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VOLPE AND KOENIG, P.C. UNITED PLAZA 30 SOUTH 17TH STREET PHILADELPHIA, PA 19103			COLEMAN, ALONZO N	
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

eoffice@volpe-koenig.com



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**DETAILED ACTION*****Information Disclosure Statement***

The information disclosure statement (IDS) submitted on 26 July 2010 was filed before the mailing date of the First Action on the Merits (FAOM). The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

***Drawings***

The drawings are objected to under 37 CFR 1.83(a) because they fail to show the start-up and run-down bearings (7) on Fig. 3 as described in the specification. (page 5, lines 12-15) Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 112***

The following is a quotation of 35 U.S.C. 112(b):

(B) CONCLUSION.—The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the inventor or a joint inventor regards as the invention.

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The following is a quotation of 35 U.S.C. 112 (pre-AIA), second paragraph:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1, 12, 16 are rejected under 35 U.S.C. 112(b) or 35 U.S.C. 112 (pre-AIA), second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the inventor or a joint inventor, or for pre-AIA the applicant regards as the invention.

Regarding claims 1, 12, and 16, the phrase "such as" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

Claim 2 is rejected under 35 U.S.C. 112(b) or 35 U.S.C. 112 (pre-AIA), second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the inventor or a joint inventor, or for pre-AIA the applicant regards as the invention.

The term "same principle" in claim 2 is a relative term which renders the claim indefinite. The term "same principle" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. The degree of rigidity and damping cannot be specified by the term "same principle".

#### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-13, 15-16 are rejected under 35 U.S.C. 102(b) as being anticipated by STANGELAND (US 5310265).

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Regarding claim 1, Stangeland discloses, a bearing system for a rotor in a turbine, the rotor being provided with at least two bearings (2) and associated seals (9) wherein each bearing and sealing point for the rotor is in the form of a bearing and seal combination which is formed of a stator located within a rotating machine housing and surrounding the rotor wherein the stator is formed with a bore (C), whereby an annular clearance is formed between the stator and rotor, and wherein the bore has a gradually increasing (c-delta c) sectional area in the direction of higher pressure (10) within the rotating machine, wherein the stator is provided with means adapted for damping of gas rotation in the annular clearance, wherein the rotating damping means includes an inclined hole-pattern. (See Figs. 3-6; Col. 2, lines 10-25; lines 45-58)

Regarding claim 2, Stangeland discloses, a bearing system according to claim 1 wherein the bearing and seal combination is an axial bearing formed as a cylindrical disc on the rotor which bears against an associated portion of the stator, whereby a gas film may be formed with rigidity and damping according to the same principle as in a radial bearing having desired dynamic rigidity and damping. (See Fig. 2; Col. 2, lines 30-45)

Regarding claim 3, Stangeland discloses, a bearing system according to claim 1 wherein the axial bearing is formed according to the hydrostatic principle which entails a flow restriction before and after its bearing surface as to obtain rigidity with accompanying damping. (See Col. 2, lines 30-45)

Regarding claim 4, Stangeland discloses, a bearing system according to claim wherein the axial bearing is formed as a combination of the radial bearing with gas film and the hydrostatic principle with flow restriction before and after the bearing surface. (See Col. 2, lines 30-45)

Regarding claim 7, Stangeland discloses, a bearing system according to claim 1, wherein the bore is formed having an uneven surface structure (9, 11). (See Fig. 6)

Regarding claim 8, Stangeland discloses, a bearing system according claim 1, wherein the bore is formed having a pattern of holes (9, 11). (See Fig. 6)

Regarding claim 9, Stangeland discloses, a bearing system according to claim 1, wherein the surface structure of the bore has an outer zone consisting of an external radial pattern of holes and an

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internal pattern of channels, but so positioned relative to each other as to allow gas exchange to take place in the direction of the higher pressure. (See Fig. 4-6; Col. 2, lines 25-45)

Regarding claim 10, Stangeland discloses, a bearing system according to claim 1, wherein at the start-up or the run-down of the rotating machine the higher pressure is provided by means of an accumulator which contains gas at such a pressure, and which is in communication with each individual bearing and seal combination. (See Col. 3, lines 51-70)

Regarding claim 11, Stangeland discloses, a bearing system according claim 1, wherein the system comprises at least two support bearings arranged in connection with the respective bearing and seal combination, and which are of a type suitable for withstanding contact for a brief period during start-up or run-down. (See Col. 3, lines 38-50)

Regarding claim 12, Stangeland discloses, a bearing system according to claim 1, wherein the system includes a control means such as a regulating valve, so as to adjust the geometry of the respective bearing and seal combination by means of applied pressure forces. (See Fig. 5; Col. 2, lines 53-68)

Regarding claim 13, Stangeland discloses, A bearing system claim 1, wherein the motor and the compressor are located in the same housing. (See Col. 4, lines 12-17)

Regarding claim 15, Stangeland discloses, a bearing system according to claim 1, wherein the guide apparatus gives the gas a start rotation in a direction opposite a rotating direction of the rotor. (See fig. 3; Col. 2, lines 28-45)

Regarding claim 16, Stangeland discloses, a turbine, including a bearing system according to claim 1. (See Figs. 3-6; Col. 2, lines 10-25)

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Stangeland in view of RAMSAY (US 6210103).

Regarding claim 14, Stangeland teaches, a bearing system claim 1, but does not teach a passive permanent magnetic bearing arranged integrated in the bearing and seal combination. Ramsay teaches a seal/bearing unit for a pump wherein a passive permanent magnetic bearing (163) supports the rotor (160). (See Fig. 16, Col. 9, lines 20-32; 48-70) It would have been obvious to one with ordinary skill, in the art at the time of the invention, to modify the bearing assembly as taught by Stangeland with the magnetic bearing seal/bearing arrangement as taught by Ramsay in order to prevent any leakage of fluid from the hydrodynamic bearing assembly and firmly support the rotor bearings, which will reduce vibrations under operational conditions.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. TITCOMB (US 5516212) teaches hydrostatic bearing seals.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ALONZO N. COLEMAN whose telephone number is (571)272-2344. The examiner can normally be reached on Monday through Thursday 7:30AM to 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathaniel E. Wiehe can be reached on (571) 272-8648. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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