Title (en)

Earth well drilling apparatus.

Title (de)

Vorrichtung zum Bohren einer Erdbohrung.

Title (fr)

Dispositif pour le forage d'un puits.

Publication

EP 0227456 A2 19870701 (EN)

Application

EP 86309988 A 19861219

Priority

- US 81153185 A 19851219
- US 81157185 A 19851223
- US 81157285 A 19851223
- US 81157785 A 19851223

Abstract (en)

Structure (17) is passed into an earth well (10) including a whipstock (28) attached to piping (18) and a retractible anchor. The whipstock (28) includes a number of connected guide assemblies. Erection means is connected at one end to a forward guide assembly and at the other end to an extension projecting to the earth surface. To erect the whipstock, the extension is pulled to cause the guide assemblies to swing into a curved pathway. Thereafter, a drilling tube is passed through the whipstock into the formation. The whipstock may be deerected by releasing the extension means. Then, the anchor is released and the structure is pulled out. A drilling system in which hydraulic forces are applied against a drillhead at the forward end of a drilling pipe to pull a pipe into underground formation. A pushing force also is applied from the rearward end using sliding seals and a closed rearward end of the drill string against which fluid pressure is applied, or (b) by providing a dead weight to the rearward end. A system for gravel packing a production radial tube placed by the drilling system. The radial tube is perforated. A flexible permeable liner is passed into the radial tube and slurry is flowed through the liner and out the distal end of the radial tube back towards the well bore to form an annular gravel pack. Probe and method for determining the curvature of an elongated opening such as a borehole in the earth. The probe includes an axially extending flexible shaft and two pairs of sensive wires arranged in the quadrature about the shaft for axial movement relative to each other upon bending of the probe. The relative axial positions of the sensing wires on opposite sides of the flexible shaft are monitored to determine the curvature of the borehold.

IPC 1-7

E21B 7/06; E21B 7/18; E21B 21/12; E21B 43/11; E21B 29/02; E21B 47/022; E21B 4/00; E21B 17/07

IPC 8 full level

E21B 7/06 (2006.01); **E21B 7/18** (2006.01); **E21B 17/07** (2006.01); **E21B 21/12** (2006.01); **E21B 29/02** (2006.01); **E21B 43/04** (2006.01); **E21B 43/11** (2006.01); **E21B 44/00** (2006.01); **E21B 47/022** (2012.01)

CPC (source: EP)

E21B 7/061 (2013.01); **E21B 7/18** (2013.01); **E21B 17/07** (2013.01); **E21B 21/12** (2013.01); **E21B 29/02** (2013.01); **E21B 43/04** (2013.01); **E21B 43/11** (2013.01); **E21B 44/005** (2013.01); **E21B 47/022** (2013.01)

Cited by

CN109025919A; CN113266281A; GB2538541A; CN106639877A; EP1764475A1; CN106677728A; CN109779524A; CN111852335A; US11248429B2; US11193345B2; WO2007039025A1; WO9839551A1; WO2018063003A3; WO9532353A1; US8011453B2; US8127858B2

Designated contracting state (EPC)

BE DE ES FR GB IT

DOCDB simple family (publication)

EP 0227456 A2 19870701; **EP 0227456 A3 19881123**; **EP 0227456 B1 19920819**; AU 605122 B2 19910110; AU 6673286 A 19870625; BR 8606305 A 19871006; DE 3686478 D1 19920924; DE 3686478 T2 19930121; MX 160919 A 19900619

DOCDB simple family (application)

EP 86309988 A 19861219; AU 6673286 A 19861218; BR 8606305 A 19861219; DE 3686478 T 19861219; MX 470286 A 19861218