

Title (en)  
SHOE, IN PARTICULAR ATHLETIC SHOE

Title (de)  
SCHUH, INSBESONDERE SPORTSCHUH

Title (fr)  
CHAUSSURE, EN PARTICULIER CHAUSSURE DE SPORT

Publication  
**EP 3358981 A1 20180815 (DE)**

Application  
**EP 15778612 A 20151007**

Priority  
EP 2015001963 W 20151007

Abstract (en)  
[origin: WO2017059876A1] The invention relates to a shoe (1), in particular an athletic shoe, having a shoe top (2) and a rotary closure (3) for lacing the shoe (1) on the foot of the wearer by means of at least one tensioning element (4, 5), wherein the rotary closure (3) is arranged on the instep (6) of the shoe (1), wherein the rotary closure (3) has a rotatably arranged tension roller (7), wherein the rotary closure (3) is driven by means of an electric motor (8), and wherein the transfer of the rotational motion of the electric motor (8) to the tension roller (7) occurs via a transmission (9). In order to achieve a compact design which provides sufficiently high torques for the lacing, according to the invention, the transmission (9) has: a first spur gear stage (10), wherein a spur gear (11) of the first spur gear stage (10) intermeshes together with a drive pinion (12) of the electric motor (8) and wherein a pinion (13), connected to the spur gear (11) of the first spur gear stage (10) in a rotationally fixed manner, intermeshes with a spur gear (14) of a second spur gear stage (15), a second spur gear stage (15), wherein the spur gear (14) of the second spur gear stage (15) is connected to a worm (16) of a worm gear (16, 17) in a rotationally fixed manner, a worm gear (16, 17), wherein the worm (16) intermeshes together with a worm gear (17), wherein the tension roller (7) is connected to the worm gear (17) in a rotationally fixed manner.

IPC 8 full level  
**A43B 3/00** (2006.01); **A43C 11/16** (2006.01)

CPC (source: EP KR US)  
**A43B 3/34** (2022.01 - EP US); **A43C 1/00** (2013.01 - US); **A43C 1/04** (2013.01 - US); **A43C 7/08** (2013.01 - KR); **A43C 11/008** (2013.01 - KR); **A43C 11/14** (2013.01 - KR); **A43C 11/165** (2013.01 - EP KR US)

Citation (search report)  
See references of WO 2017059876A1

Cited by  
EP4011237A1; US11812825B2

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)  
**WO 2017059876 A1 20170413**; CA 2998546 A1 20170413; CA 2998546 C 20190618; CN 108135312 A 20180608; CN 108135312 B 20200922; EP 3358981 A1 20180815; EP 3358981 B1 20190717; ES 2749676 T3 20200323; JP 2018529479 A 20181011; JP 6639031 B2 20200205; KR 102137804 B1 20200724; KR 20180069796 A 20180625; MX 2018004218 A 20180801; PL 3358981 T3 20191231; US 10349703 B2 20190716; US 2018289110 A1 20181011

DOCDB simple family (application)  
**EP 2015001963 W 20151007**; CA 2998546 A 20151007; CN 201580083611 A 20151007; EP 15778612 A 20151007; ES 15778612 T 20151007; JP 2018518418 A 20151007; KR 20187009454 A 20151007; MX 2018004218 A 20151007; PL 15778612 T 20151007; US 201515766199 A 20151007