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[Continued on next page]

(54) Title: MULTISTAGE SEPARATION SYSTEM

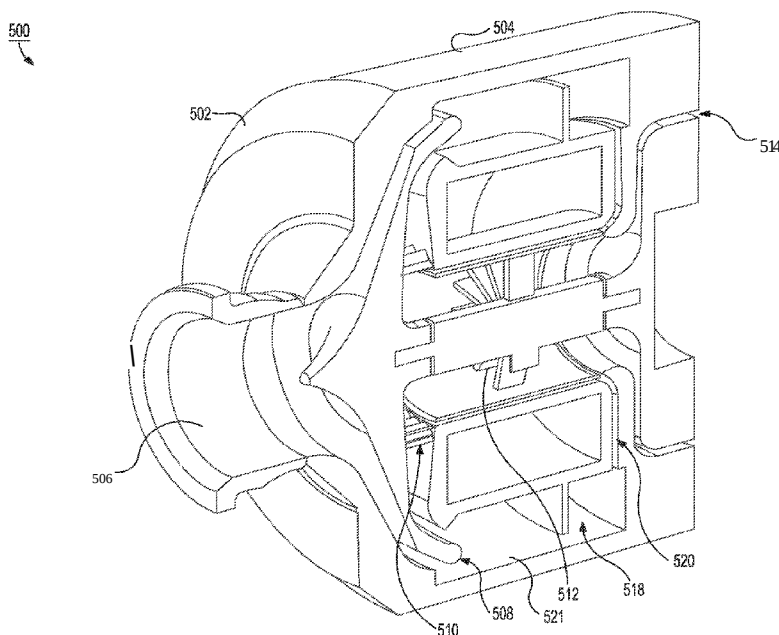


FIG. 5

(57) Abstract: A "bolt on" static separator is disclosed for use in conjunction with a rotating separator to handle higher liquid volumes that are not able to be effectively separated by the rotating separator alone. The static separator may be positioned upstream of the rotating separator, generally right in front of the rotating separator, i.e., immediately ahead of the inlet to the rotating separator and generally attached directly to the front end of the rotary separator. The static separator may include a significant change in flow path direction that is sufficient to cause coarse fluid separation. The output of the static separator is in communication with the input of the rotating separator. Additionally, the drain of the static separator is in communication with the drain of the rotating separator and is at the same pressure.

- before the expiration of the time limit for amending the (88) Date of publication of the international search report
claims and to be republished in the event of receipt of amendments (Rule 48.2(h)) 1' .2

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US20 11/042235**A. CLASSIFICATION OF SUBJECT MATTER****BOW 19/00(2006.01)i, BOW 17/038(2006.01)i, B04B 5/00(2006.01)1**

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 19/00; B01D 36/00; B63H 9/06; F04D 29/70; B01D 45/12

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 practicable, search terms used)

eKOMPASS(KIPO internal) & Keywords: separation, multistage, compressor, shaft, static, rotary

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	w0 2009-111616 A2 (DRESSER-RAND COMPANY et al.) 11 September 2009 See abstract , paragraphs [0012] , [0024] -[0031] , claims 1-23 and figures 1-6	1-18
A	w0 2008-036394 A2 (DRESSER-RAND COMPANY et al.) 27 March 2008 See abstract , claims 1-34 and figures 1-3	1-18
A	US 2007-0062374 A1 (KOLLE, JACK J.) 22 March 2007 See abstract , paragraphs [0040] -[0058] , claims 1-13 and figures 1-10	1-18
A	w0 2007-103248 A2 (DRESSER-RAND COMPANY et al.) 13 September 2007 See abstract , claims 1-29 and figures 1-13	1-18
A	US 2009-0324391 A1 (MAIER WILLIAM C.) 31 December 2009 See abstract , claims 1-21 and figures 1-5	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

"E" earlier application or patent but published on or after the international filing date

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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

"&" document member of the same patent family

Date of the actual completion of the international search

28 FEBRUARY 2012 (28.02.2012)

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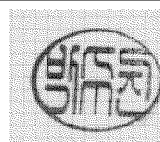
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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US2011/042235

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.: 19-31
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:

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 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.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/US2011/042235

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