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**United States Patent** [19]  
**Sham et al.**

[11] **Patent Number:** **5,891,042**  
[45] **Date of Patent:** **Apr. 6, 1999**

[54] **FITNESS MONITORING DEVICE HAVING AN ELECTRONIC PEDOMETER AND A WIRELESS HEART RATE MONITOR**

5,456,262 10/1995 Birnbaum .  
5,491,474 2/1996 Suni et al. .  
5,539,706 7/1996 Takenaka et al. .

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[57] **ABSTRACT**

[21] Appl. No.: **926,035**

A fitness monitoring device includes an electronic pedometer which responds to a user's body motion at each step and a wireless heart rate monitor which is wirelessly coupled to the electronic pedometer. The wireless heart rate monitor provides a heart beat signal indicative of an exertion level of the user. A visual display is provided to display the pedometer functions and the heart rate signal. A microprocessor receives the pedometer output signal and the heart rate signal. The microprocessor is programmed to provide visual display data relating to the heart rate and pedometer functions.

[22] Filed: **Sep. 9, 1997**

[51] **Int. Cl.**<sup>6</sup> ..... **A61B 5/0205**

[52] **U.S. Cl.** ..... **600/483**

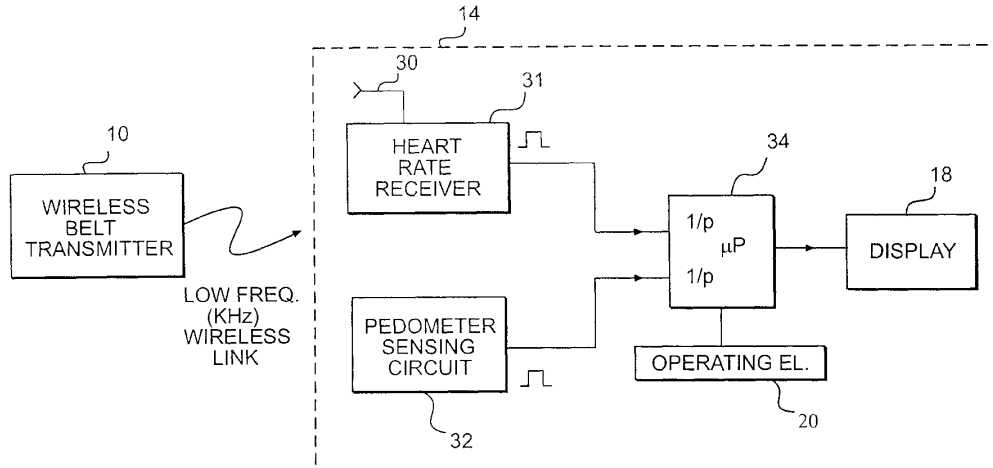
[58] **Field of Search** ..... 600/483, 503, 600/508, 509, 519, 520; 128/903

[56] **References Cited**

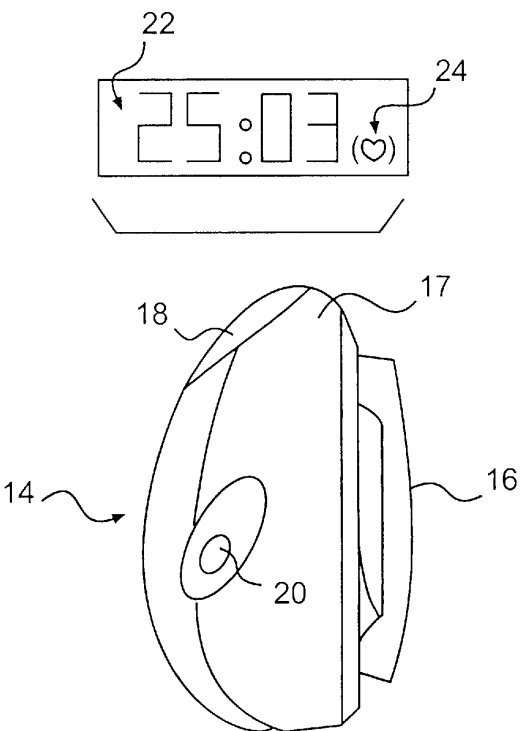
**U.S. PATENT DOCUMENTS**

4,367,752 1/1983 Jimenez et al. .... 600/519  
5,335,664 8/1994 Nagashima ..... 128/903

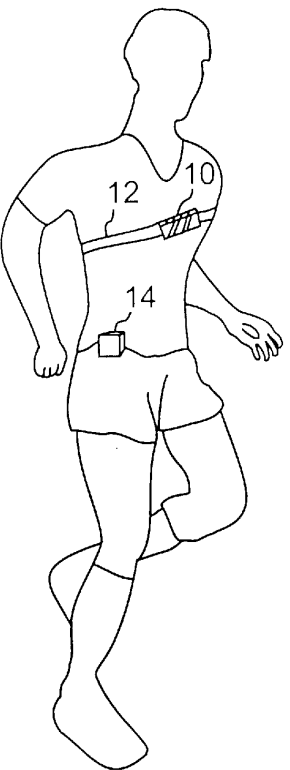
**9 Claims, 5 Drawing Sheets**



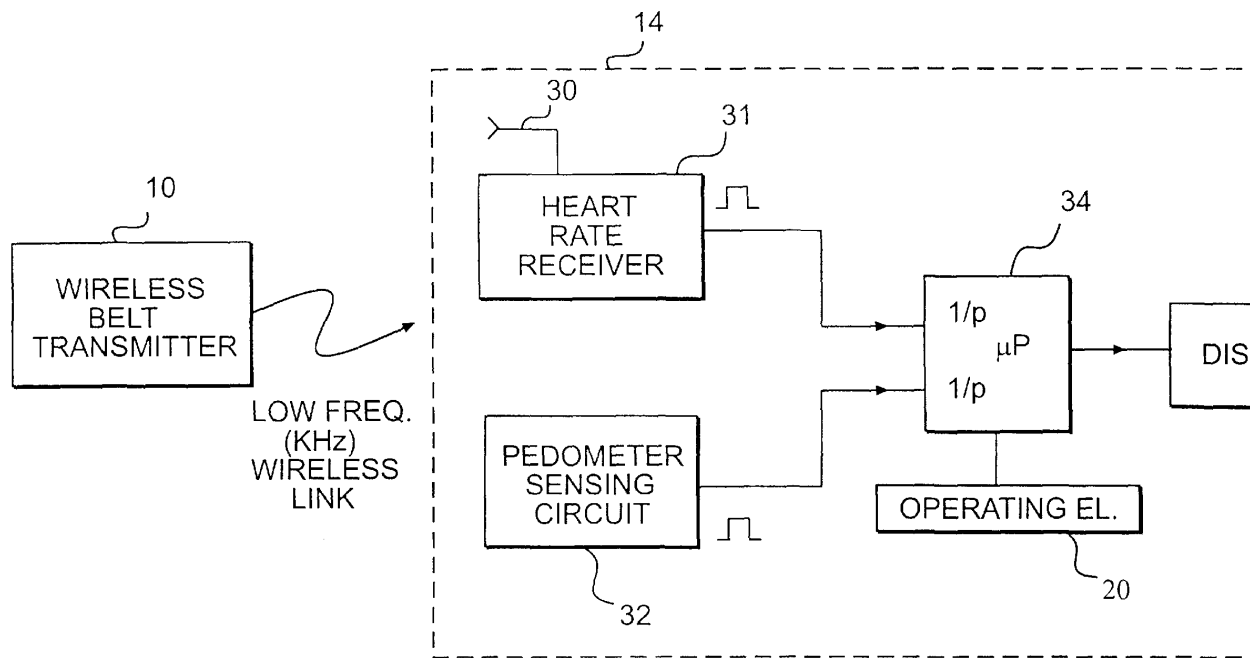
Wahoo, Exhibit 1019



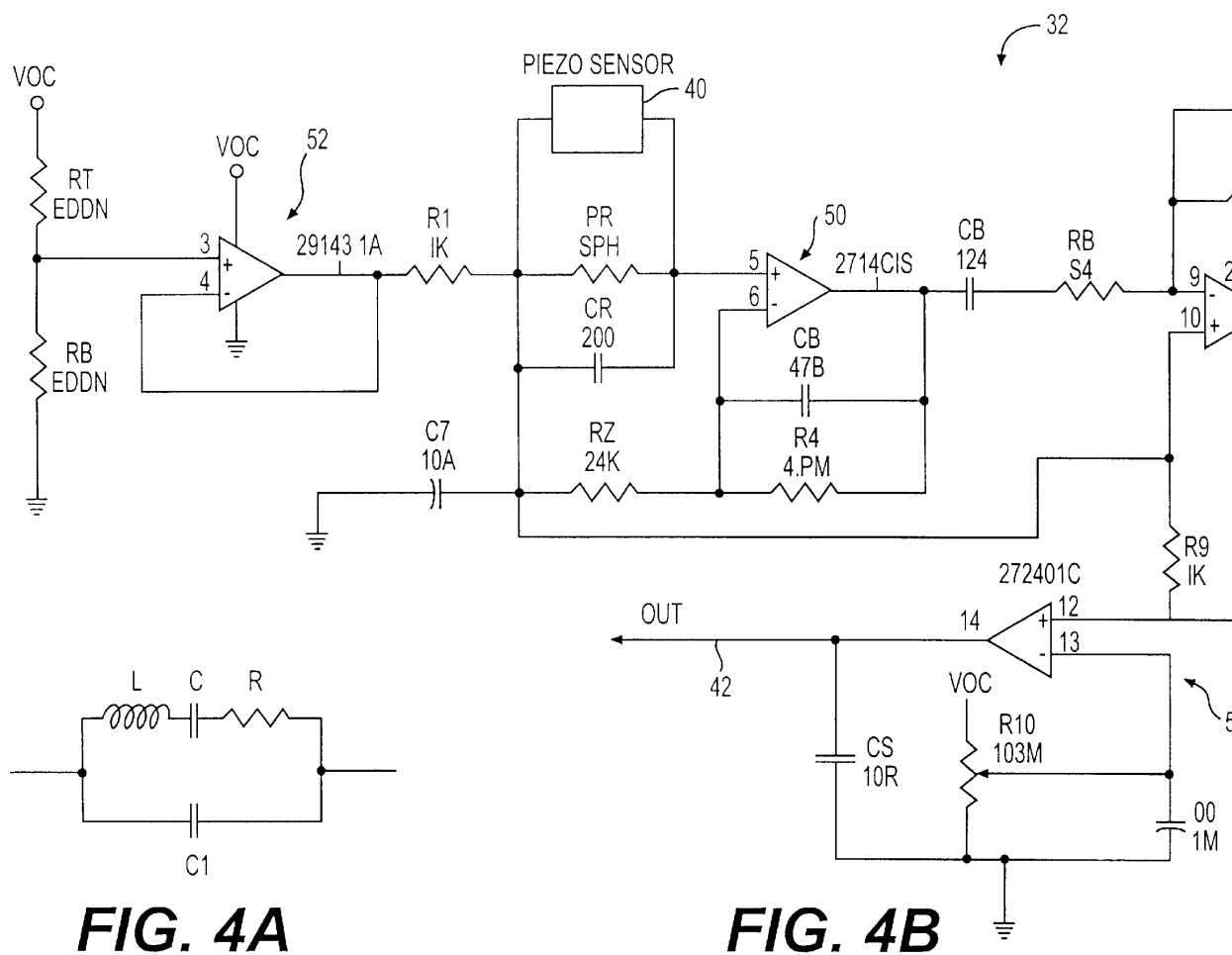
**FIG. 2**

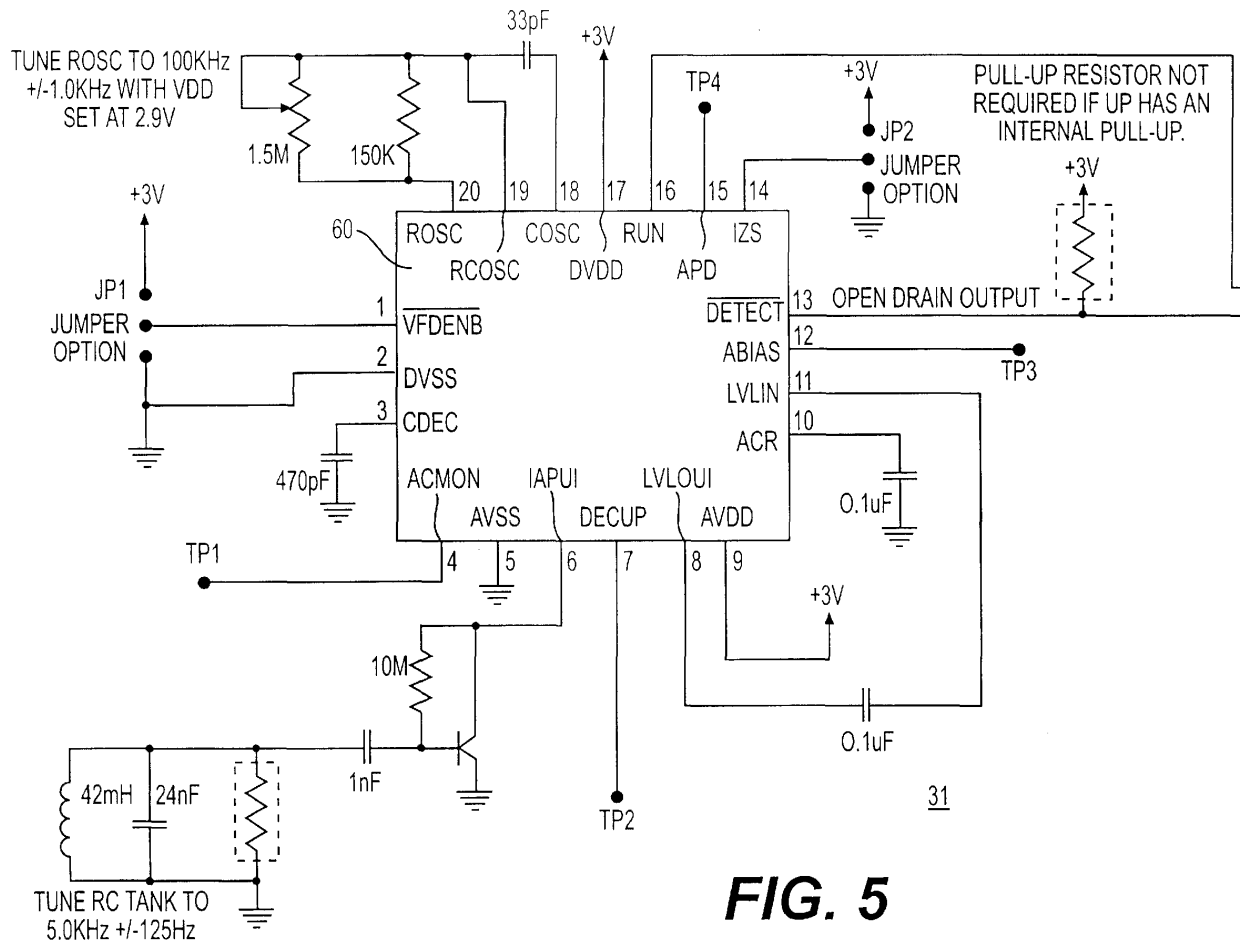


**FIG. 1**



**FIG. 3**





**FIG. 5**

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