

THE SIGMA SQUAD NEWS BLOG - MARCH 18TH, 2008

Let me say "Thank you" to everybody who has written in. Your praise and support are greatly appreciated. I am overwhelmed by your positive responses, and greatly appreciate your feedback on the books. I promise to keep the quality up, and make sure that every one is 100% happy with their books.

It is official! Coast To Coast AM's George Knapp will be interviewing me this Sunday, the 23rd of March, 2008!

Because of the large volume of emails, I am responding with this mailing, since answers are the same for so many of each of the questions.

Many people have written in, requesting information on power systems. So, I have just added 3 new volumes. These books were originally held back to see how well the first books do, but the people have spoken. The knowledge is wanted. The books are subdivided as follows:

- Volume #7 "Esoteric Power Systems" covers energy systems that are unknown to most people. These power systems bring a level of self reliance through stable energy generation that can be used for powering flying craft or for home production. 614 pages 99% patents - 1% commentary. Excerpts below:
 1. *"Presenting a free energy electric motor that is a motor that produces much greater power than it uses to run it, because the armature has no magnetic coil windings where it is comprised only of iron and is motored by a timed sequence of intermitting electrical excitation of the stator magnetic coils."*
 2. *An engine is provided which will greatly reduce atmospheric pollution and noise by providing a sealed system engine power source which has no exhaust nor intake ports."*
 3. *"A motor shaft rotates from energy derived from charged particles emitted from atomic waste."*

- Volume #8 "Permanent Magnet Systems" covers the "forbidden" world of self powering energy production systems. The use of permanent magnets in generators can far exceed what the public has been told is possible in power generation. 621 pages 99% patents - 1% commentary. Excerpts below:

1. *"This invention relates to electric rotating machines and more particularly to electric motors having a self-starting capability."*
 2. *"The invention relates to a permanent magnet perpetual motion machine in which one permanent magnet arrangement sets up a steady field in an annular air-cap which interacts with the field of another arrangement which comprises of a set of permanent magnets in a particular layout, or a particularly shaped coil connected to a D.C. source, located in the annular air-cap, to cause perpetual rotation of either of the two arrangements, the other being stationary."*
 3. *"Any of the devices described here will produce an excess of energy, while at the same time work perpetually without an external source of energy, but yet are very simple to construct."*
- Volume #9 "Hydrogen Power Systems" is uniquely written for the average person who is interested in utilizing alternative fuels, namely hydrogen. While these hydrogen technologies can be used for flying craft, this particular volume has as its focus the revealing of public domain technology to **convert your standard automobile to a water/hydrogen fueled vehicle**. 632 pages 99% patents - 1% commentary. Excerpts below:

1. *"A mechanism allows for a simple gasoline engine to be converted to run using hydrogen as a fuel by the introduction of a pulse of hydrogen during the intake stroke."*
2. *"The automobile engine is a standard version of those used in modern automobiles but the fuel used to power the engine is an air and hydrogen mixture."*
3. *"A combustion engine which uses in combination oxygen and an excess of hydrogen as fuel has a substantially closed exhaust system which recirculates the gaseous part of the exhaust through the engine and expels only water."*

It has been my goal to make as many people aware of the existing UFO technology as possible, to help transform the current world into the world that we have been promised since we were kids. I will make public disclosure of the building/reconstruction of the public domain patented technology in the books as funding permits. All of the proceeds from the sales of the books goes to this purpose.

Which brings us to the prospectus. I am extending an open invitation to funding and/or investors on my personal research and developments. This work and advancement, when external funding manifests, will only be disclosed under patent issuance and agreement with investors (NDA's and all that fun stuff). But just remember

that the existing technology as exposed in the UFO How-To series covers the ability of the glowing balls of light to make those right-angle maneuvers at unbelievably high speed while being invisible to radar. These craft exist and are replicable by the technological recipes (patents) in the series.

We are still working on the bundle solution... My publisher/printer (lulu.com) is not open to selling the books as a bundle. I am trying to convince them otherwise, and I am open to suggestions.

A number of people have commented on my supposition that a UFO could have been built that was flown and powered by steam. For those Doubting Thomas-es, (Doubting Thomi?) I have attached to this newsletter US Patent #6290184, "Flying Craft with Water and Air Propulsion Source." Please note the opening words:

"The invention relates to a flying craft capable of swift flight through a fluid medium, such as air, water or space, and a propulsion system therefore that is energy efficient, using air and water as main propulsion energy."

The question has also been raised about the claims of the "ten thousand mile per gallon carburetor." So I quote directly from Shell.com's Ecomarathon:

http://www.shell.com/home/content/uk-en/society_environment/eco_marathon/about/about_eco_marathon_0204.htm

"The history of the Shell Eco-Marathon stretches back over 50 years. It originated at Shell's research lab in Illinois, US, with friendly wagers between fellow scientists to see who could get the most miles per gallon from their vehicles. From these humble origins, where the winner scarcely achieved 50MPG, more organized competitions evolved.

In 1977, Shell organized the first competition at Mallory Park essentially for student teams. In 1978 the competition grew further and an open class was introduced.

Over the years, the fuel economy record has been rapidly improved. The most recent record was set at the 2003 event by team Microjoule from St Sebastien/Loire in France. They achieved a fuel consumption figure of

10,705 miles per gallon - beating the previous record set by the same team in 2001 by nearly 500 mpg."

Negotiation with the History Channel's cable show UFO Hunters is currently underway. I'll keep you up to date as developments progress.

And for those who came in a little late: No, I am not a debunker. ;-)

And now on to the "Flying Craft with Water and Air Propulsion Source."

Check back soon!

Luke "Lucky" Fortune



US006290184B1

(12) **United States Patent**
Paterro

(10) **Patent No.:** **US 6,290,184 B1**
(45) **Date of Patent:** ***Sep. 18, 2001**

(54) **FLYING CRAFT WITH WATER AND AIR PROPULSION SOURCE**

(76) Inventor: **Von Friedrich C. Paterro**, 23-B 23rd Floor, Makati Tuscany 6751 Ayala Avenue, Makati City (PH), 1226

(*) Notice: This patent issued on a continued prosecution application filed under 37 CFR 1.53(d), and is subject to the twenty year patent term provisions of 35 U.S.C. 154(a)(2).

Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 32 days.

(21) Appl. No.: **09/200,703**

(22) Filed: **Nov. 27, 1998**

(51) **Int. Cl.**⁷ **B64G 1/40**

(52) **U.S. Cl.** **244/172; 244/23 R; 244/73 R; 60/39.182; 60/644.1; 60/227; 376/318; 376/907**

(58) **Field of Search** **244/23 R, 172, 244/73 R; 60/644.1, 227; 376/318, 319, 907**

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Primary Examiner—Charles T. Jordan

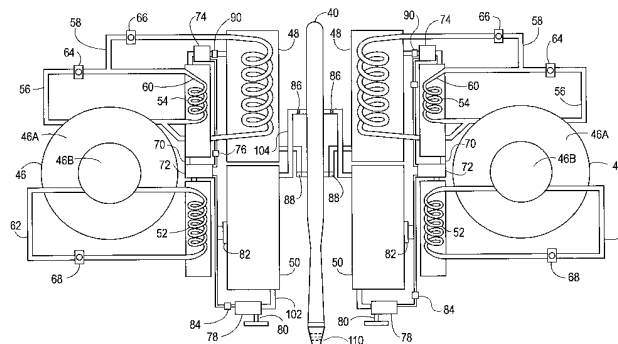
Assistant Examiner—Tien Dinh

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(57) **ABSTRACT**

A propulsion system for a flying craft uses an air and water fuel source to provide propulsion thrust. The system includes two steam generating units, one attached directly to a compact turbine and the other connected to a compressor. The compressor compresses the steam from the latter steam generator, including excess steam from the turbine generator, and pumps it to a super-heated steam compression chamber. At the same time, the turbine generator powers another compressor to take in air from the atmosphere and pumps it into a super chilled compression chamber. After both the compressed super-heated steam and the compressed super chilled air have attained required pressure, volume and temperature, both gases are fed into an expansion chamber under appropriate control. The expansion chamber operates as a rocket booster and is equipped with an exhaust system made up of a main nozzle and several auxiliary thrust vectoring nozzles. Reactionary forces within the expansion chamber, caused by expansion of the chilled steam, cause thrust and generated heat. The generated heat heats the chilled compressed air within the gas expansion chamber, causing expansion of the chilled air, providing further thrust. The exhaust system controls exiting of the expanding gases to control and vector the thrust. Preferably, the heat source for the system is one or more nuclear reactors.

24 Claims, 16 Drawing Sheets



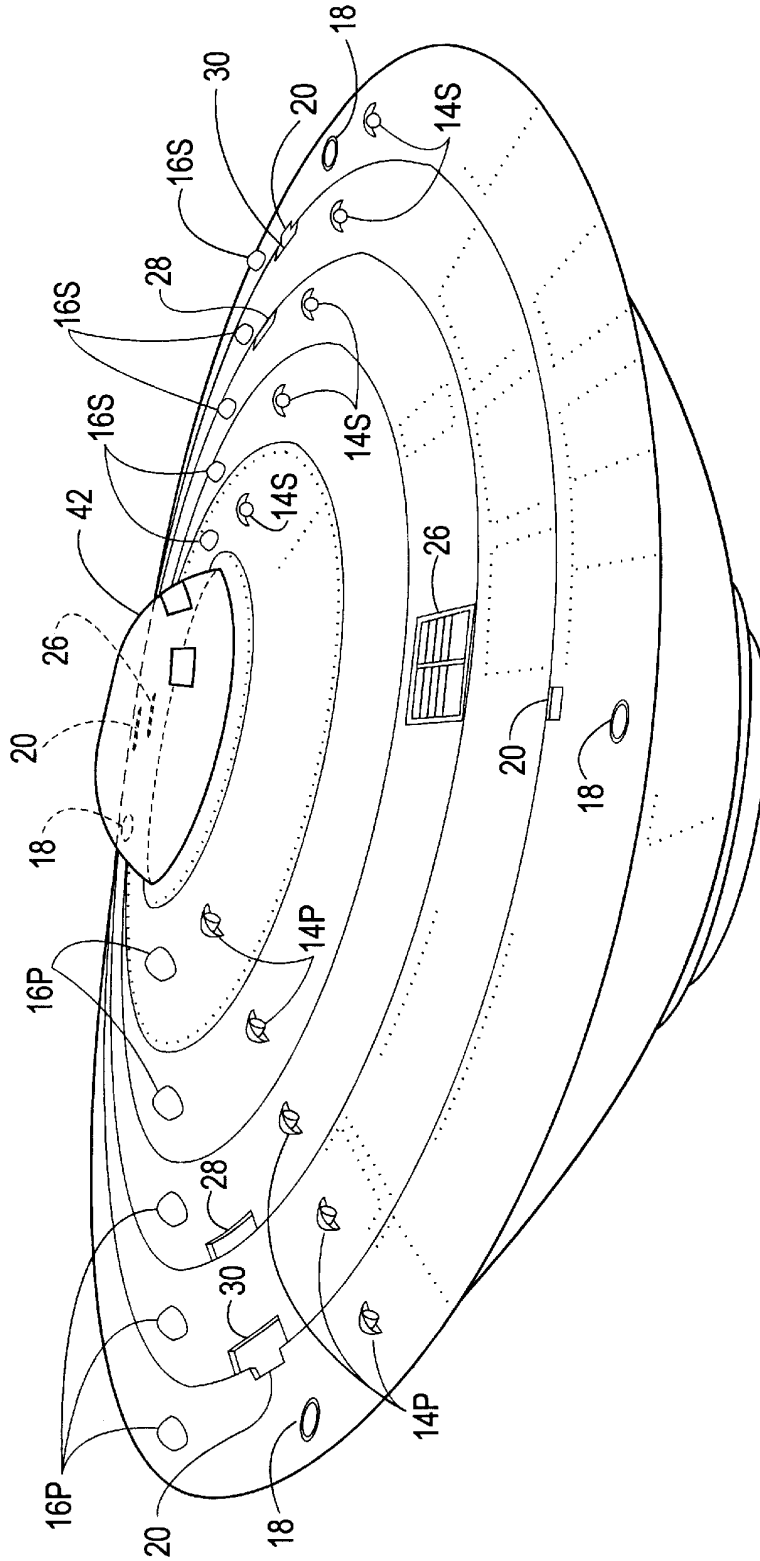


Fig. 1

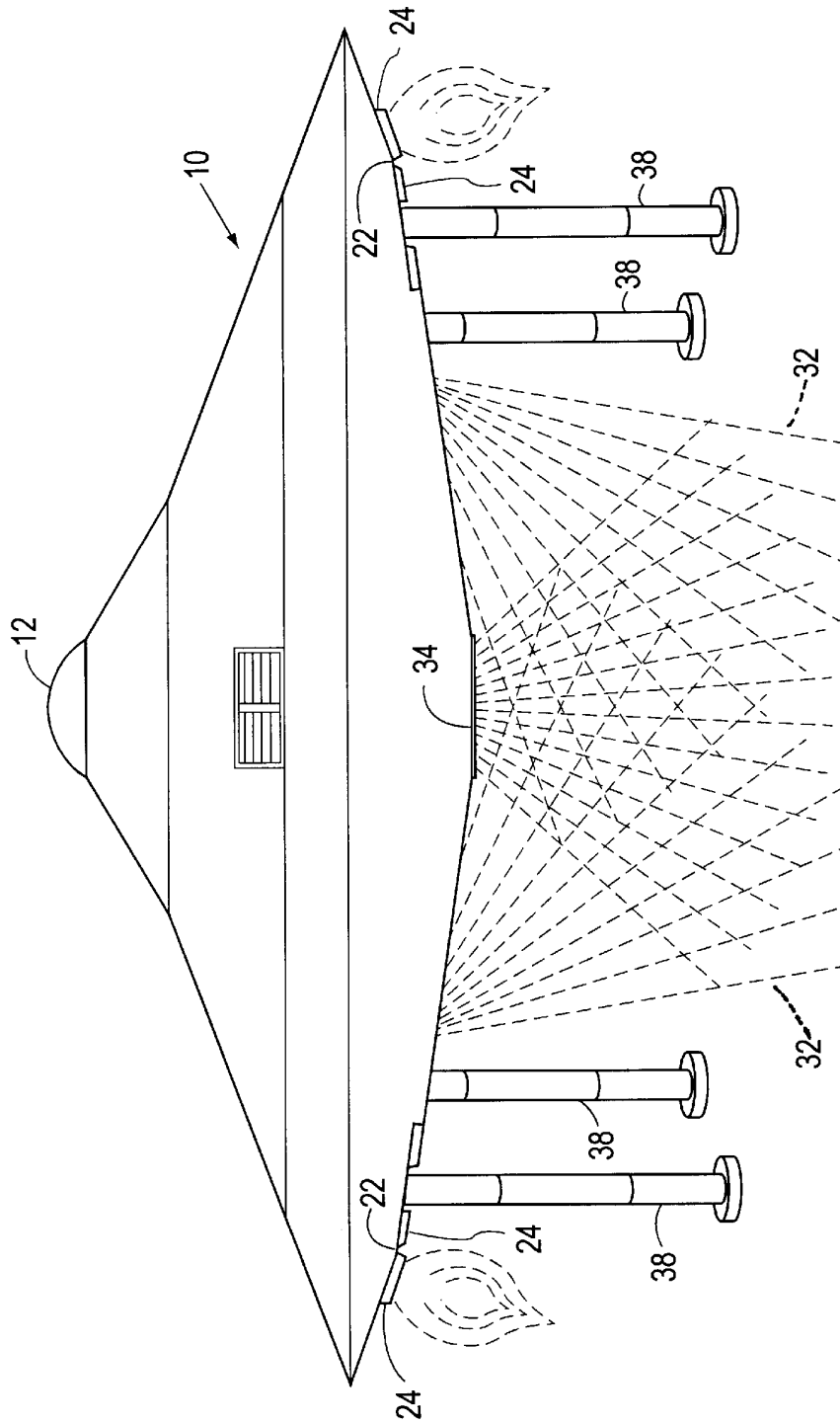


Fig. 3

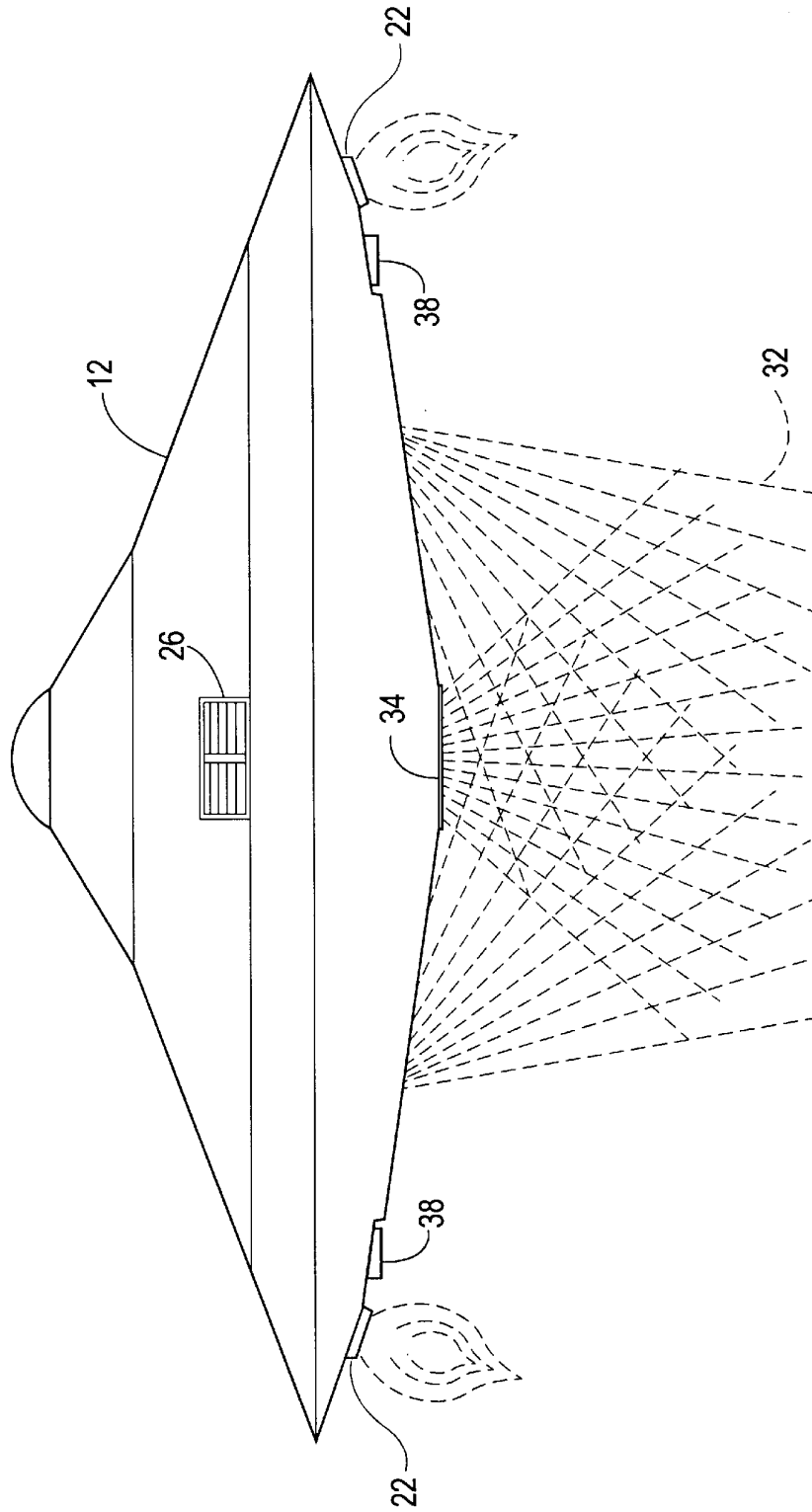


Fig. 4

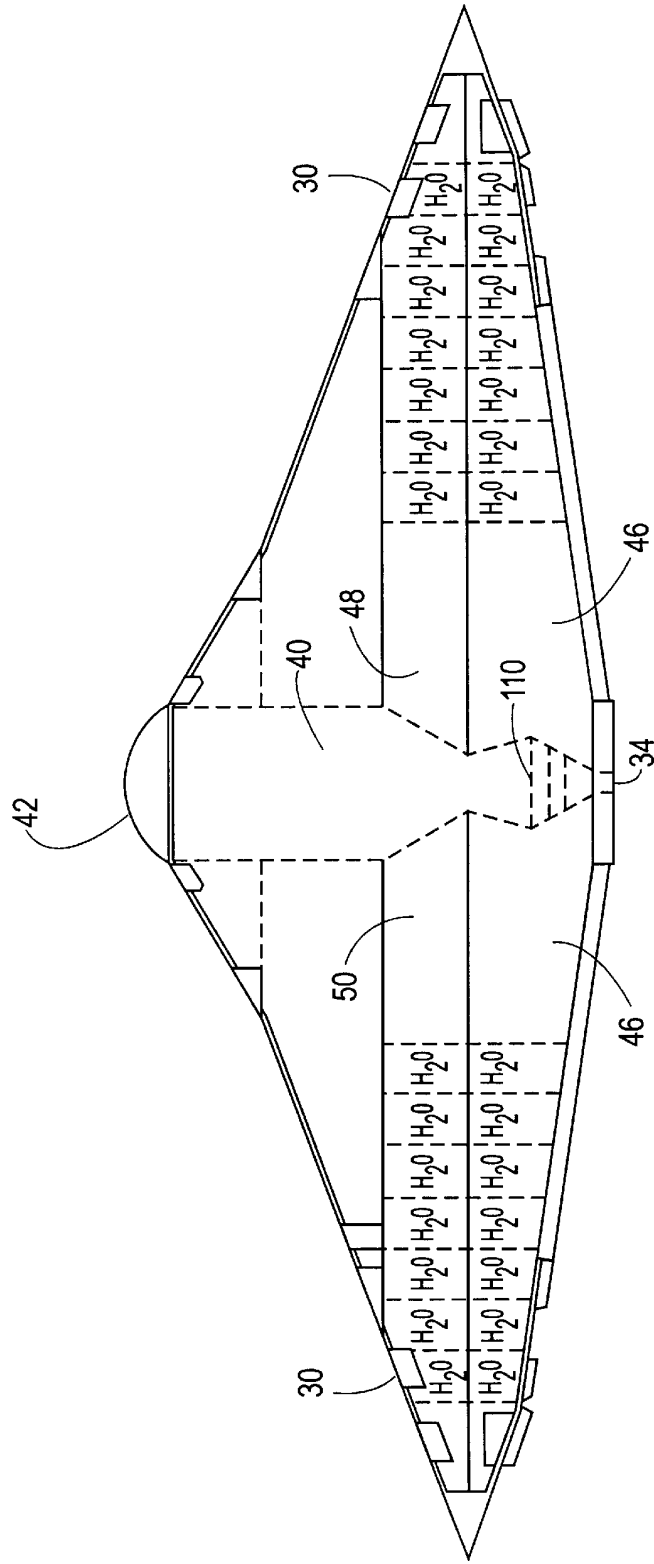


Fig. 5

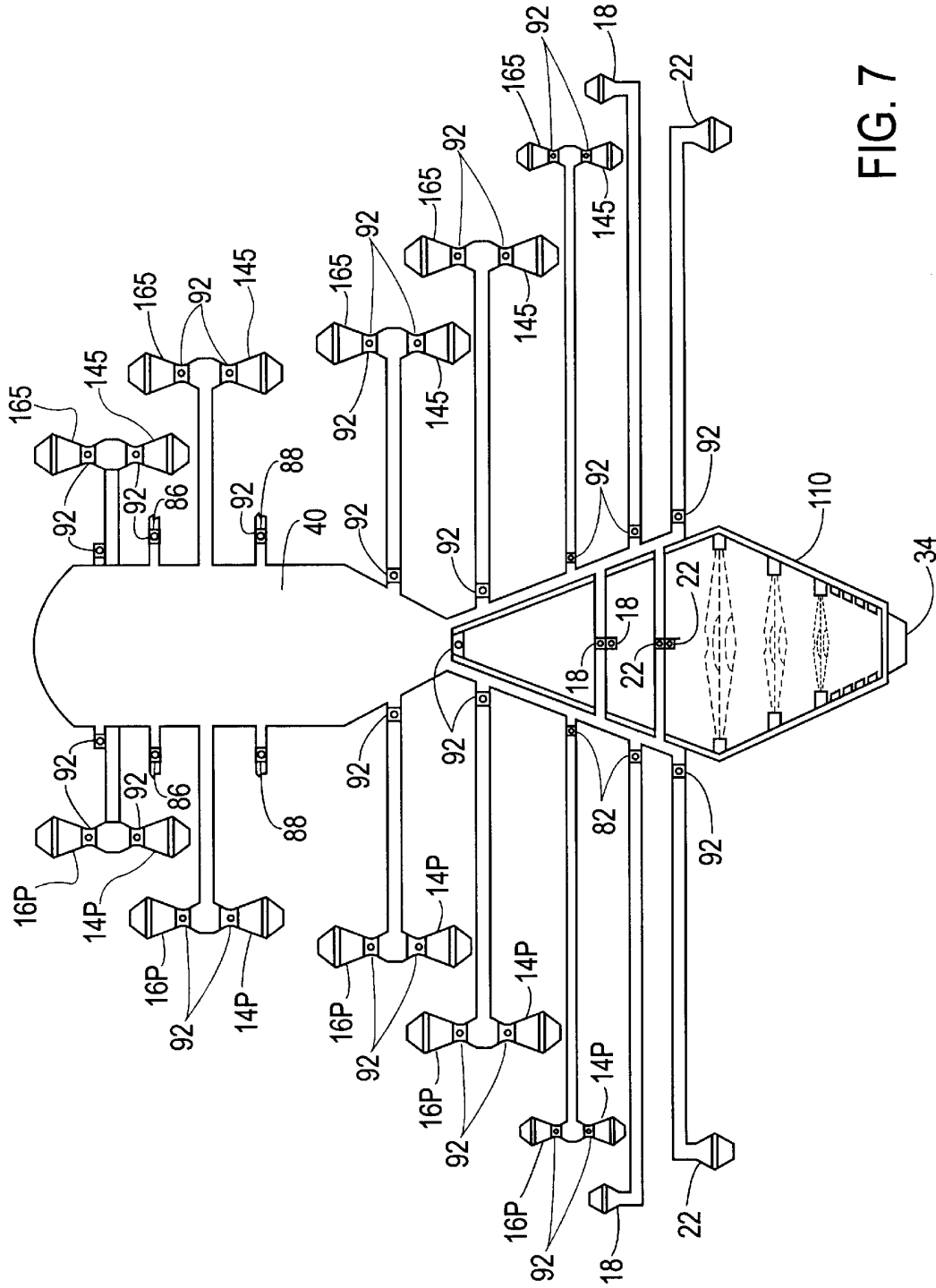


FIG. 7

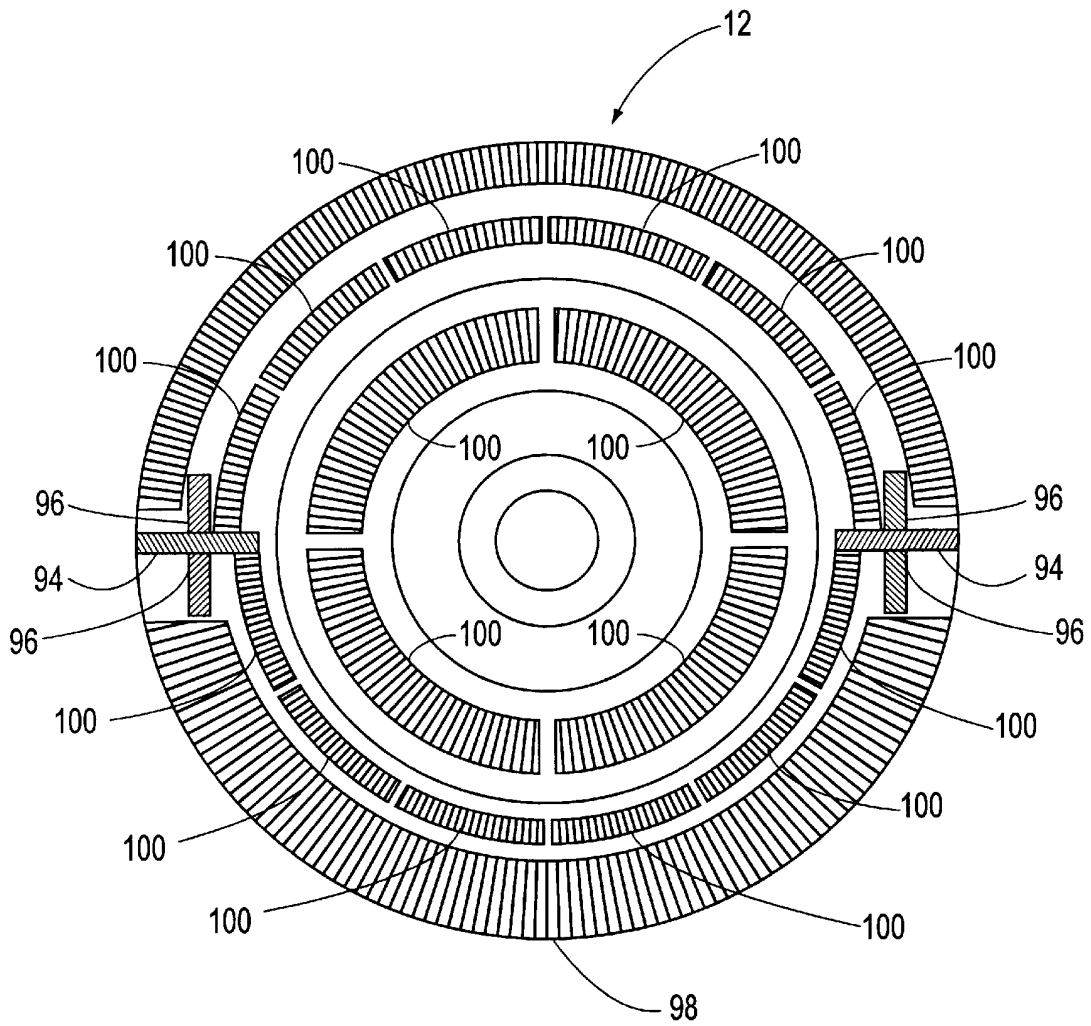


FIG. 8

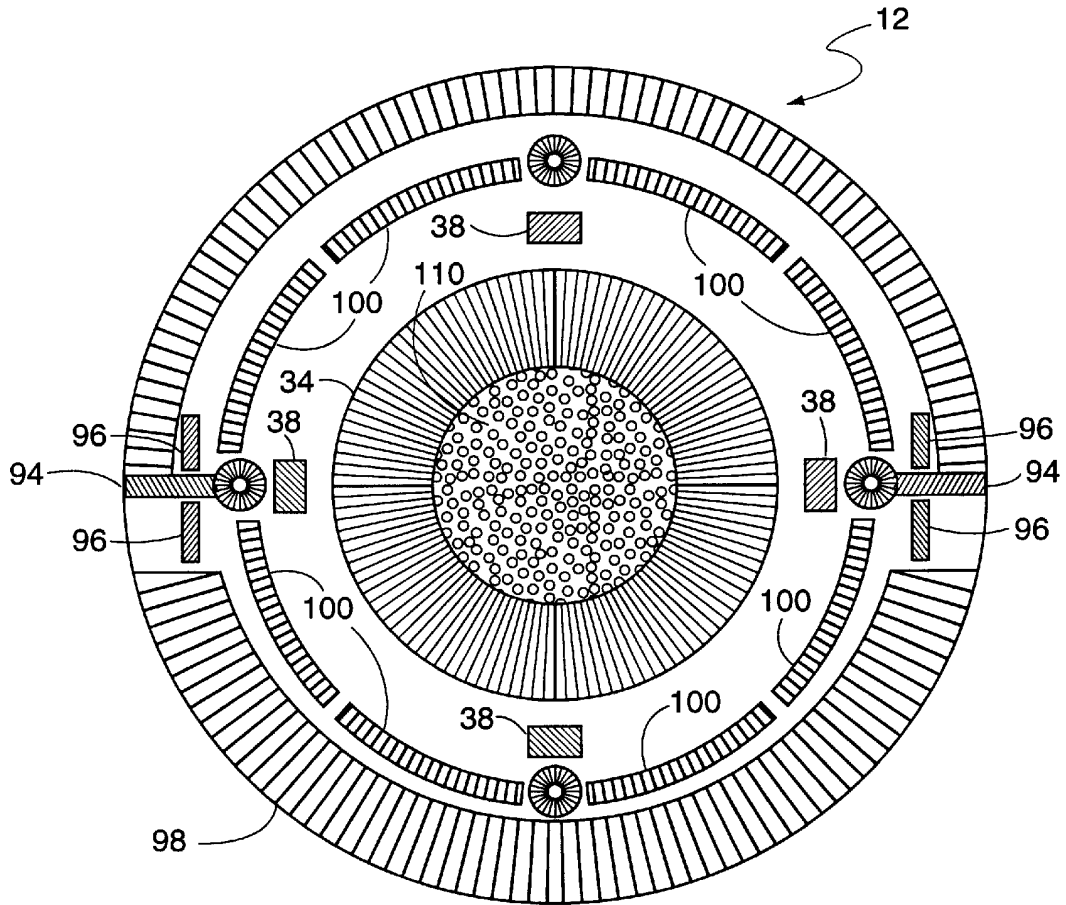


FIG. 9

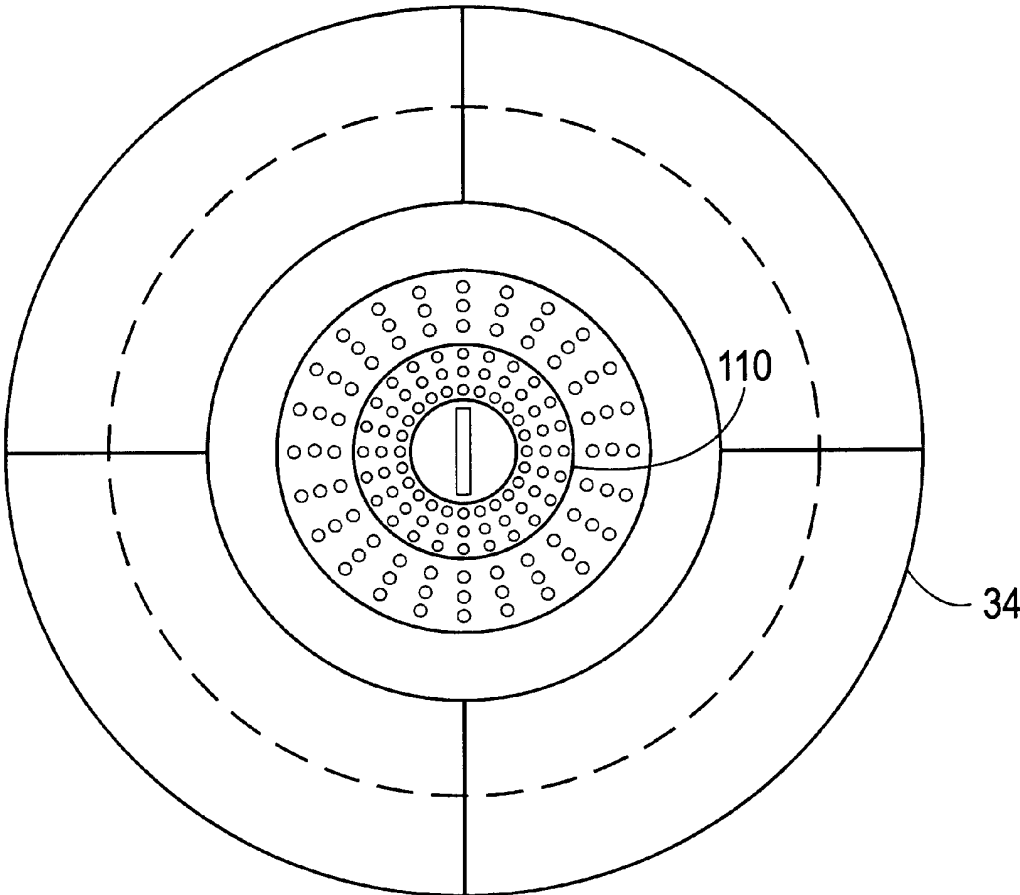


FIG. 10

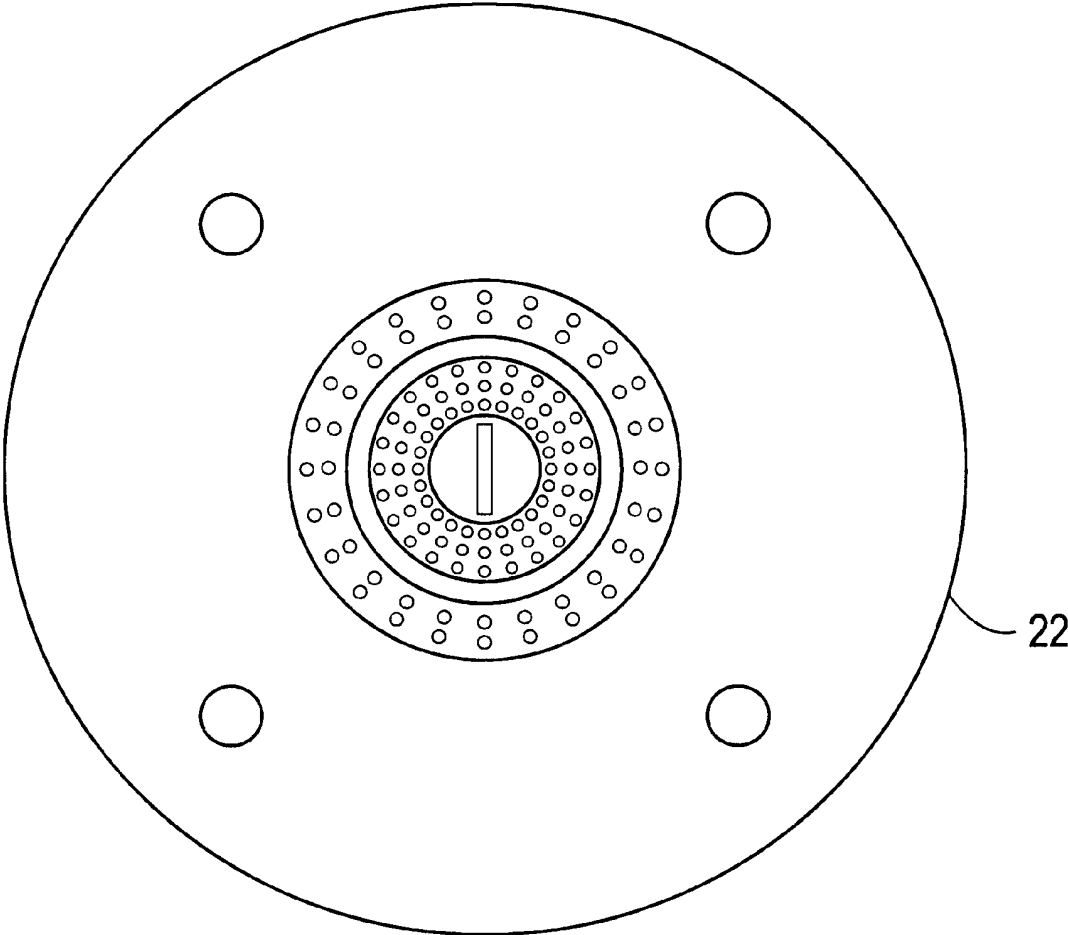


FIG. 11

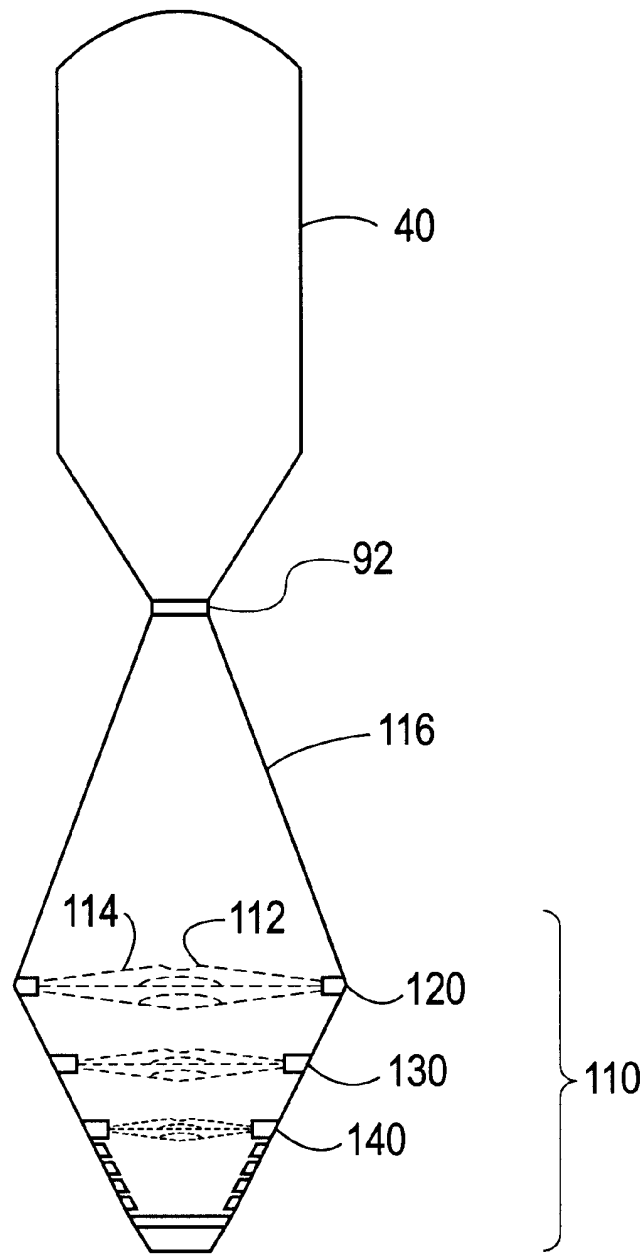


FIG. 12

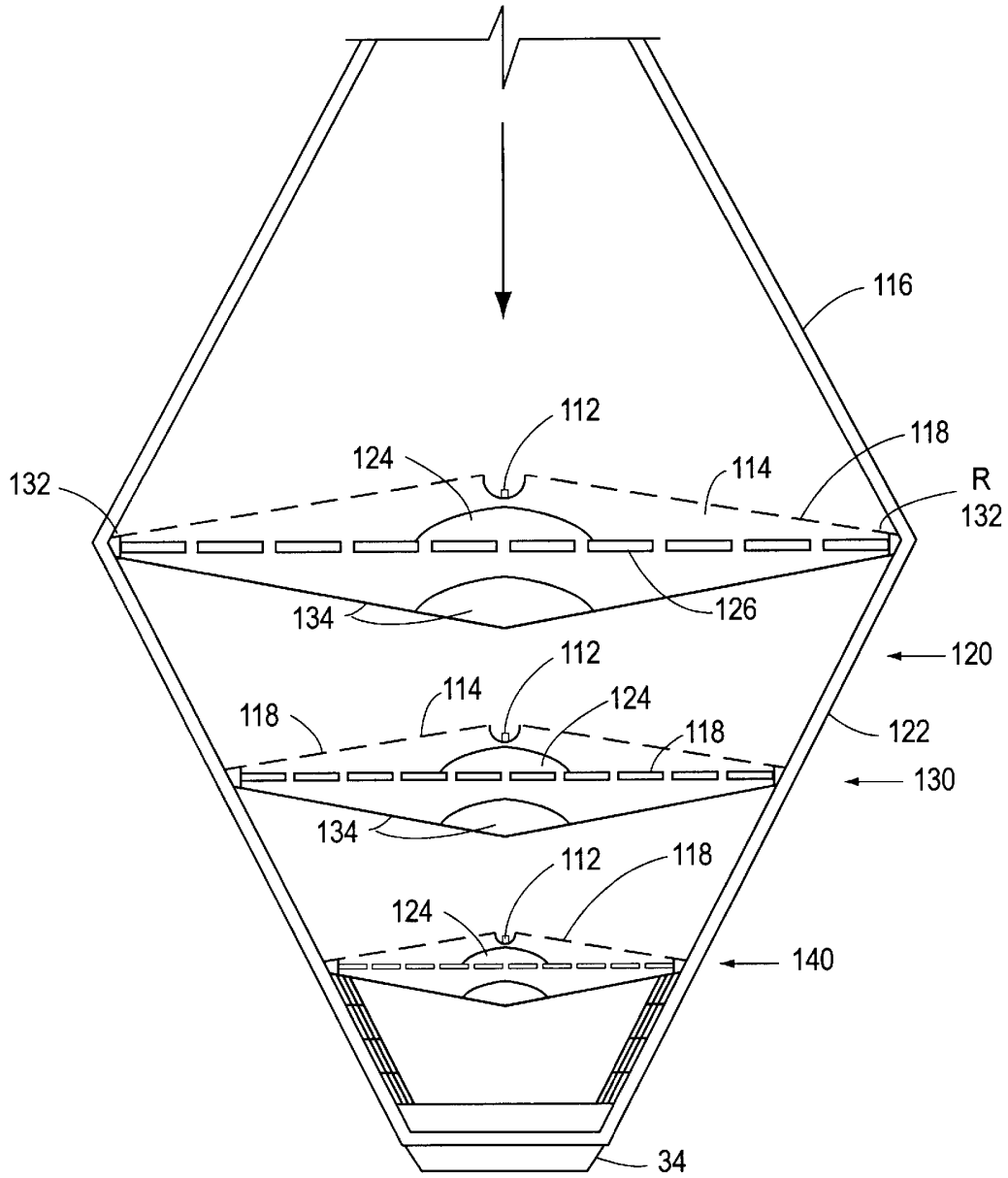


FIG. 13

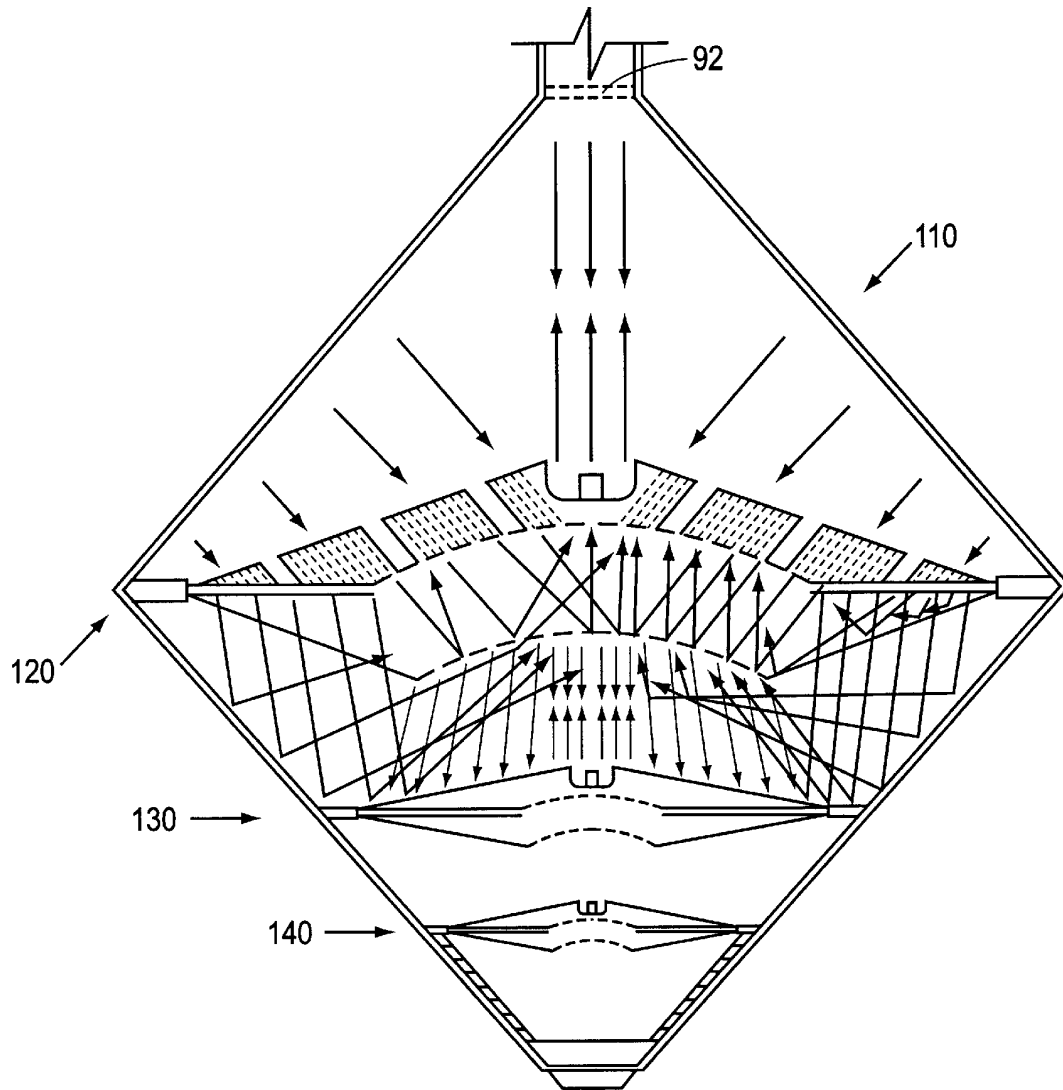


FIG. 14

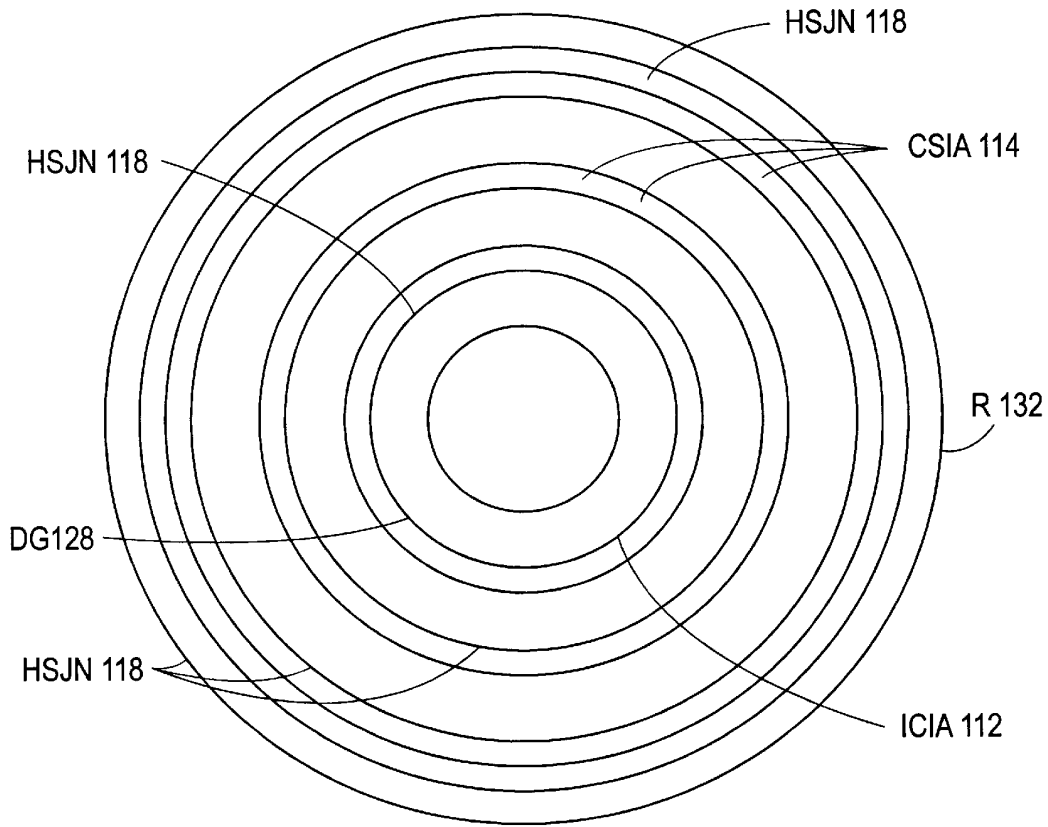


FIG. 15

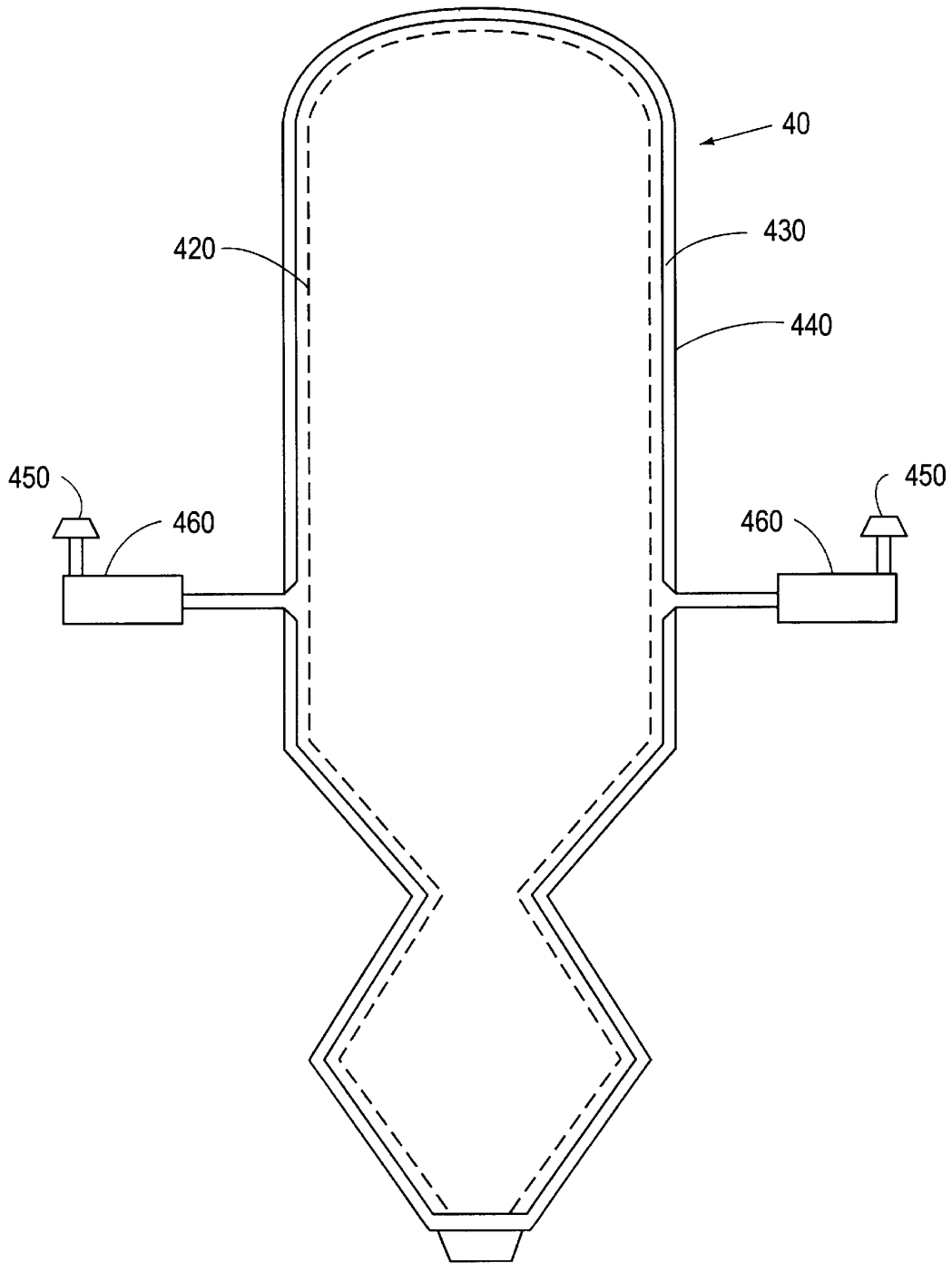


FIG. 16

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FLYING CRAFT WITH WATER AND AIR PROPULSION SOURCE

BACKGROUND OF THE INVENTION

1. Field of Invention

The invention relates to a flying craft capable of swift flight through a fluid medium, such as air, water or space, and a propulsion system therefore that is energy efficient, using air and water as main propulsion energy.

2. Description of Related Art

Numerous aircraft and spacecraft utilize solid or gas fossil fuels in jet or rocket engines to provide thrust necessary for flight of the craft. However, these fuels are costly, in limited supply, and not environmentally friendly.

Steam generators are known to provide low-cost energy by providing a driving force for one or more steam turbines. In such a system, generated steam is recirculated through a condenser to return the steam to water. The steam turbines produce low-cost electric energy, particularly when nuclear reactors are used as a heat source.

There is a need for a more economical and environmentally friendly fuel source and propulsion system that can be used to provide thrust for future aircraft and spacecraft. There is also a need for such a propulsion system that uses an abundant replenishable fuel source that will not further pollute our environment.

SUMMARY OF THE INVENTION

Applicant has overcome the above long felt needs and desires by inventing a novel propulsion system and flying craft therefore that does not rely on fossil fuels.

The invention relates to a flying craft that is driven by an air and water propulsion system through use of two steam generating units, one attached directly to a compact turbine and the other connected to a compressor. The compressor compresses the steam from the latter steam generator, including excess steam from the turbine generator, and pumps it to a super-heated steam compression chamber. At the same time, the turbine generator powers another compressor to take in air from the atmosphere and pump it into a super chilled compression chamber. After both the compressed super-heated steam and the compressed super chilled air have attained required pressure, volume and temperature, both compressed gases are fed into an expansion chamber under appropriate control.

The expansion chamber operates as a rocket booster and is equipped with an exhaust system made up of tiny, high-speed jet nozzles at its tip. The expansion chamber is further augmented by a main thrust vectoring nozzle and four two-stage thrust vectoring take-off and landing flaps. Various other auxiliary thrust vectoring nozzles direct thrust during cruising. The reactionary forces within the expansion chamber, caused by the simultaneous expansion of the chilled steam and the heated air, produce increased pressure and increased gas speed within the expansion chamber. These gases escape from the exhaust of the expansion chamber and provide a vertical thrust to force the craft upwards. The main thrust vectoring nozzle, along with the four thrust vectoring flaps, regulates the escaping gases and controls the speed and attitude of the craft. In a preferred embodiment, the craft has a saucer-shaped fuselage.

A propulsion system according to the invention comprises a water holding system; an air intake system; a heat source connected to the water holding system to generate heated water; a first heat exchanger that receives the heated water,

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the heat exchanger producing steam for driving a steam turbine; a second heat exchanger that receives the heated water, the second heat exchanger producing additional steam; a first compressor driven by the steam turbine for compressing the additional steam into superheated compressed steam; a heated steam compression chamber of a predetermined volume connected to the first compressor for receiving and storing the superheated compressed steam; a second compressor driven by the steam turbine and connected with the air intake system for producing compressed air; a chilled air compression chamber of a predetermined volume connected to the second compressor, the chilled air compression chamber receiving and storing the compressed air; a chilling mechanism for chilling the chilled air chamber; a gas expansion chamber of a predetermined volume connected to both the heated steam compression chamber and the chilled air compression chamber; control mechanisms located between the heated steam compression chamber and the gas expansion chamber and between the chilled air compression chamber and the gas expansion chamber for controlling flow of the superheated steam and the chilled air into the gas expansion chamber; and an exhaust system for directing exiting gases from the gas expansion chamber, wherein the gas expansion chamber receives a predetermined proportion of the superheated compressed steam and the chilled compressed air, which when combined react by rapid expansion and result in the exiting gases providing thrust as the exiting gases are expelled from the gas expansion chamber through the exhaust system.

BRIEF DESCRIPTION OF THE DRAWINGS

The invention will be described with reference to the following drawings wherein:

FIG. 1 illustrates a perspective view of an exemplary flying craft according to the invention;

FIG. 2 illustrates a cross-sectional side view of the flying craft according to the invention;

FIG. 3 illustrates a side view of the flying craft showing a landing configuration;

FIG. 4 illustrates yet another side view of the flying craft in a take-off position;

FIG. 5 illustrates a cross-sectional view of the flying craft showing various compartment locations;

FIG. 6 illustrates an exemplary cross-sectional view of a power source according to the invention;

FIG. 7 illustrates a gas expansion chamber according to the invention;

FIG. 8 illustrates a top view of the spaceship of FIG. 1;

FIG. 9 illustrates a bottom view of the flying craft of FIG. 1;

FIG. 10 illustrates a bottom partial view of the flying craft showing take-off thrust vectoring flaps and vertical thrust vectoring nozzles;

FIG. 11 illustrates a bottom partial view of individual vertical thrust vectoring nozzles according to the invention;

FIG. 12 illustrates a cross-sectional view of a disc-shaped exhaust system according to the invention;

FIG. 13 illustrates a more detailed view of the exhaust system;

FIG. 14 is a cross-sectional view of the exhaust system showing exhaust flow through the system;

FIG. 15 is a top internal view of the exhaust system shown in FIGS. 13-14; and

FIG. 16 is a cross-sectional view of the gas expansion chamber according to another embodiment of the invention.

DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS

With reference to FIGS. 1-4, an exemplary multi-purpose vertical take-off and landing (VTOL) flying craft **10** is shown having an exemplary saucer-shaped fuselage **12**. Main thrust generation, used for both take-off and navigational mobility once in flight, is provided by thrust generated in gas expansion chamber **40** (see FIG. 2) and channeled and regulated through an exhaust system **110** and finally exiting from thrust vectoring nozzle **34** having a plurality of high speed jet nozzles **36**.

Further flight navigational control is achieved through a series of thrust vectoring nozzles. In particular, forward flight navigation is provided by a series of auxiliary port-side and starboard-side forward thrust vectoring nozzles **14P** and **14S**. Likewise, backward navigation is provided by a series of backward thrust vectoring nozzles **16P** and **16S**. Downward thrust to lower the altitude of the flying craft is provided by downward thrust vectoring nozzles **18** while drift correction is handled by drift correcting thrust vectoring nozzles **20**. Vertical thrust is augmented by vertical thrust vectoring nozzles **22**. All of the auxiliary thrust vectoring nozzles use exhaust gases from the gas expansion chamber for thrust.

Once craft **10** achieves a desired altitude for horizontal flight, vertical thrust vectoring nozzle **34**, along with the four vertical thrust vectoring nozzles **22**, support the craft in a hovering configuration while the forward thrust vectoring nozzles **14P**, **14S** allow forward movement of the craft.

Various navigational and directional changes can be achieved through suitable control of the various auxiliary thrust vectoring nozzles. Thus, the craft can turn left or right, accelerate and decelerate, both vertically and horizontally in forward and backward directions, and rotate in any direction. Rudders **94** (FIGS. 8-9) can be raised and lowered to further achieve left or right rotation. Due to the various combinations of thrust vector nozzles, the flying craft is highly maneuverable, much more so than conventional winged aircraft.

Telescopic landing gear **38** (four legs provided) can be raised or lowered between landing and flight positions as shown in FIGS. 3 and 4. As best illustrated in FIG. 1, the fuselage **12** is provided with a pressurized lock (door) **26** that can be raised or lowered to allow passage of personnel or cargo into and out of the craft. The fuselage **12** is also provided with decompression chambers. **28** and water intake valves **30**, which will be described in more detail below.

A cockpit **42** is suitably located within the craft, and includes a window or other means for outside viewing by personnel, particularly by the pilot. If sufficient room is available, the cockpit can be located at a top of the fuselage, as shown, as this location has optimal viewing capabilities.

FIG. 5 shows a cross-sectional view of the craft showing an exemplary compartment layout within fuselage **12**. Gas expansion chamber **40** is centrally located while components making up the power source are located closely thereto, including atomic reactors **46**, heated steam compression chamber **48** and chilled air compression chamber **50**. Preferably, a water storage system includes a plurality of smaller compartments, equally provided throughout the remainder of the craft so that the craft is well balanced. Water is removed from these compartments in a manner that retains a balance of the weight. The various compartments making up the water storage system can be filled with water by water intake valves **30**, which communicate with the various compartments and an external source of water. If

desired, the craft can be made water-tight and capable of a water landing. In which case, the craft can submerge to a depth sufficient to allow refilling of the water storage system through water intake valves **30**. Remaining space within fuselage **12** can store cargo or accommodate additional personnel. Additional viewing windows may be provided as necessary.

While particular navigational means have been provided, it is contemplated that other suitable navigational thrust generating and directing means could be substituted. Moreover, the inventive flying craft is not limited to a saucer-shape fuselage, but could have more conventional aircraft or spacecraft shape.

An exemplary propulsion source for the flying craft will now be described with reference to FIG. 6. Thrust for the craft **10** is provided by a fuel source of air and water through use of two symmetrical propulsion generating subsystems, disposed in opposition around gas expansion chamber **40**. Like numbered parts function the same. Thus, only one subsystem will be described in detail.

Atomic reactor **46**, preferably of the blanket and core type having blanket **46A** and core **46B**, is connected to heat exchangers **52,54** through service lines **56, 58, 60** and **62**. The service lines include respective control valves **64, 66, 68** and **70**. Heated steam from heat exchanger **52** is connected directly to a compact steam turbine generator **72**. Excess steam is fed to heat exchanger **54** through control valve **70**. Heat exchanger **54** is connected directly to a powerful compressor **74** powered by the steam turbine generator **72** through line **76**. The compressor **74** sucks in the generated steam and pumps it into heated steam compression chamber **48** through line **90**. The steam turbine generator **72** also powers a second air compressor **78**, which sucks in air from the atmosphere through air intake system **80**, which can consist of an air duct, and pumps it into chilled air compression chamber **50**. Chamber **50** is chilled by chilling mechanism **82**. Safety control **84** is provided between generator **72**, chilling mechanism **82** and second air compressor **78**.

Each of the heated steam compression chamber **48** and chilled air compression chamber **50** preferably stores eight times the volume of compressed gas compared to the volume of compressed gases within gas expansion chamber **40** at any given time. The total volume of compressed gases inside gas compression chambers **48, 50** (total of four chambers disposed around a central vertical axis) is thus preferably equal to thirty-two times that of the gas expansion chamber **40**.

Superheated steam from chamber **48** and chilled air from chamber **50** are proportionally released to gas expansion chamber **40** through service control lines **86, 88** in a controlled and balanced manner according to their pressure, volume and temperature. As best illustrated in FIG. 7, the superheated steam enters chamber **40** near the top. The chilled air enters gas expansion chamber **40** below where the superheated steam enters. Upon entering the gas expansion chamber **40**, the compressed superheated steam begins to rapidly expand due to the reduced pressure in the gas expansion chamber **40** compared with that within chamber **48**. This rapid expansion also results in generation of heat within gas expansion chamber **40** and downward propulsion of the expanding superheated steam towards the compressed chilled air and the thrust vectoring nozzle **34**. The generated heat acts on the entering compressed chilled air, which accordingly also begins to rapidly expand as it is heated. This combination of reaction forces within gas expansion

chamber **40** provide thrust for flying craft **10**. A continuous source of thrust can be provided by controlled entrance of new gases into the chamber **40** from the chambers **48** and **50**.

It is contemplated that an ideal proportion of super-heated steam to super-chilled air within gas expansion chamber **40** is 40:10. That is, 40 cubic feet of super-heated steam to 10 cubic feet of super-chilled air. After the super-heated gas and the super-chilled gas are both fed into gas expansion chamber **40**, they begin to expand to about four times their previous volume due to a reduction in pressure. Both gases further expand as super-heated steam expands when chilled and super-chilled air expands when heated. When sufficient pressure exists, control valve **92** of the gas expansion chamber **40** is opened to allow exhausting of the gases and generation of thrust.

The laws defining the gases can be approximated by Boyle's first ideal gas law where $P_1V_1=P_2V_2$. Thus, if the pressure of a gas is doubled, the volume becomes one half. Under Charles' law, if a temperature of a gas is increased, the volume of the gas increases if the pressure remains the same. Or, if the volume is increased, the temperature of the gas increases if the pressure remains the same. Therefore, for a constant pressure, the temperature is directly proportional to the volume such that $V_1/V_2=T_1/T_2$.

If the volume of a gas remains the same and the temperature is increased, then the pressure increases. The reverse is also true. With constant volume, an increase in pressure produces an increase in temperature. Thus, $P_1/P_2=T_1/T_2$.

Gases are believed to be made up of molecules that are far apart from one another. Thus, gases are compressible. Gases expand when heated because heat gives the molecules the energy with which to move from one point to another. Hydrogen molecules at freezing (0° C.) are believed to be moving at about 1 mile per second. This speed increases as temperature increases. According to Avogrado, if the volume of any gas is 22.4 liters, the temperature is 0° C. and the pressure is 30" of Hg, the number of molecules present is 6×10^{23} molecules.

Because air is a mixture of gases, it acts like a gas. If air is cooled, it shrinks. Thus, the motion of its molecules slow down. When compressed super-chilled air is heated, it expands immensely. Such expansion can be caused by the heating from superheated steam within the gas expansion chamber **40**.

The present inventive propulsion system is similar to conventional jet engines where air is compressed and mixed with fossil fuel then burned in a combustion chamber to produce expanded gases that release energy to propel a craft. Similarly, rocket engines use liquid oxygen and solid rocket fuel to produce expanded gases. However, the inventive propulsion system does not rely on conventional fossil fuels.

FIG. 7 also illustrates various thrust vectoring nozzles of flying craft **10** and their interconnection with gas expansion chamber **40**. In particular, gas expansion chamber **40** is provided with a shape similar to a rocket booster and fitted with a three-stage exhaust system **110** shrouded by thrust vectoring nozzle **34**. Entry of super heated steam and chilled air into chamber **40** is regulated by control of service control lines **86**, **88**. The resultant reactionary force created within the gas expansion chamber **40** due to the rapid expansion of both gases passes through exhaust system **110** and thrust vectoring nozzle **34**, which guide and regulate their escape. This generates main upward thrust capable of propelling the spacecraft **10**.

Vertical thrust vectoring nozzle **34** can be controlled to provide hovering of the craft. This hovering or lift can be

augmented by controlled release of escaping gases through the four thrust vectoring nozzles **22**. Further steering and attitude control of the craft can be achieved by suitable control of forward thrust vectoring nozzles **14P**, **14S**, backward thrust vectoring nozzles **16P**, **16S**, downward thrust vectoring nozzles **18**, and drift correction thrust vectoring nozzles **20**, which can be activated individually or simultaneously to control various spacecraft movements. As shown, all of the thrust vectoring nozzles are connected to and receive escaping gases from gas expansion chamber **40** through selective opening of respective control valves **92**.

Upon take-off, vertical thrust vectoring nozzles **22** maintain enough vertical thrust to maintain a desired hovering or elevated state. Landing gear **38** can then be retracted.

FIG. 12 illustrates the gas expansion chamber **40** in proportion to the preferred three-stage exhaust system **110**. Exhaust system **110** comprises three stages: first stage **120**, second stage **130** and third stage **140**. Each stage includes a rim **132** that seals and spaces the stage from adjacent stages. More detailed views of the exhaust system are illustrated in FIGS. 13-15. Air duct control **92** of the gas expansion chamber **40** has a diameter that is equal to the diameter of an inverted cone impact area (ICIA) **112** of a first stage **120** of the exhaust system. Highly accelerated gases rushing down the ICIA **112** from air duct control **92** have a compounded tubular (solid) shape and upon impact with the ICIA **112** rise upward toward the height of the air duct control **92** where pressure is greater. This augments the original thrust of the system. Upon reaching air duct control **92**, the rising gases are pushed down by the greater forces of the new gases coming from the main section of the gas expansion chamber **40** and then forced left to spin downward towards canalled solid impact area (CSIA) **114**, which is deep and angled 45° towards the center, causing the spinning gases to continue spinning through all the CSIA **114**. This creates a tornado effect as the gases rise once more within the circumferential area of a tapered conical top part **116** of the exhaust system **120**. This creates an upward thrust while the bulk of the spinning accelerated gases are forced downward by the rush of new gases from air duct control **92** and exit at the angled high speed jet nozzles (HSJN) **118** toward a lower section **122** of the first stage **120** of exhaust system **110**. Upon exiting high speed jet nozzles **118**, the gases hit an upper cone-shaped reaction area (UCSRA) **124** causing further upward thrust due to the great pressure pushing the UCSRA **124** upwards. A lower cone-shaped reaction area (LCSRA) **134** is provided to serve as a push area for a lower stage.

When the volume of accelerated gases increase within the UCSRA **124**, accelerated gases begin to move to a low pressure gas overflow channel **126** which is louvered and angled at 45° towards a second stage **130** of the exhaust system. When a large volume of accelerated gases pass through the louvered low pressure gas overflow channel **126**, the pressure at the UCSRA **124** becomes greater producing additional thrust. Thus, the angled high speed jet nozzles **118** and angled gas overflow channel **126** contribute to thrust. This series of gas flow is repeated as the exiting gases travel through the smaller second stage **130** and smaller yet third stage **140** exhaust systems until the gases finally exit from the thrust vectoring nozzle **34**.

FIG. 8 shows a top of fuselage **12** in which rudders **94** are provided for left and right steering movement. These rudders are retractable. To farther enhance flight capabilities, the saucer-shaped craft can be provided with retractable dual flight directional fins **96**. Elevator **98** and flaperons **100** can also be provided as air brakes, stabilizers and flaps.

FIG. 9 shows a bottom of fuselage 12 showing various components, including rudders 94, directional fins 96, multipurpose flaperons 100, and vertical thrust vectoring nozzles 22. FIG. 10 shows a partial bottom view of the main thrust vectoring nozzle 34 and the bottom of three stage exhaust system 110. FIG. 11 shows a partial bottom view of one of the vertical thrust vectoring nozzles 22 with a similar three stage exhaust system. The other three vertical thrust vectoring nozzles 22 have substantially the same structure.

During landing operation, the landing gear 38 is lowered. To finely adjust landing attitude, drift correcting thrust vectoring nozzles 20 can be used. Upon landing, the telescoping landing gear 38 can be further lowered or raised to a desired spacecraft height.

In one embodiment, the craft is capable of underwater landing and operation. In such an embodiment, the craft is provided with water-tight seals and the air intake system is closed, either automatically or manually, when underwater. The fuselage is also designed to withstand anticipated pressures associated with a desired depth of operation. When moving through a fluid medium, such as water, the propulsion system can use remaining air stored within chilled air chamber 50. When this supply is exhausted, propulsion is achieved solely by the expansion of compressed superheated steam in gas expansion chamber 40.

In another embodiment, the flying craft can be used for interplanetary flight. The fuselage in such an embodiment would be designed to withstand the pressures and temperatures encountered when exiting or entering earth's atmosphere. Additionally, the fuselage would be pressurized. As in the previous embodiment, upon exhaustion of the air within chilled air chamber 50, propulsion would be achieved solely by the superheated steam. Depending on the size of the craft and the traveling range of the craft, more than two reactors 46 may be used. Obviously, a larger sized craft can have increased water capacity and thus a greater range. Optionally, when traveling through space, the exhaust gases can be vented back into the craft by a vacuum system powered by compressors so that the exhaust gases can be recycled.

In the embodiment shown in FIG. 16, for use during underwater or space travel, the gas expansion chamber 40 can include an inner wall 420, an outer wall 440, insulation 430 between the inner and outer walls, a chilling mechanism 460 to provide chilled air to cool the gas expansion chamber, and a generator 450 to generate power for the chilling mechanism 460. The insulation 430 maintains the desired chilling temperature of the gas expansion chamber 40.

In this embodiment, useful during underwater or space operation where air is in small supply, the gas expansion chamber 40 can be superchilled by way of chilling mechanism 460, which operates within the double-walled construction of the gas expansion chamber 40. This aids in expansion of the superheated steam inside the gas expansion chamber 40.

To handle the forces generated by the novel propulsion system, the gas expansion chamber should be made from a suitable high strength, high heat metal. Numerous suitable metals or composite materials would be known to one of ordinary skill in the art. One such suitable material is KM-1557. The remainder of the spacecraft can be made from suitable materials based on desired requirements for each component, based on its size, strength, weight, and intended use of the flying craft.

While specific aspects of the invention have been described with respect to preferred embodiments of the invention, these are not intended to be limiting. Various modifications can be made without departing from the scope of the appended claims.

What is claimed is:

1. A propulsion system for a flying craft using water and air, comprising:

- a water holding system;
- an air intake system;
- a heat source connected to said water holding system to generate heated water from water within said water holding system;
- a first heat exchanger that receives the heated water, said heat exchanger producing steam for driving a steam turbine;
- a second heat exchanger that receives the heated water, said second heat exchanger producing additional steam;
- a first compressor driven by said steam turbine for compressing the additional steam into superheated compressed steam;
- a heated steam compression chamber of a predetermined volume connected to said first compressor for receiving and storing the superheated compressed steam;
- a second compressor driven by said steam turbine and connected with said air intake system for producing compressed air;
- a chilled air compression chamber of a predetermined volume connected to said second compressor, said chilled air compression chamber receiving and storing the compressed air;
- a chilling mechanism for chilling said chilled air compression chamber;
- a gas expansion chamber of a predetermined volume connected to both said heated steam compression chamber and said chilled air compression chamber;
- control mechanisms located between said heated steam compression chamber and said gas expansion chamber and between said chilled air compression chamber and said gas expansion chamber that control flow of the superheated steam and the chilled air into said gas expansion chamber; and
- an exhaust system for directing exiting gases from said gas expansion chamber, wherein said gas expansion chamber receives a predetermined amount of the superheated compressed steam and the chilled compressed air, the superheated steam rapidly expanding within said gas expansion chamber and generating heat and flow of the compressed steam toward said exhaust system, the generated heat causing rapid expansion of the chilled compressed air, and the resultant expansion of the compressed steam and compressed chilled air providing thrust directed toward said exhaust system, said exhaust system directing the thrust to provide a desired propulsion force direction.

2. The propulsion system of claim 1, wherein said exhaust system includes a plurality of high-speed jet nozzles at an opening end of said gas expansion chamber.

3. The propulsion system of claim 1, wherein said exhaust system includes a main thrust vectoring nozzle for channeling and directed the exiting gases in a main vertical thrust direction.

4. The propulsion system of claim 3, further comprising at least one auxiliary thrust vectoring nozzle in communication with said gas expansion chamber for directing thrust in a direction other than the main thrust direction.

5. The propulsion system of claim 4, wherein said at least one auxiliary thrust vectoring nozzle includes one of a forward thrust vectoring nozzle, a backward thrust vectoring nozzle, and a downward thrust vectoring nozzle.

6. The propulsion system of claim 3, further comprising at least one auxiliary vertical thrust vectoring nozzle.

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7. The propulsion system of claim 6, further comprising a plurality of movable vectoring flaps positionable into and out of a path of exiting gases from said at least one vertical thrust vectoring nozzle.

8. The propulsion system of claim 3, further comprising at least one drift correcting thrust vectoring nozzle.

9. The propulsion system of claim 1, wherein said heat source is an atomic reactor.

10. The propulsion system of claim 9, wherein said atomic reactor is of the core and blanket type.

11. A flying craft using a water and air fuel source comprising:

- a spacecraft fuselage;
- a water storage system within said fuselage;
- an air intake system;
- a heat source within said fuselage connected to said water storage system to generate heated water from water within said water storage system;
- a first heat exchanger within said fuselage that receives the heated water, said heat exchanger producing steam for driving a steam turbine;
- a second heat exchanger within said fuselage that receives the heated water, said second heat exchanger producing additional steam;
- a first compressor within said fuselage driven by said steam turbine for compressing the additional steam into superheated compressed steam;
- a heated steam compression chamber within said fuselage of a predetermined volume connected to said first compressor for receiving and storing the superheated compressed steam;
- a second compressor within said fuselage driven by said steam turbine and connected with said air intake system for producing compressed air;
- a chilled air compression chamber of a predetermined volume within said fuselage and connected to said second compressor, said chilled air compression chamber receiving and storing the compressed air;
- a chilling mechanism for chilling said chilled air chamber;
- a gas expansion chamber of a predetermined volume connected to both said heated steam compression chamber and said chilled air compression chamber;
- control mechanisms located between said heated steam compression chamber and said gas expansion chamber and between said chilled air compression chamber and said gas expansion chamber that control flow of the superheated steam and the chilled air into said gas expansion chamber; and
- an exhaust system for directing exiting gases from said gas expansion chamber, wherein said gas expansion chamber receives a predetermined amount of the superheated compressed steam and the chilled compressed air, the superheated steam rapidly expanding within said gas expansion chamber and generating heat and flow of the compressed steam toward said exhaust system, the generated heat causing rapid expansion of the chilled compressed air, and the resultant expansion of the compressed steam and compressed chilled air providing thrust directed toward said exhaust system, said exhaust system directing the thrust to provide a desired propulsion force direction.

12. The flying craft of claim 11, wherein said exhaust system includes a plurality of high-speed jet nozzles at an opening end of said gas expansion chamber.

13. The flying craft of claim 11, wherein said exhaust system includes a main thrust vectoring nozzle for channeling and directing the exiting gases in a main vertical thrust direction.

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14. The flying craft of claim 13, further comprising at least one auxiliary thrust vectoring nozzle in communication with said gas expansion chamber for directing thrust in a direction other than the main thrust direction.

15. The flying craft of claim 14, wherein said at least one auxiliary thrust vectoring nozzle includes one of a forward thrust vectoring nozzle, a backward thrust vectoring nozzle, and a downward thrust vectoring nozzle.

16. The flying craft of claim 13, further comprising at least one auxiliary vertical thrust vectoring nozzle.

17. The flying craft of claim 16, further comprising a plurality of movable vectoring flaps positionable into and out of a path of exiting gases from said at least one vertical thrust vectoring nozzle.

18. The flying craft of claim 13, further comprising at least one drift correcting thrust vectoring nozzle.

19. The flying craft of claim 11, wherein said heat source is an atomic reactor.

20. The flying craft of claim 19, wherein said atomic reactor is of the core and blanket type.

21. The flying craft of claim 11, wherein said fuselage is saucer-shaped.

22. The flying craft of claim 21, further comprising a plurality of telescopic landing legs.

23. The flying craft of claim 21, further including at least one water intake valve communicating with said water holding system for filling said water holding system with water from a supply of water external from said flying craft.

24. A flying craft comprising:

- a spacecraft fuselage;
- a water storage system within said fuselage;
- a heat source within said fuselage connected to said water storage system to generate heated water from water within said water storage system;
- a first heat exchanger within said fuselage that receives the heated water, said heat exchanger producing steam for driving a steam turbine;
- a second heat exchanger within said fuselage that receives the heated water, said second heat exchanger producing additional steam;
- a first compressor within said fuselage driven by said steam turbine for compressing the additional steam into superheated compressed steam;
- a heated steam compression chamber within said fuselage of a predetermined volume connected to said first compressor for receiving and storing the superheated compressed steam;
- a gas expansion chamber of a predetermined volume connected to said heated steam compression chamber;
- a control mechanism located between said heated steam compression chamber and said gas expansion chamber that controls flow of the superheated steam into said gas expansion chamber; and
- an exhaust system for directing exiting gases from said gas expansion chamber, wherein said gas expansion chamber receives a predetermined amount of the superheated compressed steam, the superheated steam rapidly expanding within said gas expansion chamber and generating heat and flow of the compressed steam toward said exhaust system, the resultant expansion of the compressed steam providing thrust directed toward said exhaust system, said exhaust system directing the thrust to provide a desired propulsion force direction.

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