

Title (en)

METHOD FOR PRODUCING A FLAT SPIRAL SPRING, AND BENDING DEVICE FOR PRODUCING SAME

Title (de)

VERFAHREN ZUR HERSTELLUNG EINER BANDFEDER SOWIE BIEGEEINRICHTUNG ZU DEREN HERSTELLUNG

Title (fr)

PROCÉDÉ DE FABRICATION D'UN RESSORT À RUBAN ET DISPOSITIF DE PLIAGE POUR SA FABRICATION

Publication

EP 3194091 B1 20190508 (DE)

Application

EP 15747446 A 20150731

Priority

- DE 102014111015 A 20140804
- EP 2015067712 W 20150731

Abstract (en)

[origin: WO2016020294A1] The invention relates to a method for producing a flat spiral spring, in particular a spring sheet for covering a cooling area of a piston of internal combustion engines, said spring sheet being formed at least as an annular disk-shaped segment (12), wherein a strip-shaped material (23) is fed to a bending device (27) that comprises at least one drum (29), said drum rotating about a rotational axis (31), and the strip-shaped material (23) is supplied in a tangential alignment to the lateral surface (36) of the drum (29) such that a lateral wall (20) which determines the thickness of the strip-shaped material (23) rests against at least some sections of a contact surface (37) on the lateral surface (36) of the drum (29). The contact surface (37) of the drum (29) has a radius which substantially corresponds to an internal radius of the strip-shaped material (23) to be bent into the segment (12), and at least one deflecting device (32) is aligned at a distance to the drum (29) such that the strip-shaped material (23) is guided in a forced manner between the drum (29) and the deflecting device (32), and the strip-shaped material (23) is bent so as to follow the drum (29) by means of the deflecting device.

IPC 8 full level

B21F 3/04 (2006.01); **B21D 5/14** (2006.01); **B21D 11/06** (2006.01); **B21F 3/08** (2006.01); **B21F 35/04** (2006.01); **B21F 37/04** (2006.01)

CPC (source: EP US)

B21D 5/143 (2013.01 - EP US); **B21D 11/10** (2013.01 - EP US); **B21D 53/16** (2013.01 - EP US); **B21D 53/84** (2013.01 - EP US);
B21D 53/886 (2013.01 - US); **B21F 3/04** (2013.01 - EP US); **B21F 3/08** (2013.01 - EP US); **B21F 35/04** (2013.01 - EP US);
B21F 37/04 (2013.01 - EP 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 102014111015 A1 20160204; BR 112017002091 A2 20171121; CN 106714995 A 20170524; CN 106714995 B 20200515;
EP 3194091 A1 20170726; EP 3194091 B1 20190508; MX 2017001503 A 20180112; US 10661330 B2 20200526; US 2017216905 A1 20170803;
WO 2016020294 A1 20160211

DOCDB simple family (application)

DE 102014111015 A 20140804; BR 112017002091 A 20150731; CN 201580049913 A 20150731; EP 15747446 A 20150731;
EP 2015067712 W 20150731; MX 2017001503 A 20150731; US 201515500939 A 20150731