

Title (en)
Roller cone drill bit, method of designing the same and rotary drilling system

Title (de)
Rollenbohrmeissel, zugehöriges Entwurfsverfahren und Drehbohrsystem

Title (fr)
Trépan à cônes, procédé pour sa conception et système de forage rotatif

Publication
EP 1371811 B1 20110330 (EN)

Application
EP 03021139 A 19990831

Priority
• EP 99945376 A 19990831
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Abstract (en)
[origin: WO0012860A2] A novel and improved roller cone drill bit and method of design are disclosed. A roller cone drill bit for drilling through subterranean formations having an upper connection for attachment to a drill string, and a plurality of cutting structures rotatably mounted on arms extending downward from the connection. A number of teeth are located in generally concentric rows on each cutting structure. The actual trajectory by which the teeth engage the formation is mathematically determined. A straight-line trajectory is calculated based on the actual trajectory. The teeth are positioned in the cutting structures such that each tooth having a designed engagement surface is oriented perpendicular to the calculated straight-line trajectory.

IPC 8 full level
E21B 10/08 (2006.01); **E21B 10/16** (2006.01); **E21B 41/00** (2006.01)

CPC (source: EP)
E21B 10/08 (2013.01); **E21B 10/16** (2013.01)

Citation (examination)
• CN 2082755 U 19910814 - XINAN PETROLEUM COLLEGE [CN]
• US 5197555 A 19930330 - ESTES ROY D [US]
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GB IT

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WO 0012860 A2 20000309; WO 0012860 A3 20000608; WO 0012860 A9 20001123; AU 5798499 A 20000321; EP 1117894 A2 20010725; EP 1117894 A4 20020814; EP 1117894 B1 20031203; EP 1117894 B2 20100303; EP 1371811 A2 20031217; EP 1371811 A3 20040102; EP 1371811 B1 20110330; EP 1498572 A2 20050119; EP 1498572 A3 20060412; EP 1500781 A2 20050126; EP 1500781 A3 20060412; EP 1500782 A2 20050126; EP 1500782 A3 20060412; EP 1500783 A2 20050126; EP 1500783 A3 20060412; ID 28893 A 20010712; MX PA01002208 A 20030327

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