

18/07/02
2002043867.

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau



162162

(43) International Publication Date
16 August 2001 (16.08.2001)

PCT

(10) International Publication Number
WO 01/59769 A1

(51) International Patent Classification⁷: **G11B 5/54**,
5/58, 21/22

(21) International Application Number: PCT/US01/03611

(22) International Filing Date: 5 February 2001 (05.02.2001)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/181,178 9 February 2000 (09.02.2000) US

(71) Applicant: **SEAGATE TECHNOLOGY LLC** [US/US];
1280 Disc Drive, Shakopee, MN 55379-1863 (US).

(David); 1630 Tahoe Drive, Milpitas, CA 95035 (US).
SHIH, Chung; 10069 Oakleaf Place, Cupertino, CA
95014 (US). **MACLEOD, Nigel, Charles**; 3320 Maple-
wood Road, Deephaven, MN 55391 (US). **LIU, Youmin**;
1072 Colorado Place, Palo Alto, CA 94303 (US).

(74) Agent: **DEMPSTER, Shawn, B.**; Seagate Technology
LLC, 1280 Disc Drive, Shakopee, MN 55379-1863 (US).

(81) Designated States (*national*): CN, DE, GB, JP, KR, SG.

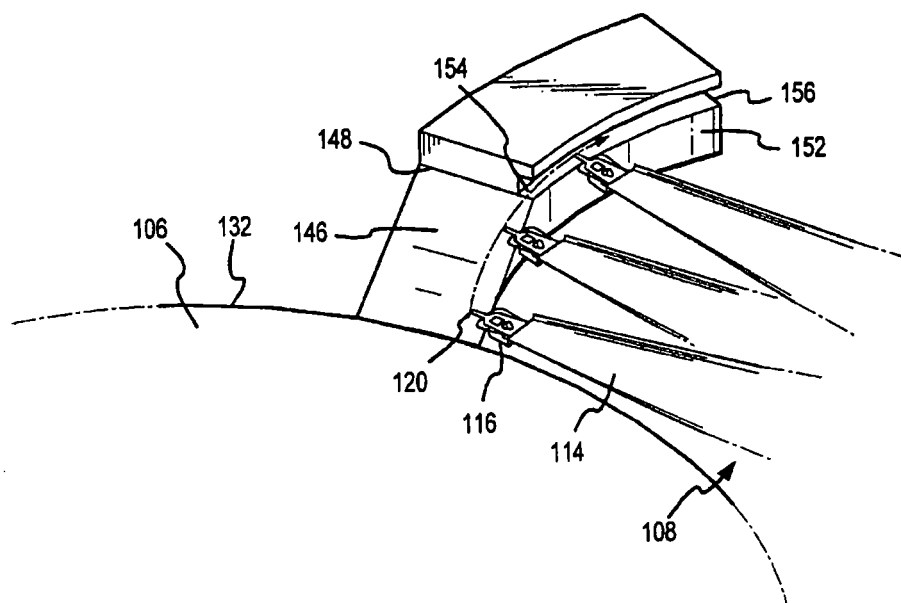
Published:

- with international search report
- before the expiration of the time limit for amending the
claims and to be republished in the event of receipt of
amendments

(72) Inventors: **FAYEULLE, Serge, Jacques**; 7173 Gold
Nugget Drive, Longmont, CO 80503 (US). **CHEN, QiXu**

*For two-letter codes and other abbreviations, refer to the "Guid-
ance Notes on Codes and Abbreviations" appearing at the begin-
ning of each regular issue of the PCT Gazette.*

(54) Title: **HARDENED AND LUBRICATED LOAD/UNLOAD RAMP AND METHOD FOR PREPARING THE SAME**



(57) **Abstract:** A disc drive load/unload ramp incorporates a coat of hardened film, the hardened film providing a surface that is more wear resistant and less likely to result in debris formation during normal disc drive use. The hardened surface material, which includes, but is not limited to, DLC, silicon nitride and titanium carbide, is deposited by sputtering techniques. A disc drive compatible lubricant layer is added to the hardening film to reduce friction. A method of reducing debris formation in a disc drive having a load/unload ramp includes first depositing a hardened film on the load/unload ramp followed by depositing a lubricant layer on the hardened film.

WO 01/59769 A1



ACTION