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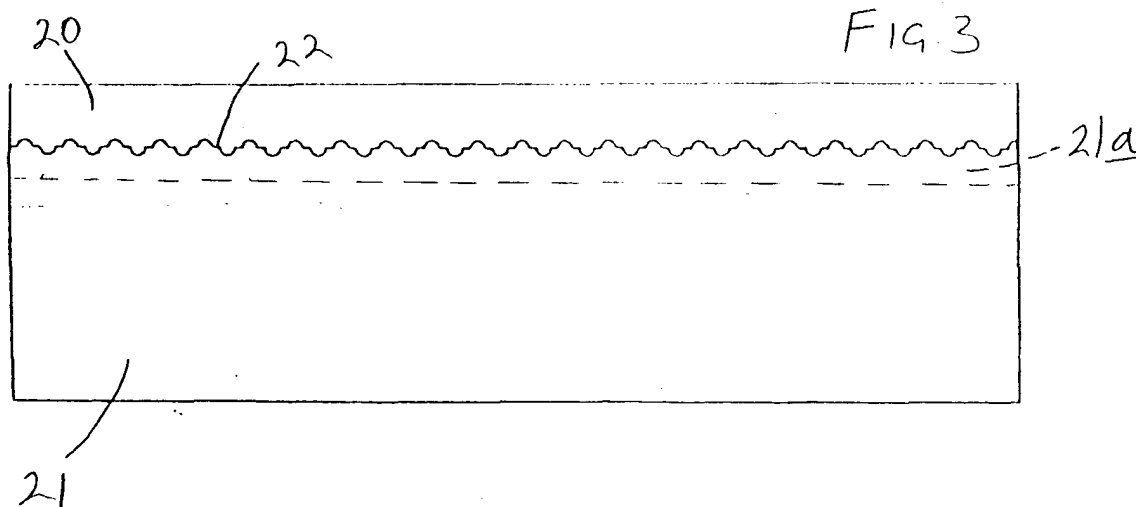
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(54) **Cutting elements faced with superhard material**

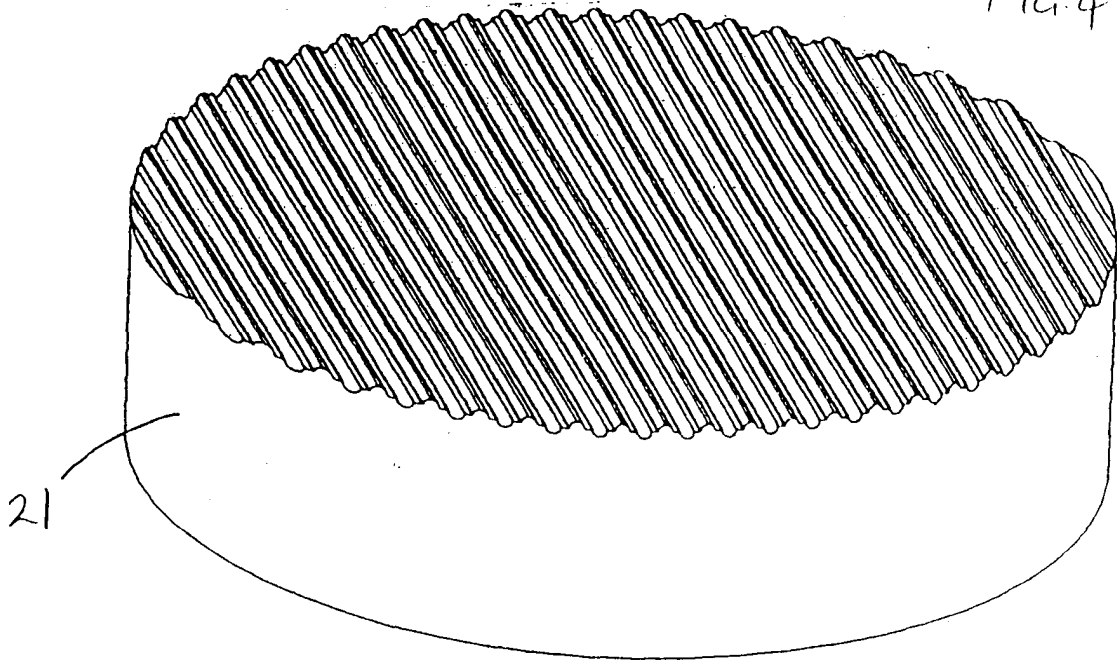
(57) A preform element, such as may be used as a cutting element in a drag-type rotary drill bit, comprises a polycrystalline diamond facing table bonded to a tungsten carbide substrate. The rear face of the facing table is formed with a series of elongate ribs and grooves, and the front face of the substrate is formed with a series of elongate ribs and grooves which interengage the

grooves and ribs respectively in the facing table. The ribs and grooves on each surface include ribs which are spaced from adjacent grooves so that the part of the surface which extends from the bottom of a groove to the apex of the adjacent rib is non-linear and discontinuous. The discontinuity between each rib and groove may be an intervening surface portion which is flat, inclined, curved or otherwise shaped.



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FIG. 4





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EUROPEAN SEARCH REPORT

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| DOCUMENTS CONSIDERED TO BE RELEVANT | | | |
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| Category | Citation of document with indication, where appropriate, of relevant passages | Relevant to claim | CLASSIFICATION OF THE APPLICATION (Int.Cl.6) |
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| A | EP 0 733 777 A (CAMCO DRILLING GROUP LTD) 25 September 1996 * figures 5,7 * --- | 1,6,26, 28 | |
| A,D | US 5 120 327 A (DENNIS MAHLON D) 9 June 1992 * abstract; figures 1,2 * --- | 1,6,26, 28 | |
| A,D | US 4 784 023 A (DENNIS MAHLON D) 15 November 1988 * figures 1-4 * ----- | 1,6,26, 28 | TECHNICAL FIELDS SEARCHED (Int.Cl.6) E21B B23P |
| The present search report has been drawn up for all claims | | | |
| Place of search THE HAGUE | | Date of completion of the search 1 July 1999 | Examiner Schouten, A |
| CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document | | | |

EPO FORM 1503 03.92 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
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