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(54) **THREE-DIMENSIONAL ADHESIVE DEVICE
HAVING A MICROELECTRONIC SYSTEM
EMBEDDED THEREIN**

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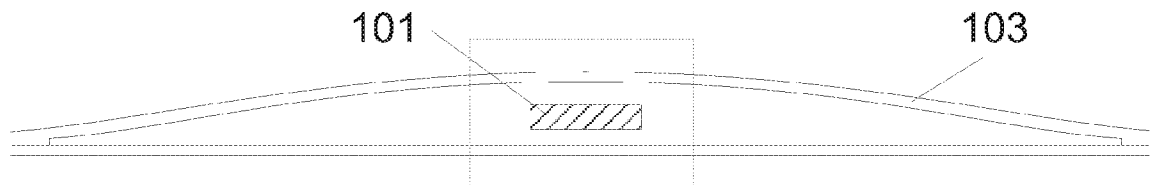
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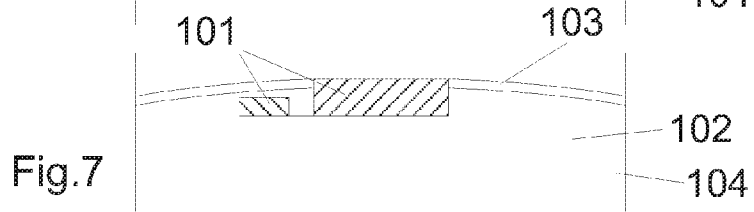
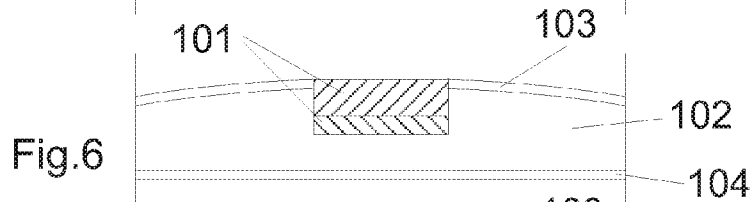
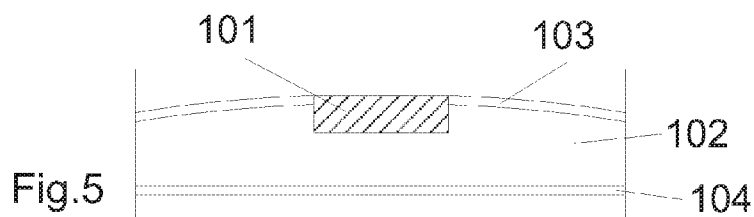
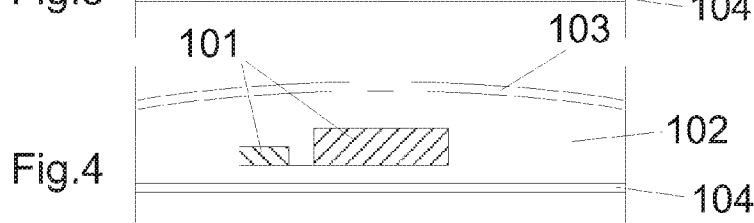
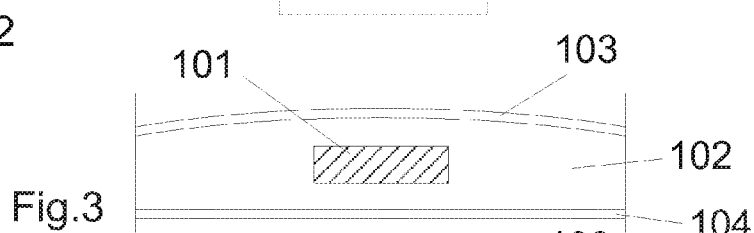
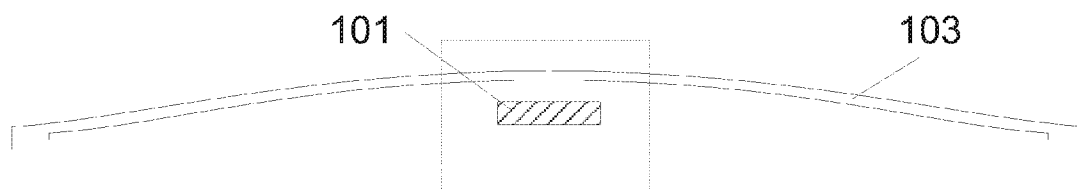
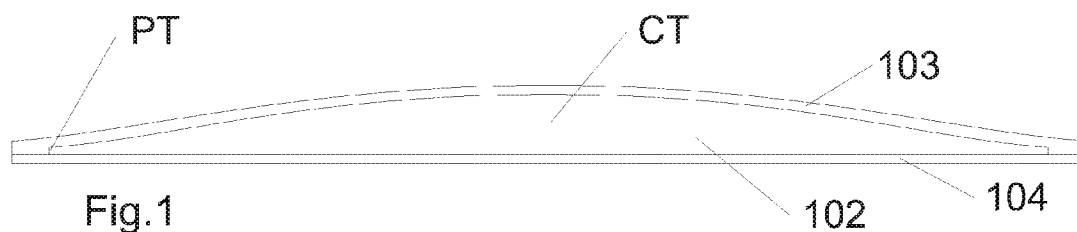
(57) **ABSTRACT**

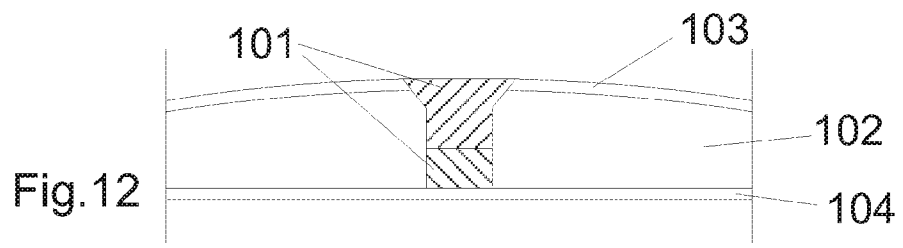
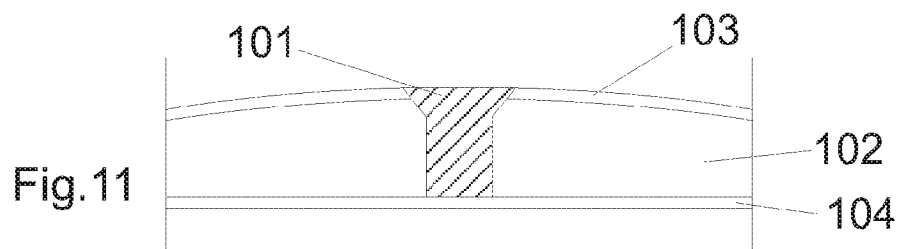
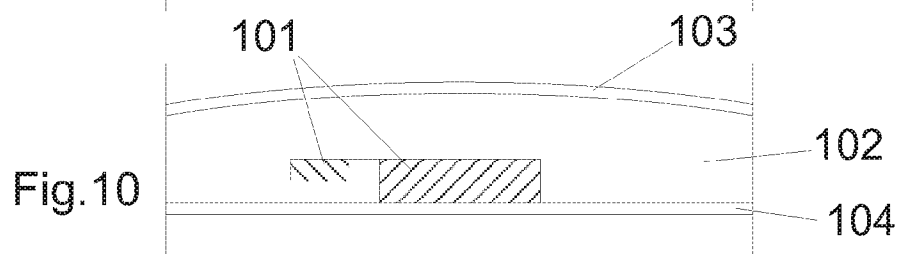
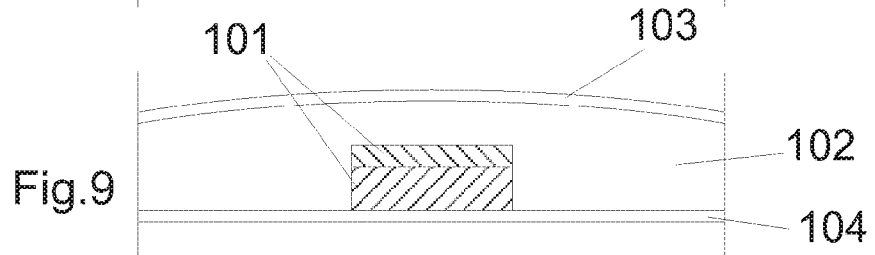
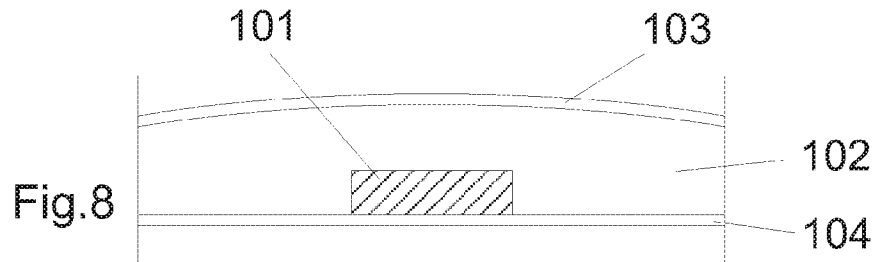
Accordingly, the present invention relates to a three-dimensional adhesive device to be attached to the body surface of a mammal comprising a microelectronic sensing system characterized by

- (a) a three-dimensional adhesive body made of a pressure sensitive adhesive having an upper surface and a bottom surface;
- (b) a microelectronic system embedded in the body of the pressure sensitive adhesive;
- (c) one or more cover layer(s) attached to the upper surface; and
- (d) optionally a release liner releasable attached to the bottom surface of the adhesive device.

Suitably the microelectronic system is a microelectronic sensing system capable of sensing physical input such as pressure, vibration, sound, electrical activity (e.g. from muscle activity), tension, blood-flow, moisture, temperature, enzyme activity, bacteria, pH, blood sugar, conductivity, resistance, capacitance, inductance or other chemical, biochemical, biological, mechanical or electrical properties.







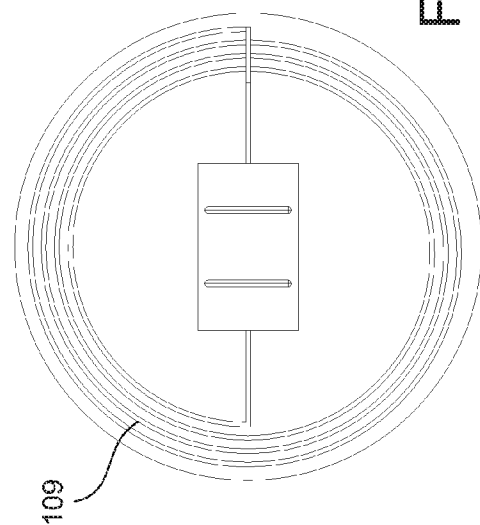


Fig. 14

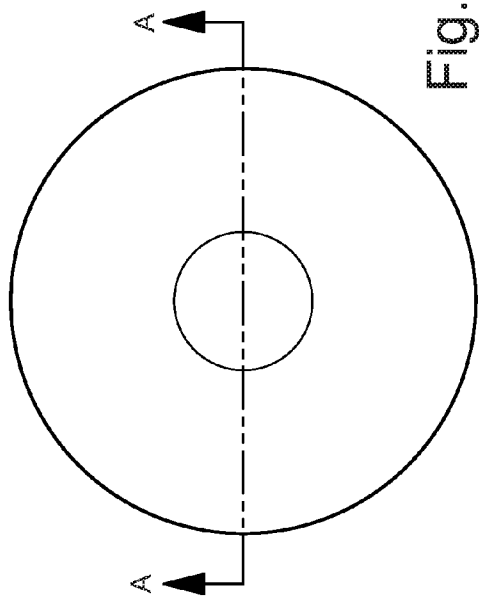


Fig. 13

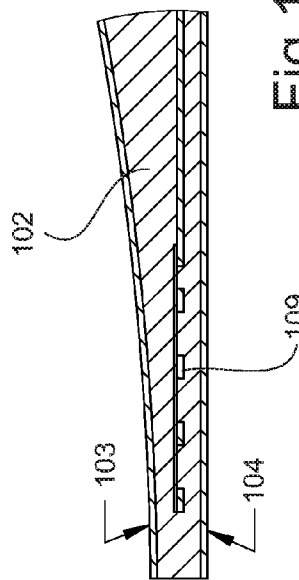


Fig. 16

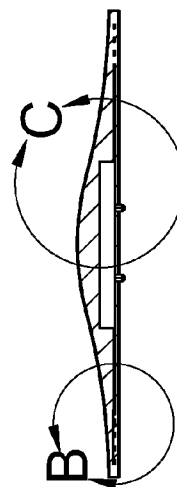


Fig. 15

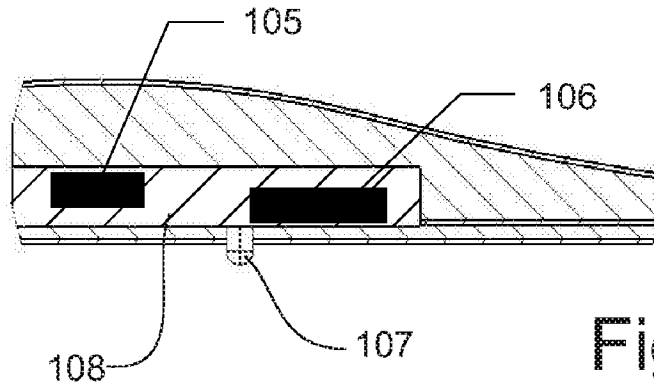


Fig.17

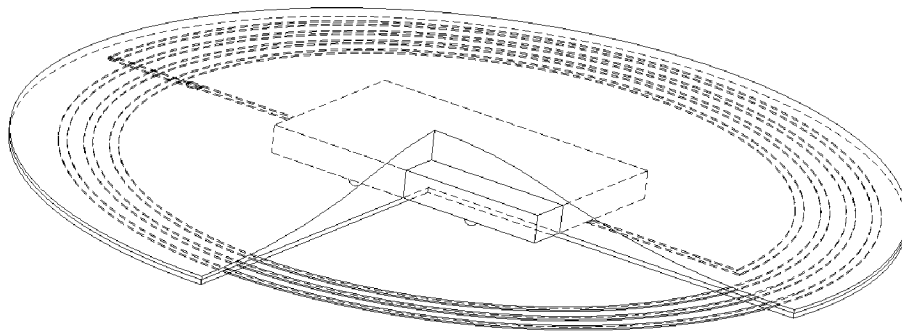


Fig.18

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