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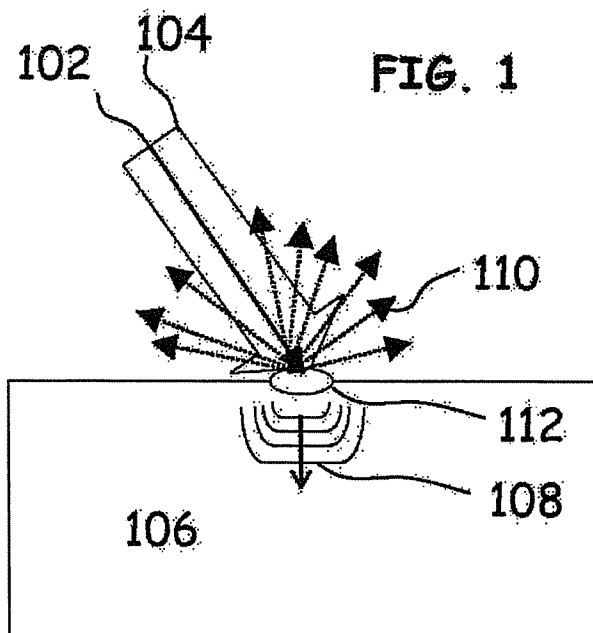
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(54) Title: PRE-AMPLIFIER FOR DETECTION LASERS WITHIN LASER ULTRASONIC INSPECTION SYSTEMS



(57) Abstract: A pulse detection laser is provided. The pulse detection laser includes a single frequency oscillator, a continuous preamplifier, and a pulsed amplifier. The single frequency oscillator generates a seed laser beam and is optically coupled to the continuous preamplifier. The continuous pre-amplifier amplifies the seed laser to produce an intermediate power laser beam. A pulsed amplifier optically coupled to the continuous pre-amplifier receives the intermediate power laser beam and amplifies the intermediate power laser beam to produce a pulse detection laser beam. One task of this pulse detection laser is to illuminate ultrasonic displacements. Light from the laser is scattered, collected, and analyzed with an interferometer to demodulate the ultrasonic displacements caused by the return echoes of the ultrasound at the surface of the part.