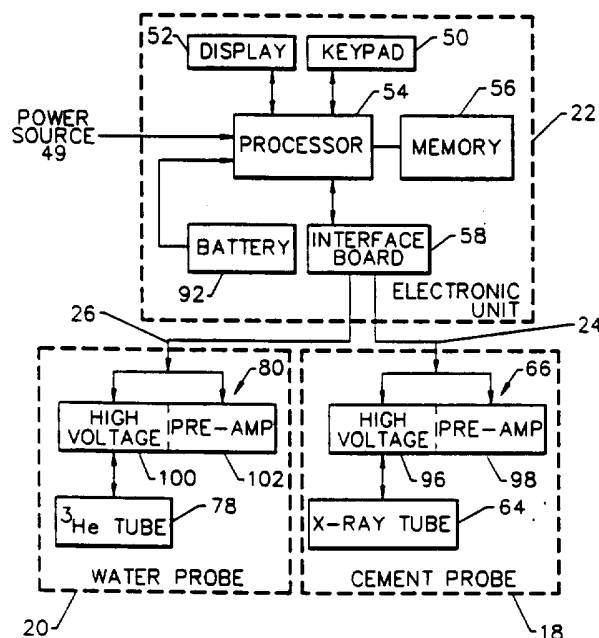




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(21) International Application Number: PCT/US93/02029 (22) International Filing Date: 9 March 1993 (09.03.93) (30) Priority data: 850,554 13 March 1992 (13.03.92) US (71) Applicant: TROXLER ELECTRONIC LABORATORIES, INC. [US/US]; 3008 Cornwallis Road, P.O. Box 12057, Research Triangle Park, NC 27709 (US). (72) Inventor: PRATT, James, Daniel, Jr. ; 1536 Varsity Drive, Raleigh, NC 27606 (US). (74) Agents: LINKER, Raymond, O., Jr. et al.; Bell, Seltzer, Park & Gibson, P.O. Drawer 34009, Charlotte, NC 28234 (US).		(81) Designated States: AU, BR, CA, JP, KR, NZ, European patent (AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE). Published <i>With international search report. Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments</i> (88) Date of publication of the international search report: 28 October 1993 (28.10.93)

(54) Title: APPARATUS AND METHOD FOR MEASURING PHYSICAL CHARACTERISTICS OF MATERIALS**(57) Abstract**

An instrument and a method are provided for determining the moisture and cement contents of fresh concrete and for calculating and displaying to the user of the instrument the projected strength of the concrete. The instrument has two probes, each probe containing a low-activity nuclear source. The probes are stored in shielded receptacles in a housing when not in use. The user calibrates the probes with reference to concrete compositions of known cement and water content, and then for field use separately inserts each probe into the access tube of a sample pan filled with concrete to obtain counts corresponding to moisture content and cement content. An electronics unit is attached to the housing for storing the correlations and performing the calculations.

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INTERNATIONAL SEARCH REPORT

PCT/US 93/02029

International Application No

I. CLASSIFICATION OF SUBJECT MATTER (if several classification symbols apply, indicate all) ⁶		
According to International Patent Classification (IPC) or to both National Classification and IPC		
Int.Cl. 5 G01N33/38; G01N23/02		
II. FIELDS SEARCHED		
Minimum Documentation Searched ⁷		
Classification System	Classification Symbols	
Int.Cl. 5	G01N	
Documentation Searched other than Minimum Documentation to the Extent that such Documents are Included in the Fields Searched ⁸		
III. DOCUMENTS CONSIDERED TO BE RELEVANT⁹		
Category ¹⁰	Citation of Document, ¹¹ with indication, where appropriate, of the relevant passages ¹²	Relevant to Claim No. ¹³
X	WO,A,8 801 382 (GRUMMAN AEROSPACE CORPORATION) 25 February 1988	1, 19
Y	see abstract; figures 1,2	2, 11, 12, 15, 20-22, 24, 26, 28
Y	--- US,A,4 766 319 (REGIMAND) 23 August 1988	2, 11, 12, 15, 20-22, 24, 26, 28
A	see column 2, line 5 - column 8, line 11; figures	5, 30-35
Y	--- US,A,4 039 809 (BAILEY) 2 August 1977	15, 22
A	see column 2, line 13 - column 2, line 47; figure 1	1, 2, 11, 26, 30

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IV. CERTIFICATION		
Date of the Actual Completion of the International Search	Date of Mailing of this International Search Report	
25 AUGUST 1993	0 3. 09. 93	
International Searching Authority	Signature of Authorized Officer	
EUROPEAN PATENT OFFICE	BOSMA R.A.P.	

III. DOCUMENTS CONSIDERED TO BE RELEVANT (CONTINUED FROM THE SECOND SHEET)		
Category °	Citation of Document, with indication, where appropriate, of the relevant passages	Relevant to Claim No.
A	GB,A,1 193 003 (ÉLECTRICITÉ DE FRANCE SERVICE NATIONAL) 28 May 1970 see the whole document ---	1,11,15, 19,26,30
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**ANNEX TO THE INTERNATIONAL SEARCH REPORT
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This annex lists the patent family members relating to the patent documents cited in the above-mentioned international search report.
The members are as contained in the European Patent Office EDP file on
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