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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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G01C 22/00   (2006.01)
(52) **U.S. Cl.** **702/160**
(58) **Field of Classification Search** 702/141, 702/150–154, 158, 160; 600/595; 73/490, 73/510
See application file for complete search history.

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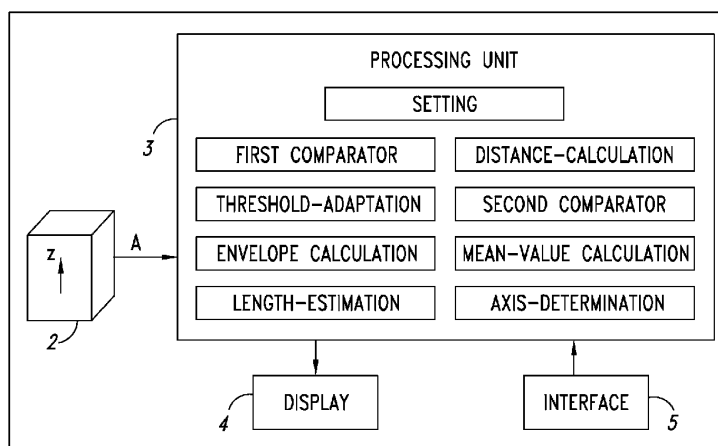
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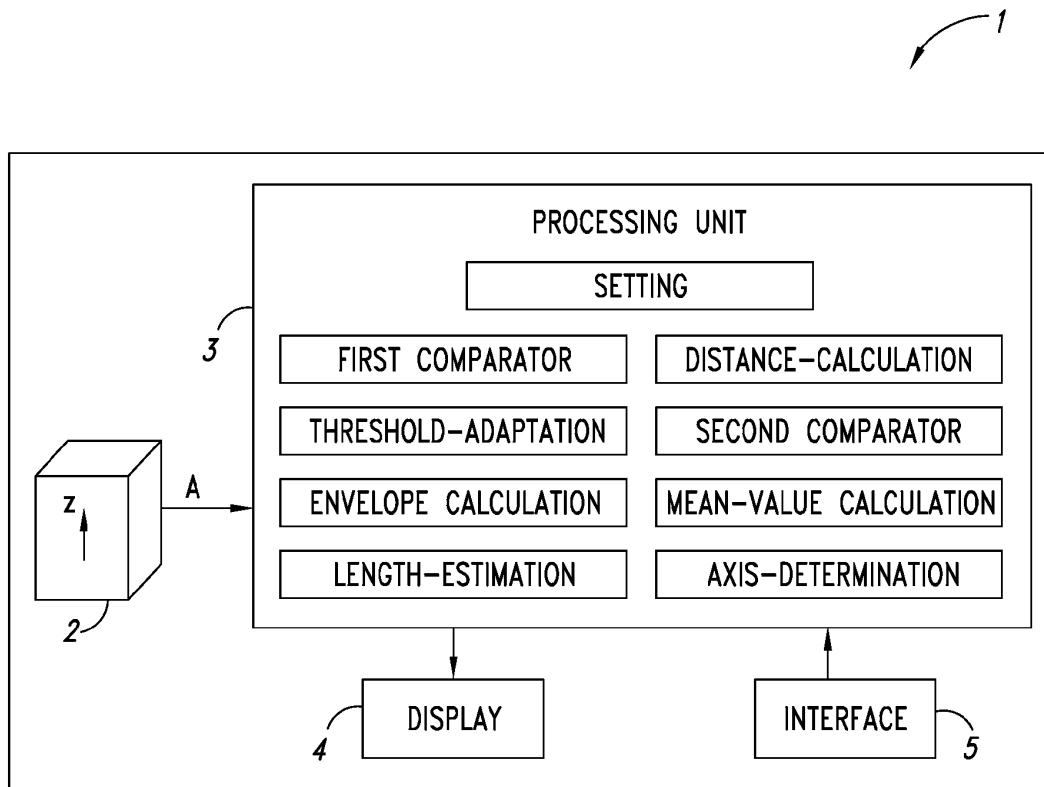
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(57) **ABSTRACT**

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.
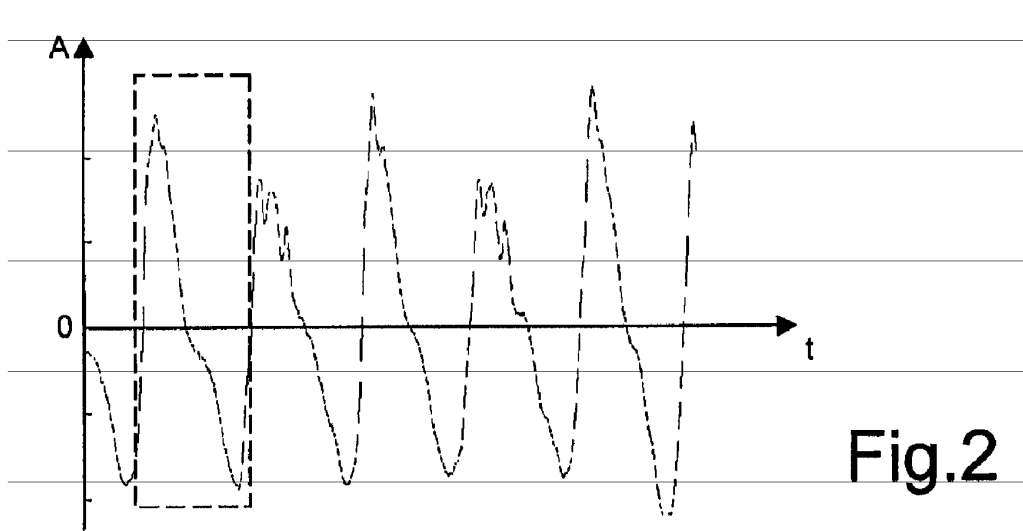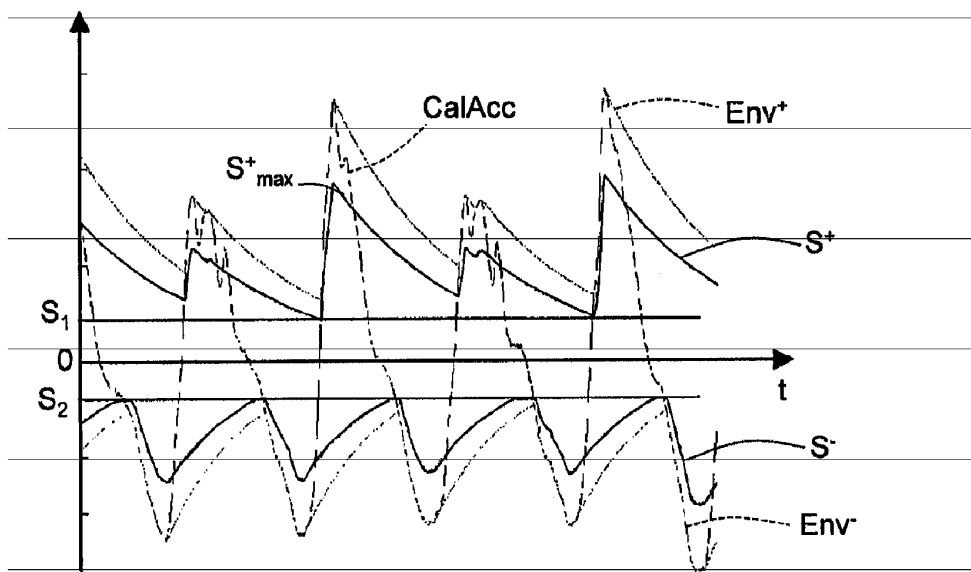
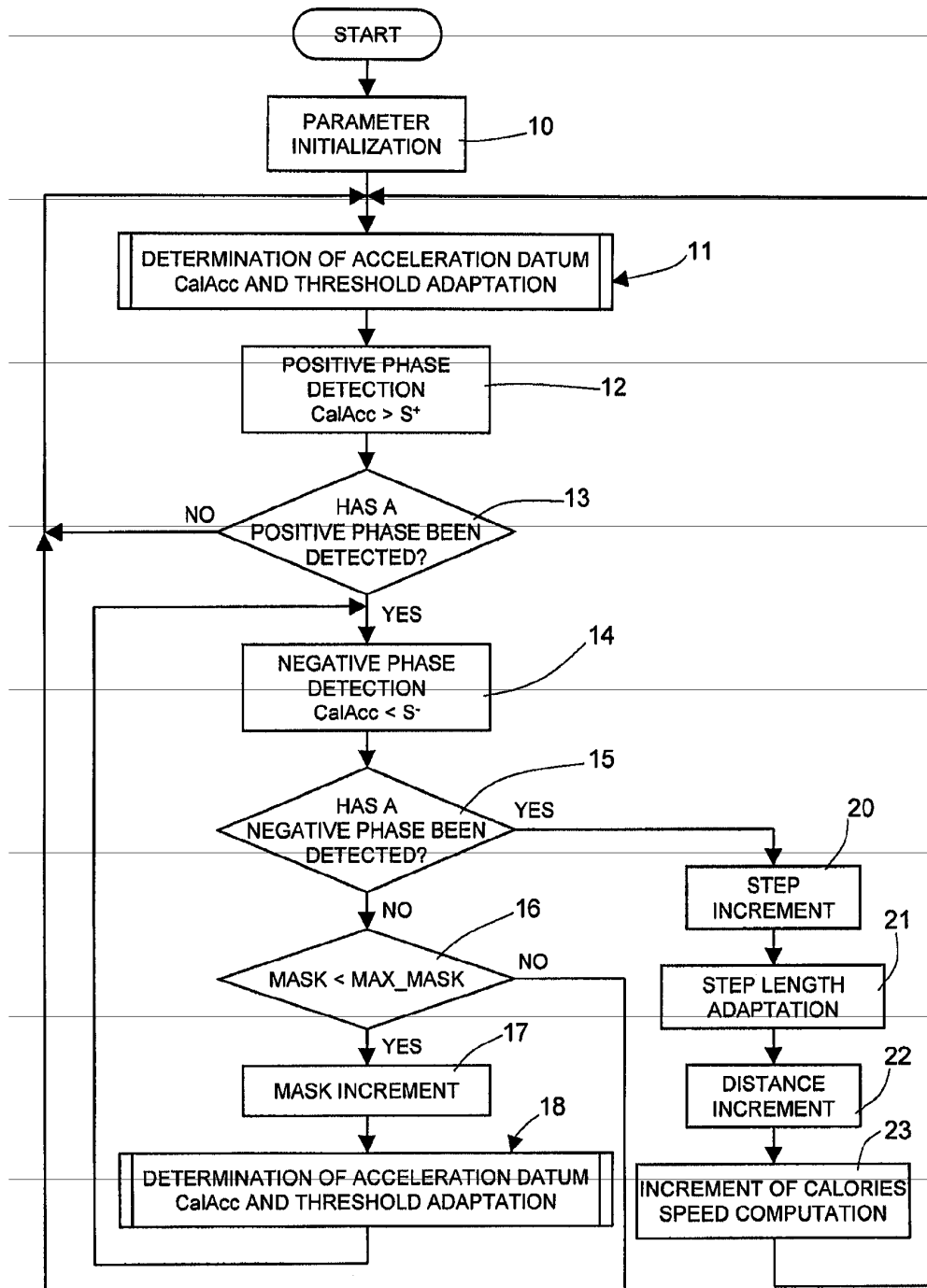**30 Claims, 5 Drawing Sheets**

FIG. 1

Fig.2

Fig.5

Fig.3

Fig.4

DOCKET ALARM
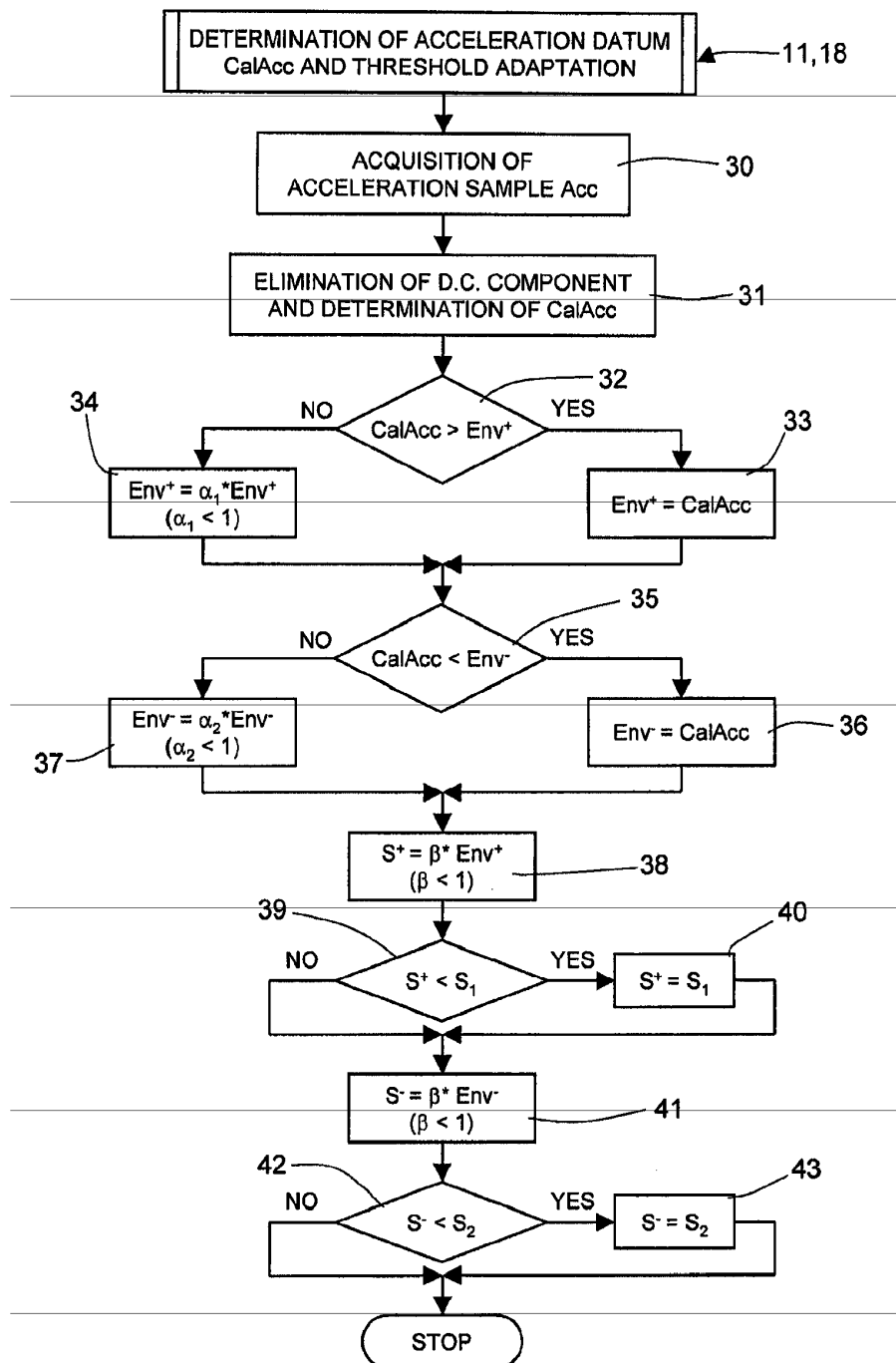
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