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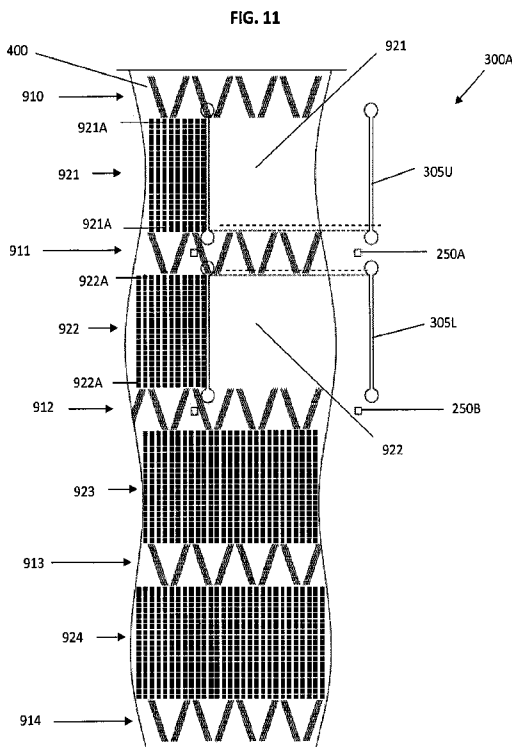
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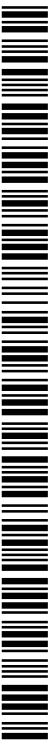
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[Continued on next page]

(54) Title: ERASE DRIVE SYSTEMS AND METHODS OF ERASURE FOR TAPE DATA CARTRIDGE



(57) Abstract: The present disclosure relates generally to writing and reading data from a magnetic tape storage media and, more particularly, to a secure erasure system for the eradication of the data contained in the data tracks of a tape media such that substantially all of the data can be erased while leaving the servo bands substantially unaltered or within specification. A data tape cartridge erased with such a system can then be reused in a secure data storage environment with complete confidence that any data from a previous usage is not subject to discovery.



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GM, KE, LR, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*

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INTERNATIONAL SEARCH REPORT

International application No
PCT/US2010/044018

A. CLASSIFICATION OF SUBJECT MATTER
 INV. G11B5/008 G11B5/024 G11B20/10 G11B20/00 G11B5/584

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED
 Minimum documentation searched (classification system followed by classification symbols)
 G11B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)
 EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2009/002859 A1 (JOHNSON DOUGLAS W [US] ET AL) 1 January 2009 (2009-01-01) figures 1,2 paragraphs [0017] - [0018], [0020], [0025] - [0028], [0030] - [0031], [0033] - [0034], [0036]	1-5, 9-11, 14-16, 19-21, 24,30, 31,34
X	US 2004/001271 A1 (CHLIWNYJ ALEX [US] ET AL) 1 January 2004 (2004-01-01) figures 1,2A,2B paragraphs [0023], [0024], [0026] - [0027], [0041], [0047] - [0048], [0062]	1,5, 9-11,14, 15,19, 21,30

Further documents are listed in the continuation of Box C.

See patent family annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search 7 October 2010	Date of mailing of the international search report 03/02/2011
Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Authorized officer Seeger, Alexander

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2010/044018

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.

2. As all searchable claims could be searched without effort justifying an additional fees, this Authority did not invite payment of additional fees.

3. As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

1-6, 9-11, 14, 15, 19-21, 24, 30, 31, 34

Remark on Protest

- The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

International application No

PCT/US2010/044018

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 0 557 552 A1 (TANDBERG DATA [NO]) 1 September 1993 (1993-09-01) figure 1 column 1, line 41 - column 2, line 3 column 4, line 9 - line 33 column 4, line 49 - column 5, line 8 column 5, line 21 - line 27 -----	1,10,11, 14-16, 19,21, 24,30, 31,34

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2010/044018

Patent document cited in search report	Publication date	Patent family member(s)	Publication date	
US 2009002859	A1	01-01-2009	WO 2009005589 A1	08-01-2009
US 2004001271	A1	01-01-2004	NONE	
EP 0557552	A1	01-09-1993	DE 69219105 D1	22-05-1997
			DE 69219105 T2	24-07-1997
			JP 2974102 B2	08-11-1999
			JP 6004809 A	14-01-1994
			US 5394278 A	28-02-1995

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-6, 9-11, 14, 15, 19-21, 24, 30, 31, 34

The read/write/erase head assembly comprises an independent slider body for the erase element.

2. claim: 7

The read/write/erase head assembly comprises a read/write slider and the erase element is appended thereto.

3. claim: 8

At least one read/write element and the erase element being included in the read/write/erase head assembly are made in the same thin film wafer stack.

4. claims: 12, 13, 17, 18

The erase element comprises an erase gap array.

5. claims: 22, 32

An erase element having a smaller magnetic width than a magnetic width of a data band of a magnetic tape to be erased.

6. claims: 23, 33

Two erase elements having a smaller magnetic width than a magnetic width of a data band of a magnetic tape to be erased.

7. claims: 25-29

A read/write/erase head assembly comprising three slider bodies.
