



(51) International Patent Classification:

F28F 19/00 (2006.01) *C25F 1/00* (2006.01)
C25F 3/04 (2006.01) *F28F 21/08* (2006.01)

(21) International Application Number:

PCT/US2013/034246

(22) International Filing Date:

28 March 2013 (28.03.2013)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

61/616,542 28 March 2012 (28.03.2012) US

(71) Applicant: **CARRIER CORPORATION** [US/US]; 1
Carrier Place, Farmington, Connecticut 06034 (US).

(72) Inventor: **GAROSSHEN, Thomas J.**; 128 Martin Ter-
race, Glastonbury, Connecticut 06033 (US).

(74) Agent: **HAYTER, Alicia A.**; CANTOR COLBURN LLP,
20 Church Street, 22nd Floor, Hartford, Connecticut 06103
(US).

(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, CZ, DE, DK, DM,
DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT,
HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP,
KR, KZ, LA, LC, LK, LR, LS, LT, 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, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ,
TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA,
ZM, ZW.

(84) Designated States (*unless otherwise indicated, for every
kind of regional protection available*): ARIPO (BW, GH,
GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, 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, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM,
TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW,
ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:

- *as to applicant's entitlement to apply for and be granted a
patent (Rule 4.17(ii))*
- *as to the applicant's entitlement to claim the priority of the
earlier application (Rule 4.17(iii))*
- *of inventorship (Rule 4.17(iv))*

Published:

- *with international search report (Art. 21(3))*
- *before the expiration of the time limit for amending the
claims and to be republished in the event of receipt of
amendments (Rule 48.2(h))*

(54) Title: SURFACE TREATMENT FOR CORROSION RESISTANCE OF ALUMINUM

(57) Abstract: A heat exchanger having enhanced corrosion resistance is provided including at least one metal tube. The surface of the tube has a modified microstructure. At least one inhomogeneity has been removed or refined from the surface of the tube.



WO 2013/148934 A1