



## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

<p>(51) International Patent Classification <sup>5</sup> : A61F 13/02</p>	A1	<p>(11) International Publication Number: WO 94/06382 (43) International Publication Date: 31 March 1994 (31.03.94)</p>
<p>(21) International Application Number: PCT/IE93/00050 (22) International Filing Date: 22 September 1993 (22.09.93) (30) Priority data: 922676 22 September 1992 (22.09.92) IE (71)(72) Applicant and Inventor: DUFFY, Gerard, Patrick [IE/IE]; Cloonagleragh, Turlough, Castlebar, County Mayo (IE). (74) Agent: ANNE RYAN &amp; CO.; 60 Northumberland Road, Ballsbridge, Dublin 4 (IE). (81) Designated States: AU, BR, CA, CZ, FI, HU, JP, KR, NO, NZ, PL, RU, US, European patent (AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE).</p>		<p><b>Published</b> <i>With international search report.</i> <i>With amended claims.</i></p>
<p>(54) Title: IMPROVEMENTS IN SKIN PLASTERS</p>		
<p>(57) Abstract</p> <p>A plaster (10) for topical application comprises a strip (11) securable to the skin by adhesive (13, 13'), a first flap (18) which when pulled exposes to the skin surface a first swab (20) which wipes the skin and a second flap (18') which when pulled exposes in succession to the skin surface a second swab (20') which wipes the skin and then a dressing (14) which remains in contact with the skin. At least one of the swabs (20, 20') can be impregnated with an antiseptic agent so that the action of pulling a flap (18, 18') can result in the skin being cleansed and sterilized prior to the dressing (14) coming into contact therewith. The flaps (18, 18') are each detachable from a central portion (12) at weakened lines (19, 19'), respectively. The surface of the plaster (10) overlying the dressing (14) is provided with an openable aperture (15, 16) for accessing the skin.</p>		

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DescriptionImprovements in Skin PlastersTechnical Field

5           This invention relates to skin plasters of the type comprising various types of fabric or synthetic materials and an adhesive substance for local application to cuts and abrasions and puncture sites resulting from needles, cannulas and the like, hereinafter referred to collectively as plasters.

10       Background Art

          In general, in procedures where a plaster is applied to the skin, the skin is first swabbed with an antiseptic, such as surgical spirit and optionally dried with a further swab before the plaster is actually affixed to the skin. Thus, one must have such swabs and antiseptic agent  
15       to hand.

          A plaster which obviated the need for swabs and a skin antiseptic would be of considerable benefit to medical personnel applying such plasters but also in the home, schools, leisure areas and the workplace, where all of these separate items may not readily be to hand.

20           A further problem is that once a plaster is in place, if access is required to the site of application, the plaster must be removed. The removal of a plaster can cause pain because the adhesive adheres to the site of application. Thus, a plaster which permitted access to the site of application without removing the plaster would have advantages in the  
25       situations hereinbefore mentioned.

Disclosure of Invention

5 The invention provides a plaster for topical application, which comprises a folded strip securable to the skin by adhesive and a flap which when pulled exposes in succession to the skin surface a swab which wipes the skin and then a dressing which remains in contact with the skin.

The plaster according to the invention can be provided with a further flap which when pulled exposes to the skin surface a further swab which wipes the skin.

10 According to a preferred embodiment of the invention, the plaster comprises a first flap which when pulled exposes to the skin surface a first swab which wipes the skin and a second flap which when pulled exposes in succession to the skin surface a second swab which wipes the skin and then the dressing which remains in contact with the skin.

15 Preferably, the first swab is impregnated with an antiseptic agent.

20 Thus, the plaster according to the invention obviates the need for a separate wiping of the skin with an antiseptic agent to which a plaster is to be applied prior to application of said plaster, because this operation can be inherent in the application of the plaster as hereinbefore described by virtue of the structure and mode of application thereof.

25 The second swab, when such is present, can be impregnated with an active agent.

For example, the active agent can be a rubefacient, such as camphor or menthol or other locally acting peripheral vasodilator.

Other active agents that might be used to impregnate a swab forming part of the plaster according to the invention include an antimicrobial agent, an antioxidant, a pH-controlling agent, a plasticizer, a surfactant, a humectant or a penetration enhancer.

- 5           The swab might also be impregnated with a local anaesthetic to suppress irritation and pain at the site of application of the plaster, depending on the medical procedure to be carried out on the patient.

10           In a further preferred embodiment once the plaster is secured *in situ* and the or each flap has been pulled to expose and bring the dressing into contact with the skin, means are provided for readily detaching the flaps and associated swab carrying portions of the plaster. Suitably said means comprise a weakened line from which the flaps and associated swab carrying portions can be detached by a tearing action, such as a tear-away strip.

- 15           The dressing itself can also be impregnated with an active agent. For example, the dressing can be impregnated with a haemostatic agent, such as thrombin. However, the active agent can also be an antimicrobial agent, including an antibiotic or, indeed, any of the active agents hereinabove specified for impregnation of a swab forming part  
20 of the plaster according to the invention.

The dressing can also contain an active agent in a form suitable for percutaneous or transdermal administration.

- 25           It will be appreciated that when the or each swab and or the dressing are impregnated with an active agent, the plaster must be composed of such materials or be of such a construction that mixing or leakage of the active agent(s), as appropriate, is prevented. For example, the or each swab can be provided with a foil backing which prevents leakage or transfer of the active agent into the overlying layers of the plaster in the folded condition.

Following detachment of the flaps they are generally discarded. However, a swab on the or each flap can be used to take a specimen of body fluid or discharge from broken skin for analysis by biochemical, histological or other pathological procedure.

5           According to a still further preferred embodiment according to the invention the surface of the plaster overlying the dressing is provided with an openable aperture for accessing the skin once the plaster is affixed to the skin.

10           This embodiment of the invention allows access for injection, transfusion, the insertion of a cannula and many other medical procedures. By using materials conventionally used to form plasters, one can simply form such an openable aperture by a punching operation which generates a flap, which can be opened to access the skin but which remains attached to or hinged to the plaster and which  
15           can be closed again by simply pushing the flap back into position.

          It will also be appreciated that the plaster according to the invention would be particularly suited for use in blood banks on blood or plasma donors. Thus, the plaster with one or two flaps could be applied to the site from which blood or plasma is to be withdrawn and  
20           successively wiped with antiseptic and optionally dried, the needle by means of which the blood is to be withdrawn is then passed through the aperture following opening thereof. Once the donation has been taken, the needle will be withdrawn and the aperture closed, optionally  
25           following introduction of an effective amount of a haemostatic agent through the aperture. Of course, it will be appreciated that the dressing as such could be impregnated with a haemostatic agent in the ready-to-use state of the plaster.

          As indicated above, the plaster according to the invention is manufactured from materials conventionally used in plaster  
30           manufacture. The swabs can be formed of any suitable material such as lint, gauze and various types of mesh, as required. By selecting appropriate materials, one can achieve a plaster that is porous to air or,

alternatively, occlusive, as required, depending on the particular application of the plaster. The outer surface of the plaster, in use, can be comprised of a waterproof material, if required.

5 Likewise, the adhesive material will be conventional adhesive material or material having inherent tackiness *secundem artem*.

The invention also provides a plaster for topical application comprising an openable aperture for accessing the skin once the plaster has been affixed to the skin.

10 The invention will be further illustrated by the following description of an embodiment thereof, given by way of example only with reference to the accompanying Drawings:

#### Brief description of the Drawings

15 Fig. 1 is a schematic representation of a plaster according to the invention in the folded state, details of underlying layers thereof being shown in dotted outline;

Fig. 2 is a schematic representation of the plaster of Fig. 1 in the unfolded state; and

Fig. 3 is an end elevation in section of the plaster of Fig. 1.

#### Best mode for carrying out the Invention

20 Referring to the Drawings and, in particular, Fig. 2 thereof, there is indicated, generally at 10, a plaster consisting of a strip 11 cut to the desired dimensions and which can be folded into the configuration shown in each of Figs. 1 and 3.

25 The plaster 10 has a central portion 12 of a slightly greater width than the remainder of the strip 11, so as to accommodate a strip of adhesive (not shown) along the longitudinal edges 13, 13' thereof.

A dressing 14 is shown in dotted outline affixed on the under surface of said central portion 12 and an aperture 15 closeable by a flap 16 is cut from the central portion 12 but remains attached or hinged along a portion 17 of the edge of the aperture 15.

5           On either side of the central portion 12 there is a flap 18, 18' each of which is attached to the central portion 12 by a weakened line 19, 19', respectively. Each of the flaps 18, 18' carries a swab 20, 20' shown in dotted outline on the under surface thereof. Each of the flaps 18, 18' has a tapered end portion 21, 21' which, together with a portion  
10 of the flap 18, 18', projects beyond the central portion 12 when the plaster is in the folded condition and by means of which the swabs 20, 20' and the dressing 14 are successively brought into contact with the skin following application of the plaster 10 thereto. First the tapered end portion 21 and then the tapered end portion 21' is pulled so as to  
15 unfold the plaster 10 from the configuration shown in each of Figs. 1 and 3 to the fully opened configuration depicted in Fig. 2.

Once the flap 18 has been pulled into the fully extended position as shown in Fig. 2, it can simply be detached from the central portion 12 at the weakened line 19. Likewise, once the flap 18' has been pulled  
20 into the fully extended position as shown in Fig. 2, it too can simply be detached at weakened line 19'.

The flap 16 can be opened and closed, as required, for example, for the insertion and subsequent removal of a needle.



Claims

1. A plaster for topical application, which comprises a folded strip securable to the skin by adhesive and a flap which when pulled exposes in succession to the skin surface a swab which wipes the skin  
5 and then a dressing which remains in contact with the skin.
2. A plaster according to Claim 1, which is provided with a further flap which when pulled exposes to the skin surface a further swab which wipes the skin.
3. A plaster according to Claim 2, which comprises a first  
10 flap which when pulled exposes to the skin surface a first swab which wipes the skin and a second flap which when pulled exposes in succession to the skin surface a second swab which wipes the skin and then the dressing which remains in contact with the skin.
4. A plaster according to Claim 3, wherein the first swab is  
15 impregnated with an antiseptic agent.
5. A plaster according to Claim 3 or 4, wherein the second swab is impregnated with an active agent.
6. A plaster according to any preceding claim, wherein once the plaster is secured *in situ* and the or each flap has been pulled to  
20 expose and bring the dressing into contact with the skin, means are provided for readily detaching the flaps and associated swab carrying portions of the plaster.
7. A plaster according to Claim 6, wherein the means  
25 comprise a weakened line from which the flaps and associated swab carrying portions can be detached by a tearing action.
8. A plaster according to any preceding claim, wherein the surface of the plaster overlying the dressing is provided with an

openable aperture for accessing the skin once the plaster is affixed to the skin.

5           9.    A plaster according to any preceding claim, wherein the plaster in the folded condition is provided with one or a pair of peel-off strip(s).

          10.   A plaster for topical application comprising an openable aperture for accessing the skin once the plaster has been affixed to the skin.

**AMENDED CLAIMS**

[received by the International Bureau on 29 December 1993 (29.12.93);  
original claim 10 cancelled; other claims unchanged (1 page)]

openable aperture for accessing the skin once the plaster is affixed to the skin.

9. A plaster according to any preceding claim, wherein the plaster in the folded condition is provided with one or a pair of peel-off strip(s).
- 5

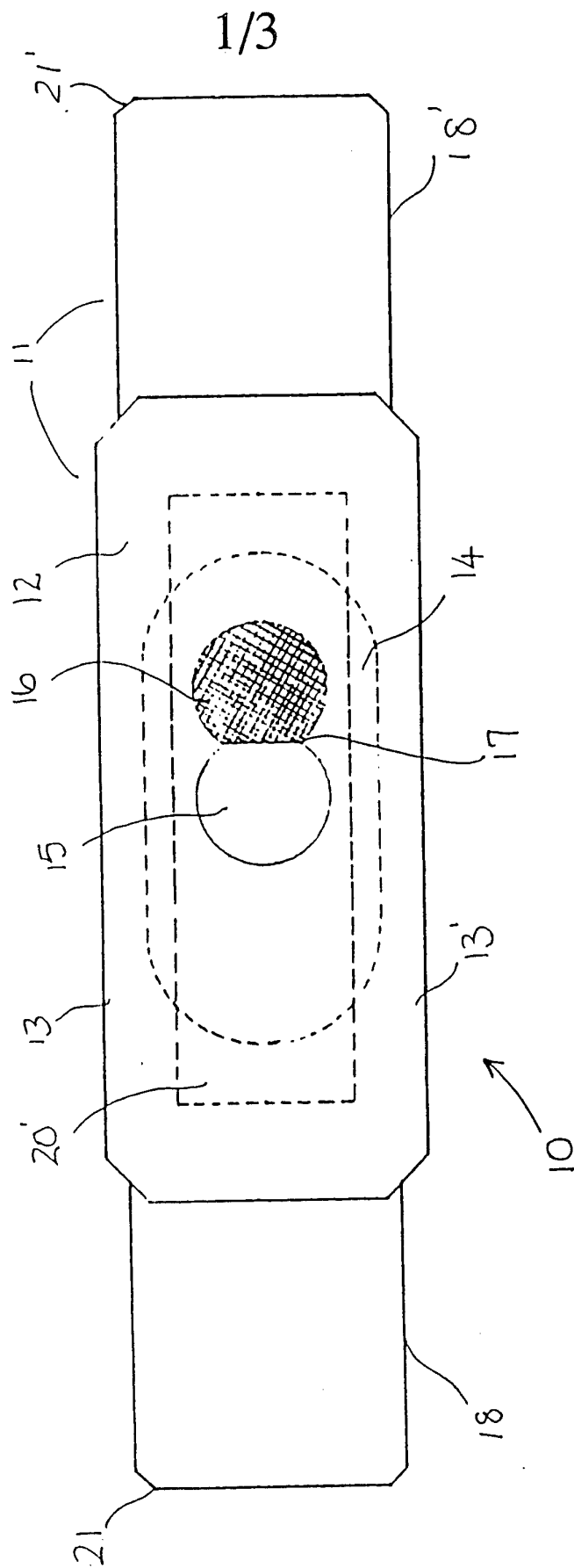


FIG. 1

2/3

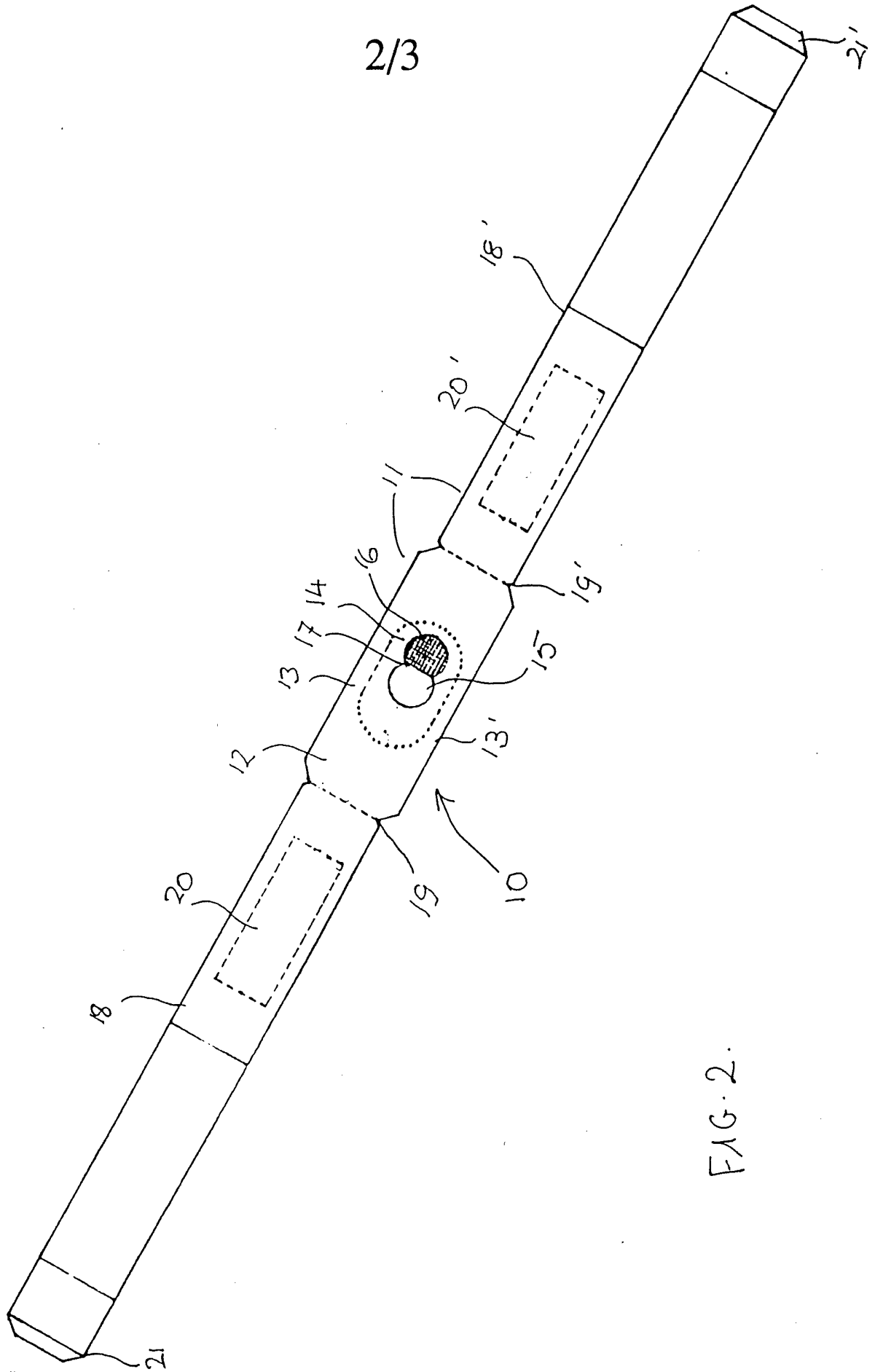


FIG. 2.

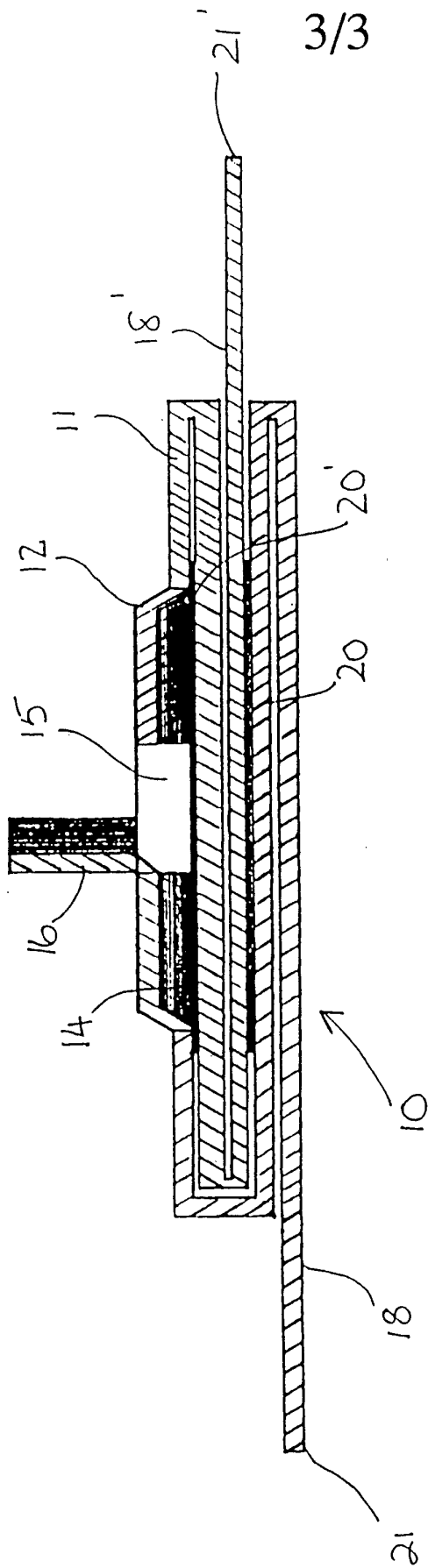


FIG. 3

A. CLASSIFICATION OF SUBJECT MATTER IPC 5 A61F13/02		
According to International Patent Classification (IPC) or to both national classification and IPC		
B. FIELDS SEARCHED		
Minimum documentation searched (classification system followed by classification symbols) IPC 5 A61F		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched		
Electronic data base consulted during the international search (name of data base and, where practical, search terms used)		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category <sup>a</sup>	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US,A,3 018 881 (T.H.WALL) 30 January 1962 see figures 2-4 ---	1-3,9
A	US,A,4 738 678 (R.A.PAULIS) 19 April 1988 see abstract; figure 2 ---	1,6
A	US,A,4 176 664 (S.KALISH) 4 December 1979 see column 1, line 8 - line 12; figure 1 ---	4,5
A	US,E,33 353 (S.B.HEINECKE) 25 September 1990 see abstract; figures 1-2 ---	6,7,9
X	US,A,5 086 763 (J.L.HATHMAN) 11 February 1992	10
A	see figure 1 -----	8
<input type="checkbox"/> Further documents are listed in the continuation of box C. <input checked="" type="checkbox"/> Patent family members are listed in annex.		
<sup>a</sup> Special categories of cited documents :		
"A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier document but published on or after the international filing date "I" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art. "&" document member of the same patent family		
Date of the actual completion of the international search  8 November 1993		Date of mailing of the international search report  15. 11. 93
Name and mailing address of the ISA European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+ 31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+ 31-70) 340-3016		Authorized officer  NICE, P

# INTERNATIONAL SEARCH REPORT

International application No.

PCT/IE 93/00050

## Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1.  Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
  
2.  Claims Nos.:  
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
  
3.  Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

Claims 1-9 Plaster including swab for wiping skin  
Claim 10 Plaster with operable aperture

../.. SEE ANNEX

1.  As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2.  As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3.  As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
  
4.  No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- The additional search fees were accompanied by the applicant's protest.
- No protest accompanied the payment of additional search fees.



FURTHER INFORMATION CONTINUED FROM Form PCT/ISA/210 (continuation of first sheet (1)) (July 1992)

Non-Unity A Priori  
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Claim 1 and dependent claims 2-9 are directed to an adhesive dressing (plaster), incorporating at least one swab which can be used to wipe the skin before applying the dressing. This feature addresses the problem of ensuring wound cleanliness without need of further equipment.

Claim 10 is directed to a plaster with an openable aperture. This feature addresses the problem of providing subsequent access to the wound without having to remove the plaster.

The special technical features of the two groups of claims are intended to solve two distinct problems, and they could be incorporated independently of one another with no interdependence between them. They are not linked so as to form a single general inventive concept. Hence, the application lacks unity a priori.

However, it has been possible to make a complete search for both inventions with negligible additional work. The international search report is therefore complete, with no requirement to pay an additional search fee.

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US-A-3018881		CH-A- 404853 DE-B- 1254818 FR-A- 1314185 GB-A- 1001421 NL-C- 132475 NL-A- 274018	
US-A-4738678	19-04-88	NONE	
US-A-4176664	04-12-79	NONE	
US-E-33353	25-09-90	US-A- 4598004 AU-B- 582201 AU-A- 5164785 EP-A,B 0189999 JP-A- 61174281	01-07-86 16-03-89 31-07-86 06-08-86 05-08-86
US-A-5086763	11-02-92	NONE	