

Title (en)  
PISTON, ESPECIALLY FOR A PRESSURE DIE CASTING APPARATUS

Publication  
**EP 0423413 A3 19930217 (DE)**

Application  
**EP 90102606 A 19900209**

Priority  
DE 3934778 A 19891018

Abstract (en)  
[origin: US5048592A] A plunger for forcing molten aluminum or brass out of a casting cylinder of a diecasting machine includes a cap which is screwed via an internal thread onto an external thread of a supporting body and is made of a material, in particular a copper alloy, which has a greater coefficient of thermal expansion than the material of the cylinder, in particular steel, and the material of the supporting body, in particular steel. An inner cover face of the cap bears against a front face of the supporting body and, with its internal thread, is screwed thermally onto the external thread of the supporting body, and in addition, is preferably shrunk on thermally.

IPC 1-7  
**B22D 17/20; B22D 19/00**

IPC 8 full level  
**B22D 17/20** (2006.01)

CPC (source: EP US)  
**B22D 17/203** (2013.01 - EP US)

Citation (search report)

- [Y] US 4842039 A 19890627 - KELM OTTO [US]
- [A] US 4667729 A 19870526 - ZECMAN KENNETH P [US]
- [A] FR 2285948 A1 19760423 - KUNZ HUGO [DE], et al
- [A] US 3046621 A 19620731 - MORTON GLEN R
- [A] DE 1191934 B 19650429 - NAT LEAD CO
- [Y] PATENT ABSTRACTS OF JAPAN vol. 10, no. 196 (M-497)10. Juli 1986 & JP-A-61 041 515 ( HITACHI METALS ) 27. Februar 1986

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**US 5048592 A 19910917**; DE 59010692 D1 19970507; EP 0423413 A2 19910424; EP 0423413 A3 19930217; EP 0423413 B1 19970402; ES 2102354 T3 19970801

DOCDB simple family (application)  
**US 47707290 A 19900209**; DE 59010692 T 19900209; EP 90102606 A 19900209; ES 90102606 T 19900209