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(54) Title: OPTOMECHANICAL METHOD TO MEASURE ARTERIAL PULSE AND ASSESS CARDIOPULMONARY HEMODYNAMICS

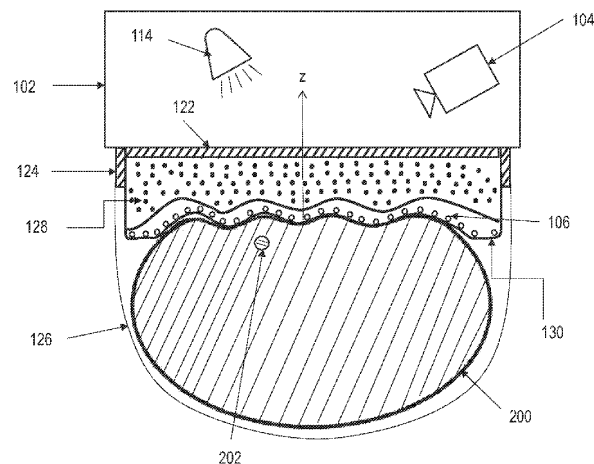


FIG. 2

(57) Abstract: An optomechanical sensor system is provided. The system can include a patient-worn surface displacement system comprising a deformable surface configured to be positioned against the patient adjacent to a superficial artery thereof, a plurality of optical markings disposed on the deformable surface, and an actuator configured to apply a pressure to hold the surface displacement system against the patient such that spatiotemporal movement of the superficial artery causes corresponding movement of the deformable surface and the plurality of optical markings. The system further includes an optical system which includes an imaging system, illumination, and with or without mirrors configured to visualize the plurality of optical markings at an oblique angle. The system determined the spatiotemporal movement of the superficial artery based on the received plurality of images and determine a cardiopulmonary parameter associated with the patient based thereon.

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WO 2022/035841 A1

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