

Title (en)
Intermittently rotating drilling tool.

Title (de)
Mit Unterbrechungen drehendes Bohrwerkzeug.

Title (fr)
Outil de perforation à rotation intermittente.

Publication
EP 0149290 A2 19850724 (EN)

Application
EP 84300227 A 19840113

Priority
EP 84300227 A 19840113

Abstract (en)
In an intermittently rotating down-hole drilling tool a closed valve (17) is operatively moved downwards by pressurised drilling mud pumped down the drill string (11), the valve when it attains its lower position being opened and being returned under the influence of a spring (40) or other upward urging means acting on the valve to its upper position at which the valve is closed, thereby completing the cycle of operations. The valve is continuously coupled to a torque member (71) such that the downward movement of the valve causes the torque member to turn in one direction, and the upward movement of the valve causes the torque member to turn in the opposite direction. A drill bit (103) mounted on the lower end of a rotor (75) is connected, by means of a one-way clutch (76), to the torque member so that during the downward movement of the valve the rotor and drill bit are rotatably driven by the torque member but are stationary during the upward movement of the valve, the drill bit thus being operatively intermittently rotated. During the upward movement of the valve the pressurised drilling mud flows through the open valve and issues from the drill bit as high pressure and volume flushing jets while the drill bit is stationary, thereby providing a more effective cleaning of cuttings and chips from the bottom of the bore hole being formed by the drill bit. Aligned annular grooves (87, 88) are provided in the rotor and in the housing in which the rotor is mounted, ball bearings (89) being partially disposed in each of these grooves, thereby to provide an axial thrust bearing (86) capable of transmitting high axial thrust from the housing to the rotor and hence to the drill bit. Lipped pockets (90) are also provided in the rotor in communication with the grooves therein, with the ball bearings being disposed within these pockets during assembly and disassembly of the rotor and housing.

IPC 1-7
E21B 4/00; **E21B 44/00**; **E21B 17/04**; **E21B 21/10**

IPC 8 full level
E21B 4/00 (2006.01); **E21B 21/10** (2006.01); **E21B 44/00** (2006.01)

CPC (source: EP)
E21B 4/00 (2013.01); **E21B 21/10** (2013.01); **E21B 44/005** (2013.01)

Cited by
GB2351307B; CN114893140A; US11982142B2; US10024103B2

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

DOCDB simple family (publication)
EP 0149290 A2 19850724; **EP 0149290 A3 19851009**

DOCDB simple family (application)
EP 84300227 A 19840113