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(30) Priority: **02.11.2017 US 201762580719 P**

(54) **OPPOSED SCREW COMPRESSOR WITH STAGGERED SCREW ROTOR**

(57) A rotor for use in a fluid machine includes a rotor shaft, a first portion supported by the rotor shaft and having a plurality of first lobes, and a second portion supported by the rotor shaft having a plurality of second lobes. The plurality of first lobes at an inwardly facing end

of the first portion is arranged at a stagger angle relative to the plurality of second lobes at an inwardly facing end of the second portion. The stagger angle is greater than zero.

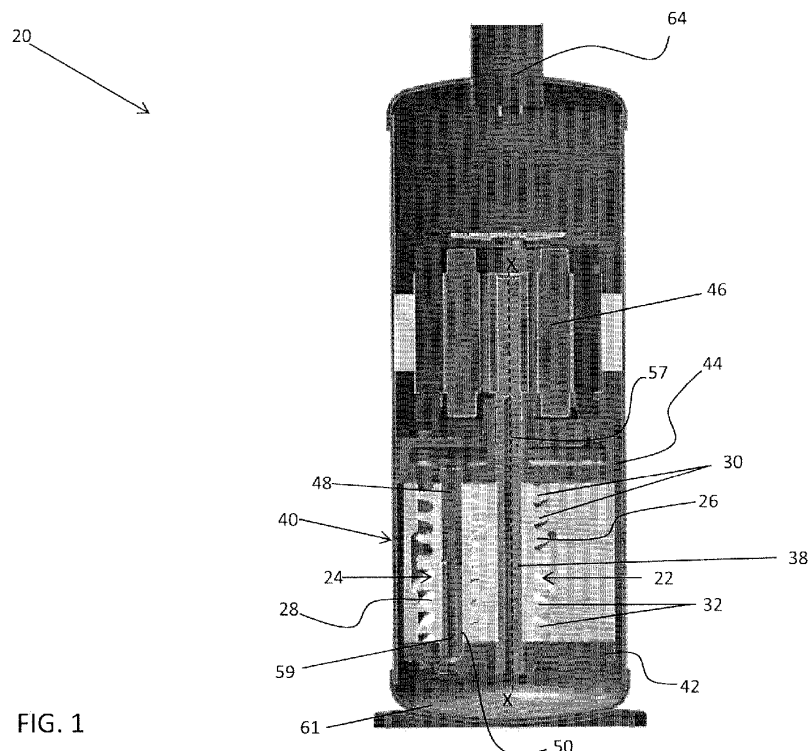


FIG. 1

**PARTIAL EUROPEAN SEARCH REPORT**

Application Number

under Rule 62a and/or 63 of the European Patent Convention.
This report shall be considered, for the purposes of
subsequent proceedings, as the European search report

EP 18 20 3805

DOCUMENTS CONSIDERED TO BE RELEVANT

| Category | Citation of document with indication, where appropriate, of relevant passages | Relevant to claim | CLASSIFICATION OF THE APPLICATION (IPC) |
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| X | DE 10 2013 010886 A1 (O'CONNOR BRIAN J [US]) 9 January 2014 (2014-01-09) * abstract; figures 7-9 * | 1-8 | INV. F04C18/16 F04C23/00 |
| X | FR 894 018 A (M. VAN DER GRAAF) 12 December 1944 (1944-12-12) * page 3, line 9 - line 14; figure 1 * | 1-8 | |
| X | WO 2005/047706 A1 (BOC GROUP PLC [GB]; TUNNA CLIVE MARCUS LLOYD [GB] ET AL.) 26 May 2005 (2005-05-26) * abstract; figure 8 * | 1-8 | |
| X | US 5 478 210 A (MARUYAMA TERUO [JP] ET AL) 26 December 1995 (1995-12-26) * abstract; figure 3 * | 1-8 | |
| X | US 6 655 938 B2 (EBARA CORP [JP]) 2 December 2003 (2003-12-02) * abstract; figure 3 * | 1-8 | |
| | | | TECHNICAL FIELDS SEARCHED (IPC) |
| | | | F04C |

INCOMPLETE SEARCH

The Search Division considers that the present application, or one or more of its claims, does/do not comply with the EPC so that only a partial search (R.62a, 63) has been carried out.

Claims searched completely :

Claims searched incompletely :

Claims not searched :

Reason for the limitation of the search:

see sheet C

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|---|----------------------------------|-------------------|
| Place of search | Date of completion of the search | Examiner |
| Munich | 11 July 2019 | Alquezar Getan, M |
| CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document | | |

EPO FORM 1503 03.82 (P04E07)

**INCOMPLETE SEARCH
SHEET C**

Application Number

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Claim(s) completely searchable:

1-8

Claim(s) not searched:

9-15

Reason for the limitation of the search:

The main request to carry out the search on the whole claimed subject-matter as indicated by the applicant in his reply to the invitation pursuant to Rule 62a(1) EPC is not granted.

The allegation, that independent claims 1 and 9 relate to alternative solutions to the same technical problem admissible under Rule 43(2)(c) EPC, is not convincing.

An exception within the meaning of Rule 43(2)(c) EPC can only be accepted if these alternatives cannot be covered by a single independent claim, however this is not the case. The core solution to the technical problem as defined in the application has not been included in the claimed subject-matter, if it had been included, the alternatives of claims 1 and 9 could have been drafted together under a common independent claim.

The search has been restricted to the subject-matter of claim 1 and its dependent claims.

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82