

Title (en)

ROLLER-CONE BITS, SYSTEMS, DRILLING METHODS, AND DESIGN METHODS WITH OPTIMIZATION OF TOOTH ORIENTATION

Title (de)

ROLLENMEISSEL, SYSTEME, BOHRVERFAHREN UND KONSTRUKTIONSMETHODEN MIT OPTIMIERUNG DER ZAHNORIENTIERUNG

Title (fr)

TREPANS A CONES, SYSTEMES DE FORAGE, PROCEDES DE FORAGE ET PROCEDES DE CONCEPTION PRESENTANT UNE ORIENTATION DES DENTS OPTIMISEE

Publication

EP 1117894 A2 20010725 (EN)

Application

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Priority

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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.

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