

Title (en)
Punching device and punch therefor

Title (de)
Stanzeinrichtung und Stanzstempel für diese

Title (fr)
Dispositif de poinçonnage et poinçon

Publication
EP 1604751 A1 20051214 (DE)

Application
EP 05011615 A 20050530

Priority
DE 202004009138 U 20040609

Abstract (en)
A perforating press, e.g. for perforating green sheets in the production of ceramic substrates, has a pattern of thin needles (21) held in a press block with the pointed ends passing through the sheets and into a set of socket holes. The top ends of the needles have waisted sections (24) onto which are secured shrink fit sleeves (22) to provide a thrust surface to drive the thin needles. The waisted profile can be prepared in a variety of processes and with a variety of profiles. The sleeve can be metal or plastic and can be fitted by a cold or hot process. The needles are replaceable when worn.

Abstract (de)
Der erfindungsgemäße Stanzstempel weist einen formschlüssig gehaltenen Kopf 22 auf. Der Kopf 22 ist an dem Schaft 21 des Stempels 8 gehalten, indem durch plastische Verformung, beispielsweise durch radiale Druckanwendung, Material radial nach innen verdrängt wird, so dass sich ein Vorsprung 28 ausbildet, der flächenhaft an der Wandung einer Ausnehmung 23 anliegt. Es ist ein sicherer und dauerhafter Kraftübergang sichergestellt. <IMAGE>

IPC 1-7
B21D 28/34; **B26F 1/14**

IPC 8 full level
B21D 28/34 (2006.01); **B26F 1/00** (2006.01); **B26F 1/14** (2006.01); **H05K 3/00** (2006.01)

CPC (source: EP KR US)
B21D 28/34 (2013.01 - EP KR US); **Y10T 83/9428** (2015.04 - EP US); **Y10T 83/943** (2015.04 - EP US); **Y10T 83/9476** (2015.04 - EP US)

Citation (search report)

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CN104690148A

Designated contracting state (EPC)
DE FR IT

DOCDB simple family (publication)
DE 202004009138 U1 20040812; DE 502005000599 D1 20070531; EP 1604751 A1 20051214; EP 1604751 B1 20070418; JP 2005349561 A 20051222; JP 4966516 B2 20120704; KR 20060048260 A 20060518; US 2005274251 A1 20051215; US 7578224 B2 20090825

DOCDB simple family (application)
DE 202004009138 U 20040609; DE 502005000599 T 20050530; EP 05011615 A 20050530; JP 2005169466 A 20050609; KR 20050048833 A 20050608; US 14821305 A 20050609