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(12) United States Patent

Pasolini et al.

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(54)	PEDOMETER DEVICE AND STEP
	DETECTION METHOD USING AN
	ALGORITHM FOR SELF-ADAPTIVE
	COMPUTATION OF ACCELERATION
	THRESHOLDS

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(51) **Int. Cl.** *G01C 22/00*

See application file for complete search history.

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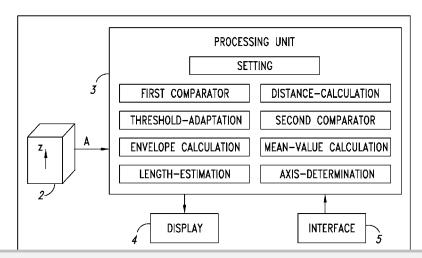
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(57) ABSTRACT

In a pedometer device for detecting and counting steps of a user on foot, an accelerometer sensor detects a vertical acceleration generated during the step. A processing unit, connected to the accelerometer sensor, processes an acceleration signal relating to the acceleration in order to detect the occurrence of a step, and in particular compares the acceleration signal with a first reference threshold. The processing unit automatically adapts the first reference threshold as a function of the acceleration signal. In particular, the processing unit modifies the first reference threshold as a function of an envelope of the amplitude of the acceleration signal.

30 Claims, 5 Drawing Sheets









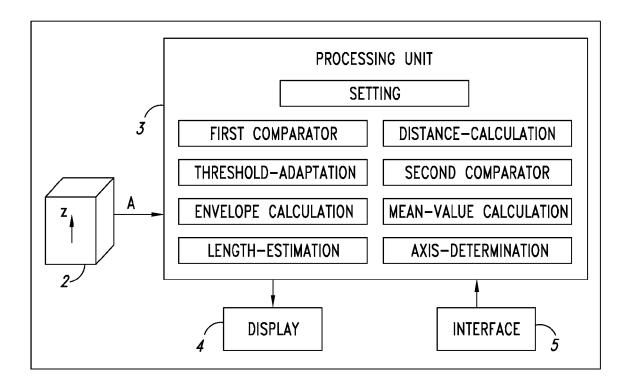
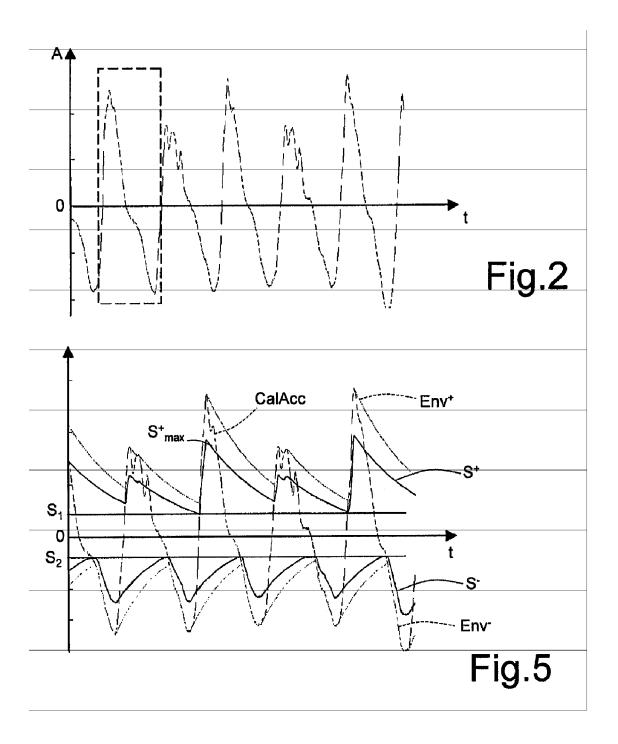
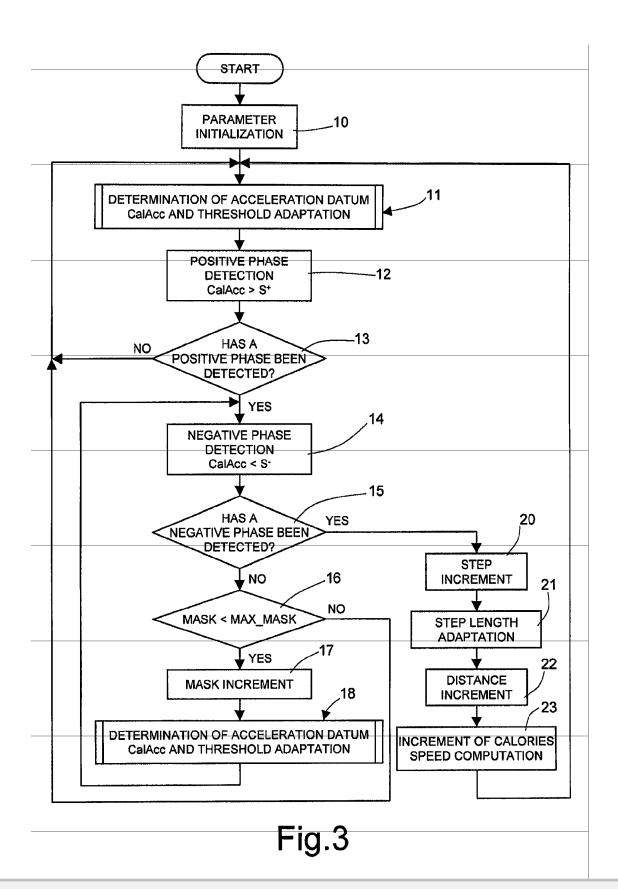


FIG. 1











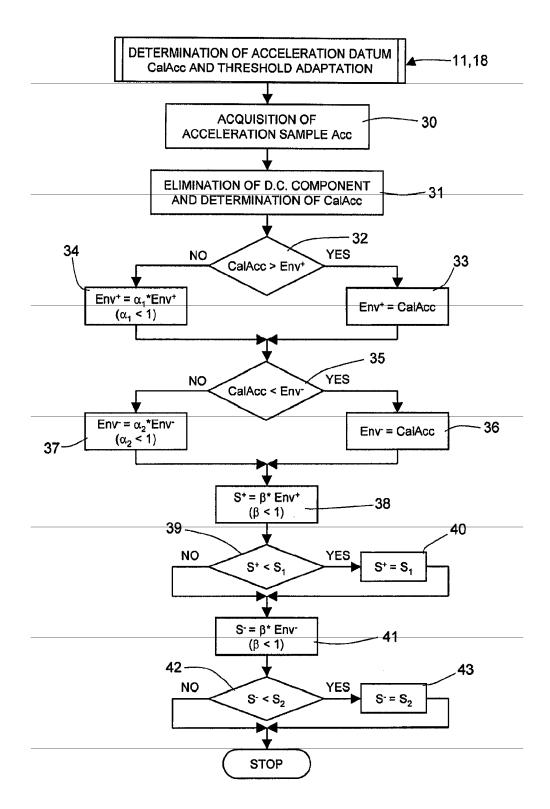


Fig.4



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