

Title (en)

APPARATUS AND METHOD OF INDUCTION-HARDENING MACHINE COMPONENTS WITH PRECISE POWER OUTPUT CONTROL

Publication

EP 0542813 A4 19930915 (EN)

Application

EP 91914109 A 19910725

Priority

- US 9105285 W 19910725
- US 69334391 A 19910430
- US 56339890 A 19900806

Abstract (en)

[origin: WO9203026A1] An induction hardening machine for contour hardening of machine components such as gears includes a phase angle detector circuit (112) which produces a pulse for each corresponding detection of a predetermined phase angle of an AC signal. A start switch (SW2) and the pulse produced by the phase detector provide inputs to a circuit (116) which requires concurrence of the pulse and activation of the switch before a predetermined width signal pulse is produced. The predetermined width signal pulse activates power switching devices (114) to supply a predetermined power signal to an RF generator (120) coupled to an induction heating coil (128). Precise induction heating is accomplished via precise control of power input to the RF generator (120).

IPC 1-7

H05B 6/06; **H05B 6/14**

IPC 8 full level

C21D 1/10 (2006.01); **C21D 9/32** (2006.01); **H05B 6/06** (2006.01); **H05B 6/10** (2006.01); **H05B 6/14** (2006.01); **H05B 6/40** (2006.01)

CPC (source: EP)

H05B 6/06 (2013.01); **H05B 6/405** (2013.01)

Citation (search report)

See references of WO 9203026A1

Cited by

CN110235519A

Designated contracting state (EPC)

AT BE CH DE ES FR GB IT LI NL SE

DOCDB simple family (publication)

WO 9203026 A1 19920220; AT E136721 T1 19960415; AU 649062 B2 19940512; AU 8309291 A 19920302; BR 9106736 A 19930706; CA 2046851 A1 19920207; CA 2046851 C 19950307; DE 69118699 D1 19960515; DE 69118699 T2 19960829; EP 0542813 A1 19930526; EP 0542813 A4 19930915; EP 0542813 B1 19960410; JP 2885511 B2 19990426; JP H06500150 A 19940106; KR 970011547 B1 19970711; RU 2113773 C1 19980620

DOCDB simple family (application)

US 9105285 W 19910725; AT 91914109 T 19910725; AU 8309291 A 19910725; BR 9106736 A 19910725; CA 2046851 A 19910711; DE 69118699 T 19910725; EP 91914109 A 19910725; JP 51338491 A 19910725; KR 930700353 A 19930206; RU 93005002 A 19910725