

663192 CONVENTION

AUSTRALIA

Patents Act 1990

**NOTICE OF ENTITLEMENT**

We, **SOLAR-FASHION GmbH & CO. KG** of 8589 Bindlach 1, Germany state the following in connection with Australian Application No. 40627/93:

1. We are the nominated person.
2. The nominated person is the assignee of the actual inventor.
3. The nominated person is the applicant of the basic application listed in the declaration under Article 8 of the PCT.
4. The basic application is the application first made in a Convention country in respect of the invention.

Dated: 30 November 1993

By **PHILLIPS ORMONDE & FITZPATRICK**  
Patent Attorneys for the Applicant  
By:

.....*David B Fitzpatrick*.....

To: The Commissioner of Patents

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Melbourne, Australia, 3000

Our Ref: 350170

1925x



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**(12) PATENT ABRIDGMENT (11) Document No. AU-B-40627/93**  
**(19) AUSTRALIAN PATENT OFFICE (10) Acceptance No. 663192**

- (54) Title  
**SUNLIGHT-TRANSMISSIVE TEXTILE FABRIC, AND BATHING WEAR AND LIGHT-PROTECTIVE CLOTHING MANUFACTURED FROM SUCH FABRIC**
- International Patent Classification(s)  
(51)<sup>5</sup> **A41D 031/00 A41D 007/00 D04B 021/10**
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**4222582 09.07.92 DE GERMANY**
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- (71) Applicant(s)  
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- (56) Prior Art Documents  
**GB 1283410**  
**US 4546493**
- (57) Claim

1. A material transmitting sunlight for bathing wear or light-protective clothing, including a mesh knitted fabric with mesh openings, which is printed with contrasting bright colours and cannot therefore be seen through when put on the skin, wherein the knitted fabric includes polyamide fibres and a polyurethane elastomer and has a honeycomb-like structure with rows of mesh openings which extend in at least three angularly offset directions.

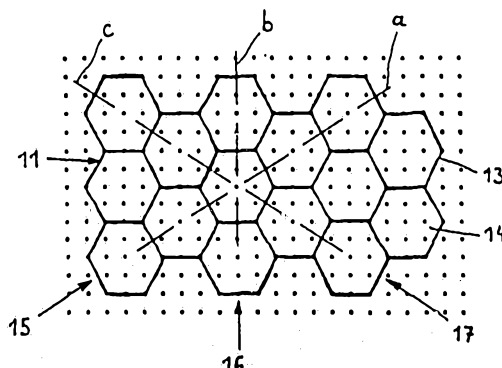
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |    |                                                                                                                                                                                                                                                                                 |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| (51) Internationale Patentklassifikation 5 :<br>A41D 31/00, 7/00, D04B 21/10                                                                                                                                                                                                                                                                                                                                                                                                                                                | A1 | (11) Internationale Veröffentlichungsnummer: WO 94/01010<br>(43) Internationales<br>Veröffentlichungsdatum: 20. Januar 1994 (20.01.94)                                                                                                                                          |
| (21) Internationales Aktenzeichen: PCT/EP93/01024<br>(22) Internationales Anmeldedatum: 28. April 1993 (28.04.93)<br>(30) Prioritätsdaten:<br>P 42 22 582.5 9. Juli 1992 (09.07.92) DE<br>(71) Anmelder (für alle Bestimmungsstaaten ausser US): SOLAR-FASHION GMBH & CO. KG [DE/DE]; D-8589 Bindlach 1 (DE).<br>(72) Erfinder; und<br>(75) Erfinder/Anmelder (nur für US) : RIEDEL, Herbert [DE/DE]; Stambacherstr. 10, D-8654 Markt Leugast (DE).<br>(74) Anwalt: SANDMANN, Joachim; Hirtenstr. 19, D-8012 Otobrunn (DE). |    | (81) Bestimmungsstaaten : AT, AU, BR, CA, CH, CZ, DE, DK, ES, FI, GB, HU, JP, KP, KR, LU, NL, NO, NZ, PL, PT, SE, SK, US, europäisches Patent (AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE),<br><br>Veröffentlicht<br>Mit internationalem Recherchenbericht. |

663192

**663192**

(54) Title: SUNLIGHT-TRANSMISSIVE TEXTILE FABRIC, AND BATHING WEAR AND LIGHT-PROTECTIVE CLOTHING MANUFACTURED FROM SUCH FABRIC

(54) Bezeichnung: SONNENLICHTDURCHLÄSSIGER STOFF UND AUS DIESEM HERGESTELLTE BADEBEKLEIDUNG UND LICHTSCHUTZBEKLEIDUNG



(57) Abstract

The invention concerns a bathing costume made from a tulle-like knitted fabric (11) printed with contrasting fluorescent colours and which is made up of 73 % nylon and 27 % of a polyurethane elastomer. The knitted fabric (11) has a multiplicity of hexagonal stitch openings (14) aligned in three directions (a, b, c) in rows (15, 16, 17). The bathing costume allows about two-thirds of the incident UV-radiation from the sun to pass through and thus enables an all-over tan to be obtained, without being transparent, even when wet. In addition, the bathing costume dries rapidly and provides an elastic fit over the body.

(57) Zusammenfassung

Die Erfindung sieht eine Badebekleidung aus einem mit kontrastierenden Leuchtfarben bedruckten tüllartigen Gewirke (11) vor, das sich zu 73 % aus Nylon und zu 27 % aus einem Polyuretan-Elastomer zusammensetzt. Das Gewirke (11) weist eine Vielzahl von sechseckigen Maschenöffnungen (14) auf, die in drei Richtungen (a, b, c) in Reihen (15, 16, 17) ausgerichtet sind. Diese Badebekleidung lässt ca. zwei Drittel der einfallenden UV-Strahlen der Sonne durch und begründet somit eine Ganzkörperbräunung, ohne jedoch transparent zu sein - und zwar auch nicht in nassem Zustand. Hinzu kommt, dass die Badebekleidung schnell trocknet und sich elastisch dem Körper anpasst.

Applicant: SOLAR-Fashion GmbH. & Co. KG  
D-8589 Bindlach 1

Title: Material transmitting sunlight and bathing wear and light-protective wear made from the same

5 Description:

This invention relates to a material transmitting sunlight, especially for bathing wear or light-protective clothing, consisting of a net-like, knitted fabric with mesh openings which is printed with contrasting bright colours and cannot therefore be seen through when put on the skin.

10 Such a material as well as bathing wear made therefrom are already known. Such a bathing suit or bikini has the advantage that even the parts of the body clad therewith tan in the sun, even although they are covered as with conventional bathing wear and are not visible. This bathing wear therefore facilitates tanning substantially free from demarcations in sunny weather, without  
15 the need for nude bathing or seeking out a bathing beach provided therefor or suitable country.

The known bathing wear involves a printed net-like knitted fabric of cotton. This is really only suitable for pure sun bathing and not for swimming. If this bathing wear gets wet its opacity is no longer fully guaranteed. The wet bathing  
20 wear also dries comparatively badly, which reduces the wearing comfort or requires a change of clothes. Moreover the adaptability to the body and the fit depending thereon leave something to be desired, especially after many wearings or long life.

It is an object of this invention to provide an improved material.

25 According to the invention there is provided a material transmitting sunlight for bathing wear or light-protective clothing, including a mesh knitted fabric with mesh openings, which is printed with contrasting bright colours and cannot therefore be seen through when put on the skin, wherein the knitted fabric includes polyamide fibres and a polyurethane elastomer and has a honeycomb-  
30 like structure with rows of mesh openings which extend in at least three angularly offset directions.



Advantageous embodiments and developments of this invention appear from the dependent claims.

5 The material according to the invention is very elastic and able to stretch because of the components of the knitted fabric and its honeycomb structure, moreover in at least three and even four directions. This leads to an enhanced ability to adapt to the shape of the body, whereby the polygonal (hexagonal) mesh openings correspondingly widen out when being worn, so that the sun's rays and thus the UV rays leading to tanning of the skin can penetrate well. At the same time, the knitted fabric lying against the body remains opaque because of  
10 the printing with contrasting bright colours, moreover even when the knitted fabric is wet. Furthermore the wet material dries particularly rapidly, for which not only the fibres employed but also the loose structure of the appropriately light knitted fabric are responsible. Accordingly, appropriate bathing wear is suitable for both sun bathing and swimming.

15 Investigations with a knitted fabric having hexagonal mesh openings of uniform size including polyamide fabric (nylon) in the range of 60% to 80% preferably 73%, and polyurethane elastomer (Lycra) in the range of 20% to 40%, preferably 27%, in thread counts in the range of 30 to 50 denier, preferably 40 denier, and 250 to 300 denier, preferably 280 denier, respectively with a mass per  
20 unit area in the range of 120 to 200 g/m<sup>2</sup>, preferably 160 g/m<sup>2</sup> have shown that the knitted fabric allows through about 65% of the UV rays of the sun or in other words shields the body from about 1/3 of the UV radiation. This corresponds approximately to the use of a sun cream with a light-protection factor of 10 on the bare skin. Thus the material according to the invention is not only specially  
25 suitable for bathing wear but is also of general advantage when the skin is to be protected from over-strong sun radiation without the use of sun creams, which are made on a fat or oil basis, while a tanning effects is definitely desired. Numerous different kinds of articles of clothing offer themselves as such light-protective clothing, for example T-shirts, leggings, cycling trousers and Capri trousers. It is  
30 conceivable that printing in contrasting colours can then be omitted at least partially, if desired.



- 3a -

Embodiments of the invention will now be explained in more detail with reference to schematic drawings, in which:

Figure 1 shows a bathing suit from the front and the rear;

Figure 2 shows a bikini in front view;

5 Figure 3 shows an enlarged section of the printed material used for the



bathing wear;

Figure 4 shows the closely adjacent hexagonal mesh openings of the knitted fabric forming the material in a further enlarged illustration of principle; and

5 Figure 5 shows an illustration of principle corresponding to Figure 4 of knitted fabric with other mesh openings.

Figure 1 shows a bathing suit 1 with a front side 2 and a rear side 3. As indicated in broken lines, the leg openings, the neck opening and the armholes are provided in known manner with an elastic hem 4 using an overlock seam.

10 Figure 2 shows a bikini 5 with bikini shorts 6 and a top part 7. Elastic hems 8 and 9 are provided here also.

Both the bathing suit 1 and the bikini 5 are formed and made up in the usual way. The distinctiveness lies only in the material used in their manufacture, from which the specific advantages in use result.

15 Figure 3 shows this material 10 in a sectional enlargement, relating to a knitted fabric 11 with printing 12.

In Figure 3 the structure of the knitted fabric 11 can be seen in the region of light coloured printing, since the material 10 is represented on a dark background. It involves a net-like knitted fabric 11 which is made from a two-thread yarn 13 and  
20 has a multiplicity of closely adjacent mesh openings 14. In the representation in Figure 3 the material 10 is in the worn state of light stretching so that the mesh openings 14 are partially opened to varying extents and the mesh opening rows do not stand out clearly everywhere. It should however be noted that the mesh  
25 openings 14 have a hexagonal shape and are arranged in three rows of mesh openings angularly offset from one another.

This situation is shown more clearly in Figure 4. This illustration of the principle superimposed on a grid of points makes it clear that the mesh openings 14 of the machine made knitted fabric 11 are not exactly regular hexagons because the two horizontally running edges are somewhat shorter than the other four edges.  
30 The fact that each mesh opening 14 pertains to three rows 15, 16 and 17 of mesh openings can be seen well, these extending in three directions a, b, c angularly offset from one another. Adjacent mesh openings 14 of a row have a narrow edge



boundary formed in common from the yarn 13.

The yarn 13 used to make the net-like knitted fabric 11 comprises - not shown in the Figures - a thicker nylon thread with a count of about 40 denier and a thinner yarn with a count of about 280 denier of a polyurethane elastomer (Lycra). This corresponds to a yarn composition of 73% nylon and 27% Lycra. The specific weight of the knitted fabric 11 amounts to  $160 \text{ g/m}^2$ . The clear mesh opening width amounts to substantially 0.2 to 1.0 mm, preferably 0.5 mm, in the state not widened out by wearing.

Because of the structure of the knitted fabric 11, the yarn components employed and a special finish, the material 10 is very elastic and able to stretch in many directions. This ensures a permanent good fit of the bathing wear 1 or 5 and widening or modification of the mesh openings 14 during wear or from body movements. The body thus experiences irradiation substantially all over in the sun with about 65% of the incident UV rays. In the region of the hems 4 or 8, 9 the tanning effect can be improved by slight shifting of the seam on the skin from time to time.

Figure 5 illustrates the fact that a knitted fabric 18 can be used with different mesh openings 19 and 20, namely octagonal larger mesh openings 19 and square smaller mesh openings 20, the larger mesh openings 19 being arranged in four rows 21 to 24 of mesh openings, which extend in four directions d, e, f, g which are at  $45^\circ$  to each other - i.e. with a uniform angular offset. In this case also there results a material which is elastic and able to stretch in four directions, with good tanning properties.

The printing 12 is effected with contrasting bright colours. For example six (possibly even more) different bright colours 25 to 30 are used, which contrast with each other. It can be seen from Figure 3 that the printed design provides comparatively small areas of the same colour, so that there is not only intensive coloration but also a strongly changing coloration. This results in the impression for human eyes that the material 10 which lies on the skin and is thus not lit through is not a net with a large proportion of its area in openings but is a dense material.



THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:

1. A material transmitting sunlight for bathing wear or light-protective clothing, including a mesh knitted fabric with mesh openings, which is printed with contrasting bright colours and cannot therefore be seen through when put on the skin, wherein the knitted fabric includes polyamide fibres and a polyurethane elastomer and has a honeycomb-like structure with rows of mesh openings which extend in at least three angularly offset directions.
2. A material transmitting sunlight according to claim 1, wherein the mesh openings are substantially hexagonal and arranged in rows of mesh openings which extend in three angularly offset directions.
3. A material transmitting sunlight according to claim 2, wherein all mesh openings have substantially the same shape and size.
4. A material transmitting sunlight according to claim 1, wherein the mesh openings are arranged in rows of mesh openings extending in four directions offset from one another.
5. A material transmitting sunlight according to any of claims 1 to 4, wherein the knitted fabric includes nylon and elastane.
6. A material transmitting sunlight according to any of claims 1 to 5, wherein the knitted fabric includes 60% to 80% polyamide fibres and 20% to 40% polyurethane elastomer.
7. A material transmitting sunlight according to claim 6, wherein the knitted fabric includes substantially 73% polyamide fibres and substantially 27% polyurethane.
8. A material transmitting sunlight according to any of claims 1 to 7, wherein the knitted fabric includes a polyamide thread with a count of 30 to 50 denier, preferably of about 40 denier.
9. A material transmitting sunlight according to any of claims 1 to 8, wherein the knitted fabric includes a polyurethane elastomer thread with a count of 250 to 300 denier, preferably of about 280 denier.
10. A material transmitting sunlight according to any of claims 1 to 9, wherein the knitted fabric has a mass per unit area of 120 to 200, preferably about 160 g per m<sup>2</sup>.



11. A material transmitting sunlight according to any of claims 1 to 10, wherein the clear mesh opening width amounts to 0.2 to 1.0 mm, preferably about 0.5 mm.

12. Bathing wear, includes a bathing suit, a bikini or bathing trunks, wherein it is made from a material transmitting sunlight according to any of claims 1 to 11.

13. Light-protective clothing, includes a T-shirt, leggings, cycling trousers, or Capri trousers, wherein it is made from a material transmitting sunlight according to any of claims 1 to 11.

14. A material transmitting sunlight substantially as hereinbefore described with respect to any one of the embodiments illustrated in the accompanying drawings.

DATED: 7 June, 1995

15 PHILLIPS ORMONDE & FITZPATRICK

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*David B Fitzpatrick*



40627/93

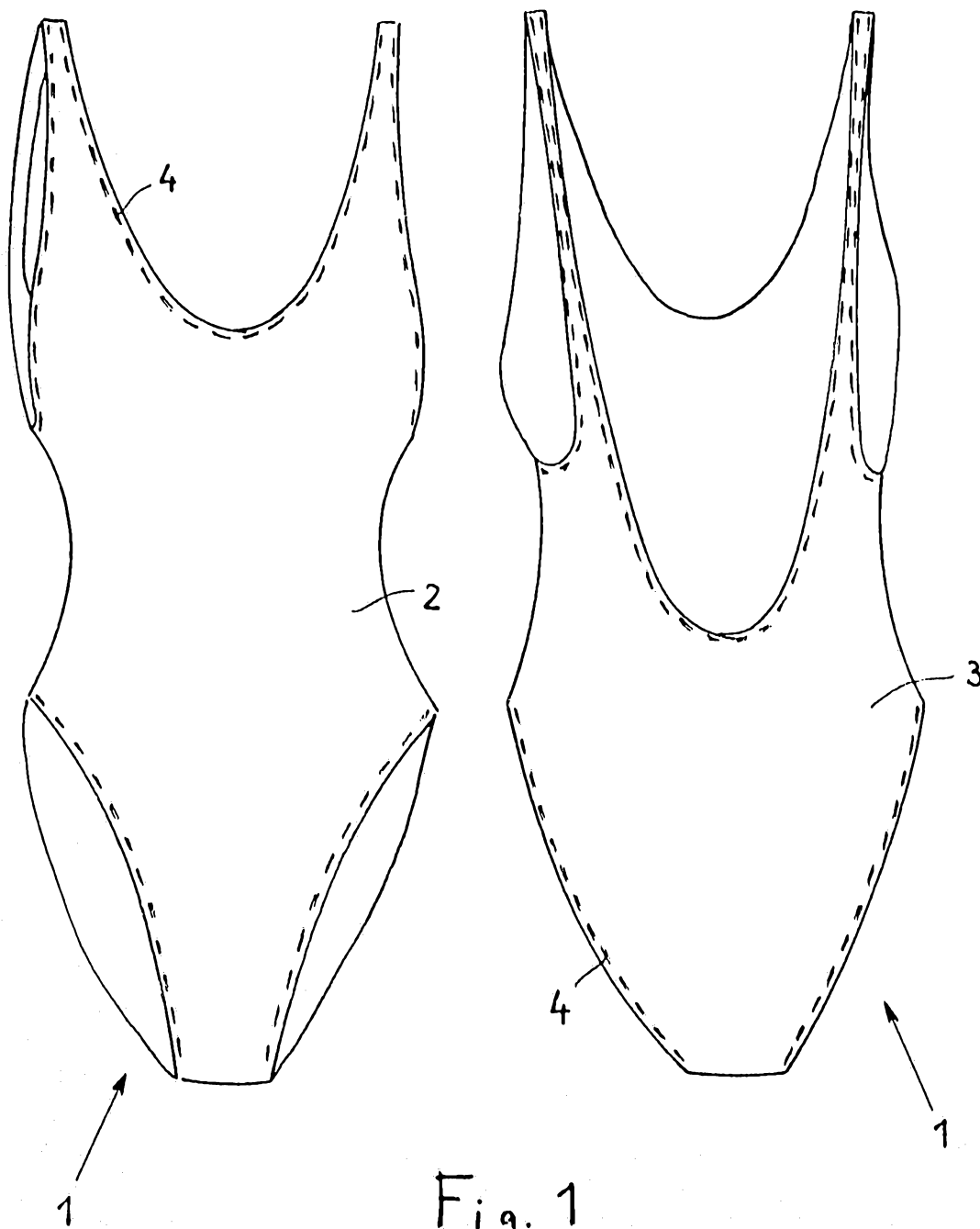


Fig. 1

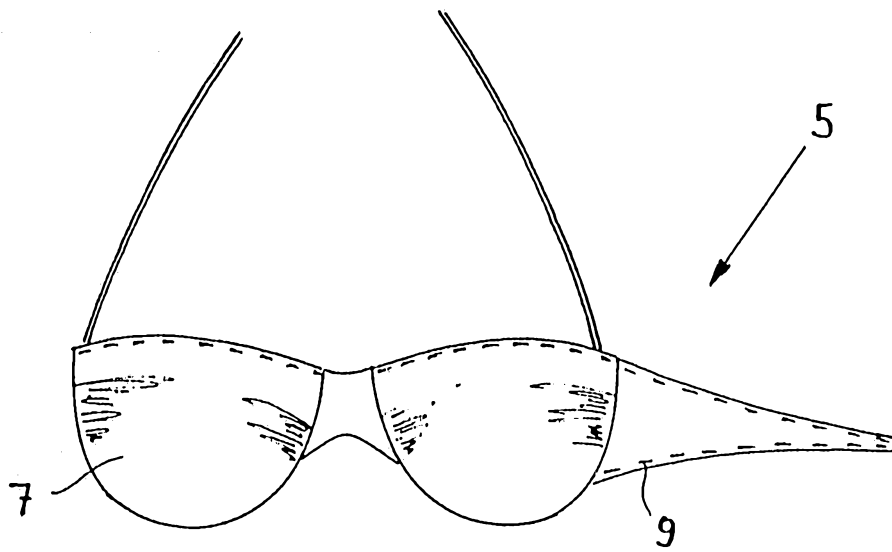


Fig. 2

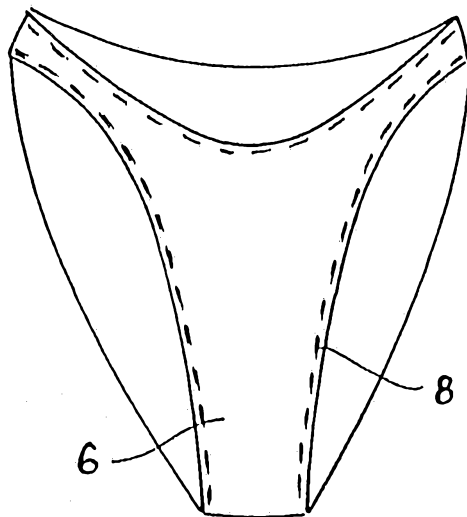




Fig. 3

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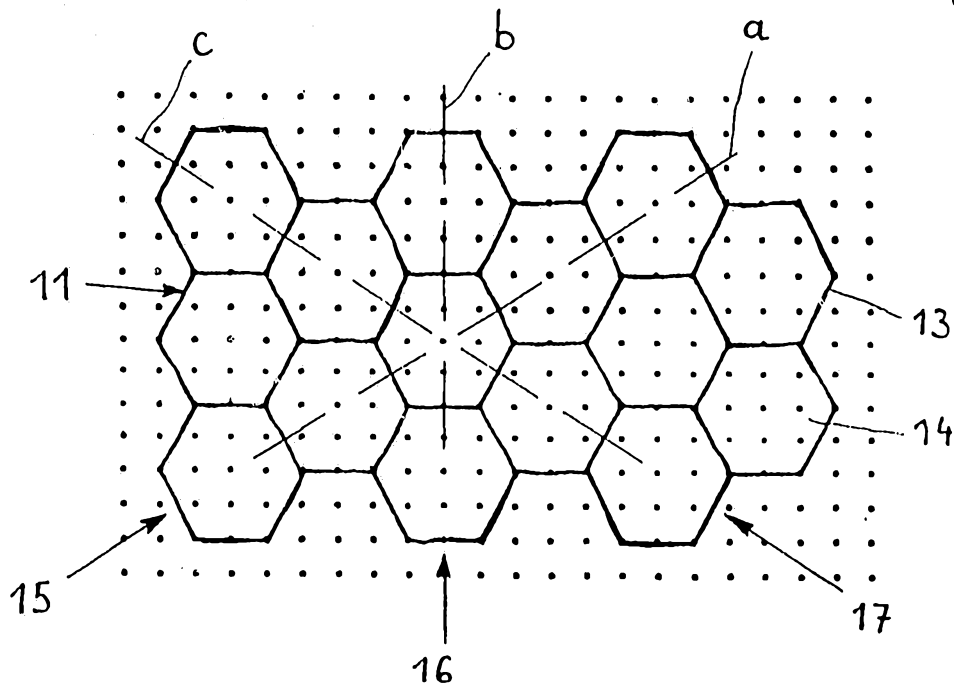


Fig. 4

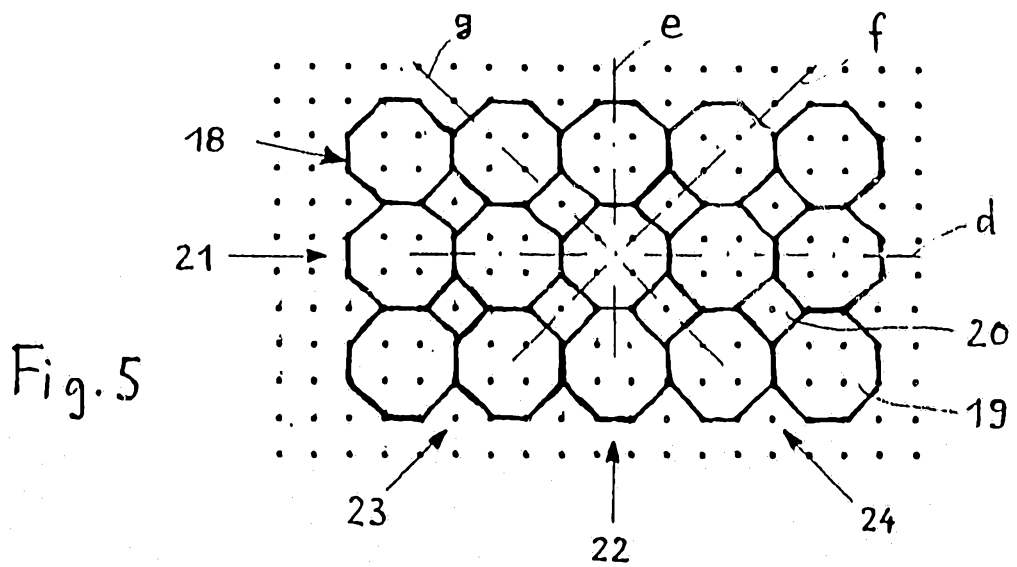


Fig. 5

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/EP 93/01024

## A. CLASSIFICATION OF SUBJECT MATTER

INT. CL.<sup>5</sup> A41D31/00; A41D7/00; D04B21/10

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)

INT. CL.<sup>5</sup> A41D ; D04B

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 practicable, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages                                                                                  | Relevant to claim No. |
|-----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|
| A         | DE, B, 1 209 072 (B. BOHNERT) 20 January 1966<br>see the whole document<br>---                                                                                      | 1-5, 12, 13           |
| A         | DATABASE WPIL<br>Section Ch, Week 8440,<br>Derwent Publications Ltd., London, GB;<br>Class A94, AN 84-247622<br>& JP, A, 59 150 142 (TOYOCO KK) see abstract<br>--- | 1                     |
| A         | DE, A, 1 760 606 (M. MEIER-MALETZ) 9 March 1972<br>see page 2, line 19 - page 3, line 19; claims 1, 6;<br>figures 1, 2, A-C<br>---                                  | 1-5, 12               |
| A         | CH, C, 492 412 (F. J. GREITER) 14 August 1970<br>see the whole document<br>---                                                                                      | 1                     |
| A         | US, A, 4 546 493 (K. A. BORTNICK) 15 October 1985<br>see column 2, line 66 - column 3, line 15;<br>figure 4<br>---                                                  | 1                     |

☐ Further documents are listed in the continuation of Box C.☐ See patent family annex.

\* 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

"L" 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

"&amp;" document member of the same patent family

Date of the actual completion of the international search

30 August 1993 (30.08.93)

Date of mailing of the international search report

17 September 1993 (17.09.93)

Name and mailing address of the ISA/

EUROPEAN PATENT OFFICE

Facsimile No.

Authorized officer

Telephone No.

**INTERNATIONAL SEARCH REPORT**

International application No.

**PCT/EP 93/01024****C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT**

| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|-----------|------------------------------------------------------------------------------------|-----------------------|
| A         | US, A, 3 389 582 (N. J. ALEXANDER)<br>25 June 1956<br><br>-----                    |                       |

**ANNEX TO THE INTERNATIONAL SEARCH REPORT  
ON INTERNATIONAL PATENT APPLICATION NO.**

EP 9301024  
SA 73404

This annex lists the patent family members relating to the patent documents cited in the above-mentioned international search report.  
The members are as contained in the European Patent Office EDP file on  
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information. 30/08/93

| Patent document<br>cited in search report | Publication<br>date | Patent family<br>member(s)                      | Publication<br>date              |
|-------------------------------------------|---------------------|-------------------------------------------------|----------------------------------|
| DE-B-1209072                              |                     | None                                            |                                  |
| DE-A-1760606                              | 09-03-72            | None                                            |                                  |
| CH-C-492412                               | 30-06-70            | DE-A- 1941732<br>FR-A- 2043801<br>GB-A- 1283410 | 07-01-71<br>19-02-71<br>26-07-72 |
| US-A-4546493                              | 15-10-85            | None                                            |                                  |
| US-A-3389582                              |                     | None                                            |                                  |

# INTERNATIONALER RECHERCHENBERICHT

Internationales Aktenzeichen

PCT/EP 93/01024

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|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|
| <b>I. KLASSEFIZKATION DES ANMELDUNGS-GEGENSTANDS</b> (bei mehreren Klassifikationssymbolen sind alle anzugeben) <sup>6</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                              |                                                    |
| Nach der Internationalen Patentklassifikation (IPC) oder nach der nationalen Klassifikation und der IPC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                              |                                                    |
| Int.Kl. 5 A41D31/00; A41D7/00; D04B21/10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                              |                                                    |
| <b>II. RECHERCHIERTE SACHGEBIETE</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                              |                                                    |
| Recherchierter Mindestprüfstoff <sup>7</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                              |                                                    |
| Klassifikationssystem                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Klassifikationssymbole                                                                                                                                                       |                                                    |
| Int.Kl. 5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | A41D ; D04B                                                                                                                                                                  |                                                    |
| Recherchierte nicht zum Mindestprüfstoff gehörende Veröffentlichungen, soweit diese unter die recherchierten Sachgebiete fallen <sup>8</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                              |                                                    |
| <b>III. EINSCHLAGIGE VERÖFFENTLICHUNGEN</b> <sup>9</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                              |                                                    |
| Art. <sup>9</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Kennzeichnung der Veröffentlichung <sup>11</sup> , soweit erforderlich unter Angabe der maßgeblichen Teile <sup>12</sup>                                                     | Betr. Anspruch Nr. <sup>13</sup>                   |
| A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | DE,B,1 209 072 (B. BOHNERT)<br>20. Januar 1966<br>siehe das ganze Dokument<br>---                                                                                            | 1-5, 12, 13                                        |
| A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | DATABASE WPIL<br>Section Ch, Week 8440,<br>Derwent Publications Ltd., London, GB;<br>Class A94, AN 84-24762<br>& JP,A,59 150 142 (TOYOBO KK)<br>siehe Zusammenfassung<br>--- | 1                                                  |
| A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | DE,A,1 760 606 (M. MEIER-MALETZ)<br>9. März 1972<br>siehe Seite 2, Zeile 19 - Seite 3, Zeile 19; Ansprüche 1,6; Abbildungen 1,2,A-C<br>---<br>-/--                           | 1-5, 12                                            |
| <p><sup>10</sup> Besondere Kategorien von angegebenen Veröffentlichungen <sup>10</sup> :</p> <p>"A" Veröffentlichung, die den allgemeinen Stand der Technik definiert, aber nicht als besonders bedeutsam anzusehen ist</p> <p>"E" Älteres Dokument, das jedoch erst am oder nach dem internationalen Anmeldedatum veröffentlicht worden ist</p> <p>"L" Veröffentlichung, die geeignet ist, einen Prioritätsanspruch zweifelhaft erscheinen zu lassen, oder durch die das Veröffentlichungsdatum einer anderen im Recherchenbericht genannten Veröffentlichung belegt werden soll oder die aus einem anderen besonderen Grund angegeben ist (wie ausgeführt)</p> <p>"O" Veröffentlichung, die sich auf eine mündliche Offenbarung, eine Benutzung, eine Ausstellung oder andere Maßnahmen bezieht</p> <p>"P" Veröffentlichung, die vor dem internationalen Anmeldedatum, aber nach dem beanspruchten Prioritätsdatum veröffentlicht worden ist</p> <p>"T" Spätere Veröffentlichung, die nach dem internationalen Anmeldedatum oder dem Prioritätsdatum veröffentlicht worden ist und mit der Anmeldung nicht kollidiert, sondern nur zum Verständnis des der Erfindung zugrundeliegenden Prinzips oder der ihr zugrundeliegenden Theorie angegeben ist</p> <p>"X" Veröffentlichung von besonderer Bedeutung; die beanspruchte Erfindung kann nicht als neu oder auf erfinderischer Tätigkeit beruhend betrachtet werden</p> <p>"Y" Veröffentlichung von besonderer Bedeutung; die beanspruchte Erfindung kann nicht als auf erfinderischer Tätigkeit beruhend betrachtet werden, wenn die Veröffentlichung mit einer oder mehreren anderen Veröffentlichungen dieser Kategorie in Verbindung gebracht wird und diese Verbindung für einen Fachmann nahelegend ist</p> <p>"&amp;" Veröffentlichung, die Mitglied derselben Patentfamilie ist</p> |                                                                                                                                                                              |                                                    |
| <b>IV. BESCHIEINIGUNG</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                              |                                                    |
| Datum des Abschlusses der internationalen Recherche                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                              | Absenddatum des internationalen Recherchenberichts |
| 30.AUGUST 1993                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                              | 17. 09. 93                                         |
| Internationale Recherchenbehörde                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                              | Unterschrift des bevollmächtigten Bediensteten     |
| EUROPAISCHES PATENTAMT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                              | FAIRBANKS S.A.                                     |

# INTERNATIONALER RECHERCHENBERICHT

Internationales Aktenzeichen

PCT/EP 93/01024

| III. EINSCHLAGIGE VERÖFFENTLICHUNGEN (Fortsetzung von Blatt 2) |                                                                                                                          |                    |
|----------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|--------------------|
| Art °                                                          | Kennzeichnung der Veröffentlichung, soweit erforderlich unter Angabe der maßgeblichen Teile                              | Betr. Anspruch Nr. |
| A                                                              | CH,C,492 412 (F. J. GREITER)<br>14. August 1970<br>siehe das ganze Dokument<br>---                                       | 1                  |
| A                                                              | US,A,4 546 493 (K. A. BORTNICK)<br>15. Oktober 1985<br>siehe Spalte 2, Zeile 66 - Spalte 3, Zeile 15; Abbildung 4<br>--- | 1                  |
| A                                                              | US,A,3 389 582 (N. J. ALEXANDER)<br>25. Juni 1956<br>-----                                                               |                    |

**ANHANG ZUM INTERNATIONALEN RECHERCHENBERICHT  
ÜBER DIE INTERNATIONALE PATENTANMELDUNG NR.**

EP 9301024  
SA 73404

In diesem Anhang sind die Mitglieder der Patentfamilien der im obengenannten internationalen Recherchenbericht angeführten Patentedokumente angegeben.

Die Angaben über die Familienmitglieder entsprechen dem Stand der Datei des Europäischen Patentamts am

30/08/93

| Im Recherchenbericht<br>angeführtes Patentedokument | Datum der<br>Veröffentlichung | Mitglied(er) der<br>Patentfamilie | Datum der<br>Veröffentlichung |
|-----------------------------------------------------|-------------------------------|-----------------------------------|-------------------------------|
| DE-B-1209072                                        |                               | Keine                             |                               |
| DE-A-1760606                                        | 09-03-72                      | Keine                             |                               |
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