

Title (en)

Apparatus and method of mechanical joining from sheet metal plates, profiles or multiple-sheet metal connections

Title (de)

Vorrichtung und Verfahren zum mechanischen Fügen von Blechen, Profilen oder Mehrblechverbindungen

Title (fr)

Appareil et procédé de joindre mécaniquement des tôles, des profilés ou des connections de tôles multiples

Publication

EP 0890397 B1 20030326 (DE)

Application

EP 98112439 A 19980706

Priority

- DE 19729368 A 19970709
- US 22973199 A 19990113

Abstract (en)

[origin: EP0890397A1] The method concerns mechanical joining of sheet metal components, sections etc., according to which the joint between two components is produced by a force produced on these components by jointing tools. The required force is produced by several successive impacts of a jointing tool (52, 54), or is introduced into the joint in a pulsing mode at an excitation frequency. The opposite jointing tool (52, 54), the excited jointing tool (52, 54) and/or the components (50) to be joined are elastically mounted, so that their natural frequencies are lower than the excitation frequency. The apparatus includes a frame and a power unit for displacement of the jointing tools according to the claimed method.

IPC 1-7

B21D 39/03

IPC 8 full level

B21D 39/03 (2006.01); **B21J 15/02** (2006.01)

CPC (source: EP US)

B21D 39/031 (2013.01 - EP US); **B21J 15/025** (2013.01 - EP US); **B21J 15/12** (2013.01 - EP); **Y10T 29/49764** (2015.01 - EP US); **Y10T 29/4978** (2015.01 - EP US); **Y10T 29/49936** (2015.01 - EP US); **Y10T 29/49938** (2015.01 - EP US); **Y10T 29/53004** (2015.01 - EP US); **Y10T 29/53065** (2015.01 - EP US); **Y10T 29/53535** (2015.01 - EP US); **Y10T 29/53839** (2015.01 - EP US); **Y10T 29/5393** (2015.01 - EP US); **Y10T 29/53935** (2015.01 - EP US); **Y10T 29/53996** (2015.01 - EP US)

Cited by

DE102013217633A1; DE102013217632A1; CN107344223A; CN106862463A; KR100431640B1; EP1108480A3; DE102015213436A1; DE102015213761A1; DE102015213433A1; EP3117925A1; DE102015213438A1; EP3332886A1; EP3388165A1; DE102017205264A1; US6862913B2; EP1132158A1; EP3120951A1; EP3124133A1; DE102015214014A1; DE102020104529A1; DE102020104529B4; EP2845680A1; DE102013217640A1; EP2845665A1; US9844810B2; EP2846050A1; US9700933B2; EP2873473A1; DE102014113438A1; US9926963B2; US10208782B2

Designated contracting state (EPC)

DE ES FR GB IT SE

DOCDB simple family (publication)

EP 0890397 A1 19990113; **EP 0890397 B1 20030326**; DE 19729368 A1 19990114; US 2001002506 A1 20010607; US 6199271 B1 20010313

DOCDB simple family (application)

EP 98112439 A 19980706; DE 19729368 A 19970709; US 22973199 A 19990113; US 76515201 A 20010117