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# United States Patent [19]

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Richardson et al.

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- [54] **PORTABLE AEROBIC FITNESS MONITOR FOR WALKING AND RUNNING**
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- [73] Assignee: **Living Systems, Inc.**, Boulder, Colo.
- [21] Appl. No.: **08/902,748**
- [22] Filed: **Jul. 30, 1997**
- [51] Int. Cl.<sup>6</sup> ..... **A61B 5/02**
- [52] U.S. Cl. .... **600/300; 600/481; 600/587; 482/8; 482/901**
- [58] Field of Search ..... **600/500, 502, 600/520, 587, 592, 595; 482/3, 4, 8, 9, 900, 901, 300, 481**

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*Assistant Examiner*—Charles Marmer, II  
*Attorney, Agent, or Firm*—Jay R Beyer; Stephen C Sheer

## [57] ABSTRACT

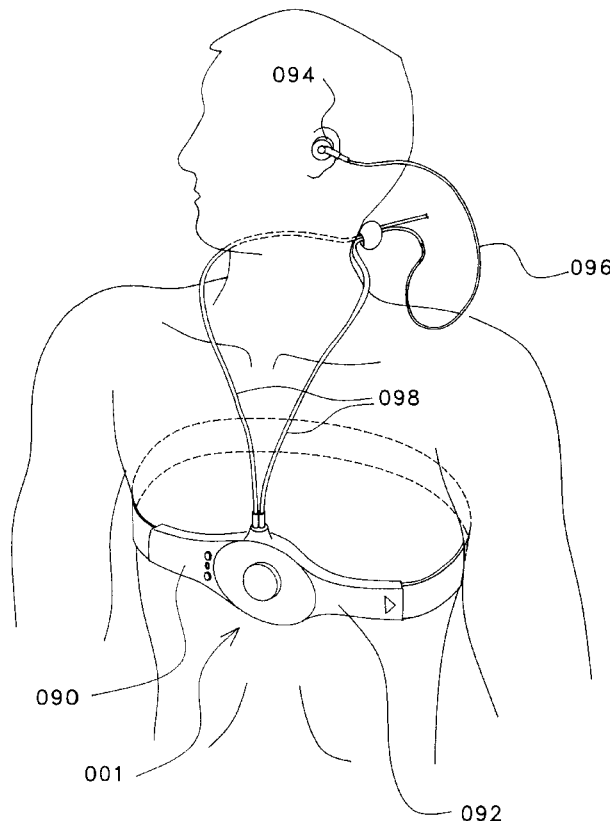
A personal fitness monitoring device and a method for assessing the fitness of an individual as the individual exercises includes using a pedometer to determine and output data representing the locomotion of the individual. A heart rate monitor determines and outputs data representing the heart rate of the individual. A determination arrangement calculates the fitness of the individual as the individual exercises using personal data provided by the individual in combination with the data outputs of the pedometer and the heart rate without requiring a predetermined exercise regime. In one embodiment, the pedometer calculates a distance traveled by the individual using personal data provided by the individual. The personal fitness monitoring device may further include a user interface for communicating with the user. The user interface uses a single user controlled selecting mechanism to select a desired one of various user selectable options. The single user controlled selecting mechanism is arranged such that the user selects the desired option by actuating the selecting mechanism during or immediately following the time during which the desired option is being presented by the user interface. The personal fitness monitoring device may also include a predicting arrangement for tracking and predicting the fitness of the individual.

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**23 Claims, 14 Drawing Sheets**



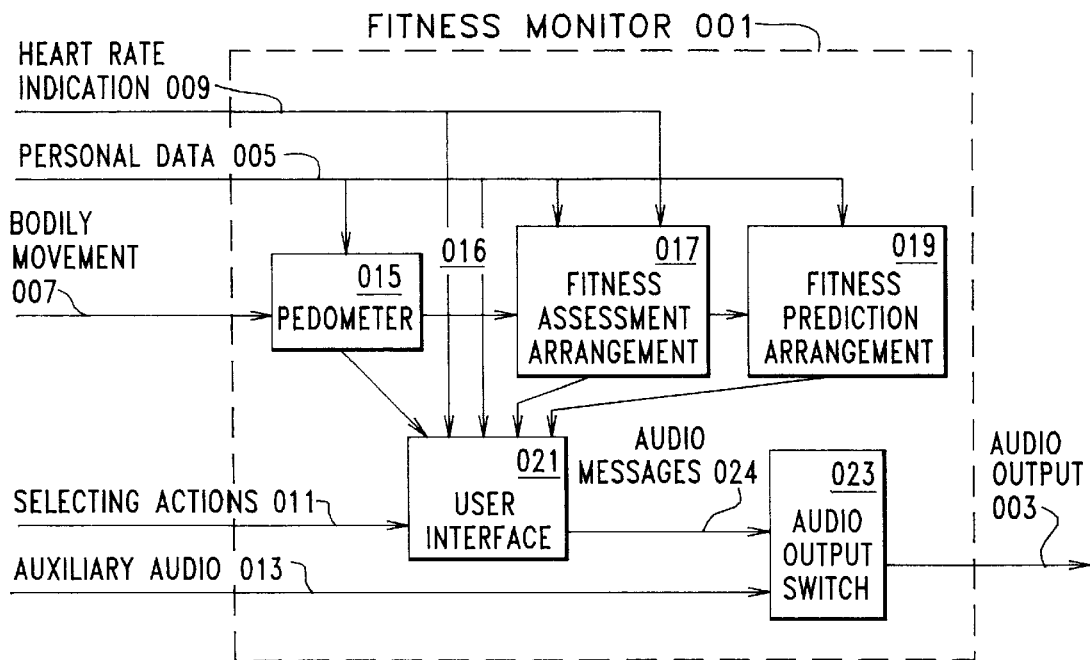


FIG. 1

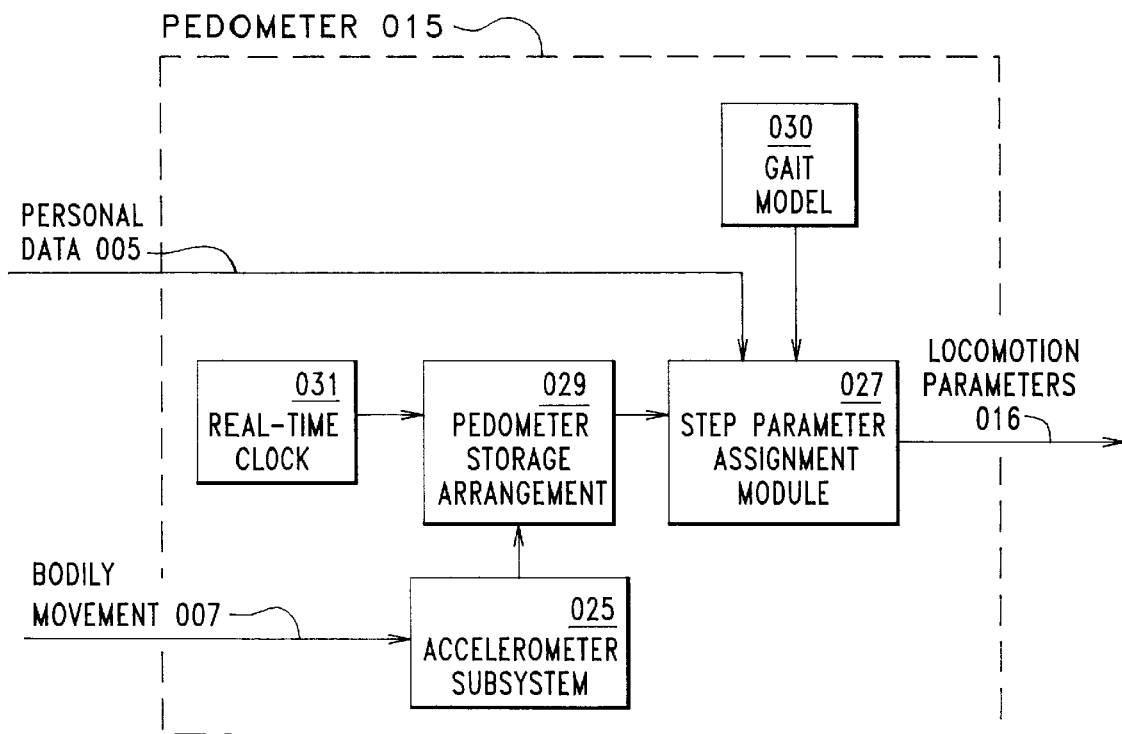


FIG. 2

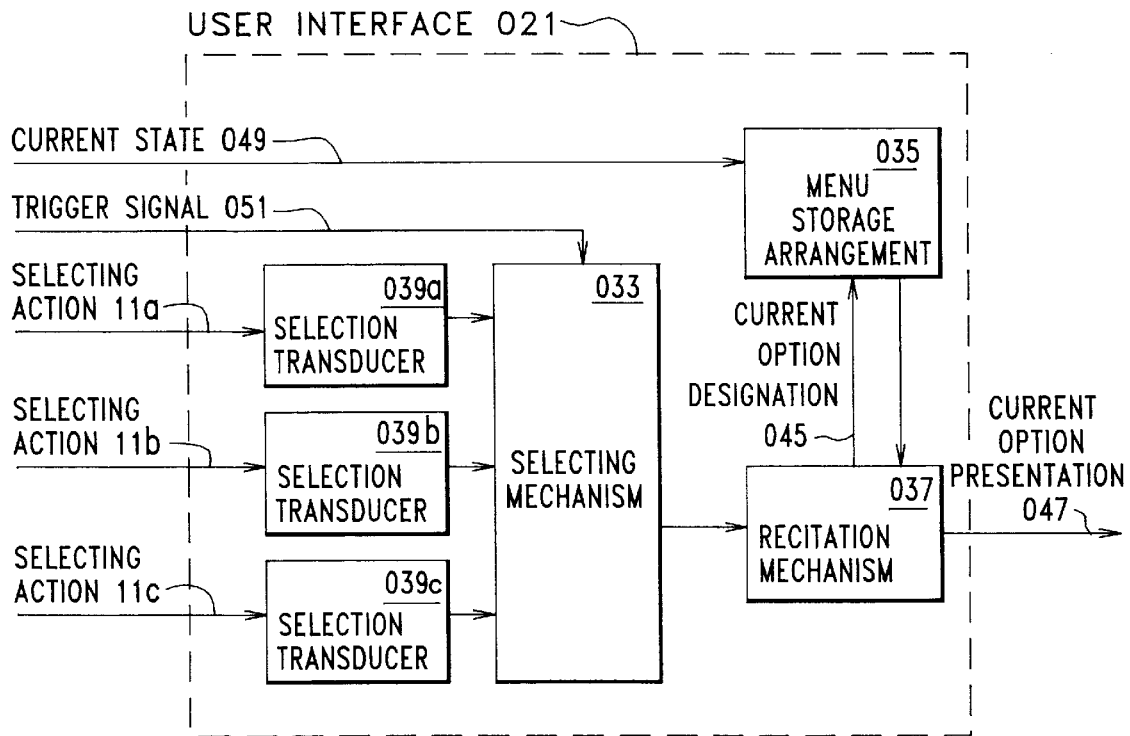


FIG. 3

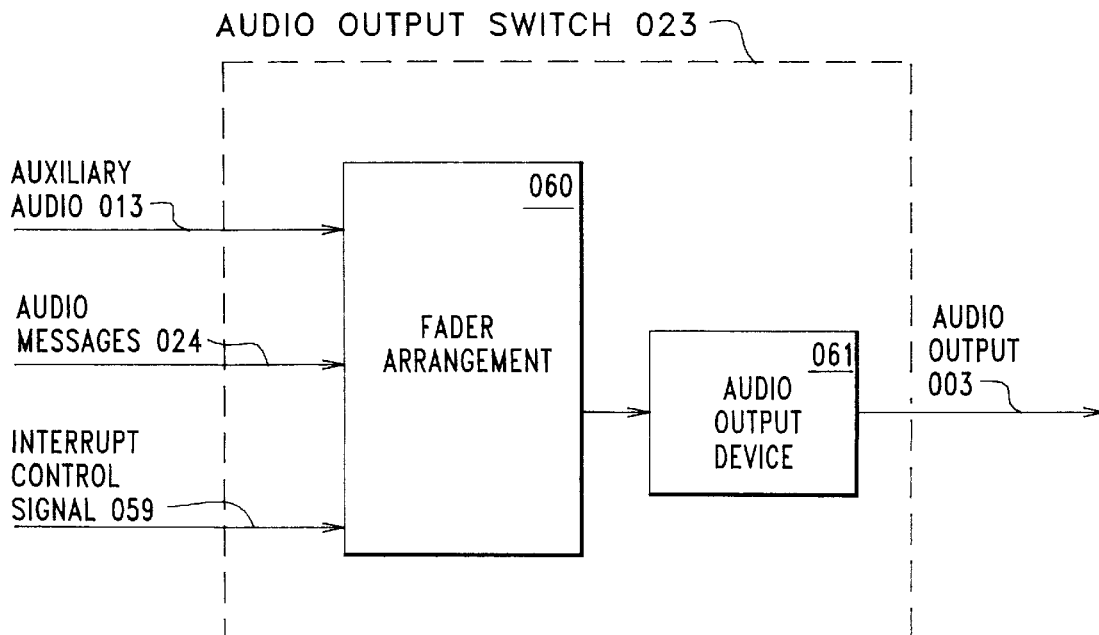


FIG. 4

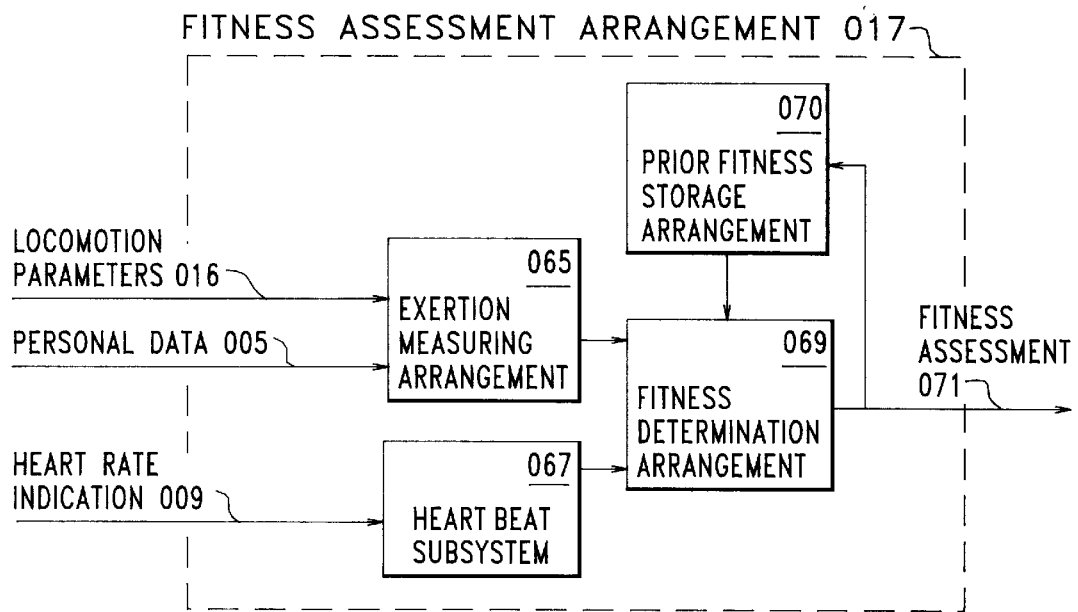


FIG. 5

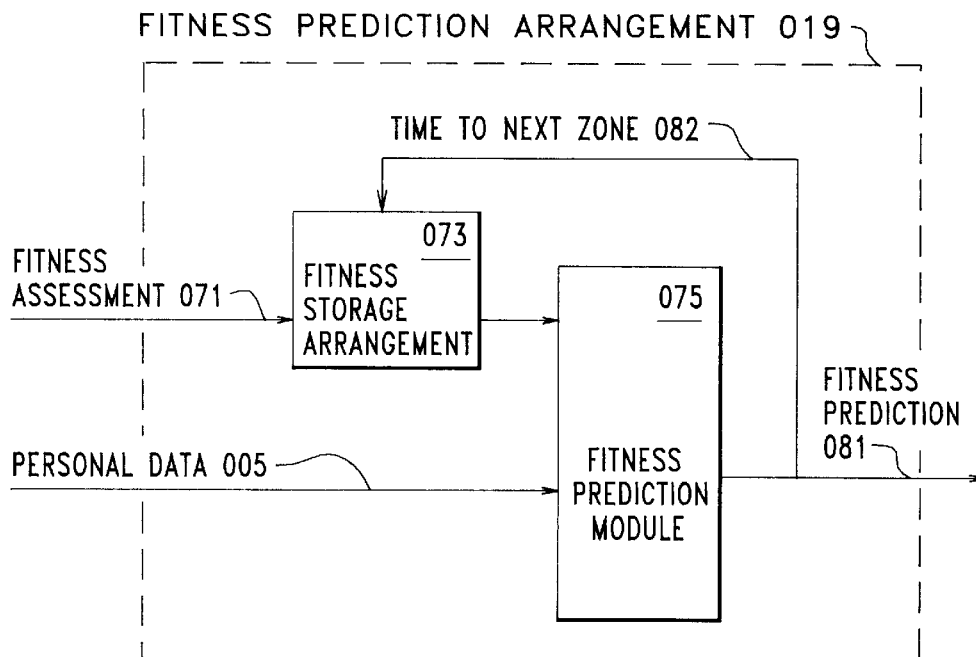


FIG. 6

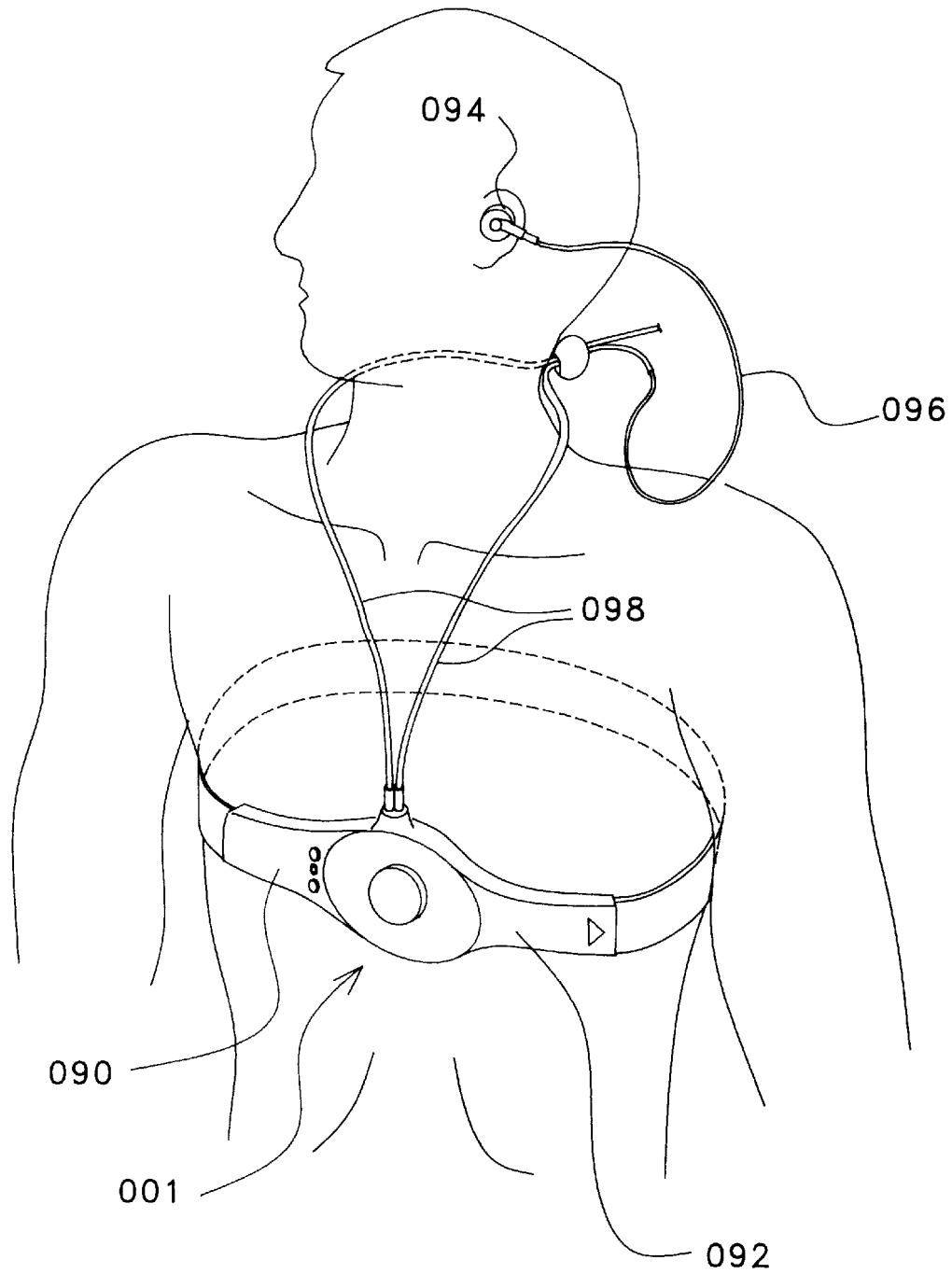


FIG. 7

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