

Title (en)
SYSTEM AND METHOD FOR PRODUCING BLOCK ICE TREATED WITH NITROGEN SUBSTITUTION

Title (de)
SYSTEM UND VERFAHREN ZUR HERSTELLUNG VON BLOCKEIS MIT STICKSTOFFSUBSTITUTION

Title (fr)
SYSTÈME ET PROCÉDÉ DE PRODUCTION DE BLOC DE GLACE TRAITÉS AVEC UNE SUBSTITUTION D'AZOTE

Publication
EP 3098545 A1 20161130 (EN)

Application
EP 15196529 A 20151126

Priority
JP 2015098972 A 20150514

Abstract (en)
A system for producing block ice treated with nitrogen substitution includes a nitrogen gas supplying unit for supplying nitrogen gas under a predetermined pressure; a cooled nitrogen-dissolved water producing unit for producing nitrogen-dissolved water, which is provided with a water receiving tank for storing material water, a cooler for cooling the water stored in the water receiving tank, and a nitrogen gas injector for injecting nitrogen gas supplied from the nitrogen gas supplying unit into the water stored in the water receiving tank; and a nitrogen-substitution block ice producing unit which is provided with a plurality of ice cans immersed in a brine tank kept at a freezable temperature for water, a filling device for filling each of the ice cans with the nitrogen-dissolved water supplied from the nitrogen-dissolved water producing unit, and a gas injector for injecting nitrogen gas supplied from the nitrogen gas supplying unit into an unfrozen portion of the nitrogen-dissolved water.

IPC 8 full level
F25C 1/18 (2006.01)

CPC (source: CN EP RU US)
F25C 1/00 (2013.01 - CN RU); **F25C 1/18** (2013.01 - EP US); **F25C 1/20** (2013.01 - US); **F25C 5/00** (2013.01 - US)

Citation (applicant)

- JP 2007155172 A 20070621 - SHOWA REITO PLANT KK
- JP 2007282550 A 20071101 - SHOWA REITO PLANT KK
- JP H06101943 A 19940412 - MAEKAWA SEISAKUSHO KK
- JP 2011112579 A 20110609 - NIKON CORP
- JP 2007225127 A 20070906 - NAT INST OF ADV IND & TECHNOL

Citation (search report)

- [AD] JP H06101943 A 19940412 - MAEKAWA SEISAKUSHO KK
- [A] US 2015038760 A1 20150205 - WAKAYAMA TOSHITSUGI [JP], et al

Designated contracting state (EPC)
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)
BA ME

DOCDB simple family (publication)
EP 3098545 A1 20161130; EP 3098545 B1 20180321; CA 2915485 A1 20161114; CA 2915485 C 20180410; CL 2016000342 A1 20161202; CN 106152647 A 20161123; CN 106152647 B 20181026; DK 3098545 T3 20180625; ES 2666832 T3 20180508; JP 2016217543 A 20161222; JP 6236614 B2 20171129; KR 20160134458 A 20161123; PT 3098545 T 20180424; RU 2619251 C1 20170512; TW 201640066 A 20161116; TW I657224 B 20190421; US 2016334153 A1 20161117

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EP 15196529 A 20151126; CA 2915485 A 20151217; CL 2016000342 A 20160212; CN 201610059184 A 20160128; DK 15196529 T 20151126; ES 15196529 T 20151126; JP 2015098972 A 20150514; KR 20150190555 A 20151231; PT 15196529 T 20151126; RU 2016102847 A 20160129; TW 105102187 A 20160125; US 201614997995 A 20160118