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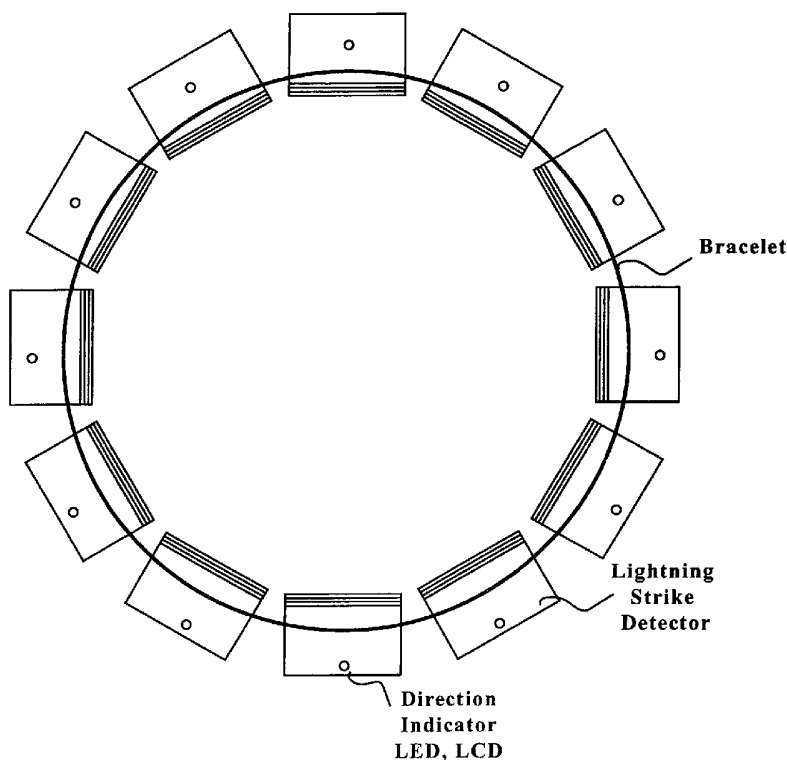
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[Continued on next page]

(54) Title: LIGHTNING STRIKE HAZARD DETECTOR



(57) Abstract: An accurate, fast-acting, wearable lightning strike hazard detector has a plurality of collecting plates for collection of arriving charged particles. The collecting plates are insulated from each other by an insulating mechanism. A connecting means electrically connects the collecting plates to a bleeding circuit to bleed accumulated charges to a ground plane. The voltage within the bleeding circuit is determined by a voltage measuring mechanism. A voltage accumulation mechanism measures the accumulated voltage of each plate and its rate of voltage accumulation as a function of time. Voltage accumulation and voltage time data are interpreted by an algorithm to determine lightning strike potential. A signal generating means generates a signal when said voltage accumulation and voltage accumulation rate exceed preselected limits. The signal actuates an alarm means, which provides an audible or visual alarm to warn against an impending lightning strike. Plural detector pairs are, optionally, housed on a bracelet or placed within a wristwatch

housing to determine the direction from which a lightning strike hazard is approaching. The detector has an on-board power supply, such as a lithium battery. Its warning signal provides sufficient time to permit the wearer to seek shelter, or assume a low, close to ground, profile that avoids a lightning strike.

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US04/29299

A. CLASSIFICATION OF SUBJECT MATTER
 IPC(7) : G01W 1/00
 US CL : 340/601,691.4,693.5; 73/170.24; 324/72; 702/4
 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)
 U.S. : 340/601,660,691.2,691.4,691.6,693.5; 73/170.24; 324/72; 702/4

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)
 Please See Continuation Sheet

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5,057,820 A (MARKSON et al) 15 October 1991, see the Abstract and Fig. 7.	1-13
A	US 4,983,954 A (HUSTON) 08 January 1991, see the Abstract.	1-13
A	US 5,359,319 A (CAMPBELL et al) 25 October 1994, see the Abstract and Fig. 9.	1-13
A	US 6,150,945 A (WILSON) 21 November 2000, see the Abstract and Fig. 4.	1-13
A	US 5,296,842 A (KATO) 22 March 1994, see the Abstract.	1-13
A	US 5,621,410 A (GRAY et al) 15 April 1997, see the Abstract.	1-13
A	US 6,405,134 B1 (SMITH et al) 11 June 2002, see the Abstract.	1-13

Further documents are listed in the continuation of Box C. See patent family annex.

* Special categories of cited documents:	"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
"A" document defining the general state of the art which is not considered to be of particular relevance	"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
"E" earlier application or patent published on or after the international filing date	"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
"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)	"&"	document member of the same patent family
"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		

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Continuation of B. FIELDS SEARCHED Item 3:

EAST (lightning, sense, detect, predict, forecast, anticipate, buildup, impending, approaching, alarm, alert, warn, lamp, LED, bracelet, wristwatch, wrist, portable, handheld, wear, worn, plate, electrode, capacitive, insulator, dielectric)