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Yoshida et al.

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(54) **WRIST-WORN COMMUNICATIONS APPARATUS**

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G04C 11/02 (2006.01)
H04B 1/38 (2006.01)
(52) **U.S. Cl.** **368/10; 368/13; 368/47; 368/282; 455/90.3; 455/344**
(58) **Field of Classification Search** **368/4, 368/10, 13, 47, 88, 281, 292; 455/90.3, 344**
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

5,239,521 A	8/1993	Blonder	
5,260,915 A *	11/1993	Houlihan	368/10
5,381,387 A *	1/1995	Blonder et al.	368/10
5,467,324 A *	11/1995	Houlihan	368/10
5,564,082 A	10/1996	Blonder et al.	
6,078,803 A	6/2000	Fernandez Martinez	
6,215,985 B1	4/2001	Tolvanen	
6,311,071 B1	10/2001	Voroba et al.	
2003/0019894 A1	1/2003	Caldana	

FOREIGN PATENT DOCUMENTS

EP	0 572 252 A1	12/1993
EP	0 684 704 A2	11/1995
EP	0 782 308 A1	7/1997
EP	0 907 279 A2	4/1999
WO	WO 98/05148 A1	2/1998
WO	WO 01/61970 A2	8/2001

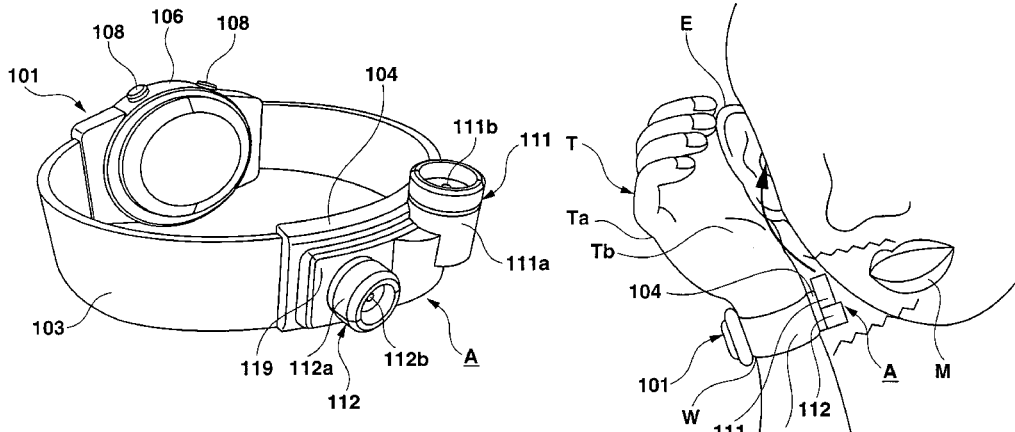
* cited by examiner

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(57) **ABSTRACT**

A watch of the communications apparatus is worn on a user's wrist by bands. A support member pivoted on the band is then turned so as to extend in the transverse direction of the bands. A speaker unit is provided on the support member so as to face in a transverse direction of the band while a microphone unit is disposed on the support member so as to face in a direction perpendicular to a surface of the band. When a user communicates with the other party, the speaker unit provided on the support member is directed toward the user's ear. This causes the microphone unit provided on the support member to be directed easily toward the user's mouth. Alternatively a hinged lid is provided the lid carrying a key-in unit or a display and a speaker unit.

8 Claims, 20 Drawing Sheets



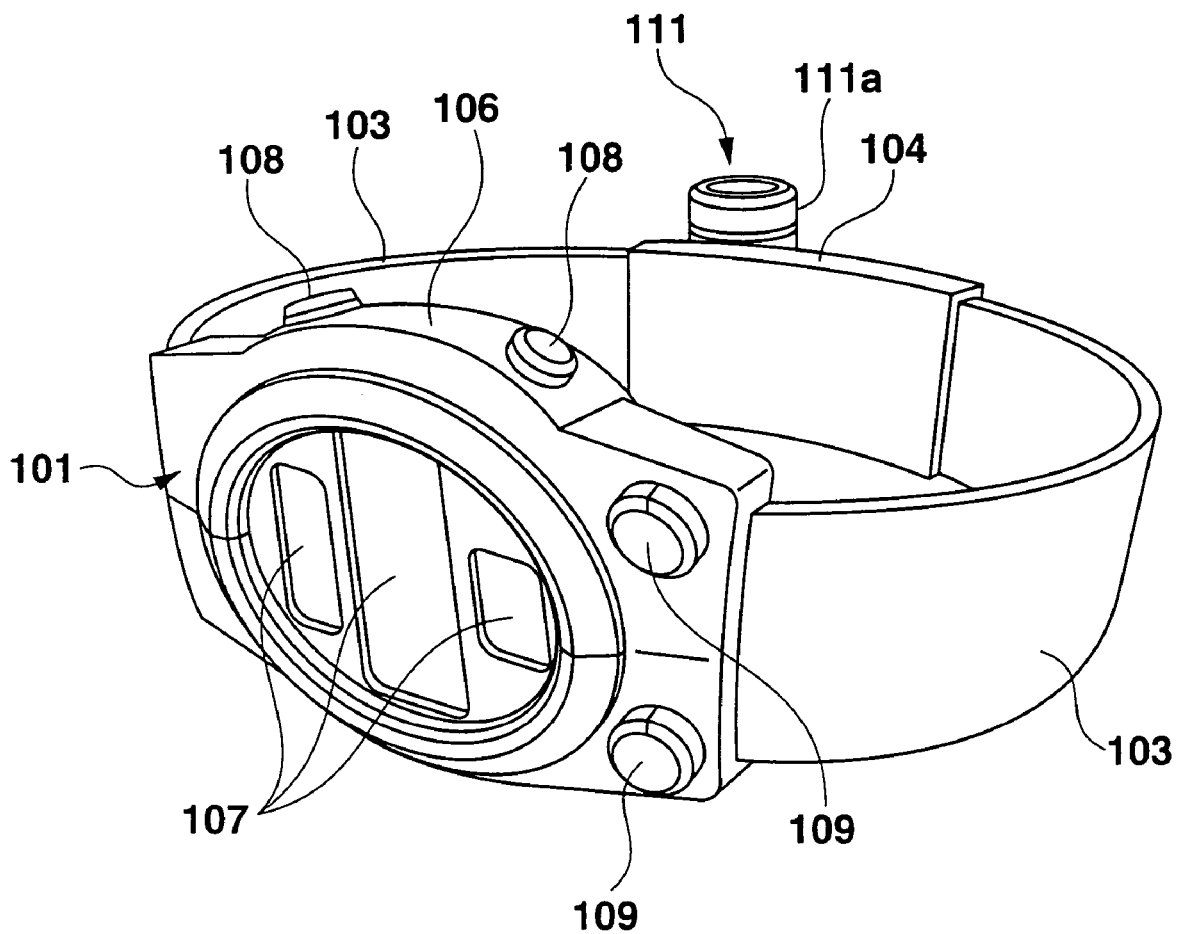


FIG. 1

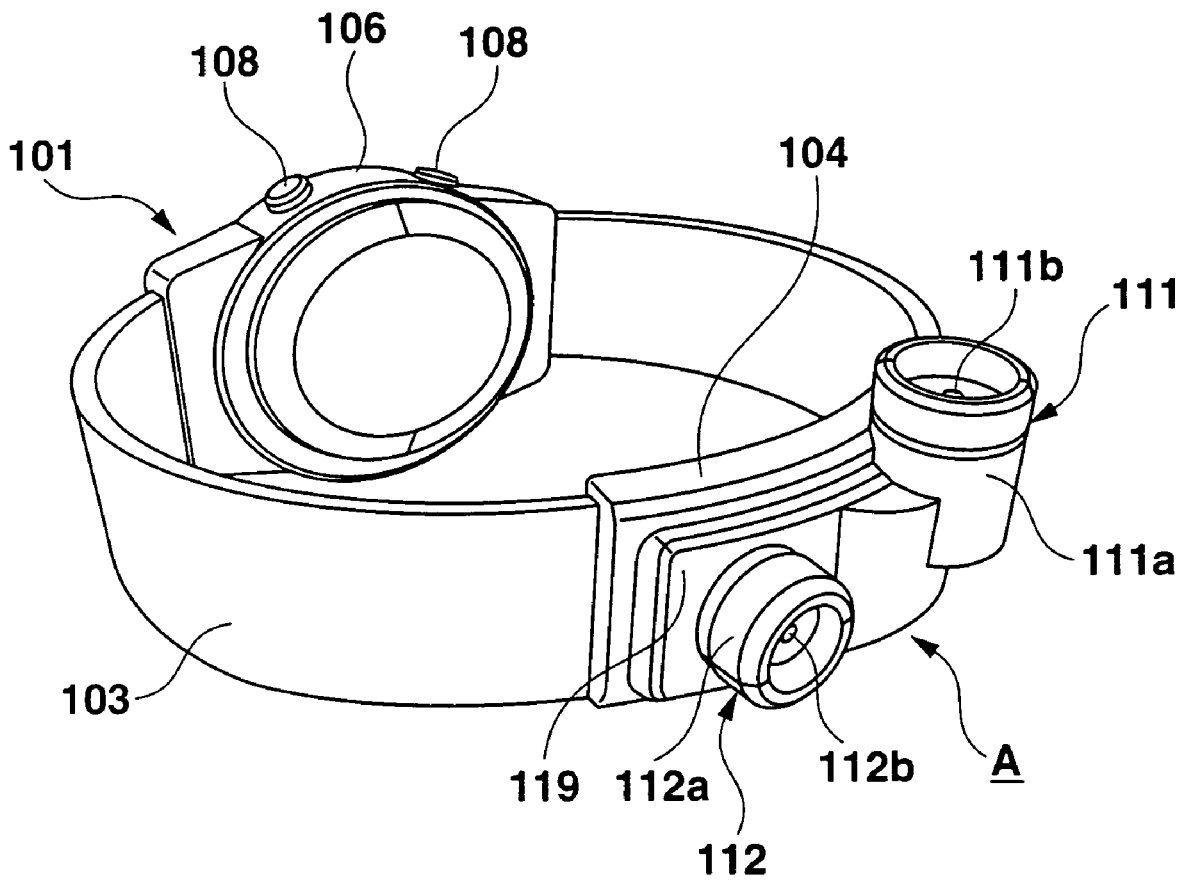


FIG. 2

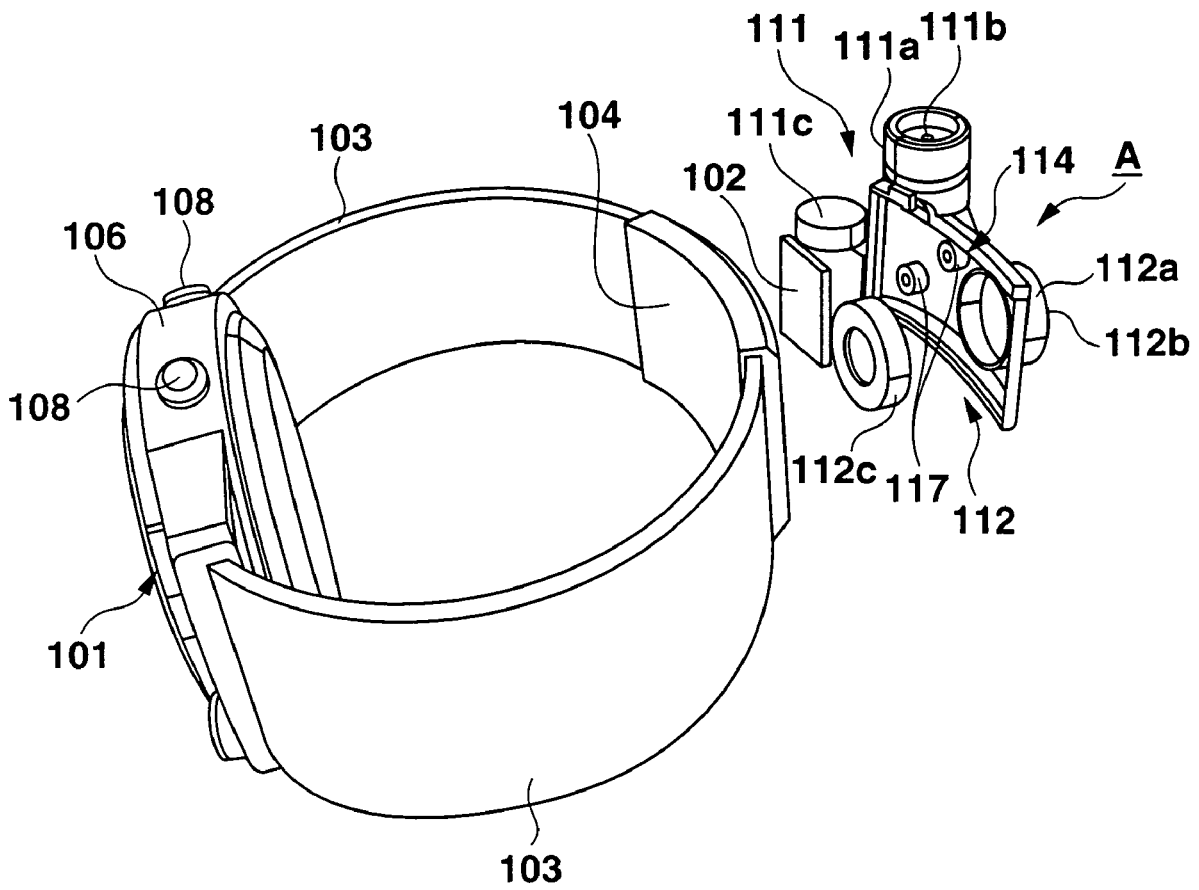


FIG.3

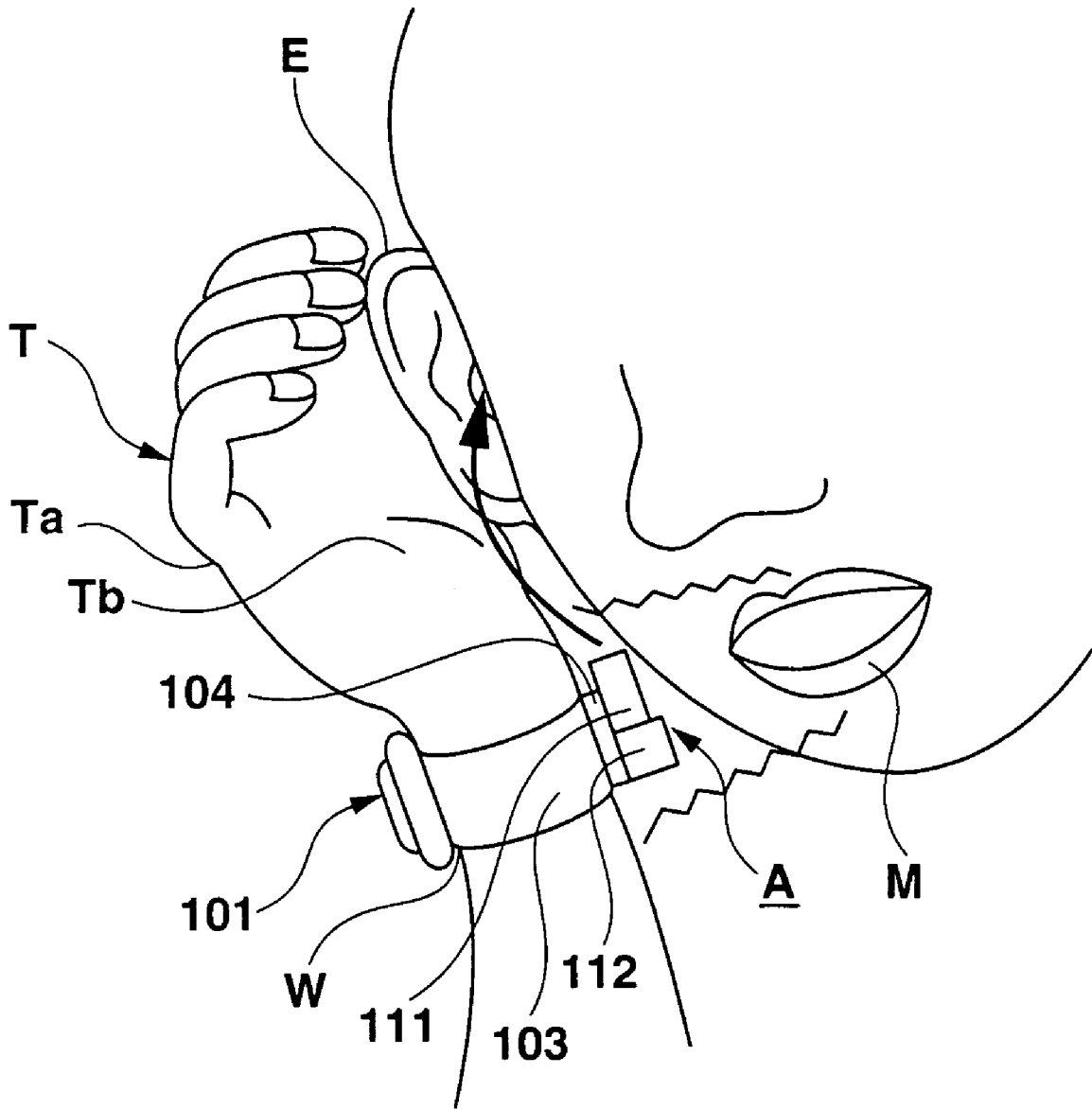


FIG.4

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