



US007046020B2

(12) **United States Patent**  
**LaMeres et al.**

(10) **Patent No.:** **US 7,046,020 B2**  
(45) **Date of Patent:** **May 16, 2006**

(54) **PROBES WITH PERPENDICULARLY  
DISPOSED SPRING PINS, AND METHODS  
OF MAKING AND USING SAME**

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(\*) Notice: Subject to any disclaimer, the term of this  
patent is extended or adjusted under 35  
U.S.C. 154(b) by 0 days.

(21) Appl. No.: **10/781,086**

(22) Filed: **Feb. 17, 2004**

(65) **Prior Publication Data**

US 2005/0179454 A1 Aug. 18, 2005

(51) **Int. Cl.**

**G01R 31/02** (2006.01)

(52) **U.S. Cl.** ..... **324/754; 324/761**

(58) **Field of Classification Search** ..... **324/754-762,**  
**324/73.1, 158.1; 439/482, 82**

See application file for complete search history.

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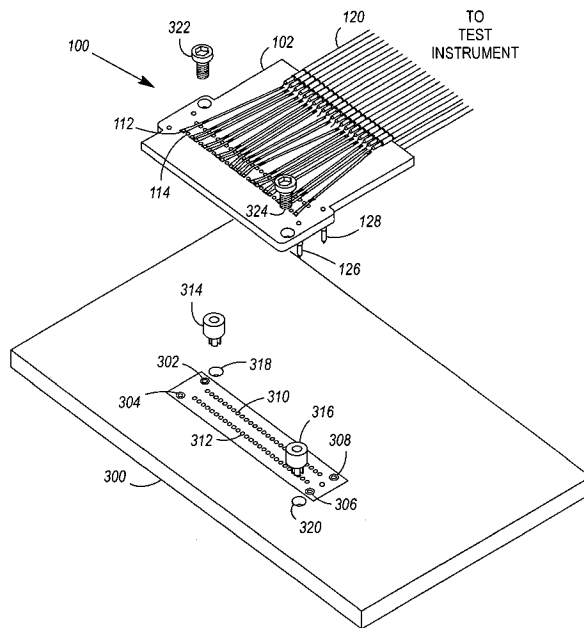
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*Primary Examiner*—Jermele Hollington

(57) **ABSTRACT**

A probe for probing test points on a target board uses a  
printed circuit board (PCB) having a plurality of signal  
routes for routing signals to a test instrument. The probe also  
has a plurality of spring pins for probing the test points on  
the target board. Each of the spring pins is i) disposed  
perpendicularly to the PCB, and ii) electrically coupled to at  
least one signal route of the PCB. By way of example, the  
spring pins may be fit into holes in the PCB or, alternately,  
they may be electrically coupled to signal routes of a second  
PCB that is perpendicularly abutted to the first PCB. Meth-  
ods for making and using such probes are also disclosed.

**16 Claims, 5 Drawing Sheets**

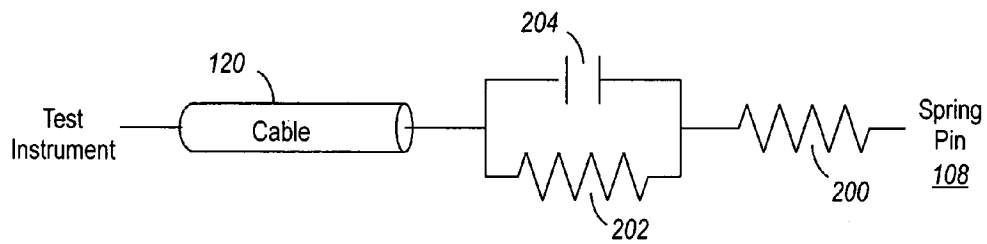
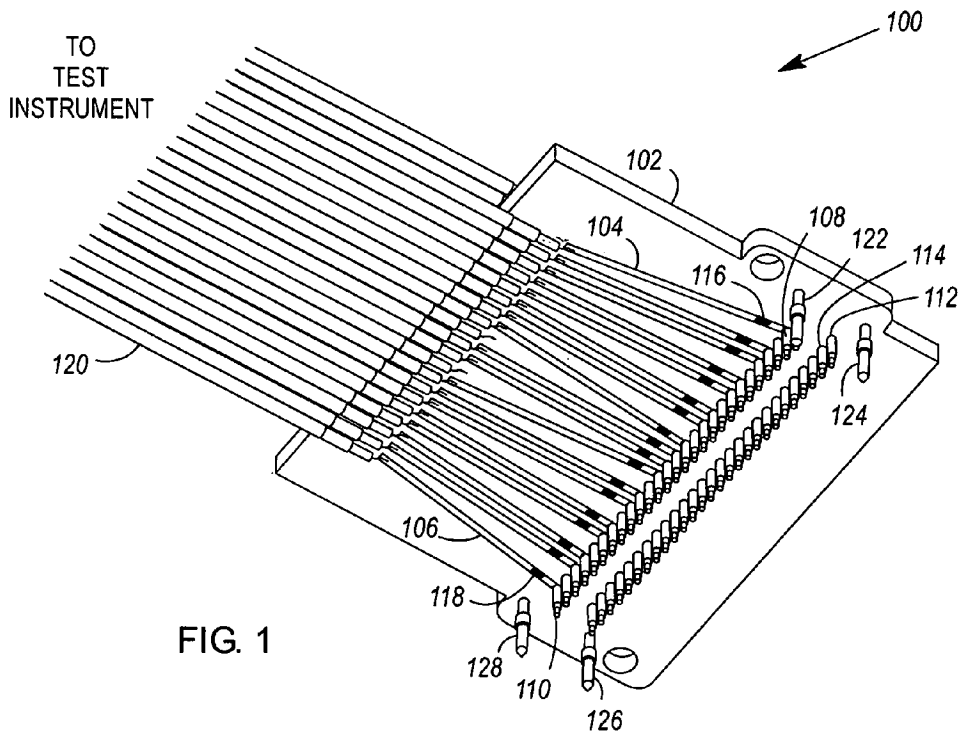


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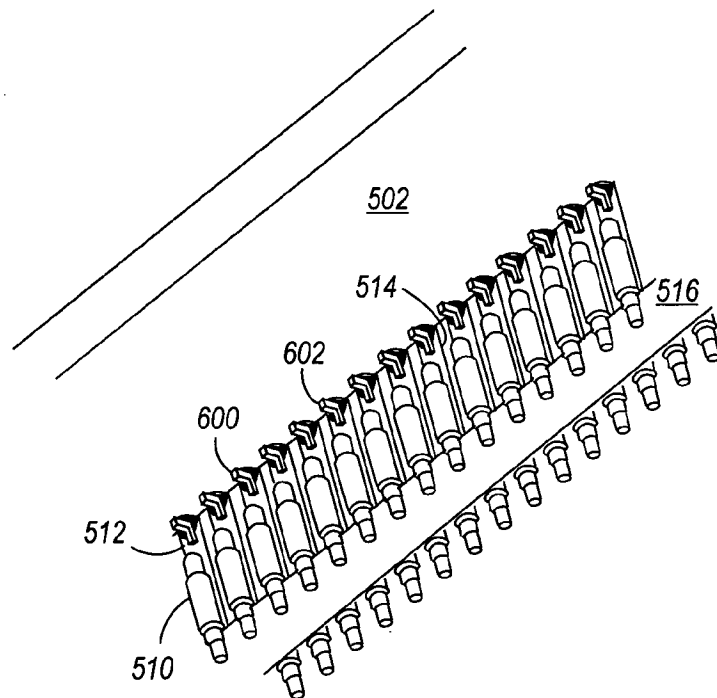
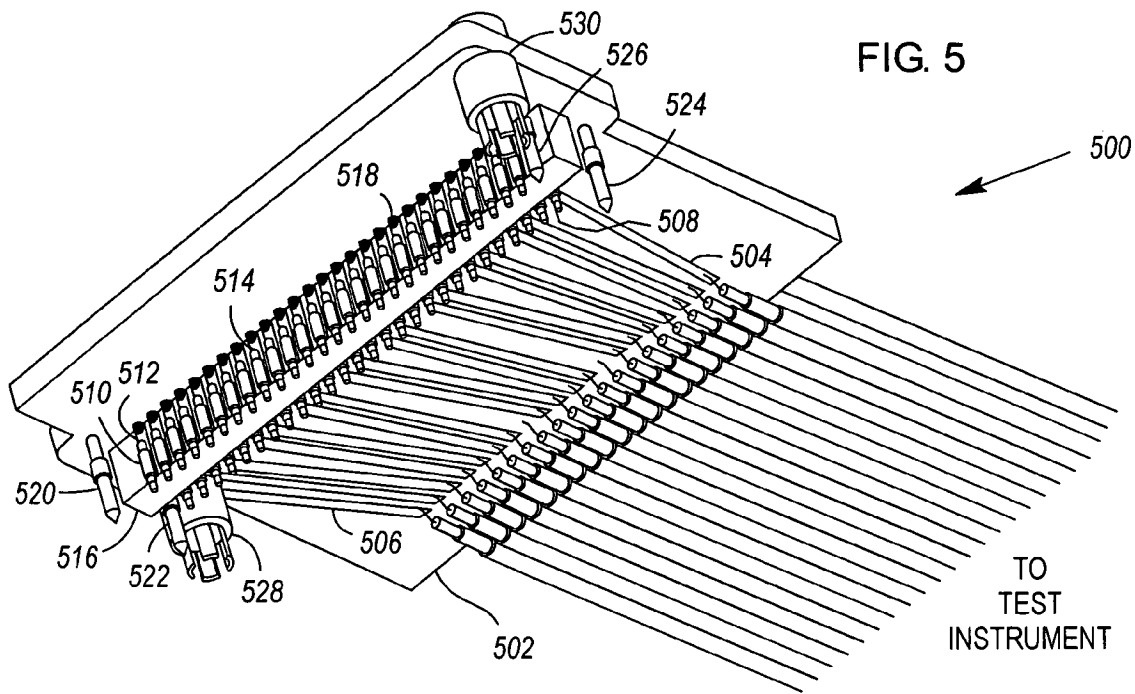
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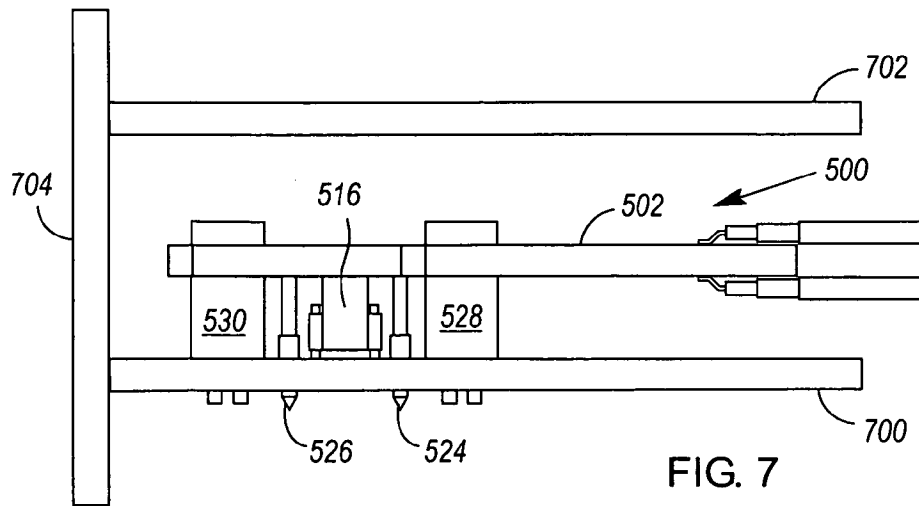


FIG. 7

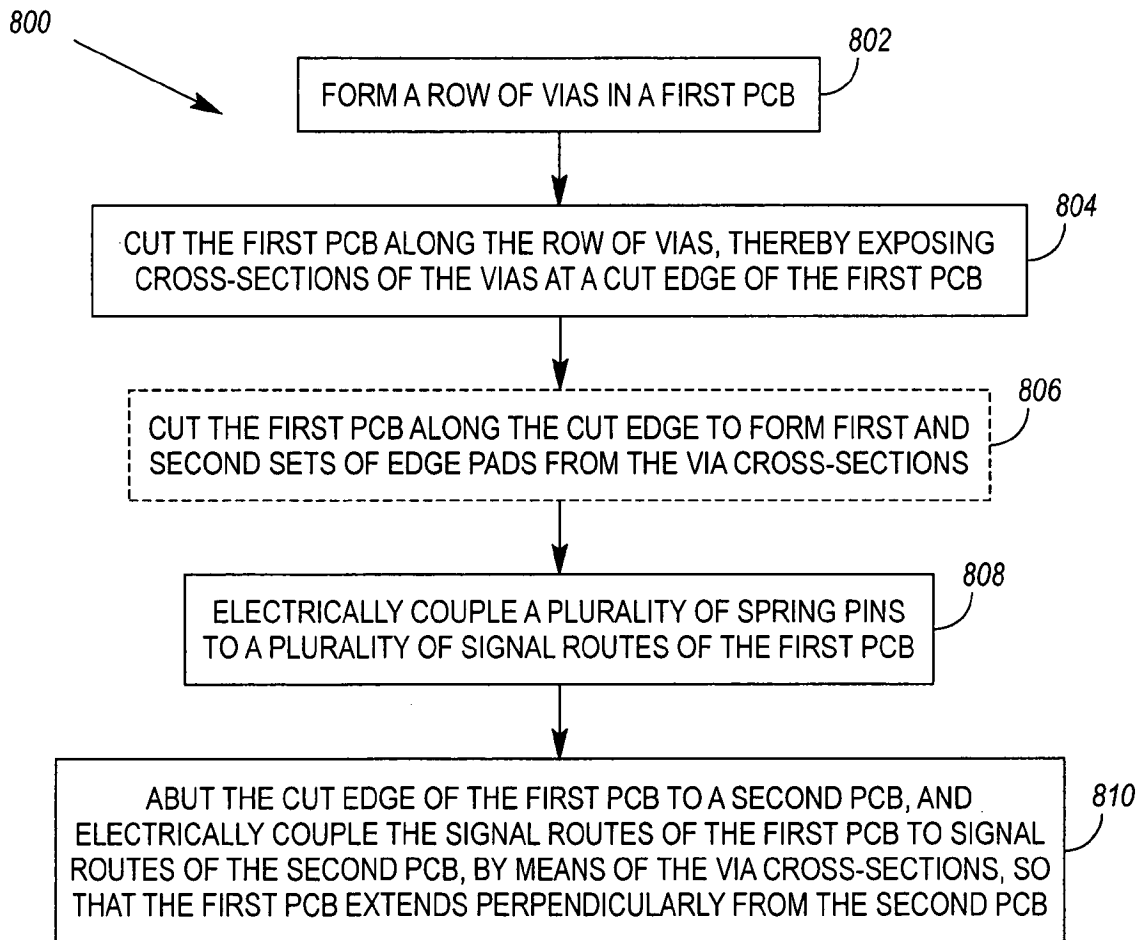


FIG. 8

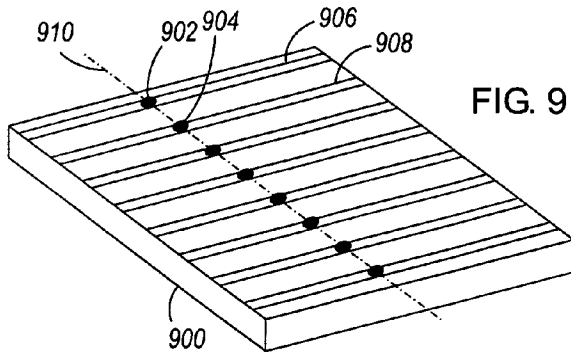


FIG. 9

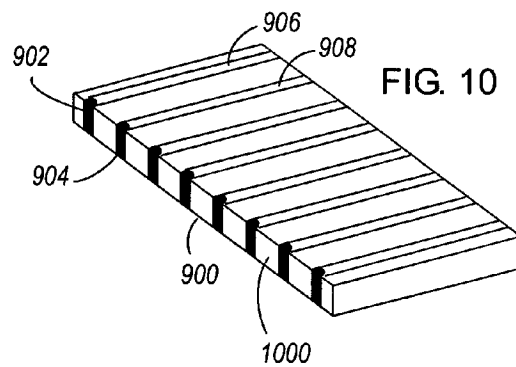


FIG. 10

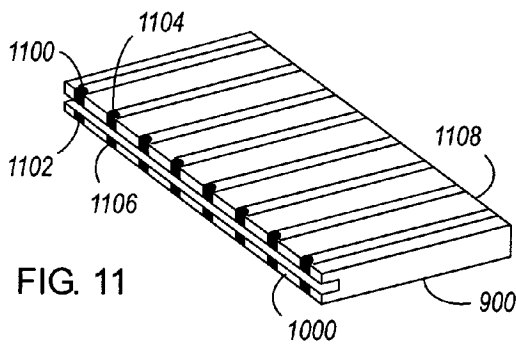


FIG. 11

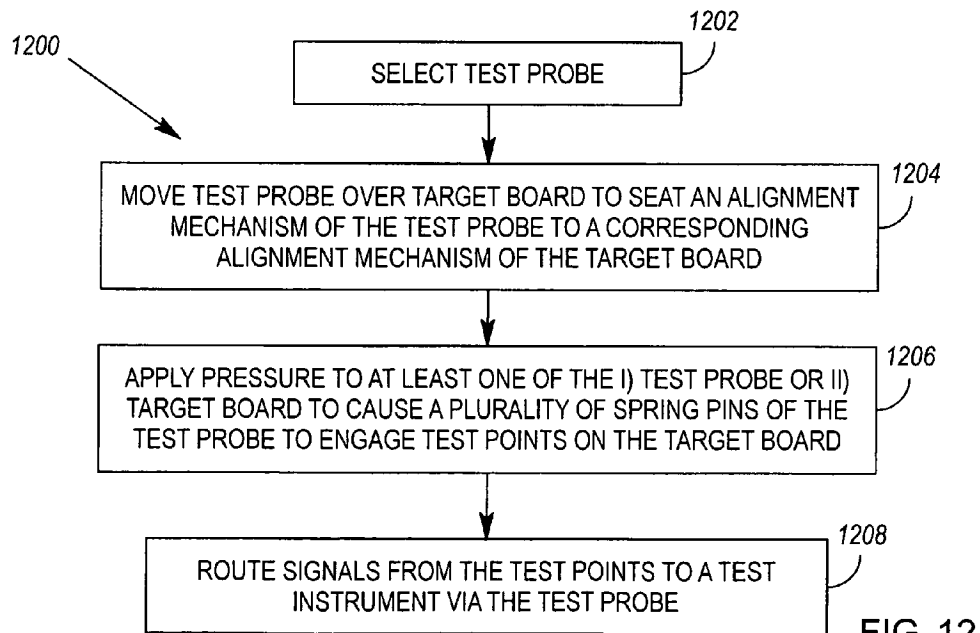


FIG. 12