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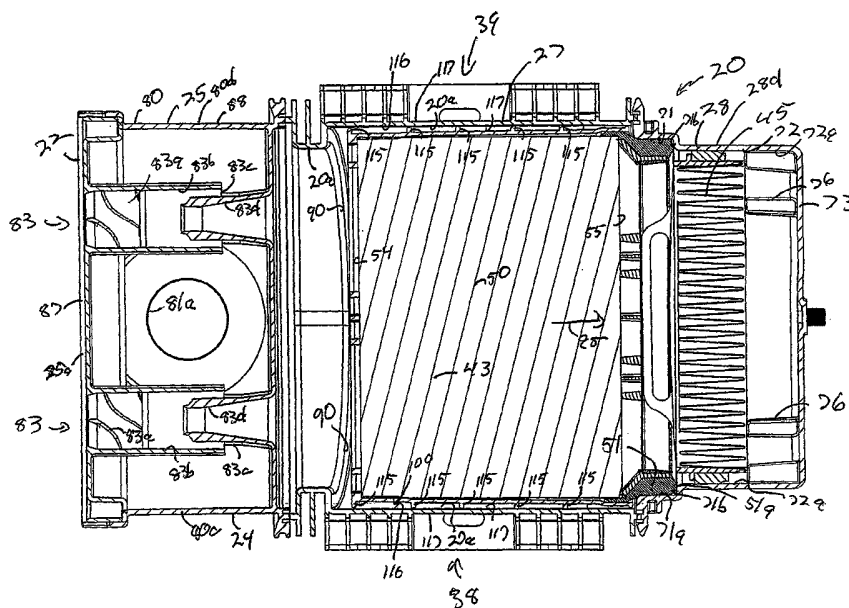
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[Continued on next page]

(54) Title: FILTER ARRANGEMENTS; HOUSINGS; ASSEMBLIES; AND, METHODS



(57) Abstract: An air cleaner and preferred components for an air cleaner are provided. In one arrangement, the air cleaner includes a band or cassette component, configured for removably receiving a z-filter media pack therein, during use. In another arrangement, the band is permanently mounted of the media pack. Air cleaner arrangements configured for use of the cassette or band therewith included an arrangement with a central housing section for receipt of the main filter cartridge and cassette, and which has thereon a mounting arrangement with 3 mountable sides. Preferred precleaner arrangements and outlet tube arrangements can be secured to the center housing section.



FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO,
SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN,
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INTERNATIONAL SEARCH REPORT

International Application No
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A. CLASSIFICATION OF SUBJECT MATTER
B01D46/24 B01D46/52

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)
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)

EPO-Internal, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 1 364 695 A (MANN + HUMMEL GMBH) 26 November 2003 (2003-11-26) the whole document	1-24
A	WO 03/084641 A (DONALDSON COMPANY, INC) 16 October 2003 (2003-10-16) the whole document	1, 13
A	WO 03/095068 A (DONALDSON COMPANY, INC; NEPSUND, LARRY, R; KUEMPEL, BRADLEY, A; ENGEL,) 20 November 2003 (2003-11-20) cited in the application the whole document	1, 13, 19-24



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.

"&" document member of the same patent family

Date of the actual completion of the international search

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2005/014909

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.:
1-24
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: 1-12

An air cleaner filter cartridge arrangement comprising:

- a media pack with flutes and an oval cross-sectional shape;
 - a radially directed housing seal arrangement secured to an end of the media pack;
 - a band defining an interior and having the media pack positioned therein; the band having a ramp-engaging end portion being at an end of the media pack; and the band having a projection arrangement to provide for grasping of the band during handling.
-

2. claims: 13-24

An air cleaner assembly comprising:

- a housing including an inlet section; a central main filter cartridge receiving section; and an outlet section;
 - an air filter cartridge including a media pack positioned within the central main filter cartridge receiving section;
- A method of installing an air filter cartridge into an air cleaner housing through a side service access opening in the air cleaner.
-

3. claim: 25

A safety element for use in an air cleaner assembly; the safety element comprising:

- a pre-formed outer skirt having two opposite curved ends, and two, opposite, sides;
 - pleated media positioned surrounded by the skirt;
 - a radial seal positioned on the skirt; and
 - a projection extending outwardly from a first one of the curved ends in a direction opposite a second one of the curved ends, by a distance of at least 5 mm.
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INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US2005/014909

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