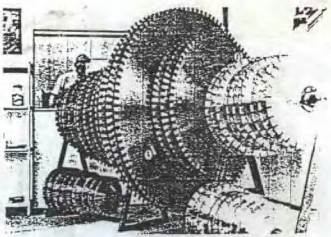
金刚石锯片

专利定题检索资料



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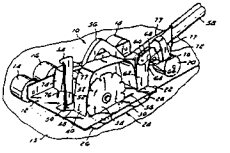
M17 **USP 5,056,499** (15 pp) **E. Chiuminatta, A.R. Chiuminatta** (Jul 2, 1990)

Apparatus for cutting concrete

An apparatus comprising a saw is provided for cutting a groove in soft concrete after it has been finished and before it has completely hardened. The saw 10, shown in Fig 2, consists of an abrasive circular saw blade 34 and its drive motor 32 mounted on a wheeled support platform 12. The blade extends through a slot 36 in the platform and also through a skid plate 24 depending from the platform, in order to cut the concrete below

Fig 2



USP 5,056,499

the skid plate. The saw blade has little or no kerf or tooth offset and is provided with slots to carry the cut concrete out of the groove. An extendable handle 58 allows the device to be used beyond the physical reach of the operator. 19 claims, 11 fig.

1. 专 利 号: US 5056499 （美国）
专利权人: E. Chiuminatta etc.
摘　　要: 切割混凝土的装置——用于在还没有完全硬化的混凝土上切槽，其特征是装置主要包括锯片38，锯片驱动装置32及轮式支撑平台12 （15页，图11）

E39 **EPA 0,451,509** (5 pp) **G. Weis, J. Pfister, D. Swarovski & Co**
(Apr 12, 1990—W. Germany) In German
Grinding body. *Schleifkörper*

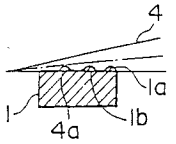
A grinding body with a concave grinding surface has a number of wings with rounded edges, with the tips of the wings inclined in the direction of travel. The grinding body is characterised in that it consists of a plastically deformable alloy containing abrasive grits. Coolant channels are provided from a central opening ending at or before the tips of the wings. 8 claims, 1 fig.

2. 专 利 号: EP 0451509 （欧洲）
专利权人: D. Swarovski & Co.
摘　　要: 具有凹形表面的磨具——其特点是由含耐磨颗粒的可塑性变形合金制成 （5页，图1）

E41 EPA 0,446,811 (13 pp) M. Yoshikawa, Onoda Cement Co Ltd
(Mar 10, Mar 22, 1990—Japan)
Method and apparatus for grinding diamond and diamond product using the same

The invention relates to a method for grinding the surface (a) of a diamond 1, a respective apparatus and a diamond product

Fig 1



EPA 0,446,811

for use as a cutting tool, heat sink or electronic substrate material. As shown in Fig 1, the side surface 4a of a laser beam 4 is brought into contact with the diamond, and the side surface of the laser beam is moved relatively along the surface 1a of the diamond, while giving thermal energy of the laser beam to the surface of the diamond. 27 claims, 24 fig.

3. 专利号: EP 0446811 (欧洲)
专利权人: Onoda Cement Co. Ltd.
摘　要: 研磨金刚石及其制品的方法及装置——激光束4的侧面4a在金刚石1的表面1a相对移动　13项、图24)

M18 EPA 0,450,506 (5 pp) J. Pfister, K. Daum, Tyrolit Schleifmittelwerke Swarovski KG
(Apr 3, 1990—Austria) In German
Wire saw. *Sägeseil*

A cable for a wire saw for cutting natural stone, masonry and the like consists of a metal cable fitted with beads coated with diamond abrasive. The beads are spaced apart from each other by spacers made of a material which can be cast or injected. The spacers are of a smaller diameter than the beads, and ring-shaped ribs consisting of a metal disc are provided between the beads and the spacers. The cable is characterised in that the diameter of the ribs is approximately the same as that of the beads. 4 claims, 3 fig.

4. 专利号: EP 0450506 (欧洲)
专利权人: Tyrolit Schleifmittelwerke Swarovski KG
摘　要: 绳锯——
(5项, 图3)

E115 **USP 5,022,797** (13 pp) **M. Sawa *et al*, Hitachi Ltd**
(May 14, Sep 9, 1986 — Japan)
Diamond tool

A diamond tool for the mirror-finish cutting of non-ferrous materials and a method of manufacturing the same are provided. The diamond tool has a main cutting edge and minute side cutting edges formed at the opposite ends of the main cutting edge so as to intersect the main cutting edge at an angle. The depth of chamfer on the side cutting edge is 1.5 to 5 times the depth of tears formed in the machined surface and the length of the side cutting edge is 1.5 to 10 times the feed of the diamond tool. The rake face of the diamond tool comprises two rake faces and two side rake faces. A tool grinding surface plate for manufacturing the diamond tool has a flat surface for grinding the rake faces and a circumferential tapered surface for grinding the side rake faces. The end relief surface and the rake face of the diamond tool are in the (001) zone of the single crystal diamond tip thereof and the crystal orientation of the end relief surface is in the range of (150) and (010) or a crystallographic equivalent. 2 claims, 17 fig.

5. 专 利 号: US 5022797 （美国）
专利权人: Hitachi Ltd.
摘　　要: 用于有色金属材料镜面加工切割的金刚石工具及其制法——有一个主切削刃和与之斜交的侧向小切削刃，侧向切削刃上倒角深度为加工面上裂痕深度的1.5-5.0倍，长度为工具给进量的1.5-10.0倍　（13页，图17）

E59 **USP 5,002,828** (5 pp) **J.-M. Cerceau, Société Industrielle de Combustible Nucléaire**
(Nov 17, 1987—France)
Composite diamond abrasive, process for preparation and drilling or machining tools which are equipped with it

A composite diamond abrasive has an active phase comprising a sintered product (or compact), containing diamond grains representing more than 80% by volume of the compact, and a support consisting essentially of tungsten carbide. The diamond compact is characterised in that each diamond grain is linked directly to its neighbours by bridging to exhibit a polycrystalline structure. The tungsten carbide support comprises a nickel-chromium binder phase including 6 to 15% of carbide. Drilling and machining tools can be equipped with the abrasive product of the invention. 13 claims.

6. 专 利 号: US 5002828 （美国）
专利权人: Societe Industrielle de Combustible Nucleaire
摘　　要: 复合金刚石研磨料及其制作方法——可用于钻进和加工工具，复合片中金刚石含量大于80%（体积比）　（5页）

E42 EPA 0,452,618 (10 pp) J. Dettwiler, F. Schlumpf, **Delta Engineering**

(Apr 17 1990—Switzerland) In German

Method and apparatus for making grinding bodies for tools for the stock-removal machining of materials. *Verfahren und Vorrichtung zur Herstellung von Schleifkörpern für Werkzeuge zur abtragenden Bearbeitung von Materialien*

A method and apparatus are proposed by means of which grinding bodies for attachment to a toolholder are produced. The individual grinding body consists of several layers of sinter metal powder or sinter metal discs together with several layers of natural or synthetic abrasive grits, whereby the layers are introduced in different sequences into a negative mould corresponding to the shape of the diamond wheel. The abrasive grits or diamond particles are picked up by a suction disc which is shaped in the form of a template and is provided with boreholes, the disc being acted upon by a vacuum, and ejected onto the subsequent sinter metal disc. In order to achieve a homogeneous structure, the grinding body blanks produced by this process are sintered at an appropriate temperature and pressure. 10 claims, 10 fig.

7. 专 利 号：EP 0452618 （欧洲）
专利权人：Delta Engineering
摘　　要：磨料块制作方法及装置——磨料由数层烧结金属粉末和数层天然或人造金刚石颗粒组成 （10页，图10）

M16 USP 5,056,272 (8 pp) G.C. Battaglia

(Jul 16, 1990)

★ **Method and apparatus for reducing thickness of stone slabs**

A machine for reducing the thickness of slabs of stone, such as granite, incorporates two sets of saw blades all of uniform diameter mounted on separate parallel axles. The blades in each set are offset from coplanar alignment with the blades in the other set. A stone slab to be reduced in thickness is advanced along a path parallel to the sets of blades. The blades in the first set cut a number of parallel channels into the slab leaving ridges corresponding to the gaps between the blades. The ridges are then cut away by the second set of blades as the slab advances past them, thereby reducing the thickness of the slab and leaving the slab with a flat upper surface and a uniform thickness throughout. 16 claims, 7 fig.

8. 专 利 号：US 5056272 （美国）
专利权人：G.C. Battaglia
摘　　要：减少石料板材的厚度的方法及装置——由两组直径完全相同的锯片分别固定在相互平行的轴上 （8页，图7）

此为试读，需要完整PDF请访问：www.erton

E111 USP 5,015,265 (13 pp) F. R. Corrigan, D. E. Slutz, General Electric Company
(Jun 14, 1989)
Process for making cubic boron nitride from coated hexagonal boron nitride and abrasive particles and articles made therefrom

An object of the invention is to provide an improved process for making cubic boron nitride (CBN) by direct conversion of oxide-free hexagonal boron nitride (HBN). Another object is to provide abrasive CBN particles having improved inter-particle bonding and controlled breakdown characteristics and articles made therefrom. Polycrystalline CBN is prepared from HBN by removing oxide from the surface of HBN particles and coating the substantially oxide-free particles with an agent capable of preventing re-oxidation of the particle surface. The coated HBN particles in a substantially oxide-free state are then converted to a polycrystalline CBN by direct conversion of HBN to CBN. Coating agents include metals, metal carbides, metal nitrides and metal borides. 36 claims, 2 fig.

9. 专 利 号: 5051265 (美国)
专利权人: General Electric Company
摘　　要: 由HBN(六方氮化硼)制取CBN(立方氮化硼)的过程——由HBN直接转化成CBN，并可改进可制颗粒的粘结特性 (13页，图2)

E103 USP 5,011,309 (4 pp) R. H. Frushour
(Aug 7, 1989)
Composite compact with a more thermally stable cutting edge and method of manufacturing the same

A compact blank for use in operations that require very high abrasion resistance and a thermally stable cutting edge is disclosed. The compact comprises a substrate formed of tungsten carbide or other hard material with a polycrystalline diamond layer bonded to the substrate. The diamond layer is fabricated by chemical vapour deposition and then subsequently sonded to the tungsten carbide substrate by the application of high pressure and high temperature at diamond stable conditions. 7 claims, 1 fig.

10. 专 利 号: US 5011309 (美国)
专利权人: R. H. Frushour
摘　　要: 具有较高热稳定性切削刀的复合片及其制作方法——除热稳定生高外，耐磨性也较高。 (4页，图1)

E113 USP 5,020,394 (7 pp) T. Nakamura, T. Nakai, Sumitomo Electric Industries Ltd
Oct 14, 1988 — Japan
Polycrystalline diamond fluted tool and a process for the production of the same

The invention provides a polycrystalline diamond fluted tool in which at least a part of the rake face of a fluted tool base metal is brazed with a polycrystalline diamond film, synthesised by a vapour phase method to form a cutting edge, and a process for the production of a polycrystalline diamond fluted tool, which comprises forming, by a vapour phase synthesis method, a film of polycrystalline diamond on the surface of a substrate which has been subjected to helical grinding, then subjecting the product to a chemical treatment to dissolve and remove the substrate, brazing the resulting polycrystalline diamond film in a fluted form to at least a part of the rake face of a tool base metal which has been subjected to helical grinding in a similar manner to the substrate, and then working a flank face of the brazed tool base metal to form a cutting edge. 18 claims, 3 fig.

11. 专 利 号: US 5020394 （美国）
专利权人: Sumitomo Electric Industries Ltd.
摘　　要: 聚晶金刚石槽形工具及其制造方法——槽形工具基层金属前刀面上至少有一部分焊有聚晶金刚石以形成切削刃。制造过程包括用气相合成法形成金刚石薄膜，热处理除去基层 （7页，图3）

E16 USP 5,031,484 (7 pp) S. M. Packer, Smith International Inc
(May 24, 1990)
Diamond fluted end mill

The invention provides a helically fluted end mill having at least a pair of spiral flutes in the mill side walls and a method of applying polycrystalline diamond powder into grooves formed along a leading edge of the flutes to form a diamond cutting surface. The mill body may be made of tungsten carbide and the process for producing the tool involves compacting and sintering the diamond material into the helically formed grooves and subsequently machining the mill body to obtain the final dimensions. 26 claims, 6 fig.

12. 专 利 号: US 5031484 （美国）
专利权人: Smith International Inc.
摘　　要: 金刚石槽形端面铣刀——其侧面上至少有一对螺旋形槽，槽的前缘上具有金刚石粉末以形成切削面
（7页，图6）

N7 **USP 5,035,087** (11 pp) **M. Nishiguchi *et al*, Sumitomo Electric Industries Ltd, Asahi Diamond Industrial Co Ltd, Nissei Industry Corp**
(Dec 8, Dec 10, 1986—Japan)
Surface grinding machine

The invention relates to a surface grinding machine for grinding the back surface of a wafer of a single crystal III - V group compound semiconductor on which elements have been fabricated. The machine comprises a wheel head vertically movably supported, a cup-shaped diamond wheel supported by a rotatable wheel shaft at one end of the wheel head and having an abrasive grain layer of Young's modulus (10-15) × 10^4 kgf/cm^2 at the lower end of the wheel, a wheel shaft driving motor, a servomotor, a suitable number of chuck tables, an index table for rotatably supporting the chuck tables, a chuck table driving motor, a main shaft motor current analysis circuit for detecting the current value of the wheel shaft driving motor, a main shaft rotation number analysis circuit for detecting the number of rotations of the wheel shaft driving motor and a feed speed control circuit for controlling the servomotor in such a manner as to decrease the feed speed when the grinding resistance is greater than a predetermined resistance value and increase the feed speed when the grinding resistance is smaller than the predetermined resistance value. 1 claim, 5 fig.

13. 专利号: US 5035087 （美国）
专利权人: Sumitomo Electric Industries Ltd.
摘　　要: 表面研磨机——它有可竖向移动的磨头，杯形金刚石轮，驱动马达，以及马达电流、转速分析回路，给进速度控制回路等组成。（11页，图5）

E40 **EPA 0,448,510** (7 pp) **G. Marxer *et al*, Hilti AG**
(Mar 12, 1990—W. Germany) In German
Method for avoiding cracks in cut-off blades and grinding wheels. *Verfahren zur Vermeidung von Rissen in Trenn- und Schleifscheiben*

The invention relates to a method of treating cut-off blades and grinding wheels provided with radial slots, typically tools provided with diamond abrasive inserts on their periphery for machining stone, concrete and the like. In order to prevent cracking, the tools are treated by shot-blasting the end of the slots facing the centre of the blade. This results in relieving the stresses in the material, compressing the surface and rounding the edges in the slots. 4 claims, 2 fig.

14. 专利号: EP 0448510 （美国）
专利权人: Hilti AG
摘　　要: 避免切割锯片和磨轮产生裂痕的方法——在槽端采用喷丸处理以释放材料中的应力（7页，图2）

E19 EPA 0,437,830 (6 ppi) W. F. Banholzer *et al*, General Electric Company

(Jan 16, 1990 — US)

CVD diamond coated annulus components and method of their fabrication

A method is provided for improving the abrasion resistance of the annular interior surface of an annulus such as in spray nozzles, valves, wire drawing dies and the like. The method comprises the steps of a) placing the annulus component heated to an elevated CVD diamond forming temperature in a vacuum chamber held under reduced pressure, b) providing a hydrocarbon/hydrogen gas mixture in the chamber, and c) at least partially decomposing the mixture in the chamber. In a final step, the decomposed gas mixture is directed into the heated annulus interior for diamond deposition/growth to occur on the interior surface. 15 claims.

16. 专 利 号: EP 0437830 （欧洲）
专利权人: General Electric Company
摘 要: CVA镀金刚石环形件——1)，将加热到CVD金刚石形成温度的环形件放入真空室，2)，向真空室提供碳氢化合物/氢气混合物，3)，分解一部分混合物，4)，将分解的气体混合物导入环形件内部使金刚石沉积和生长 （8页）

E10 USP 5,011,510 (7 pp) I. Hayakawa, H. Soboi, Mitsui Mining and Smelting Co Ltd

(Oct 5, 1988—Japan)

Composite abrasive articles and manufacturing method therefor

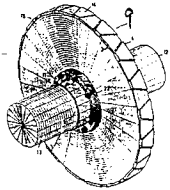
A composite abrasive article is obtained by the steps of mixing diamond or cubic boron nitride abrasive grains and a metal powder, moulding the mixture into small abrasive pieces or clusters, of uniform size, simultaneously or subsequently sintering the thus moulded abrasive pieces and then mixing the completely sintered abrasive pieces with a resin, metal or glass having a low melting point, such that the resultant mixture may be solidified into a predetermined shape and a composite abrasive article is obtained. 7 claims, 1 fig.

16. 专 利 号: US 5011510 （美国）
专利权人: Mitsui Mining and Smelting Co Ltd.
摘 要: 复合耐磨颗粒及其制作方法——将金刚石或CBN颗粒于金属粉末混合，然后压模，烧结 （7页，图1）

EJB USP 5,052,154 (9 pp) D. Lehmann, Naxos-Union Schleifmittel- und Schleifmaschinenfabrik
(Jul 20, 1988—W. Germany)
Grinding wheel having adjustable axial dimension

The grinding wheel 9 of the invention, shown, for example, in Fig 5, is intended for use in grinding operations wherein stress is imparted to side surfaces 15 of the wheel. The wheel is fastened by bolts 22 to a flange 11 of a grinding spindle 10 that has spindle carriers 12, 13 on opposite sides of the wheel. The grinding wheel comprises a wheel supporting body formed by two partial wheel-supporting bodies which are axially adjustable relative to each other. Each partial wheel supporting body has on its outer periphery a plurality of circumferentially spaced projections separated by respective axial grooves. The projections of each

Fig 5



USP 5,052,154

partial body fit within respective grooves in the other partial body, such that the projections of the two bodies alternately mesh in a tooth-like manner and segmentally define the circumferential surface, the radially outer portions of the side surfaces and the transitional areas therebetween of the grinding wheel. Superhard abrasive material is provided on the projections of the two partial bodies such that separate abrasive segments 3, 4 are formed. 21 claims, 5 fig.

17. 专 利 号: US 5052154 （美国）
专利权人: Naxos-Union Schleifmittel-und Schleifmaschinenfabric
摘　　要: 可调节的磨轮——该磨轮的特点在于由两个单独的支撑体组成，两个支撑体在轴向方向可以调节，每个支撑体的周边上具有许多轴向槽栏互隔开的突出片，一个支撑体的突出体固定在另一个支撑体的栏间槽内，互相啮合。（9也，图5）