

(19)



Europäisches Patentamt
European Patent Office
Office européen des brevets



(11)

EP 1 353 302 A3

(12)

EUROPEAN PATENT APPLICATION

(88) Date of publication A3:
22.10.2003 Bulletin 2003/43

(51) Int Cl.7: **G07D 7/04**

(43) Date of publication A2:
15.10.2003 Bulletin 2003/42

(21) Application number: **03015597.2**

(22) Date of filing: **07.01.2002**

(84) Designated Contracting States:
**AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU
MC NL PT SE TR**
Designated Extension States:
AL LT LV MK RO SI

- **Evans, Peter Dilwyn**
Emsworth, Hampshire, PO10 7PY (GB)
- **Skinner, John Alan**
Havant, Hampshire PO9 2QQ (GB)
- **Potter, Michael**
Nr Petersfield, Hampshire, GU32 1RN (GB)
- **Pullan, Peter Alan**
Portsmouth, Hampshire, PO6 2EB (GB)
- **Scowen, Barry Clifford**
Woking, Surrey, GU21 5DW (GB)

(30) Priority: **08.01.2001 GB 0100451**
11.06.2001 GB 0114212

(62) Document number(s) of the earlier application(s) in
accordance with Art. 76 EPC:
02250079.7 / 1 221 679

(74) Representative: **Skone James, Robert Edmund**
GILL JENNINGS & EVERY
Broadgate House
7 Eldon Street
London EC2M 7LH (GB)

(71) Applicant: **De La Rue International Limited**
Basingstoke, Hants RG22 4BS (GB)

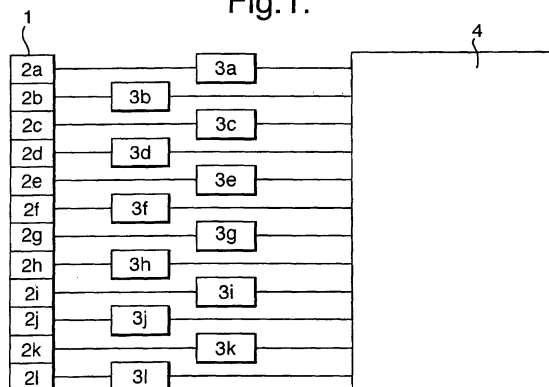
(72) Inventors:
• **Buttiant, John**
Ferring, West Sussex, BN12 6QR (GB)

(54) **Magnetic thread reader**

(57) A method of detecting a magnetic thread comprises causing relative movement between the thread and an array of magnetic heads (2a-2l), each head (2a-2l) generates a signal upon detecting a portion of the thread. The arrival of a thread at one of the heads is detected, that head being denoted a primary head, and the head on each side a secondary head. Output signals

from the primary and secondary heads are monitored to generate a representation of the thread, and the magnitude of the signals from the primary and secondary heads are compared such that if the magnitude of the output signal from a secondary head exceeds that from the primary head, the primary and secondary heads are reallocated accordingly.

Fig.1.



EP 1 353 302 A3



European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 03 01 5597

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
A	US 5 255 129 A (JONES PHILIP B) 19 October 1993 (1993-10-19) * the whole document * ---	1-16	G07D7/04
A	US 5 889 271 A (WEBB MARTIN JOHN) 30 March 1999 (1999-03-30) * abstract * * column 4, line 62 - column 5, line 16 * * column 6, line 3 - line 56 * * figures 1-5 * ---	1-16	
A	GB 2 098 768 A (BANK OF ENGLAND THE GOVERNOR &) 24 November 1982 (1982-11-24) * the whole document * ---	1-16	
A	US 5 378 885 A (JONES JR ROBERT E ET AL) 3 January 1995 (1995-01-03) * the whole document * -----	1-16	
The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
			G07D
Place of search	Date of completion of the search	Examiner	
THE HAGUE	3 September 2003	Van Dop, E	
CATEGORY OF CITED DOCUMENTS		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document			

EPO FORM 1503 03/02 (P04C01)

ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.

EP 03 01 5597

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

03-09-2003

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 5255129 A	19-10-1993	AT 123164 T	15-06-1995
		AU 630746 B2	05-11-1992
		AU 6406190 A	18-04-1991
		CA 2049040 A1	23-03-1991
		DE 69019752 D1	29-06-1995
		DE 69019752 T2	14-12-1995
		DK 493438 T3	16-10-1995
		EP 0493438 A1	08-07-1992
		ES 2073034 T3	01-08-1995
		FI 98413 B	28-02-1997
		WO 9104549 A1	04-04-1991
		JP 2739157 B2	08-04-1998
		JP 5500721 T	12-02-1993
		KR 9406839 B1	28-07-1994
		NO 914198 A	25-10-1991
US 5889271 A	30-03-1999	AT 165683 T	15-05-1998
		AU 689968 B2	09-04-1998
		AU 3813195 A	17-06-1996
		CA 2201306 A1	30-05-1996
		DE 69502296 D1	04-06-1998
		DE 69502296 T2	08-10-1998
		DK 791210 T3	07-10-1998
		EP 0791210 A1	27-08-1997
		ES 2115402 T3	16-06-1998
		FI 972017 A	13-05-1997
		WO 9616381 A1	30-05-1996
		JP 10511784 T	10-11-1998
		KR 274699 B1	15-12-2000
		NO 972267 A	16-05-1997
		GB 2098768 A	24-11-1982
US 5378885 A	03-01-1995	DE 69224995 D1	07-05-1998
		DE 69224995 T2	10-12-1998
		EP 0610383 A1	17-08-1994
		ES 2113960 T3	16-05-1998
		JP 7500940 T	26-01-1995
		WO 9309532 A1	13-05-1993

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82