

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

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
14 March 2002 (14.03.2002)

PCT

(10) International Publication Number
WO 02/020133 A3

(51) International Patent Classification⁷: **B01D 46/52**,
46/24, 39/16

(21) International Application Number: PCT/US01/25111

(22) International Filing Date: 10 August 2001 (10.08.2001)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/230,138 5 September 2000 (05.09.2000) US
09/871,575 31 May 2001 (31.05.2001) US

(71) Applicant: **DONALDSON COMPANY, INC.** [US/US];
1400 West 94th Street, P.O. Box 1299, Minneapolis, MN
55440-1299 (US).

(72) Inventors: **GOGINS, Mark, A.**; 806 Millwood Avenue,
Roseville, MN 55113 (US). **WEIK, Thomas, M.**; 18870
Azure Road, Deephaven, MN 55391 (US).

(74) Agent: **DAIGNAULT, Ronald, A.**; Merchant & Gould
P.C., P.O. Box 2903, Minneapolis, MN 55402-0903 (US).

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU,
AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU,
CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,
GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,
LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW,
MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK,
SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW.

(84) Designated States (*regional*): ARIPO patent (GH, GM,
KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian
patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European
patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE,
IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF,
CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD,
TG).

Published:

- with international search report
- before the expiration of the time limit for amending the
claims and to be republished in the event of receipt of
amendments

(88) Date of publication of the international search report:
21 November 2002

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: AIR FILTER ASSEMBLY FOR FILTERING AN AIR STREAM TO REMOVE PARTICULATE MATTER
ENTRAINED IN THE STREAM

(57) Abstract: Filter arrangements for industrial air cleaners include a barrier media, usually pleated, treated with a deposit of fine fiber. The media is particularly advantageous in high temperature (greater than 140 °F) operating environments.



WO 02/020133 A3

INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 01/25111

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 B01D46/52 B01D46/24 B01D39/16

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 7 B01D

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)

WPI Data, PAJ, EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 6 090 173 A (S.A. JOHNSON ET AL.) 18 July 2000 (2000-07-18) cited in the application the whole document ---	1,45-55
A	DE 299 07 699 U (FIBERMARK GESSNER) 5 August 1999 (1999-08-05) page 4, line 3 - page 5, line 12; claim 1 ---	1-5
A	US 5 672 399 A (B. KAHLBAUGH ET AL.) 30 September 1997 (1997-09-30) the whole document ---	1
A	US 4 900 671 A (A.R. POKORA ET AL.) 13 February 1990 (1990-02-13) column 7, line 2 - line 12; figure 1 --- -/--	27-31



Further documents are listed in the continuation of box C.



Patent family members are listed in 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.
- *Z* document member of the same patent family

Date of the actual completion of the international search

23 September 2002

Date of mailing of the international search report

30/09/2002

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

Bertram, H

INTERNATIONAL SEARCH REPORT

International Application No
PCT/US 01/25111

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 4 650 506 A (M.A.BARRIS ET AL.) 17 March 1987 (1987-03-17) the whole document -----	1-5

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US 01/25111

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 6090173	A	18-07-2000	CN 1311708 T EP 1100608 A1 JP 2002522194 T WO 0007694 A1	05-09-2001 23-05-2001 23-07-2002 17-02-2000
DE 29907699	U	05-08-1999	DE 29907699 U1	05-08-1999
US 5672399	A	30-09-1997	WO 9916534 A1 US 2001003082 A1 US 6165572 A US 6171684 B1 AU 4655897 A BR 9714928 A EP 1028794 A1 JP 2001518378 T	08-04-1999 07-06-2001 26-12-2000 09-01-2001 23-04-1999 06-03-2001 23-08-2000 16-10-2001
US 4900671	A	13-02-1990	US 4647952 A AT 78435 T AT 124970 T DE 3650351 D1 DE 3650351 T2 DE 3686153 D1 DE 3686153 T2 EP 0245365 A1 EP 0355868 A2 JP 6068017 B JP 63502079 T WO 8702939 A1 US 5153298 A	03-03-1987 15-08-1992 15-07-1995 17-08-1995 21-12-1995 27-08-1992 07-01-1993 19-11-1987 28-02-1990 31-08-1994 18-08-1988 21-05-1987 06-10-1992
US 4650506	A	17-03-1987	NONE	