

Title (en)

Method for cutting thin sheets, in particular metal plates, and elastomeric material used in this method.

Title (de)

Verfahren zum Schneiden dünner Platten, insbesondere von Blech und elastomerisches Material, das für dieses Verfahren verwendet wird.

Title (fr)

Procédé de découpage de feuilles minces, notamment de tôle et matériau élastomère utilisable pour ce procédé.

Publication

EP 0292357 A1 19881123 (FR)

Application

EP 88401119 A 19880506

Priority

FR 8707239 A 19870522

Abstract (en)

[origin: JPS6422426A] PURPOSE: To prevent generation of a burr of a product at a low cost by constructing a punch with a heterogeneous composite elastic material having different hardness regions. CONSTITUTION: A punch 4 is formed with a heterogeneous material consisting of a localized region of a relatively larger hardness and a remaining region of a relatively smaller hardness. A heterogeneous structure constituting the punch 4 is arranged with an elasticity distribution mass body 9 made of an elastomer material at an side opposite to a action face of the punch 4, this elasticity distribution mass body 9 transmits punch force to a whole heterogeneous structure placed on a sheet 1 in contact with a sharp edge 7 of a metal die 6 to demarcate a region to be blanked. Accordingly, by generating a crack at an initial place, blanking action is started to cause breaking, until it meets with advancement of an other line of blanking action started by an other heterogeneous region, blanking action by shearing is propagated.

Abstract (fr)

Le procédé de découpage d'un matériau en feuille (1) entre un poinçon (4) et une matrice (6) à arête tranchante (7) est caractérisé en ce que le poinçon (4) est constitué d'un matériau élastique composite hétérogène comportant des zones localisées (4a) à dureté relativement plus élevée et des zones complémentaires (4b) à dureté relativement plus faible.

IPC 1-7

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IPC 8 full level

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Citation (search report)

- [A] US 3683735 A 19720815 - ACHLER HOWARD S, et al
- [A] US 3765285 A 19731016 - ARCHER H, et al
- [A] CH 570248 A5 19751215 - SMITHS INDUSTRIES LTD
- [A] FR 2584956 A1 19870123 - COURBIS TECHNOLOGIES [FR]
- [A] US 2133445 A 19381018 - GUERIN HENRY E
- [A] US 2859719 A 19581111 - KRAYBILL DANIEL W
- [A] US 2377664 A 19450605 - BERGER JOHN L

Cited by

CN103949525A; CN103706705A; CN103909136A; CN104841752A; EP0491602A1; EP3254777A1

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