

United States Patent [19]

Nakamura

Patent Number: [11]

5,475,725

Date of Patent: [45]

Dec. 12, 1995

[54] PULSE METER WITH PEDOMETER **FUNCTION**

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[73] Assignee: Seiko Instruments Inc., Japan

[21] Appl. No.: 191,017

Feb. 2, 1994 [22] Filed:

[30] Foreign Application Priority Data

Feb.	22, 1993	[JP]	Japan	•••••		•••••	5-0	32310
[51]	Int. Cl.6				G010	22/00;	A61B	5/02
[52]	U.S. CI.					. 377/24	1.2 ; 12	8/689
[58]	Field of	Search				377/24	.2; 128	3/689,
						1	28/668	. 696

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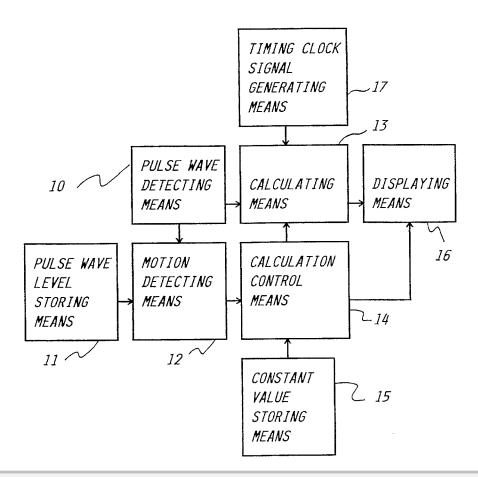
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Primary Examiner-John S. Heyman Attorney, Agent, or Firm-Adams & Wilks

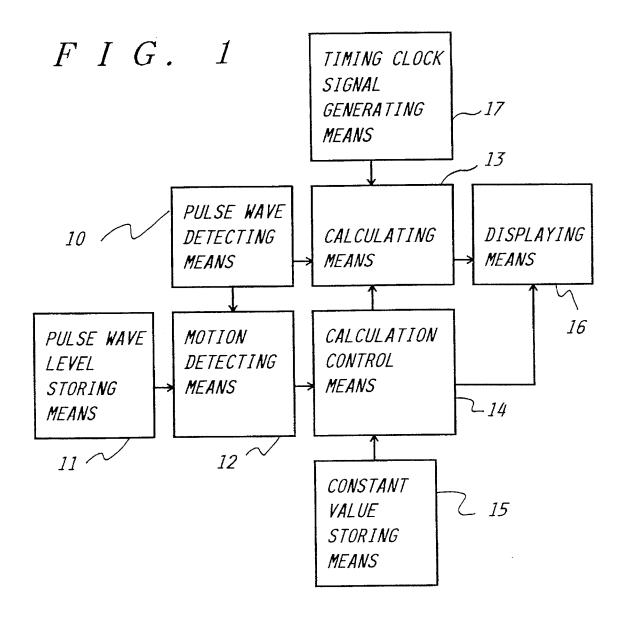
ABSTRACT

An electronic combined pulse meter and pedometer may be provided with only a single sensor used for determining walking pace and pulse rate. A pulse wave detector detects a pulse wave of the user and outputs a corresponding pulse wave signal to a calculating circuit and a walking state detector. The walking state detector compares the detected pulse wave with a reference level stored in a pulse wave level memory and outputs a walking state signal if the level of the detected pulse wave exceeds the reference level. Calculation control circuitry selects various constant values pre-stored in a constant value memory based upon the walking state signal and outputs the selected constant values to the calculating circuit and a display device. The calculating circuit calculates the time interval between successive pulses of the detected pulse wave signal in accordance with a clock signal and the selected constant values, and outputs the result to the display device.

19 Claims, 12 Drawing Sheets

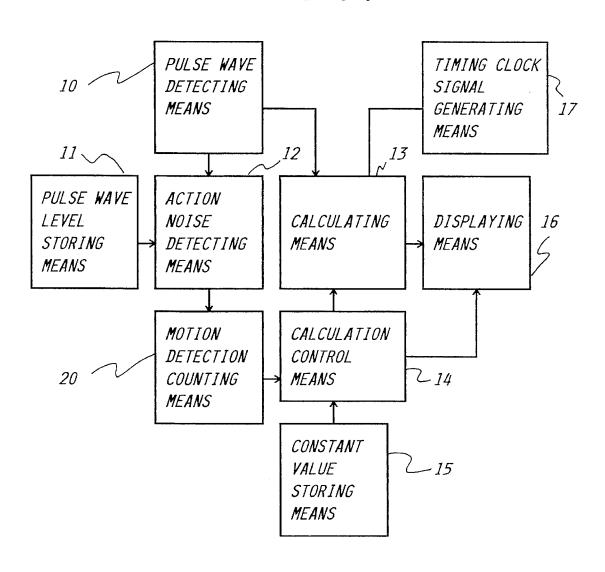




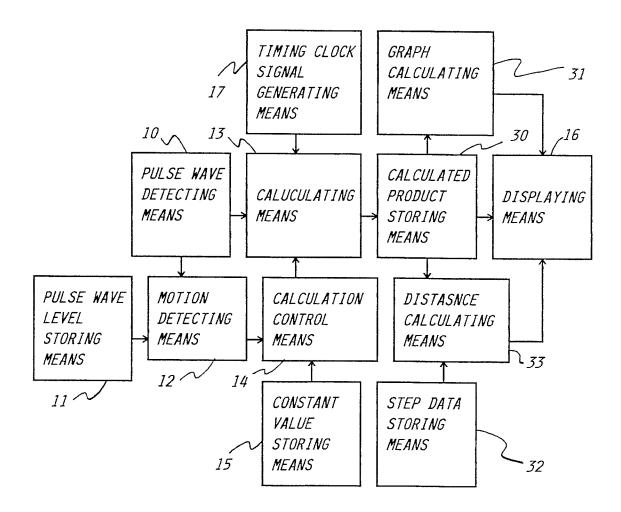


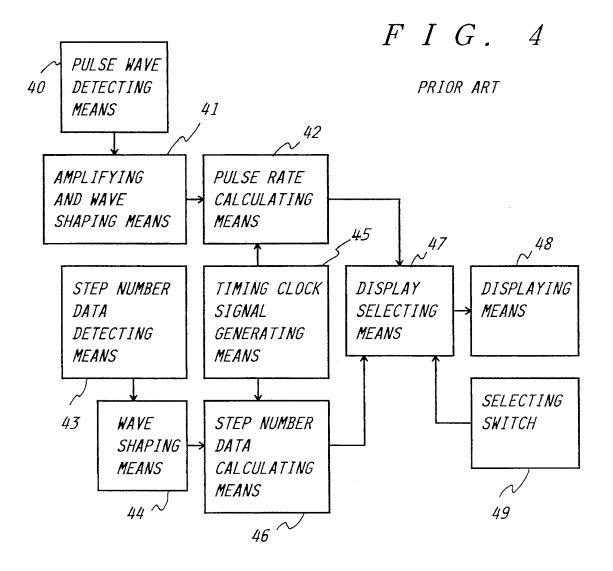


F I G. 2



F I G. 3







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