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(54) **PRESENTING DATA GENERATED BY A CONTINUOUS GLUCOSE MONITOR**

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(52) **U.S. Cl.**

CPC ***A61B 5/74*** (2013.01); ***A61B 5/14532*** (2013.01); ***A61M 5/1723*** (2013.01); ***G06F 19/3456*** (2013.01); ***H04L 47/22*** (2013.01); *G06F 19/3468* (2013.01); *H04L 67/12* (2013.01); *H04L 67/322* (2013.01)

(58) **Field of Classification Search**

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USPC 340/870.01–870.44, 500–693.12, 340/5.1–5.92; 455/67.11

See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

6,425,060	B1	7/2002	Mounes-Toussi et al.
7,811,231	B2	10/2010	Jin et al.
8,187,183	B2	5/2012	Jin et al.

(Continued)

FOREIGN PATENT DOCUMENTS

CN	103168304	A	6/2013
CN	103238154	A	8/2013
RU	2473307	C1	1/2013

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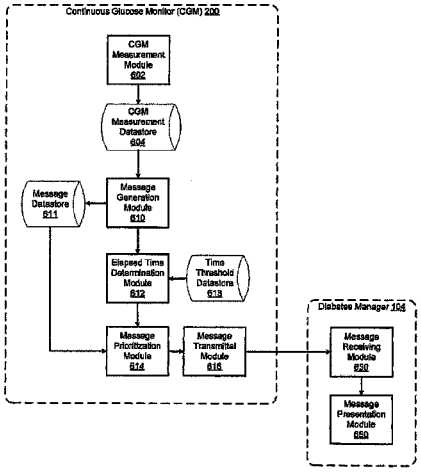
(57) **ABSTRACT**

A computer implemented method for transmitting messages generated by a continuous glucose monitor (CGM), the method comprising: generating a first message at the CGM at a first time, the first message being related to blood glucose measuring; generating a second message at the CGM at a second time, the second time being after the first time, the second message being related to blood glucose measuring; determining an elapsed time since a transmitter of the CGM has transmitted data; determining whether the elapsed time is greater than a threshold; determining whether the second message is to be transmitted before the first message, in response to the elapsed time being greater than the threshold; and transmitting data corresponding with the second message before transmitting data corresponding with the first message to a diabetes management device, in response to determining that the second message is to be transmitted before the first message.

14 Claims, 8 Drawing Sheets