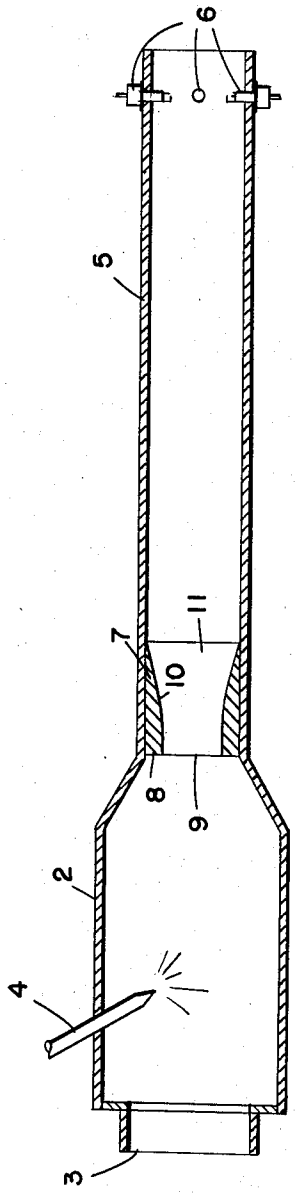
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RESO-JET MOTOR

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RESO-JET MOTOR

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4 Claims. (Cl. 60—35.6)

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This invention relates to a new and improved cyclically operating jet or reaction motor.

An object of this invention is to provide a jet or reaction motor that has an increased efficiency and thrust.

A further objective of this invention is to provide a cyclically operating jet or reaction motor that has an increased pressure on the compression or positive phase of the cycle and increased vacuum on the suction or negative phase of the cycle.

Other objects and advantages of this invention will become apparent as the discussion proceeds and is considered in connection with the accompanying claims and drawing, wherein like characters of reference designate like parts throughout, and wherein:

The figure is a longitudinal section view of the cyclically operating jet or reaction motor as embodied by this invention.

Referring now to the drawing, wherein for the purpose of illustration, is shown a preferred embodiment of this invention, the numeral 2 designates a fuel-air mixing chamber having an air inlet passage 3 and a conventional fuel inlet 4 as shown. Carried by the mixing chamber 2 is a combustion tube 5 having a conventional electric ignition means 6, such as high voltage spark plugs or the like, located adjacent the exhaust end of the said tube 5. The number of plugs and distance from the end of the tube 5 may be varied for each specific motor, but it is recommended that a plurality of plugs be used and that they be located approximately four inches from the exhaust or the open end of said tube.

In the intake portion of the exhaust tube 5, and preferably at the junction of the tube 5 and the mixing chamber 2, as shown, is a constriction 7 in the form of a sharp edged venturi, welded into or cast integral with the inner walls of the combustion tube 5. The said constriction 7 is in the form of a venturi with a shoulder 8, provided at the throat 9 of the venturi, as shown, facing into or toward the mixing chamber 2. The said constriction outwardly diverges away from the shoulder into a bell 10 opening down stream of the tube 5. Precise dimensions of the constriction 7, such as the ratio of the mouth and the throat and the length of the constriction to the length of the combustion tube etc., are omitted from this specification because they will vary with each different design of motor.

In operation, air is introduced into the mixing chamber during the negative or low pressure cycle of the motor. Fuel is injected into the chamber 2, continuously through the inlet 4.

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The mixed air-fuel then enters the combustion tube 5 through constriction 7. Initially the charge is fired by the spark plugs 6, then after motor is firing in resonance, the spark plugs are disconnected and subsequent ignition of the motor follows from the flash back of each preceding explosion. The mixed fuel-air burns backward from the spark or exhaust end of the combustion tube 5, building up pressure progressively until it reaches the constriction 7 where the wave front then reverses its direction and moves forward again through the tube toward the exhaust end, creating a low pressure area in the mixing chamber thus completing the combustion cycle.

It is to be understood that the form of this invention, herewith shown and described, is to be taken as a preferred example of the same, and that various changes in the shape, size and arrangement of parts may be resorted to, without departing from the spirit of this invention, or the scope of the subjoined claims.

What I claim is:

1. In a cyclically operating reaction motor having a fuel-air mixing chamber, an axially aligned air inlet means communicating with said chamber at one end, and having a peripheral shoulder normal thereto and facing said chamber, fuel inlet means in said chamber, and a combustion tube axially coextensive with said chamber and having intake and exhaust ends, the said intake end being in open communication with the said mixing chamber at its other end; ignition means in said combustion tube adjacent the exhaust end of said tube, and a sleeve forming a constriction in said combustion tube adjacent the said intake end, the inside of said sleeve being in the form of a venturi having a sharp edge with a shoulder normal to said venturi at its throat facing the said mixing chamber.

2. A reso-jet engine comprising an air inlet, a fuel-air mixing chamber connected thereto, a fuel nozzle in said chamber, a combustion tube open at both ends and axially aligned with said chamber, ignition means in said combustion tube, said combustion tube having a Venturi throat at its inner end adjacent said chamber with a normal peripheral shoulder forming a sharp inner edge at the chamber end of the throat, whereby a resonating pressure wave is produced in said combustion tube between the ignition means and said Venturi throat.

3. A reso-jet engine comprising an air inlet, a fuel-air mixing chamber connected thereto, a fuel nozzle in said chamber, a combustion tube open

at both ends and axially aligned with said chamber, ignition means at one end of said combustion tube, said tube having a restricted passageway at the chamber end, said passageway characterized by having a sharply edged normal peripheral face toward said chamber and a bell-shaped face opening toward the other end of said combustion tube, whereby a resonating pressure wave is produced in said combustion tube between the end having the ignition means and the passageway.

4. In a reso-jet motor having means defining an air inlet, and a fuel-air mixing chamber having a tail pipe secured at one end of the chamber so as to form a continuous passage for air through the reso-jet motor, the combination of a restriction device positioned at the forward end of said tail pipe where the tail pipe joins the mixing chamber, said restriction device including a narrow throat having walls tapering outwardly to the walls of said tail pipe, said throat further

characterized by having the end thereof facing said mixing chamber cut off squarely to form an inner peripheral shoulder in said mixing chamber with a sharp internal edge, and ignition means in said tail pipe rearwardly of said restriction device whereby the wave fronts of explosions of fuel-air mixtures initiated by said ignition means are reflected by the tapering walls of said tail pipe.

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