

07/15/2006

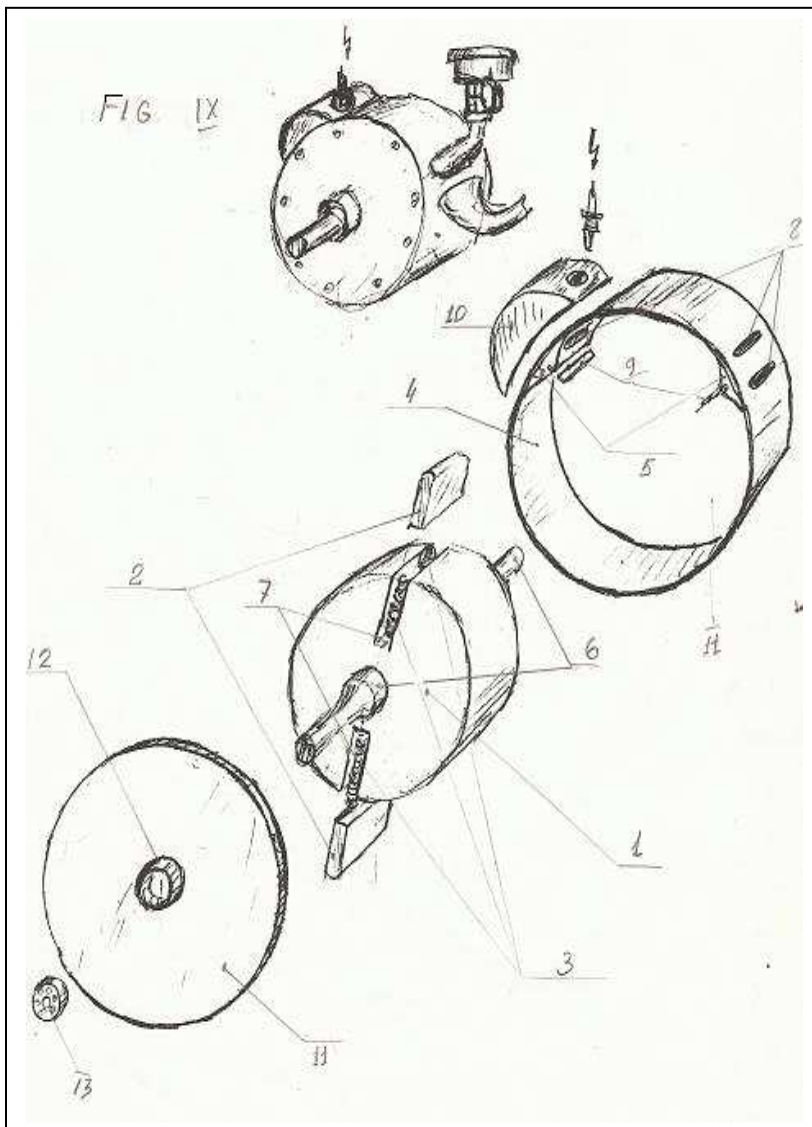
To: General Motors Corporation

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Introduction

Here is a Project of the internal combustion rotary engine. Advantages of rotary engines are obvious:

1. Less metal is needed than the standard combustion engine
2. A few parts to build

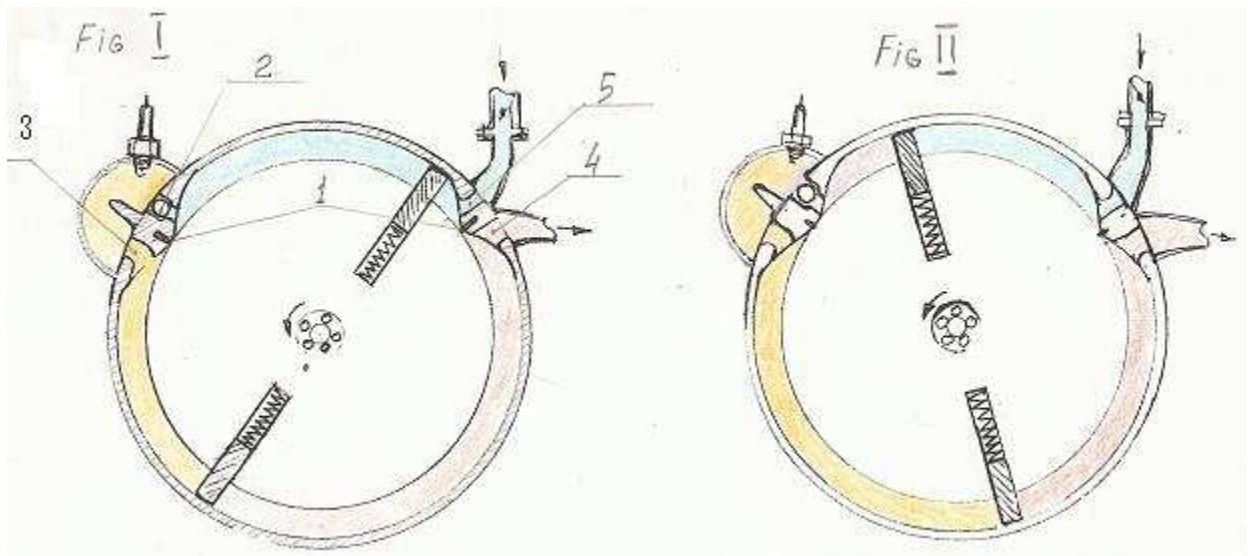


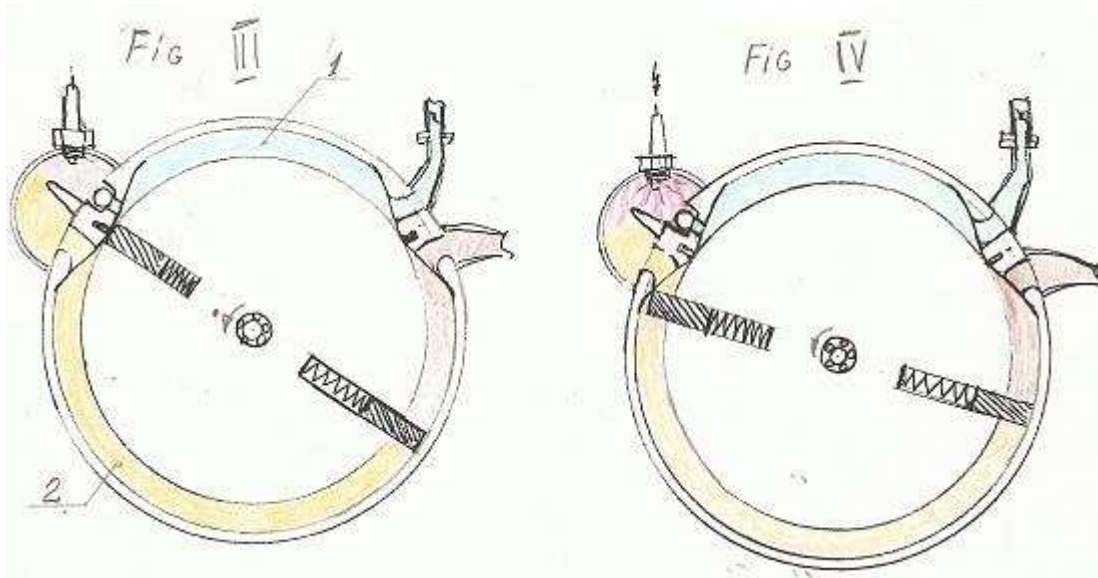
3. Greater power-to-weight ratio
4. Simple design in the case
5. Lower fuel consumption per Horse Power output
6. Expected efficiency is around 70%

Still, existing ideas and prototypes have severe disadvantages:

1. Narrow temperature ranges
2. Complicated lubrication system
3. Sealing problems

We expect to get rid of these problems by my project. If you are interested, lubrication system of the project can be presented to you later. At this time we only want to introduce concept of the engine work to encourage about usefulness of the project.





Details of the Design

1. *Rotor* (Refer to Figure IX)

The rotor (1) with two slots (7) cut through the rotor in radial direction. It is set on the shaft (6). Force accepting plates (2) are spring (3) loaded and set into the slots (7).

2. *The Stator* (Refer to Figure IX)

It is a cylinder with two bumps (5) on the inner surface. These bumps separate the workforce chamber [(2) Fig. III] from the intake-compression chamber [(1) Fig. III]. The top portion of the bumps have slots [(1) Fig. I] in which two loaded springs are inserted to seal the plates [(9) Fig. IX], just like in the rotor description above. In both sides of the bumps appropriate channels are made. The function of these channels is:

- a. To intake the fuel-air mix [(5) Fig. I].
- b. To deliver compressed fuel mix into the combustion chamber [(10) Fig. IX]. The inlet of the combustion

- chamber has a saddle with a ball [(2) Fig. I] carrying the function of a check valve.
- c. The outlet of the combustion chamber channel [(3) Fig. I] serves as a deliverer of gases exploded by a spark to the workforce chamber.
 - d. Outlet for exhaust work force chamber gases [(4) Fig. I].

3. Combustion Chamber [(10) Fig. IX]

It is separately made and is attached to the engine chamber. It has a divider [(1) Fig. 8] to make two chamber out of one connected by a pathway [(H) Fig. VII]. Into the combustion chamber a spark plug is built in.

4. Full Assembly of the Engine

The rotor and stator are both covered with lids [(11) Fig. IX] with bear (13) housings [(12) Fig. IX]. A rotor shaft (6) is inserted into the two bearings.

The Concept of Engine Work

For engine start refer Fig.V

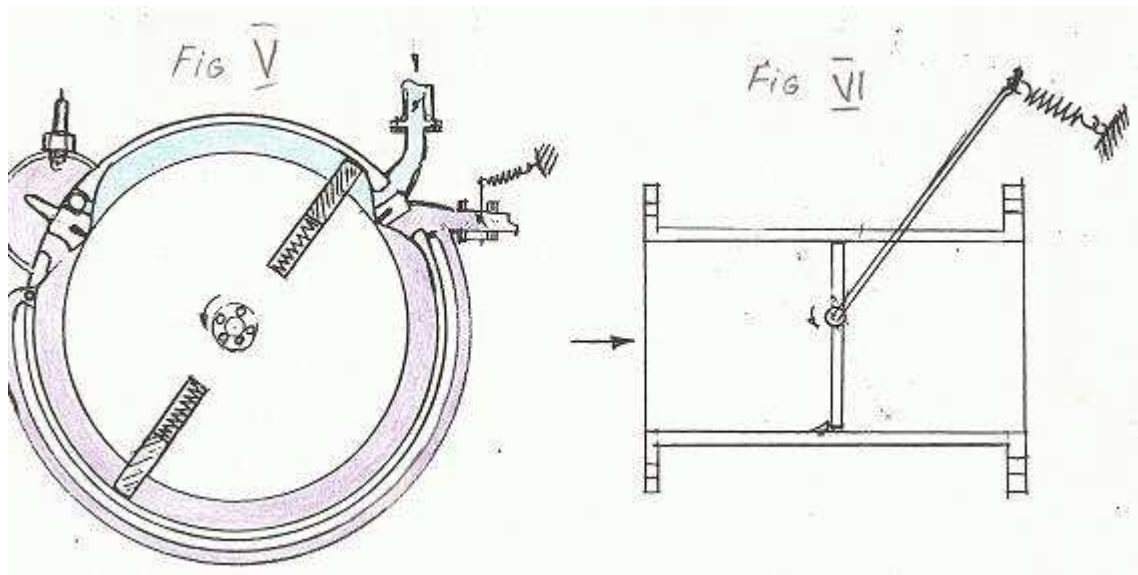
Rotor spins by engine starter to build-up an initial pressure in the combustion starter. After this engine start occurs when rotor is in position shown on Fig.IV. Four strokes take place by one single rotor turn at any time when engine runs: intake (induction), compression, power (combustion), and exhaust stroke.

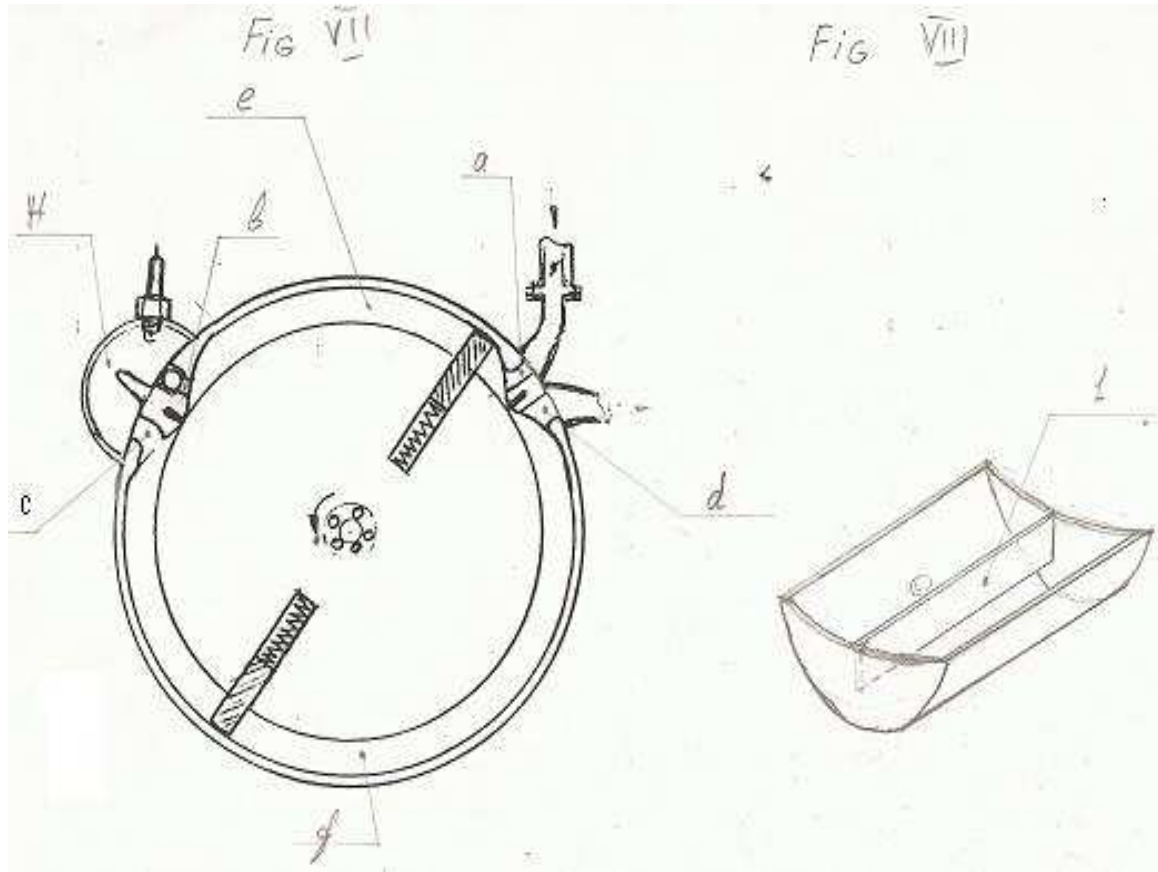
Fig.I shows the following actions: at lower department on the left of plate power stroke develops while on the right of the plate exhaust occurs; at upper department on right side of plate mixture of fuel and air intake occurs while on left side of the same plate compression begins.

Fig.II As soon as pressure before check valve become greater then after the check valve fuel mix flows into combustion chamber through opening while at opposite side of the plate fuel mix intake continues.

Fig.III Force accepting plate [(2) Fig.IX] relocates across seal plate [(9) Fig.IX]. Its spring is fully decompressed. Combustion chamber is partially filled with compressed fuel mix and ready for ignition and explosion.

Fig.IV It shows ignition from spark plug while force accepting plate passed the high pressure delivery channel.





Conclusion

Calculations show that by 1:1 scale of the drawings to the real engine and rotor with of 10 centimeters. And 3000r/min.power output develops over 20 horse power by intake volume of 200 cm^3 at two full rotations. To get the same output reciprocating principle engines require around 600 cm^3 .

If you are interested in this project please let me know as soon as possible.

If we don't get answer from you soon, we are going to send the idea to Mazda Industries or so.

Sincerely
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