



US005973999A

United States Patent [19]
Naff et al.

[11] **Patent Number:** **5,973,999**
[45] **Date of Patent:** **Oct. 26, 1999**

- [54] **ACOUSTIC CANNON**
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- [21] Appl. No.: **08/939,265**
- [22] Filed: **Sep. 29, 1997**
- [51] **Int. Cl.⁶** **H04B 1/034**; G08B 15/00
- [52] **U.S. Cl.** **367/139**; 181/142
- [58] **Field of Search** 367/137, 138, 367/139; 181/142, 144, 145; 381/161, 337, 338, 339; 89/1.1, 1.11; 116/22 A; 43/124

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[57] **ABSTRACT**

An acoustic cannon has a plurality of acoustic sources with output ends symmetrically arranged in a planar array about a central point. Pressure pulses are generated in each acoustic source at substantially the same time. The pressure pulses exit the output ends as sonic pulses. Interaction of the sonic pulses generates a Mach disk, a non-linear shock wave that travels along an axis perpendicular to the planar array with limited radial diffusion. The Mach disk retains the intensity of the sonic pulses for a time and a distance significantly longer than that achievable from a single sonic source. The acoustic cannon is useful as a non-lethal weapon to disperse crowds or disable a hostile target.

15 Claims, 5 Drawing Sheets

