

Title (en)
METHOD FOR PRODUCING A HOLLOW SHAFT, IN PARTICULAR A CAMSHAFT AND A CAMSHAFT PRODUCED ACCORDING TO SAID METHOD

Title (de)
VERFAHREN ZUM HERSTELLEN EINER HOHLWELLE, INSBESONDERE NOCKENWELLE, UND DANACH HERGESTELLTE HOHLWELLE

Title (fr)
PROCEDE POUR LA PRODUCTION D'UN ARBRE CREUX, NOTAMMENT D'UN ARBRE A CAMES, ET ARBRE CREUX PRODUIT SELON CE PROCEDE

Publication
EP 1320433 A1 20030625 (DE)

Application
EP 01986277 A 20010924

Priority

- DE 0103666 W 20010924
- DE 10049047 A 20000929
- DE 10049048 A 20000929

Abstract (en)
[origin: WO0228564A1] The invention relates to a method for producing a hollow shaft, in particular a camshaft according to an internal high-pressure forming (IHF) process. According to said method, cams and/or machine elements are mounted at intervals onto the outer surface of the hollow shaft, depending on the use of the latter, by a non-positive and/or positive fit, in a position appropriate to their function. The invention also relates to a hollow shaft produced according to said method. The invention aims to improve the efficiency of the method. To achieve this: the cams and/or machine elements required for the function of the hollow shaft (1) are pushed onto and positioned on the shaft in a location and position related to their function, when the hollow shaft is placed in the forming tool; an element (5) with approximately the same external diameter as the internal diameter of the hollow shaft is placed in at least one end of said shaft; the hollow shaft together with the cams and/or machine elements that have been pushed onto the same and the inserted element are placed in an IHF tool; once the IHF tool has been closed, a medium is caused to act under the required high-pressure in the hollow shaft.

IPC 1-7
B21D 53/84; **B21D 26/02**; **B21K 1/12**

IPC 8 full level
B21D 26/02 (2006.01); **B21D 26/033** (2011.01); **B21D 39/00** (2006.01); **B21D 39/04** (2006.01); **B21D 53/84** (2006.01); **F01L 1/04** (2006.01); **F01L 1/047** (2006.01); **F16C 3/02** (2006.01)

CPC (source: EP US)
B21D 26/033 (2013.01 - EP US); **B21D 39/04** (2013.01 - EP US); **B21D 53/845** (2013.01 - EP US); **B23P 11/005** (2013.01 - EP US); **F01L 1/047** (2013.01 - EP US); **B23P 2700/02** (2013.01 - EP US); **Y10T 29/17** (2015.01 - EP US); **Y10T 29/49293** (2015.01 - EP US); **Y10T 29/49805** (2015.01 - EP US); **Y10T 29/49911** (2015.01 - EP US); **Y10T 29/49938** (2015.01 - EP US); **Y10T 29/4994** (2015.01 - EP US); **Y10T 403/4949** (2015.01 - EP US)

Citation (search report)
See references of WO 0228564A1

Designated contracting state (EPC)
AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE TR

DOCDB simple family (publication)
WO 0228564 A1 20020411; **WO 0228564 A8 20020718**; AU 2343102 A 20020415; DE 10194184 D2 20030904; EP 1320433 A1 20030625; JP 2004510585 A 20040408; US 2004034975 A1 20040226; US 6961998 B2 20051108

DOCDB simple family (application)
DE 0103666 W 20010924; AU 2343102 A 20010924; DE 10194184 T 20010924; EP 01986277 A 20010924; JP 2002532380 A 20010924; US 38103703 A 20030321