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(54) **BIASED ROTATABLE COMBDRIVE ACTUATOR METHODS**

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(52) **U.S. Cl.** **73/514.16**; 73/514.29; 310/309

(58) **Field of Search** 73/504.02, 504.04, 73/504.12, 504.14, 504.15, 514.16, 514.29, 514.32; 310/309, 308

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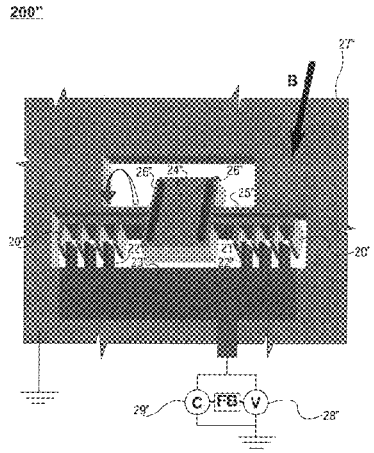
(57) **ABSTRACT**

A method for rotating a combdriven device about an axis uses applied bias force along with applied voltage between first and second comb fingers to controllably rotate the device about one or two axis. One mode of the present invention includes measuring the position of a rotating element and providing feedback to control the angular position thereof by changing bias force and/or drive voltage. The present invention can be employed with prior-art staggered combdrives, single layer self-aligned combdriven devices, and in a broad range of applications in optical telecommunication switching, video, biomedical, inertial sensors, and in storage magnetic disk drives.

13 Claims, 8 Drawing Sheets