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Abstract

MEMS based Motor

A MEMS (micro-electromechanical system) device having a rotor 44, a stator 43 and a shaft 27 connected to the stator 43 and around which the rotor 44 rotates. Grooves 47 are formed in a portion of the rotor 44, such that when the rotor 44 rotates an air bearing is formed for supporting the rotor 44 and maintaining its distance from the shaft 27 and stator 43. The rotor 44 is formed from joining two substrates 13, 23. One of the substrates 13 includes a surface having openings 7 including frustoconical walls, and one of the substrates 23 includes a surface having openings 15 including walls perpendicular to the surface of the substrate. The openings in the two substrates are in register with each other so that pairs of the openings form chambers 24. Each chamber 24 is provided with a shaft 27, which is positioned with a wide section of the shaft trapped in the chamber 24. The wide section of the shaft has a frustoconical surface facing the frustoconical walls of the chamber 24.

[Fig. 10]



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