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Song et al.

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(54) **OPTICAL PICKUP ACTUATOR DRIVING METHOD AND APPARATUS THEREFOR**

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

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(22) Filed: **Feb. 6, 2004**

Related U.S. Application Data

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(30) Foreign Application Priority Data

Jun. 19, 2001 (KR) 2001-34687

(51) **Int. Cl.⁷ G02B 7/02**

(52) **U.S. Cl. 359/814; 359/824; 369/44.15**

(58) **Field of Search 359/814, 824, 359/813, 811; 369/44.15**

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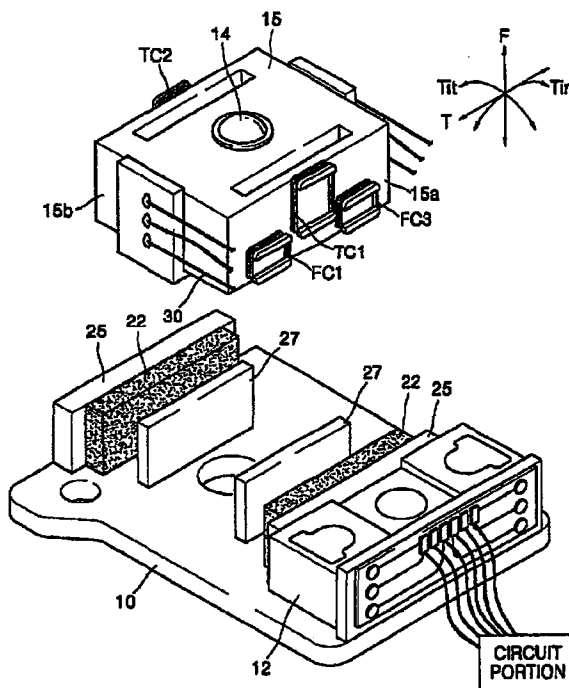
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(57) ABSTRACT

An optical pickup actuator includes a bobbin. At least one focus coil and at least one track coil are arranged at both sides of the bobbin to secure the remaining sides of the bobbin. The optical pickup actuator can drive an optical pickup in a focus direction, a track direction, and a tilt direction. The focus coil is also used as the tilt coil. An optical pickup actuator is driven by arranging a bobbin on a base of the optical pickup actuator so as to be moved by support members, installing at least one focus and tilt coil to drive the bobbin in focus and tilt directions and at least one track coil to drive the bobbin in a track direction at opposite side surfaces of the bobbin, arranging magnets to face corresponding sides of the opposite side surfaces of the bobbin, and dividing the focus and tilt coils into at least two sets of coils and applying an input signal to each of the sets. Since driving in the focus direction and the tilt direction can be controlled together by a single coil, the number of the support members can be reduced and the defective ratio can be lowered. Accordingly, the three axes driving and the four axes driving can be stably implemented.

10 Claims, 8 Drawing Sheets



LG Electronics, Inc. et al.
EXHIBIT 1001

FIG. 1 (PRIOR ART)

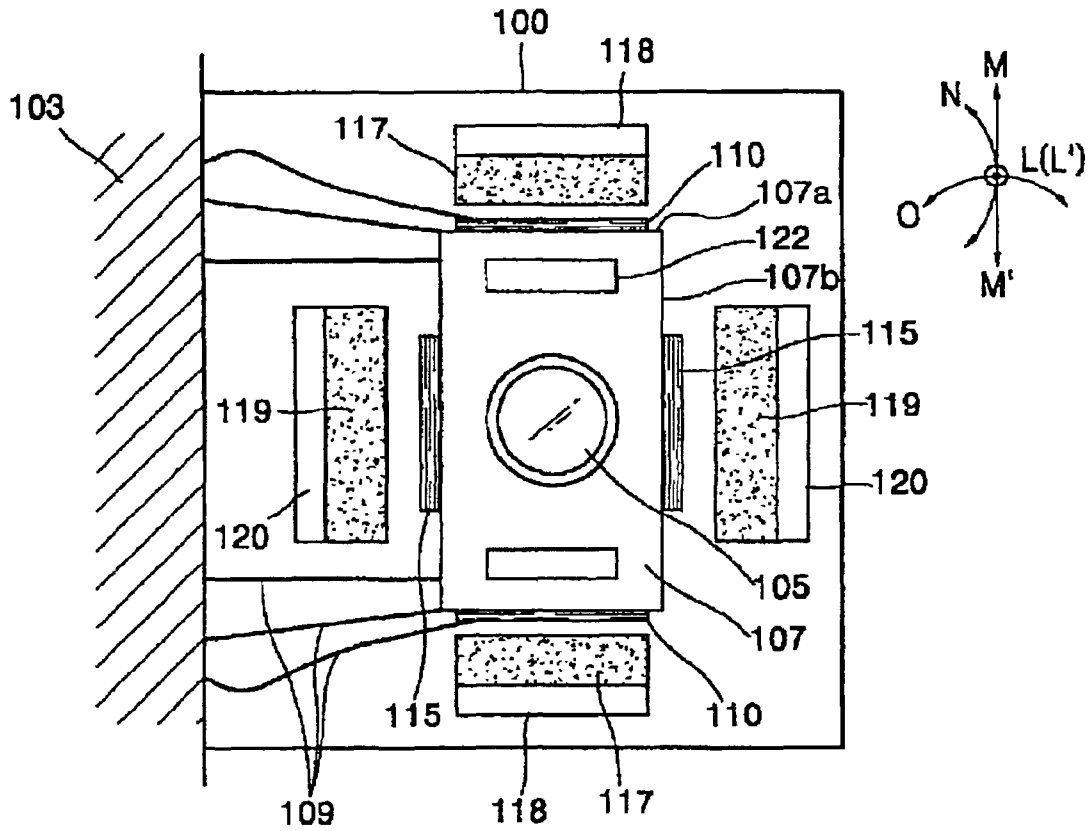


FIG. 2A (PRIOR ART)

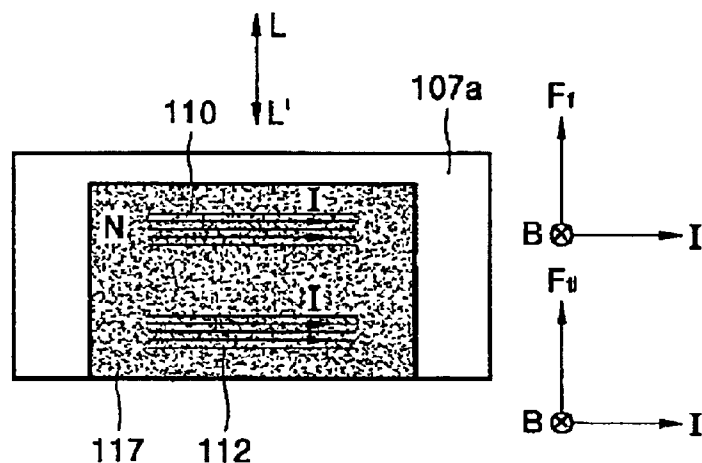


FIG. 2B (PRIOR ART)

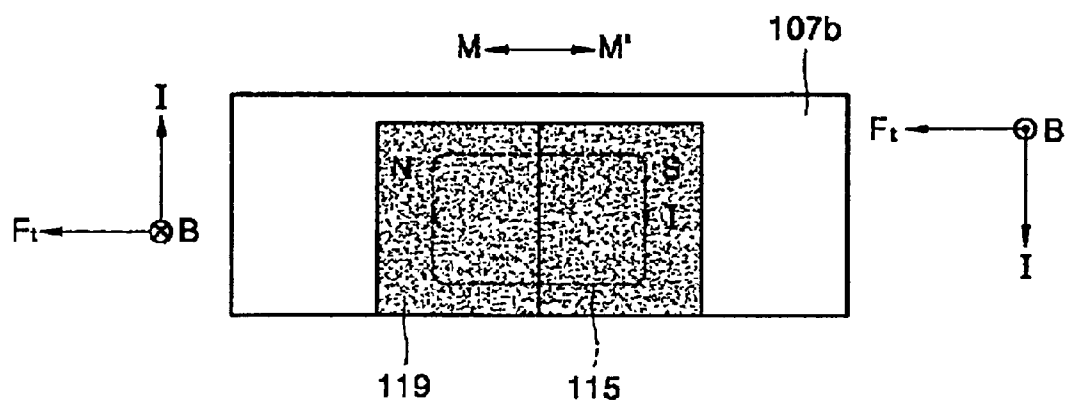


FIG. 3

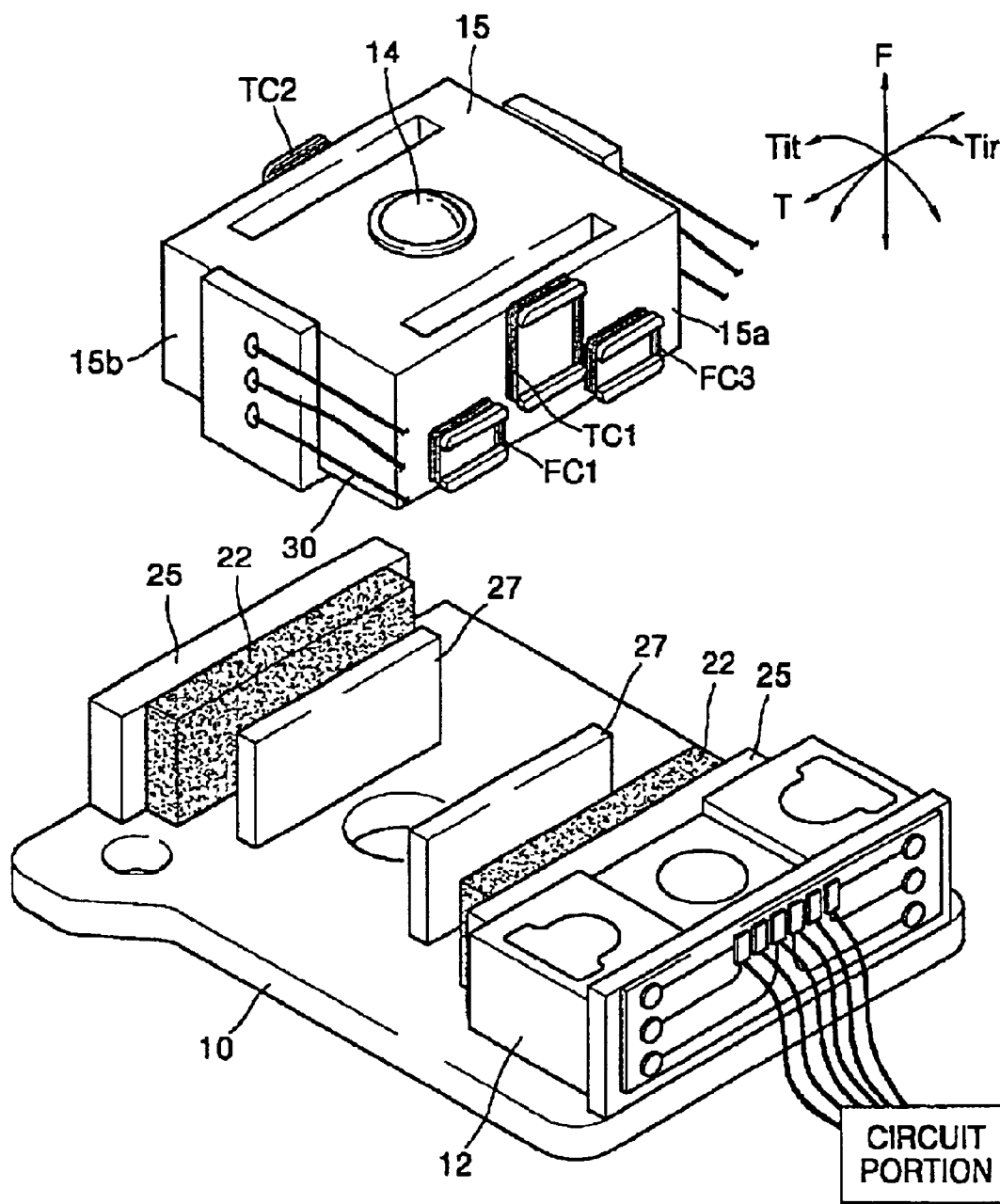


FIG. 4

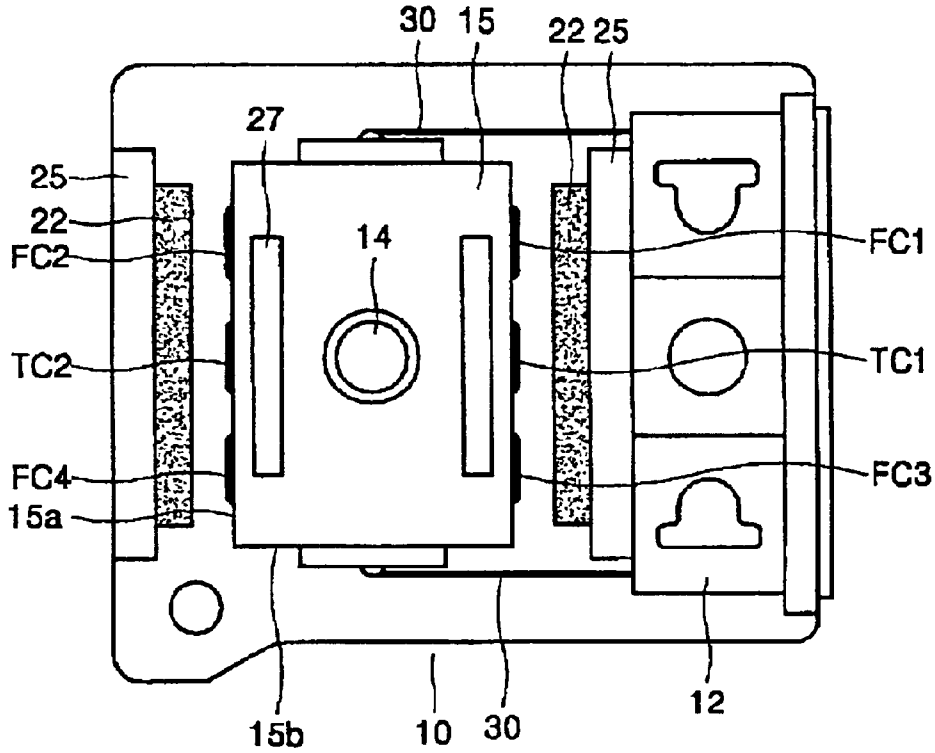
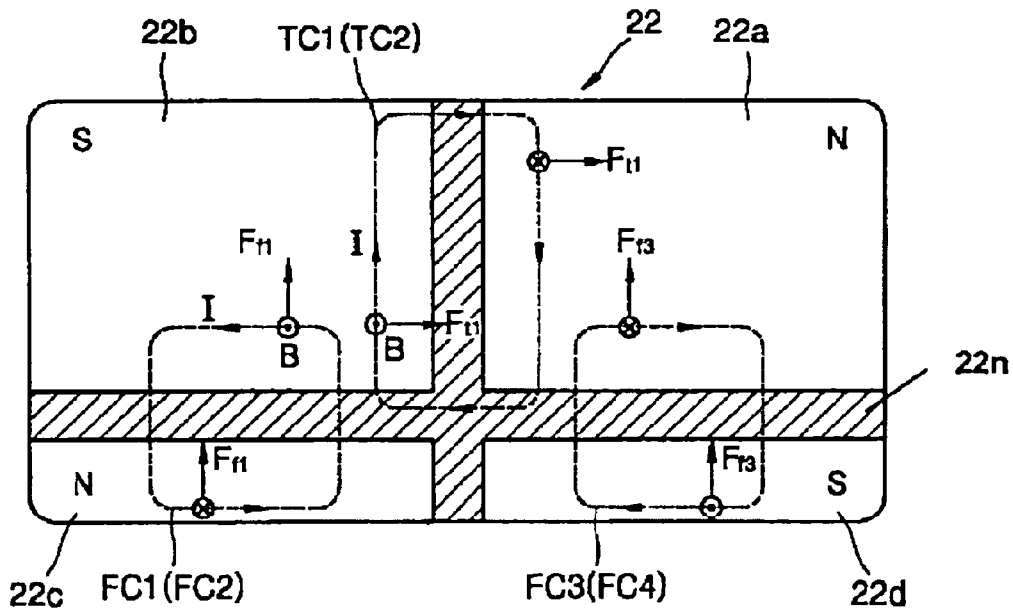


FIG. 5



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