ABSTRACT

A shaftless roller for lead forming apparatus for scratch-free, precision forming of leads on a semiconductor device. The shaftless roller includes a semi-cylindrical cavity disposed in the lead forming apparatus. A cylindrical rod is rotatably fitted into the cavity such that more than fifty percent but less than one hundred percent of the rod is inside the cavity. The roller further includes a plurality of slots leading into the cavity for facilitating self-cleaning action, and an air passage adapted for delivering pressured air into the cavity to serve as air bearing for the cylindrical rod.

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