

Title (en)  
VERTICAL FULL-ROTATION SHUTTLE

Title (de)  
VERTIKALER SCHIFFCHEN MIT KOMPLETTER UMDREHUNG

Title (fr)  
NAVETTE À ROTATION COMPLÈTE VERTICALE

Publication  
**EP 3246448 B1 20190724 (EN)**

Application  
**EP 15877807 A 20150113**

Priority  
JP 2015050702 W 20150113

Abstract (en)  
[origin: EP3246448A1] In order to prevent occurrence of thread breakage and incidental looping, a thread escape recess (18) recessed radially outward relative to an imaginary cylindrical surface inscribed in an inner peripheral portion (17) of an inner shuttle (3) is provided adjacent to a downstream side in a direction of rotation (A) of a needle location hole (11).

IPC 8 full level  
**D05B 57/14** (2006.01); **D05B 57/28** (2006.01)

CPC (source: EP KR)  
**D05B 57/14** (2013.01 - EP KR); **D05B 57/28** (2013.01 - EP)

Designated contracting state (EPC)  
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DOCDB simple family (publication)  
**EP 3246448 A1 20171122; EP 3246448 A4 20180704; EP 3246448 B1 20190724**; CN 107075766 A 20170818; CN 107075766 B 20190806; JP 6395864 B2 20180926; JP WO2016113852 A1 20171026; KR 101909650 B1 20181018; KR 20170063752 A 20170608; WO 2016113852 A1 20160721

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**EP 15877807 A 20150113**; CN 201580057253 A 20150113; JP 2015050702 W 20150113; JP 2016569156 A 20150113; KR 20177010665 A 20150113