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(54) **NOISE SHIELDING FOR A NONINVASIVE DEVICE**

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See application file for complete search history.

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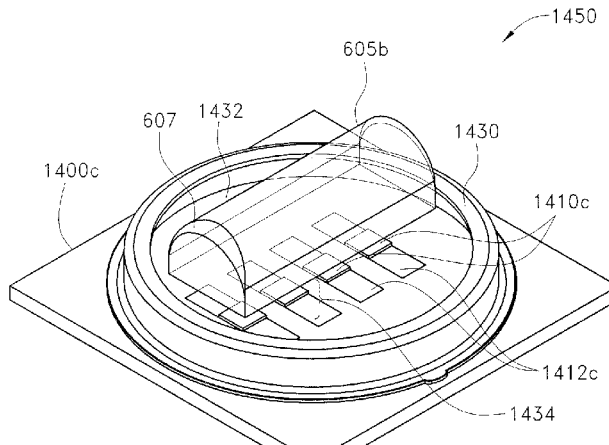
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(57) **ABSTRACT**

A noninvasive physiological sensor for measuring one or more physiological parameters of a medical patient can include a bump interposed between a light source and a photodetector. The bump can be placed in contact with body tissue of a patient and thereby reduce a thickness of the body tissue. As a result, an optical pathlength between the light source and the photodetector can be reduced. In addition, the sensor can include a heat sink that can direct heat away from the light source. Moreover, the sensor can include shielding in the optical path between the light source and the photodetector. The shielding can reduce noise received by the photodetector.

**21 Claims, 43 Drawing Sheets**



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