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(12) **United States Patent**
Neal

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(54) **MOTOR**

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Related U.S. Application Data

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(63) Continuation of application No. 10/874,142, filed on Jun. 21, 2004, now Pat. No. 7,049,715, which is a continuation of application No. 09/470,428, filed on Dec. 22, 1999, now Pat. No. 6,753,628.

(Continued)

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(57) **ABSTRACT**

(51) **Int. Cl.**
H02K 35/00 (2006.01)

A motor has a stator substantially encapsulated within a body of thermoplastic material; and one or more solid parts used in the motor either within or near the body. The thermoplastic material has a coefficient of linear thermal expansion such that the thermoplastic material contracts and expands at approximately the same rate as the one or more solid parts. In another aspect, a motor for a hard disc drive comprises at least one conductor, at least one magnet, at least one bearing and a shaft; and a monolithic body of thermoplastic material substantially encapsulating the at least one conductor. The bearing is either encapsulated in the thermoplastic material, housed in a hollow cylindrical insert encapsulated in the thermoplastic material, or secured in a bore formed in the body of thermoplastic material. The motor has improved shock resistance.

(52) **U.S. Cl.** **310/43**

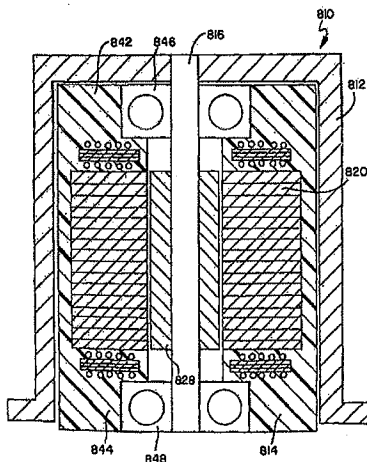
(58) **Field of Classification Search** None
See application file for complete search history.

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16 Claims, 14 Drawing Sheets



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