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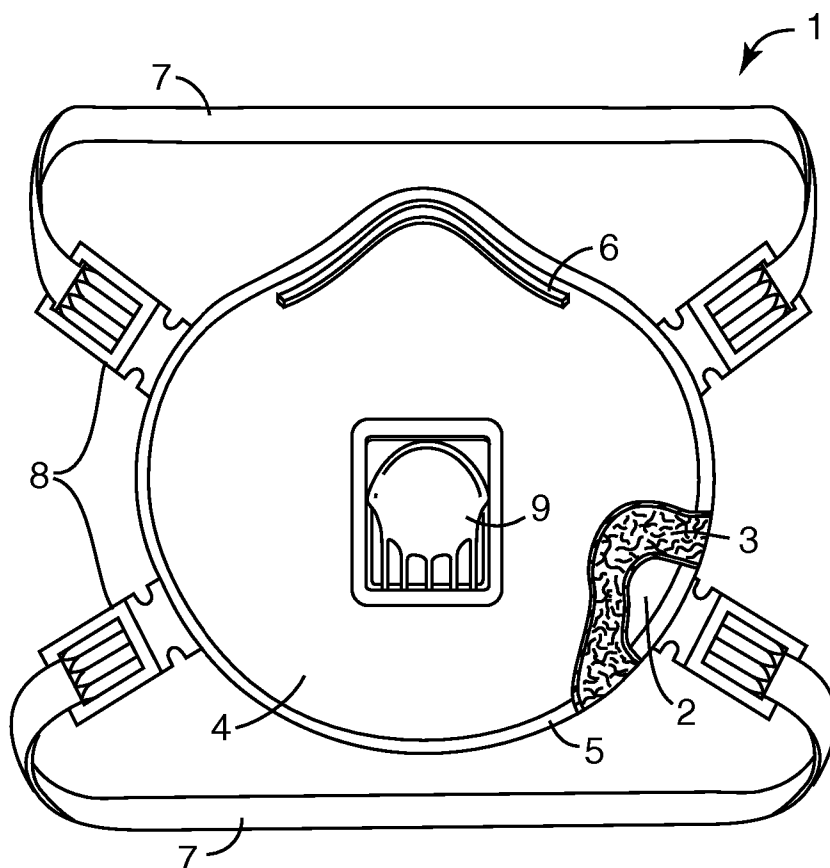
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[Continued on next page]

(54) Title: MOLDED MONOCOMPONENT MONOLAYER RESPIRATOR



(57) Abstract: A molded respirator is made from a monocomponent monolayer nonwoven web of continuous charged monocomponent meltspun partially crystalline and partially amorphous oriented fibers of the same polymeric composition that have been bonded to form a coherent and handleable web which further may be softened while retaining orientation and fiber structure. The respirator is a cup-shaped porous monocomponent monolayer matrix whose matrix fibers are bonded to one another at at least some points of fiber intersection. The matrix has a King Stiffness greater than 1 N. The respirator may be formed without requiring stiffening layers, bicomponent fibers, or other reinforcement in the filter media layer.



**Declarations under Rule 4.17:**

- *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*
- *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))*
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

**Published:**

- *with international search report*

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## INTERNATIONAL SEARCH REPORT

International application No.  
**PCT/US2007/073647****A. CLASSIFICATION OF SUBJECT MATTER****A62B 7/00(2006.01)i**

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 8 : A62B 7/00, B01D 24/00, D04H 3/00, B32B 27/34, B29B 9/10

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Korean Utility models and applications for Utility models since 1975

Japanese Utility models and applications for Utility models since 1975

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

eKIPASS(KIPO internal) &amp; keyword: mask, fiber, crystalline, amorphous, and similar terms

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

| Category* | Citation of document, with indication, where appropriate, of the relevant passages                      | Relevant to claim No. |
|-----------|---|-----------------------|
| A         | US 5681469 A (STEVEN D. BARBOZA et al.) 28 October 1997<br>See columns 3-7; figures 1-6.                | 1-18                  |
| A         | US 5993943 A (HASSAN BODAGHI et al.) 30 November 1999<br>See columns 4-12; figures 1, 2, and 6.         | 1-18                  |
| A         | US 5582907 A (DAVID B. PALL) 10 December 1996<br>See columns 7-11; figures 4-9.                         | 1-18                  |
| A         | US 6315806 B1 (LEONARD TOROBIN; RICHARD C. FINDLOW) 13 November 2001<br>See columns 10-16; figures 1-9. | 1-18                  |

☐ 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

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"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

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Date of mailing of the international search report

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**INTERNATIONAL SEARCH REPORT**

Information on patent family members

International application No.

**PCT/US2007/073647**

| Patent document<br>cited in search report | Publication<br>date | Patent family<br>member(s)  | Publication<br>date  |
|---|---------------------|---|--|
| US 5681469 A                              | 28. 10. 1997        | None  |  |
| -----                                     |                     |   |  |
| US 5993943 A                              | 30. 11. 1999        | None  |  |
| -----                                     |                     |   |  |
| US 5582907 A                              | 10. 12. 1996        | AU 1995-32768 A1<br>EP 0772484 B1<br>EP 0772484 A1<br>EP 0772484 A4<br>JP 10-508343 T2<br>JP 2006-037339 A2<br>US 5582907 A<br>US 5586997 A<br>US 5652050 A<br>US 5714073 A<br>US 5846438 A<br>US 6074869 A<br>WO 96-03194 A1 | 22. 02. 1996<br>27. 02. 2008<br>14. 05. 1997<br>02. 12. 1998<br>18. 08. 1998<br>09. 02. 2006<br>10. 12. 1996<br>24. 12. 1996<br>29. 07. 1997<br>03. 02. 1998<br>08. 12. 1998<br>13. 06. 2000<br>08. 02. 1996 |
| -----                                     |                     |   |  |
| US 6315806 B1                             | 13. 11. 2001        | None  |  |