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(54) Title: SYSTEM AND METHOD FOR DETECTING BRAIN ABNORMALITIES USING BACKSCATTERED RADIATION

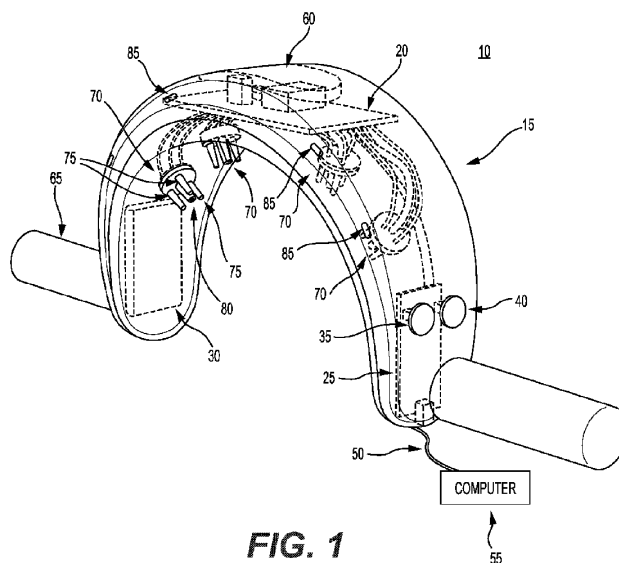


FIG. 1

(57) Abstract: A system (10) for detecting brain abnormalities in a brain of a patient includes a headband (15) configured to be worn on a head of a patient. The headband (15) includes at least one light source (75) configured to generate at least one pulsed incident beam of light (IBNIR) directed toward a portion of the brain (45) of the patient and at least one detector (80) configured to detect at least one backscattered beam of light (BSBNIR) from the portion of the brain (45) of the patient. The headband (15) further includes a controller (90) configured to calculate an insertion loss (IL) and an insertion phase difference (I_{PD}). It is then determined if the patient has a brain abnormality based on the calculated insertion loss (IL) and the insertion phase difference (I_{PD}).

[Continued on next page]

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