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- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, JP, KE, KG, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.
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[Continued on next page]

(54) Title: TIME-KEEPING DEVICES INCLUDING INDICATIONS BY MAGNETIC PARTICLES IN SUSPENSION IN LIQUID FILLED CHAMBERS

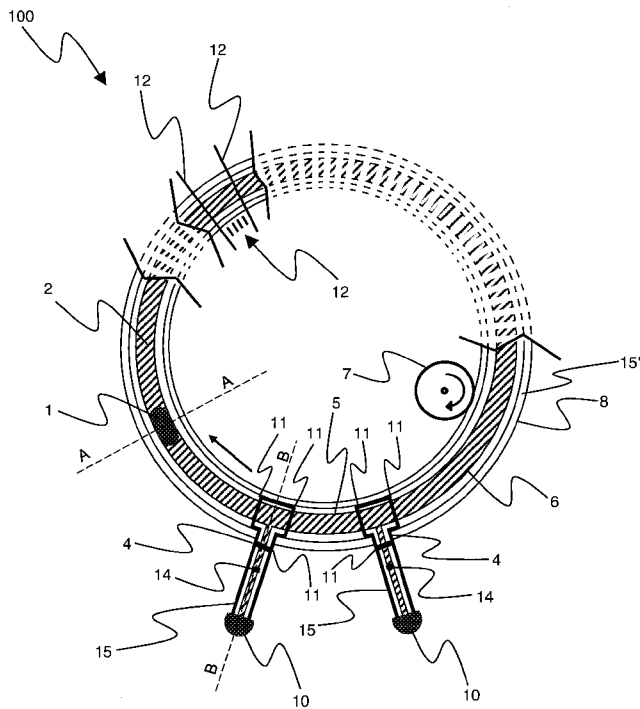


FIG. 1A

(57) Abstract: A time-keeping device having a watch mechanism and method for use, the device having a watch dial that has at least one sealed chamber and/or capillary in a transparent substrate disposed on the side facing a user, and another side coupled to a micro-magnet drive system. The sealed chamber has at least a liquid with magnetic particles suspended therein. The micro-magnet driven system is driven, for example, by a clockwork mechanism under the watch dial.



**Declarations under Rule 4.17:**

- *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*
- *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))*
- *of inventorship (Rule 4.17(iv))*

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- *with international search report (Art. 21(3))*
- *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

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A. CLASSIFICATION OF SUBJECT MATTER  
INV. G04C17/00  
ADD.  
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)  
G04C

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 practicable, search terms used)  
EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 222 808 A (SUGARMAN JEFFREY [US] ET AL) 29 June 1993 (1993-06-29) column 4, line 3 - column 5, line 13 column 6, line 23 - column 8, line 39 figures 1-4	1-6,13
X	----- WO 2010/106514 A1 (BARDELLI ROBERTO [IT]; FOSCHI LEONARDO [IT]) 23 September 2010 (2010-09-23) page 2, lines 7-31 page 3, lines 5-19 page 3, line 26 - page 4, line 30 figures 1-3	1-13
A	----- DE 42 07 122 A1 (HESSABI IRADJ [DE]) 9 September 1993 (1993-09-09) abstract figure 1 ----- -/--	1-13

Further documents are listed in the continuation of Box C.

See patent family annex.

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Date of the actual completion of the international search  2 March 2016	Date of mailing of the international search report  09/03/2016
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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  Pirozzi, Giuseppe
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# INTERNATIONAL SEARCH REPORT

International application No  
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C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 3 486 109 A (SCHMIDT EBERHARDT) 23 December 1969 (1969-12-23) abstract figure 12  -----	1-13

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/IB2015/001336

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 5222808	A	29-06-1993	AU 3975193 A 18-11-1993
			CA 2109703 A1 28-10-1993
			EP 0591505 A1 13-04-1994
			JP 2801403 B2 21-09-1998
			JP 3135057 B2 13-02-2001
			JP H06507835 A 08-09-1994
			JP H10277377 A 20-10-1998
			US 5222808 A 29-06-1993
			WO 9320932 A1 28-10-1993
-----			
WO 2010106514	A1	23-09-2010	CA 2758652 A1 23-09-2010
			CN 102422229 A 18-04-2012
			EP 2409201 A1 25-01-2012
			IT 1393323 B1 20-04-2012
			JP 2012521004 A 10-09-2012
			US 2012026840 A1 02-02-2012
			WO 2010106514 A1 23-09-2010
-----			
DE 4207122	A1	09-09-1993	NONE
-----			
US 3486109	A	23-12-1969	BE 699827 A 16-11-1967
			CH 437267 A4 15-10-1969
			CH 487453 A 15-10-1969
			CH 1124466 A4 14-06-1968
			DE 1591865 A1 14-01-1971
			FR 1552838 A 10-01-1969
			GB 1144543 A 05-03-1969
			NL 6710629 A 05-02-1968
			US 3486109 A 23-12-1969
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