

Title (en)  
Ladder

Title (de)  
Leiter

Title (fr)  
Echelle

Publication  
**EP 0931904 A3 20000517 (EN)**

Application  
**EP 98301074 A 19980213**

Priority  
KR 19980000836 A 19980114

Abstract (en)  
[origin: EP0931904A2] A ladder capable of preventing an accident from being caused due to the weakened combining force between beams and hinges while a user uses the ladder to perform work, and capable of preventing the beams and the steps from being released from each other. The ladder includes two pairs of beams (1,1' and 2,2')engaged with each other by hinge means (H,H' ) , and a plurality of steps(S) disposed between the beams (1,1',2,2') at the same distance interval. Both ends of the steps(S) are inserted into holes (100) which are formed at one side surfaces of the beams (1,1',2,2')and have the same cross sectional shape with that of the steps(S) and a predetermined size adapted to receive the ends of the steps (1,1',2,2'). Both ends of the steps(S) are enlarged due to the striking force applied by a punch (102) and are engaged with the beams (1,1',2,2')under the state that rounded ends of the steps(S) are formed from the outer side surfaces of the beams (1,1',2,2')to inner side surfaces of the beams (1,1',2,2') due to the striking force applied by the punch (102) and the rounded ends are brought into contact with the ends of the steps(S). <IMAGE> <IMAGE>

IPC 1-7  
**E06C 7/08**; **E06C 1/32**; **E06C 1/18**

IPC 8 full level  
**E06C 7/50** (2006.01); **E06C 1/18** (2006.01); **E06C 1/32** (2006.01); **E06C 7/08** (2006.01)

CPC (source: EP KR)  
**E06C 1/18** (2013.01 - EP); **E06C 1/32** (2013.01 - EP); **E06C 7/085** (2013.01 - EP); **E06C 7/50** (2013.01 - KR)

Citation (search report)  
• [A] FR 2100519 A1 19720324 - CHEVANT CLAUDE [FR]  
• [A] GB 2090550 A 19820714 - YAMAZAKI KEIICHIRO  
• [A] BE 466463 A  
• [A] FR 1122019 A 19560830 - NUSBAUMER & CIE  
• [A] GB 2038441 A 19800723 - NORCROS INVESTMENTS LTD  
• [A] US 5022118 A 19910611 - WAN-LI CHANG [TW]  
• [A] US 3811151 A 19740521 - KUEMMERLIN W  
• [A] EP 0359970 A1 19900328 - LOH KG HAILO WERK [DE]

Cited by  
CN111390037A; CN106337646A; CN105317368A; DE102004011851A1; EP1574661A1; WO2004001176A1; TWI400387B

Designated contracting state (EPC)  
AT BE CH DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE

DOCDB simple family (publication)  
**EP 0931904 A2 19990728**; **EP 0931904 A3 20000517**; KR 100251377 B1 20000601; KR 19990065510 A 19990805

DOCDB simple family (application)  
**EP 98301074 A 19980213**; KR 19980000836 A 19980114