

Title (en)  
Device for clinch joints.

Title (de)  
Durchsetzfügevorrichtung.

Title (fr)  
Dispositif pour joints à mi-fer.

Publication  
**EP 0366987 A1 19900509 (DE)**

Application  
**EP 89118946 A 19891012**

Priority  
DE 3836937 A 19881029

Abstract (en)  
[origin: JPH02155524A] PURPOSE: To firmly perform joining through single press process by pressing with a shape forming anvil of a female die and a forming member with a corresponding cylindrical recessed die when executing press joining of two sheets of metallic sheet pieces with male type and female type dies. CONSTITUTION: An anvil 12 cylindrical and with a circular top surface is provided. A female die for press forming is formed of a socket 10 with slopes 14 on the both sides and two pieces of forming members 16 having semicylindrical recessed parts 18 in a shape surrounding the anvil 12 on both sides. Metallic sheets 34, 36 to be joined are placed on the forming members 16 of the female die, on which a male die 30 is mounted concentrically to the anvil 12 of the female die. The metallic sheets 34, 36 to be worked are pressed with a circular front part 32 having a shoulder part 38, so that the shoulder part 38 of the male die 30 may abut on the upper metallic sheet 34, and then with die-pressing by the anvil 12 of the female die and the sloping surface 14, the two pieces of metallic sheets 34, 36 decrease thickness to 1/3 of the initial thickness and the edge parts of the anvil slide transversely to form a projected bead 40, and thus the metallic sheets 34, 36 are firmly joined.

Abstract (de)  
Vorrichtung zum Durchsetzfügen mit einem Stempel (30) und einer Matrize (16). Die Schneidenteile (16) der Matrize weichen nach dem Durchsetzen der Bleche in Richtung der Stempelbewegung, durch einen Parameter des Fügevorgangs gesteuert, aus, so daß sich das Material ungehindert breiten kann.

IPC 1-7  
**B21D 39/03; B23P 11/00**

IPC 8 full level  
**B21D 39/03** (2006.01); **B23P 11/00** (2006.01)

CPC (source: EP US)  
**B21D 39/031** (2013.01 - EP US); **Y10T 29/53765** (2015.01 - EP US)

Citation (search report)

- [Y] EP 0215449 B1 19910522
- [Y] DE 3713083 A1 19871029 - BTM CORP [US]
- [A] DE 3106313 A1 19820422 - BTM CORP [US]
- [AP] US 4803767 A 19890214 - OBRECHT ROBERT E [US], et al
- [A] SOVIET INVENTIONS ILLUSTRATED, Sektion P,Q, Woche 29, 02. September 1987 DERWENT PUBLICATIONS LTD., London, P52P62

Cited by  
DE19847794C1; US6240627B1; WO02081112A3

Designated contracting state (EPC)  
AT BE CH DE ES FR GB IT LI LU NL SE

DOCDB simple family (publication)  
**EP 0366987 A1 19900509; EP 0366987 B1 19920129**; AT E72152 T1 19920215; CA 2001636 A1 19900429; CA 2001636 C 19950606; DE 3836937 A1 19900503; DE 58900799 D1 19920312; ES 2030573 T3 19921101; JP 2515894 B2 19960710; JP H02155524 A 19900614; RU 1773238 C 19921030; US 4972565 A 19901127

DOCDB simple family (application)  
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