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(56) Documents cited  
**GB 0412584**  
**GB 0358802**  
**GB 0266020**  
**GB 0173877**  
**GB 0166388**  
**US 4007725**

(58) Field of search  
**F1B**

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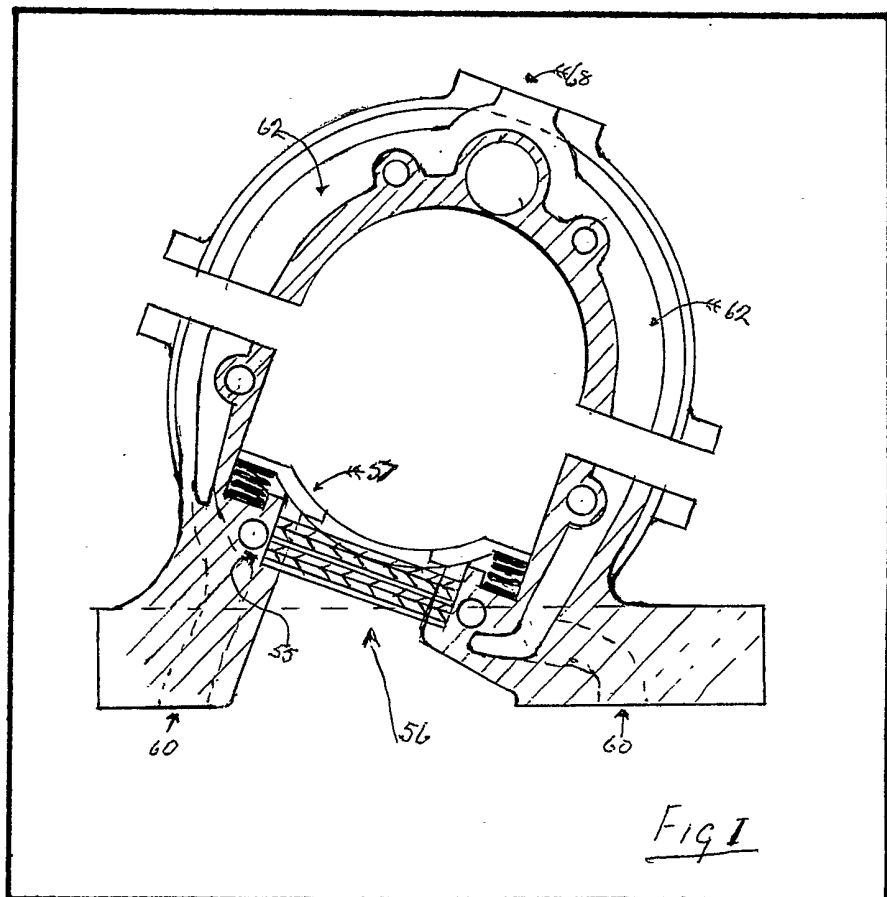
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(54) **I.C. Engine rotary valve**

(57) The valve housing consists of a lower part cast integral with the cylinder head defining a combustion space. A passage 56 leading to the combustion space has a sealing

member 57 supported by springs on either side to hold member to the rotary valve. A top housing part is secured to the bottom part by screws or bolts and two side covers (46, 48, Figs. 2a and 2b) are secured to these parts. Cooling water passages 60, 62, 68 are formed in the housing.



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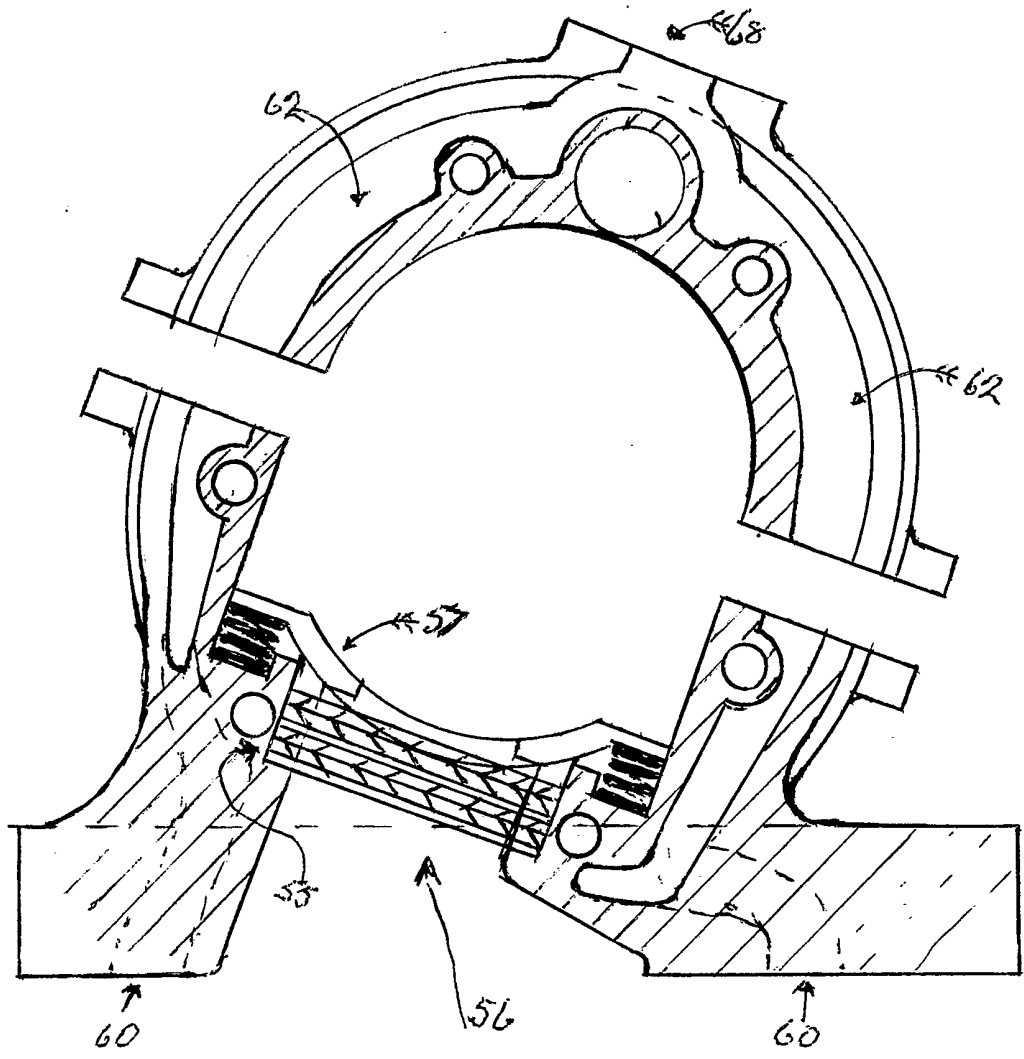
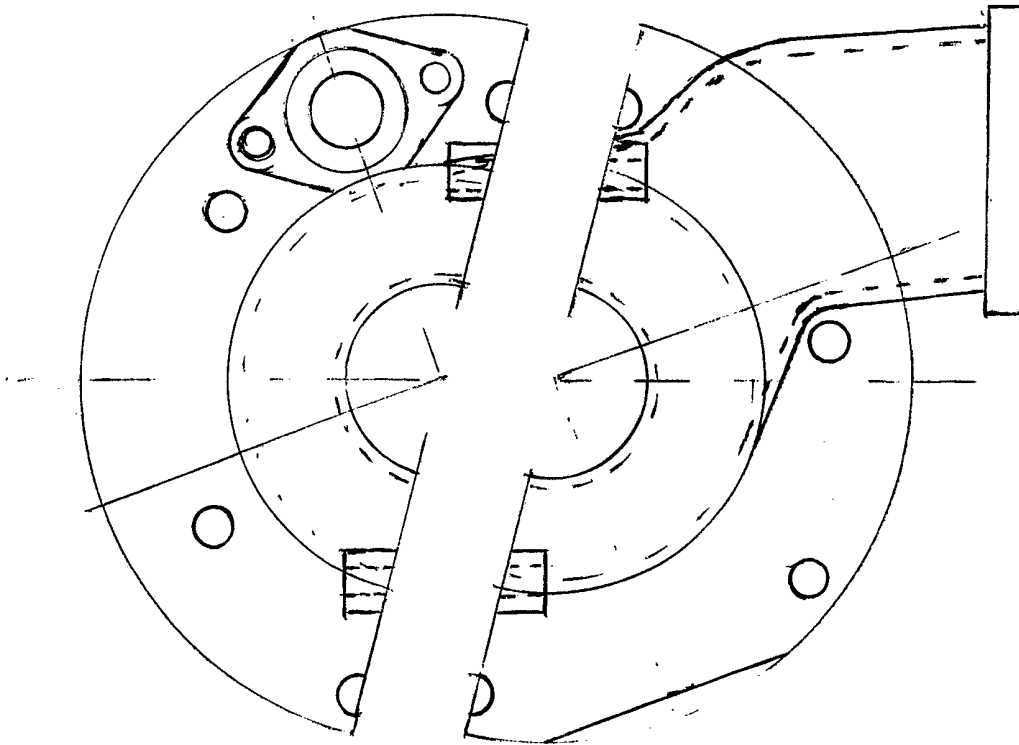


FIG 1

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SIDE COVER 1/6

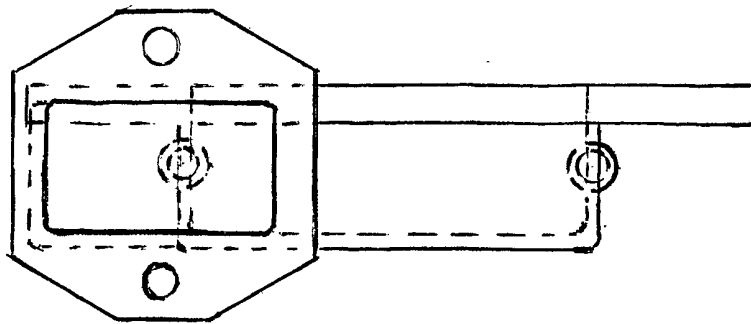
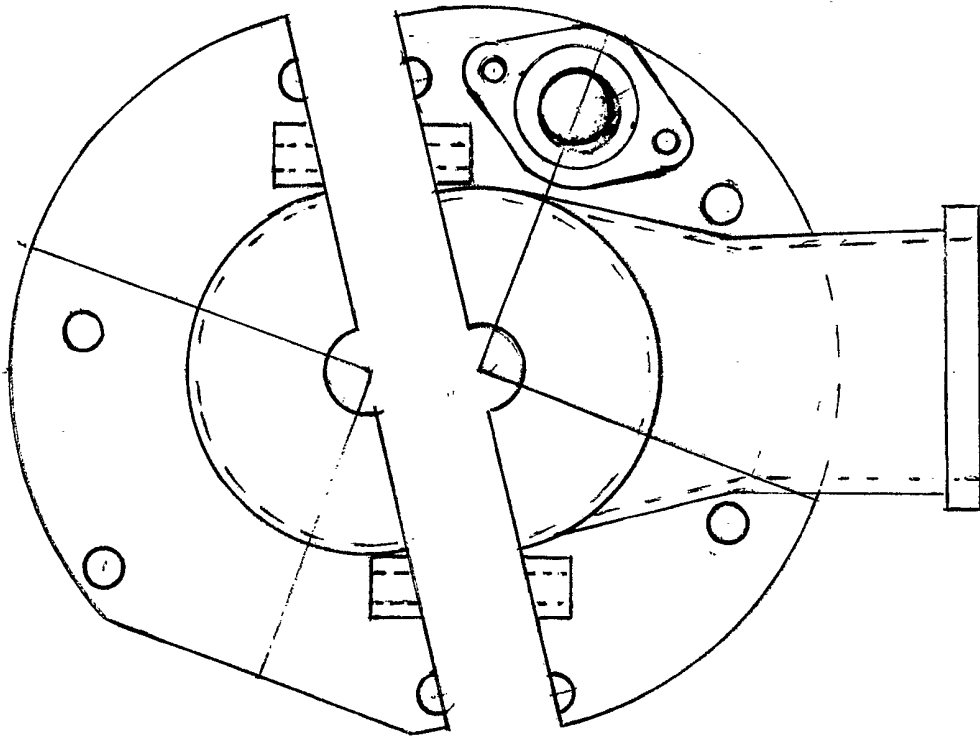


FIG 2 a

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SIDE COVER 1/8

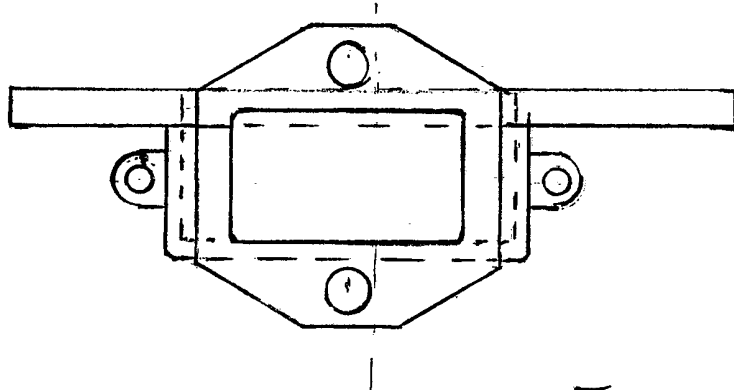


Fig 2 B

## SPECIFICATION

**Improvements in rotary valves**

I George Edward Ablett, a British subject of 160 Moorfield Road, Widnes, Cheshire, do hereby  
5 declare that the nature of this invention and in what manner the same is to be performed, to be described and ascertained in and by the following statement.

This invention relates to rotary valves for  
10 internal combustion engines of the type wherein sealing means are provided to prevent fluid or gases leaking around the ports of the rotary valve member, the said sealing means being resiliently pressed against the periphery of the valve  
15 element and has a port for the passage of fluid or gasses therethrough. It is the object of the invention to provide a housing with sealing member which is suitable for an internal combustion engine and has inlet and exhaust  
20 passages integral with the side covers and can be secure to a housing body by screws or bolts as my specification No. 8208246.

The embodiments of the invention are illustrated in the accompanying drawings by way  
25 of example, and in the said drawings:—

Figure 1 is a sectional view through the rotary valve housing, the housing consisting of 4  
30 members, a centre section in 2 halves, lower half being integral with the cylinder cover and having a port 56 for communicating with said cylinder, the port 56 being counter bored to accept the lower part of a sealing member 57 Fig. 1., the top half acting as a cover for the rotary valve and secured by screws or bolts (not shown) to the  
35 lower half as shown Fig. 1. The two side covers 46 and 48 Fig. 2a and 2b incorporating the inlet passage and the exhaust passage are secured to centre members of the housing by bolts or screws to make a single housing unit.

40 Figure 1 being a sectional side view of the

housing showing sealing member in counter bore of port 56 with supporting springs to maintain a seal against the rotary valve and means of seal against leakage from compression around the  
45 outside of the seal member 55.

In Fig. 1 the lower half of the housing is shown cut out to take the seal member 55 and shows the rotary valve to be free to rotate in the housing which has not been possible with earlier designs,  
50 the rotary valve having a drive shaft in a central bore and the shaft supported by 2 bearings outside of the housing and secured to the base of the housing 12 enable the rotary valve to rotate freely in its housing.

55 Fig. 1 shows cooling water entrance 60 on base 12 located from cylinder jacket and passing close to seal member 57 for cooling thence through passage 62, around the housing and out of passage 68 to recirculate.

**60 Claims**

1. A rotary valve housing having a top half, and a lower half integral with a base and having a port for communicating with a cylinder of the engine and incorporating a sealing member for the valve.

65 2. A rotary valve housing having an inlet side cover cast integral with inlet passage as one piece, or in two halves to fit around the valve sleeve and the two halves rejoined by screws or bolts.

70 3. A rotary valve housing having an exhaust side cover cast or made as one piece with exhaust passage, or made as two halves split through the flange of side cover and secured together by screws or bolts to fit around exhaust sleeve of the  
75 valve.

4. A rotary valve housing as in claim 1, having a ceiling passage cast integral with the body of the housing and being fed from cylinder jacket cooling water.