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K. C. HOWARD
CONTINUOUS COMBUSTION TYPE ROTATING
COMBUSTION PRODUCTS GENERATOR
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2,603,947

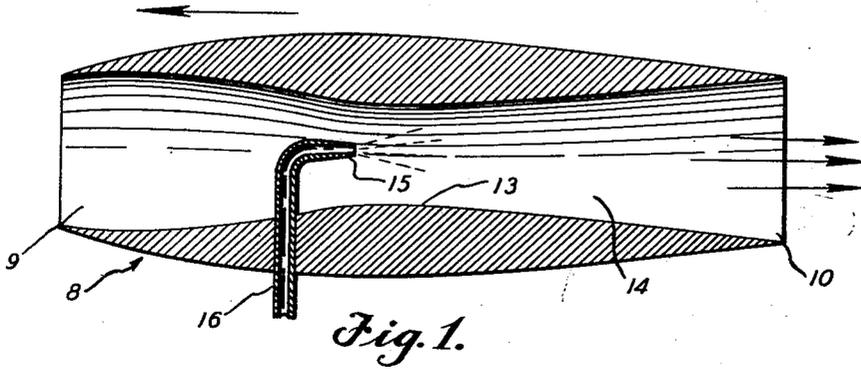


Fig. 1.

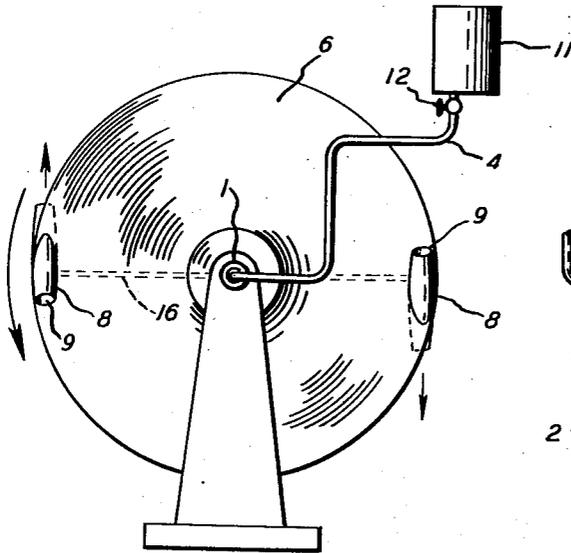


Fig. 2.

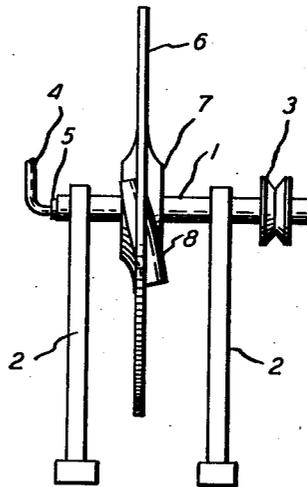


Fig. 3.

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CONTINUOUS COMBUSTION TYPE ROTATING COMBUSTION PRODUCTS GENERATOR

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1 Claim. (Cl. 60—39.35)

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This invention relates to rotary engines and has reference to a ram jet arrangement for rotation around a central axis.

An object of the invention is to provide a relatively small and efficient rotary engine and including ram jet units for attaining high angular velocity.

Another object of the invention is to provide, in a ram jet rotary engine, a construction and arrangement whereby the exhaust gases from the jet units do not enter the unit intakes, and will thereby increase the efficiency of engines of the referred to class.

A further object of the invention is to provide a fuel injection system for rotary jet engines whereby centrifugal force is utilized for forcibly supplying the fuel to the combustion chambers of the jet units.

These and other objects of the invention will become apparent from the following description of the accompanying drawing of exemplary forms of the invention, and wherein:

Figure 1 is an enlarged vertical sectional view of a typical ram jet unit which forms a part of the present invention.

Figure 2 is an elevational view of a rotary jet engine embodying the present invention.

Figure 3 is a side view of the jet engine illustrated in Figure 2.

The invention illustrated includes a tubular shaft 1 rotatably supported between a pair of standards 2. A power take-off, such as a pulley 3, is secured to the shaft 1 near one end thereof, and a fuel line 4 is provided at the other end of the said shaft and includes a closure 5 adapted to fit the rotatable end of the shaft.

There is a disk 6 rigidly secured to the shaft 1 by means of a hub 7 and multiple ram jet units 8 are provided in the disk 6 near the periphery thereof and are angularly disposed relative to the plane of the said disk, the length of the said units being substantially perpendicular to the disk radii. It will be noted in this form of the invention all intakes 9 of the units 8 are on one side of the disk 6, whereas all jet unit outlets or exhausts 10 are on the other side of the said disk.

Fuel is supplied to the line 4 in the form of the invention illustrated in Figures 2 and 3 by means of a tank 11 connected with the said line, and which tank may be provided with a cock 12.

The jet unit illustrated in Figure 1 is representative of any ram jet unit, and since such units

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are known to the art, it will not be described in detail. However, such units are generally comprised of the referred to intakes 9, outlets 10, and each combination thereof has a venturi 13 opening between the said intake and outlet. Between each venturi 13 and its outlet 10 there is a combustion chamber 14 where, in the forward end thereof, there is a rearwardly directed fuel outlet 15 which is the angular end of a fuel supply line 16 connected with the tubular shaft 1.

The described invention is operated by first rotating the same in the direction indicated by the arrows outwardly of the various figures by suitable auxiliary means. The fuel is thus delivered at the outlets 15 of the fuel lines 16 by centrifugal force, and when sufficient compression is attained from the incoming rammed air, the fuel mixture is initially ignited, such as by placing a flame across the path of the units 8. The reactionary force of the resulting jet exhausted through the outlets 10 will thus result in the rotation of the engine and the delivery of power at the take-off 3.

What is claimed is:

In a rotary engine, a tubular shaft, means supplying fuel to the inside of said shaft, a disk concentrically mounted on said shaft and perpendicular to the axis thereof, relatively short and substantially straight rammed air jet units angularly positioned through said disk at equal distances from the center of the latter, the length of each said jet unit being arranged substantially perpendicular to its theoretical disk radius, said jet units also being arranged with all of their inlets positioned on one side of said disk and all of their outlets positioned on the other side of said disk, and supply line means for communicating fuel from said shaft to said jet units.

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