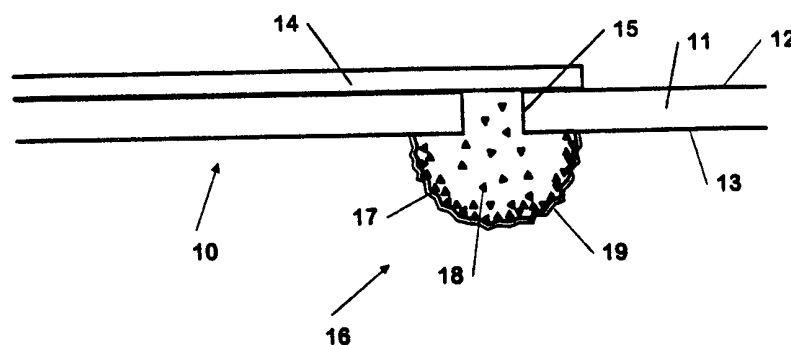


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(54) Title: COMPOSITE ELECTRICAL CONTACT STRUCTURE AND METHOD FOR MANUFACTURING THE SAME



(57) Abstract

An improved wear resistant bump contact (Fig. 1, item 16) is produced by the inclusion of small particles (18) of hard materials in the conductive material of the contact bump, preferably by co-deposition at the time of electroplating of the bump bulk material. Desirable attributes of the small particles of hard material include small particle size, hardness greater than the hardness of the bulk material of the contact bump, compatibility with the plating conditions, and electrical conductivity. In one variation, the bump of metal-particle co-deposited material is coated by a thin cap layer (19) of noble, non oxidizing metal to prevent electrical erosion by arcing as contact is made and broken from the pad.

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US98/14263

A. CLASSIFICATION OF SUBJECT MATTER

IPC(6) : G01R 1/02

US CL : 324/757

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. : 324/754-765

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
NONE

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
NONE

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 4,918,383 A (HUFF ET AL) 17 APRIL 1990 (17.04.90), SEE ABSTRACT.	1-52
A	US 5,012,187 A (LITTLEBURY) 30 APRIL 1991 (30.04.91), SEE ABSTRACT.	1-52
A	US 5,604,446 A (SANO) 18 FEBRUARY 1997 (18.02.97), SEE ABSTRACT.	1-52
A	US 5,623,213 A (LIU ET AL) 22 APRIL 1997 (22.04.97), SEE ABSTRACT.	1-52



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