

Title (en)

PROCESS FOR FORMING HOLLOW STEPPED SHAFTS OF COLD-FORMABLE METAL BY INTERNAL HIGH PRESSURE

Title (de)

VERFAHREN ZUM INNENHOCHDRUCK-UMFORMEN VON HOHLEN, ABGESETZTEN WELLEN AUS KALTUMFORMBAREM METALL

Title (fr)

PROCEDE POUR LE FORMAGE PAR HAUTE PRESSION INTERNE D'ARBRES CREUX ETAGES EN METAL FACONNABLE A FROID

Publication

EP 0726823 B1 20000628 (DE)

Application

EP 95900062 A 19941103

Priority

- DE 9401300 W 19941103
- DE 4337517 A 19931103

Abstract (en)

[origin: US5802899A] PCT No. PCT/DE94/01300 Sec. 371 Date Jul. 12, 1996 Sec. 102(e) Date Jul. 12, 1996 PCT Filed Nov. 3, 1994 PCT Pub. No. WO95/12466 PCT Pub. Date May 11, 1995The invention relates to a process for forming hollow stepped shafts of cold-formable metal by internal high pressure with the following steps: provision of a tube outlet section and filling it with fluid; sealing at least the tube section to be widened; application of a suitable high internal pressure for widening the tube section; calibration of the workpiece by applying a high calibration pressure; maintenance of the calibration pressure while heading the tube along the longitudinal axis. Internal tools, also spring-loaded tools, are provided as supports in the tool.

IPC 1-7

B21D 26/02

IPC 8 full level

B21D 26/02 (2011.01); **B21D 26/033** (2011.01)

CPC (source: EP KR US)

B21D 26/033 (2013.01 - EP KR US)

Cited by

EP2036628A1

Designated contracting state (EPC)

AT BE DE ES FR GB IT NL SE

DOCDB simple family (publication)

US 5802899 A 19980908; AT E194092 T1 20000715; CA 2175822 A1 19950511; CN 1057029 C 20001004; CN 1134124 A 19961023; DE 4337517 A1 19950504; DE 59409414 D1 20000803; EP 0726823 A1 19960821; EP 0726823 B1 20000628; ES 2147279 T3 20000901; JP H09504478 A 19970506; KR 960705640 A 19961108; WO 9512466 A1 19950511

DOCDB simple family (application)

US 63778397 A 19970202; AT 95900062 T 19941103; CA 2175822 A 19941103; CN 94194009 A 19941103; DE 4337517 A 19931103; DE 59409414 T 19941103; DE 9401300 W 19941103; EP 95900062 A 19941103; ES 95900062 T 19941103; JP 51296095 A 19941103; KR 19960702319 A 19960503