

Title (en)

Expander tool for hollow workpieces.

Title (de)

Aufweitewerkzeug für hohle Werkstücke.

Title (fr)

Outil évasé pour pièces à usiner creuses.

Publication

**EP 0417674 B1 19931201 (DE)**

Application

**EP 90117329 A 19900908**

Priority

- DE 3930710 A 19890914
- DE 4017404 A 19900530

Abstract (en)

[origin: CA2024394A1] An expansion tool (1) for pipes with a basic tool body (2) with two hand levers (3, 12), one of which (12) operates an expanding mandrel (5) with a free rotating cylinder (19) through a control mechanism (10). By activating the lever, the expanding mandrel emerges from the basic body (2), eliding at a preset stroke against a set (15) of radially moving expanding wedges (16). In order to allow the enforced withdrawal of the expanding mandrel (5) with reduced operating forces and a specific force distribution, the cylinder (19) has a shouldered cylinder axis (19a). The expanding mandrel is connected to the movable hand lever (12) through a retraction device (20). In one form of construction with a cam shaped control mechanism (10), the retraction device (29) consists of a tension member with working points on the cylinder (19) and on the hand lever (12). In another form of construction the control mechanism has a slit running in a curve shape around its swivel axis, in which the cylinder is guided in both directions of the movement of the expanding mandrel.

IPC 1-7

**B21D 41/02**

IPC 8 full level

**F16L 1/00** (2006.01); **B21D 39/20** (2006.01); **B21D 41/02** (2006.01)

CPC (source: EP US)

**B21D 41/026** (2013.01 - EP US)

Cited by

EP2392832A3; EP0689886A1; DE19924695A1; DE19924695C2; EP0619153A1; US6672128B2; US7922475B2; US8303295B2; EP2420333A1; WO2012022665A1; US9248617B2; US8562331B2; WO2009000966A1

Designated contracting state (EPC)

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**EP 0417674 A1 19910320; EP 0417674 B1 19931201**; AT E97840 T1 19931215; CA 2024394 A1 19910315; DE 59003679 D1 19940113; DK 0417674 T3 19940321; ES 2047223 T3 19940216; JP 3171845 B2 20010604; JP H03174928 A 19910730; US 5046349 A 19910910

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**EP 90117329 A 19900908**; AT 90117329 T 19900908; CA 2024394 A 19900831; DE 59003679 T 19900908; DK 90117329 T 19900908; ES 90117329 T 19900908; JP 24281990 A 19900914; US 58156990 A 19900912