

Title (en)  
METHOD FOR FORMING DEFORMED CROSS-SECTION AND FORMED ARTICLE OF QUADRILATERAL CROSS-SECTION EXHIBITING EXCELLENT SPOT WELDABILITY

Title (de)  
VERFAHREN ZUR HERSTELLUNG EINES VERFORMTEN QUERSCHNITTS UND FORMARTIKEL MIT VIERSEITIGEM QUERSCHNITT MIT HERRORRAGENDER PUNKTSCHWEISSFÄHIGKEIT

Title (fr)  
PROCÉDÉ DE MISE EN FORME DE SECTION TRANSVERSALE IRRÉGULIÈRE ET ARTICLE MOULÉ AYANT UNE SECTION TRANSVERSALE EN PARALLÉLOGRAMME ET POSSÉDANT D'EXCELLENTE PROPRIÉTÉS DE SOUDABILITÉ PAR POINTS

Publication  
**EP 2351623 A4 20121031 (EN)**

Application  
**EP 09816295 A 20090924**

Priority

- JP 2009067123 W 20090924
- JP 2008246271 A 20080925
- JP 2008246268 A 20080925

Abstract (en)  
[origin: EP2351623A1] It is difficult for a forming technique of complex cross-section shape of the related art to obtain a complex cross-section forming article having high spot weldability and high dimensional accuracy. More specifically, a tubing material 10 having a tensile strength (TS) of 590 MPa or more is crushed by complex cross-section shape forming dies 1 and 1A each having at least one surface with a flat portion in a state in which no internal pressure is loaded or an internal pressure of 50 MPa or less is loaded to the tubing material by liquid, and an internal pressure such that the maximum internal pressure becomes higher than or equal to the following P min [MPa] is continuously loaded by the liquid so as to form the tubing material into a complex cross-section shape.  $P_{min} = 0.045 \times TS$

IPC 8 full level  
**B21D 26/02** (2011.01); **B21D 26/033** (2011.01); **B21D 26/041** (2011.01); **B21D 51/16** (2006.01)

CPC (source: EP KR)  
**B21D 26/02** (2013.01 - KR); **B21D 26/033** (2013.01 - EP KR); **B21D 26/041** (2013.01 - EP); **B21D 51/06** (2013.01 - KR); **B21D 51/16** (2013.01 - KR)

Citation (search report)

- [XA] EP 1293415 A1 20030319 - NIPPON STEEL CORP [JP], et al
- [A] EP 1166914 A1 20020102 - IVECO FIAT [IT]
- [A] WO 0143897 A1 20010621 - TI CORPORATE SERVICES [GB], et al
- [A] US 5339667 A 19940823 - SHAH SANJAY M [US], et al
- See references of WO 2010035883A1

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US2015352626A1; US9545657B2; US10086422B2

Designated contracting state (EPC)  
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DOCDB simple family (application)  
**EP 09816295 A 20090924**; CN 200980137781 A 20090924; JP 2009067123 W 20090924; KR 20117006739 A 20090924; KR 20137017515 A 20090924