

Jan. 17, 1950

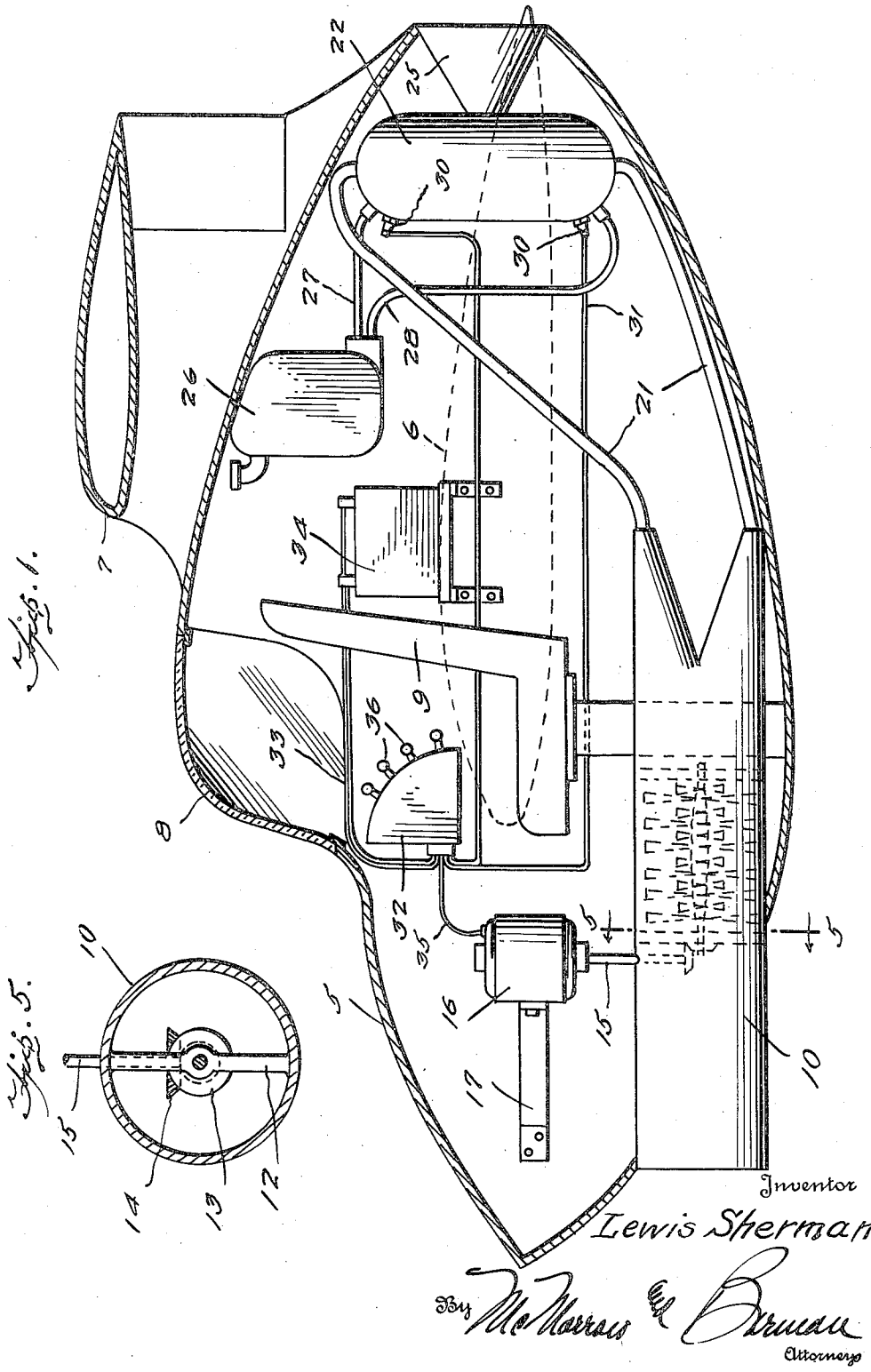
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2,494,635

COMPRESSOR FOR JET PROPELLING APPARATUS

Filed March 9, 1945

2 Sheets-Sheet 1



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Fig. 2.

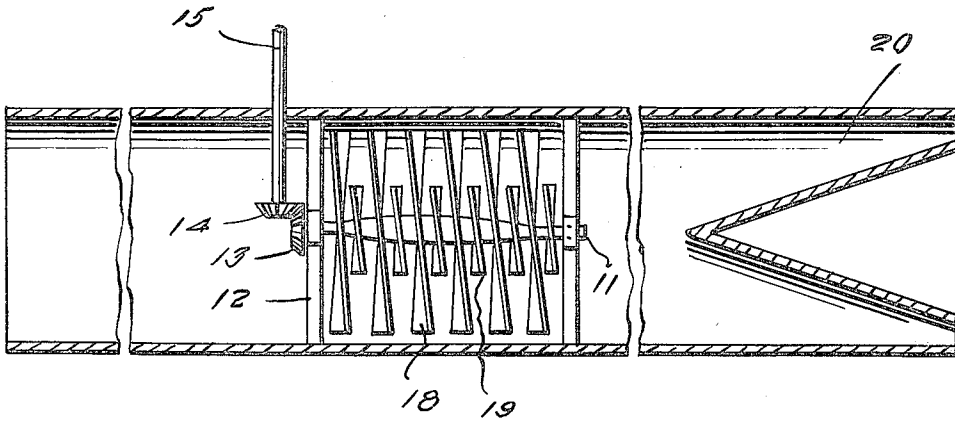


Fig. 3.

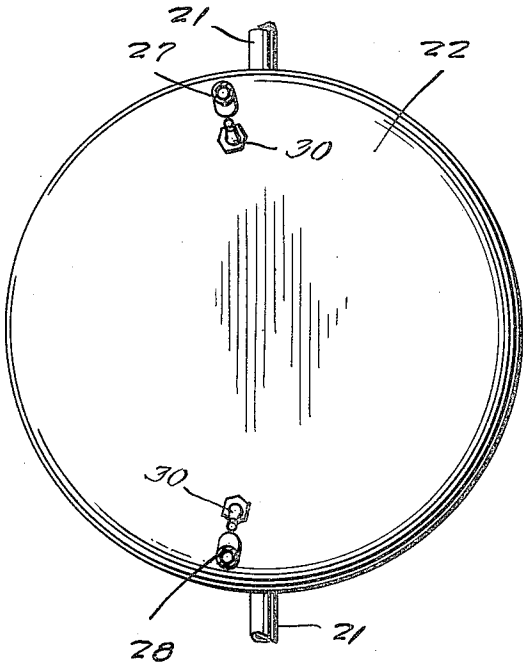
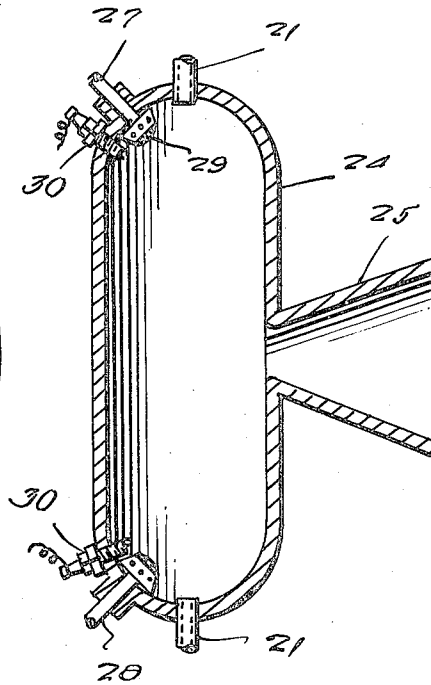


Fig. 4.



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UNITED STATES PATENT OFFICE

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COMPRESSOR FOR JET PROPELLING APPARATUS

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1 Claim. (Cl. 230—122)

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The present invention relates to the jet propulsion of airplanes of a type utilizing the reaction generated by jets of a gaseous substance discharged from the machine through specially constructed nozzles and in which the propelling force is created by the burning of a liquid hydrocarbon and oxygen in a combustion chamber and the ejection of the products of combustion through a nozzle with reactive propelling effect.

An important object of the present invention is to provide a heating chamber for air admitted thereto under pressure and in which the air is expanded through the medium of burners positioned in the chamber and discharging the products of combustion through a flared nozzle at the rear of the airplane to utilize the reaction exerted by the discharge of the products of combustion to propel the airplane.

A still further object of the invention is to provide power operating means for supplying air under pressure to the heating chamber as well as to utilize the forward momentum of the airplane to build up the air pressure supplied to the heating chamber.

A still further object is to provide an apparatus of this character of simple and practical construction, which is efficient and reliable in operation, relatively inexpensive to manufacture and otherwise well adapted to the purposes for which the same is intended.

Other objects and advantages reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming part hereof, wherein like numerals refer to like parts throughout, and in which

Figure 1 is a longitudinal sectional view of the fuselage of an airplane equipped with the jet propulsion mechanism forming the subject of the present invention,

Figure 2 is a longitudinal sectional view of the air inlet tube,

Figure 3 is a front elevational view of the heating chamber,

Figure 4 is a vertical sectional view thereof, and

Figure 5 is a fragmentary sectional view of the air inlet tube taken substantially on a line 5—5 of Figure 1.

Referring now to the drawings in detail wherein for the purpose of illustration I have disclosed a preferred embodiment of the invention, the numeral 5 designates the fuselage or cabin of an airplane which may be of any suitable shape or design and from the opposite sides of which wings 6 project. A wing structure 7 may also be

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mounted above the fuselage and the front upper portion of the fuselage is provided with a windshield 8 behind which is positioned the pilot's seat 9.

A tube 10 is positioned longitudinally in the lower portion of the fuselage and projects from the front end thereof with the front end of the tube open.

A shaft 11 is journaled axially in the tube in spiders 12, one end of the shaft having a bevelled gear 13 attached thereto driven by a similar gear 14 on a shaft 15 connected to an electric motor 16 which is secured in brackets 17 within the fuselage.

Secured to the shaft 11 are a plurality of fan blades 18 between which are interposed relatively small fan blades 19, all of the fan blades cooperating to draw air into the front end of the tube 10 and compressing the same in a pair of oppositely-disposed, rearwardly-directed, frusto-conical bifurcations 20 comprising reduced passages at the rear end of the tube.

Pipes or tubes 21 are connected to the passages 20 and lead to a container 22 forming a heating chamber, the pipes or tubes 21 preferably communicating with the heating chamber through diametrically opposite sides thereof.

The chamber 22 is positioned in the rear end of the fuselage and is positioned vertically therein to provide flat front and rear walls 23 and 24. Communicating with the rear wall 24 of the chamber and extending rearwardly therefrom is a frusto-conical or funnel-like nozzle 25 having its reduced end communicating with the chamber and with its wide end opening into the atmosphere at the rear or tail of the fuselage.

A fuel tank 26 is supported in the fuselage at the upper portion thereof and from which upper and lower supply pipes 27 and 28 extend and communicate with the chamber 22 at points adjacent the pipes 21. Burner nozzles 29 are attached on the ends of the pipes 27 and 28 within the chamber, the fuel being supplied to the nozzles 29 from the tank 26 by any suitable pressure means, not shown.

Spark plugs 30 are also positioned in the chamber 22 immediately adjacent the nozzles 29 and from which circuit wires 31 extend to a switch housing 32 adjacent the pilot's seat 9 and from which circuit wires 33 also extend leading to a storage battery 34, or other suitable source of electrical energy. Circuit wires 35 also extend from the motors 16 into the switch housing, the circuits for the motor and spark plugs being controlled by a plurality of switch levers 36.

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In the operation of the device the fans 18 and 19 are driven by the electric motor 16 to force air toward the rear end of the tube 10 where the air is compressed in the restricted passages 20 and then fed by the pipes or tubes 21 to the chamber 22. At the same time fuel is supplied to the nozzles 29 from the tank 26 and ignited by the spark plugs 30.

The compressed air is thus expanded as it enters the chamber 22 and is discharged through the restricted opening of the nozzle 25, the reaction of the force of the air or products of combustion being discharged from the nozzle serving to propel the aircraft forwardly.

The forward movement of the airplane will force air into the open tube 10 to thus assist the blades 18 and 19 to further compress the air at the rear end of the tube after the airplane is maintained in flight.

In view of the foregoing description taken in conjunction with the accompanying drawings, it is believed that a clear understanding of the construction, operation and advantages of the machine will be quite apparent to those skilled in the art. A more detailed description thereof is accordingly deemed unnecessary.

It is to be understood, however, that even though I have herein shown and described a preferred embodiment of my invention, that the same is susceptible to certain changes fully comprehended by the spirit of the invention as herein described, and the scope of the appended claim.

Having thus described the invention, what I claim is:

An air compressor for a jet propulsion engine or the like, comprising an elongated cylindrical tube having its front end open, the tube being formed at its rear end to provide a pair only of diametrically oppositely disposed elongated rearwardly tapering tubular extensions, the rear ends

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of the extensions being open, the extensions forming longitudinally rearwardly diverging passages leading from the cylindrical tube, a longitudinally extending shaft rotatably mounted within the cylindrical tube near the longitudinal center of the tube and forwardly of the rear tapered extensions, the shaft being arranged substantially at the axial center of the cylindrical tube, the cylindrical tube projecting a substantial distance longitudinally forwardly of the forward end of the shaft, a plurality of longitudinally spaced radial blades fixedly mounted upon the shaft for rotation therewith, and mechanical means operatively connected with the shaft for rotating the same.

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