Title (en)

Method for forming a large metal sheet, especially a vehicle body part

Title (de)

Verfahren zur Herstellung eines grossflächigen Blechteiles, insbesondere eines Karosseriebauteiles für ein Fahrzeug

Title (fr)

Méthode de formage d' une large tôle, en particulier une partie de carrosserie d'un véhicule

Publication

EP 1097758 A2 20010509 (DE)

Application

EP 00119880 A 20000913

Priority

DE 19953522 A 19991105

Abstract (en)

A flat blank (2) esp. a tailored blank, is subjected to e.g. a hydraulic or pneumatic medium (8) in a forming tool (3), to produce a pre-stretched semi-finished part. This part is subsequently formed to a finished part in a separate deep drawing tool. The die (5) of the forming tool has a smooth or profiled underside.

Abstract (de)

Bei einem Verfahren zur Herstellung eines großflächigen Blechteiles, insbesondere eines Karosseriebauteiles für ein Fahrzeug aus einer ebenen Platine ist vorgesehen, daß die ebene Platine (2) durch einseitige Beaufschlagung mit einem Wirkmedium (8) in einem Umformwerkzeug (3) in eine vorgereckte Vorform (10) gebracht wird und daß einschließend die aus dem Umformwerkzeug (3) entnommene Vorform (10) in einem separaten Tiefziehwerkzeug (11) in die Endform (12) umgeformt wird.

IPC 1-7 (main, further and additional classification)

B21D 22/20

IPC 8 full level (invention and additional information)

B21D 22/20 (2006.01); **B21D 22/26** (2006.01); **B21D 26/02** (2011.01); **B21D 26/021** (2011.01); **B21D 35/00** (2006.01)

CPC (invention and additional information)

B21D 26/021 (2013.01); **B21D 22/20** (2013.01); **B21D 22/26** (2013.01); **B21D 26/02** (2013.01)

Cited by

NL1019185C2; WO03033186A1; WO2012069108A1

Designated contracting state (EPC)

DE ES FR GB IT

EPO simple patent family

EP 1097758 A2 20010509; EP 1097758 A3 20020102; EP 1097758 B1 20041201; DE 19953522 A1 20010517; ES 2228374 T3 20050416; JP 2001162330 A 20010619; KR 20010051446 A 20010625; US 6675620 B1 20040113

INPADOC legal status

2018-07-31 [PG25 DE] LAPSED IN A CONTRACTING STATE ANNOUNCED VIA POSTGRANT INFORM. FROM NAT. OFFICE TO EPO

- Ref Country Code : DE
- Free text : LAPSE BECAUSE OF NON-PAYMENT OF DUE FEES
- Effective date : 20180404

2018-04-04 [REG DE R119] APPLICATION DEEMED WITHDRAWN, OR IP RIGHT LAPSED, DUE TO NON-PAYMENT OF RENEWAL FEE

- Document : DE 50008822

2017-01-31 [PGFP DE] POSTGRANT: ANNUAL FEES PAID TO NATIONAL OFFICE

- Ref Country Code : DE
- Payment date : 20160930
- Year of fee payment : 17

2012-08-31 [PG25 FR] LAPSED IN A CONTRACTING STATE ANNOUNCED VIA POSTGRANT INFORM. FROM NAT. OFFICE TO EPO

- Ref Country Code : FR
- Free text : LAPSE BECAUSE OF NON-PAYMENT OF DUE FEES
- Effective date : 20110930

2012-06-22 [REG FR ST] NOTIFICATION OF LAPSE

- Effective date : 20120531

2011-09-30 [PG25 ES] LAPSED IN A CONTRACTING STATE ANNOUNCED VIA POSTGRANT INFORM. FROM NAT. OFFICE TO EPO

- Ref Country Code : ES
- Free text : LAPSE BECAUSE OF NON-PAYMENT OF DUE FEES
- Effective date : 20090914

2011-07-29 [PG25 ES] LAPSED IN A CONTRACTING STATE ANNOUNCED VIA POSTGRANT INFORM. FROM NAT. OFFICE TO EPO

- Ref Country Code : ES
- Free text : LAPSE BECAUSE OF NON-PAYMENT OF DUE FEES
- Effective date : 20110704

2011-07-14 [REG ES FD2A] ANNOUNCEMENT OF LAPSE IN SPAIN
- Effective date : 20110714

2011-03-31 [PG25 IT] LAPSED IN A CONTRACTING STATE ANNOUNCED VIA POSTGRANT INFORM. FROM NAT. OFFICE TO EPO
- Ref Country Code : IT
- Free text : LAPSE BECAUSE OF NON-PAYMENT OF DUE FEES
- Effective date : 20090913

2011-02-04 [REG FR TP] TRANSMISSION OF PROPERTY

2010-11-30 [PG25 GB] LAPSED IN A CONTRACTING STATE ANNOUNCED VIA POSTGRANT INFORM. FROM NAT. OFFICE TO EPO
- Ref Country Code : GB
- Free text : LAPSE BECAUSE OF NON-PAYMENT OF DUE FEES
- Effective date : 20090913

2010-11-30 [PGFP FR] POSTGRANT: ANNUAL FEES PAID TO NATIONAL OFFICE
- Ref Country Code : FR
- Payment date : 20101005
- Year of fee payment : 11

2010-05-26 [GBPC] GB: EUROPEAN PATENT CEASED THROUGH NON-PAYMENT OF RENEWAL FEE
- Effective date : 20090913

2009-11-27 [REG FR CD] CHANGE OF NAME OR COMPANY NAME

2009-07-10 [REG FR TP] TRANSMISSION OF PROPERTY

2009-02-27 [PGFP ES] POSTGRANT: ANNUAL FEES PAID TO NATIONAL OFFICE
- Ref Country Code : ES
- Payment date : 20080929
- Year of fee payment : 9

2008-12-31 [PGFP GB] POSTGRANT: ANNUAL FEES PAID TO NATIONAL OFFICE
- Ref Country Code : GB
- Payment date : 20080918
- Year of fee payment : 9

2008-11-28 [PGFP IT] POSTGRANT: ANNUAL FEES PAID TO NATIONAL OFFICE
- Ref Country Code : IT
- Payment date : 20080922
- Year of fee payment : 9

2005-11-23 [26N] NO OPPOSITION FILED
- Effective date : 20050902

2005-08-26 [ET] FR: TRANSLATION FILED

2005-05-04 [GBT] GB: TRANSLATION OF EP PATENT FILED (GB SECTION 77(6)(A)/1977)
- Effective date : 20050407

2005-04-16 [REG ES FG2A] DEFINITIVE PROTECTION
- Document : ES 2228374 T3

2005-01-05 [REF] CORRESPONDS TO:
- Document : DE 50008822 P 20050105

2004-12-30 [REG IE FG4D] EUROPEAN PATENTS GRANTED DESIGNATING IRELAND
- Free text : GERMAN

2004-12-01 [AK] DESIGNATED CONTRACTING STATES:
- Kind Code of Ref Document : B1
- Designated State(s) : DE ES FR GB IT

2004-12-01 [REG GB FG4D] EUROPEAN PATENT GRANTED
- Free text : NOT ENGLISH

2003-04-16 [17Q] FIRST EXAMINATION REPORT
- Effective date : 20030228

2002-09-18 [AKX] PAYMENT OF DESIGNATION FEES
- Free text : DE ES FR GB IT

2002-09-04 [17P] REQUEST FOR EXAMINATION FILED
- Effective date : 20020702

2002-01-02 [AK] DESIGNATED CONTRACTING STATES:
- Kind Code of Ref Document : A3
- Designated State(s) : AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE

2002-01-02 [AX] REQUEST FOR EXTENSION OF THE EUROPEAN PATENT TO:
- Free text : AL;LT;LV;MK;RO;SI

2001-05-09 [AK] DESIGNATED CONTRACTING STATES:
- Kind Code of Ref Document : A2
- Designated State(s) : DE ES FR GB IT

2001-05-09 [AK] DESIGNATED CONTRACTING STATES:
- Kind Code of Ref Document : A2
- Designated State(s) : AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE

2001-05-09 [AX] REQUEST FOR EXTENSION OF THE EUROPEAN PATENT TO:
- Free text : AL;LT;LV;MK;RO;SI