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# United States Patent [19]

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Gerhard

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## [54] FLEXIBLE FERRITE LOADED LOOP ANTENNA ASSEMBLY

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### [57] ABSTRACT

[73] Assignee: **The United States of America as represented by the Secretary of the Navy**, Washington, D.C.

A buoyant loop antenna, deployable along a cable, includes a core region comprising a plurality of annular ferrite beads. These annular shaped beads include a center hole and generally concave first end and a generally convex second end. The ferrite beads are aligned with the concave end of one bead against the convex end of another bead. This allows the cable to flex while the beads maintain contact with each other, providing flexibility and resistance to crushing. The core region has a loop wire wrapped helically around it, forming the loop antenna. The loop wire element starts and ends at the same end of the core region, forming a loop. This loop allows transmission and reception in and athwart (side to side) direction. This novel wire loop antenna can be combined with a straight wire antenna (which provides reception in a fore and aft direction) to provide an omni-directional cable antenna assembly.

[21] Appl. No.: **08/696,586**

[22] Filed: **Jul. 24, 1996**

[51] Int. Cl.<sup>6</sup> ..... **H01Q 1/34; H01Q 7/08**

[52] U.S. Cl. .... **343/709; 343/895; 343/788**

[58] Field of Search ..... **343/709, 895, 343/787, 788; H01Q 1/34, 7/08**

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**19 Claims, 5 Drawing Sheets**

