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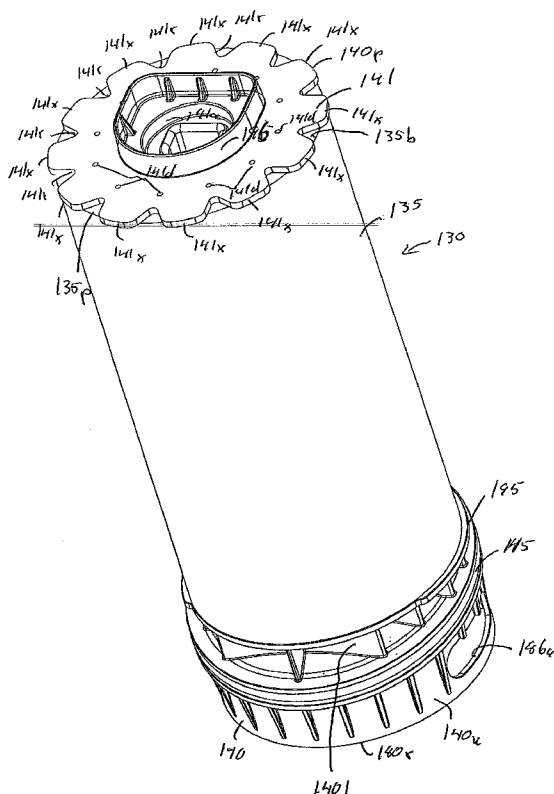
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[Continued on next page]

(54) Title: CRANKCASE VENTILATION FILTER ARRANGEMENTS; COMPONENTS; AND, METHODS

FIG. 11



(57) Abstract: A crankcase ventilation filter assembly and components therefor, are described. In an example arrangement, the crankcase ventilation filter assembly is configured to be serviced from either the top or the bottom. A rotational indexing arrangement is to ensure appropriate orientation of an internally received filter cartridge, and other components of the arrangement are provided. Methods of assembly, servicing and use are described.



FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL,
NO, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG,
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A. CLASSIFICATION OF SUBJECT MATTER
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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 F01M

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.
A	WO 2007/053411 A (DONALDSON CO INC [US]; MOSSET WADE STEPHEN [US]; DAHLSTROM ROBERT LAWR) 10 May 2007 (2007-05-10) the whole document -----	1, 27, 30, 31
A	WO 2005/063358 A (DONALDSON CO INC [US]; SCHIAVON ANGELO [IT]; CANTONI MAURO [IT]; ZANET) 14 July 2005 (2005-07-14) the whole document -----	1, 27, 30, 31
A	WO 2004/045743 A (DONALDSON CO INC [US]; GIESEKE STEVEN SCOTT [US]; DUSHEK ROBERT A [US]) 3 June 2004 (2004-06-03) the whole document -----	1, 27, 30, 31
A	US 2005/193694 A1 (GIESEKE STEVEN S [US] ET AL) 8 September 2005 (2005-09-08) the whole document -----	36, 51, 54, 56
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☒ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

* Special categories of cited documents :

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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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- * & * document member of the same patent family

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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.
A	US 2003/051455 A1 (GIESEKE STEVEN S [US] ET AL) 20 March 2003 (2003-03-20) the whole document -----	36, 51, 54, 56
A	US 2007/084157 A1 (HEIKAMP WOLFGANG [DE] ET AL) 19 April 2007 (2007-04-19) the whole document -----	36, 51, 54, 56
A	GB 2 106 410 A (SUGIURA EIICHI [JP]) 13 April 1983 (1983-04-13) the whole document -----	36, 51, 54, 56
A	US 4 011 846 A (GAGLIARDI JOSEPH F) 15 March 1977 (1977-03-15) the whole document -----	36

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2008/066757

Box No. 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 No. 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 allsearchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fees, this Authority did not invite payment of additional fees.
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 and, where applicable, the payment of a protest fee.
- ☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- ☐ 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: 1-35

A crankcase ventilation filter cartridge comprising a non-circular seal perimeter and other details of form

2. claim: 36 to 57

Crankcase ventilation filter and method of assembling, comprising a housing top and a housing bottom being removably secured over the housing body.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2008/066757

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