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# United States Patent [19]

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**Dunfield et al.**

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[54] **SPINDLE MOTOR HAVING OVERMOLDED STATOR**

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**Gunter Karl Heine**, Aptos, both of Calif.

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[21] Appl. No.: **550,175**

[22] Filed: **Oct. 30, 1995**

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### Related U.S. Application Data

- [63] Continuation-in-part of Ser. No. 386,883, Feb. 10, 1995.
- [51] Int. Cl.<sup>6</sup> ..... **G11B 17/02; H02K 5/24; H02K 7/14**
- [52] U.S. Cl. .... **360/98.07; 360/99.08; 310/67 R; 310/51; 310/254**
- [58] Field of Search ..... **360/97.01, 98.01, 360/98.07, 98.08, 99.04, 99.08-99.12; 310/51, 67 R, 254**

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*Primary Examiner*—Jefferson Evans  
*Attorney, Agent, or Firm*—Westman, Champlin & Kelly, P.A.

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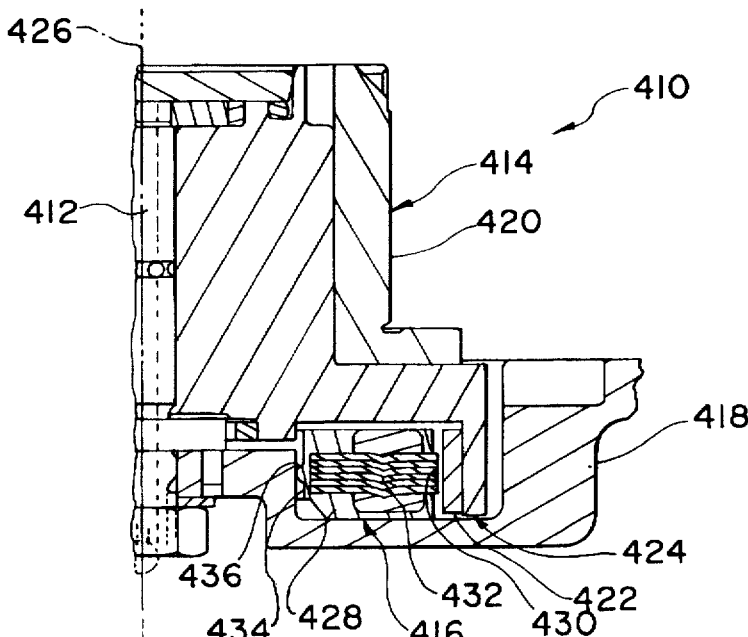
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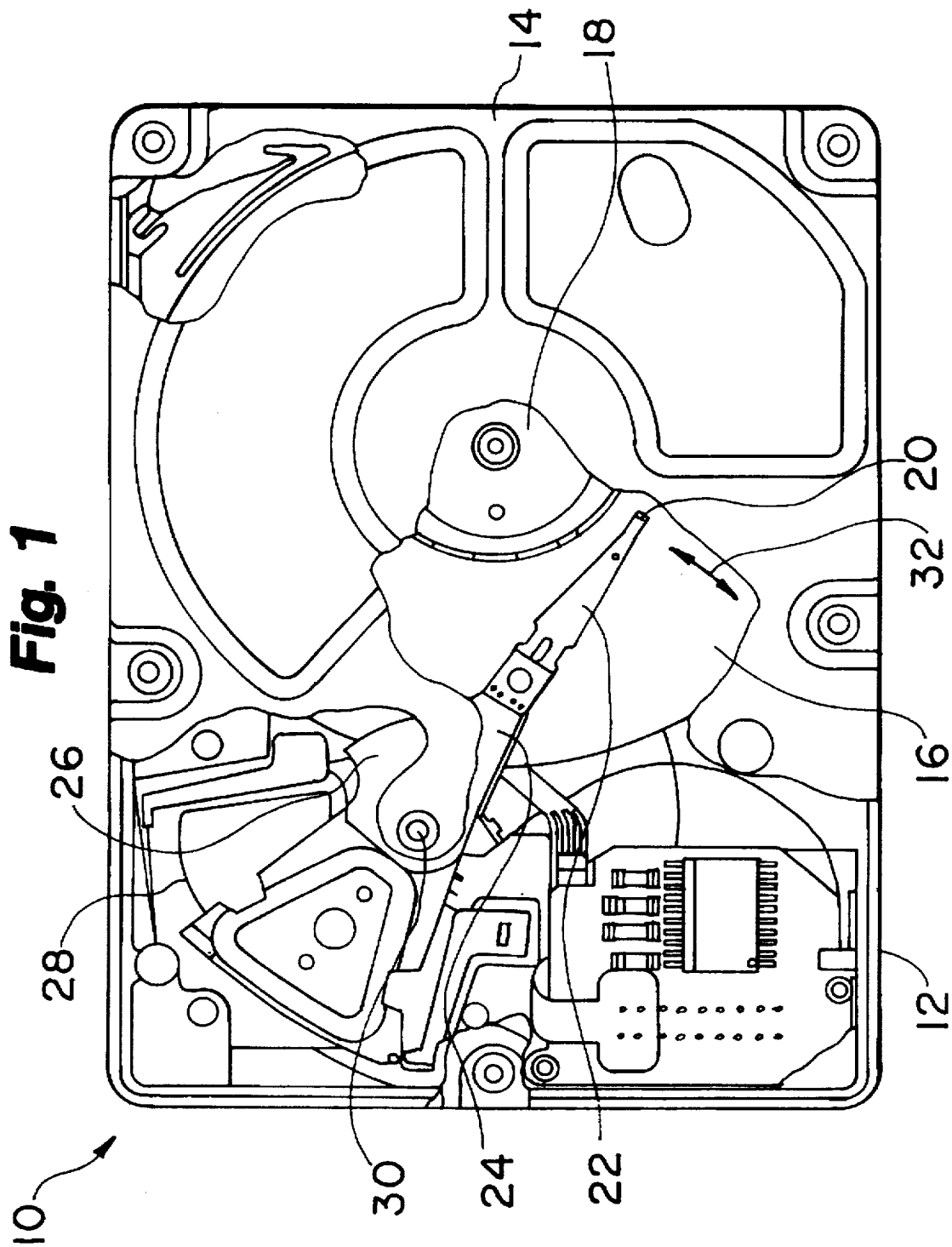
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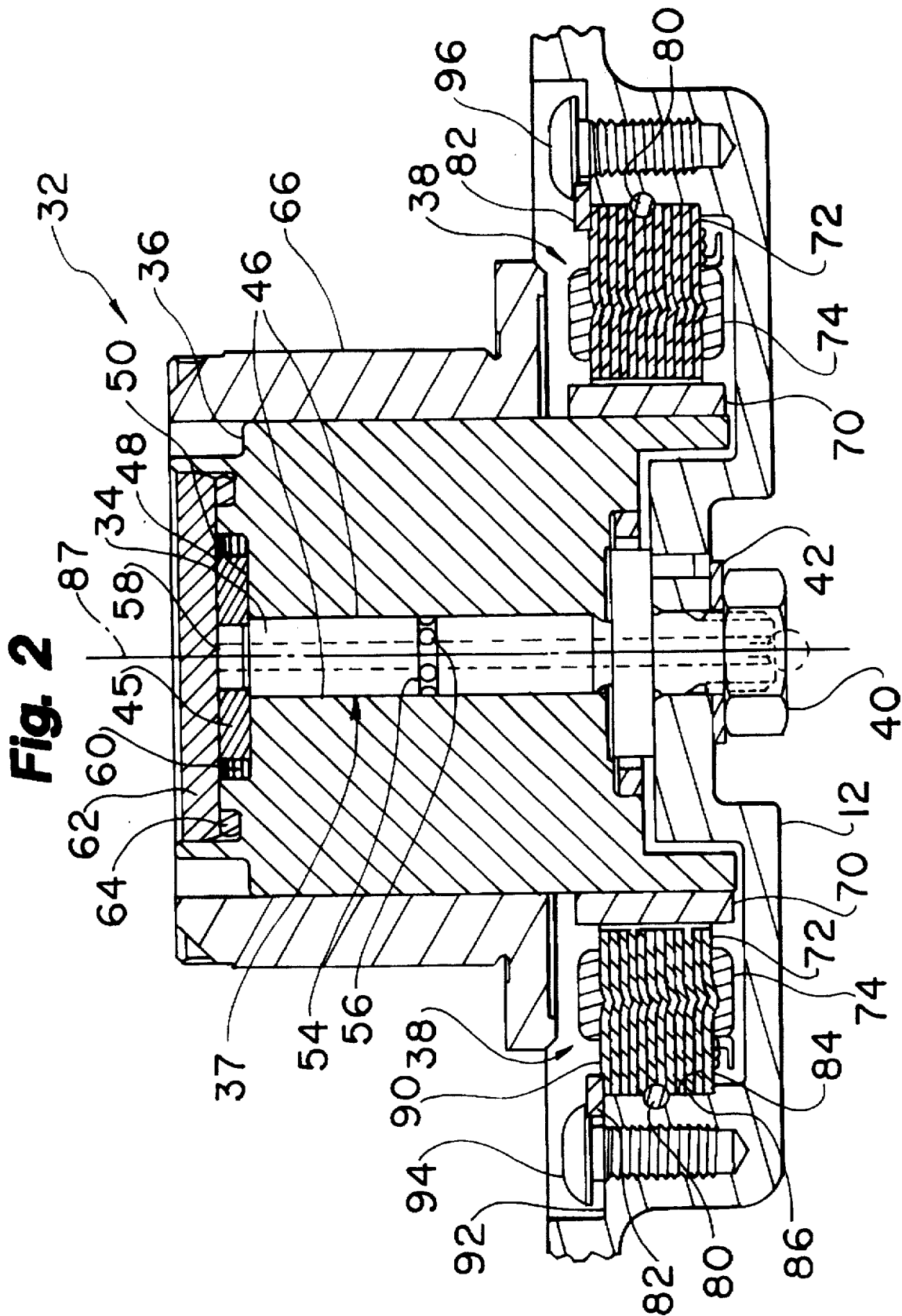
### [57] ABSTRACT

A disc drive spindle motor for rotating at least one disc in a data storage device includes a base, a shaft, a rotor and a stator. A bearing interconnects the rotor with the shaft and allows the rotor to rotate about the shaft. An overmold encapsulates at least a portion of the stator and provides the stator with a smooth external surface. The overmold mechanically isolates the stator from the base and damps sympathetic vibrations in the stator structure to reduce the generation of acoustic noise in the storage device.

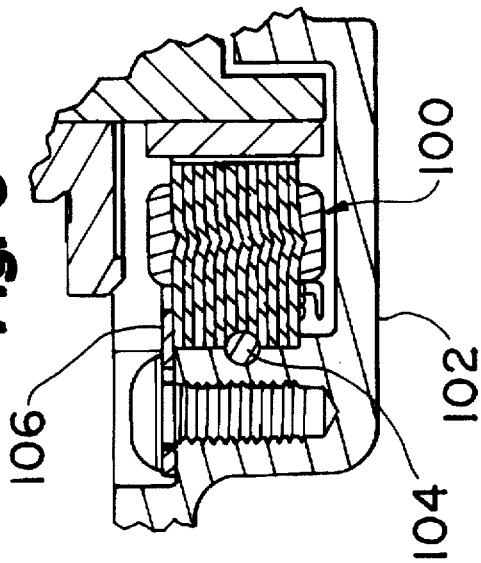
**31 Claims, 14 Drawing Sheets**



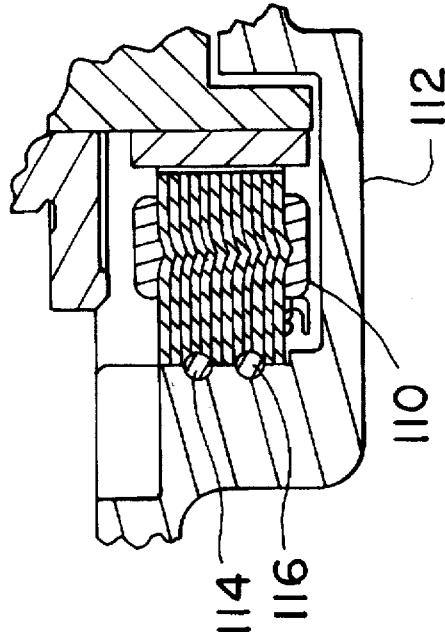




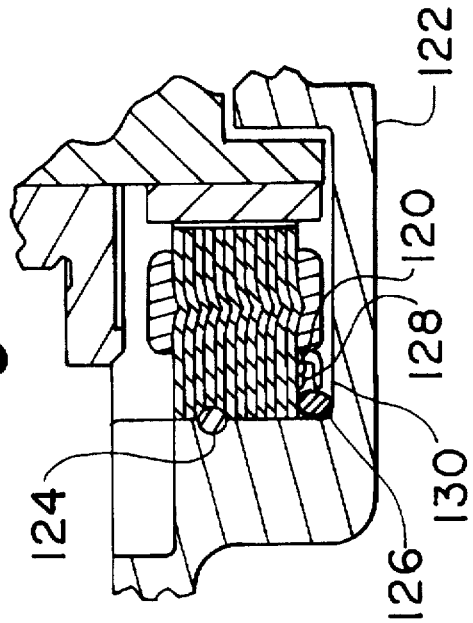
**Fig. 3**

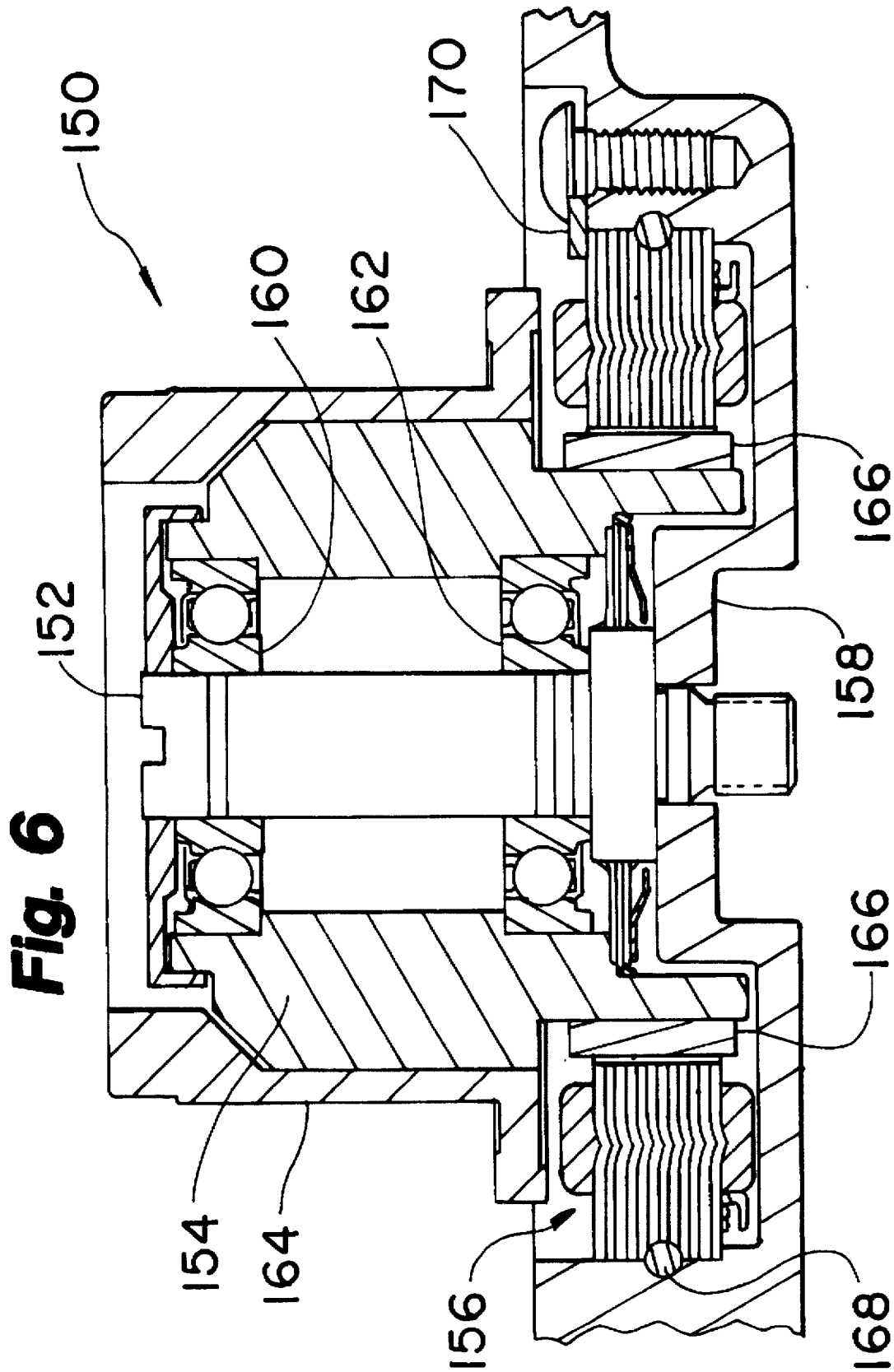


**Fig. 4**



**Fig. 5**





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