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(54) KINETIC ENERGY HEAT PUMP

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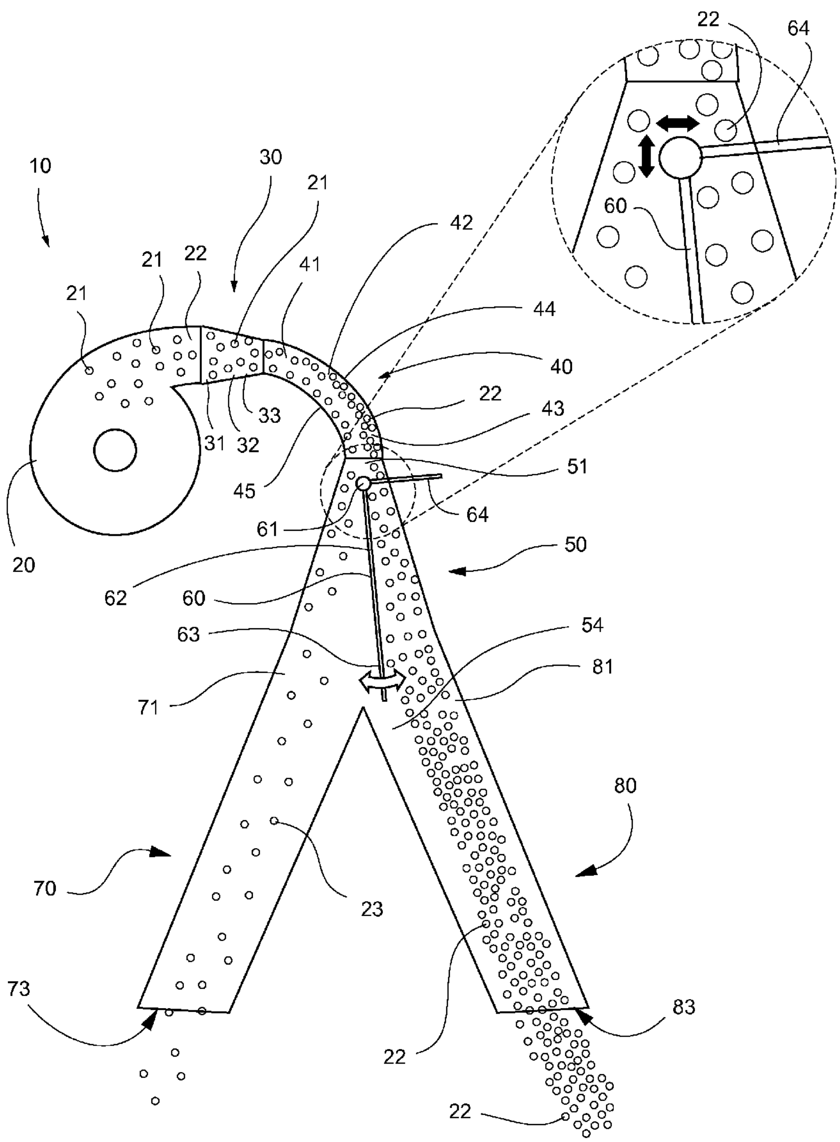
(57) ABSTRACT

A kinetic energy heat pump and method for separating fluids into hot and cold fractions, wherein the kinetic energy heat pump comprises a blower, a nozzle, a tube having a radial bend, a diffuser having a separating baffle and at least two outputs. To use, gas is accelerated through the nozzle. The gas then travels around a radial bend, wherein centrifugal force compresses gas toward the outside of the radial bend, thereby forming hot gas molecules, and expands gas molecules near the inside wall of the radial bend to form cold gas molecules. The hot and cold gas molecules then travel through the diffuser. The separating baffle selectively directs the amount of hot and cold gas molecules that travel through hot and cold output channels of the diffuser.



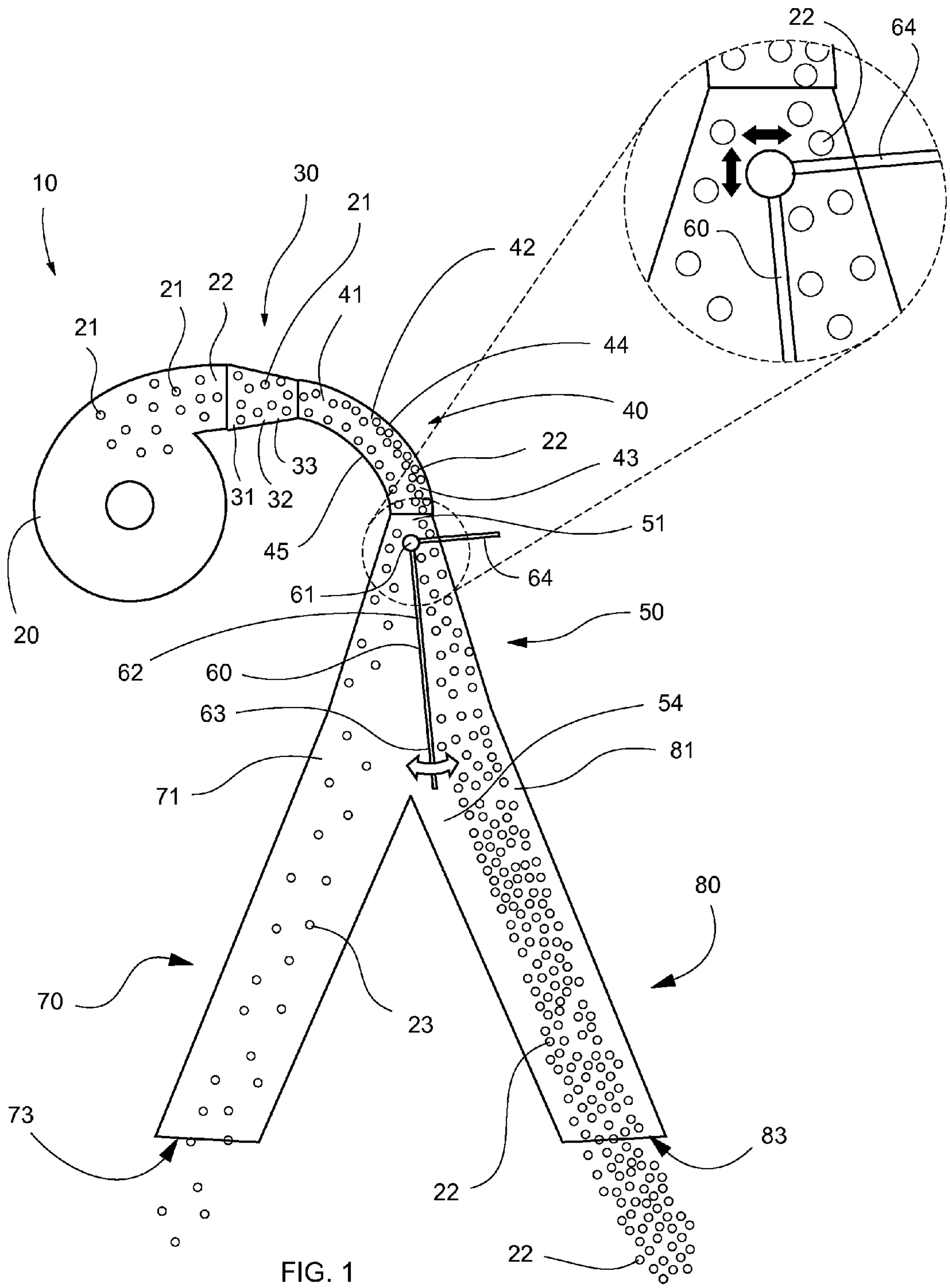


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FIG. 1

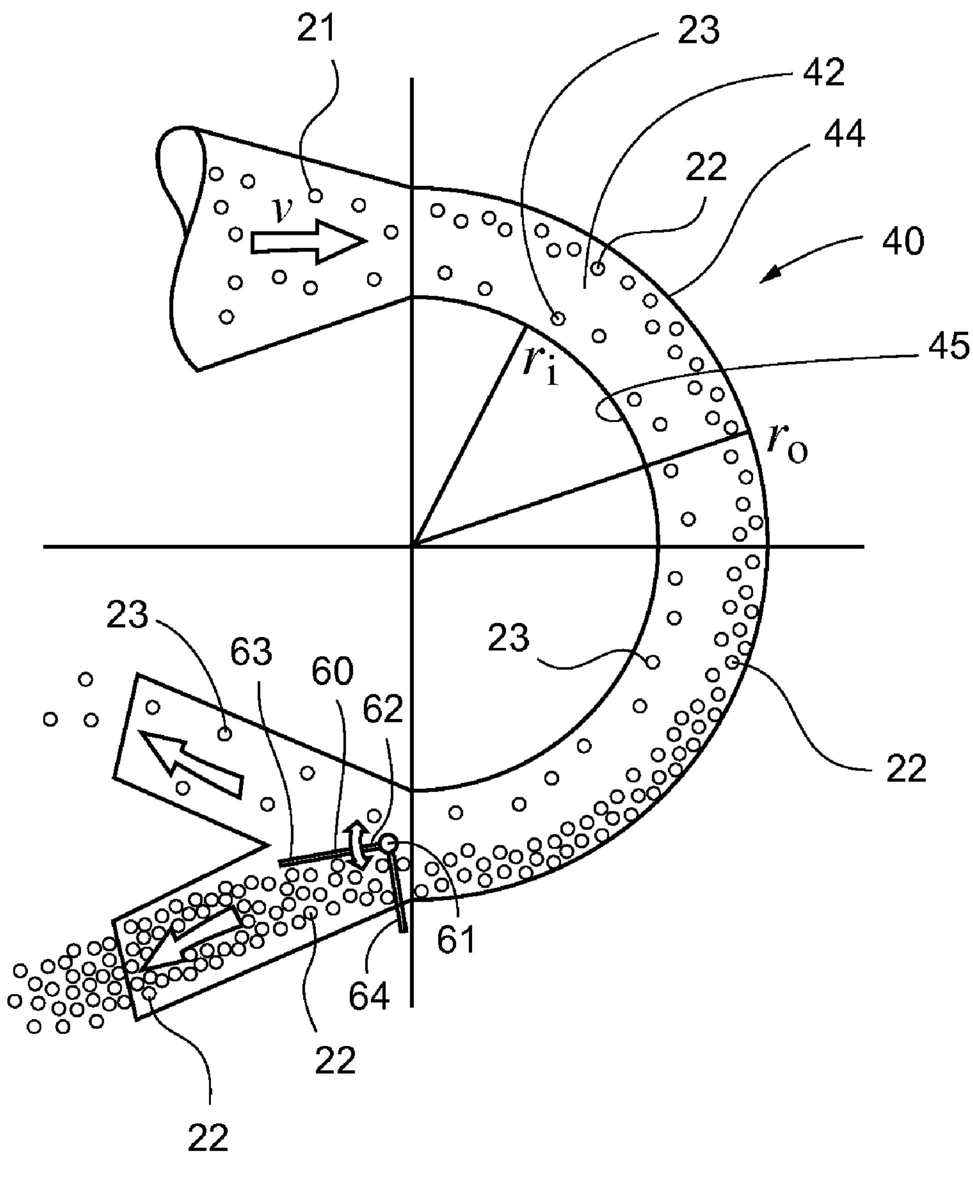

FIG. 2

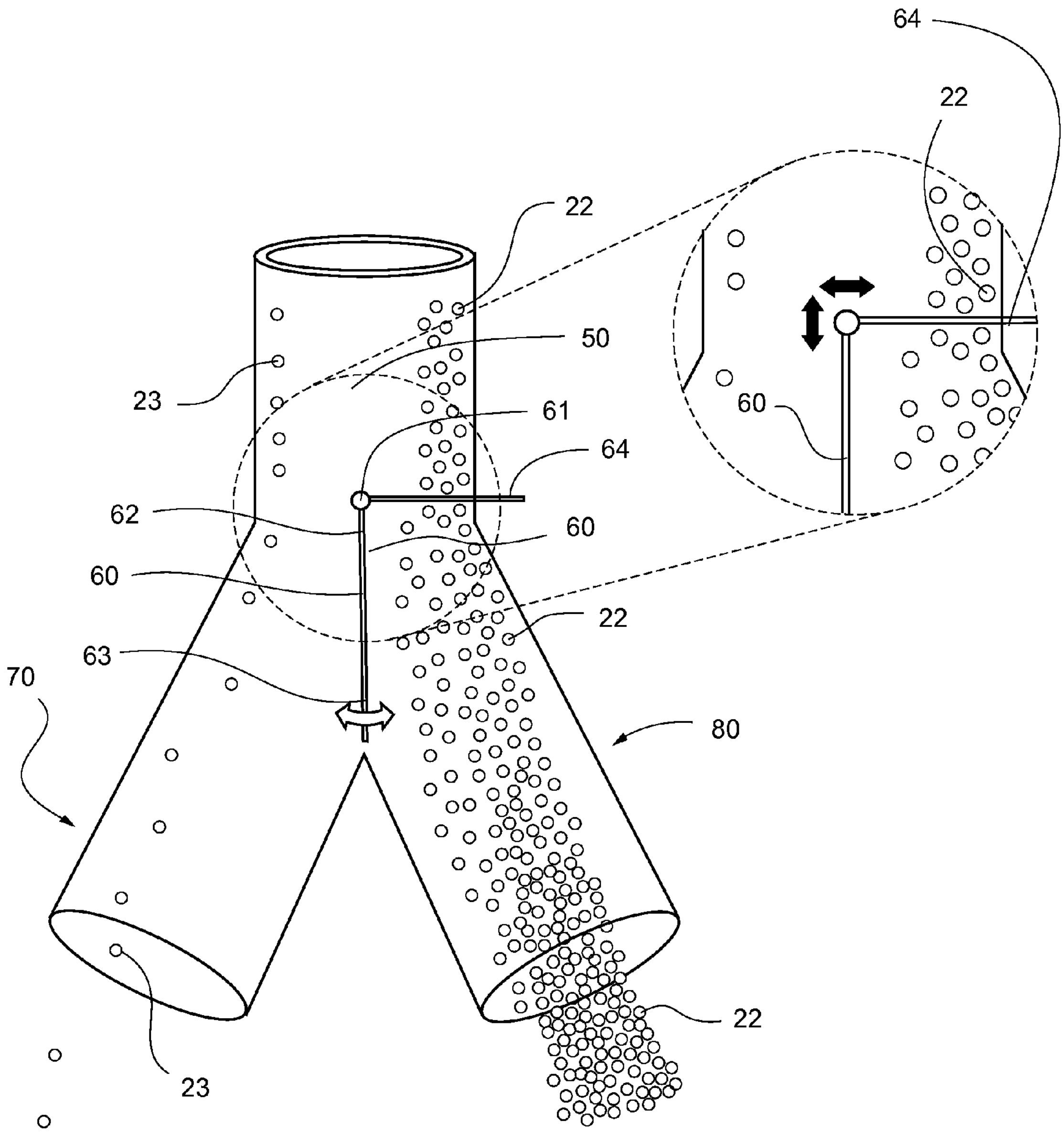

FIG. 3

KINETIC ENERGY HEAT PUMP

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] None

FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT

[0002] None

PARTIES TO A JOINT RESEARCH AGREEMENT

[0003] None

REFERENCE TO A SEQUENCE LISTING

[0004] None

BACKGROUND OF THE INVENTION

[0005] 1. Technical Field of the Invention

[0006] The present invention relates generally to a kinetic energy heat pump and method for separating fluids into hot and cold fractions, and more specifically a kinetic energy heat pump comprising a nozzle, a tube and a diffuser having a separating baffle therewithin, wherein the tube comprises a radial bend, and wherein gases travel around the radial bend at near sonic velocities and form a thermal gradient due to outward compression and inward expansion of the gases.

[0007] 2. Description of Related Art

[0008] Heat exchangers are typically utilized to transfer heat from one substance to another substance, wherein energy is expended by extracting heat from a heat source and delivering it to another source. While heat exchangers are useful in transferring heat, there are disadvantages and/or problems associated with heat exchangers which may make them undesirable for certain applications.

[0009] For instance, heat exchangers require costly components. Heat exchangers require materials that conduct heat efficiently, such as, copper, which is more expensive than other types of metals, such as steel. Secondly, many heat exchangers utilize extensive lengths of fine tubing, which is costly, and which is difficult to repair and/or replace. Lastly, fouling in tubing is a common problem associated in mass heat transfer, wherein contaminants may stick on the walls of the heat exchanger tubing, restricting flow of the fluid therewithin, thereby rendering the heat exchanger inoperable.

[0010] Heat exchangers may operate for many uses, but one of the most common is as part of heating and air conditioning units, which are utilized to generate hot or cold air. Heat exchangers are utilized in air conditioning units, wherein the traditional air conditioning unit comprises a compressor, a condenser, and an evaporator. The combination of air flowing over the coils of the evaporator functions as a heat exchanger. Working fluid arrives at the compressor as a cool, low-pressure gas, wherein the compressor compresses the fluid, thereby increasing the energy and temperature of molecules of the fluid. The fluid leaves the compressor as a heated, high pressure gas and flows into the condenser, in which cooling of the molecules of the fluid occurs, changing the fluid from a gas to a liquid that remains under high pressure. The liquid then travels into the evaporator through a narrow hole, wherein the liquid's pressure drops as it expands and begins to evaporate into a gas. As the liquid evaporates, it requires heat, and, thus, it extracts heat from the air outside flowing over and around the evaporator, thereby cooling the air.

[0011] Heat exchangers are also utilized in heat pumps. A heat pump functions similarly to an air conditioner, but allows for heating and cooling of air. The working fluid cycle is reversible and the heat exchangers can operate as either condenser or evaporator.

[0012] While air conditioning units are capable of cooling air, there are problems associated with air conditioning devices. Because they exchange heat from air with the cool fluid, air conditioners comprise several components that are expensive. If the fluid ceases to flow because of an obstruction, the fluid may locally freeze within or after leaving the evaporator, thereby preventing newly cooled fluid from entering to be heated by the air flowing over and around the evaporator. In such event, while the air conditioner may run, it does not put out cool air. Additionally, air conditioners have a low average life expectancy of only ten to twelve years. Accordingly, various attempts have been made to overcome the deficiencies of traditional air conditioners.

[0013] Similarly, while heat pumps are capable of heating and cooling air, there are problems associated with traditional heat pumps. For example, heat pumps utilized in Northern climates encounter special problems. One of the main difficulties is that northern climates require high heating capacities and less cooling capacities while conventional heat pumps have nearly equal cooling and heating capacities. Another inherent problem associated with heat pumps is that liquid refrigerants enter and damage the compressor. Additionally, heat pumps have a low average life expectancy of only eight to fifteen years. Accordingly, various attempts have been made to overcome the deficiencies of traditional heat pumps.

[0014] For instance, one previous device for cooling air teaches a supersonic flow separator, wherein a high pressure gas stream is expanded to supersonic velocity through a supersonic effuser, thereby forming liquid and/or solid particles. The supersonic gas stream is made to traverse a planar bend provided with a permeable outer wall to and through which liquid and/or solid particles are inertially moved and thereby separated from the gas stream. While such a device is capable of separating components from a gas stream, the device may not operate effectively if the permeable wall became plugged by debris. As such, this device requires a considerable amount of maintenance to maintain its efficiency.

[0015] Another previous device is a refrigeration system comprising a closed loop system that circulates refrigerants. This device teaches placing a vortex generator between a compressor and condensers, and the mixed refrigerants are controlled via a vapor separator, most preferably a vortex generator. While such a device provides refrigeration, it utilizes refrigerants fluids, which may include environmentally harmful and unsafe chemicals, such as chlorofluorocarbons.

[0016] Therefore, it is readily apparent that there is a need for an apparatus capable of separating gases into hot and cold streams utilizing simple components that are easy to repair and replace, and which utilizes materials that are environmentally benign.

BRIEF SUMMARY OF THE INVENTION

[0017] Briefly described, in a preferred embodiment, the present invention overcomes the above-mentioned disadvantages and meets the recognized need for such an apparatus by providing a kinetic energy heat pump and method for heating and cooling air, and more specifically a kinetic energy heat pump comprising a nozzle, a tube and a diffuser having a separating baffle disposed therewithin, wherein the tube comprises a radial bend, and wherein gases accelerated to near sonic velocity travel around the radial bend and compress outward to form a thermal gradient.

[0018] Accordingly, one advantage of this apparatus is that it heats and cools air without utilizing a heat exchanger, and thus does not incur problems associated with heat exchangers, such as, the temperature differential across the exchanger surface, or the utilization of toxic refrigerants and/or the possibility of refrigerant leakage.

[0019] According to its major aspects and broadly stated, the present invention in its preferred form is a kinetic energy heat pump comprising a tube having a radial bend. The radial bend preferably comprises between approximately ninety and one hundred and eighty degrees, but could be less than ninety or more than one hundred and eighty degrees so long as reasonable separation of thermal streams can be accomplished. The kinetic energy heat pump further comprises a nozzle, a diffuser and two outputs, wherein the nozzle accelerates gas to near sonic, but subsonic, velocities, and wherein the two outputs comprise a hot gas output and a cold gas output.

[0020] The kinetic energy heat pump accelerates gases around the radial bend and compresses the gases outward to form a thermal gradient. The thermal gradient is formed by action of centrifugal force on the gases, wherein gases that are compressed more have increased temperature, and wherein the thermal gradient is divided via a separating baffle into a fraction having hot gases relative to input temperature and a fraction having cool gases relative to input temperature.

[0021] The kinetic energy heat pump further provides a method of heating and cooling air comprising: obtaining a kinetic energy heat pump having a tube with a radial bend, a gas source, a blower, an adjustable separating baffle and two outputs. Gas is accelerated with the blower and nozzle combination, wherein the accelerated gas flows around the radial bend and into a diffuser with a baffle that divides the gas into hot and cold streams. The method of heating and cooling air further comprises extracting the cold stream from one of the two outputs, extracting the hot stream from the other of the two outputs and adjusting the baffle to select the temperature of the hot and cold gas streams.

[0022] Additionally, the kinetic energy heat pump comprises a blower, a nozzle, a tube having a bend a diffuser and a separating baffle, wherein the blower and nozzle combine to produce near sonic, but subsonic, flow around the bend in the tube. The kinetic energy heat pump further comprises a cold gas fraction and a hot gas fraction, wherein the separating baffle selectively controls the temperature of gases in the hot and cold gas outlets.

[0023] More specifically, the present invention is a kinetic energy heat pump comprising a blower, a nozzle, a tube with a bend, a diffuser, a separating baffle, a cold channel and a hot channel. The blower is in fluid communication with the nozzle, the nozzle is in fluid communication with the tube and the tube is in fluid communication with the diffuser, wherein the separating baffle is disposed within the diffuser. The diffuser is in fluid communication with the cold channel and the hot channel. As discussed more particularly hereinbelow, the separating baffle pivots at either end, wherein the baffle is selectively adjusted to modify the quantity of cold gas molecules and hot gas molecules that travel through a cold and a hot channel, respectively, wherein selection of the quantity of molecules selects the temperature of the gas steams passing through the hot and cold channel.

[0024] The blower introduces gas molecules into the kinetic heat energy heat pump, wherein the blower comprises an outlet end that enters the nozzle. The nozzle comprises an inlet, a throat and an outlet, wherein the end of the blower is in fluid communication with the inlet of the nozzle.

[0025] The tube comprises a first end, a radial bend and a second end, wherein the outlet of the nozzle is in fluid communication with the first end of the tube. Further, the second end of the tube is in fluid communication with the diffuser, wherein the diffuser has a separating baffle disposed therewithin. Additionally, the end of the diffuser is in fluid communication with the cold channel and the hot channel, wherein the cold channel comprises a cold inlet and a cold outlet, and wherein the hot channel comprises a hot inlet and a hot outlet.

[0026] In use, the blower introduces the gas molecules into the nozzle, wherein the nozzle accelerates the gas molecules to near sonic, but subsonic, velocities. The accelerated gas molecules exit the nozzle and enter the first end of the tube, traveling into the radial bend, wherein the tube comprises an outer radius and an inner radius. As the gas molecules travel around the radial bend, centrifugal force compresses the gas molecules outwardly against an outer wall of the tube, thereby heating the gas molecules. Similarly, the gas molecules expand near the inner wall to form a cold stream of gas molecules, wherein the cold gas molecules are disposed predominately near an inside wall of the tube. The hot gas molecules and the cold gas molecules travel through the second end of the tube and into the diffuser. The hot gas molecules enter the hot side of the diffuser, wherein the hot side is in communication with the outer portion of the bending tube, and wherein the diffuser decelerates the hot gas molecules back to ambient pressures. Similarly, the cold gas molecules enter the cold side of the diffuser, wherein the cold side is in communication with the inner portion of the bending tube, and wherein the diffuser decelerates the cold gas molecules back to ambient pressure. The separating baffle subsequently separates and directs the hot gas molecules and the cold gas molecules into the hot channel opening and the cold channel opening, respectively. The hot gas molecules subsequently travel through the hot channel and exit via the hot outlet. Likewise, the cold gas molecules travel through the cold channel and exit via the cold outlet.

[0027] The kinetic energy heat pump may be particularly understood in terms of the following equations: Newton's Second Law of Motion states $F=ma$, wherein F=force, m=mass and a=acceleration. Also, $P=F/A$, wherein P=pressure, F=force and A=area. Lastly, the acceleration due to centrifugal force is given as $a=v^2/r$, wherein a=acceleration, v=velocity and r=radius. Solving for F, results in $F=PA$. Substituting for F, results in $ma=PA$. Solving for P and substituting for a, results in $P=mv^2/rA$ for gaseous fluids.

[0028] Additionally, it is assumed that the working fluid is ideal, although the system will work with non-ideal gaseous fluids. Thus, equations about ideal gas may be applied, wherein $PV=mRT$, and wherein P=pressure, V=volume, m=molecular mass, R=ideal gas constant 53.34 $ft\text{-}lb_f/lbr_m\text{-}°K$ and T=temperature. Solving for T and substituting for P, equation $T=(V/R)(v^2/rA)$ is obtained, wherein T is a function of radius r of the tube. Assuming A is constant, taking the derivative of T and r, the following equation is obtained, $T_o=[T_i^2+v^2/R\ (\ln(r_o)-\ln(r_i))]^{1/2}$, wherein T_o is the temperature of the gas stream at r_o, and wherein T_i is the temperature of the gas stream at r_i.

[0029] An example of numerical values associated with the kinetic energy heat pump is shown in Example 1. For example, if outer radius of the tube is four (4) inches and the inner radius of the tube is two (2) inches, and the gas molecules exit the nozzle at a velocity of approximately 1129 ft/sec, then the temperature of hot gas molecules at the outer radius is 78.4° F. and the temperature of gas molecules at the inner radius is 75° F.

[0030] Additionally, the separating baffle is selectively adjusted via a rod which adjusts a pivot point at the inlet side of the baffle to vary the fraction of the hot gas molecules and the cold gas molecules entering the hot channel opening and the cold channel opening, respectively, wherein the separating baffle selectively adjusts, thereby increasing the amount of the hot gas molecules that exit the hot output and decreasing the amount of the cold gas molecules that exit the cold output or, alternatively, decreasing the amount of the hot gas molecules exiting the hot output and increasing the amount of the cold gas molecules exiting the cold output. It will be recognized by those skilled in the art that the quantity of the hot gas molecules and the cold gas molecules exiting the cold outlet and the hot outlet may be adjusted via any sort of means known in the art for dividing a fluid stream in lieu of the separating baffle with the pivot.

[0031] Accordingly, a feature and advantage of the present invention is its ability to heat and/or cool air with greater efficiency than conventional pump technology because no energy is expended by transferring heat over and around a heat exchanger.

[0032] Another feature and advantage of the present invention is that it comprises parts that are easy to replace and service.

[0033] Still another feature and advantage of the present invention is that it does not require environmentally damaging chlorofluorocarbons or other working fluids other than the gas utilized in the system, such as air.

[0034] Yet another feature and advantage of the present invention is its ability to be utilized for facility HVAC systems.

[0035] Yet a further feature and advantage of the present invention is its ability to be utilized for vehicle or aircraft HVAC systems, wherein the vehicle's velocity may replace the blower.

[0036] Yet still another feature and advantage of the present invention is its ability to be utilized with any gaseous fluid or mixture of gases.

[0037] A further feature and advantage of the present invention is its ability to be utilized for separation of gases.

[0038] These and other features and advantages of the present invention will become more apparent to one skilled in the art from the following description and claims when read in light of the accompanying drawings.

BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWINGS

[0039] The present invention will be better understood by reading the Detailed Description of the Preferred Embodiments with reference to the accompanying drawing figures, in which like reference numerals denote similar structure and refer to like elements throughout, and in which:

[0040] FIG. **1** is a cross sectional view of a kinetic energy heat pump;

[0041] FIG. **2** is a cross-sectional schematic view of a kinetic energy heat pump; and

[0042] FIG. **3** is a perspective view of an outlet of a kinetic energy heat pump, showing a pivoting baffle.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT OF THE INVENTION

[0043] In describing the preferred embodiment of the present invention, as illustrated in FIGS. **1-3**, specific terminology is employed for the sake of clarity. The invention, however, is not intended to be limited to the specific terminology so selected, and it is to be understood that each specific element includes all technical equivalents that operate in a similar manner to accomplish similar functions.

[0044] Referring now to FIG. **1** kinetic energy heat pump **10** comprises blower **20**, nozzle **30**, tube **40**, diffuser **50**, separating baffle **60**, cold channel **70** and hot channel **80**. Blower **20** is in fluid communication with nozzle **30**, nozzle **30** is in fluid communication with tube **40** and tube **40** is in fluid communication with diffuser **50**, wherein separating baffle **60** is disposed within diffuser **50**. Diffuser **50** is in fluid communication with cold channel **70** and hot channel **80**. As discussed more particularly in FIG. **3** hereinbelow, separating baffle **60** comprises pivot **61**, wherein pivot **61** is selectively adjusted via rod **64** to modify the quantity of cold gas molecules **23** and hot gas molecules **22** that travel through cold and hot opening **71**, **81**, respectively by positioning separating baffle **60**.

[0045] Still referring to FIG. **1**, blower **20** introduces gas molecules **21** into kinetic heat energy heat pump **10**, wherein blower **20** comprises end **22**. Nozzle **30** comprises inlet **31**, throat **32** and outlet **33**, and wherein end **22** of blower **20** is in fluid communication with inlet **31** of nozzle **30**.

[0046] Tube **40** comprises first end **41**, radial bend **42** and second end **43**, wherein outlet **33** of nozzle **30** connects to first end **41** of tube **40**. In one embodiment, tube **40** comprises approximately a ninety-degree bend. It will be recognized by those skilled in the art that tube **40** could comprise angles greater or less than ninety-degrees without departing from the spirit of the present invention.

[0047] Second end **43** of tube **40** is in fluid communication with diffuser **50**, wherein diffuser **50** comprises inlet **51** and outlet **54**, and wherein diffuser **50** comprises separating baffle **60** having top **62** and bottom **63**. Additionally, outlet **54** of diffuser **50** is in communication with cold channel **70** and hot channel **80**, wherein cold channel **70** comprises cold opening **71** and cold outlet **73**, and wherein hot channel **80** comprises hot opening **81** and hot outlet **83**.

[0048] Referring to FIGS. **1-2**, in use, blower **20** introduces gas molecules **21** into nozzle **30**, wherein nozzle **30** accelerates gas molecules **21** to near sonic, but subsonic velocities. Accelerated gas molecules **21** exit nozzle **30** and enter first end **41** of tube **40**, traveling into radial bend **42**, wherein radial bend **42**, and wherein tube **40** comprises outer radius r_o and inner radius r_i. Kinetic energy heat pump **10** has been tested at radial bends **42** comprising approximately between ninety and one hundred and eighty degrees. Bends **42** of less than ninety or more than one hundred and eighty degrees could be utilized so long as adequate thermal separation results.

[0049] As gas molecules **21** travel around radial bend **42**, centrifugal force compresses gas molecules **21** outwardly against outer wall **44**, thereby heating gas molecules **22**. Similarly, gas molecules **21** away from outer wall **44**, being less compressed, form cold gas molecules **23**, wherein cold gas molecules **23** are disposed predominately near inside wall **45** of tube **40**. Hot gas molecules **22** and cold gas molecules **23** travel through end **43** of tube **40** and into diffuser **50**. Hot gas molecules **22** enter inlet **51** of diffuser **50**, wherein diffuser **50** decelerates hot gas molecules **22**. Similarly, cold gas molecules **23** enter inlet **51** of diffuser **50**, wherein diffuser **50** decelerates cold gas molecules **23**. Separating baffle **60** subsequently separates and directs hot gas molecules **22** and cold gas molecules **23** into hot opening **81** and cold opening **71**, respectively. Hot gas molecules **22** subsequently travel through hot channel **80** and exit via hot outlet **83**. Likewise, cold gas molecules **23** travel through cold channel **70** and exit via cold outlet **73**.

TABLE 1

$F = ma$	(Equation 1)
$P = \frac{F}{A}$	(Equation 2)
$a = \frac{r^2}{r}$	(Equation 3)
$F = PA$	(Equation 4)
$ma = PA$	(Equation 5)
$P = \frac{mv^2}{rA}$	(Equation 6)
$PV = mRT$	(Equation 7)
$T = \frac{V}{R} \diamond \frac{r^2}{rA}$	(Equation 8)
Then, $dV = Adr$ (Assume A = constant)	
$T_o = \left[T_i^2 + \frac{v^2}{R} - \{\ln(r_o) \cdot \ln(r_i)\}\right]^{1/2}$	(Equation 9)

[0050] FIG. **2** may be particularly understood in terms of equations as shown in Table 1. Newton's Second Law of Motion states F=ma (Equation 1), wherein F=force, m=mass and a=acceleration. Also, P=F/A (Equation 2) wherein P=pressure, F=force and A=area. Lastly, centrifugal force is given by $a=v^2/r$ (Equation 3), wherein a=acceleration, v=velocity and r=radius. Solving for F in Equation 2, F=PA (Equation 4) is derived. Substituting Equation 1 for F in Equation 4, ma=PA (Equation 5) is derived. Solving for P in Equation 5 and substituting Equation 3 for a, results in $P=mv^2/rA$ (Equation 6).

[0051] Additionally, it is assumed that the working fluid is ideal, although the device will work with non-ideal gaseous fluids. Thus, equations about ideal gas may be applied, wherein PV=mRT (Equation 7), and wherein P=pressure, V=volume, m=molecular mass, R=ideal gas constant 53.34 ft-lb_f/lb_m-° K and T=temperature. Solving for T in Equation 7 and substituting Equation 6 for P, equation $T=(V/R)\ (v^2/rA)$ (Equation 8) is obtained, wherein T is a function of radius r of tube **40**. Assuming A is constant, taking the derivative of T and r, the following equation is obtained, $T_o=[T_i^2+v^2/R\ (\ln(r_o)-\ln(r_i))]^{1/2}$ (Equation 9), wherein T_o is the temperature of the gas stream at r_o, and wherein T_i is the temperature of the gas stream at r_i.

EXAMPLE 1

[0052] R=53.34 ft-lb_f/lb_m-° K

[0053] v=1129 ft/sec

[0054] r_o=4 inches

[0055] r_i=2 inches

[0056] T_i=75° F.

[0057] T_o=78.4° F.

[0058] An example of numerical values associated with kinetic energy heat pump **10** is shown in Example 1. For example, if gas molecules **21** enter nozzle **30** and r_o of tube **40** is four (4) inches and r_i of tube **40** is two (2) inches, and gas molecules **21** exit nozzle **30** at a velocity of approximately 1129 ft/sec, then T_i is 75° F., and, utilizing Equation 9, T_o of kinetic energy heat pump **10** is 78.4° F.

[0059] Additionally, as more clearly shown in FIG. **3**, separating baffle **60** is selectively adjusted via rod **64** that positions separating baffle **60** by moving pivot **61** and top **62** of separating baffle **60** to vary the fraction of hot gas molecules **22** and cold gas molecules **23** entering hot opening **81** and cold opening **71**, respectively. Separating baffle **60** selectively rotates about pivot **61**, thereby increasing the amount of hot gas molecules **22** that exit hot output **83** and decreasing the amount of cold gas molecules **23** that exit cold output **73** or, alternatively, decreasing the amount of hot gas molecules **22** exiting hot output **83** and increasing the amount of cold gas molecules **23** exiting cold output **73**, wherein bottom **63** of separating baffle **60** self adjusts to maintain an equilibrium pressure of gases through hot and cold channels **70**, **80**. It will be recognized by those skilled in the art that the quantity of hot gas molecules **22** and cold gas molecules **23** exiting cold outlet **73** and hot outlet **83** may be adjusted via any sort of means known in the art other than separating baffle **60** with pivot **61**.

[0060] The foregoing description and drawings comprise illustrative embodiments of the present invention. Having thus described exemplary embodiments of the present invention, it should be noted by those skilled in the art that the within disclosures are exemplary only, and that various other alternatives, adaptations, and modifications may be made within the scope of the present invention. Merely listing or numbering the steps of a method in a certain order does not constitute any limitation on the order of the steps of that method. Many modifications and other embodiments of the invention will come to mind to one skilled in the art to which this invention pertains having the benefit of the teachings presented in the foregoing descriptions and the associated drawings. Although specific terms may be employed herein, they are used in a generic and descriptive sense only and not for purposes of limitation. Accordingly, the present invention is not limited to the specific embodiments illustrated herein, but is limited only by the following claims.

What is claimed is:

1. A kinetic energy heat pump comprising:

a tube having a radial bend, wherein gases travel around said radial bend, and wherein said gases concentrate to form a thermal gradient.

2. The kinetic energy heat pump of claim **1**, wherein said thermal gradient is formed by action of centrifugal force on said gases.

3. The kinetic energy heat pump of claim **2**, wherein said thermal gradient is divided into a fraction having hot gases and a fraction having cold gases.

4. The kinetic energy heat pump of claim **3**, wherein said hot gases are compressed more than said cold gases.

5. The kinetic energy heat pump of claim **4**, wherein said hot and cold gases are directed by a separating baffle.

6. The kinetic energy heat pump of claim **5**, further comprising a diffuser.

7. The kinetic energy heat pump of claim **6**, further comprising a nozzle, wherein said nozzle accelerates gas to near sonic, but subsonic, velocities.

8. The kinetic energy heat pump of claim **4**, further comprising a diffuser.

9. The kinetic energy heat pump of claim **4**, further comprising a nozzle, wherein said nozzle accelerates gas to near sonic, but subsonic, velocities.

10. The kinetic energy heat pump of claim **4**, further comprising at least two outputs comprising a hot gas output and a cold gas output.

11. The kinetic energy heat pump of claim **1**, wherein said kinetic energy heat pump separates gases.

12. The kinetic energy heat pump of claim **5**, wherein said separating baffle is adjusted via a rod, and wherein said rod adjusts said separating baffle via a pivot point.

13. The kinetic energy heat pump of claim **1**, further comprising a diffuser and a nozzle, wherein said nozzle accelerates gas to near sonic, but subsonic, velocities, and wherein said kinetic energy heat pump separates gases.

14. A method of heating and cooling air, said method comprising the steps of:

obtaining a kinetic energy heat pump comprising a tube having a radial bend, a gas source, a blower, an adjustable separating baffle and at least two outputs;

accelerating a gas with said blower and nozzle combination;

flowing said accelerated gas around said radial bend; and

dividing said gas into hot and cold streams.

15. The method of heating and cooling air of claim **14**, said method further comprising the step of:

extracting said cold stream from one of said at least two outputs.

16. The method of heating and cooling air of claim **14**, said method further comprising the step of:

extracting said hot stream from one of said at least two outputs.

17. The method of heating and cooling air of claim **14**, said method further comprising the step of:

adjusting said baffle to select the temperature of said hot and cold gas streams.

18. A kinetic energy heat pump comprising:

a tube having an approximately ninety degree bend;

a blower;

a nozzle, wherein said blower and nozzle are combined, and wherein said combination is limited to producing near sonic, but subsonic, flow through said nozzle;

a diffuser; and

a separating baffle.

19. The kinetic energy heat pump of claim **18**, further comprising a cold gas fraction and a hot gas fraction.

20. The kinetic energy heat pump of claim **18**, further comprising a hot gas outlet and a cold gas outlet, wherein said separating baffle controls the temperature of gases in said hot and cold gas outlets.

* * * * *