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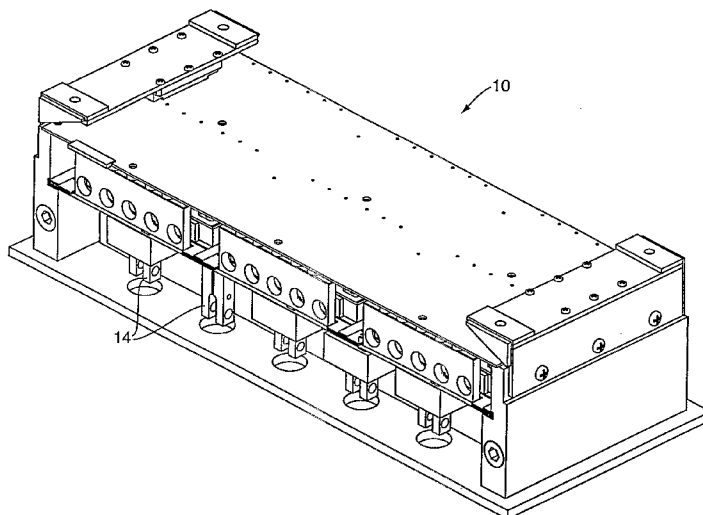
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[Continued on next page]

(54) Title: ELECTRICAL BUS WITH ASSOCIATED POROUS METAL HEAT SINK AND METHOD OF MANUFACTURING SAME



(57) Abstract: A module is formed in which semiconductor components are soldered to an electrically conductive heat sink. The electrically conductive heat sink is formed so that it will serve as an electrical bus in an electronic device. The chips of the semiconductor component are metallurgically bonded to the surface of the heat sink. The heat sink uses a heat transfer fluid that flows through an interior of the heat sink, the interior containing an internal element. In the preferred embodiment, the internal element is a plurality of silver plated copper balls. The copper balls are brazed to each other and to the walls of the heat sinks in an assembly process. The heat sink housing will typically be made from copper, with one surface made from molybdenum so that the expansion and contraction of the heat sink housing molybdenum surface will be similar to that of the silicon substrate of the chips, thereby avoiding the problem of the chip substrate cracking and breaking due to thermal flexing.

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