

Title (en)  
APPARATUS FOR DIRECTIONAL DRILLING

Publication  
**EP 0015137 B1 19840222 (EN)**

Application  
**EP 80300476 A 19800219**

Priority  
US 1358479 A 19790221

Abstract (en)  
[origin: EP0015137A1] A method and apparatus for drilling a substantially horizontal borehole through a subterranean mineral bed with a drilling assembly including a drill shaft 10 connected to a down-hole motor 12 and drill bit 13. A deflection device 26 is positioned between the down-hole motor and the drill bit. The deflection device applies a predetermined perpendicular force to the drill bit causing the borehole to deviate from the drill shaft axis in the direction of the force. The method includes periodically surveying the borehole to determine its position relative to the top or bottom of the mineral bed, and rotating the drill shaft through a half turn sequentially to provide an alternating upward and downward trajectory to the borehole within the upper and lower boundaries of the mineral bed.

IPC 1-7  
**E21B 7/06**

IPC 8 full level  
**E21B 7/06** (2006.01); **E21B 7/08** (2006.01)

CPC (source: EP)  
**E21B 7/068** (2013.01)

Cited by  
US2016281431A1; US4471843A; GB2306529A; US5778992A; GB2306529B; US7267184B2; US10316638B1; RU2740390C2; US11261667B2; US7546209B2; WO2004113666A1; WO0034616A1; US8875806B2; US9534446B2; US11193331B2; US6516900B1; US8960326B2; US10119385B2; US10544666B1; US11421480B2; US11428047B2; US11459828B2; US11643877B2

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**EP 80300476 A 19800219**; AU 5418479 A 19791224; CA 343775 A 19800116; DE 3066665 T 19800219; PL 22216180 A 19800221; ZA 797051 A 19791228