use in this invention is a metallised 12 micron polyester film, in which the base film is biaxially

oriented unplasticised polyester, as supplied for example by Hueck et Cie. The metallisation is typically approximately 120 mg/m^2. Suitably the film has a melt index of approximately 250%. Advantageously a layer of polyethylene, typical from 25 - 75 micron thick, is laminated to the base film. Such a laminate may be adhered to a substrate by hot-pressing using a domestic clothes iron, and may subsequently be stripped from the substrate without residue problems.

Referring to Fig. 4 a wound dressing comprises an assembly of three layers 11,12,13 of metallised polyester/polyethylene laminate and two wound contact dressings 14,15. Each film 11,12,13 has its polyethylene surface 11a,12a,13a facing into the assembly and each wound dressing 14,15 has its wound contacting surface 14a,15a facing outwards. The dressing is shown schematically with spaced layers so that the structure can be seen. In the actual construction, starting from the left hand side (as seen in Fig. 4), an unperforated film 11 is

heat bonded to a perforated film 12 which is heat bonded to the first wound dressing 14. From the right hand side, an unperforated film 13 is heat bonded to the second wound dressing 15. The two wound dressings are connected at their non-wound contacting surfaces. Alternatively a single wound dressing with a double sided wound contacting surface may be used. The films 12,13 are heat welded to each other at their contacting surfaces above and below the wound dressing to provide a sealed and sterilisable package. Alternatively peelable lacquers can be used to join these films together. A series of packages may be formed in a continuous strip by spacing wound dressings between the metallised films and contacting the assembly with heated rollers or plates to provide continuous or spaced heat welding as appropriate. Alternatively special peelable lacquers can be used. The outer metallised surfaces of each film 11,13 can be printed using conventional procedures with a camouflage pattern.

In a conventional warfare scenario, the outer layer 11 can be peeled away from later 12, and layer 13 can be peeled away from layer 13 and wound dressing 15. Thus the perforated, camouflage-printed film 12 and the dressings can be placed over the wound. The perforated camouflage layer acts as the backing layer for the wound dressing system. This perforated layer allows the wound to "breath" and is suitable as a wound dressing in conventional warfare.

In chemical and nuclear warfare, special protective suits are worn to protect the individual. In such conditions the unperforated layer 11 and perforated layer 12 can be peeled away together from wound dressing 14 and unperforated layer 13. The unperforated layer 13 with its camouflaged outer surface and the wound dressing are used to dress a wound. The remaining joined layers 11 and 12 can be used as a strong unperforated layer to repair the protective suit, using suitable adhesive tape.

An alternative configuration uses an additional perforated layer 16 as shown in Fig. 5, to form a symmetrical packing sequence. This allows peeling to be initiated from either side. Fig. 5 also illustrates at 17 a feature which may be applied to other embodiments, namely that unbonded flaps or tags may be formed, without prejudicing the seal of the wound dressing. These flaps may be printed on their inner surfaces with information relating to use of the dressing, in particular information as to where peeling should be initiated depending on the prevailing conditions of attack i.e. chemical, nuclear or conventional.

As mentioned above, the dressing system can be supplied as a continuous strip, and dressings can be cut away as needed. Such a strip is conveniently provided as a foll 30 secured by an external ring 31, conveniently a roll of adhesive tape for securing the dressings, as shown in Fig. 6.

Fig. 7 : illustrates how any wound dressing or poultice system

can be backed by a perforated layer 33 and this in turn can be covered by a nonperforated layer 34. The two layers 33 and 34 can be joined to each other using peelable lacquers. This arrangement means that the non-perforated layer can be peeled off the underlying perforated layer 33 when the poultice/wound dressing is to be used in its dry application and the non-perforated layer 34 can be left in place when it is required to have a wet dressing. The non-perforated layer 34 would not be moisture permeable and hence would enable a 'wet' dressing to stay wet.

There can be a further adaptation of the design for the aforementioned military wound dressing in that the metallised reflective film which is printed with the camouflage pattern and which forms the backing for the military wound dressing can be produced from a special film produced by CAMVAC Ltd., Thetford, East Anglia. This special film is produced as alternating layers of transparent and metallised film. The proportion of transparent to metallised parts can vary but a

typical example would be ⅔ metallised film and ⅓ transparent film.

The transparent part of the film can in turn be covered by a further reflective film which can be joined to the underlying film using peelable lacquer.

This covering metallised film can be printed with camouflage pattern to match up with the camouflage pattern of the remaining wound dressing backing film.

The advantage of this system is that the upper layer overlying the transparent layer and attached using peelable lacquer can be peeled away leaving the transparent layer through which the primary wound contact layer can be visualised.

Using this method the wound contact layer can be seen and used to assess the level of haemorrhage from the wound or the state of the wound without causing disturbance to the wound.

The use of the special metallised film as produced by CAMVAC Ltd., Thetford, East Anglia, which is produced as a part-metallised and part-transparent film can be used for a variety of other uses in the area of "thermal coverings".

A typical use is as a reflective cover for baby milk bottles. The special metallised film can be made as a surrounding reflective, metallised layer for a baby's milk bottle. The reflective metallised film can be formed as a close-fitting covering or pouch for a baby's bottle. The reflective metallised film reflects back the radiative heat from the warm milk.

Due to the design of the specialised metallised film produced e.g. by CAMVAC, Thetford, East Anglia who produce a film that is part-metallised and part-transparent, the current invention describes a covering of the transparent part of the film by a further metallised strip which can be printed with any design or operating instructions.

When this further metallised strip is in place it reflects back

the radiative heat from the milk.

However if it is required to see the level of milk in the bottle then the metallised strip which is joined to the underlying metallised layer by peelable lacquer can be peeled back for effective visualisation.

The general design of this reflective metallised film whereby a transparent strip of the underlying film is covered by a further layer of metallised film which is able to reflect back the infra-red radiation. This further layer of reflective metallised film is joined to the underlying film by peelable lacquer.

This basic design is suitable for use in any case where a reflective film can be used to reflect back - radiant heat (normally infra-red radiation) and yet to visualise the underlying structure.

A further embodiment of this invention relates to a wound or burns dressing which reflects back the body's own infra-red radiation by means of a metallised reflective film. This invention also allows the wound to be visualised whilst the wound dressing is still in place.

It is well established that wounds and burns heal more quickly if the wound or burn is kept at body temperature. By definition when wounds or burns occur the integrity of the skin is damaged and also the body's ability to maintain body temperature in that damaged area.

This invention uses reflective metallised film to reflect back the body's own infra-red radiation in order to maintain the body temperature in the area of a wound or burn.

This invention also incorporates methods of visualising the wound area whilst the reflective metallised film is present in order to minimise disturbance of the wound dressing. The visualisation can be achieved as follows:

In the first method, the reflective metallised polyester/polythene film can be produced in alternating strips of metallised film and transparent layers. Such an alternating metallised and then transparent film is produced in various thicknesses (e.g. 38 micron) by e.g. CAMVAC Ltd., Thetford, E. Anglia, U.K.

Such a film can be made so that the reflective metallised part covers two-thirds of the area while the transparent part covers one-third of the area or in fact the film can be made with any proportion of metallised to transparent area.

The aim of this burn or wound dressing is to reflect back the body's own infra red radiation to decrease the heat loss from the wound/burn area and to maintain body temperature at the wound/burn surface. The transparent polyester/polythene part of this wound/burn dressing enables the wound/burn to be visualised.

This polyester/polythene film which has both a reflective

metallised part as well as a transparent part can be heat bonded to itself to form a "mitten" shape or a "glove" shape or a "foot" shape or a "tube" shape, in fact to any shape which might be useful for a wound/burn dressing.

Such mittens or gloves can be partially bonded to a paper backing as in the method used in the Dispos-a-glove* arrangement for an examination glove. (Dispos-a-glove is a trademark of Johnson & Johnson Medical). This method means that the glove or mitten or tube can be put on easily.

Such an arrangement of alternating metallised 36 and transparent areas 35 are shown in Fig. 8 which shows a dressing in the form of a mitten.

If it is decided to produce a specialist burn dressing in the form of such a mitten, the mitten can be sealed 37 and be opened by a tab 38. Instructions can be printed on the inside or outside of this tab.

The mitten can be filled with a suitable pharmaceutical burns

therapeutic agent e.g. Flamazine* (antibacterial, silver sulphadiazine 1% cream). (Trade mark Smith & Nephew Pharmaceuticals). Such a dressing could be used for skin graft donor sites, wounds, burns, infected leg ulcers and pressure sores.

Either side of the mitten can be printed using specialised foil printing technique as developed by G & A Printers, Unit 15c Eurolink Industrial Centre, Sittingbourne, Kent. E.G. the inside of the tab 38 can be printed with the instructions for use. The outside of the mitten over the metallised area can be printed with company logos, further instructions, or even with any variety of camouflage printing so that the dressing could be specially adapted for military use.

A second method of producing a wound/burn dressing has a metallised reflective film to reflect back the body's own infra-red radiation is as shown in Fig. 9 in which 39 represents the wound contact layer, 40 is a transparent polyester/polythene film joined by specialised peelable

lacquers to the metallised reflective film 41. A specialist, reflective wound/burn dressing is thus produced.

This reflective metallised film dressing can be made in virtually any configuration e.g. Fig. 10 - showing a reflective metallised film layer 41 which is bonded by suitable peelable lacquers to a transparent polyester/polythene layer which is produced in the form of a glove.

The outside of the metallised layer 41 can be printed with any company logo, directions for use or with camouflage printing (to make the dressing suitable for military use).

For a specialist burn dressing this dressing can be filled with any special burns pharmaceutical therapeutic agent e.g. Flamazine (Smith & Nephew Pharmaceuticals). This specialist burn dressing can be sealed for e.g. at the "wrist" of the mitten or glove design. The whole dressing can be sterilised using gamma irradiation.

An alternative design for this reflective wound/burn dressing is as a combination of the two basic designs in which the reflective metallised polyester/polythene film is produced in the form of alternating strips of metallised film and transparent layers as produced by Camvac Ltd., Thetford, East Anglia, U.K.

In this design the transparent strips are covered by reflective metallised strips. These reflective metallised strips are joined to the underlying polyester/polythene film using specialised peelable lacquers.

This design, where the reflective metallised strips cover the transparent strips represents an economical use of materials and also produces a relatively lightweight dressing. The underlying dressing with the alternating metallised and transparent strips is left in place to cover a wound or a burn. The reflective metallised film reflects back the body's own infra-red radiation to maintain the wound or burn

temperature at an ideal temperature for optimum wound repair.

The bonded, peelable strips can be peeled back to visualise the wound through the transparent strips without disturbing the wound/burn.

It is possible to incorporate these designs for reflective metallised film into the backing layer of occlusive or partically occlusive dressings e.g. as a backing layer for Opsite (Smith & Nephew Pharmaceuticals) and Allevyn (Smith & Nephew Pharmaceuticals). Such a design would improve the performance of these dressings in respect of maintaining the temperature of the wound or burn surface at as close to optimum temperature as possible for maximum healing rates.

A typical example of the peelable lacquer mentioned in this invention is "Heat Seal 200101" produced by Swale Coatings & Inks Limited.

This heat-sealable lacquer is a solvent based heat seal for polyester. This solvent was originally designed for plated

metal applications. The heat seal is based on ethyl acetate and is designed to seal to itself only.

This heat seal for polyester offers excellent adhesion to treated and untreated polyester with good seal strengths at low temperatures, (the heat seal threshold being 70°C). The dry components comply to F + D.A. 175.300.

This heat seal is normally used in conjunction with a release lacquer when blocked against unprinted polyester.

This heat seal typically has a total solids content of 25.0%, a viscosity of 20 seconds Zahn 3 at 20°C, it is normally applied by a gravure plate at a recommended dry coating weight of 1.0 - 1.5 grams per square metre.

A reflective metallised film as described in this invention can be laminated on the back of an adhesive occlusive dressing such as op-site film (made by Smith & Nephew Ltd.) in order to improve the dressings' characteristics particularly as a burns dressing. The laminated metallised film can also be laminated in the form of alternating transparent strips and reflective metallised strips as described earlier. The transparent strips can be covered by further reflective metallised strips which can be attached by specialist peelable lacquers.

CLAIMS:

1. A thermal cover sheet comprising a sheet of reflective metal foil or metallised plastics film, which is perforated to allow passage of water vapour.

2 A thermal cover sheet according to Claim 1, which is printed with outline shapes suitable, when cut out, for covering body parts.

3. A thermal cover sheet according to Claim 1, which is shaped to fit on or around a body part.

4. A thermal cover sheet according to any one of Claims 1 to 3, in which the perforations are arranged in discrete bands across the sheet.

5. A thermal cover sheet according to any one of Claims 1 to 4, in which the perforations are arranged in hexagonal or staggered arrays.

6 A thermal cover sheet according to any one of Claims 1 to 5, including means for securing the sheet to a body part or other surface.

7. A thermal cover sheet according to Claim 6, in which the securing means is adhesive tape.

8. A thermal cover sheet according to Claim 6, in which the securing means is a ribbon or strap.

9. A thermal cover sheet according to Claim 6, in which the securing means is a heat-softenable polymer layer on one surface of the reflective foil or film.

10. A thermal cover sheet according to any one of claims 3 to 9, further including a wound dressing pad adhered to the sheet.

11. A thermal cover pack comprising a sheet as claimed in any one of Claims 1 to 5 and a supply of adhesive tape.

12. A wound dressing comprising a wound contacting pad and a backing sheet of reflective metal foil or metallised plastics film.

13. A wound dressing according to Claim 12 in which the reflective backing sheet is perforated to allow passage of water vapour.

14. A wound dressing according to Claim 13 in which the perforations are arranged in discrete bands across the backing sheet.

15. A wound dressing according to Claims 12,13 or 14, in which the area of the backing sheet is greater than the area of the wound contacting pad.

16. A wound dressing according to any one of Claims 12 to 15, in which the outer surface of the backing sheet is printed with a camouflage pattern.

17. A wound dressing according to Claim 13 which is sealed in an envelope formed by two opposed unperforated films sandwiching the perforated film and dressing pad the unperforated and perforated films being independently peelable from the combined structure.

18. A wound dressing according to Claim 17 in which the perforated and unperforated films are laminates of a metallised plastics film and heat-softenable plastics film.

19. A wound dressing according to Claim 17 in which the unperforated and perforated films are independently peelable from the combined structure using peelable lacquers.

20. A wound dressing according to Claim 17 in which the underlying perforated and/or the overlying non-perforated layer can incorporate a transparent layer so that the primary wound contact layer can be visualised.

21. A wound dressing according to any one of Claims 12 - 20 in which the backing sheet is a part-metallised, part-transparent film which can be used to reflect back radiative heat and yet allow visualisation of the underlying structure.

22. A wound or burns dressing according to Claim 20 in which the transparent areas can be covered with further reflective metallised film which can be peeled back using peelable

lacquers to see through the underlying transparent areas which would enable the level of wound haemorrhage to be assessed or to assess the state of the wound without causing disturbance of the wound.

23. A wound dressing according to any one of Claims 12 - 22 in which a backing layer of reflective metallised film reflects back the body's own infra-red radiation in order to maintain the body temperature in the area of a wound or burn.

24. A wound dressing according to any one of Claims 12 - 23 which is heat bonded to itself to form a mitten, glove, foot or tube shape.

25. A wound dressing according to any one of Claims 12 to 24 which is partially bonded to a paper backing for ease of use.

26. A wound dressing according to any one of Claims 12 - 24 which can be sealed.

27. A wound dressing according to Claim 26 which contains a useful pharmaceutical agent.

28. A wound dressing according to any one of Claims 12 - 27 which has printed instructions on the outside surfaces and on the opening tabs.

29. A wound dressing according to Claims 12 - 28 which can be sterilised by gamma irradiation.

30. A wound dressing according to Claims 12 - 29 which is camouflage printed on the outside for military use.

31. A thermal cover made of part-metallised, part-transparent film which can be used to reflect back radiative heat and yet allow visualisation of the underlying structure.

32. A thermal cover according to Claim 30 where the transparent areas can be covered with further reflective metallised film which can be peeled back using peelable lacquers to see through the underlying transparent areas.

33. A thermal cover according to Claims 30 or 31 shaped as a reflective cover for a hot beverage container, for example a baby's milk bottle.

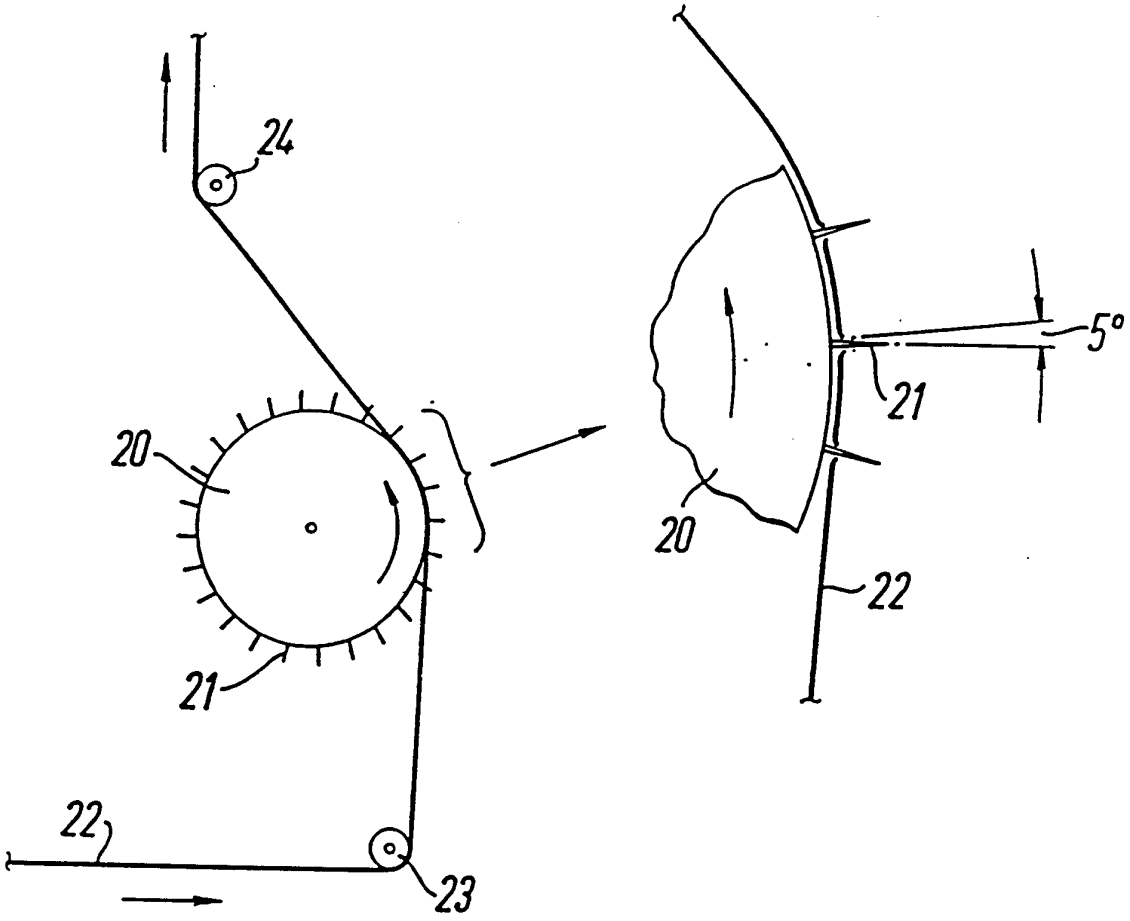

Fig.1

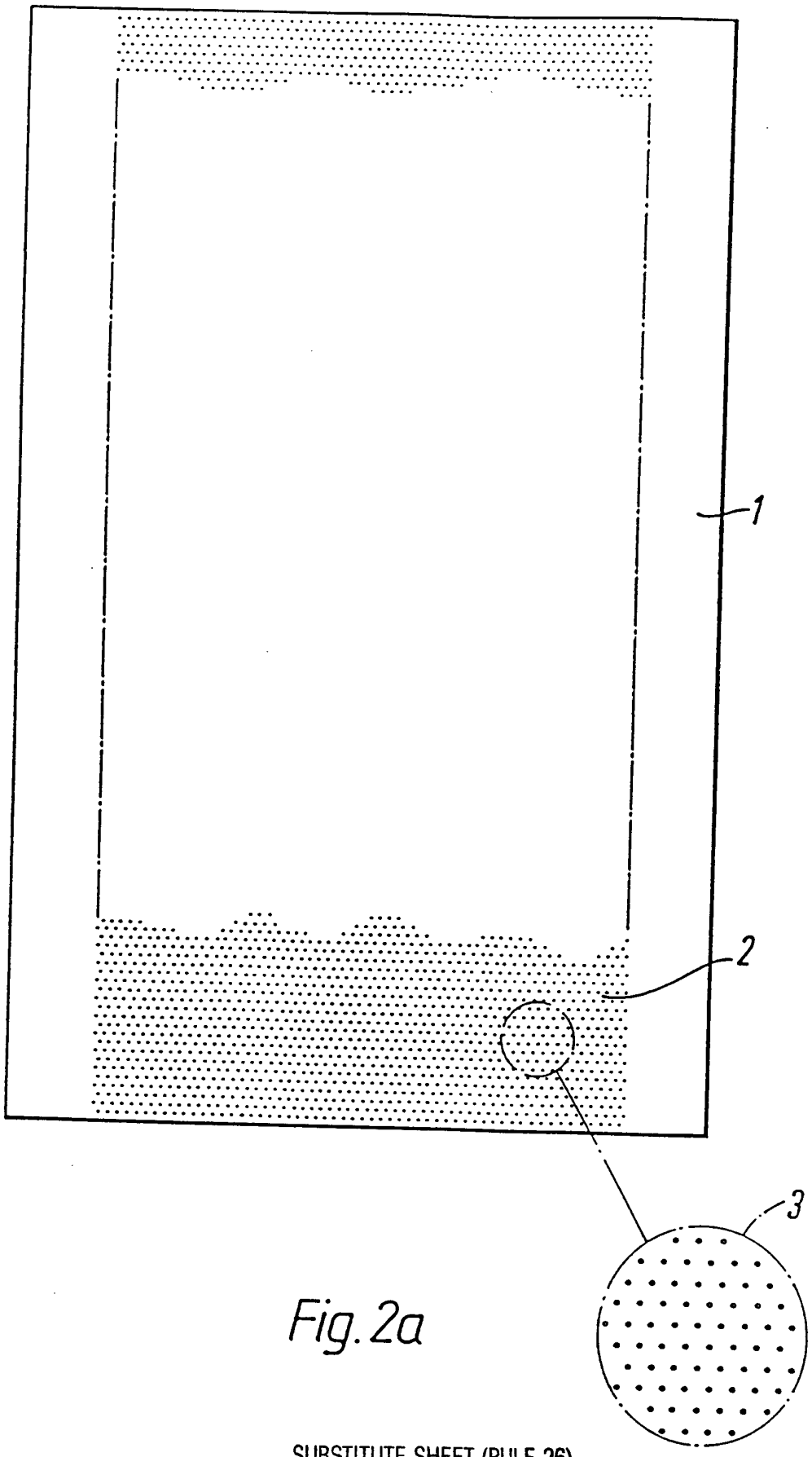

Fig. 2a

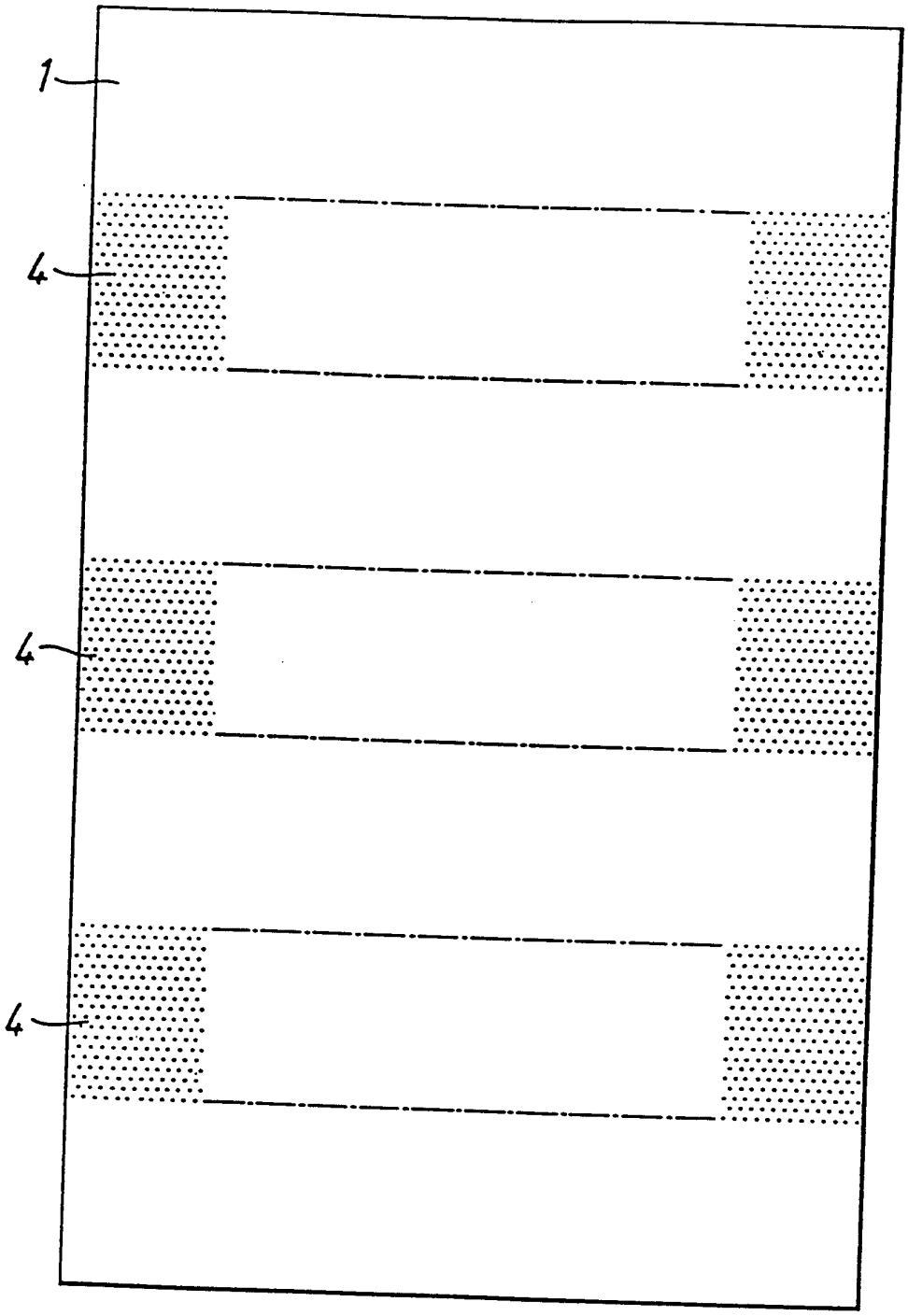

Fig.2b

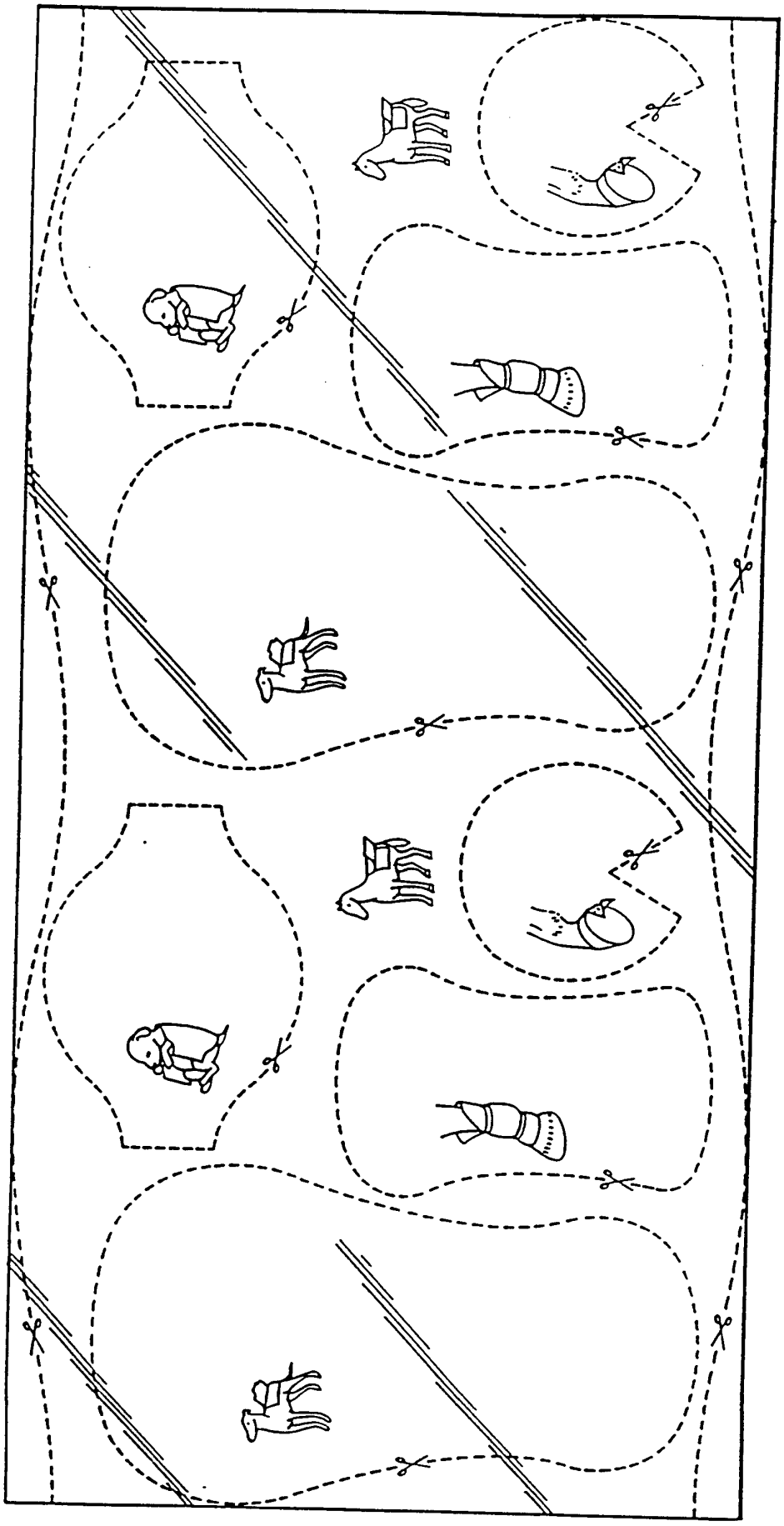

Fig. 3a

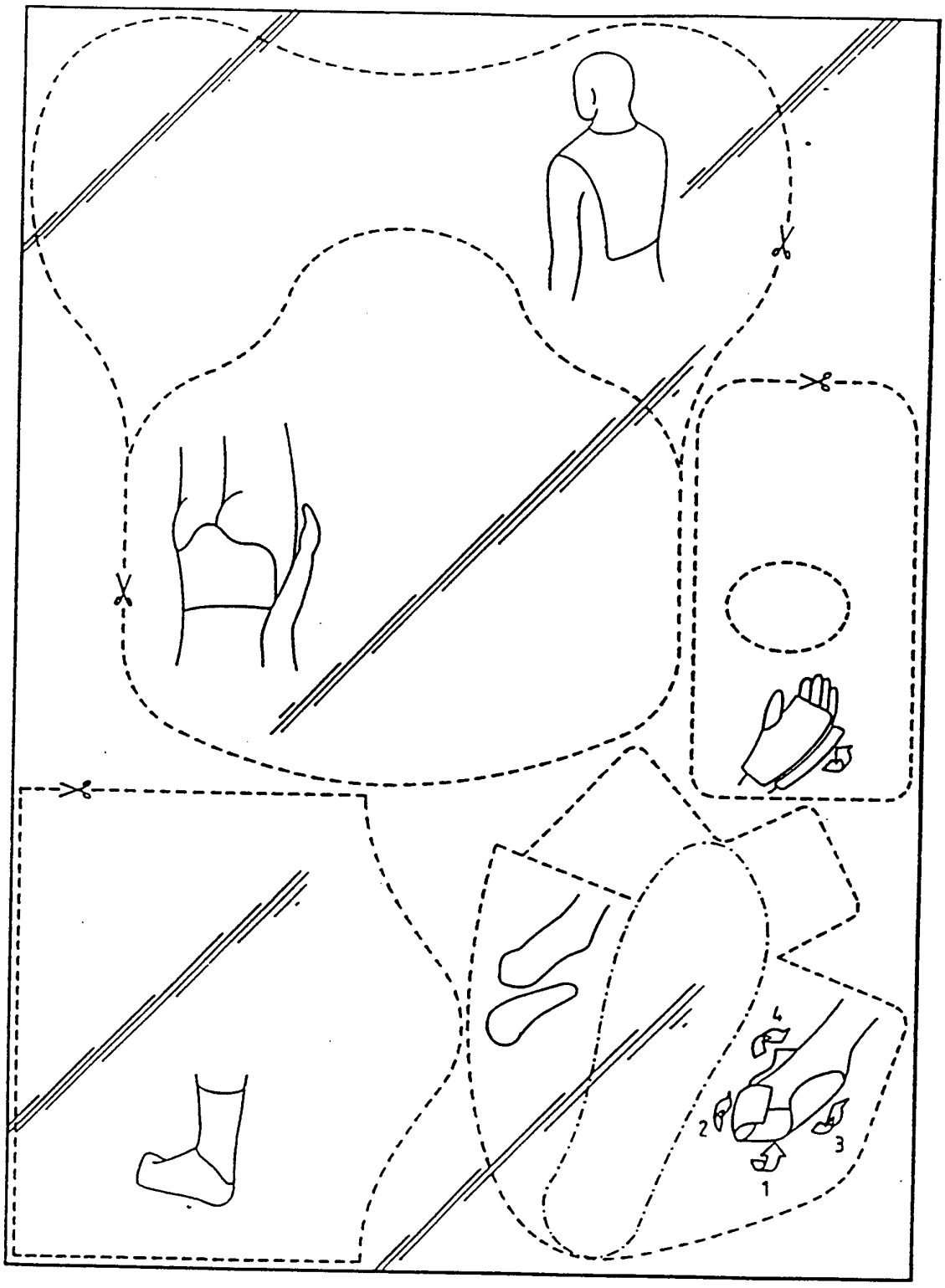

Fig. 3b

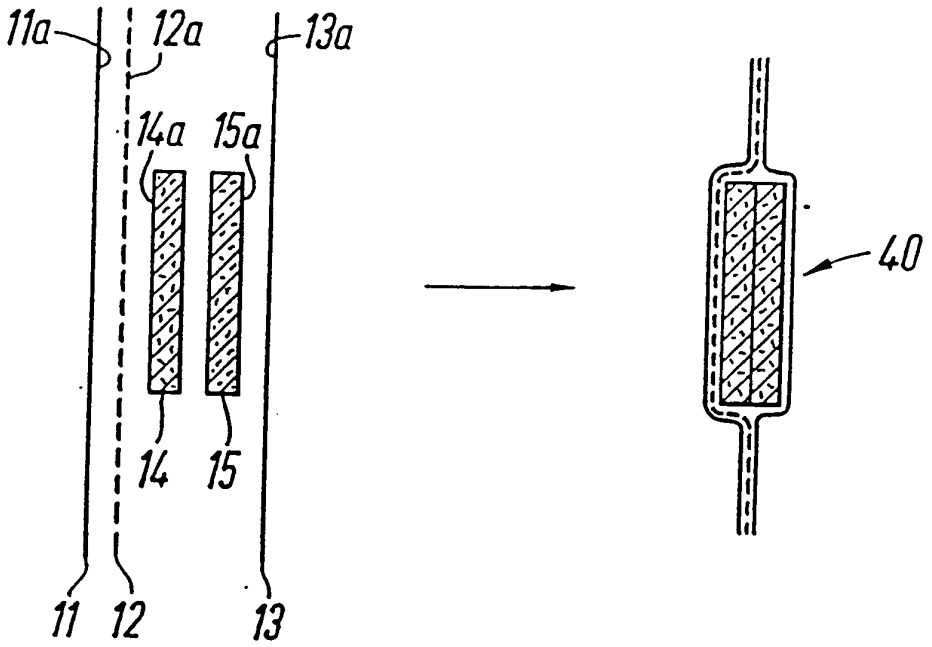

Fig. 4

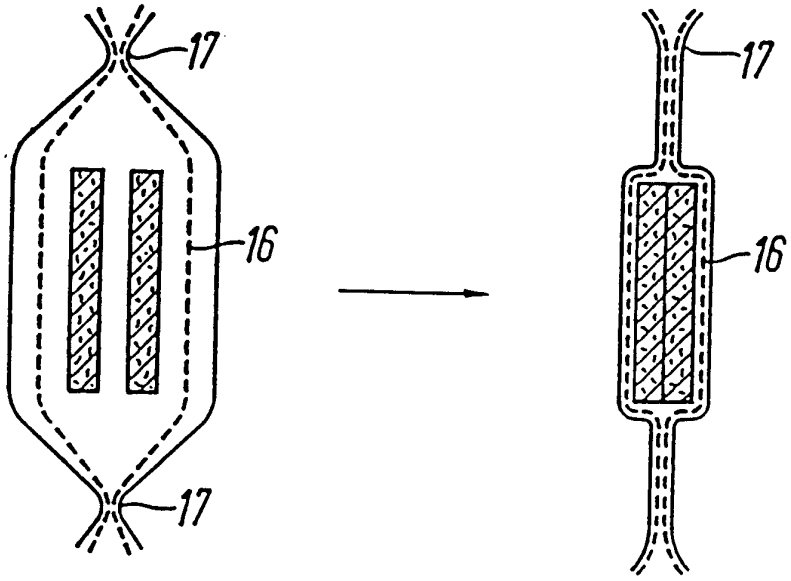

Fig. 5

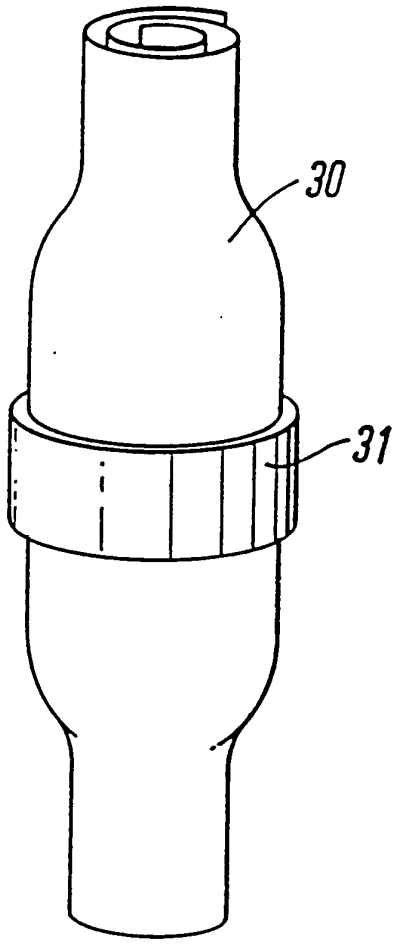

Fig. 6

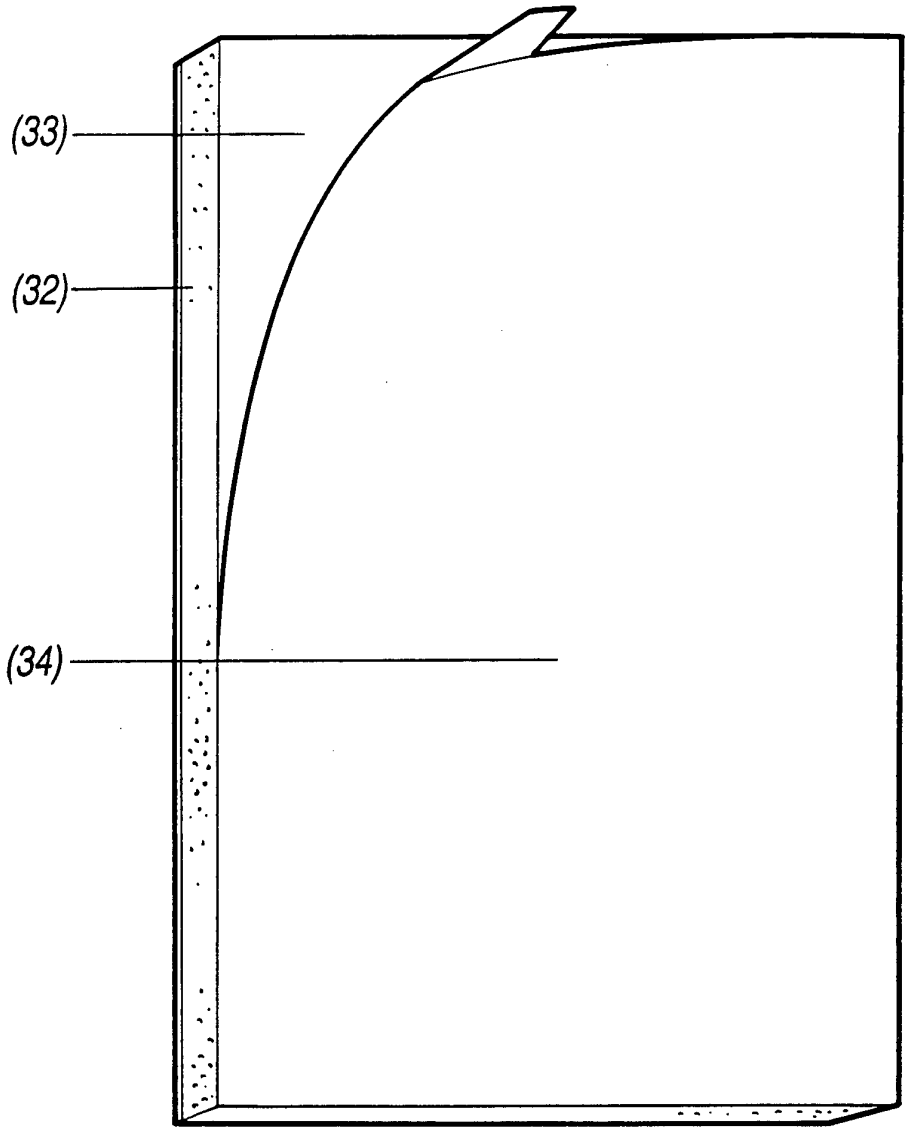

Fig. 7

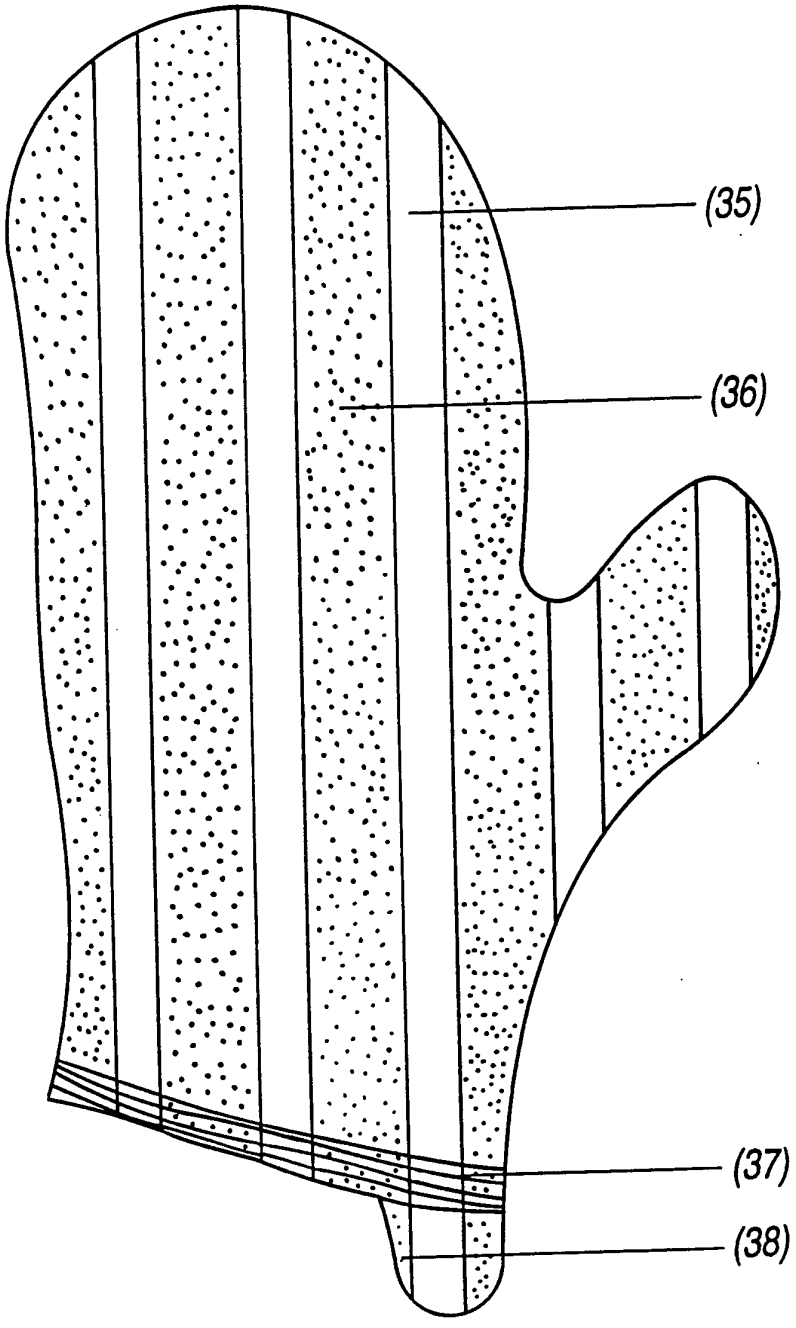

Fig.8

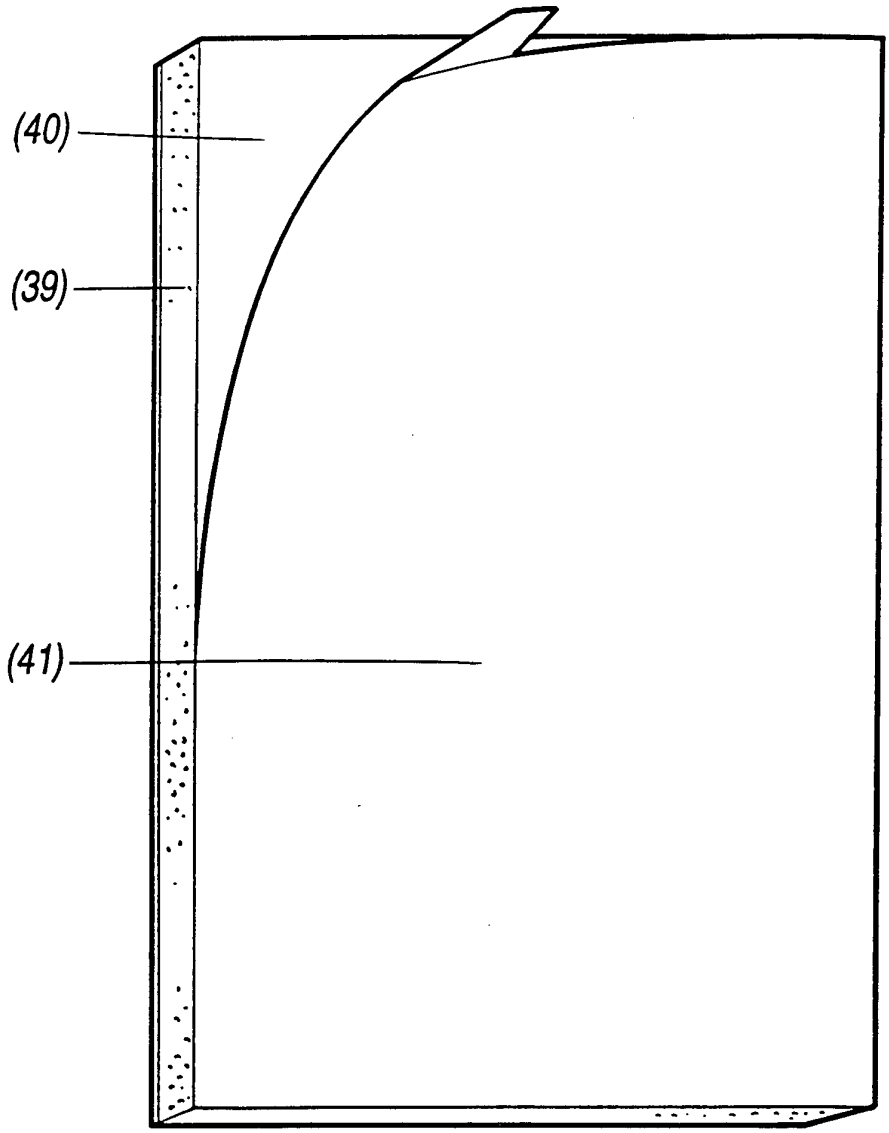

Fig. 9

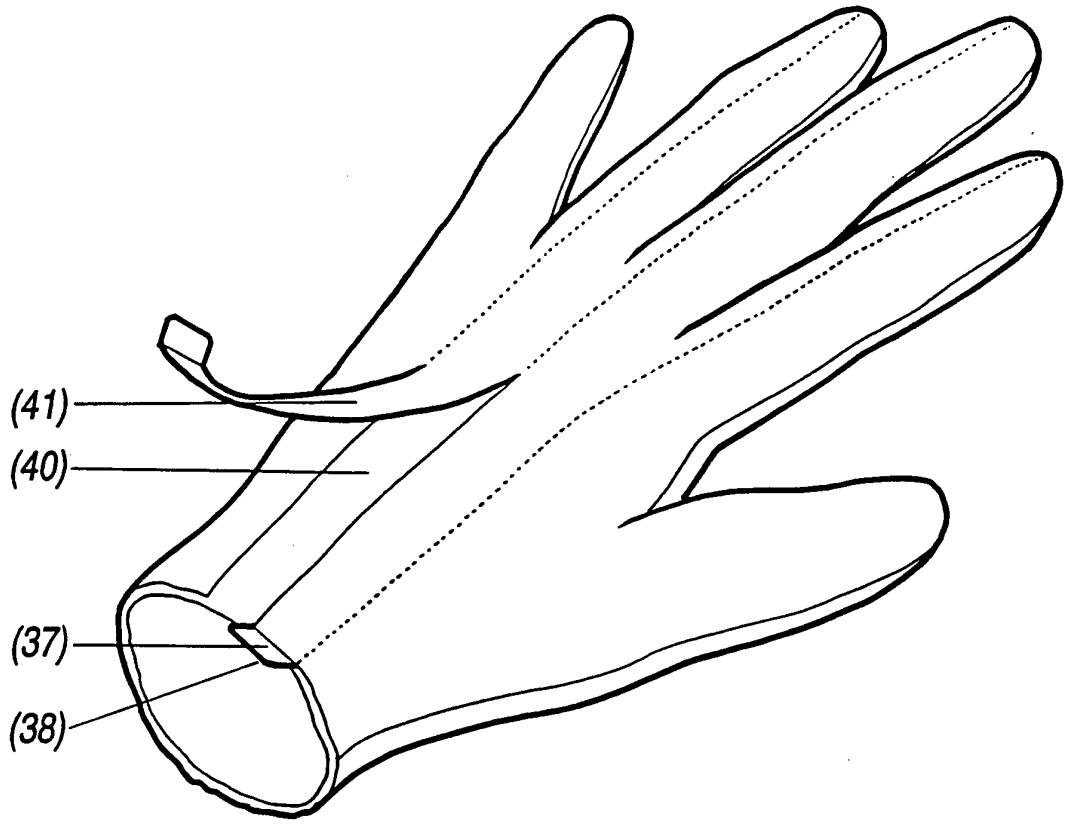

Fig.10