This invention relates to an internal combustion motor of the rotary type and it generally aims to provide a novel and improved construction which will run with minimum vibration with all rotating parts constantly moving in the same direction and which develops a maximum power with minimum weight.

A further object is to provide a novel construction which will enable the use of ordinary motor fuel and even the cheaper grades without the operation being hampered by the accumulation of carbon, a construction which will operate without knocking or jerking due to gradual application of the force developed against the vanes.

A further object is to provide a novel construction which will be automatically lubricated, may be easily air cooled and in which the parts will run without undue binding or friction.

Various additional objects and advantages will become apparent from a consideration of the description following taken in connection with accompanying drawings illustrating an operative embodiment and wherein —

Figure 1 is a view of the improved motor in vertical section taken substantially centrally and transverse to the main shaft.

Figure 2 is a substantially central vertical sectional view taken at a right angle to Figure 1.

Figure 3 is a detail sectional view taken on the line 3—3 of Figure 2, and

Figure 4 is a detail section taken on the line 4—4 of Figure 1.

Referring specifically to the drawings, a suitable stator casing is provided at 10 which may be welded or otherwise secured to a supporting base 11. Such base 11 may have legs 12 welded thereto which support bearings 13 for a main shaft 14 of the motor.

The rotor is shown at 15 and is carried by the shaft 14. Such rotor 15 is wider than the stator and the rotor peripherally has inwardly extending portions 16 arranged in hermetic or sealing contact with side walls 17 of the stator. The main peripheral wall 18 of the rotor is located between the walls 17 and is engaged by sealing rings 19 which overlap the same, and are urged outwardly into sealing engagement with the inner surfaces of walls 17 by suitable spring elements 20. The springs 20 consist of strips of spring steel bowed into substantial U-shapes in cross section, and intermediate of their edges, as shown at 20, and secured to inwardly extending portions 16 and the sealing rings 19, said U-shaped portions bridging the inner edges of the walls 17, 20, designating the securing members for said strips. The bowed portions 20 are stressed to hold rings 19 in sealing engagement with walls 17 as shown in Figure 2.

The stator 10 is of irregular shape so as to provide a compression chamber at 21 and a combustion chamber at 22, such chambers communicating by way of a restricted space or passage 23, and being divided by a partition 24. The stator has a fuel inlet passageway 25 on one side of the partition 24 and an exhaust passageway 26 on the other side of such partition 24. Passageway 25 communicates with a carburetor or source of fuel supply. A spark plug 27 is secured in the rotor wall in order to fire the compressed charge, being arranged in an ignition circuit including conductor 27 and controlled in any suitable manner.

Any suitable number of pistons are employed at 28, each consisting of a plurality of individually adjustable vanes 29. The rotor in addition to the wall 18 has an annular wall 30, and the vanes 29 pass through openings as shown, in said walls 18 and 30, being surrounded and intimately engaged by metallic bars 31 urged into contact with the vanes by expansive springs 32.

The vanes 29 are urged outwardly into wiping contact with the marginal wall of the stator by means of individual expansive springs 33 abutting the same and also abutting the shaft 14. The wall 30 forms a lubricant chamber and it will be realized that sufficient lubricant is fed to the working parts, by its flow along the vanes 29. Undue flow or escape of lubricant is prevented by reason of the bars 31 and springs 32 although any other suitable form of packing means may be substituted if desired.
In order to move the vanes 29 inwardly to their maximum extent for discharge of spent gases and passage of the vanes past the partition 24, one or more cam members 34 may be provided adjacent the partition 24, being suitably fastened to the stator. Lubricant may be supplied to the rotor through a port normally closed by a plug or equivalent.

In the operation of the motor, the fuel enters at 25, and is compressed and moves forwardly by one group of vanes 29, being held between that group and the group in advance thereof. Accordingly the charge moves from the chamber 21 through the restricted passage 23 after which it is fired by the plug 27, the force moving the vanes forward in the combustion chamber 22 after which the spent gas escapes through the passage 26 in view of the fact that the cams 34 cause the vanes 29 to move inwardly. Since there are three sets of vanes, three charges will be compressed and fired for each revolution of the engine.

It will be realized that the lubrication of the engine is automatic since the inner ends of the vanes 29 travel in the lubricant reservoir and sufficient lubricant flows outwardly along the surfaces of such vanes.

Various changes may be resorted to provided they fall within the spirit and scope of the invention.

I claim as my invention:

1. A rotary engine having a stator, a rotor operable therein, said parts providing therebetween a combustion chamber and a compression chamber and a restricted space between them, a partition between said chambers, and exhaust port in communication with the combustion chamber, a series of pistons carried by the rotor and movable radially thereof through contact with the stator wall, firing means for the combustion chamber, means to cause retraction of the vanes to enable exhaust of spent gases, said rotor having inner and outer peripheral walls, the inner wall enclosing an oil reservoir, walls connecting the inner and outer peripheral walls and forming chambers about the pistons, packing means arranged in said chambers about the vanes to prevent undue escape of lubricant, and expansive spring means in said chambers abutting the walls therein and abutting said packing means.

2. A rotary engine having a stator, a rotor operable therein, said parts providing therebetween a combustion chamber and a compression chamber and a restricted space between them, a partition between said chambers, an exhaust port in communication with the combustion chamber, a series of pistons carried by the rotor and movable radially thereof through contact with the stator wall, firing means for the combustion chamber, means to cause retraction of the vanes to enable exhaust of spent gases, said rotor having inner and outer peripheral walls, the inner wall enclosing an oil reservoir, walls connecting the inner and outer peripheral walls and forming chambers about the pistons, packing means arranged in said chambers about the vanes to prevent undue escape of lubricant, and expansive spring means in said chambers abutting the walls therein and abutting said packing means.