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United States Patent [19]

Norris

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[54] **ACOUSTIC HETERODYNE DEVICE AND METHOD**

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[51] **Int. Cl.^{6}** **H04B 3/00**
[52] **U.S. Cl.** **381/77**; 381/79
[58] **Field of Search** 381/79, 77, 82

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[57] **ABSTRACT**

The present invention is the emission of new sonic or subsonic compression waves from a region resonant cavity or similar of interference of at least two ultrasonic wave trains. In one embodiment, two ultrasonic emitters are oriented toward the cavity so as to cause interference between emitted ultrasonic wave trains. When the difference in frequency between the two ultrasonic wave trains is in the sonic or subsonic frequency range, a new sonic or subsonic wave train of that frequency is emitted from within the cavity or region of interference in accordance with the principles of acoustical heterodyning. The preferred embodiment is a system comprised of a single ultrasonic radiating element oriented toward the cavity emitting multiple waves.
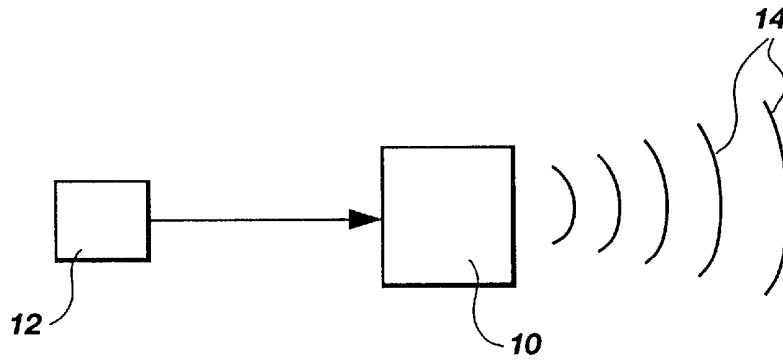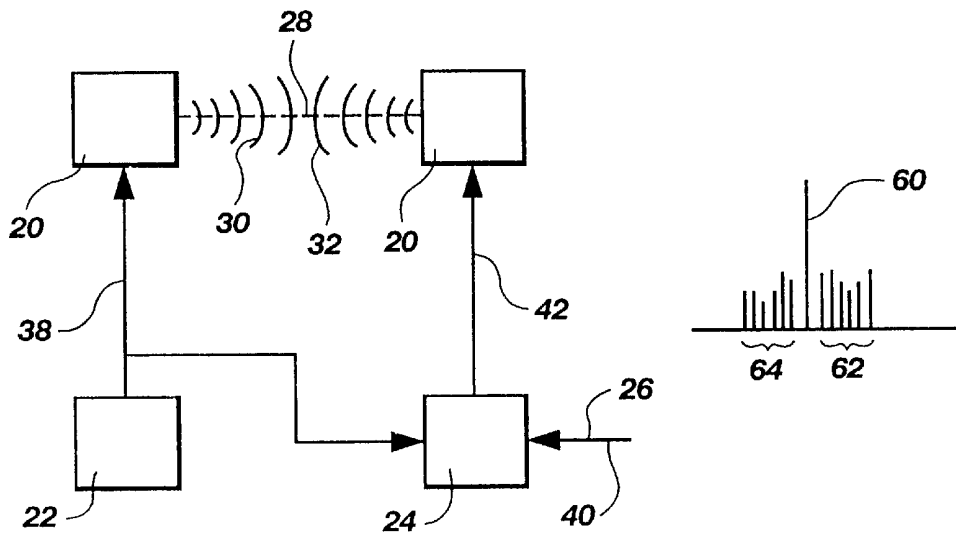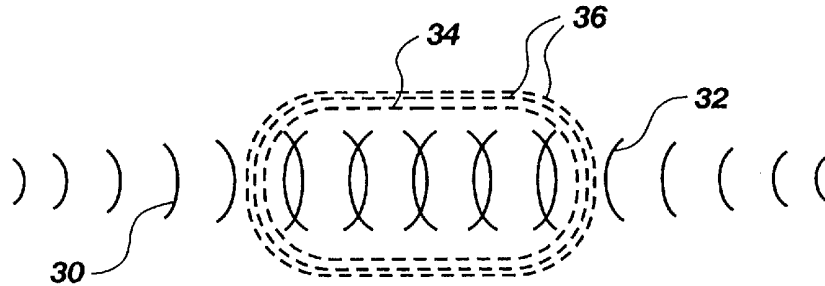
6 Claims, 7 Drawing Sheets

Fig. 1

Fig. 2

Fig. 3

Fig. 4

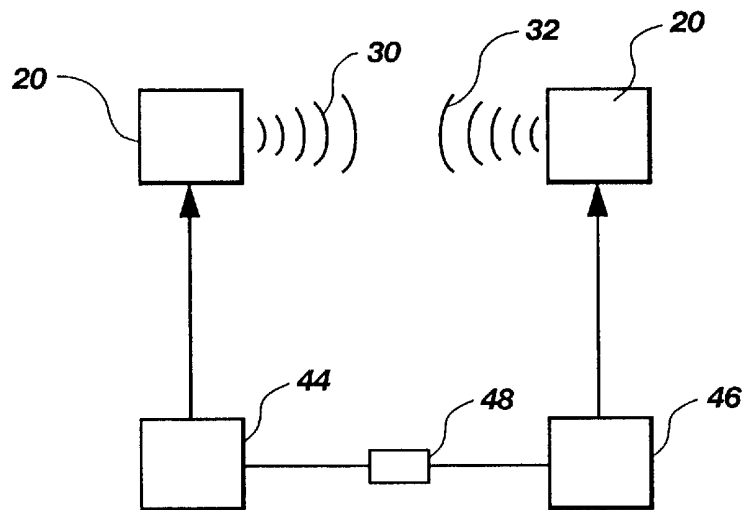*RESTORING FORCE (PRESSURE) VS. AMPLITUDE*

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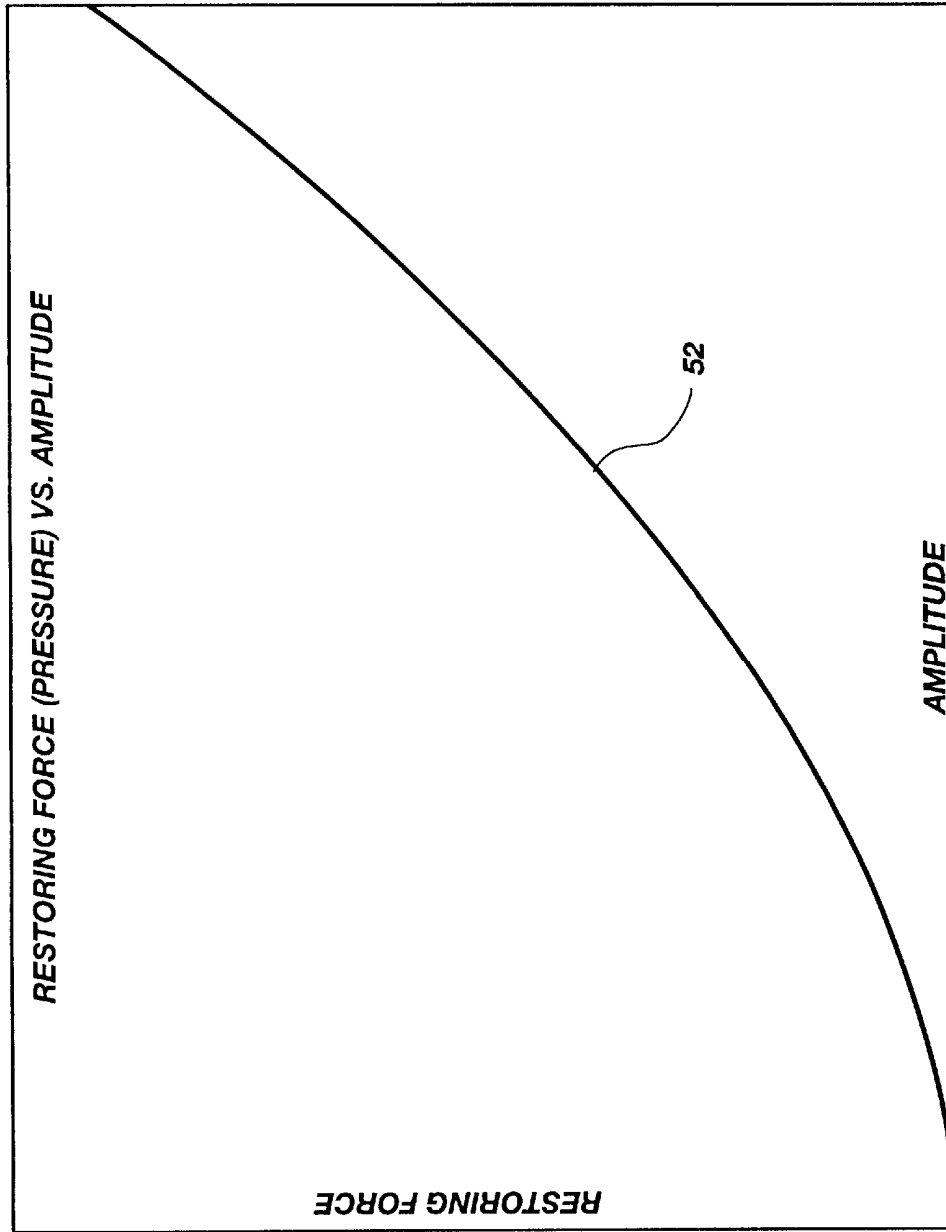RESTORING FORCE
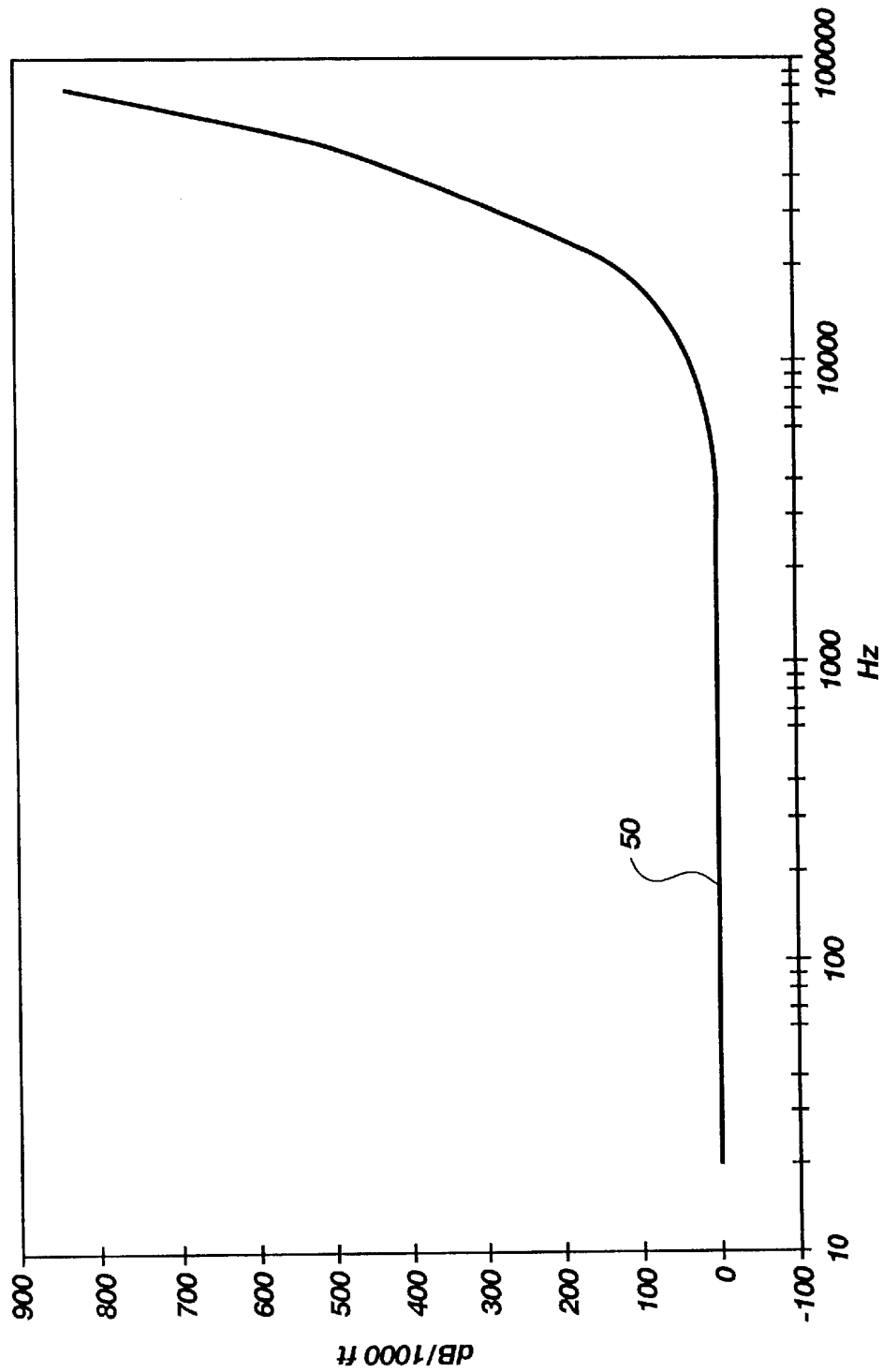
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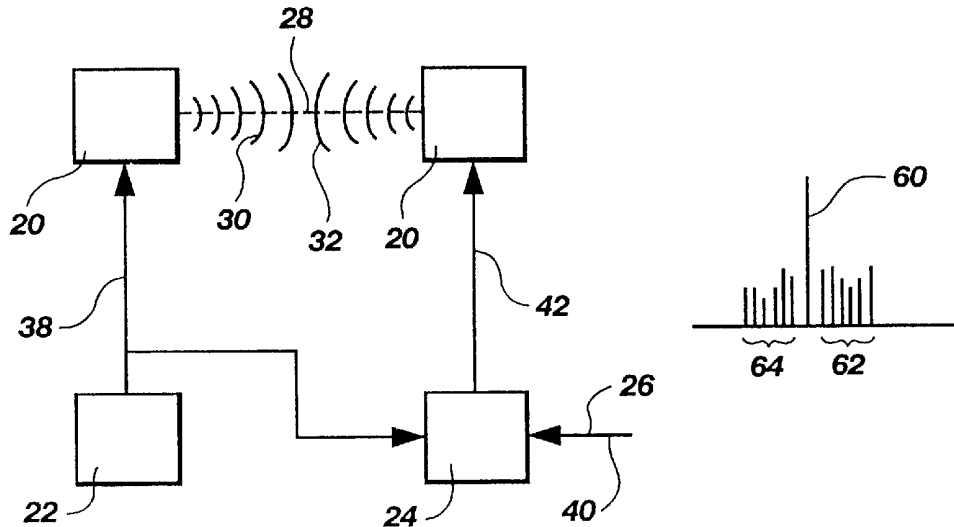
Fig. 5A

Fig. 5B

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