

from the hand where the collision has occurred, and further, the vibration is also transmitted to the hand. In MR and VR systems, as the feel of CG-displayed object cannot be obtained, this advantage that the player can experience the vibration corresponding to the CG is important.

[0035] As the material of the sensor attachment tool main body has extensibility to some degree, the sensor attachment member can be extended upon attachment, in correspondence with difference in palm sizes. Further, it may be arranged such that in the developed view of FIG. 2, the portions A and A' are not connected but they are removably engaged by hook-and-loop fasteners or the like, and regardless of the player's hand size, the sensor attachment tool can be always attached to the hand with appropriate tightness. Note that in this case, the speaker attachment member 5 has a size larger than that of the perimeter of the wrist.

[0036] In this tool, as the speaker, a piezoelectric speaker may be used in place of the general magnetic coil type speaker. As the magnetic position/posture sensor does not greatly influence the piezoelectric speaker, this speaker can be preferably used in the proximity of the position/posture sensor.

[0037] Further, in a case where the sensor attachment tool is used in a system for determining the position of a hand by image recognition, a marker (particular figure, color or the like) as a target of image recognition must be attached to the hand. As shown in FIG. 5, a marker 8 may be attached to the sensor attachment member 6 on the palm side. Further, the speaker 1 itself can be utilized as a marker 9 as shown in FIG. 6. In this case, if the surface of the speaker 1 is provided with an image-recognizable pattern by painting the outline of the speaker 1 or the like in a particular color, the position/posture of the speaker 1 can be recognized.

[0038] In FIG. 5, as the marker 8 having a particular appearance appears on the palm, the appearance of the hand is impaired. However, in FIG. 6, as a marker 9 is placed on the surface of the speaker 1, the marker can be set without greatly impairing the appearance of the hand.

[0039] In the case of FIG. 6, the position/posture of the palm itself cannot be directly image-recognized, however, as the relative position of the palm to the wrist is known, the position/posture of the palm can be obtained by recognition of the position/posture of the speaker 1.

[0040] Further, in an MR system, the speaker 1 can be seemingly hidden by overlay-displaying some CG in the position of the speaker 1.

[0041] Note that the present invention is not limited to the above embodiment, but applicable to other position/posture sensors than the magnetic type sensor, such as a ultrasonic position/posture sensor. Further, if non-magnetic posi-

tion/posture sensor and speaker are employed, the both position/posture sensor and the speaker may be positioned on the palm side or the back side.

[0042] As described above, according to the present invention, a position/posture sensor and a speaker used in a virtual reality system, a mixed reality system and the like can be attached to a hand in a preferable state.

[0043] The present invention is not limited to the above embodiments and various changes and modifications can be made within the spirit and scope of the present invention. Therefore, to apprise the public of the scope of the present invention the following claims are made.

What is claimed is:

1. A sensor attachment apparatus for at least attaching a sensor for detecting a position/posture of a hand, used in a virtual reality apparatus, a mixed reality apparatus or the like, comprising:

- a first ring to which said sensor is attached; and
- a second ring to which a speaker is attached;

wherein said first and second rings are connected by a band-shaped connection member.

2. The sensor attachment apparatus according to claim 1, wherein at least said first ring comprises an extensible material.

3. The sensor attachment apparatus according to claim 1, wherein said second ring and said connection member comprise an extensible material.

4. The sensor attachment apparatus according to claim 1, wherein diameters of said first and second rings are defined so as to attach said first ring in a position of the hand, and said second ring in a position of a wrist,

and wherein the diameter of said second ring is greater than that of the wrist.

5. The sensor attachment apparatus according to claim 1, wherein said sensor and said speaker are provided on opposite palm side and back side of the hand.

6. The sensor attachment apparatus according to claim 1, wherein said sensor and said speaker are respectively connected to a cable, and wherein the cable connected to said sensor is fixed by said second ring.

7. The sensor attachment apparatus according to claim 1, wherein said sensor and said speaker are of magnetic type.

8. The sensor attachment apparatus according to claim 1, wherein said sensor attachment apparatus has a marker for position detection.

9. The sensor attachment apparatus according to claim 1, wherein said marker is attached to a position opposite to an attachment position of said sensor of said first ring.

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