

Title (en)

METHOD FOR MANUFACTURING TAPERED RODS AND APPARATUS THEREFOR

Publication

EP 0054343 B1 19840815 (EN)

Application

EP 81304219 A 19810915

Priority

- JP 17503180 A 19801211
- JP 17627680 A 19801213

Abstract (en)

[origin: EP0054343A2] Method for manufacturing a tapered rod for a coil spring from a metallic material of mainly steel in a linear state, by imparting heating to the same with a predetermined temperature gradient pattern in the axial direction thereof while or before pulling by tensile force the metallic material chucked at two axially distant points in either direction in a gradually decreasing or stepwise decreasing speed, until a desired tapered portion is formed. An apparatus preferably employed for this method comprises a pulling mechanism (12, 22) for chucking and pulling the material, an electric current supplying mechanism (15) for supplying predetermined amount of current to the material between the two chucked points, a plurality of cooling means (C1 - Cn) arranged axially along the material for positionwise cooling the material so as to make the temperature gradient thereon, a temperature detecting means (16, 17) for detecting the surface temperature of the material for feeding back the detected data to the current supplying mechanism (15), and a heating temperature controlling means (18) for controlling the amount of the current flowed there.

IPC 1-7

B21C 37/04

IPC 8 full level

B21C 37/04 (2006.01); **C21D 8/06** (2006.01); **C21D 9/00** (2006.01)

CPC (source: EP)

B21C 37/04 (2013.01); **C21D 8/06** (2013.01); **C21D 9/0075** (2013.01); **C21D 2281/02** (2013.01)

Cited by

EP0765698A1; EP0259580A3

Designated contracting state (EPC)

AT BE CH GB IT LI LU NL SE

DOCDB simple family (publication)

EP 0054343 A2 19820623; EP 0054343 A3 19820721; EP 0054343 B1 19840815

DOCDB simple family (application)

EP 81304219 A 19810915