

(12) International Application Status Report

Received at International Bureau: 07 March 2020 (07.03.2020)

Information valid as of: 11 March 2020 (11.03.2020)

Report generated on: 23 January 2021 (23.01.2021)

(10) Publication number:

WO2020/192999

(43) Publication date:

01 October 2020 (01.10.2020)

(26) Publication language:

German (DE)

(21) Application Number:

PCT/EP2020/053529

(22) Filing Date:

12 February 2020 (12.02.2020)

(25) Filing language:

German (DE)

(31) Priority number(s):

10 2019 204 202.3 (DE)

(31) Priority date(s):

27 March 2019 (27.03.2019)

(31) Priority status:

Priority document received (in compliance with PCT Rule 17.1)

(51) International Patent Classification:

F01N 3/20 (2006.01)

(71) Applicant(s):

ROBERT BOSCH GMBH [DE/DE]; Postfach 30 02 20 70442 Stuttgart (DE) *(for all designated states)*

(72) Inventor(s):

HANNEKE, Juergen; Bei Den Gaerten 7a 70499 Stuttgart (DE)

RUIGROK VAN DE WERVE, Jan; Hohenheimerstr. 87 70184 Stuttgart (DE)

(54) Title (EN): DEVICE FOR HEATING A TANK

(54) Title (FR): DISPOSITIF DE CHAUFFAGE D'UN RÉSERVOIR

(54) Title (DE): VORRICHTUNG ZUR BEHEIZUNG EINES TANKS

(57) Abstract:

(EN): The invention relates to a device for heating a tank (10) in which an operating/auxiliary agent (12) that is capable of freezing is stored. The operating/auxiliary agent is conveyed by a conveying unit (18). The conveying unit sucks in the operating/auxiliary agent (12) that is capable of freezing through a filter (22), upstream of which a heating means (20) is connected. At least in the bottom region (44) of the tank (10), and/or in the housing (30) of the conveying unit (18), and/or in a slosh wall (68), an integrated heat pipe (40, 60, 62) is arranged, which enlarges a heat emission surface (42) and is connected to at least one heat generator (80), to which at least one cooling element (104, 106) is assigned.

(FR): L'invention concerne un dispositif de chauffage d'un réservoir (10), dans lequel un combustible/produit auxiliaire (12) congelable est stocké. Celui-ci est transporté par un groupe de transport (18). Celui-ci aspire le combustible/produit auxiliaire (12) congelable à travers un filtre (22), auquel un chauffage (20) est connecté en amont. Au moins un cal(40, 60, 62) intégré, augmentant la surface de rayonnement de chaleur (42), est disposé au moins dans la zone de fond (44) du réservoir (10) et/ou dans le boîtier (30) du groupe de transport (18) et/ou dans une paroi anti-débordement (68), lequel est connecté à au moins un générateur de chaleur (80), auquel au moins un élément de refroidissement (104, 106) est associé.

(DE): Die Erfindung bezieht sich auf eine Vorrichtung zur Beheizung eines Tanks (10), in dem ein gefrierfähiger Betriebs-/Hilfsstoff (12) bevorratet ist. Dieser wird durch ein Förderaggregat (18) gefördert. Dieses saugt den gefrierfähigen Betriebs-/Hilfsstoff (12) durch einen Filter (22) an, dem eine Heizung (20) vorgeschaltet ist. Zumindest im Bodenbereich (44) des Tanks (10) und/oder im Gehäuse (30) des Förderaggregates (18) und/oder in einer Schwappwand (68) ist mindestens ein eine Wärmeabstrahlfläche (42) vergrößerndes integriertes Wärmerohr (40, 60, 62) angeordnet, das mit mindestens einem Wärmeerzeuger (80) verbunden ist, dem mindestens ein Kühlelement (104, 106) zugeordnet ist.

International search report:

Received at International Bureau: 08 April 2020 (08.04.2020) [EP]

International Report on Patentability (IPRP) Chapter II of the PCT:

Not available

(81) Designated States:

AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, JO, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME, MG, MK, MN, 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

European Patent Office (EPO) : AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR

African Intellectual Property Organization (OAPI) : BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG

African Regional Intellectual Property Organization (ARIPO) : BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, ST, SZ, TZ, UG, ZM, ZW

Eurasian Patent Organization (EAPO) : AM, AZ, BY, KG, KZ, RU, TJ, TM