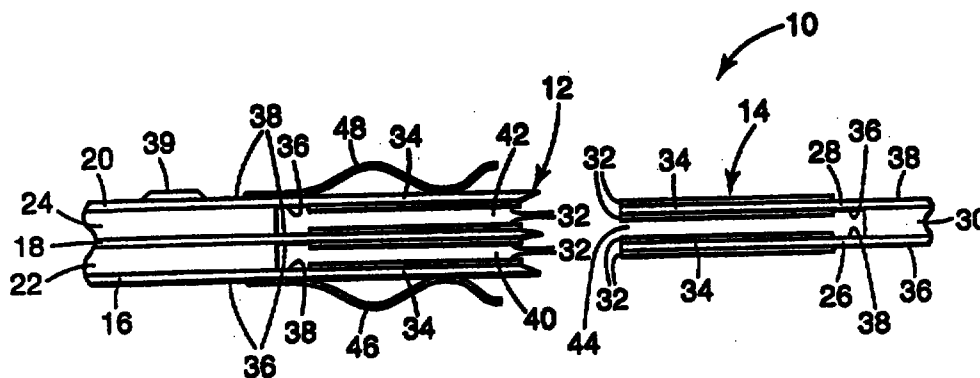




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(54) Title: ELECTRICAL CONNECTOR ASSEMBLY WITH INTERLEAVED MULTILAYER STRUCTURE AND FABRICATION METHOD



(57) Abstract

An electrical connector assembly having an interleaved multilayer structure includes a first connector structure having at least a first connector layer, and a second connector structure having at least second and third connector layers. A plurality of conductive contact surfaces are disposed along edge portions of the connector layers. Upon engagement of the first connector structure and the second connector structure, the first connector layer is oriented to engage a gap defined between the second and third connector layers. The interleaved engagement of the connector layers results in a low-profile electrical connector assembly providing a large number of interconnections between respectively aligned contact surfaces with precise alignment and reliable electrical contact. The connector layers may include conductive contact surfaces on one or both sides of each layer to provide higher interconnection densities. The disposition of contact surfaces on both sides of a layer can relax alignment tolerances for a given interconnection density. Nevertheless, precise alignment can be ensured by the use of conventional lithographic techniques to print the contact surfaces. At least some of the connector layers can be made from a material capable of resilient deformation, and can be realized, for example, by flexible printed circuit board layers or flex circuit layers. The resiliently deformable material, when deformed, produces a force that resists deformation. Thus, when interleaved engagement of the connector layers produces deformation, the resisting force serves to bias the connector layers against one another to ensure good electrical contact force.