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[54] DETECTION OF VIBRATIONAL ENERGY VIA OPTICAL INTERFERENCE PATTERNS

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[58] Field of Search 356/354, 355, 356/356, 357, 358; 73/655, 657, 656

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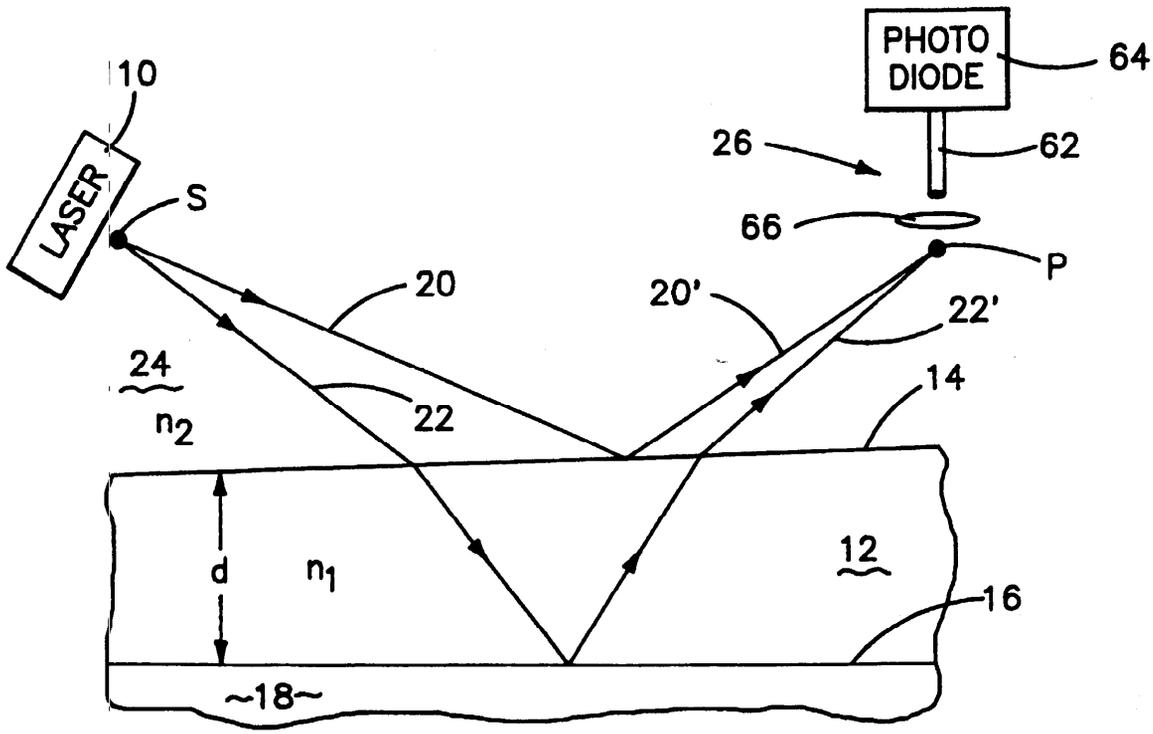
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[57] ABSTRACT

A method and apparatus for sensing and measuring vibrational energy in a structure subject to vibrations is described. The method comprises the steps of applying a thin transparent film material having a thickness to a structure subject to vibrations and measuring the vibrational energy within the structure by measuring changes in the thickness of the thin transparent film material resulting from vibrations within the structure being transmitted to the thin transparent film material. The apparatus for sensing and measuring the vibrational energy comprises a light source for generating a coherent light beam, the thin transparent film material, and a detector for receiving reflected light rays from the top and bottom surfaces of the film material.

28 Claims, 2 Drawing Sheets



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