

ELECTRICAL CONNECTOR USING COMPOSITE BEAM WITH LOW INITIAL DEFLECTION RATE

ABSTRACT

An electrical connector assembly according to the current invention comprises a receptacle and a composite action beam. The composite action beam is located in the receptacle and has a movable end and a fixed end. During initial phase of insertion cycle, a movable end of the composite action beam moves as the pin is inserted into the connector. This movement reduces insertion force. During an intermediate phase of the insertion cycle, the movable end reaches the inside wall of the connector and the composite action beam now functions as a two-end supported beam. The composite action beam thereon exerts sufficiently high normal force against the inserted pin so as to retain the pin in the inserted position. Thus, the composite action beam reduces insertion force without compromising normal force once the pin is inserted.

Figure 1A