

Title (en)
TUBE DIAMETER EXPANDING METHOD AND MOLDING APPARATUS

Title (de)
ROHRDURCHMESSERSPREIZVERFAHREN UND FORMVORRICHTUNG

Title (fr)
PROCÉDÉ D'AGRANDISSEMENT DE DIAMÈTRE DE TUBE ET APPAREIL DE MOULAGE

Publication
EP 3431205 A1 20190123 (EN)

Application
EP 16894259 A 20160314

Priority
JP 2016001438 W 20160314

Abstract (en)
A tube diameter expanding method includes: rotating a tube having one end fixed to a turntable about a center axis of the tube; inserting a rod-like roller which extends in an axial direction of the tube into the tube from another end of the tube, and bringing the rod-like roller into contact with a forming region extending from the other end to a predetermined position of the tube; heating the forming region of the tube; cooling at least a section located near the forming region and within a non-forming region extending from the predetermined position to the one end of the tube; and moving the rod-like roller in a state of contacting the forming region of the tube, in a direction from the one end of the tube toward the other end of the tube and outward in a radial direction of the tube.

IPC 8 full level
B21D 41/02 (2006.01); **B21C 37/18** (2006.01); **B21D 22/14** (2006.01)

CPC (source: EP US)
B21C 37/18 (2013.01 - EP US); **B21D 22/14** (2013.01 - EP US); **B21D 37/16** (2013.01 - EP US); **B21D 41/02** (2013.01 - EP US); **B21D 41/023** (2013.01 - EP US)

Cited by
CN110586783A

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)
EP 3431205 A1 20190123; **EP 3431205 A4 20190814**; **EP 3431205 B1 20210714**; CN 108698110 A 20181023; CN 108698110 B 20191008; JP 6574518 B2 20190911; JP WO2017158635 A1 20190214; US 2019076903 A1 20190314; WO 2017158635 A1 20170921

DOCDB simple family (application)
EP 16894259 A 20160314; CN 201680083317 A 20160314; JP 2016001438 W 20160314; JP 2018505550 A 20160314; US 201616085245 A 20160314