

Title (en)  
INTERNAL WRENCH FOR A TOP HEAD DRIVE ASSEMBLY

Publication  
**EP 0285386 B1 19930602 (EN)**

Application  
**EP 88302818 A 19880330**

Priority  
• US 3448287 A 19870402  
• US 7902487 A 19870729

Abstract (en)  
[origin: EP0285386A2] An internal wrench (40) for earth drilling machine (10) of the type having a mast (12), a top head drive assembly (14) mounted for movement along the mast (12) and a quill (24) rotated by the top head drive assembly (14) includes a body (42) having an upper end (44) and a lower end (46) sized to fit within a length of casing (26). The upper end (44) of the body (42) is mounted to the quill (24) for rotation with the quill (24) and several jaws (60) are mounted to the lower end (46) of the body (42) to move between an extended position in which the jaws (60) engage in interior surface (30) of the casing (26) to rotate the casing (30) with the body (42), and a retracted position in which the jaws (60) are out of engagement with the interior surface (30). The jaws (60) are selectively moved between the extended and retracted positions in response to rotation of the body (42) by a system (66-86) which includes a drag ring (93) which operates the jaws (60) and a friction brake, (96) which engages the drag ring (93). A plug (54) is mounted to an intermediate portion of the body (42) to mate with threads at the upper end of the casing (26) to seal off the casing. Followers (100) on selected jaws (60) automatically retract the jaws (60) when the body (42) is lowered into the casing (26) to mate the plug (54) with the threads at the upper end of the casing (26).

IPC 1-7  
**E21B 3/02**; **E21B 19/16**

IPC 8 full level  
**E21B 3/02** (2006.01); **E21B 19/16** (2006.01)

CPC (source: EP KR US)  
**E21B 3/022** (2020.05 - EP KR US); **E21B 19/00** (2013.01 - KR); **E21B 19/16** (2013.01 - EP); **E21B 19/161** (2013.01 - EP KR US)

Cited by  
US5839330A; US5243081A; GB2299849A; AU697613B2; GB2332009A; GB2332009B; US6161617A; CN1074500C; DE102011056808A1; US6742596B2; US10138690B2; US6705405B1; US6976298B1; US6622796B1; WO0171154A1; WO03060287A1; WO2006135787A1; WO9618799A1; US6536520B1; US11002086B2; US7665515B2; US6684737B1; US6725938B1; US6598501B1; US6412554B1; US6668684B2; US6732822B2; US6527047B1; US6688398B2; US7021374B2; WO9811322A1; WO2013092911A3

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

DOCDB simple family (publication)  
**EP 0285386 A2 19881005**; **EP 0285386 A3 19890329**; **EP 0285386 B1 19930602**; AU 1400188 A 19881006; CA 1299166 C 19920421; DE 3881429 D1 19930708; KR 890002519 A 19890410; NO 881445 D0 19880330; NO 881445 L 19881003

DOCDB simple family (application)  
**EP 88302818 A 19880330**; AU 1400188 A 19880330; CA 563016 A 19880331; DE 3881429 T 19880330; KR 880003725 A 19880401; NO 881445 A 19880330