

Title (en)

Multi-component cutting element using triangular, rectangular and higher order polyhedral-shaped polycrystalline diamond disks.

Title (de)

Mehrkomponenten-Schneidelement mit dreieckigen, viereckigen und mehreckigen polykristallinen Diamantscheiben.

Title (fr)

Élément de coupe à plusieurs composants comportant des disques de diamant polycristallin triangulaires, rectangulaires et en forme de polyèdre d'ordre plus élevé.

Publication

EP 0156264 A2 19851002 (EN)

Application

EP 85103002 A 19850315

Priority

US 59310284 A 19840326

Abstract (en)

A diamond cutter (18) for use in a drill bit having a geometric size and shape normally characterised by unleached diamond product, such as STRATAPAX diamond cutters, can be fabricated by assembling a plurality of prefabricated leached polycrystalline diamond (PCD) elements (14) in an array in a cutting slug (20). A cutting slug is formed of matrix (16) material which in one embodiment is impregnated with diamond grit. The cutting face of the cutting slug (20) is characterized by exposing at least one surface of each of the PCD elements (14) disposed therein. The diamond elements (14) may be set within the cutting slug (20) either in a compact touching array or in a spaced-apart relationship. More than one type of array may also be employed within a single cutting slug (20). The diamond elements (14) can assume a variety of polyhedral shapes such as triangular prismatic elements, rectangular elements, hexagonal elements and the like. The plurality of diamond elements (14) and the cutting slug (20) are fabricated using hot pressing or infiltration techniques.

IPC 1-7

E21B 10/46

IPC 8 full level

B23B 27/14 (2006.01); **B24D 3/00** (2006.01); **B24D 7/18** (2006.01); **E21B 10/56** (2006.01); **E21B 10/567** (2006.01)

CPC (source: EP)

E21B 10/5676 (2013.01)

Cited by

US4943488A; US5116568A; CN102409981A; US5979578A; GB2304358A; GB2304358B; GB2309991A; GB2309991B; US5030276A; GB2177144A; GB2353810A; GB2353810B; GB2429471A; GB2429471B; GB2190412A; EP0246789A3; GB2181472A; US6248447B1; US7533740B2; US6272753B2

Designated contracting state (EPC)

BE DE FR GB NL

DOCDB simple family (publication)

EP 0156264 A2 19851002; **EP 0156264 A3 19860611**; **EP 0156264 B1 19900905**; AU 4021885 A 19851003; CA 1241946 A 19880913; DE 3579484 D1 19901011; JP S60226995 A 19851112

DOCDB simple family (application)

EP 85103002 A 19850315; AU 4021885 A 19850321; CA 477320 A 19850325; DE 3579484 T 19850315; JP 5969085 A 19850326