

Title (en)

IMPROVEMENTS RELATING TO TOOLS FOR COLD FLOW FORMING OF ASSEMBLY POINTS IN SHEET METAL

Title (de)

VERBESSERUNGEN AN WERKZEUGEN ZUR ERZEUGUNG VON BEFESTIGUNGSPUNKTEN AN BLECHEN DURCH KALTFORMUNG

Title (fr)

PERFECTIONNEMENTS AUX OUTILS POUR LA REALISATION DE POINTS D'ASSEMBLAGE DE TOLES PAR FLUAGE A FROID

Publication

**EP 0649355 B1 19980121 (FR)**

Application

**EP 94916204 A 19940429**

Priority

- EP 9401445 W 19940429
- FR 9305297 A 19930504

Abstract (en)

[origin: WO9425196A1] Improvements relating to tools for cold flow forming of assembly points in sheet metal. The tools comprise a first tool (1) with a punch (6) and a blank holder (5) and a second tool (10) with a guiding surface (16) from which extends a finger (14) terminated by an anvil (15), a die (20) formed by at least two shells (18), each of said shells (18) having a shoulder (21) slidably mounted on the guiding surface (16) and in contact with the lateral surface of the finger (14) through resilient means (26), the guiding means of the sections (18) being provided together with a stop restricting the separation of the shells (18) during cold flow. The improvements are characterized in that the stop consists of two half sections (30) elastically secured to the second tool (10).

IPC 1-7

**B21D 39/03**

IPC 8 full level

**B21D 39/03** (2006.01)

CPC (source: EP US)

**B21D 39/031** (2013.01 - EP US); **Y10T 29/34** (2015.01 - EP US); **Y10T 29/5343** (2015.01 - EP US)

Cited by

US8042370B2; DE102018218949A1; DE102018218949B4

Designated contracting state (EPC)

DE ES GB IT NL SE

DOCDB simple family (publication)

**WO 9425196 A1 19941110**; AU 6796394 A 19941121; DE 69408080 D1 19980226; DE 69408080 T2 19980806; EP 0649355 A1 19950426; EP 0649355 B1 19980121; ES 2114689 T3 19980601; FR 2704785 A1 19941110; FR 2704785 B1 19950721; JP H08503893 A 19960430; US 5509290 A 19960423

DOCDB simple family (application)

**EP 9401445 W 19940429**; AU 6796394 A 19940429; DE 69408080 T 19940429; EP 94916204 A 19940429; ES 94916204 T 19940429; FR 9305297 A 19930504; JP 52391894 A 19940429; US 36253995 A 19950407