Title: METHOD AND SYSTEM FOR IMPROVED WIRE BONDING

Abstract: A method for coupling electrical contacts is provided that includes forming, over a contact of die (20), a bonded ball (30) that includes a neck (50), a collar (54), a shoulder (58) and a base (60). The shoulder has a downwardly and outwardly sloping shoulder (58) that makes an angle (58A) of 105-130 degrees with an upwardly extending vertical line (35). The neck (50) and shoulder (58) overlie substantially all of the area of the base (60) that makes contact with the die (20).
Declarations under Rule 4.17:
— as to applicant’s entitlement to apply for and be granted a patent (Rule 4.17(ii))
— as to the applicant’s entitlement to claim the priority of the earlier application (Rule 4.17(iii))

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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.
INTERNATIONAL SEARCH REPORT

INTERNATIONAL SEARCH REPORT

A. CLASSIFICATION OF SUBJECT MATTER
   IPC(8) : B23K 31/02; H01L23/49; H01L 21/447
   US CL : 228/180.5; 257/784; 438/617
   According to International Patent Classification (IPC) or in both national classification and IPC

B. DOCUMENTS SEARCHED
   Minimum documentation searched (classification system followed by classification symbols)
      U.S. : 228/180.5; 257/784; 438/617
   Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
      Electronic database consulted during the international search (name of data base and, where practicable, search terms used)
      USPAT; US PG PUBS

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 6,213,378 B1 (Singh) 10 April 2001 (10.04.2001), Figs. 2-4, 7 and column 4, line 34 to column 12, line14.</td>
<td>5-11</td>
</tr>
<tr>
<td>Y</td>
<td>US 5,871,141 (Hadar et al.) 16 February 1999 (16.02.1999), Figs. 5, 9-11 and column 5, lines 39-63.</td>
<td>1-4, 12-20</td>
</tr>
<tr>
<td>Y</td>
<td>US 6,114,450 A (Sachdev et al.) 05 September 2000 (05.09.2000), column 1, lines 20-38.</td>
<td>14-20</td>
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[X] Further documents are listed in the continuation of Box C. [ ] See patent family annex.

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24 October 2005 (24.10.2005)

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Name and mailing address of the ISA/US
Mail Stop PCT, Attn: ISA/US Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
Facsimile No. (703) 305-3230

Authorized officer
Stephen W. Smoot
Telephone No. 571-272-1698

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