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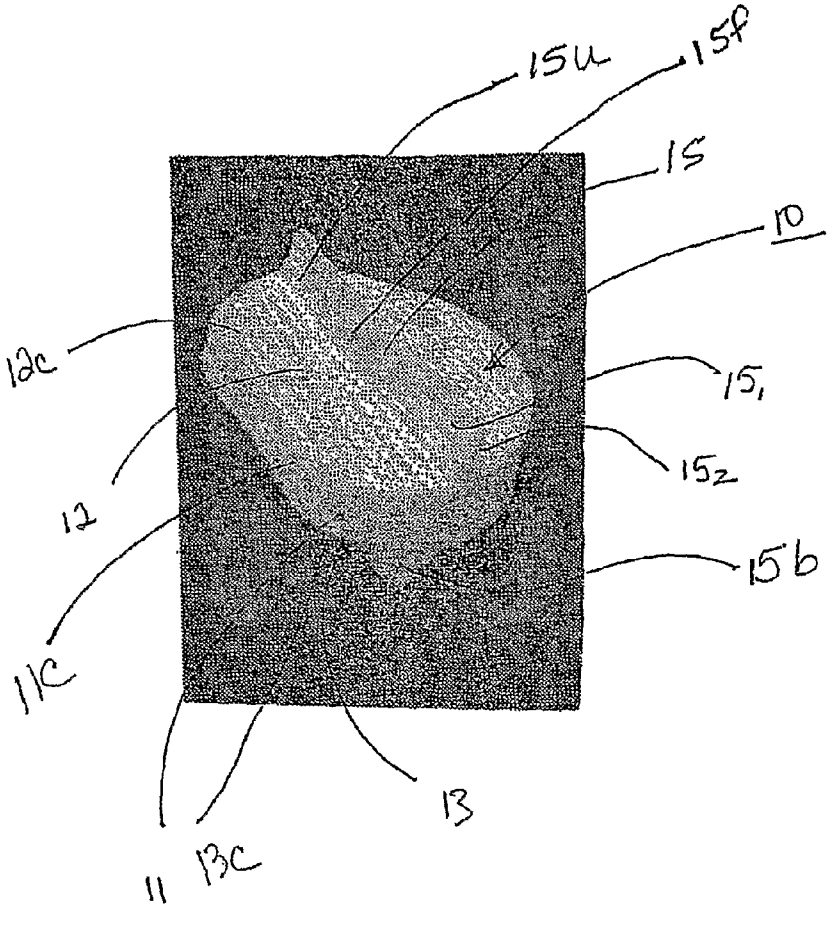
*[Continued on next page]*

(54) Title: METHODS OF PRODUCING PVA HYDROGEL IMPLANTS AND RELATED DEVICES

(57) Abstract: Methods of fabricating elastomeric implants employ a mold with PVA crystals and irrigant added to the mold independent of each other. Related molds are also described.

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FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

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# INTERNATIONAL SEARCH REPORT

International application No
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A. CLASSIFICATION OF SUBJECT MATTER
INV. A61F2/30 A61F2/44 A61L27/52

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)
A61F A61L

*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)
EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|---|---|---|
| X | EP 0 505 634 A1 (KYOCERA CORP [JP]; BIOMATERIAL UNIVERSE KK [JP])<br>30 September 1992 (1992-09-30)<br>page 6, line 40 - line 51<br>page 7, line 12 - line 52 | 1,3 |
| Y | figures 2-4 | 11,13 |
| Y | EP 0 919 209 A (HOWMEDICA [US])<br>2 June 1999 (1999-06-02)<br>paragraphs [0029], [0030] | 11,13 |
| X | WO 93/16664 A (LIMBS & THINGS LTD [GB])<br>2 September 1993 (1993-09-02)<br>page 3, line 26 - page 4, line 28 | 5 |
| Y | figures 5-11 | 7-9 |

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[X] Further documents are listed in the continuation of Box C.

[X] 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

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"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

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| Date of the actual completion of the international search | Date of mailing of the international search report |
|---|---|
| 4 October 2007 | 12/10/2007 |

| Name and mailing address of the ISA/ | Authorized officer |
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| European Patent Office, P.B. 5818 Patentlaan 2<br>NL - 2280 HV Rijswijk<br>Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,<br>Fax: (+31-70) 340-3016 | Storer, John |

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International application No
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C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|---|---|---|
| X | US 2005/055099 A1 (KU DAVID N [US])<br>10 March 2005 (2005-03-10)<br>cited in the application<br>paragraph [0033]<br>paragraph [0041]<br>paragraph [0045] - paragraph [0046] | 21,22,29 |
| Y | figure 5 | 7-9 |
| A | US 2005/287187 A1 (MANSMANN KEVIN A [US])<br>29 December 2005 (2005-12-29)<br>abstract<br>paragraph [0057] - paragraph [0059]<br>paragraph [0130] - paragraph [0135]<br>figure 1 | |
| A | WO 01/22902 A (STOY VLADIMIR A [US])<br>5 April 2001 (2001-04-05)<br>page 31, line 1 - line 11<br>page 59, line 9 - page 60, line 7 | |

# INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2007/001929

## Box II Observations where certain claims were found unsearchable (Continuation of item 2 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 III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

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

see additional sheet

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 PCT/ISA/ 210**

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-4,11-13

A method of fabricating an implantable prosthesis, comprising:
placing an inferior mesh layer on a floor of a three-dimensional mould;
introducing mouldable material into the mould onto the inferior mesh layer;
placing a superior mesh layer on a top surface of the mouldable material in the mould; then
closing the mould;
pushing any excess mouldable material out of the mould in response to the closing step; and
heating the mould with the mouldable material to a desired temperature so that the mould is heated to at least about 80°C for at least about 5 minutes; then
forming a moulded implant body formed by the heated mouldable material whereby the mesh layers are integrally attached to the moulded body formed by the mouldable material.

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2. claims: 5-10,14-29

A method of fabricating a medical implant, comprising:
placing a lid on a mould to substantially close a mould cavity;
introducing a quantity of PVA material into the mould cavity before or after the placing step;
inserting a quantity of liquid through a vent path extending through the mould lid after the lid is placed on the mould whereby the liquid enters the mould and contacts the PVA material; then
sealing the vent path; then
heating the mould for a desired time and temperature so that the PVA and liquid reach a desired temperature and form a moulded body;
cooling the mould with the moulded body after the heating step; and
forming a medical PVA hydrogel implant.

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# INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No
PCT/US2007/001929

| Patent document cited in search report | Publication date | Patent family member(s) | Publication date |
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