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**Lemke et al.**

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(54) **TWO-CYCLE, OPPOSED-PISTON INTERNAL COMBUSTION ENGINE**

(75) Inventors: **James U. Lemke**, La Jolla, CA (US); **William B. McHargue**, Cardiff by the Sea, CA (US); **Michael H. Wahl**, Bonita, CA (US); **Patrick R. Lee**, San Diego, CA (US)

(73) Assignee: **Achates Power, Inc.**, San Diego, CA (US)

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(52) **U.S. Cl.** ..... **123/41.35; 123/51 BA**  
(58) **Field of Classification Search** ..... **123/41.35, 123/41.34, 51 AA, 51 BA, 67, 197.4, 41.38, 123/53.2**

See application file for complete search history.

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*Primary Examiner* — Mahmoud Gimie  
(74) *Attorney, Agent, or Firm* — INCAPLAW; Terrance A. Meador

(57) **ABSTRACT**

In a two-cycle, opposed-piston internal combustion engine, opposed pistons disposed in a cylinder are coupled to a pair of side-mounted crankshafts by connecting rods that are subject to substantially tensile forces acting between the pistons and the crankshafts. This geometry reduces or eliminates side forces between the pistons and the bore of the cylinder. The cylinder and the pistons are independently cooled to reduce cylindrical deformation caused by thermal expansion during engine operation.

**12 Claims, 41 Drawing Sheets**

