

Title (en)
VERTICAL FULL ROTATION HOOK

Title (de)
VERTIKALER HAKEN MIT KOMPLETTER UMDREHUNG

Title (fr)
CROCHET VERTICAL À ROTATION COMPLÈTE

Publication
EP 3257992 A4 20180704 (EN)

Application
EP 15881996 A 20150213

Priority
JP 2015054038 W 20150213

Abstract (en)
[origin: EP3257992A1] In order to prevent occurrence of thread breakage and incident looping, a spring member (50) is provided in an engaging recess of an inner shuttle (3) to resiliently bias an engaging portion (27a) of an engaging strip (27) of a bobbin case (5) on a downstream side of a direction of rotation (A) so as to suppress rattling and vibrations of the bobbin case (5) against the inner shuttle (3).

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)

Citation (search report)

- [Y] EP 0507558 B1 19950830 - BROTHER IND LTD [JP]
- [Y] JP H10216382 A 19980818 - HIROSE MFG CO LTD
- [Y] CN 101619523 B 20130612 - JUKI CORP JP
- [Y] JP 2010012059 A 20100121 - JUKI KK
- [Y] JP S6141674 U 19860317
- [A] JP S58152277 U 19831012
- [A] JP H0268096 A 19900307 - HIROSE MFG CO LTD
- [A] JP H0539482 U 19930528
- [A] US 6745712 B1 20040608 - FUJINAGA NAOJI [JP], et al
- [A] EP 0861933 A2 19980902 - HIROSE MFG CO LTD [JP]
- See references of WO 2016129122A1

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)
EP 3257992 A1 20171220; EP 3257992 A4 20180704; EP 3257992 B1 20230405; CN 107109747 A 20170829; CN 107109747 B 20190813; JP 6440746 B2 20181219; JP WO2016129122 A1 20171130; KR 101962264 B1 20190326; KR 20170065627 A 20170613; WO 2016129122 A1 20160818

DOCDB simple family (application)
EP 15881996 A 20150213; CN 201580061246 A 20150213; JP 2015054038 W 20150213; JP 2016574612 A 20150213; KR 20177012098 A 20150213