

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
05 October 2023 (05.10.2023)



(10) International Publication Number
WO 2023/187377 A1

(51) International Patent Classification:

F01C 19/00 (2006.01) *F04C 27/00* (2006.01)
F04C 18/02 (2006.01) *F04C 29/00* (2006.01)

(21) International Application Number:

PCT/GB2023/050824

(22) International Filing Date:

30 March 2023 (30.03.2023)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

2204515.7 30 March 2022 (30.03.2022) GB

(71) Applicant: **EDWARDS LIMITED** [GB/GB]; Innovation
Drive, Burgess Hill Sussex RH15 9TW (GB).

(72) Inventors: **SCHOFIELD, Nigel Paul**; Edwards Limited,
Innovation Drive, Burgess Hill Sussex RH15 9TW (GB).
HOLBROOK, Alan Ernest Kinnaird; Edwards Limited,
Innovation Drive, Burgess Hill Sussex RH15 9TW (GB).
BEDWELL, David; Edwards Limited, Innovation Drive,
Burgess Hill Sussex RH15 9TW (GB).

(74) Agent: **TOTMAN, Clare**; Edwards Limited, Innovation
Drive, Burgess Hill Sussex RH15 9TW (GB).

(81) Designated States (*unless otherwise indicated, for every
kind of national protection available*): AE, AG, AL, AM,
AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ,
CA, CH, CL, CN, CO, CR, CU, CV, CZ, DE, DJ, DK, DM,
DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT,
HN, HR, HU, ID, IL, IN, IQ, IR, IS, IT, JM, JO, JP, KE, KG,
KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY,
MA, MD, MG, MK, MN, MU, MW, MX, MY, MZ, NA,
NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO,

(54) Title: SCROLL PUMP

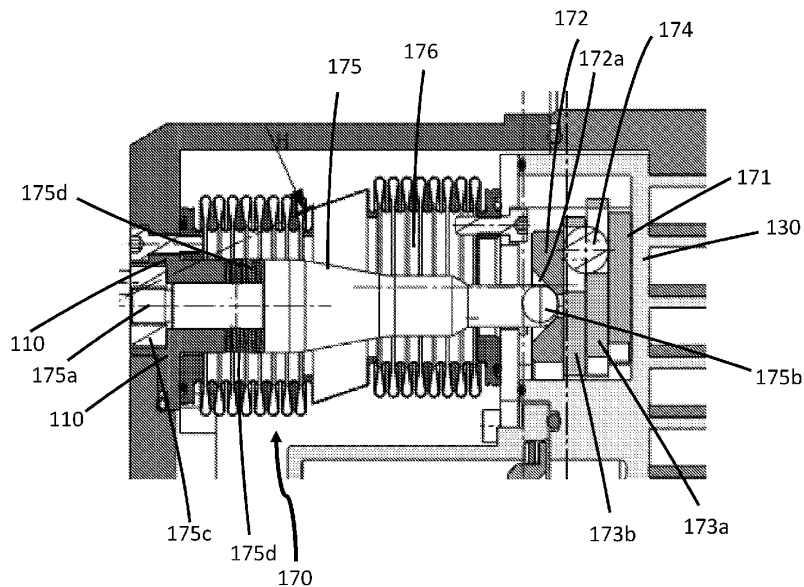


FIG. 2

(57) Abstract: A non-contacting scroll pump (100), the non-contacting scroll pump comprising a housing (110), an orbiting scroll (130) located within the housing, and a thrust bearing assembly (170) located within the housing for axially supporting the orbiting scroll. The thrust bearing assembly comprises a first plate (171) fixed to the orbiting scroll, a second plate (172) spaced apart from the first plate, a ball bearing (174) located between the first plate and the second plate, the ball bearing being configured to roll against the first and second plates during orbiting of the orbiting scroll, and a coupling structure (175) extending axially between the housing and the second plate to couple the housing to the second plate, wherein the coupling structure is engaged with the second plate, and wherein the coupling structure comprises a spring (175d) arranged to push the coupling structure against the second plate.

[Continued on next page]

RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, ST, SV, SY, TH,
TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, WS,
ZA, ZM, ZW.

(84) Designated States (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, CV, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SC, SD, SL, ST, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, ME, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

Published:

— with international search report (Art. 21(3))