

Title (en)  
PUSH DRILL GUIDANCE SYSTEM

Publication  
**EP 0020824 B1 19840125 (EN)**

Application  
**EP 79301086 A 19790608**

Priority  
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Abstract (en)  
[origin: EP0020824A1] An electronic guidance system for a push drill (10) that is remotely guided by the operator. The system functions to maintain continual indication as to the attitude of the drilling apparatus, i.e., pitch, roll and distance to rock formations overlying or underlying the drilled stratum, with such indication being made available to the remote operator so that he can control the progression of the drilling apparatus. The drilling apparatus utilizes an instrument package adjacent the drilling mechanism which samples pitch and roll data through accelerometer output, and which monitors the distance of the drill head from adjacent rock formations by means of gamma ray count. The system includes first sensing means (58) in the drill (10) generating a drill pitch output signal, a second sensing means (60) generating a drill roll output signal, radiation sensing means responsive to natural radioactivity emanating from space adjacent the push drill (10) and generating a rate signal proportional to radiation count rate, the radiation sensing means including a gamma ray counter means (104) and means (112, 134) for amplifying and integrating the pulse output from the counter means (104) to provide a signal having an amplitude indicative of gamma ray count per unit time and remote operating means (46) connected to receive the pitch and roll output signals and the rate signal to provide indication on meters (70, 72, 74) enabling remote guidance control of the drill.

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