

[54] **ULTRASONIC VISUALIZATION BY PULSED BRAGG DIFFRACTION**

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[57] **ABSTRACT**

An improvement in reflection mode Bragg display systems of the type wherein an acoustic beam is incident on an object which by reflection spatially modulates this sound field with its image information, a laser light beam interacts with such modulated sound field to undergo Bragg diffraction, thereby reproducing the image information in the diffracted light, and an optical system receiving such diffracted light images various desired cross sections of the object with a discrimination limited by the overall depth of focus of the optical imaging system. Control means are incorporated for delivering both the acoustic beam and the light beam in synchronized bursts of controlled duration to allow any of a plurality of cross-section within the acoustic depth of focus to be visualized, and spurious acoustic images eliminated, with a discrimination depth dependent on the duration of the acoustic burst. The light burst is delayed with respect to the initiation of the sound burst, and its duration limited, so as together to insure proper coincidence of the light with the sound energy reflected from the particular object plane selected for imaging.

10 Claims, 4 Drawing Figures

