

Title (en)

FRANCIS TURBINE OR FRANCIS PUMP OR FRANCIS PUMP TURBINE

Title (de)

FRANCIS-TURBINE ODER FRANCIS-PUMPE ODER FRANCIS-PUMPTURBINE

Title (fr)

TURBINE FRANCIS OU POMPE FRANCIS OU POMPE-TURBINE FRANCIS

Publication

EP 2753823 A2 20140716 (DE)

Application

EP 12741259 A 20120731

Priority

- DE 102011112521 A 20110907
- EP 2012003236 W 20120731

Abstract (en)

[origin: CA2844566A1] The invention relates to a Francis turbine or other machine built according to the Francis principle; comprising - an impeller (1) having rotor blades (1.1); - a volute housing (3) that surrounds the impeller (1); - a traverse ring (4) with a number of traverses (4.4, 4.5); - an inner rotor blade ring having larger traverses, which is arranged downstream of the traverse ring (4). The invention is characterised by the following features: - suggested is an outer rotor blade ring that is arranged upstream of the traverse ring (4); - a part of the traverse ring (4) extends with larger traverses (4.4) over a part of the circumference of the impeller, beginning at the start of the volute, and a part of the traverse ring extends with smaller traverses (4.5) over the broader circumference of the impeller as far as the end of the volute.

IPC 8 full level

F03B 3/18 (2006.01); **F03B 3/02** (2006.01); **F03B 11/04** (2006.01)

CPC (source: EP US)

F03B 3/02 (2013.01 - EP US); **F03B 3/125** (2013.01 - US); **F03B 3/18** (2013.01 - US); **F03B 3/183** (2013.01 - EP US);
F03B 3/186 (2013.01 - EP US); **F03B 11/04** (2013.01 - EP US); **Y02E 10/20** (2013.01 - EP US)

Citation (search report)

See references of WO 2013034224A2

Citation (examination)

US 1114419 A 19141020 - WHITE WILLIAM MONROE [US]

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

DOCDB simple family (publication)

DE 102011112521 A1 20130307; BR 112014003147 A2 20170221; CA 2844566 A1 20130314; CL 2014000277 A1 20140818;
CN 103732909 A 20140416; CN 103732909 B 20160817; EP 2753823 A2 20140716; JP 2014525547 A 20140929;
US 2014154057 A1 20140605; WO 2013034224 A2 20130314; WO 2013034224 A3 20131003

DOCDB simple family (application)

DE 102011112521 A 20110907; BR 112014003147 A 20120731; CA 2844566 A 20120731; CL 2014000277 A 20140204;
CN 201280038737 A 20120731; EP 12741259 A 20120731; EP 2012003236 W 20120731; JP 2014528877 A 20120731;
US 201414175297 A 20140207