

Title (en)  
METHOD OF TRANSFORMING TOOLS

Publication  
**EP 0344117 A3 19901227 (DE)**

Application  
**EP 89810372 A 19890519**

Priority  
DE 3817680 A 19880525

Abstract (en)  
[origin: EP0344117A2] The production of grooves (1a) on the insertion end (1) of a drilling and chiselling tool is effected by means of segments (2) rolling on the insertion end (1) in the axial direction. The segments (2) are arranged on levers (3) which are mounted in such a way as to be rotatable about a pivot (4) essentially perpendicular to the axial direction of the insertion end (1). The levers (3) are driven by a working cylinder (8) and actuated in synchronism with one another, with the result that a plurality of grooves (1a) are rolled into the insertion end (1) simultaneously.  
<IMAGE>

IPC 1-7  
**B21K 5/10**; **B21K 1/54**; **B25D 17/08**

IPC 8 full level  
**B21D 53/60** (2006.01); **B21H 7/00** (2006.01); **B21H 7/14** (2006.01); **B21H 7/18** (2006.01); **B21J 5/02** (2006.01); **B21K 1/54** (2006.01); **B21K 5/00** (2006.01); **B21K 5/10** (2006.01); **B25D 17/08** (2006.01)

CPC (source: EP US)  
**B21H 7/187** (2013.01 - EP US); **B21K 1/54** (2013.01 - EP US); **B21K 5/10** (2013.01 - EP US); **B21H 7/18** (2013.01 - EP US)

Citation (search report)  
• [X] DE 2065191 A1 19721207 - BISHOP A  
• [X] AU 566086 B2 19871008 - BISHOP A E  
• [A] GB 2127327 A 19840411 - ALTON SYSTEMS LIMITED  
• [A] US 685417 A 19011029 - WILLIAMS LEWIS [US]  
• [AD] DE 3015893 A1 19811029 - HILTI AG [LI]

Cited by  
EP0467493A1; CH714772A1; US6528079B2; DE102021109639B3; WO2020099536A1

Designated contracting state (EPC)  
AT BE CH DE FR GB IT LI NL SE

DOCDB simple family (publication)  
**EP 0344117 A2 19891129**; **EP 0344117 A3 19901227**; **EP 0344117 B1 19931215**; AT E98537 T1 19940115; CA 1327133 C 19940222; DE 3817680 A1 19891207; DE 58906401 D1 19940127; DK 170363 B1 19950814; DK 252789 A 19891126; DK 252789 D0 19890524; FI 892493 A0 19890523; FI 892493 A 19891126; FI 95358 B 19951013; FI 95358 C 19960125; JP 2551996 B2 19961106; JP H0225234 A 19900126; US 4941339 A 19900717

DOCDB simple family (application)  
**EP 89810372 A 19890519**; AT 89810372 T 19890519; CA 600556 A 19890524; DE 3817680 A 19880525; DE 58906401 T 19890519; DK 252789 A 19890524; FI 892493 A 19890523; JP 12797389 A 19890523; US 35556689 A 19890523