

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

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
12 December 2024 (12.12.2024)



(10) International Publication Number
WO 2024/251509 A1

(51) International Patent Classification:
F02C 3/22 (2006.01) *F02C 7/224* (2006.01)

(21) International Application Number:
PCT/EP2024/063920

(22) International Filing Date:
21 May 2024 (21.05.2024)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
2308457.7 07 June 2023 (07.06.2023) GB

(71) Applicant: **SIEMENS ENERGY GLOBAL GMBH & CO. KG** [DE/DE]; Otto-Hahn-Ring 6, 81739 München (DE).

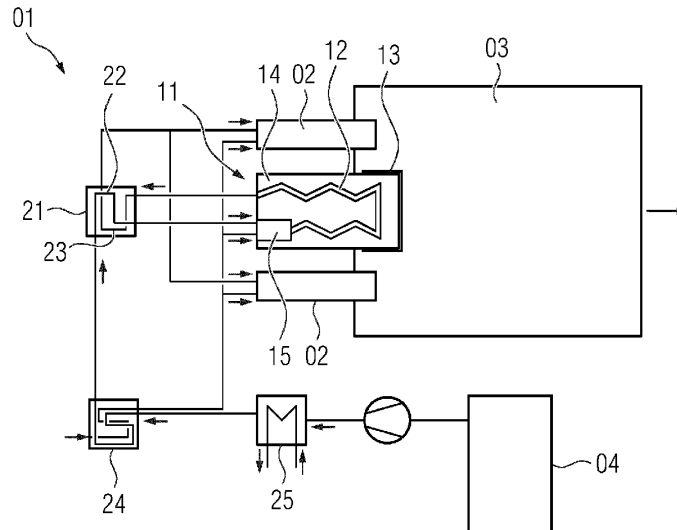
(72) Inventor: **ANDERSSON, Mats**; Birger Jarlsgatan 72, 114 20 Stockholm (SE).

(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, 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,

(54) Title: GAS TURBINE ARRANGEMENT WITH AMMONIA CRACKER AND POWER PLANT WITH SUCH AND METHOD TO OPERATE A GAS TURBINE ARRANGEMENT

FIG 1



(57) Abstract: Combustion arrangement (01) of a gas turbine comprising a burner (02), a combustion chamber (03) and an ammonia cracker (11). The ammonia cracker comprises heating means and a reaction channel (12), wherein an outlet of the reaction channel is fluidly connected to the combustion chamber and an inlet of the reaction channel is configured to be fluidly connected to a source of ammonia. To increase the efficiency and to reduce the installation effort it is intended to use a transfer section (13) as heating means, wherein the transfer section limits the combustion chamber in sections and enables a heat transfer from the combustion chamber to the reaction channel.

[Continued on next page]

WO 2024/251509 A1

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))