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Bonin

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[54] **ELECTROMAGNETIC PUMP**

[75] Inventor: **Richard L. Bonin**, Newport, R.I.

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

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[52] **U.S. Cl.** ..... **417/413 R**; 417/474; 417/477 R; 417/322

[58] **Field of Search** 417/412, 413, 474, 475, 417/476, 477, 478, 322

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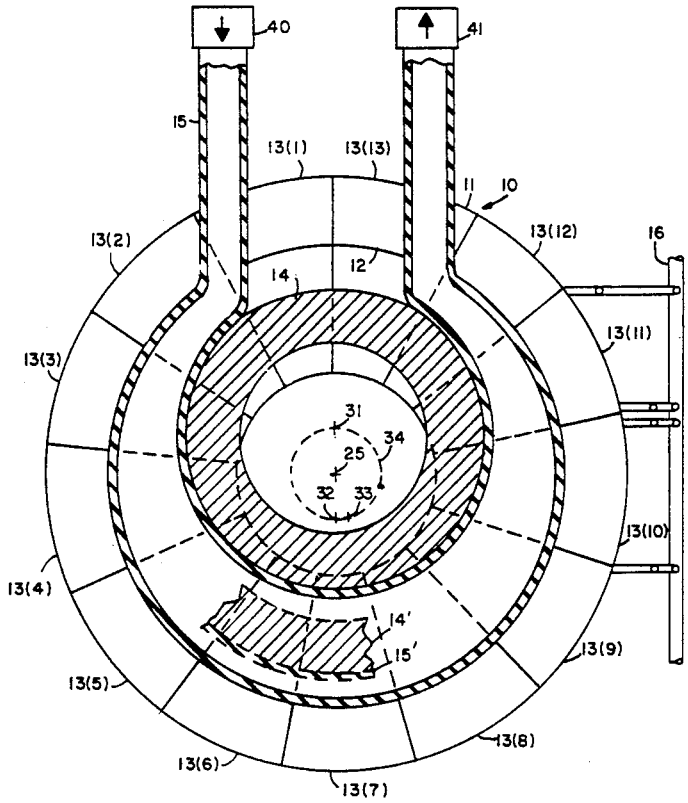
Primary Examiner—Richard A. Bertsch
Assistant Examiner—Peter Korytnyk
Attorney, Agent, or Firm—Michael J. McGowan; Prithvi C. Lall; Michael F. Oglo

[57] **ABSTRACT**

A pump having a stator that forms a cylindrical chamber defined by a wall and a plurality of independently energizable magnetic field generators. A compression roller comprising a magnetic material is disposed within the wall and is free to move with respect to the stator. A flexible diaphragm is intermediate the stator and the compression roller and disposed along the wall portion. The flexible diaphragm to be pumped has an input port and an outlet port for the fluid being pumped. An energizing control at any given instant energizes a plurality of adjacent ones of the magnetic field generators. The magnetic field generators are organized into overlapping sets that can be energized as sets in sequence thereby to produce a rotating, axially extending magnetic field within the wall. The compression roller follows the rotating field thereby to compress adjacent positions of the flexible diaphragm to pump fluid from the diaphragm through the inlet port to the outlet port.

22 Claims, 5 Drawing Sheets