

[54] **EXERCISE MEASURING INSTRUMENT**
 [75] **Inventors:** Haruo Ono; Satoshi Kinoshita; Fusao Suga, all of Tokyo, Japan

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[73] **Assignee:** Casio Computer Co., Ltd., Tokyo, Japan

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Assistant Examiner—Michael Zanelli

[30] **Foreign Application Priority Data**

Attorney, Agent, or Firm—Frishauf, Holtz, Goodman & Woodward

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 Oct. 31, 1988 [JP] Japan 63-142496[U]

[57] **ABSTRACT**

[51] **Int. Cl.⁵** G01C 22/00
 [52] **U.S. Cl.** 364/561; 235/105
 [58] **Field of Search** 364/561, 565, 566, 564; 235/105; 272/DIG. 9; 377/24.2; 324/165, 166

An exercise measuring instrument according to the present invention employs an acceleration sensor which comprises a piezoelectric piece having a pair of piezoelectric elements stuck to each other. An output waveform of the acceleration sensor is supplied to an amplifier, gain of which is changed in accordance with an exercise mode selected out of a walking mode, an exercise-walking mode and a jogging mode, and thereby an output level of the amplifier is kept at somewhat an equal voltage level, although the voltage level of the output waveform of the acceleration sensor is different between the exercise modes. This improvement allows an accurate measurement of exercise.

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34 Claims, 21 Drawing Sheets

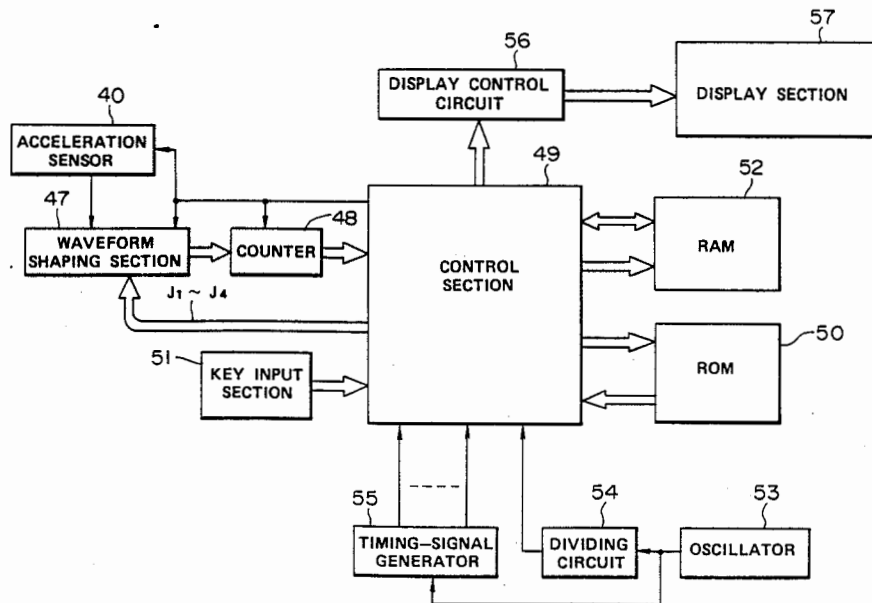
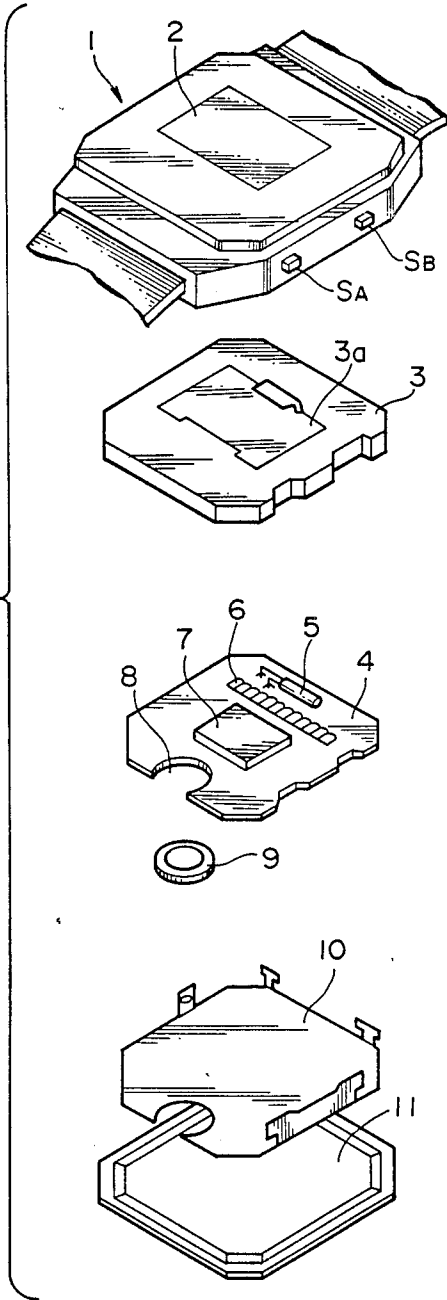


FIG. 1



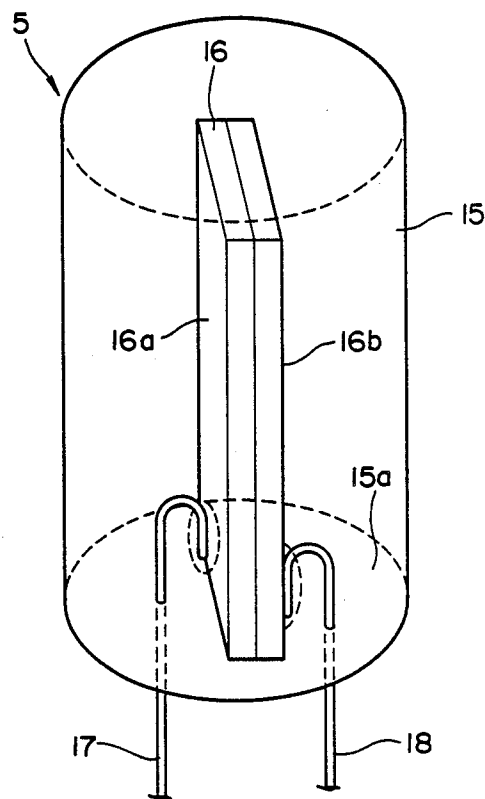


FIG. 2

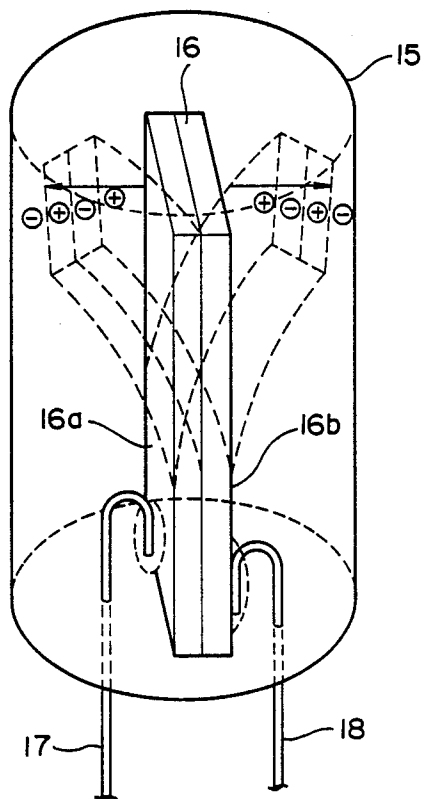


FIG. 3

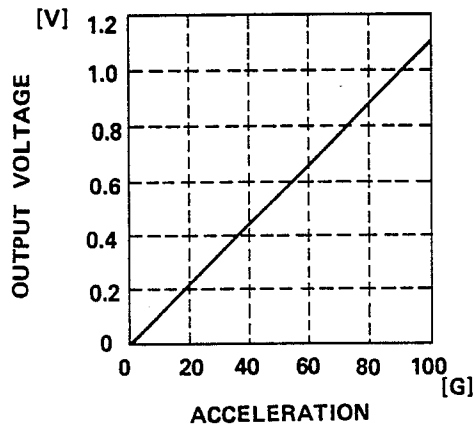


FIG. 4

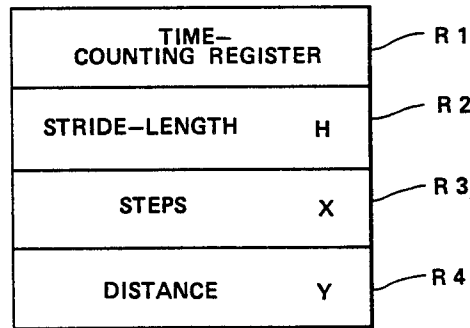


FIG. 9

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