United States Patent [19]

Olson

[11] **Patent Number: 4,902,209**

[45] **Date of Patent: Feb. 20, 1990**

[54] **SLIDING SEGMENT ROTARY FLUID POWER TRANSLATION DEVICE**

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[21] Appl. No.: **164,479**

[22] Filed: **Mar. 4, 1988**

[51] **Int. Cl.**[4] **F01C 1/344;** F01C 1/356; F01C 11/00; F02B 53/04

[52] **U.S. Cl.** **418/6;** 418/13; 418/29; 418/30; 418/92; 418/137; 418/173; 418/174; 418/254; 123/240

[58] **Field of Search** 418/173, 174, 6, 13, 418/29, 30, 136, 254, 91, 149, 92, 137; 123/240

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Primary Examiner—John J. Vrablik

[57] **ABSTRACT**

A multiple or compound work cycle, eccentric rotor, fluid power translation device, featuring adjustable and reversible work output capability, essentially comprising: A symmetric rotor having a plurality of fixed radially extended vanes rotating closely between opposing co-axially adjustable confinement plates. An internal, eccentrically disposed annulus comprised of segmented concentric rings having co-axially protruding edges; said edges engaging circular, matching bearing grooves provided by said opposed confinement plates. The segments comprising each segmented ring being each penetrated by a rotor vane; two or more segments per vane thereby compelling co-rotation of said segments and locating said segments relative segments penetrated by adjacent rotor vanes. Individual chambers of the multiple work cycles, defined by adjacent rotor vanes, concentric fluid barriers, and the eccentric fluid barrier formed by the segmented annulus assembly, are caused to be expanded and reduced in volume by rotation in a progressive and cyclic manner. Working fluid flow volume and pressure or torque, speed, and direction of rotation can be variable from maximum to zero to maximum (reverse flow or direction of rotation), depending on whether used as a pump or motor, without valving, using relatively simple mechanical linkage, by changing the offset of the rotation axes between the normally eccentrically and concentrically rotating segments and rotor assemblies.

8 Claims, 5 Drawing Sheets