

Title (en)  
PLIERS-TYPE HAND TOOL

Publication  
**EP 0228032 B1 19900620 (DE)**

Application  
**EP 86117597 A 19861217**

Priority  
DE 3545411 A 19851220

Abstract (en)  
[origin: US4829858A] In order to ergonomically optimize the hand side of combination pliers, whose gripping arms in each case form a mouth jaw on their ends and are in operative connection by means of a joint in such a way that in the case of different activities with the pliers the adaptation of the gripping arms to the anatomy and anthropometry of the human hand is retained, it is proposed that the gripping arms face one another elliptically in the plane thereof and that in the vicinity of the coupling surface to the hand the gripping arms have an elliptical cross-section.

IPC 1-7  
**B25B 7/00; B25G 1/10; B25G 1/12**

IPC 8 full level  
**B25B 7/00** (2006.01); **B25G 1/00** (2006.01); **B25G 1/10** (2006.01); **B25G 1/12** (2006.01)

CPC (source: EP US)  
**B25G 1/102** (2013.01 - EP US); **B25G 1/12** (2013.01 - EP US)

Cited by  
DE10224005B4; DE4117899C1; FR2709971A1; EP1908560A3; DE19830998A1; DE19830998C2; EP0538632A1; DE9112630U1; US8276429B2; DE102010016057A1; DE102010016057B4; EP0970781A2; US6176159B1

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

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**EP 0228032 A2 19870708; EP 0228032 A3 19871216; EP 0228032 B1 19900620**; AT E53952 T1 19900715; DE 3545411 A1 19870625; DE 3545411 C2 19880218; DE 3672108 D1 19900726; DK 161436 B 19910708; DK 161436 C 19911223; DK 612386 A 19870621; DK 612386 D0 19861218; ES 2016248 B3 19901101; FI 865161 A0 19861217; FI 865161 A 19870621; FI 87054 B 19920814; FI 87054 C 19921125; GR 3001013 T3 19911230; GR 900300020 T1 19910731; JP S62176781 A 19870803; NO 165712 B 19901217; NO 165712 C 19910327; NO 865083 D0 19861216; NO 865083 L 19870622; US 4829858 A 19890516

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**EP 86117597 A 19861217**; AT 86117597 T 19861217; DE 3545411 A 19851220; DE 3672108 T 19861217; DK 612386 A 19861218; ES 86117597 T 19861217; FI 865161 A 19861217; GR 900300020 T 19910731; GR 900400301 T 19900621; JP 30184986 A 19861219; NO 865083 A 19861216; US 21492388 A 19880609