

Title (en)

IMPROVED TOOTH DESIGN USING CYLINDRICAL DIAMOND CUTTING ELEMENTS

Publication

EP 0119620 A3 19860212 (EN)

Application

EP 84102985 A 19840319

Priority

US 47706883 A 19830321

Abstract (en)

[origin: EP0119620A2] The cutting performance of cylindrical polycrystalline synthetic diamond elements (12) is improved by segmenting such cylindrically shaped elements (12) along a plane or planes parallel to the longitudinal axis (16) of the cylindrically shaped elements (12). In the preferred embodiments half cylinder or quarter cylinder shaped segments are incorporated as the diamond cutting elements (12) within teeth (10) disposed on a rotating bit. The planar surface or surfaces (12) characterizing the cylindrical segments are oriented within the tooth (10) to provide the leading and cutting face of the diamond cutting element (12). Typically, such planar surfaces (22) are entirely exposed and disposed adjacent to and form one wall of an adjacent and preceding fluid channel (24) whereby cleaning and cooling efficiency is also improved.

IPC 1-7

E21B 10/46; **E21B 10/56**

IPC 8 full level

E21B 10/46 (2006.01); **E21B 10/56** (2006.01); **E21B 10/567** (2006.01)

CPC (source: EP US)

E21B 10/567 (2013.01 - EP US)

Citation (search report)

- [Y] US 4373593 A 19830215 - PHAAL CORNELIUS [ZA], et al
- [Y] US 4190126 A 19800226 - KABASHIMA RYUICHI [JP]
- [Y] US 4351401 A 19820928 - FIELDER COY M
- [A] GB 2096669 A 19821020 - CHRISTENSEN INC

Cited by

EP0285678A1; EP0189212A1; US4926950A; US8485283B2

Designated contracting state (EPC)

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EP 0119620 A2 19840926; **EP 0119620 A3 19860212**; **EP 0119620 B1 19900228**; AU 2568884 A 19840927; BR 8401280 A 19841030; CA 1218355 A 19870224; DE 3481435 D1 19900405; JP S6016692 A 19850128; ZA 842109 B 19841128

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EP 84102985 A 19840319; AU 2568884 A 19840316; BR 8401280 A 19840320; CA 450039 A 19840320; DE 3481435 T 19840319; JP 5126584 A 19840319; ZA 842109 A 19840321