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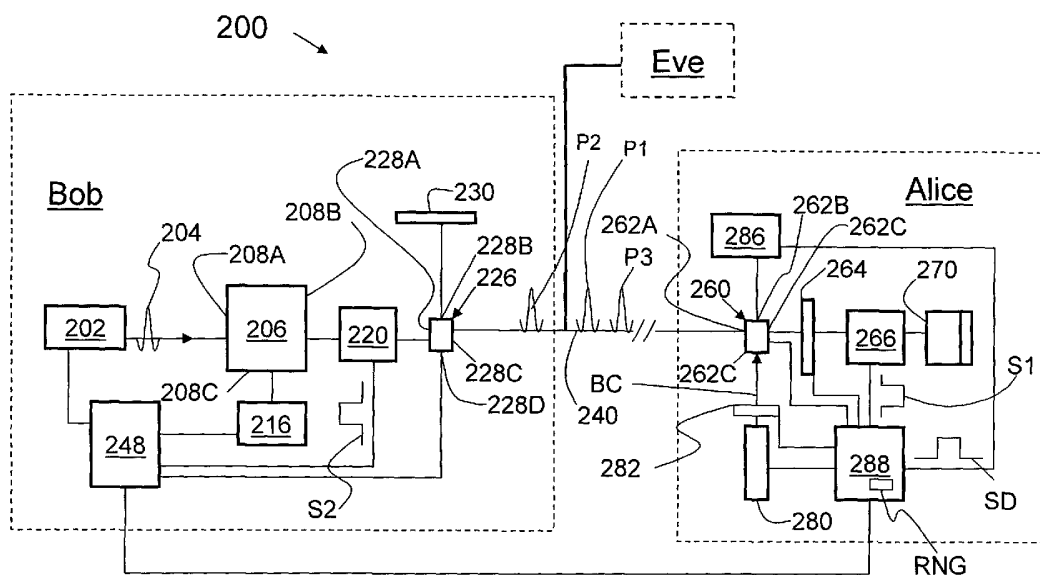
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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: WATCH DOG DETECTOR FOR QKD SYSTEM



(57) Abstract: A single-photon "watch dog" detector (286) for a two-way quantum key distribution (QKD) system (200) is described. By counting the number of weak pulses (e.g., P1, P2) entering and/or leaving the reflecting QKD station (Alice), an eavesdropper (Eve) that attempts to add weak pulses (P3) to the quantum channel (240) in order to gain phase information from the phase modulator (266) at Alice in order to deduce information about the key being exchanged can be detected.

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US04/01094

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : H04L 9/00, 9/08; H04K 1/08

US CL : 380/256, 44, 51, 278

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. : 380/256, 44, 51, 278

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)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5,768,378 A (TOWNSEND et al) 16 June 1998	1-14
A	US 5,850,441 A (TOWNSEND et al) 15 December 1998	1-14
X	US 6,438,234 B1 (GISIN et al) 20 August 2002	1-14
A	US 5,764,765 A (PHOENIX et al) 09 June 1998	1-14
A	US 2001/0055389 A1 (HUGHES et al) 27 December 2001	1-14

Further documents are listed in the continuation of Box C.

See patent family annex.

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