

Title (en)

METHOD AND APPARATUS FOR HEAT-TREATING CAMSHAFTS

Publication

EP 0291383 B1 19920701 (FR)

Application

EP 88401059 A 19880429

Priority

FR 8706503 A 19870507

Abstract (en)

[origin: EP0291383A1] This machine comprises essentially torches (14) capable of producing an electric arc and carried by a trolley (13) capable of being moved by virtue of a digitally controlled motor (18) in a horizontal direction (Y) parallel to the axis (A) of the cam (41) shaft (40) to be treated, this trolley (13) being carried by an intermediate trolley (21) capable of being moved by virtue of another digitally controlled motor (24) in a horizontal direction (Z) perpendicular to the axis (A) of the camshaft, which intermediate trolley is mounted vertically movable on the framework (33) of the machine in a vertical direction (X) perpendicular to the axis (A) of the camshaft by virtue of yet another digitally controlled motor (30) carried by the framework (33). <??>This machine permits the heat treatment by remelting of a number of identical camshafts arranged horizontally and intended for motor vehicles. <IMAGE>

IPC 1-7

C21D 9/30

IPC 8 full level

C21D 9/30 (2006.01)

CPC (source: EP US)

C21D 9/30 (2013.01 - EP US)

Designated contracting state (EPC)

DE GB IT SE

DOCDB simple family (publication)

EP 0291383 A1 19881117; EP 0291383 B1 19920701; DE 3872447 D1 19920806; DE 3872447 T2 19930304; FR 2614900 A1 19881110; FR 2614900 B1 19920403; JP S63293120 A 19881130; US 4890819 A 19900102

DOCDB simple family (application)

EP 88401059 A 19880429; DE 3872447 T 19880429; FR 8706503 A 19870507; JP 11134988 A 19880507; US 18721788 A 19880428