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Zhao et al.

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(54) **DATA ACQUISITION QUALITY AND DATA FUSION FOR PERSONAL PORTABLE WIRELESS VITAL SIGNS SCANNER**

A61B 5/7221 (2013.01); *A61B 5/742* (2013.01); *A61B 5/7405* (2013.01)

(58) **Field of Classification Search**

CPC *A61B 19/2203*; *A61B 19/5212*; *A61B 2019/2223*; *A61B 5/72*; *A61B 6/5258*; *A61B 5/11*; *A61B 5/1107*; *A61B 5/1118*; *A61B 5/113*; *A61B 5/1135*
USPC 600/534, 536, 595
See application file for complete search history.

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 168 days.

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(57) **ABSTRACT**

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In one embodiment of the invention, an interactive vital signs scanning method is disclosed including concurrently scanning for a plurality of vital signs with a portable vital signs scanner; detecting movement of the portable vital signs scanner during the scanning for the plurality of vital signs; and determining a measure of quality of the scanning for the plurality of vital signs with the portable vital signs scanner. In another embodiment, a method of improving the quality of vital signs data is disclosed including concurrently sensing data from a plurality of vital signs sensors over a period of time with a portable vital signs scanner; determining a plurality of vital sign values for a respective plurality of vital signs in response to the sensed data from the plurality of vital signs sensors over the period of time; and fusing at least two vital sign values of the plurality of vital sign values for the respective plurality of vital signs.

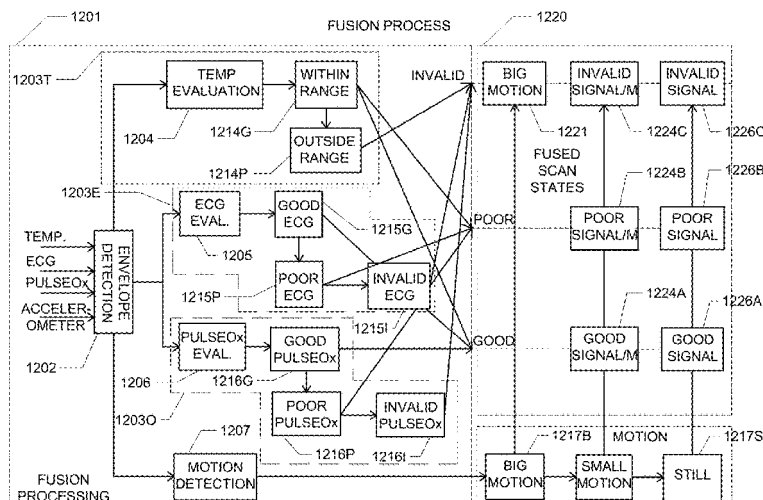
Related U.S. Application Data

(60) Provisional application No. 61/875,681, filed on Sep. 9, 2013, provisional application No. 61/924,230, filed on Jan. 6, 2014.

(51) **Int. Cl.**
A61B 5/11 (2006.01)
A61B 5/00 (2006.01)
A61B 5/0205 (2006.01)
A61B 5/0295 (2006.01)
A61B 5/0402 (2006.01)
A61B 5/1455 (2006.01)

(52) **U.S. Cl.**
CPC *A61B 5/7282* (2013.01); *A61B 5/02055* (2013.01); *A61B 5/0295* (2013.01); *A61B 5/0402* (2013.01); *A61B 5/14551* (2013.01);

21 Claims, 27 Drawing Sheets



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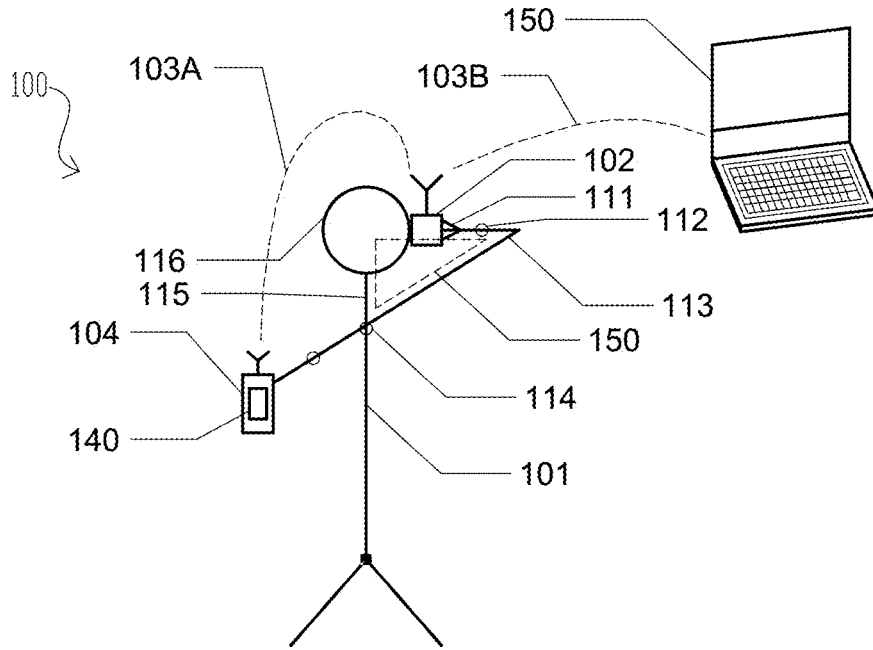


FIG. 1A

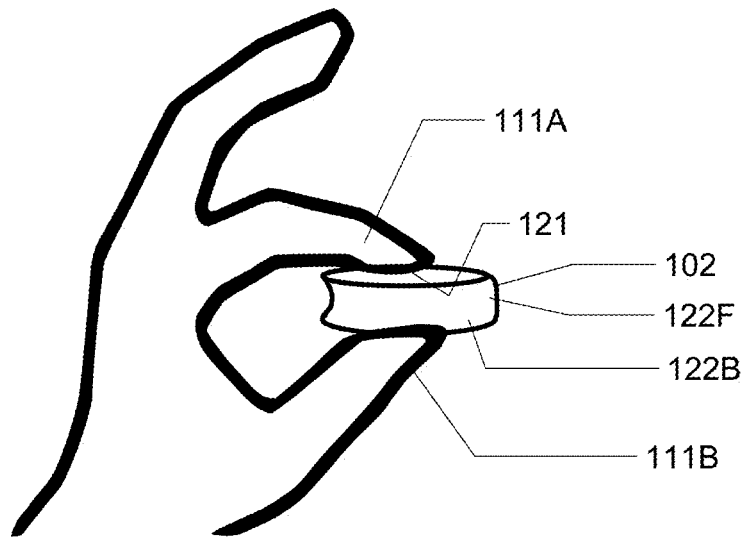


FIG. 1B

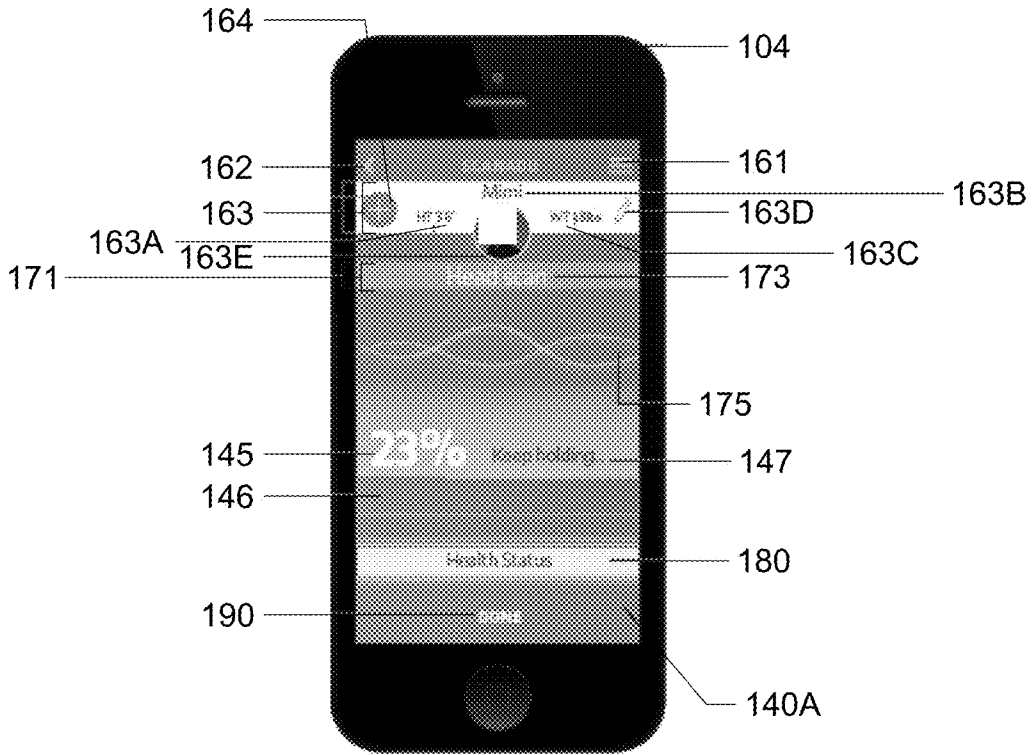


FIG. 1C

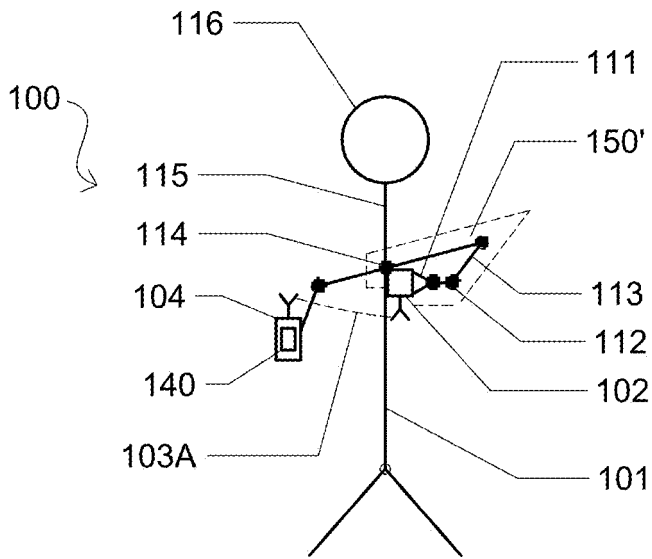


FIG. 1D

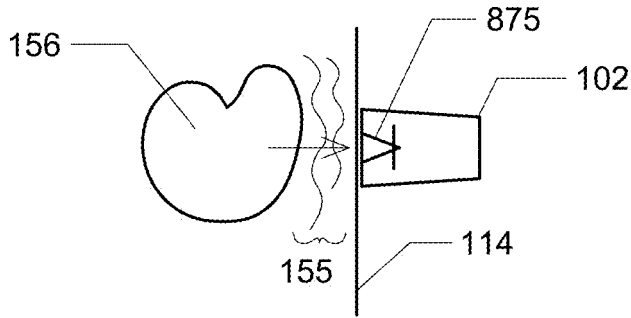


FIG. 1E

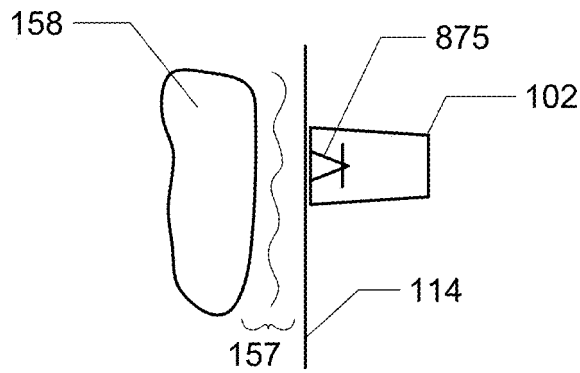


FIG. 1F

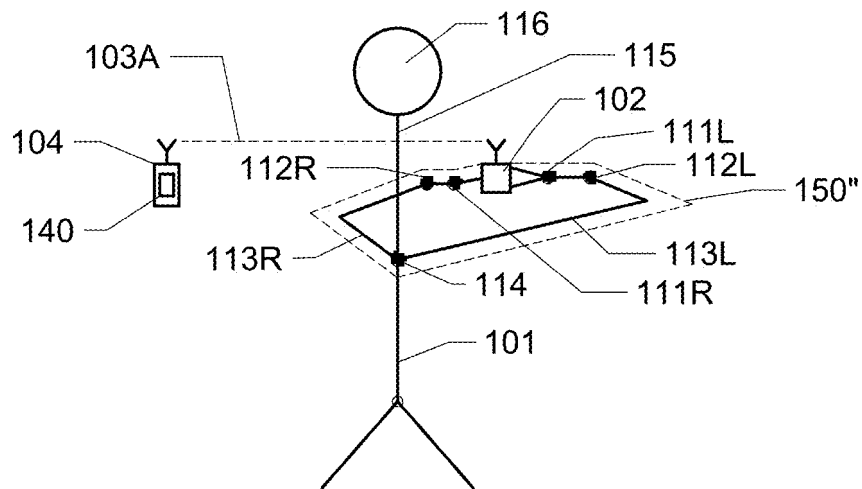


FIG. 1G

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