

Title (en)
UPSETTING METHOD AND UPSETTING APPARATUS

Title (de)
STAUCHVERFAHREN UND STAUCHVORRICHTUNG

Title (fr)
PROCEDE ET APPAREIL DE RENVERSEMENT

Publication
EP 1901865 A4 20100804 (EN)

Application
EP 06767217 A 20060616

Priority
• JP 2006312567 W 20060616
• JP 2005177991 A 20050617
• US 69340705 P 20050624

Abstract (en)
[origin: WO2006135112A1] An upsetting method capable of eliminating a correction step by preventing occurrence of quench distortion is provided. The method includes the step of preparing an upsetting apparatus 10 equipped with a forming die 11 and a guide 20 having an insertion hole 21 for securing a diameter expansion scheduled portion 2 of the bar-shaped raw material 1 in a buckling preventing state and a punch 30. The diameter expansion scheduled portion 2 of the raw material 1 in a heated state is disposed in the insertion hole 21 of the guide 20 in a heated state, and the tip end portion of the guide 20 is disposed in the cavity 12 of the forming die 11 adjusted in temperature so as to be below a temperature of the raw material 1, and the raw material is secured to the securing portion 13 of the forming die 11. With this state, the guide 20 is moved in a direction opposite to a moving direction 37 of the punch 30 while axially pressurizing the diameter expansion scheduled portion 2 of the raw material 1 by moving the punch 30, to thereby expand the diameter expansion scheduled portion 2 of the raw material 1 exposed between a tip end portion of the guide 20 and the securing portion 13 of the forming die 11 within the cavity 12 of the forming die 11.

IPC 8 full level
B21J 5/08 (2006.01); **B21J 1/06** (2006.01); **B21J 5/00** (2006.01); **B21J 13/02** (2006.01)

CPC (source: EP KR US)
B21J 1/06 (2013.01 - KR); **B21J 5/02** (2013.01 - EP US); **B21J 5/08** (2013.01 - EP KR US); **B21J 9/06** (2013.01 - KR); **B21J 13/02** (2013.01 - KR); **B21J 17/02** (2013.01 - KR)

Citation (search report)
• No further relevant documents disclosed
• See references of WO 2006135112A1

Designated contracting state (EPC)
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LT LU LV MC NL PL PT RO SE SI SK TR

DOCDB simple family (publication)
WO 2006135112 A1 20061221; EP 1901865 A1 20080326; EP 1901865 A4 20100804; KR 20080011701 A 20080205; US 2009217730 A1 20090903

DOCDB simple family (application)
JP 2006312567 W 20060616; EP 06767217 A 20060616; KR 20077029229 A 20071214; US 91781506 A 20060616