

Title (en)

HAIRPIN WINDING OF A STATOR OF AN ELECTRIC MACHINE

Title (de)

HAIRPIN-WICKLUNG EINES STATORS EINER ELEKTROMASCHINE

Title (fr)

ENROULEMENT EN ÉPINGLE À CHEVEUX D'UN STATOR DE MACHINE ÉLECTRIQUE

Publication

EP 4029123 A1 20220720 (DE)

Application

EP 20768570 A 20200908

Priority

- DE 102019124462 A 20190911
- EP 2020075011 W 20200908

Abstract (en)

[origin: WO2021048085A1] The invention relates to a stator (1) for an electric machine (401), comprising a plurality of pins (21, 22, 23, 24, 31, 32, 33, 34) which are arranged in grooves (51, 52, 53, 54, 55, 56, 57, 58) in concentric circles at different distances from a stator centre point (M), with each concentric circle forming a layer (L1, L2, L3, L4), wherein four respective pins (21, 22, 23, 24, 25, 31, 32, 33, 34, 35) are connected in series with one another in different layers (L1, L2, L3, L4) and form a winding (41): a first pin (21) of the winding (41) is positioned in a first groove (51) in the $4n-1$ layer (L3), wherein n is a natural number; a second pin (22) of the winding (41) is positioned in a second groove (52) in the $4n$ layer (L4), wherein the second groove (52) is at a first radial distance (71) from the first groove (51) in a first circumferential direction of the stator (1); a third pin (23) of the winding (41) is positioned in the first groove (51) in the $4n-3$ layer (L2); and a fourth pin (24) of the winding (41) is positioned in the second groove (52) in the $4n-3$ layer (L1).

IPC 8 full level

H02K 3/28 (2006.01); **H02K 3/12** (2006.01)

CPC (source: CN EP KR US)

H02K 3/12 (2013.01 - CN EP KR US); **H02K 3/14** (2013.01 - KR US); **H02K 3/28** (2013.01 - CN EP KR US); **H02K 3/521** (2013.01 - KR); **H02K 15/0421** (2013.01 - CN); **H02K 15/085** (2013.01 - KR 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

Designated extension state (EPC)

BA ME

DOCDB simple family (publication)

DE 102019124462 A1 20210311; CN 114667663 A 20220624; CN 114667663 B 20240419; EP 4029123 A1 20220720; JP 2022547317 A 20221111; JP 7401657 B2 20231219; KR 102691214 B1 20240805; KR 20220063210 A 20220517; US 2022376591 A1 20221124; WO 2021048085 A1 20210318

DOCDB simple family (application)

DE 102019124462 A 20190911; CN 202080073080 A 20200908; EP 2020075011 W 20200908; EP 20768570 A 20200908; JP 2022515983 A 20200908; KR 20227011699 A 20200908; US 202017642111 A 20200908