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(54) Title: OPTICAL FIBER WITH AN ACOUSTICALLY SENSITIVE FIBER BRAGG GRATING AND ULTRASOUND SENSOR INCLUDING THE SAME

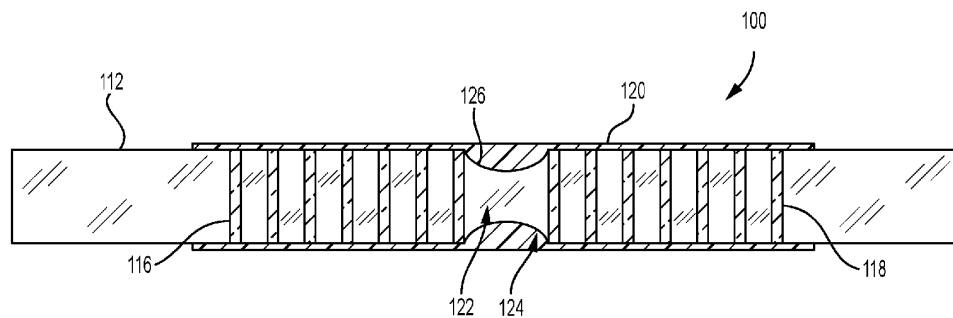


FIG. 1B

(57) Abstract: The optical fiber with an acoustically sensitive fiber Bragg grating includes an optical fiber core with a pair of fiber Bragg gratings formed therein, such that each of the fiber Bragg gratings is spaced apart from the other. A cladding material is disposed on and surrounds at least a portion of the optical fiber core. The cladding material has at least one material property associated therewith, where the at least one material property may be a smaller Young's modulus than a Young's modulus of the optical fiber core, a larger photo-elastic coefficient than a photo-elastic coefficient of the optical fiber core, or combinations thereof. An ultrasound sensor includes at least one of the optical fibers embedded in a polymer layer, along with a backing layer and an acoustic matching layer.

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