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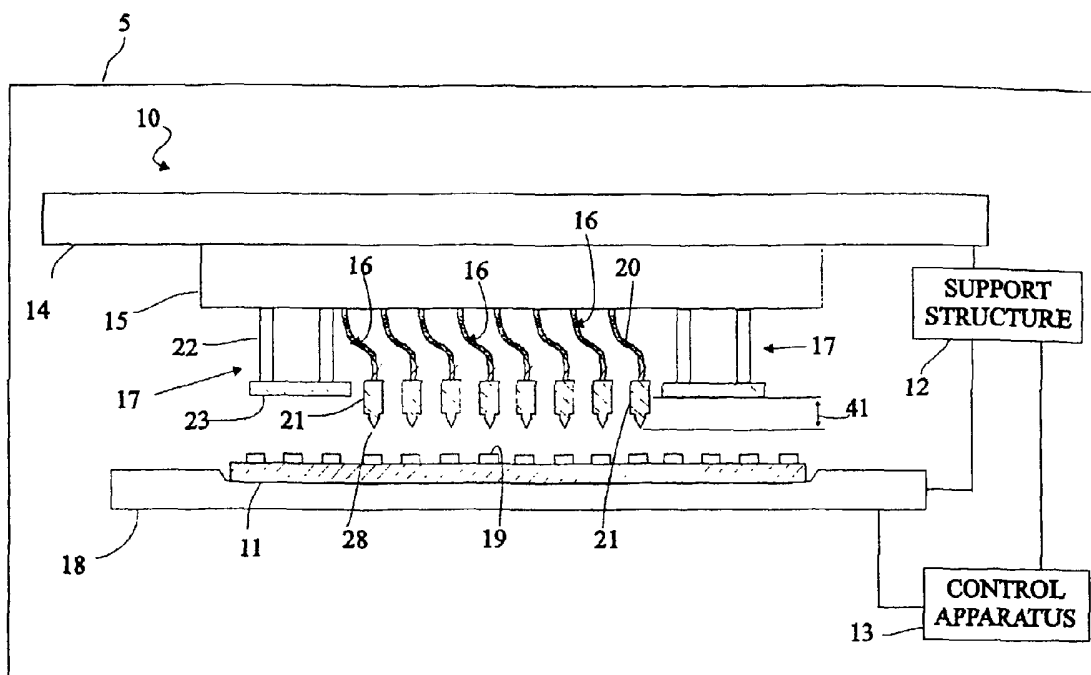
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- Published:**
- with international search report
 - before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

[Continued on next page]

(54) Title: APPARATUS AND METHOD FOR LIMITING OVER TRAVEL IN A PROBE CARD ASSEMBLY



(57) Abstract: Methods and apparatuses for testing semiconductor devices are disclosed. Over travel stops limit over travel of a device to be tested with respect to probes of a probe card assembly. Feedback control techniques are employed to control relative movement of the device and the probe card assembly. A probe card assembly includes flexible base for absorbing excessive over travel of the device to be tested with respect to the probe card assembly.

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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 Application No
PCT/US 03/40316

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 G01R1/073 G01R31/316 G01R3/00

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)
IPC 7 G01R

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

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

EPO-Internal, PAJ, WPI Data, IBM-TDB, INSPEC

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category ° | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|------------|--|------------------------------|
| X | US 2001/012704 A1 (ELDRIDGE BENJAMIN N) 9 August 2001 (2001-08-09) | 1, 7-15, 22, 23, 25-27 |
| A | paragraphs '0054!, '0070! paragraphs '0072!, '0072! | 2-4, 16-21, 28, 29 |
| X | ----- US 6 469 537 B1 (AKRAM SALMAN ET AL) 22 October 2002 (2002-10-22) column 4, line 57 - line 66 column 5, line 36 - line 47 column 6, line 29 - line 38 figures 2,3 ----- -/-- | 1, 5, 6 |

Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

° Special categories of cited documents :

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
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- *P* document published prior to the international filing date but later than the priority date claimed

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- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- *&* document member of the same patent family

Date of the actual completion of the international search

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US 03/40316

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:

3. Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.

2. As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.

3. As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:

4. No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

see annex

Remark on Protest

- The additional search fees were accompanied by the applicant's protest.
- No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-29

Probe card assembly with stoppers manufactured on the card assembly serving as force sensors.

2. claims: 30-38

Method of controlling relative movement of a device to be tested and a probe card assembly.

INTERNATIONAL SEARCH REPORT

International Application No
PCT/US 03/40316

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
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| A | US 2002/132501 A1 (ELDRIDGE BENJAMIN N ET AL) 19 September 2002 (2002-09-19) abstract figure 11 ----- | 1, 15 |

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No
PCT/US 03/40316

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