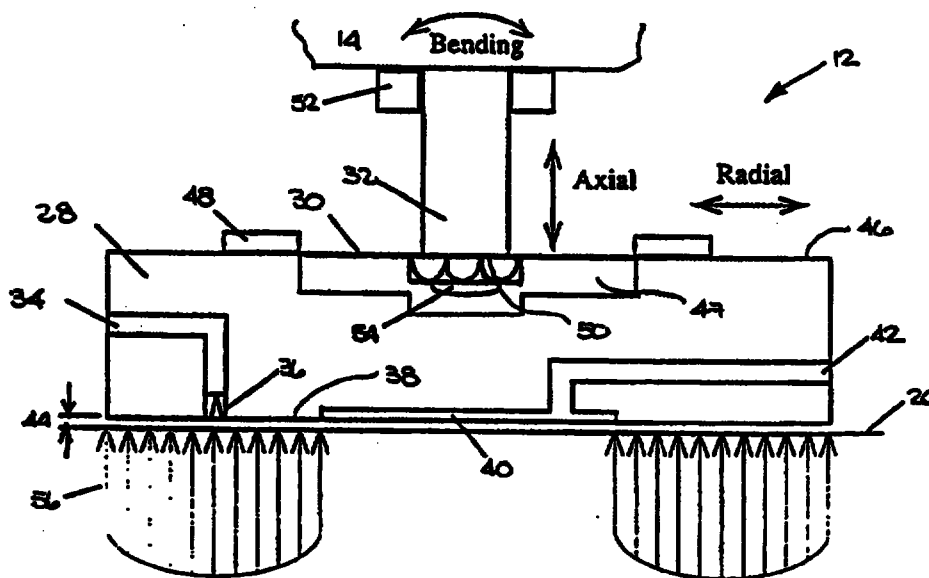




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(54) Title: DIAPHRAGM PRELOAD AIR BEARING



(57) Abstract

A preload hydrostatic bearing (12) includes a pad (28), a diaphragm (28) and an adjustable member (32). The pad has a bearing structure (38), an inlet manifold (34), and a plurality of orifices (36). The orifices direct a fluid, such as air, from the inlet manifold toward the bearing surface. The diaphragm is mounted on the pad, and the adjustable member, which extends in an axial direction, is coupled proximate one end to a center portion of the diaphragm. The diaphragm transfers a preload in the axial direction to the adjustable member. This preload hydrostatic bearing has a high repeatability of performance, without any source of friction and hysteresis.