Title (en)

Method of punching an opening in a tubular wall and tubular wall thus obtained.

Title (de)

Verfahren zum Stanzen einer Öffnung in einer rohrförmigen Wand und damit hergestellte rohrförmige Wand.

Title (fr)

Procédé de poinçonnage d'une ouverture traversante dans une paroi tubulaire, et paroi tubulaire obtenue.

Publication

EP 0533574 B1 19941207 (FR)

Application

EP 92402555 A 19920917

Priority

FR 9111571 A 19910919

Abstract (en)

[origin: EP0533574A1] In order to produce an opening (6) passing right through a tubular wall (1) of a fluid box of a heat exchanger, a punch (2) is used having a cylindrical external surface (3) terminating in a cutting edge (4), the punch being moved in the direction (F) of the generatrices of its cylindrical surface in relation to the tubular wall so that the cutting edge comes into contact with the latter via the outside and passes through its thickness, thereby forming the opening. According to the invention, this cylindrical surface is connected, opposite the cutting edge, on at least part of its perimeter, to a surface portion (8) of the punch, this portion being inclined outwards from the cylindrical surface, and, at the end of the working stroke of the punch, the inclined surface portion deforms the tubular wall so as to flare the opening. The flaring of the opening permits alignment and easy insertion of the end of a tube into the opening. <IMAGE>

IPC 1-7

B21D 28/28

IPC 8 full level

B21D 28/24 (2006.01); **B21D 28/28** (2006.01); **B21D 28/34** (2006.01); **F28F 9/02** (2006.01); **F28F 9/14** (2006.01)

CPC (source: EP US)

B21D 28/28 (2013.01 - EP US); **F28F 9/0243** (2013.01 - EP US); Y10T 29/49389 (2015.01 - EP US); Y10T 29/49391 (2015.01 - EP US)

Cited by

CZ298876B6; FR2717110A1; EP0872294A1; FR2762242A1; EP0840083A3; US6993838B1; WO0055561A1

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EP 92402555 A 19920917; BR 9203651 A 19920918; DE 69200822 T 19920917; ES 92402555 T 19920917; FR 9111571 A 19910919; JP 27252892 A 19920917; MX 9205343 A 19920918; US 29742194 A 19940805