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Mault et al.

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(54) **DIET AND ACTIVITY-MONITORING DEVICE**

(52) **U.S. Cl.** **128/921; 600/595**

(58) **Field of Search** **600/595, 587, 600/300, 301; 128/920-921**

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(56) **References Cited**

U.S. PATENT DOCUMENTS

3,972,038 A	7/1976	Fletcher et al.	340/189 M
4,100,401 A	7/1978	Tutt et al.	235/92 T
4,101,071 A	7/1978	Brejnik et al.	235/92 MT
4,117,834 A	10/1978	McPartland et al.	128/2 S
4,159,416 A	6/1979	Brejnik et al.	235/92 MT
4,192,000 A	3/1980	Lipsey	364/415
4,212,079 A	7/1980	Segar et al.	364/900
4,221,959 A	9/1980	Sessier	
4,224,952 A	9/1980	Sidorenko et al.	128/782
4,244,020 A	1/1981	Ratcliff	364/413
4,321,674 A	3/1982	Krames et al.	364/413
4,353,375 A	10/1982	Colburn et al.	128/782
4,380,802 A	4/1983	Segar et al.	364/900
4,387,777 A	6/1983	Ash	177/43

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(51) **Int. Cl.**⁷ **G06F 17/00; A61B 5/103; A61B 5/112**

(List continued on next page.)

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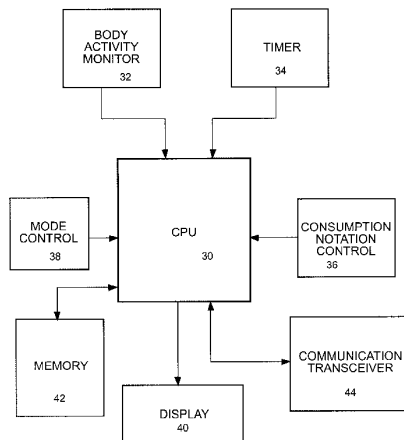
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(57) **ABSTRACT**

A diet and activity-monitoring device includes a timer which outputs a time-indicative signal. A body activity monitor monitors the body activity of a subject and outputs a signal indicative of the body activity. A consumption notation control is provided which the subject may operate to indicate when they consume food. An activity calculator receives the body activity signal and determines a body activity level for the subject. A consumption calculator communicates with the consumption notation control and receives the time-indicative signal. The consumption calculator determines and stores the times when the consumption location control is operated.

39 Claims, 8 Drawing Sheets



Apple Inc.
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U.S. PATENT DOCUMENTS

4,566,461 A	1/1986	Lubell et al.	128/668	5,729,479 A	3/1998	Golan	364/709.02
4,571,682 A	2/1986	Silverman et al.	364/413	5,788,655 A *	8/1998	Yoshimura et al.	600/587
4,575,804 A	3/1986	Ratcliff	364/715	5,819,735 A	10/1998	Mansfield et al.	128/630
4,629,015 A	12/1986	Fried et al.	177/25	5,827,179 A	10/1998	Lichter et al.	600/300
4,650,218 A	3/1987	Hawke	283/67	5,828,943 A	10/1998	Brown	434/258
4,686,624 A	8/1987	Blum et al.	364/415	5,832,448 A	11/1998	Brown	705/2
4,796,182 A	1/1989	Duboff	364/413.29	5,836,312 A	11/1998	Moore	128/897
4,803,625 A	2/1989	Fu et al.	364/413.03	5,841,115 A	11/1998	Shepley	235/375
4,807,169 A	2/1989	Overbeck	364/715.01	5,845,263 A	12/1998	Camaisa et al.	705/27
4,823,808 A	4/1989	Clegg et al.	128/773	5,876,351 A	3/1999	Rohde	600/523
4,853,854 A	8/1989	Behar et al.	364/413.01	5,890,128 A	3/1999	Diaz et al.	705/2
4,855,942 A	8/1989	Bianco	364/561	5,899,855 A	5/1999	Brown	600/301
4,855,945 A	8/1989	Sakai	364/709.02	5,908,301 A	6/1999	Lutz	434/236
4,891,756 A	1/1990	Williams, III	364/413.29	5,913,310 A	6/1999	Brown	128/897
4,894,793 A	1/1990	Ikemoto et al.	364/709.03	5,918,603 A	7/1999	Brown	128/897
4,911,256 A	3/1990	Attikiouzel	177/25.16	5,951,300 A	9/1999	Brown	434/236
4,924,389 A	5/1990	Gerbaulet et al.	364/413.29	5,954,510 A	9/1999	Merrill et al.	434/236
4,951,197 A	8/1990	Mellinger	364/413.2	5,987,493 A	11/1999	Rangan et al.	709/105
4,954,954 A	9/1990	Madsen et al.	364/413.29	5,989,188 A	11/1999	Birkhoelzer et al.	600/300
4,966,155 A	10/1990	Jackson	128/671	5,989,200 A *	11/1999	Yoshimura et al.	600/587
5,012,411 A	4/1991	Policastro et al.	364/413.04	5,997,476 A	12/1999	Brown	600/300
5,033,561 A	7/1991	Hettinger	177/25.16	6,013,007 A	1/2000	Root et al.	428/8
5,173,588 A	12/1992	Harrah	235/114	6,014,578 A	1/2000	Minoz	600/350
5,233,520 A	8/1993	Kretsch et al.	364/413.29	6,024,281 A	2/2000	Shepley	235/375
5,263,491 A	11/1993	Thornton	128/774	6,024,699 A	2/2000	Surwit et al.	600/300
5,307,263 A	4/1994	Brown	364/413.09	6,030,342 A	2/2000	Amano et al.	600/301
5,387,164 A	2/1995	Brown, Jr.	482/9	6,032,119 A	2/2000	Brown et al.	705/2
5,388,043 A	2/1995	Hettinger	364/413.29	6,032,676 A	3/2000	Moore	128/898
5,398,688 A	3/1995	Laniado	128/660.02	6,039,688 A	3/2000	Douglas et al.	600/300
5,412,560 A	5/1995	Dennison	364/413.01	6,040,531 A	3/2000	Miller-Kovach et al.	177/25.16
5,412,564 A	5/1995	Ecer	364/413	6,042,383 A	3/2000	Herron	434/238
5,454,721 A	10/1995	Kuch	434/127	6,045,513 A	4/2000	Stone et al.	600/508
5,478,989 A	12/1995	Shepley	235/375	6,077,193 A	6/2000	Buhler et al.	482/8
5,485,402 A	1/1996	Smith et al.	364/566	6,083,006 A	7/2000	Coffman	434/127
5,542,420 A	8/1996	Goldman et al.	128/630	6,095,949 A	8/2000	Arai	482/4
5,640,774 A	6/1997	Goldman	33/15 D	6,095,985 A	8/2000	Raymond et al.	600/513
5,673,691 A	10/1997	Abrams et al.	128/630	6,101,478 A	8/2000	Brown	705/2
5,678,562 A	10/1997	Sellers	128/710	6,135,950 A	10/2000	Adams	600/300
5,691,927 A	11/1997	Gump	364/709.01	6,135,951 A	10/2000	Richardson et al.	600/300
5,704,350 A	1/1998	Williams, III	128/630	6,139,494 A	10/2000	Cairnes	600/300
5,722,418 A	3/1998	Bro	128/732				

* cited by examiner

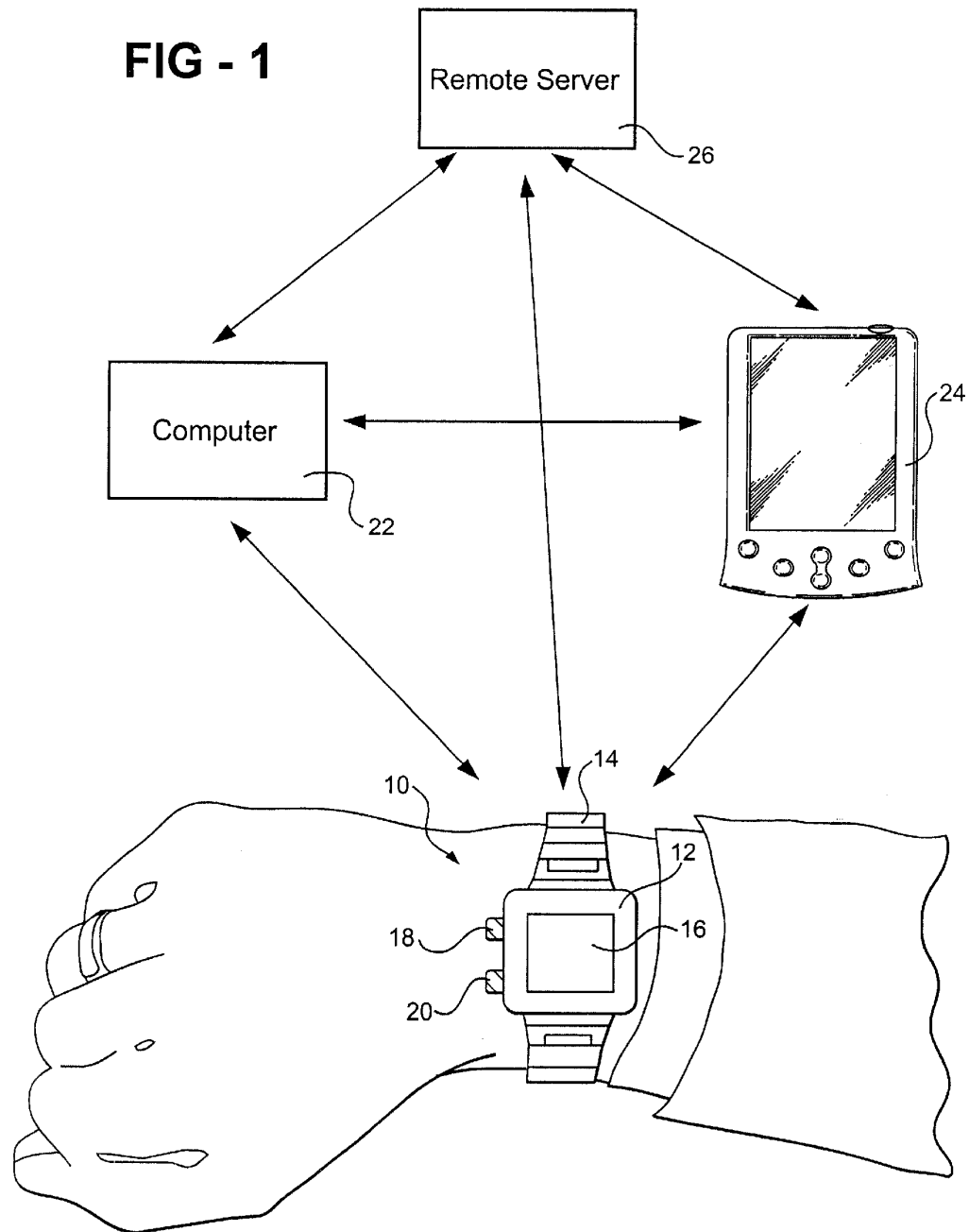


FIG - 2

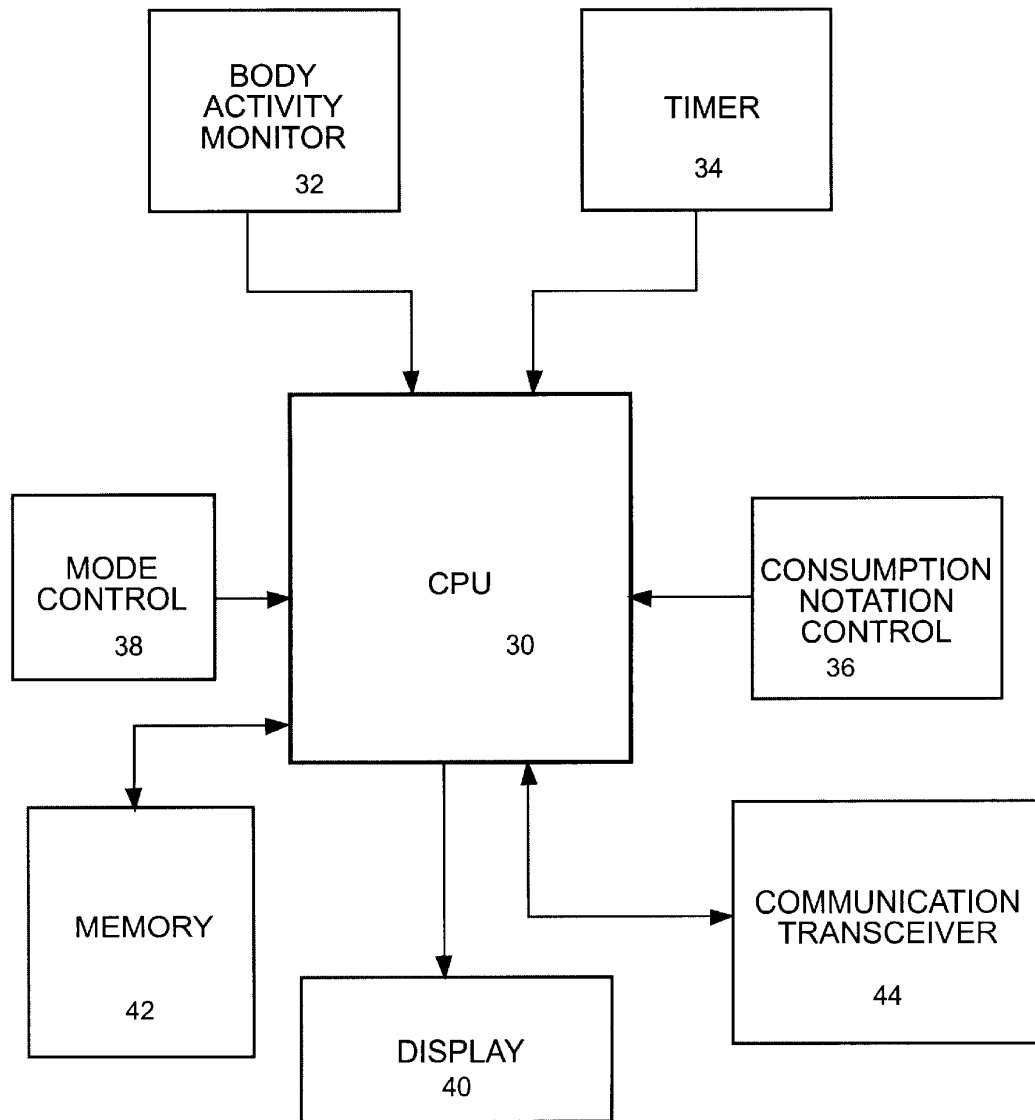


FIG - 3A

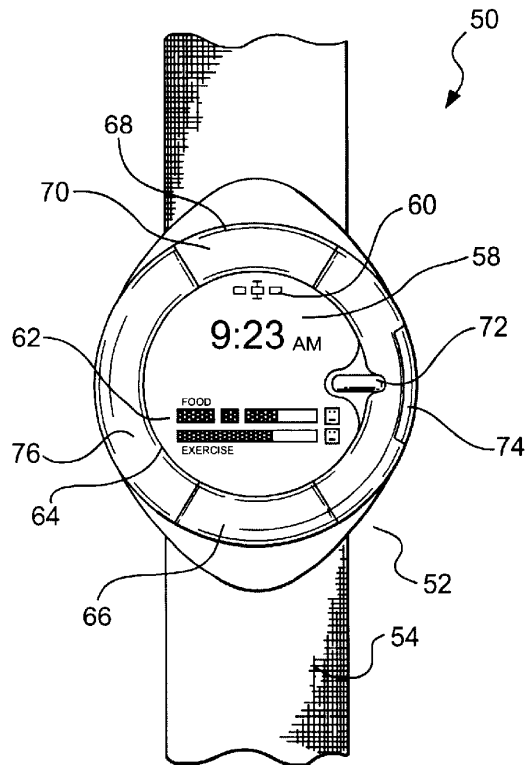
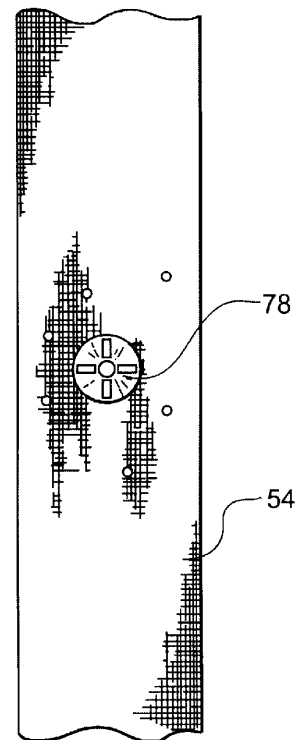


FIG - 3B



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