(54) Title: CUTTING DEVICE FOR SEPARATING INDIVIDUAL LAMINATED CHIP ASSEMBLIES FROM A STRIP THEREOF; METHOD OF SEPARATION AND A METHOD OF MAKING THE CUTTING DEVICE

(57) Abstract: An abrasive wheel (5) is used to separate individual laminated chips from a strip by cutting through the copper bridging elements (1). The abrasive wheel (5) is made up of abrasive particles bonded in a matrix having a high glass transition temperature and a cutting edge having a maximum thickness of the order of 350 micron, whereby the cut is substantially straight and free of smears and burrs.
INTERNATIONAL SEARCH REPORT

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : B24B 1/00
US CL : 451/28

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 451/28, 541, 547; 125/15, 13.01, 39, 51/293, 298

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base searched during the international search (name of data base and, where practicable, search terms used)

Please See Continuation Sheet

C. DOCUMENTS CONSIDERED TO BE RELEVANT

<table>
<thead>
<tr>
<th>Category</th>
<th>Citation of document, with indication, where appropriate, of the relevant passages</th>
<th>Relevant to claim No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>US 5,313,742 A (CORCORAN, JR. ET AL) 24 MAY 1994</td>
<td>1-2, 4-8</td>
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<td></td>
<td>(SEE ENTIRE CDOCUMENT)</td>
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<td>Y</td>
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<td>9, 11-18, 20-26, 28-29</td>
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<tr>
<td>A</td>
<td>US 6,056,795 A (RAMANATH ET AL) 02 MAY 2000</td>
<td>1, 8</td>
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<tr>
<td>A</td>
<td>US 6,276,355 B1 (ZHANG ET AL) 21 AUGUST 2001</td>
<td>9, 17</td>
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<td>A</td>
<td>US 3,650,715 A (BRUSHEK ET AL) 21 MARCH 1972</td>
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<tr>
<td>A</td>
<td>US 4,142,870 A (LOVEJOY) 06 MARCH 1979.</td>
<td>1, 8</td>
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c

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& document member of the same patent family

Date of the actual completion of the international search

30 June 2003 (30.06.2003)

Date of mailing of the international search report

24 JUL 2003

Name and mailing address of the ISA/US

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Form PCT/ISA/210 (second sheet) (July 1998)
Continuation of B. FIELDS SEARCHED Item 3:
EAST:
SEARCH TERMS: DICING, SINGULATION, COPPER, INTERCONNECTS, GANG, SAW, CUTTING