Jan. 31, 1967 RYUSUKE ITO 3,301,230

MOUNTING BASE FOR ROTARY PISTON ENGINE

Filed Dec. 2, 1964

FIG. 1

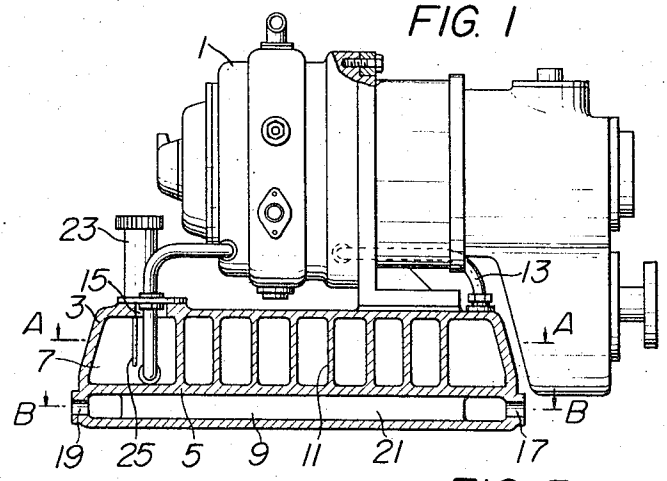


FIG. 3

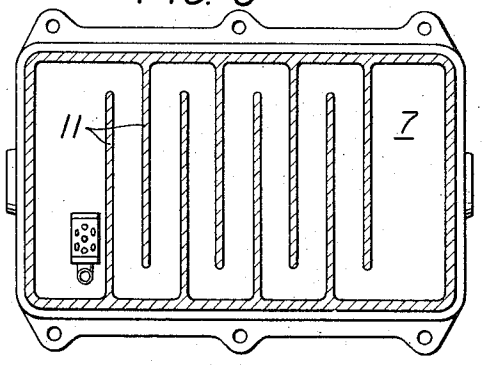


FIG. 2

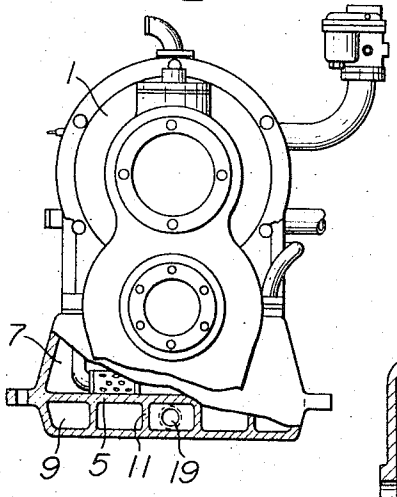
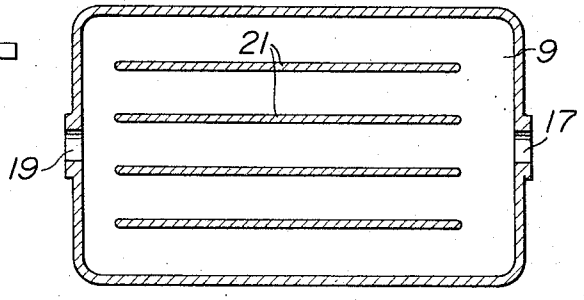


FIG. 4



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MOUNTING BASE FOR ROTARY PISTON ENGINE

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2 Claims. (Cl. 123—8)

This invention relates to rotary piston engines of the well known type which incudes a casing having an epitrochoidal inner peripheral wall and a piston mounted in said casing for planetary motion therein and having apex portions held in sliding engagement with the timer peripheral wall of the casing. With this type of rotary piston engine, lubricating oil is customarily used not only for lubrication of the interior mechanism of the engine but also for cooling the piston, and it has thus been necessary to provide a reservoir for lubricant oil and an oil cooler device, which has usually been arranged independently from the oil reservoir. This has formed an obstacle to reduction in size and weight of the engine and to simplification of its construction.

To overcome this difficulty, the present invention proposes to provide a mounting base for a rotary piston engine of the type described, which base has an enclosed cavity formed therein to serve as an oil reservoir, partition walls formed in the cavity to define an oil passageway of appropriate configuration therethrough and to serve as cooling fins, and a water jacket formed closely beneath the bottom wall of said oil reservoir to receive a flow of cooling water for cooling the oil flowing through said oil reservoir, said partition walls and water jacket together forming an oil cooling means integral with the oil reservoir.

The present invention will now be described with reference to the accompanying drawings, in which:

FIG. 1 is a side elevation, partly in section, of an engine unit embodying the present invention;

FIG. 2 is a front elevation, partly in section of same;

FIG. 3 is a cross-sectional view substantially taken along the line A—A in FIG. 1; and

FIG. 4 is a cross-sectional view substantially taken along the line B—B in FIG. 1.

Referring to the drawings, and first to FIG. 1, the engine unit includes a rotary piston engine **1** and a mounting base **3** on which said engine **1** is securely mounted. The mounting base has formed therein a cavity **7** to serve as an oil reservoir and a bottom chamber **9** separated from said cavity by the bottom wall **5** of said cavity serving as a partition wall between said cavity and chamber **9**. The cavity **7** is provided with an oil inlet port **13**, an oil outlet port **15** and a number of vertical partition walls **11** (FIGS. 1 and 3) defining an oil passageway of appropriate configuration, through which oil entering the cavity through the oil inlet port is directed to the oil outlet port at an appropriatee rate of flow. The oil reservoir cavity **7** is also provided with an oil filling port **23** and an oil level

gauge **25**, as illustrated. The bottom chamber **9**, serving as a water jacket, is provided with an inlet port **17** and an outlet port **19** for cooling water and also provided with a number of partition walls **21** (FIGS. 1 and 4), which in the illustrated embodiment define parallel passageways for cooling water so that it may flow uniformly through the chamber at an appropriate velocity depending upon the rate of flow of the cooling water. It will be understood that the partition walls **20** also serve as cooling fins.

It is to be noted that the oil flowing through the oil reservoir **7** is cooled by transferring its heat to the cooling water through the bottom wall **5** separating the oil reservoir from the water jacket and through the partition walls **11** and **21** formed in the oil reservoir **7** and water jacket **9**, respectively. It will be apparent that, if the bottom wall of the oil reservoir be exposed directly to water streams just like the bottom of a ship, the water jacket can be dispensed with. Alternatively, the water jacket may take the form of an water-tight arrangemen of coolting water tubes in the oil reservoir, which affords a required total cooling area.

What is claimed is:

1. A mounting base for a rotary piston engine of the type including a casing having an epitrochoidal inner peripheral wall and a piston mounted in said casing for planetary motion therein and having apex portions held in sliding engagement with the inner peripheral wall of the casing, said mounting base comprising a cavity formed therein and adapted to compose an oil reservoir, said cavity being provided with openings respectively in communication with the lubricating oil inlet and outlet ports of the engine, and a water-cooling means arranged integral with said oil reservoir for cooling the oil in the reservoir.

2. A mounting base for a rotary piston engine of the type including a casing having an epitrochoidal inner peripheral wall and a piston mounted in said casing for planetary motion therein and having apex portions held in sliding engagement with the inner peripheral wall of the casing, said mounting base comprising a cavity formed therein and adapted to compose an oil reservoir, said cavity being provided with openings respectively in communication with the lubricating oil inlet and outlet ports of the engine, partition walls formed in said cavity to define an oil passageway of appropriate configuration therethrough and to serve as cooling fins, and a water jacket formed closely beneath the bottom wall of said oil reservoir to receive a flow of cooling water for cooling the oil flowing through said oil reservoir, said partition walls and water jacket together forming an oil cooling means integral with said oil reservoir.

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