

Title (en)
CRYOGENIC FLUID INJECTION SYSTEM FOR PROCESSING PRODUCTS IN BULK AND METHOD OF COOLING IMPLEMENTING SAID SYSTEM

Title (de)
KRYOGENES FLÜSSIGKEITSINJEKTIONSSYSTEM ZUR MASSENVERARBEITUNG VON PRODUKTEN SOWIE KÜHLVERFAHREN MIT DIESEM SYSTEM

Title (fr)
SYSTÈME D'INJECTION DE FLUIDE CRYOGÉNIQUE PERMETTANT LE TRAITEMENT DE PRODUITS EN VRAC ET PROCÉDÉ DE REFROIDISSEMENT LE METTANT EN OEUVRE

Publication
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Application
EP 07803959 A 20070628

Priority
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• FR 0652885 A 20060710

Abstract (en)
[origin: WO2008007000A2] The injection device (3) according to the invention, intended to be attached to the wall of the bottom of a container containing a product to be cooled in bulk, comprises a hollow cylindrical body in which a valve (17) forced by a spring (19) is inserted, a through-channel (18) appreciably parallel to said valve intended to be fed by pressurized cryogenic fluid, one end of said through-channel being connected to the cryogenic fluid feed system and the opposite end opening into the seat (13) of the valve.

IPC 8 full level
F25D 3/12 (2006.01); **B05B 1/32** (2006.01); **C01B 32/55** (2017.01)

CPC (source: BR EP US)
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Citation (opposition)
Opponent :
• US 3815377 A 19740611 - TYREE L
• US 3672181 A 19720627 - TYREE LEWIS JR
• CN 2348096 Y 19991110 - PETROLEUM ENGINEERING TECHNOLO [CN]

Cited by
WO2011070283A1

Designated contracting state (EPC)
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LT LU LV MC MT NL PL PT RO SE SI SK TR

DOCDB simple family (publication)
FR 2903482 A1 20080111; **FR 2903482 B1 20080822**; AU 2007274158 A1 20080117; AU 2007274158 B2 20120726; BR PI0714376 A2 20130402; BR PI0714376 B1 20180619; CN 101489929 A 20090722; CN 101489929 B 20120118; DK 2041026 T3 20180522; EP 2041026 A2 20090401; EP 2041026 B1 20180314; EP 2041026 B2 20240424; ES 2665876 T3 20180430; PL 2041026 T3 20180831; PT 2041026 T 20180514; US 2009314010 A1 20091224; US 8621878 B2 20140107; WO 2008007000 A2 20080117; WO 2008007000 A3 20080313; ZA 200900079 B 20091230

DOCDB simple family (application)
FR 0652885 A 20060710; AU 2007274158 A 20070628; BR PI0714376 A 20070628; CN 200780026190 A 20070628; DK 07803959 T 20070628; EP 07803959 A 20070628; ES 07803959 T 20070628; FR 2007051549 W 20070628; PL 07803959 T 20070628; PT 07803959 T 20070628; US 37321707 A 20070628; ZA 200900079 A 20090105