



(11) Publication number : **0 592 345 A3**

(12)

EUROPEAN PATENT APPLICATION

(21) Application number : **93500119.8**

(51) Int. Cl.⁵ : **B28D 1/22**

(22) Date of filing : **04.08.93**

(30) Priority : **07.08.92 ES 9201661**
15.12.92 ES 9202535
17.12.92 ES 9202547

(43) Date of publication of application :
13.04.94 Bulletin 94/15

(84) Designated Contracting States :
AT BE CH DE DK FR GB GR IE IT LI LU MC NL
PT SE

(88) Date of deferred publication of search report :
17.08.94 Bulletin 94/33

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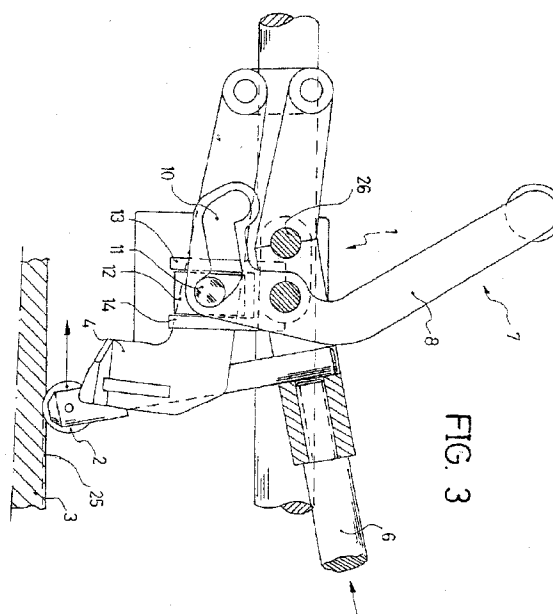
(54) **Machine for cutting/separating flat pieces of ceramic and the like.**

(57) It comprises a sliding support (1) bearing a tool (2) for marking the flat ceramic piece (3) with a groove (25), and a mechanism (4) for separating said piece (3) into two parts, said mechanism forming an integral part of the sliding support (1) and being actuated by the same lever (6) which is used to actuate said tool.

The cutting tool (2) is mounted on a shaft (30) comprising a projection (31) on the sliding support (1) and a recess (32) in said shaft (30), said projection (31) and said recess (32) being mutually coupled to position the shaft (30) relative to the sliding support (1).

It also comprises a fixed stop rule (108), an element (109) which can be moved linearly along a guide, a rotating element (110) connected to said element (109), and a fixed sector (111), graduated in angles, relative to which moves the rotating element (110), said element (110) comprising the guide (112) along which moves the element (109), the latter being graduated along its length.

The cutting and separating of the piece is made easier, the correct positioning of the cutting tool is ensured, and it is possible to make repeated, accurate cuts at any angle.





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EUROPEAN SEARCH REPORT

Application Number
EP 93 50 0119

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.5)
X	EP-A-0 387 142 (TOMECANIC SA) * column 3, line 53 - column 4, line 37 * * figures 1-5 * ---	1,2	B28D1/22
X	FR-A-2 462 244 (E. JOCKER) * page 5, line 32 - page 6, line 15 * * figures 1,2 * ---	1,2	
X	EP-A-0 255 460 (HERMANOS BOADA SA) * column 3, line 17 - line 25 * * column 4, line 7 - line 11 * * column 4, line 23 - line 29 * * figures 1,3 * ---	1,2	
A	EP-A-0 315 728 (ERICH VOM BERG LEICHTMETALLGIESSEREI UND HERSTELLUNG VON WERKZEUGEN) * column 3, line 39 - column 4, line 41 * * figures 1-3 * ---	11,14,15	
A	DE-U-91 14 140 (W.-H. LIU) * claims 1-5; figures 1-3 * -----	11,14,15	TECHNICAL FIELDS SEARCHED (Int.Cl.5) B28D
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 6 June 1994	Examiner Moet, H
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 03.82 (P04C01)



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CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing more than ten claims.

- ☐ All claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for all claims.
- ☐ Only part of the claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims and for those claims for which claims fees have been paid, namely claims:
- ☐ No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims.

LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirement of unity of invention and relates to several inventions or groups of inventions,

namely:

see sheet -B-

- ☐ All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.
- ☒ Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims: 1-3, 11-15
- ☐ None of the further search fees has been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims, namely claims:



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LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirement of unity of invention and relates to several inventions or groups of inventions, namely:

Article 82 and Rule 30(1) EPC.

The Search Department of the EPO is of the opinion that the present patent application does not fulfill the requirements of unity of invention.

The search carried out by the EPO was started with claim 1. All documents cited in the search report show, that the subject-matter of claim 1 is not new. Therefore, the common technical features of the claims 2, 4, 6, 7, 8, 11 cannot be considered as special technical features within the meaning of Rule 30(1) EPC. At this stage of the procedure, the Search Department of the EPO discerns six groups of inventions, which are given below, the common technical features being indicated in boldface characters.

1. Claims: 1-3. A machine for cutting and separating flat pieces of ceramic comprising a sliding support carrying a grooving tool and a separating mechanism for pressing the scored ceramic piece against a protruding element in view of separating said piece into two parts, characterized in that said mechanism forms an integral part of said sliding support and is actuated by the same lever which is used to actuate said grooving tool; said sliding support further comprising means for positioning said separating mechanism in two extreme positions; said means for positioning said separating mechanism comprising a lever including a pair of arms pivotally mounted on said sliding support, each of said arms being provided with a grooved cam in which slides a spigot which forms an integral part of each of the feet of said separating mechanism, said spigot being guided such that its movement is substantially vertical, said extreme positions of said separating mechanism corresponding to the extreme positions of said spigot in said grooved cam.
positioning said separating
2. Claims: 4-5. A machine for cutting and separating flat pieces of ceramic comprising a sliding support carrying a grooving tool and a separating mechanism for pressing the scored ceramic piece against a protruding element in view of separating said piece into two parts, characterized in that said mechanism forms an integral part of said sliding support and is actuated by the same lever which is used to actuate said grooving tool; said protruding element being located below said ceramic piece and being a rib arranged along the length of the machine, said rib being arranged between two plates which act as a support base for said ceramic piece, and which are deformed by the action of said separating mechanism such that said rib is made to protrude.
3. Claim: 6. A machine for cutting and separating flat pieces of ceramic comprising a sliding support carrying a grooving tool and a separating mechanism for pressing the scored ceramic piece against a protruding element in view of separating said piece into two parts, characterized in that said mechanism forms an integral part of said sliding support and is actuated by the same lever which is used to actuate said grooving tool; further comprising a stop rule which can slide in a direction transverse to the movement of said sliding support.



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LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirement of unity of invention and relates to several inventions or groups of inventions, namely:

4. Claim: 7. A machine for cutting and separating flat pieces of ceramic comprising a sliding support carrying a grooving tool and a separating mechanism for pressing the scored ceramic piece against a protruding element in view of separating said piece into two parts, characterized in that said mechanism forms an integral part of said sliding support and is actuated by the same lever which is used to actuate said grooving tool; further comprising a first pair of cylindrical bars for guiding said sliding support and comprising a second pair of bars, whose resisting moment is greater than that of said first pair of bars, said second pair of bars being mounted in a specific manner.
5. Claim: 8-10. A machine for cutting and separating flat pieces of ceramic comprising a sliding support carrying a grooving tool and a separating mechanism for pressing the scored ceramic piece against a protruding element in view of separating said piece into two parts, characterized in that said mechanism forms an integral part of said sliding support and is actuated by the same lever which is used to actuate said grooving tool; further characterized in that the grooving tool is mounted on a shaft comprising means for positioning said shaft relative to said sliding support.
6. Claims: 11-15. A machine for cutting and separating flat pieces of ceramic comprising a sliding support carrying a grooving tool and a separating mechanism for pressing the scored ceramic piece against a protruding element in view of separating said piece into two parts, characterized in that said mechanism forms an integral part of said sliding support and is actuated by the same lever which is used to actuate said grooving tool; further comprising a fixed stop rule and a fixed sector graduated in angles of particular construction.

Subject searched:

- YES 1.
- NO 2.
- NO 3.
- NO 4.
- NO 5.
- NO 6.

The search was restricted to the subject-matter of claims 1-3 and does not imply acknowledgement of unity of invention for the subjects as yet unsearched.