United States Patent [19]

Jarvik

[11] **4,173,796**

[45] **Nov. 13, 1979**

[54] **TOTAL ARTIFICIAL HEARTS AND CARDIAC ASSIST DEVICES POWERED AND CONTROLLED BY REVERSIBLE ELECTROHYDRAULIC ENERGY CONVERTERS**

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[21] Appl. No.: **858,921**

[22] Filed: **Dec. 9, 1977**

[51] **Int. Cl.**[2] **A61F 1/24**

[52] **U.S. Cl.** ..... **3/1.7**; 417/390; 417/389; 417/423 R

[58] **Field of Search** ..... 3/1.7, 1; 128/1 D, DIG. 3; 417/390, 389, 394, 395, 423 R

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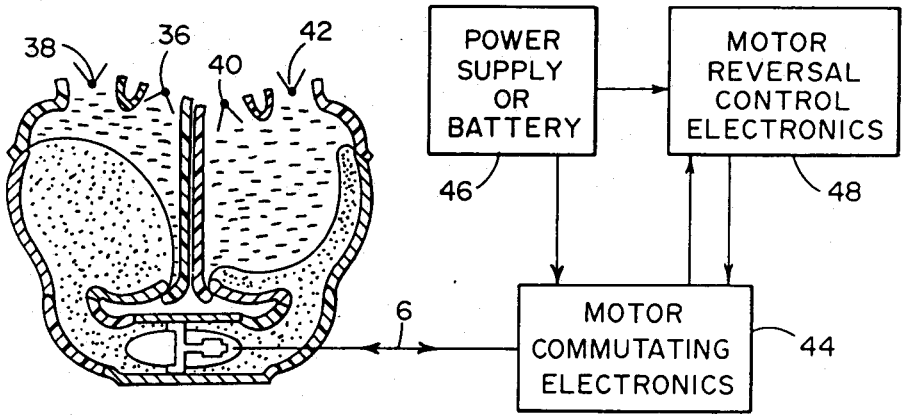
[57] **ABSTRACT**

Total artificial hearts and circulatory assist devices, including left ventricular assist devices. The invention relates to electrohydraulic energy converter systems, whereby electric energy from a power source, which may be a battery or other source, is converted into hydraulic power capable of actuating diaphragm, sack, axi-symmetric or other types of blood pumps.

11 Claims, 12 Drawing Figures