



(12) **United States Patent**  
**Hansen et al.**

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(54) **TAPE REEL ASSEMBLY WITH WASHER  
GUARD FOR A DATA STORAGE TAPE  
CARTRIDGE**

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\* cited by examiner

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(\* ) Notice: Subject to any disclaimer, the term of this  
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U.S.C. 154(b) by 0 days.

(57) **ABSTRACT**

A tape reel assembly for maintaining a data storage tape. The tape reel assembly includes a hub ring, an engagement section, a metallic ring and opposing flanges. The hub ring defines a tape-winding surface and forms a central opening. The engagement section extends substantially radially inwardly relative to the tape-winding surface and includes an inner surface, an outer surface and an annular flange. The annular flange extends substantially axially from the outer surface and defines an axial passage. The metallic ring is secured to the outer surface of the engagement section and has an inner diameter. In this regard, the inner diameter of the metallic ring is greater than a diameter of the axial passage such that the annular flange extends axially within the inner diameter of the metallic ring. Finally, the opposing flanges extend radially from opposite ends of the hub ring, respectively. With this configuration, the annular flange protects the metallic ring from accidental contact with a tape drive post during use. In addition, the annular flange serves to co-axially align a drive assembly with the tape-winding surface, thereby improving cartridge performance.

(21) Appl. No.: **09/542,533**

(22) Filed: **Apr. 4, 2000**

(51) **Int. Cl.<sup>7</sup>** ..... **G03B 23/02**

(52) **U.S. Cl.** ..... **242/348; 242/118.6; 360/132**

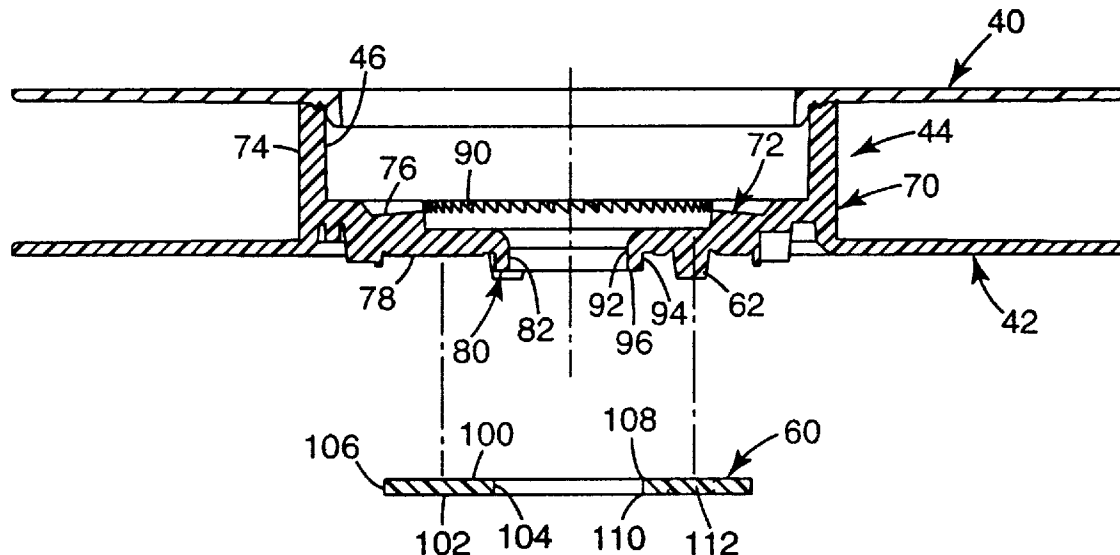
(58) **Field of Search** ..... 242/341, 342,  
242/340, 338, 343, 343.1, 343.2, 345.1,  
348, 118.6, 118.61, 608.2, 608.8, 609.4,  
612; 360/132

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**20 Claims, 7 Drawing Sheets**



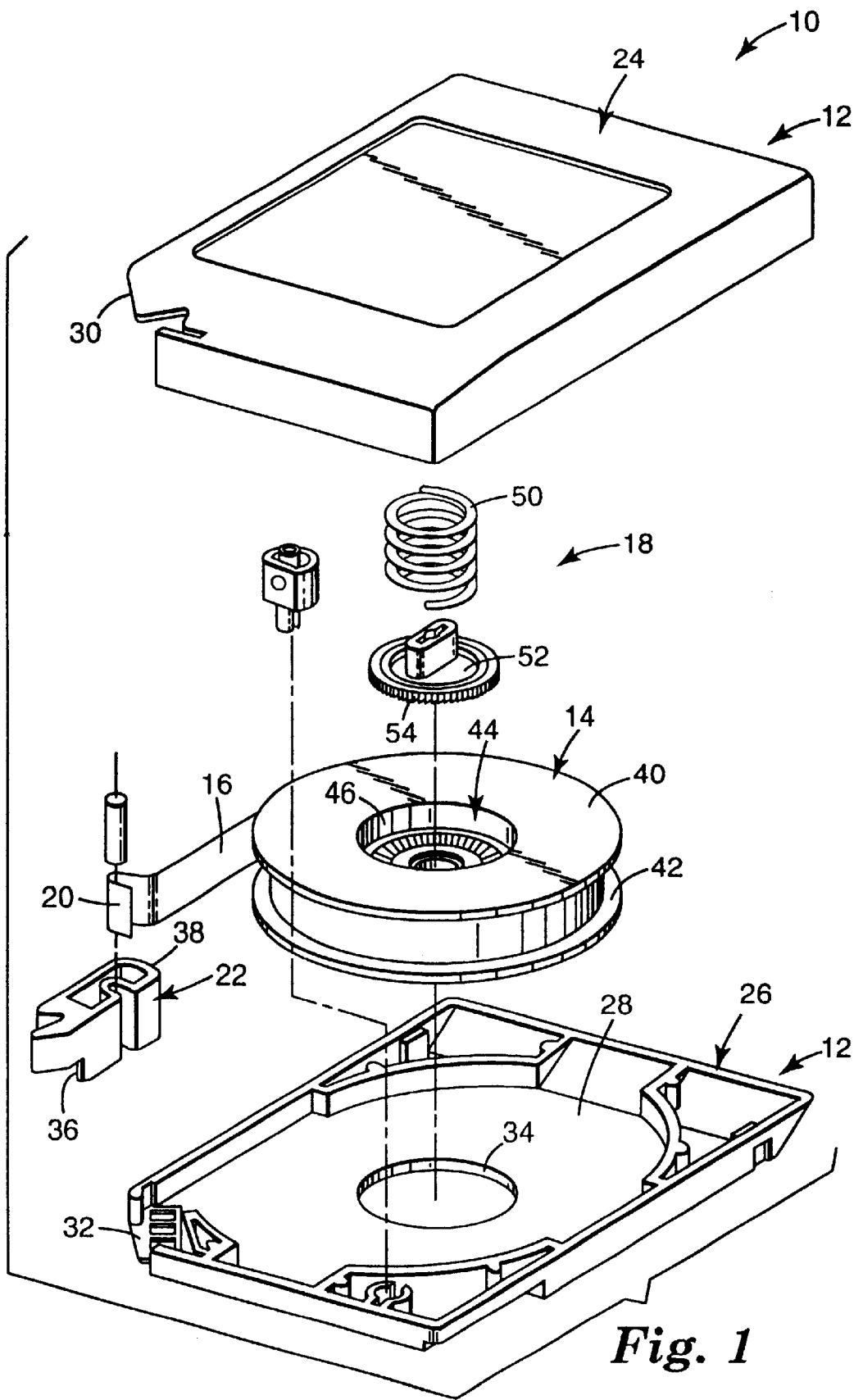
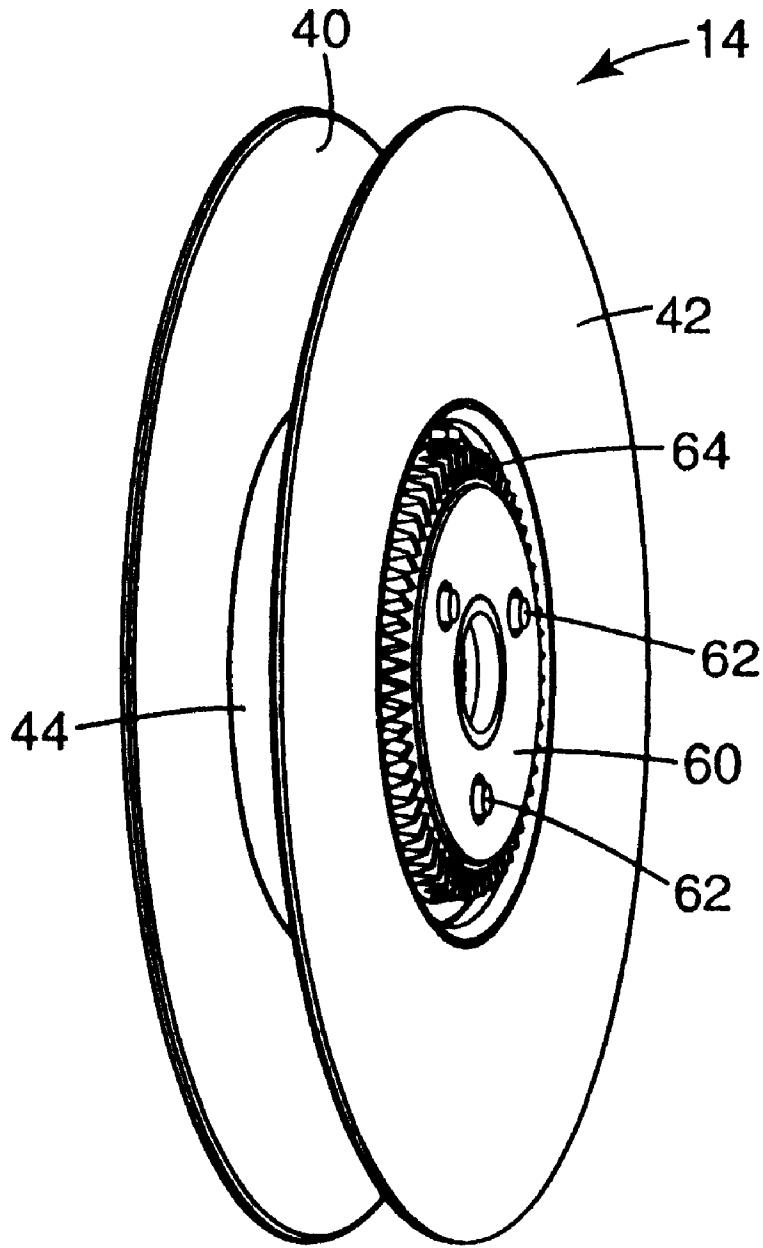
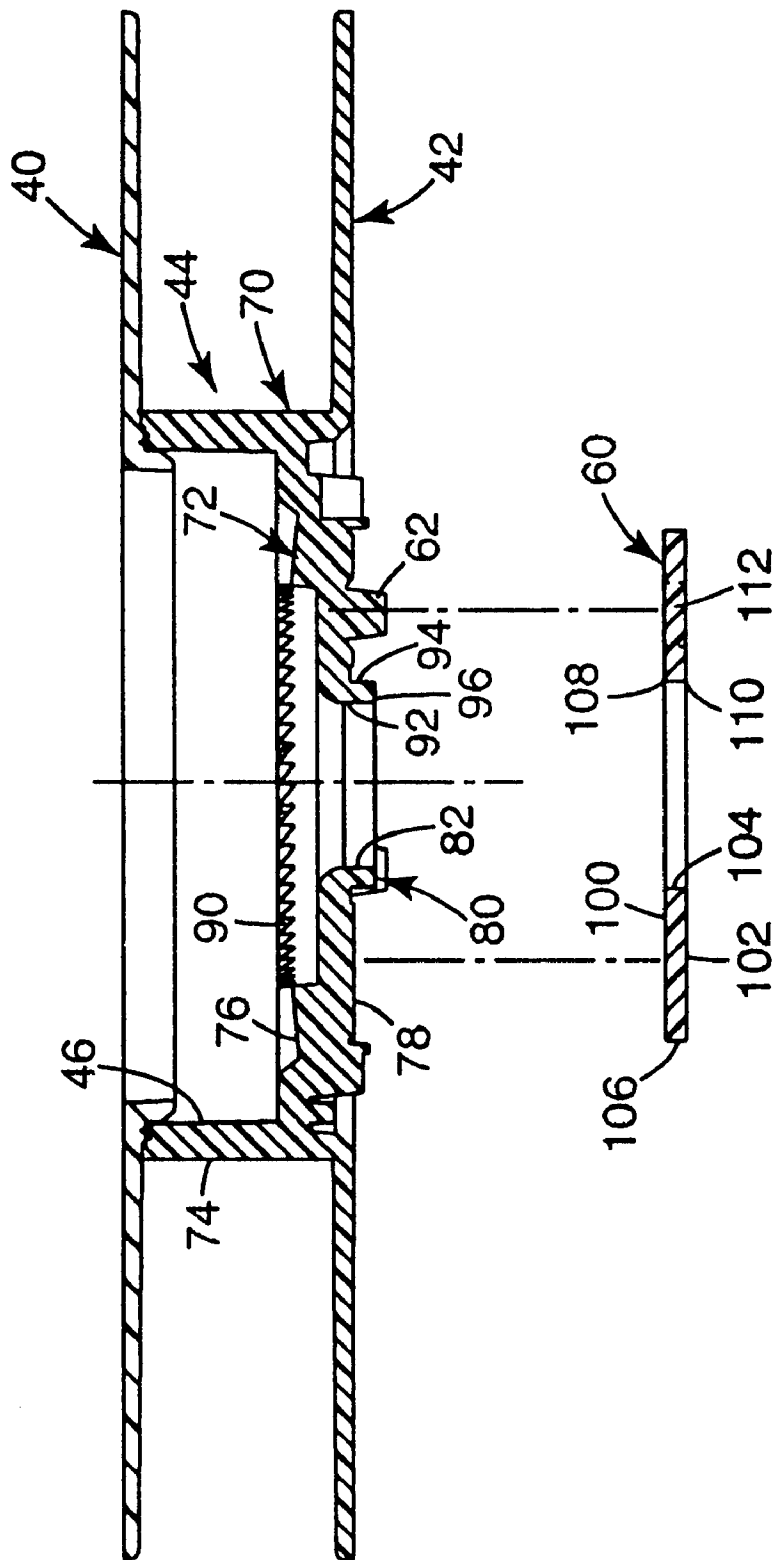


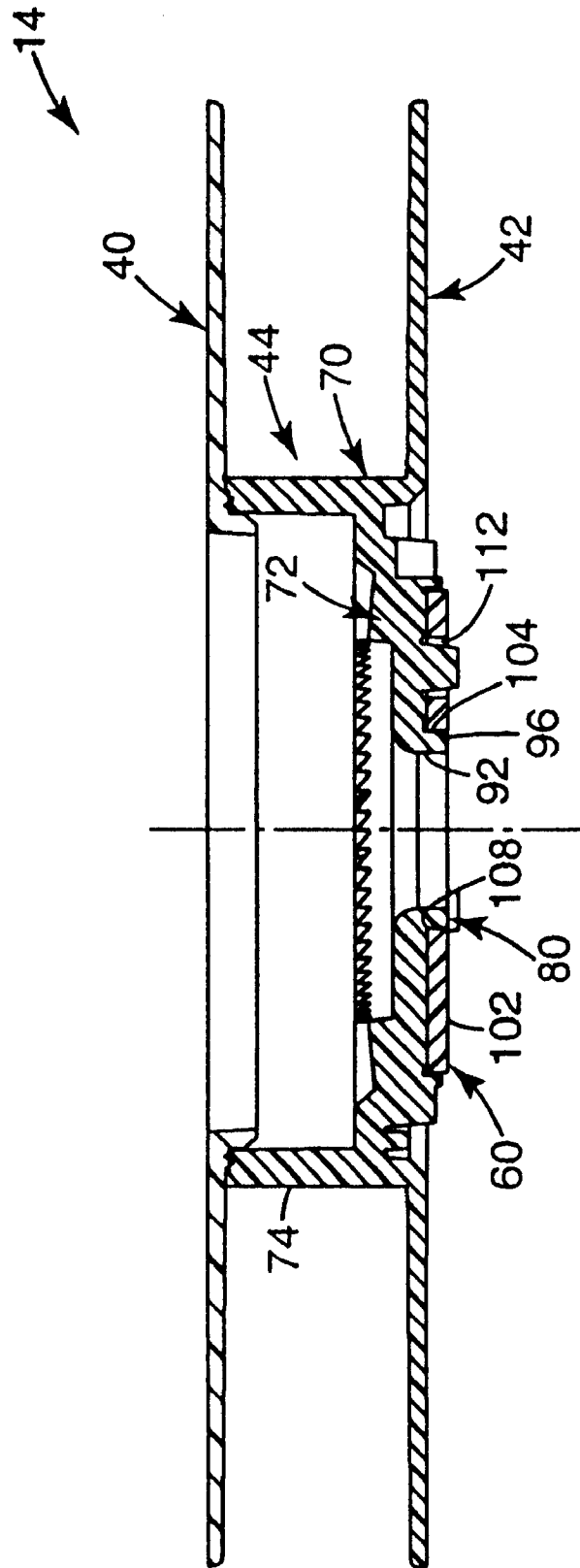
Fig. 1



*Fig. 2*



**Fig. 3A**



*Fig. 3B*

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