

Title (en)
Method for transverse rolling of ball products, in particular out of scrap railway rail heads, using flat tools

Title (de)
Verfahren zum Querwalzen von kugelförmigen Teilen, insbesondere aus Eisenbahnschrott wie Schienenköpfen, unter Verwendung flacher Werkzeuge

Title (fr)
Procédé de laminage transversal de produits sphériques, en particulier sur la base des champignons de rail de chemin de fer rebutés, à l'aide d'outils plats

Publication
EP 2540409 A1 20130102 (EN)

Application
EP 12461524 A 20120619

Priority
PL 39535011 A 20110620

Abstract (en)
A method for cross rolling with flat tools of products such as balls, in particular the ones obtained from heads of scrap railway rails, consists in that billet (1) in the form of a head cut off a scrap railway rail is placed between initial wedges (4 and 5) located on one side of flat tools (2 and 3) , which then begin to move in the opposite directions with the same velocity (V) , and the moving initial wedges (4 and 5) cut into the billet 1 and make it rotate, thereby forming a semi-finished product (6) in the form of a rod whose diameter (D1) is bigger than or equal to the diameter (D) of a ball (7) , next the flat tools (2 and 3) are stopped and the semi-finished product (6) is moved to the other side of the flat tools and placed between two wedges (8 and 9) which have longitudinal grooves (10 and 11) of a semi-circular profile, then the flat tools (2 and 3) make a return motion with the same velocity (V) , and during this time the wedges (8 and 9) , which move in the opposite directions, form the balls (7) which are separated from one another by cutters (12 and 13) in the final stage of the rolling process. The process is done in a configuration wherein only one of the flat tools (2 or 3) moves in a sliding motion with the velocity (V) , while the other tool (2 or 3) does not move.

IPC 8 full level
B21H 1/14 (2006.01)

CPC (source: EP)
B21H 1/14 (2013.01)

Citation (applicant)

- W. DOBRUCKI: "Zarys obr6bki plastycznej metali, Wydawnictwo", 1975
- Z. PATER, WALCOWANIE POPRZECZNO-KLINOWE, WYDAWNICTWO POLITECHNIKI LUBELSKIEJ, 2009

Citation (search report)

- [A] US 3206828 A 19650921 - TAKEFUSA KIKUCHI
- [A] DE 541623 C 19320115 - HOESCH KOELN NEUESSEN AG
- [A] DE 19913178 A1 20001005 - JUNG WOLFGANG [DE]

Designated contracting state (EPC)
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)
BA ME

DOCDB simple family (publication)
EP 2540409 A1 20130102; EP 2540409 B1 20140514; PL 215444 B1 20131231; PL 395350 A1 20130107

DOCDB simple family (application)
EP 12461524 A 20120619; PL 39535011 A 20110620