



(11) **EP 1 953 337 A8**

(12) **CORRECTED EUROPEAN PATENT APPLICATION**
published in accordance with Art. 153(4) EPC

(15) Correction information:

Corrected version no 1 (W1 A1)
Bibliography INID code(s) 72

(51) Int Cl.:

F01C 1/356 ^(2006.01) **F01C 13/04** ^(2006.01)
F01C 21/18 ^(2006.01) **F04C 23/02** ^(2006.01)
F25B 11/02 ^(2006.01)

(48) Corrigendum issued on:

15.10.2008 Bulletin 2008/42

(86) International application number:

PCT/JP2006/321561

(43) Date of publication:

06.08.2008 Bulletin 2008/32

(87) International publication number:

WO 2007/052569 (10.05.2007 Gazette 2007/19)

(21) Application number: **06822522.6**

(22) Date of filing: **27.10.2006**

(84) Designated Contracting States:

DE FR GB

(30) Priority: **31.10.2005 JP 2005317688**

31.10.2005 JP 2005317690

(71) Applicant: **MATSUSHITA ELECTRIC INDUSTRIAL CO., LTD.**

Kadoma-shi

Osaka 571-8501 (JP)

(72) Inventors:

- **HASEGAWA, Hiroshi**
c/o Matsushita Electric Industrial Co., Ltd
2-1-61 Shiromi, Chuo-ku, Osaka, 540-6207 (JP)
- **MATSUI, Masaru**
c/o Matsushita Electric Industrial Co., Ltd
2-1-61 Shiromi, Chuo-ku, Osaka, 540-6207 (JP)

• **OKAICHI, Atsuo**

c/o Matsushita Electric Industrial Co., Ltd
2-1-61 Shiromi, Chuo-ku, Osaka, 540-6207 (JP)

• **TAMURA, Tomoichiro**

c/o Matsushita Electric Industrial Co., Ltd
2-1-61 Shiromi, Chuo-ku, Osaka, 540-6207 (JP)

• **OGATA, Takeshi**

c/o Matsushita Electric Industrial Co., Ltd
2-1-61 Shiromi, Chuo-ku, Osaka, 540-6207 (JP)

• **MATSUI, Keizo**

c/o Matsushita Electric Industrial Co., Ltd
2-1-61 Shiromi, Chuo-ku, Osaka, 540-6207 (JP)

• **MATSUYAMA, Tetsuya**

c/o Matsushita Electric Industrial Co., Ltd
2-1-61 Shiromi, Chuo-ku, Osaka, 540-6207 (JP)

(74) Representative: **Eisenführ, Speiser & Partner**

Patentanwälte Rechtsanwälte

Postfach 10 60 78

28060 Bremen (DE)

(54) **EXPANDER AND HEAT PUMP USING THE SAME**

(57) An expander of the invention includes: n-number of rotary type fluid mechanisms (where n is an integer equal to or greater than 2), a first suction port (41b) for sucking a working fluid into a suction-side space (55a) of a first fluid mechanism (41), a communication port (43a) connecting a discharge-side space (55b) of a k-th fluid mechanism (where k is an integer from 1 to n-1) and a (k + 1)-th suction-side space (56a) to form a

single space, and a discharge port (51a) for discharging the working fluid from the discharge-side space of an n-th fluid mechanism. The expander further includes a second suction port (72f) being capable of changing its connecting position to the suction-side space (55a) of the first fluid mechanism (41), for sucking the working fluid into the suction-side space (55a).

EP 1 953 337 A8

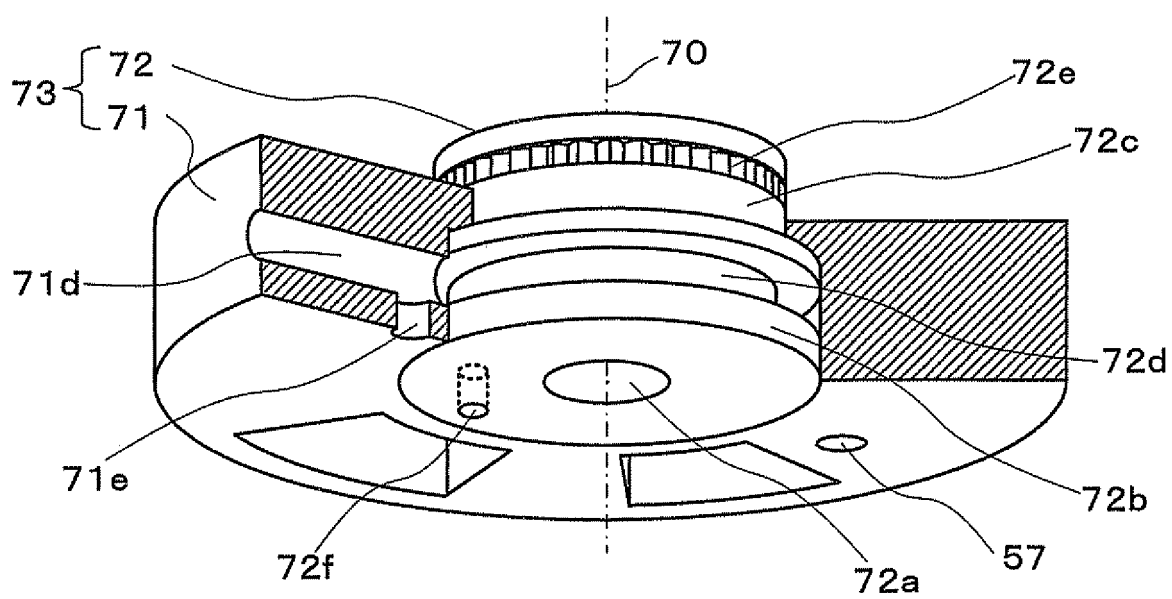


Fig. 30