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Amano et al.

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[54] HEALTH MANAGEMENT DEVICE AND EXERCISE SUPPORT DEVICE

FOREIGN PATENT DOCUMENTS

[75] Inventors: **Kazuhiko Amano**, Suwa; **Kazuo Uebaba**, Yokohama; **Hitoshi Ishiyama**, Toride, all of Japan

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[73] Assignee: **Seiko Epson Corporation**, Tokyo, Japan

[21] Appl. No.: **08/894,457**

Primary Examiner—Max Hindenburg
Attorney, Agent, or Firm—Eric B. Janofsky

[22] PCT Filed: **Dec. 18, 1996**

[86] PCT No.: **PCT/JP96/03674**

[57] ABSTRACT

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[30] Foreign Application Priority Data

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Mar. 12, 1996	[JP]	Japan	8-55115

[51] Int. Cl.⁶ **A61B 5/00**

[52] U.S. Cl. **600/595; 600/503**

[58] Field of Search 600/502, 503,
600/587, 595

A health management device is provided, which enables the user himself to make a determination of the quality of his state of health, without the presence of a physician or nurse specialist. However, this device may of course be employed to receive measurement directives from, or provide notification to, a third party. Pulse sensor 4 measures the user's fingertip pulse wave. Acceleration sensor calculates an acceleration value from the user's body. These outputs are converted to digital signals at sensor interface 6. CPU1 determines whether or not the user is exercising based on the acceleration value read out from sensor interface 6. Based on this result, CPU1 takes up the user's pulse waves before and after exercise, and determines the acceleration pulse wave. CPU1 then calculates the amplitude ratio of inflection points included in the acceleration pulse waveform, evaluates the exercise performed by the user based on the pre-exercise and post-exercise amplitude ratios, and displays this result on display device 7.

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21 Claims, 27 Drawing Sheets

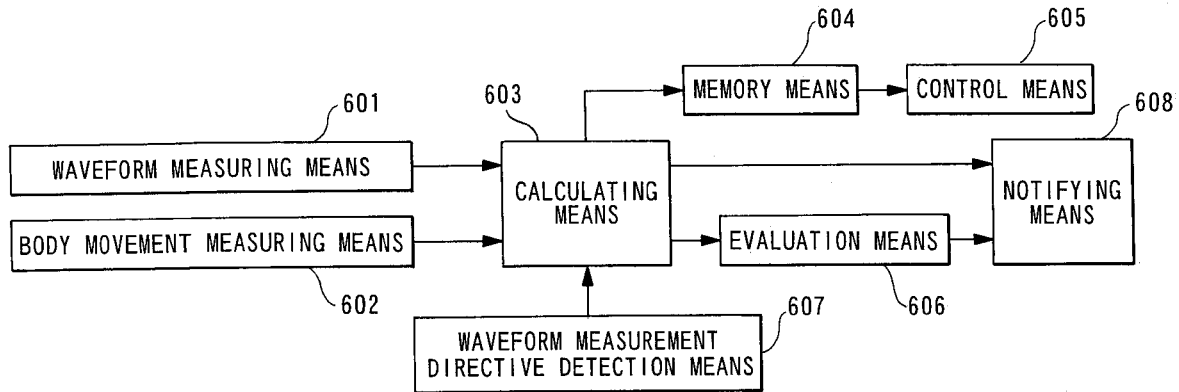


FIG. 1

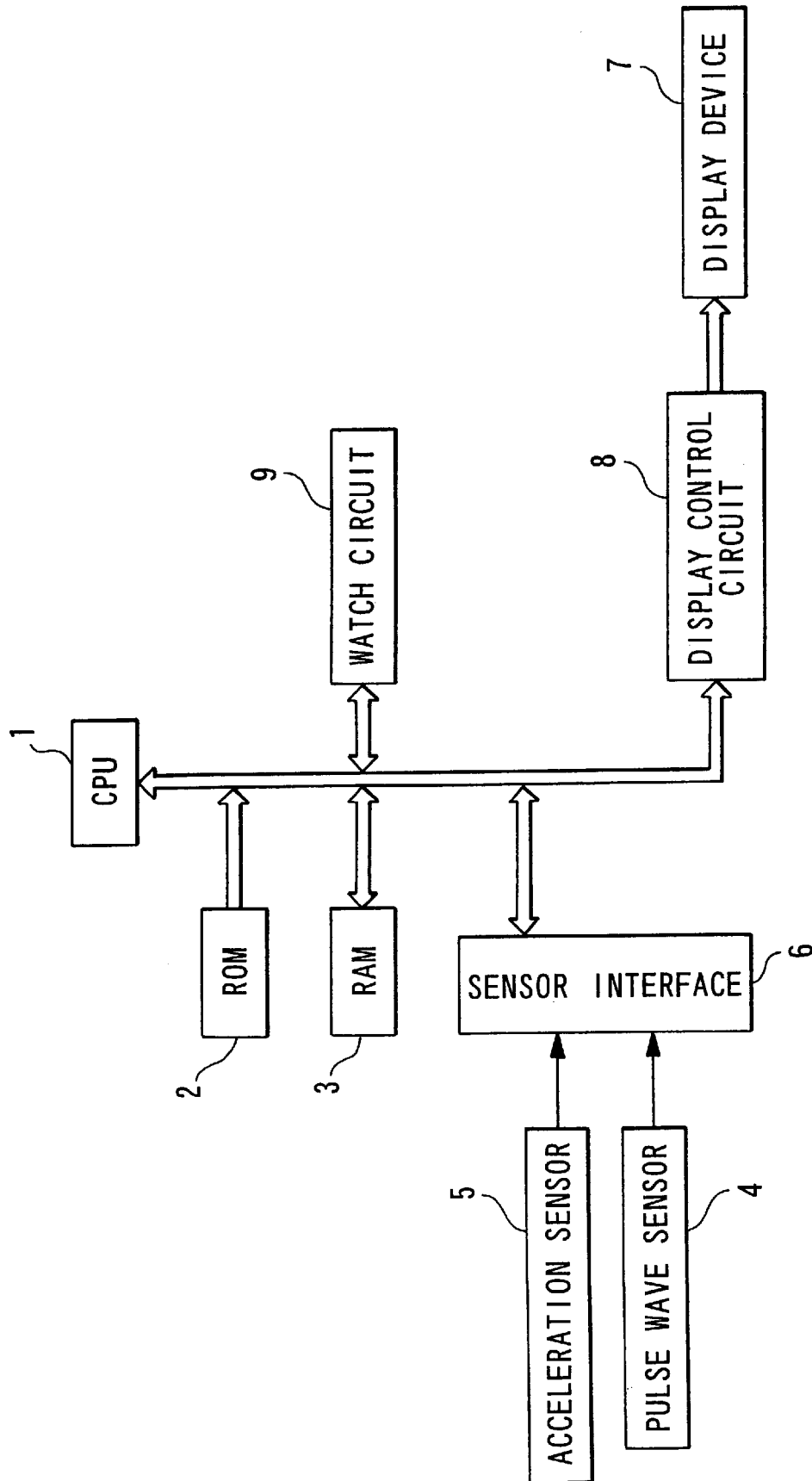


FIG. 2A

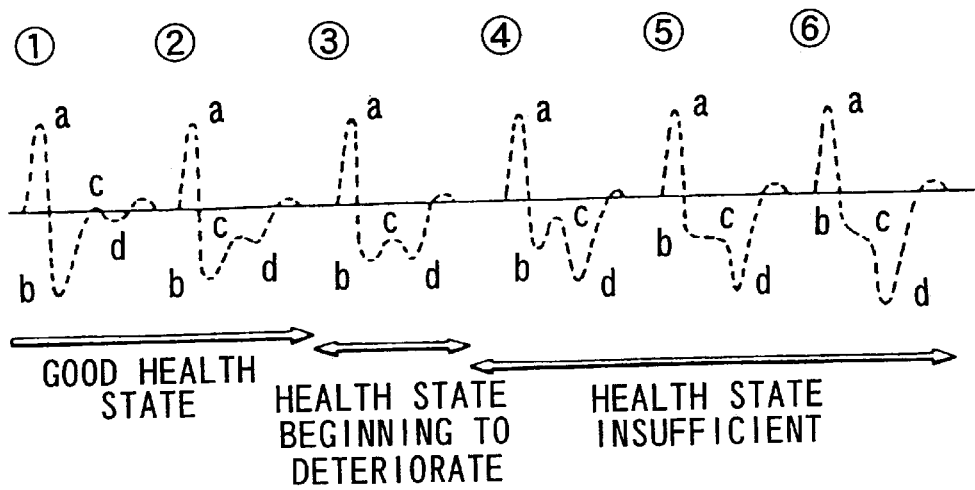


FIG. 2B

	①	②	③	④	⑤	⑥
$\frac{d}{a}$	WITHIN 10%	10~35%	35~60%	60~100%	60~100%	60~100%
$\frac{c}{a}$	WITHIN -10%	10~15%	WITHIN -15%	0~20%	20~40%	OVER 40%

FIG. 3A

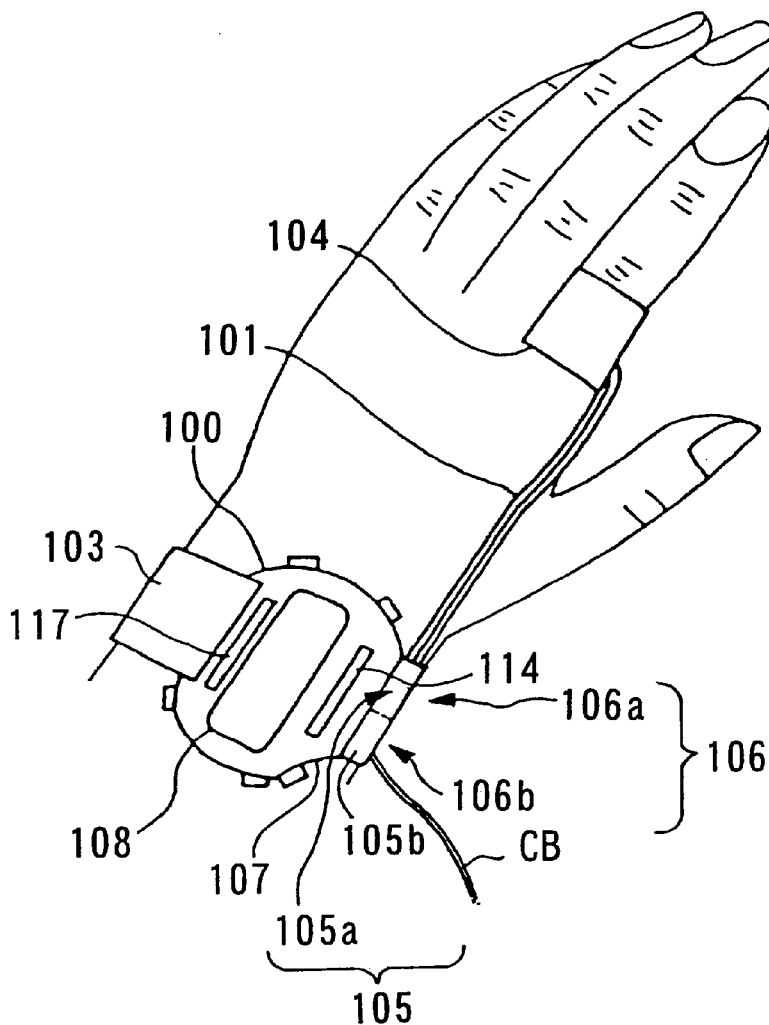


FIG. 3B

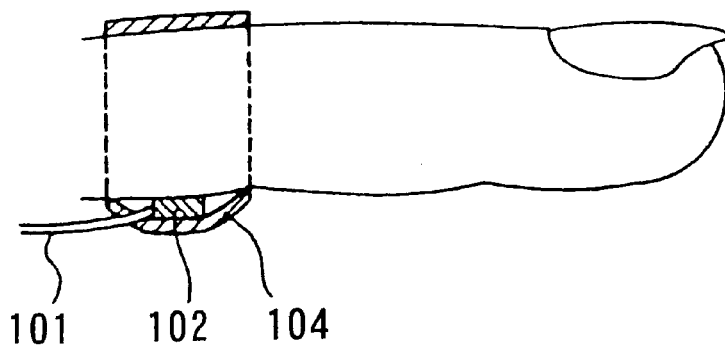
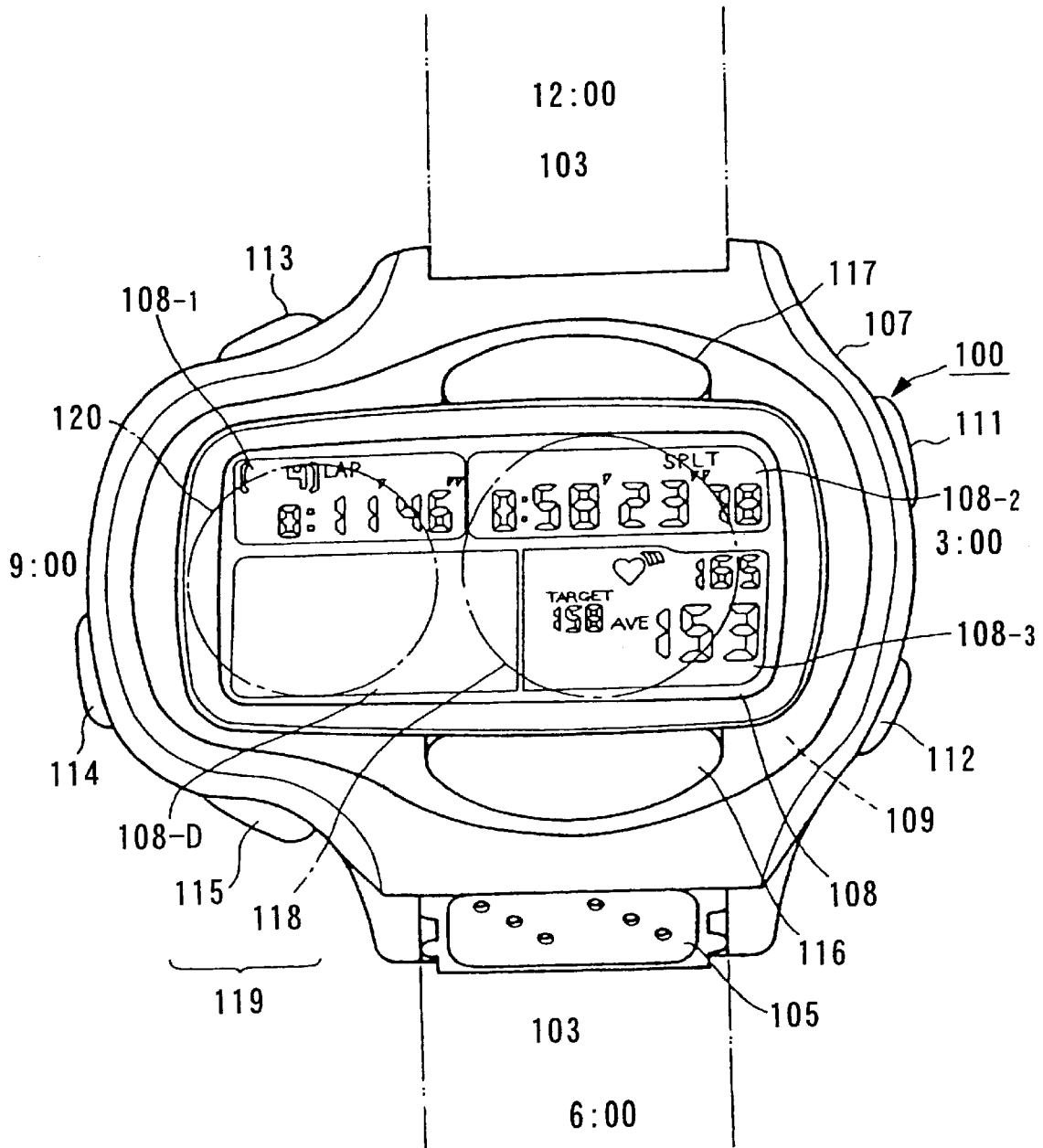


FIG. 4



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