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(54) Air conditioning device utilizing temperature differentiation of exhausted air to even temperature of external heat exchanger

(57) This invention relates to a cooling/heating air conditioning device for regulating temperature, which pumps an airflow exhausted from a space in an air conditioning object such as inside of a room or vehicle to the external through the external heat exchanger disposed

at the external of the air conditioning object such as outside of the room or vehicle so as to equalize the temperature of the fluid flowing through the internal of the external heat exchanger by means of the temperature difference between the internal and external of the air conditioning object for achieving an energy saving effect.



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Description

BACKGROUND OF THE INVENTION

(a) Field of the Invention

[0001] This invention relates to a cooling/heating air conditioning device for regulating temperature, which pumps an airflow exhausted from a space in an air conditioning object such as inside of a room or vehicle to the external through the external heat exchanger disposed at the external of the air conditioning object such as outside of the room or vehicle so as to equalize the temperature of the fluid flowing through the internal of the external heat exchanger by means of the temperature difference between the internal and external of the air conditioning object for achieving an energy saving effect.

(b) Description of the Prior Art

[0002] Conventionally, during the use of a cooling/ heating air conditioning device, due to the need for external ventilation, vent holes are typically disposed in a window type air conditioning device to perform the external ventilation, alternatively, a window type main unit is 25 cooperated with a ventilating device such as a ventilator or total heat exchanging ventilating device to perform the external ventilation. However, the pity is that, heretofore, when the aforementioned window type air conditioning device or split type air conditioning device is operated as 30 a cooler, the airflow of a relatively lower temperature exhausted from the space of an air conditioning object such as inside of a room has not been used to facilitate the decreasing of the temperature of an external heat exchanger which is disposed outdoors as a condenser, and 35 when the air conditioning device is operated as a heater, the exhausted airflow of a relatively higher temperature has not been used to facilitate the increasing of the temperature of the external heat exchanger which is disposed outdoors as an evaporator.

SUMMARY OF THE INVENTION

[0003] This invention relates to a cooling/heating air conditioning device for regulating temperature, which pumps an airflow exhausted from a space in an air conditioning object such as inside of a room or vehicle to the external through the external heat exchanger disposed at the external of the air conditioning object such as outside of the room or vehicle so as to equalize the temperature of the fluid flowing through the internal of the external heat exchanger device by means of the temperature differentiation between the two fluids. When the air conditioning device is operated as a cooler, the airflow of a relatively lower temperature exhausted from the space of the air conditioning object such as the inside of the room can be used to facilitate the decreasing of the temperature of the external heat exchanger which is disposed outdoors as a condenser, and when the air conditioning device is operated as a heater, the exhausted airflow of a relatively higher temperature can be used to facilitate the increasing of the temperature of the external heat exchanger which is disposed outdoors as an evaporator; the characteristic of energy saving of the present invention is applicable in the internal or external space of a gas-state cooling/warming air conditioning device or liquid-state temperature regulating device installed in a

- 10 fixed member such as the internal of an architecture, factory, public building or camp; or applicable in the internal or external space of a gas-state cooling/warming air conditioning device or liquid-state temperature regulating device installed in a moveable member such as a road ve-15 hicle, rail vehicle or aircraft; or applicable in the internal
 - or external space of a gas-state cooling/warming air conditioning device or liquid-state temperature regulating device installed in an equipment device.
 - [0004] According to another aspect of the invention, an air conditioning device has been invented which pumps an airflow exhausted from an air conditioned space through an external heat exchanger disposed externally of the air conditioned space so as to raise the temperature of the fluid flowing through the inside of the external heat exchanger, the device comprising:

an air conditioning device main unit (101), having an internal heat exchanger (203);

the external heat exchanger (1021), having a coolant fluid pipeline (103) for allowing coolant passed from the main unit (101) to heat exchange with the airflow exhausted from the air conditioned space (105); a fan unit (104, 1041) arranged to pump air from the air conditioned space to create the airflow exhausted from the air conditioned space (105) through the external heat exchanger (1021) to an external temperature differentiation space (130). In this way, relatively wanner air from the air conditioned space is used to warm the coolant passing through the heat exchanger.

[0005] Preferably, the device is arranged to permit an external airflow (1051) from the external temperature differentiation space (130) through the external heat exchanger (1021). This might be appropriate, for example, if it is undesirable to extract air from the air conditioned space, or if the temperature of the air in the external temperature differentiation space is higher than the air in the air conditioned space.

BRIEF DESCRIPTION OF THE DRAWINGS

[0006]

Fig. 1 is a diagram of the operating principles of this invention illustrated by the integral air conditioning device.

Fig. 2 is a structural schematic view of an embodi-

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ment of present invention having an integral air conditioning device with an external heat exchanger airflow exhausting fan unit (104) and a fluid exhausting path (106) so as to pump an air conditioning object space exhausted fluid (105) and an external airflow (1051) to flow together through an external heat exchanger (1021).

Fig. 3 is a structural schematic view of an embodiment of present invention having an integral air conditioning device without a heat exchanger airflow exhausting fan unit (104) and a ventilating device (1041) commonly constructed with a fluid exhausting path (106) so as to pump an air conditioning object space exhausted fluid (105) to flow through an external heat exchanger (1021).

Fig. 4 is a structural schematic view of an embodiment of present invention having a fluid exhausting path (1060) and an external heat exchanger airflow exhausting fan unit (104) so as to pump an air conditioning object space exhausted fluid (105) and an external airflow (1051) to flow together through an external heat exchanger (1021) in the air conditioning device assembly (1000).

Fig. 5 is a structural schematic view of an embodiment of present invention having a separately ²⁵ mounted blowing pump (1041) and an exhaust amount regulating device (1061) and having an air conditioning device assembly (1000) without the external heat exchanger airflow exhausting fan unit (104). ³⁰

Fig. 6 is a structural schematic view of an embodiment of present invention having an integral air conditioning device assembly (1000) mounted with an external heat exchanger airflow exhausting fan unit (104) and the fluid exhausting path (1060) and the ³⁵ blowing pump (1041).

Fig. 7 is a structural schematic view of an embodiment of present invention having a split type air conditioning device outdoor unit (2002) with an external heat exchanger airflow exhausting fan unit (104) and 40 a split type air conditioning device main unit (2001) mounted with the fluid exhausting path (1060).

Fig. 8 is a structural schematic view of an embodiment of present invention having the split type air conditioning device main unit (2001) commonly constructed with the blowing pump (1041) and having a split type air conditioning device outdoor unit (2002) without the external heat exchanger airflow exhausting fan unit (104).

Fig. 9 is a structural schematic view of an embodiment of present invention having the separately mounted fluid exhausting path (1060), the split type air conditioning device main unit (2001) and the split type air conditioning device outdoor unit (2002) with the external heat exchanger airflow exhausting fan unit (104).

Fig. 10 is a structural schematic view of an embodiment of present invention having the separately mounted blowing pump (1041), the split type air conditioning device main unit (2001) and the split type air conditioning device outdoor unit (2002) without the external heat exchanger airflow exhausting fan unit (104).

Fig. 11 is a structural schematic view of an embodiment of present invention having the split type air conditioning device main unit (2001), the split type air conditioning device outdoor unit (2002) with the external heat exchanger airflow exhausting fan unit (104) and the separately mounted blowing pump (1041).

Fig. 12 is a structural schematic view of an embodiment of present invention having a water-cooled air conditioning device main unit (2005), a powered fan provided cooling tower (2003) and the separately mounted blowing pump (1041).

Fig. 13 is a structural schematic view of an embodiment of present invention having a water-cooled air conditioning device main unit (2005) and a powered fan provided cooling tower (2003).

Fig. 14 is a structural schematic view of an embodiment of present invention having a water-cooled air conditioning device main unit (2005), a natural draft cooling tower (2003) and the separately mounted blowing pump (1041).

Fig. 15 is a structural schematic view of an embodiment of present invention having a split type air conditioning device outdoor unit (2002) composed of an external heat exchanger (1021) and an airflow exhausting fan unit (104) and a split type air conditioning device outdoor main station (2007), having a split type air conditioning device indoor unit (2006) composed of an internal heat exchanger (203), an flow regulating device (202), a control device (201), a conditioned airflow blowing fan (204) and an exhaust amount regulating device (1061), having a coolant compressing and circulating loop constructed by a coolant fluid pipeline (103) installed between the above two, and installing a fluid exhausting path (1060) and introducing external airflow (1051) in the air conditioning object space (120) between the exhaust amount regulating device (1061) and the external heat exchanger (1021).

Fig. 16 is a structural schematic view of an embodiment of present invention having a split type air conditioning device outdoor unit (2002) composed of an external heat exchanger (1021) and a split type air conditioning device outdoor main station (2007), having a split type air conditioning device indoor unit (2006) composed of an internal heat exchanger (203), an flow regulating device (202), a control device (201), a conditioned airflow blowing fan (204), a blowing pump (1041) and an exhaust amount regulating device (1061), having a coolant compressing and circulating loop constructed by a coolant fluid pipeline (103) installed between the above two, and installing a fluid exhausting path (1060) in the air

conditioning object space (120) between the exhaust amount regulating device (1061), the blowing pump (1041) and the external heat exchanger (1021). Fig. 17 is a structural schematic view of an embodiment of present invention having a split type air conditioning device outdoor unit (2002) composed of an external heat exchanger (1021) and an airflow exhausting fan unit (104) and a split type air conditioning device outdoor main station (2007), having a split 10 type air conditioning device indoor unit (2006) composed of an internal heat exchanger (203), an flow regulating device (202), a control device (201) and a conditioned airflow blowing fan (204), having a coolant compressing and circulating loop constructed by a coolant fluid pipeline (103) installed between 15 the above two, and separately mounting a exhaust amount regulating device (1061) in the thermal insulation device (110), and installing a fluid exhausting path (1060) and introducing external airflow (1051) in the air conditioning object space (120) be-20 tween the exhaust amount regulating device (1061) and the external heat exchanger (1021).

Fig. 18 is a structural schematic view of an embodiment of present invention having a split type air conditioning device outdoor unit (2002) composed of an 25 external heat exchanger (1021) and a split type air conditioning device outdoor main station (2007), having a split type air conditioning device indoor unit (2006) composed of an internal heat exchanger (203), an flow regulating device (202), a control de-30 vice (201) and a conditioned airflow blowing fan (204), having a coolant compressing and circulating loop constructed by a coolant fluid pipeline (103) installed between the above two, and separately mounting a blowing pump (1041) and a exhaust 35 amount regulating device (1061) in the thermal insulation device (110), and installing a fluid exhausting path (1060) in the air conditioning object space (120) between the exhaust amount regulating device 40 (1061), the blowing pump (1041) and the external heat exchanger (1021).

Fig. 19 is a structural schematic view of an embodiment of present invention having a split type air conditioning device outdoor unit (2002) composed of an 45 external heat exchanger (1021) and an airflow exhausting fan unit (104) and a split type air conditioning device outdoor main station (2007), having a split type air conditioning device indoor unit (2006) composed of an internal heat exchanger (203), an flow regulating device (202), a control device (201) and 50 a conditioned airflow blowing fan (204), having a coolant compressing and circulating loop constructed by a coolant fluid pipeline (103) installed between the above two, and separately mounting a blowing pump (1041) and a exhaust amount regulating de-55 vice (1061) in the thermal insulation device (110), and installing a fluid exhausting path (1060) and introducing external airflow (1051) in the air conditioning object space (120) between the exhaust amount regulating device (1061), the blowing pump (1041) and the external heat exchanger(1021).

Fig. 20 is a structural schematic view of an embodiment of present invention having a split type air conditioning device outdoor unit (2002) composed of an external heat exchanger (1021) and an airflow exhausting fan unit (104), having a split type air conditioning device outdoor main station (2007) which is individually installed, having a split type air conditioning device indoor unit (2006) composed of an internal heat exchanger (203), an flow regulating device (202), a control device (201), a conditioned airflow blowing fan (204) and an exhaust amount regulating device (1061), having a coolant compressing and circulating loop constructed by a coolant fluid pipeline (103) installed between the above three, and installing a fluid exhausting path (1060) and introducing external airflow (1051) in the air conditioning object space (120) between the exhaust amount regulating device (1061) and the external heat exchanger (1021).

Fig. 21 is a structural schematic view of an embodiment of present invention having a split type air conditioning device outdoor unit (2002) composed of an external heat exchanger (1021), having a split type air conditioning device outdoor main station (2007) which is individually installed, having a split type air conditioning device indoor unit (2006) composed of an internal heat exchanger (203), an flow regulating device (202), a control device (201), a conditioned airflow blowing fan (204), a blowing pump (1041) and an exhaust amount regulating device (1061), having a coolant compressing and circulating loop constructed by a coolant fluid pipeline (103) installed between the above three, and installing a fluid exhausting path (1060) in the air conditioning object space (120) between the exhaust amount regulating device (1061), the blowing pump (1041) and the external heat exchanger (1021).

Fig. 22 is a structural schematic view of an embodiment of present invention having a split type air conditioning device outdoor unit (2002) composed of an external heat exchanger (1021) and an airflow exhausting fan unit (104), having a split type air conditioning device outdoor main station (2007) which is individually installed, having a split type air conditioning device indoor unit (2006) composed of an internal heat exchanger (203), an flow regulating device (202), a control device (201) and a conditioned airflow blowing fan (204), having a coolant compressing and circulating loop constructed by a coolant fluid pipeline (103) installed between the above three, and separately mounting a exhaust amount regulating device (1061) in the thermal insulation device (110), and installing a fluid exhausting path (1060) and introducing external airflow (1051) in the air conditioning object space (120) between the ex-

haust amount regulating device (1061) and the ex- ternal heat exchanger (1021). Fig. 23 is a structural schematic view of an embod- iment of present invention having a split type air con- ditioning device outdoor unit (2002) composed of an external heat exchanger (1021), having a split type air conditioning device outdoor main station (2007)	5	
which is individually installed, having a split type air conditioning device indoor unit (2006) composed of an internal heat exchanger (203), an flow regulating device (202), a control device (201) and a condi- tioned airflow blowing fan (204), having a coolant compressing and circulating loop constructed by a	10	
coolant fluid pipeline (103) installed between the above three, and separately mounting a blowing pump (1041) and a exhaust amount regulating de- vice (1061) in the thermal insulation device (110), and installing a fluid exhausting path (1060) and in-	15	
troducing external airflow (1051) in the air condition- ing object space (120) between the exhaust amount regulating device (1061), the blowing pump (1041) and the external heat exchanger(1021). Fig. 24 is a structural schematic view of an embod-	20	
iment of present invention having a split type air con- ditioning device outdoor unit (2002) composed of an external heat exchanger (1021) and an airflow ex- hausting fan unit (104), having a split type air condi- tioning device outdoor main station (2007) which is	25	
individually installed, having a split type air condi- tioning device indoor unit (2006) composed of an internal heat exchanger (203), an flow regulating de- vice (202), a control device (201) and a conditioned airflow blowing fan (204), having a coolant com- pressing and circulating loop constructed by a cool-	30	
ant fluid pipeline (103) installed between the above three, and separately mounting a blowing pump (1041) and a exhaust amount regulating device (1061) in the thermal insulation device (110) and in- stalling a fluid exhausting path (1060) and introduc-	35	
ing external airflow (1051) in the air conditioning object space (120) between the exhaust amount reg- ulating device (1061), the blowing pump (1041) and the external heat exchanger (1021).	40	
DESCRIPTION OF MAIN COMPONENT SYMBOLS		
[0007]		

101 :	air conditioning device main unit
103 :	coolant fluid pipeline
104 :	external heat exchanger airflow exhausting fan unit
105 :	air conditioning object space exhausted fluid
106 :	fluid exhausting path

107 :	water pipe
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- 108 : cooling tower fan unit
- 109: water in and out pipe
- 110: thermal insulation device
- 111: water pump
- 120 : air conditioning object space
- 130 : external temperature differentiation space
- 201 : control device
- 202 : airflow regulating device
- 203 : internal heat exchanger
- 204 : conditioned airflow blowing fan
- 1000 : air conditioning device assembly
- 1021 : external heat exchanger
- 1041 : blowing pump
- 1051 : external airflow
- 1060 : fluid exhausting path
- 1061 : exhaust amount regulating device
- 1070 : external airflow intake pipe
 - 2001 : split type air conditioning device main unit
- 2002 : split type air conditioning device outdoor unit
- 2003 : powered fan provided cooling tower
- 2004 : natural draft cooling tower
- 5 2005 : water-cooled air conditioning device main unit
 - 2006 : split type air conditioning device indoor unit
- 2007 : split type air conditioning device outdoor main station

DETAILED DESCRIPTION OF THE PREFERRED EM-BODIMENTS

⁵⁵ [0008] Conventionally, during the use of a cooling/ heating air conditioning device, due to the need for external ventilation, vent holes are typically disposed in a window type air conditioning device to perform the exter-

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nal ventilation, alternatively, a window type main unit is cooperated with a ventilating device such as a ventilator or total heat exchanging ventilating device to perform the external ventilation. However, the pity is that, heretofore, when the aforementioned window type air conditioning device or split type air conditioning device is operated as a cooler, the airflow of a relatively lower temperature exhausted from the space of an air conditioning object such as inside of a room has not been used to facilitate the decreasing of the temperature of an external heat exchanger which is disposed outdoors as a condenser, and when the air conditioning device is operated as a heater, the exhausted airflow of a relatively higher temperature has not been used to facilitate the increasing of the temperature of the external heat exchanger which is disposed outdoors as an evaporator.

[0009] This invention relates to a cooling/heating air conditioning device for regulating temperature, which pumps the air conditioning object space exhausted fluid (105) in an air conditioning object such as the indoor or 20 the internal of a vehicle, and/or pumps the external airflow (1051) through the external heat exchanger (1021) disposed at the external of the air conditioning object such as the outdoor or the outside of a vehicle, so as to perform heat exchange with the coolant fluid pipeline (103) pass-25 ing through the internal of the external heat exchanger device by means of the temperature differentiation between the two fluids. When the air conditioning device is operated as a cooler, the airflow of a relatively lower temperature exhausted from the space of the air conditioning 30 object such as the inside of the room can be used to facilitate the decreasing of the temperature of the external heat exchanger which is disposed outdoors as a condenser, and when the air conditioning device is operated as a heat pump to supply hot air, the exhausted airflow 35 of a relatively higher temperature can be used to facilitate the increasing of the temperature of the external heat exchanger which is disposed outdoors as an evaporator; the characteristic of energy saving of the present invention is applicable in the internal or external space of a 40 gas-state cooling/warming air conditioning device or liquid-state temperature regulating device installed in a fixed member such as the internal of an architecture, factory, public building or camp; or applicable in the internal 45 or external space of a gas-state cooling/warming air conditioning device or liquid-state temperature regulating device installed in a moveable member such as a road vehicle, rail vehicle or aircraft; or applicable in the internal or external space of a gas-state cooling/warming air conditioning device or liquid-state temperature regulating de-50 vice installed in an equipment device.

[0010] Fig. 1 is a diagram of the operating principles of this invention illustrated by the integral air conditioning device.

[0011] As illustrated in Fig. 1, the main configurations ⁵⁵ are as follows:

an air conditioning device main unit (101), essentially

consisted of a throttle device, an internal heat exchanger (203), a compression device, pipelines, a control device (201), an air conditioning airflow blower and a housing, and coupled to a pipeline of the external heat exchanger (1021) mounted in an external temperature differentiation space (130) to form a circulating path by means of a coolant fluid pipeline (103); and having exhaust amount regulating device (1061) and a fluid exhausting path (1060) for the air conditioning object space exhausted fluid (105) to flow through, and further to exhaust to the external temperature differentiation space (130) through the external heat exchanger (1021);

the external heat exchanger (1021), provided with the coolant fluid pipeline (103) for allowing the coolant passed from the main unit to heat exchange with the external airflow (1051) of the external temperature differentiation space (130) of the external heat exchanger (1021) and the air conditioning object space exhausted fluid (105);

a blowing pump (1041) or an external heat exchanger airflow exhausting fan unit (104) is installed at one or more than one of the three locations including the fluid exhausting path (1060) or the inlet side or the outlet side of the external heat exchanger (1021), so as to pump the air conditioning object space exhausted fluid (105) to exhaust to the external temperature differentiation space (130) through the external heat exchanger (1021);

said external heat exchanger airflow exhausting fan unit (104) and said blowing pump (1041), comprising an air blowing or exhausting fan unit or an air pump driven by an electric motor, for pumping the air conditioning object space exhausted fluid (105) with a temperature differentiation from the air conditioning object space (120) through the exhaust amount regulating device (1061) and the fluid exhausting path (1060), or for simultaneously pumping the air conditioning object space exhausted fluid (105) and the external airflow (1051), so as to exhaust to the external temperature differentiation space (130) through the external heat exchanger (1021), enabling two airflows to exhaust to the external temperature differentiation space (130) through the external heat exchanger (1021);

the coolant fluid pipeline (103), which is a circulation pipeline device for coupling the air conditioning device main unit (101) and the external heat exchanger (1021), in which a gas or liquid coolant is circulated; the exhaust amount regulating device (1061), formed by a fluid gate, a shutoff gate or valve for operating and adjusting the exhaust amount of the air conditioning object space exhausted fluid (105); the fluid exhausting path (1060), which is a fluid passage structure for permitting the exhaust of the air conditioning object space exhausted fluid (105);

[0012] This operating principles thereof are as follows:

--When operated as the function to supply cold air to the air conditioning object space (120), if the temperature of an external temperature differentiation space (130) where the external heat exchanger (1021) is located is higher, and the external airflow (1051) is pumped only by the external heat exchanger airflow exhausting fan unit (104), it is difficult to release heat from the coolant in the coolant fluid pipe (103) disposed in the external heat exchanger 10 (1021), thereby by utilizing both or one of the external heat exchanger airflow exhausting fan unit (104) and/or the exhaust amount regulating device (1061) to pump the air conditioning object space exhausted fluid (105) at a relatively lower temperature in an in-15 door air conditioning object space (120), or simultaneously pump the air conditioning object space exhausted fluid (105) and the external airflow (1051) flowing through the external heat exchanger (1021), the effect of lowing the temperature of the external heat exchanger (1021) is enhanced, and thereby fa-20 cilitating the enhancing of the cooling air conditioning efficiency;

--on the contrary, when operated as an heat pump function to supply hot air to the air conditioning object space (120), by pumping the air conditioning object 25 space exhausted fluid (105) having relatively higher temperature to the external heat exchanger (1021) through the external heat exchanger (1021), the effect of raising the temperature of the external heat exchanger (1021) is enhanced, and thereby facilitat-30 ing to enhance the heating air conditioning efficiency; The air conditioning device utilizing temperature differentiation of exhausted gas to even temperature of external heat exchanger of the present invention includes to pump the airflow passing through the ex-35 ternal of the external heat exchanger (1021) by means of the external heat exchanger airflow exhausting fan unit (104), and /or the blowing pump (1041);

According to the air conditioning device utilizing tem-40 perature differentiation of exhausted gas to even temperature of external heat exchanger, with a thermal insulation device (110) constructed in the object location, the air conditioning object space (120) and 45 the external temperature differentiation space (130) can be insulated, the thermal insulation structure (110) includes the wall of a building, the housing of a carrier or the enclosure of a mechanism made of a heat insulation material or a material having even better heat insulation properties;

According to the air conditioning device utilizing temperature differentiation of exhausted gas to even temperature of external heat exchanger, the mentioned air conditioning object space (120) is often defined as the internal of a building or the internal of a vehicle or the internal of a boat or the internal of an aircraft or the internal of an equipment device, which allows the air conditioning device to perform

temperature-raising regulation or temperature-lowering regulation; the mentioned air conditioning object space exhausted fluid (105) is defined as the airflow exhausted from the internal of the air conditioning object space (120) and flowing through the external heat exchanger (1021);

According to the air conditioning device utilizing temperature differentiation of exhausted gas to even temperature of external heat exchanger, the mentioned external temperature differentiation space (130) is defined as the external space insulated from the air conditioning object space (120) through the thermal insulation device (110);

According to the air conditioning device utilizing temperature differentiation of exhausted gas to even temperature of external heat exchanger, the mentioned external airflow (1051) is defined as the airflow surrounding the external temperature differentiation space (130);

In the air conditioning device utilizing temperature differentiation of exhausted gas to even temperature of external heat exchanger, the temperature of the air conditioning object space exhausted fluid (105) includes higher than that of an heat exchanger to the external disposed externally of an temperature regulator:

In the air conditioning device utilizing temperature differentiation of exhausted gas to even temperature of external heat exchanger, the temperature of the air conditioning object space exhausted fluid (105) includes lower than that of an heat exchanger to the external disposed externally of an temperature regulator;

In the air conditioning device utilizing temperature differentiation of exhausted gas to even temperature of external heat exchanger, the exhausted air conditioning object space exhausted fluid (105) includes to heat exchange with the coolant fluid pipeline (103) disposed in the external heat exchanger (1021) in the external space or a surface of the external heat exchanger (1021);

The air conditioning device utilizing temperature differentiation of exhausted gas to even temperature of external heat exchanger of the present invention is formed by applying the aforementioned operating principles to various types of air conditioning devices including integral air conditioning devices, or split type air conditioning devices, or using the cooling tower to replace the cooling tower type air conditioning device of the external heat exchanger (1021).

[0013] Several embodiments of the air conditioning device utilizing temperature differentiation of exhausted gas to even temperature of external heat exchangers of the present invention are described as follows:

Fig. 2 is a structural schematic view of an embodiment of present invention having an integral air con-

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ditioning device with an external heat exchanger airflow exhausting fan unit (104) and a fluid exhausting path (106) so as to pump an air conditioning object space exhausted fluid (105) and an external airflow (1051) to flow together through an external heat exchanger (1021).

[0014] As illustrated in Fig. 2, the main configurations are as follows:

an air conditioning device main unit (101), essentially consisted of a throttle device, an internal heat exchanger (203), a compression device, pipelines, a control device (201), an air conditioning airflow blower and a housing, and coupled to a pipeline of the external heat exchanger (1021) mounted in an external temperature differentiation space (130) to form a circulating path by means of a coolant fluid pipeline (103); and having an exhaust amount regulating device (1061), and a fluid exhausting path 20 (106) formed by a housing for allowing air conditioning object space exhausted fluid (105) to flow to the external heat exchanger (1021);

the external heat exchanger (1021), provided with the coolant fluid pipeline (103) for allowing the cool-25 ant passed from the main unit to heat exchange with the external airflow (1051) of the external temperature differentiation space (130) of the external heat exchanger (1021) and the air conditioning object space exhausted fluid (105);

the coolant fluid pipeline (103), which is a circulation pipeline device for coupling the air conditioning device main unit (101) and the external heat exchanger (1021), in which a gas or liquid coolant is circulated; an external heat exchanger airflow exhausting fan 35 unit (104), comprising an air blowing or exhausting fan unit or an air pump driven by an electric motor, for pumping the external airflow (1051) of the external temperature differentiation space (130) and for 40 pumping the air conditioning object space exhausted fluid (105) with a temperature differentiation which is pumped from the air conditioning object space (120) through the exhaust amount regulating device (1061) and the fluid exhausting path (106), enabling 45 two airflows to exhaust to the external temperature differentiation space (130) through the external heat exchanger (1021);

the exhaust amount regulating device (1061), formed by a fluid gate, a shutoff gate or valve for operating and adjusting the exhaust amount of the 50 air conditioning object space exhausted fluid (105); the fluid exhausting path (106), which is a fluid passage structure for permitting the exhaust of the air conditioning object space exhausted fluid (105); whereby an integral air conditioning device assem-55 bly (1000) is formed by the abovementioned structures.

[0015] Fig. 3 is a structural schematic view of an embodiment of present invention having an integral air conditioning device without a heat exchanger airflow exhausting fan unit (104) and a ventilating device (1041) commonly constructed with a fluid exhausting path (106) so as to pump an air conditioning object space exhausted fluid (105) to flow through an external heat exchanger (1021).

[0016] As illustrated in Fig. 3, the main configurations 10 are as follows:

> an air conditioning device main unit (101), essentially consisted of a throttle device, an internal heat exchanger (203), a compression device, pipelines, a control device (201), an air conditioning airflow blower and a housing, and coupled to a pipeline of the external heat exchanger (1021) mounted in an external temperature differentiation space (130) to form a circulating path by means of a coolant fluid pipeline (103); and having a fluid exhausting path (106) formed by a housing, and having an exhaust amount regulating device (1061) and the blowing pump (1041);

the external heat exchanger (1021), provided with the coolant fluid pipeline (103) for allowing the coolant passed from the main unit to heat exchange with the air conditioning object space exhausted fluid (105) through the external heat exchanger (1021); the coolant fluid pipeline (103), which is a circulation pipeline device for coupling the air conditioning device main unit (101) and the external heat exchanger (1021), in which a gas or liquid coolant is circulated; a blowing pump (1041), comprising an air blowing or exhausting fan unit or an air pump driven by an electric motor, for pumping the air conditioning object space exhausted fluid (105) with a temperature differentiation from the air conditioning object space (120) through the exhaust amount regulating device (1061) and the fluid exhausting path (106), so as to exhaust to the external temperature differentiation space (130) through the external heat exchanger (1021);

the exhaust amount regulating device (1061), formed by a fluid gate, a shutoff gate or valve for operating and adjusting the exhaust amount of the air conditioning object space exhausted fluid (105); the fluid exhausting path (106), which is a fluid passage structure for permitting the exhaust of the air conditioning object space exhausted fluid (105); whereby an integral air conditioning device assembly (1000) is formed by the abovementioned structures.

[0017] Fig. 4 is a structural schematic view of an embodiment of present invention having a fluid exhausting path (1060) and an external heat exchanger airflow exhausting fan unit (104) so as to pump an air conditioning object space exhausted fluid (105) and an external air-

flow (1051) to flow together through an external heat exchanger (1021) in the air conditioning device assembly (1000).

[0018] As illustrated in Fig. 4, the main configurations are as follows:

an air conditioning device main unit (101), essentially consisted of a throttle device, an internal heat exchanger (203), a compression device, pipelines, a control device (201), an air conditioning airflow blower and a housing, and coupled to a pipeline of the external heat exchanger (1021) mounted in an external temperature differentiation space (130) to form a circulating path by means of a coolant fluid pipeline (103); and having a fluid exhausting path (1060) and an exhaust amount regulating device (1061);

the external heat exchanger (1021), provided with the coolant fluid pipeline (103) for allowing the coolant passed from the main unit to heat exchange with ²⁰ the external airflow (1051) of the external temperature differentiation space (130) of the external heat exchanger (1021) and the air conditioning object space exhausted fluid (105);

the coolant fluid pipeline (103), which is a circulation ²⁵ pipeline device for coupling the air conditioning device main unit (101) and the external heat exchanger (1021), in which a gas or liquid coolant is circulated; an external heat exchanger airflow exhausting fan

unit (104), comprising an air blowing or exhausting fan unit or an air pump driven by an electric motor, for pumping the external airflow (1051) of the external temperature differentiation space (130) and for pumping the air conditioning object space exhausted fluid (105) with a temperature differentiation which is pumped from the air conditioning object space (120) through the exhaust amount regulating device (1061) and the fluid exhausting path (1060), enabling two airflows to exhaust to the external temperature differentiation space (130) through the external heat exchanger (1021);

whereby an air conditioning device assembly (1000) is formed by the abovementioned structures;

the exhaust amount regulating device (1061), formed by a fluid gate, a shutoff gate or valve for operating and adjusting the exhaust amount of the air conditioning object space exhausted fluid (105); the fluid exhausting path (1060), which is a fluid passage structure for permitting the exhaust of the air conditioning object space exhausted fluid (105).

[0019] Fig. 5 is a structural schematic view of an embodiment of present invention having a separately mounted blowing pump (1041) and an exhaust amount regulating device (1061) and having an air conditioning device assembly (1000) without the external heat exchanger airflow exhausting fan unit (104).

[0020] As illustrated in Fig. 5, the main configurations

are as follows:

an air conditioning device main unit (101), essentially consisted of a throttle device, an internal heat exchanger (203), a compression device, pipelines, a control device (201), an air conditioning airflow blower and a housing, and coupled to a pipeline of the external heat exchanger (1021) mounted in an external temperature differentiation space (130) to form a circulating path by means of a coolant fluid pipeline (103); and having a fluid exhausting path (1060), an exhaust amount regulating device (1061), a blowing pump (1041);

the external heat exchanger (1021), provided with the coolant fluid pipeline (103) for allowing the coolant passed from the main unit to heat exchange with the external heat exchanger (1021) and the air conditioning object space exhausted fluid (105);

the coolant fluid pipeline (103), which is a circulation pipeline device for coupling the air conditioning device main unit (101) and the external heat exchanger (1021), in which a gas or liquid coolant is circulated; whereby an air conditioning device assembly (1000) is formed by the abovementioned structures;

a blowing pump (1041), comprising an air blowing or exhausting fan unit or an air pump driven by an electric motor, for pumping the air conditioning object space exhausted fluid (105) with a temperature differentiation from the air conditioning object space (120) through the exhaust amount regulating device (1061) and the fluid exhausting path (1060), so as to exhaust to the external temperature differentiation space (130) through the external heat exchanger (1021);

the exhaust amount regulating device (1061), formed by a fluid gate, a shutoff gate or valve for operating and adjusting the exhaust amount of the air conditioning object space exhausted fluid (105); the fluid exhausting path (1060), which is a fluid passage structure for permitting the exhaust of the air conditioning object space exhausted fluid (105).

[0021] Fig. 6 is a structural schematic view of an embodiment of present invention having an air conditioning device assembly (1000) mounted with an external heat exchanger airflow exhausting fan unit (104) and the fluid exhausting path (1060) and the blowing pump (1041). **[0022]** As illustrated in Fig. 6, the main configurations are as follows:

an air conditioning device main unit (101), essentially consisted of a throttle device, an internal heat exchanger (203), a compression device, pipelines, a control device (201), an air conditioning airflow blower and a housing, and coupled to a pipeline of the external heat exchanger (1021) mounted in an external temperature differentiation space (130) to form a circulating path by means of a coolant fluid

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pipeline (103); and having a fluid exhausting path (1060) and a blowing pump (1041);

the external heat exchanger (1021), provided with the coolant fluid pipeline (103) for allowing the coolant passed from the main unit to heat exchange with the external airflow (1051) of the external temperature differentiation space (130) of the external heat exchanger (1021) and the air conditioning object space exhausted fluid (105);

the coolant fluid pipeline (103), which is a circulation 10 pipeline device for coupling the air conditioning device main unit (101) and the external heat exchanger (1021), in which a gas or liquid coolant is circulated; an external heat exchanger airflow exhausting fan 15 unit (104), comprising an air blowing or exhausting fan unit or an air pump driven by an electric motor, for pumping the external airflow (1051) of the external temperature differentiation space (130) and for pumping the air conditioning object space exhausted fluid (105) with a temperature differentiation which 20 is pumped from the air conditioning object space (120) through the exhaust amount regulating device (1061) and the fluid exhausting path (1060) by the blowing pump (1041), enabling two airflows to exhaust to the external temperature differentiation 25 space (130) through the external heat exchanger (1021);

whereby an air conditioning device assembly (1000) is formed by the abovementioned structures;

a blowing pump (1041), comprising an air blowing 30 or exhausting fan unit or an air pump driven by an electric motor, for pumping the air conditioning object space exhausted fluid (105) with a temperature differentiation from the air conditioning object space (120) through the exhaust amount regulating device 35 (1061) and the fluid exhausting path (1060), so as to exhaust to the external temperature differentiation space (130) through the external heat exchanger (1021), enabling two airflows to exhaust to the ex-40 ternal temperature differentiation space (130) through the external heat exchanger (1021); the exhaust amount regulating device (1061), formed by a fluid gate, a shutoff gate or valve for operating and adjusting the exhaust amount of the 45 air conditioning object space exhausted fluid (105); the fluid exhausting path (1060), which is a fluid passage structure for permitting the exhaust of the air conditioning object space exhausted fluid (105).

[0023] Fig. 7 is a structural schematic view of an embodiment of present invention having a split type air conditioning device outdoor unit (2002) with an external heat exchanger airflow exhausting fan unit (104) and a split type air conditioning device main unit (2001) mounted with the fluid exhausting path (1060).

[0024] As illustrated in Fig. 7, the main configurations are as follows:

a split type air conditioning device main unit (2001), essentially consisted of a throttle device, an internal heat exchanger (203), a compression device, pipelines, a control device (201), an air conditioning airflow blower and a housing, and coupled to a pipeline of the external heat exchanger (1021) mounted in a split type air conditioning device outdoor unit (2002) in an external temperature differentiation space (130) to form a circulating path by means of a coolant fluid pipeline (103); and having a fluid exhausting path (1060) and an exhaust amount regulating device (1061);

- the split type air conditioning device outdoor unit (2002), having a housing and the external heat exchanger (1021), wherein the external heat exchanger (1021) being provided with the coolant fluid pipeline (103) for allowing the coolant passed from the split type air conditioning device main unit (2001) to heat exchange with the external airflow (1051) of the external temperature differentiation space (130) of the external heat exchanger (1021) and the air conditioning object space exhausted fluid (105), and having an external heat exchanger airflow exhausting fan unit (104), wherein the external heat exchanger airflow exhausting fan unit (104) comprising an air blowing or exhausting fan unit or an air pump driven by an electric motor, for pumping the external airflow (1051) of the external temperature differentiation space (130) and for pumping the air conditioning object space exhausted fluid (105) with a temperature differentiation from the air conditioning object space (120) through the exhaust amount regulating device (1061) and the fluid exhausting path (1060), and enabling two airflows to exhaust to the external temperature differentiation space (130) through the external heat exchanger (1021); the coolant fluid pipeline (103), which is a circulation pipeline device for coupling the air conditioning device main unit (101) and the external heat exchanger (1021), in which a gas or liquid coolant is circulated; the exhaust amount regulating device (1061), formed by a fluid gate, a shutoff gate or valve for operating and adjusting the exhaust amount of the
- air conditioning object space exhausted fluid (105); the fluid exhausting path (1060), which is a fluid passage structure for permitting the exhaust of the air conditioning object space exhausted fluid (105).

[0025] Fig. 8 is a structural schematic view of an embodiment of present invention having the split type air conditioning device main unit (2001) commonly constructed with the blowing pump (1041) and having a split type air conditioning device outdoor unit (2002) without the external heat exchanger airflow exhausting fan unit (104).

[0026] As illustrated in Fig. 8, the main configurations are as follows:

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a split type air conditioning device main unit (2001), essentially consisted of a throttle device, an internal heat exchanger (203), a compression device, pipelines, a control device (201), an air conditioning airflow blower and a housing, and coupled to a pipeline of the external heat exchanger (1021) mounted in a split type air conditioning device outdoor unit (2002) in an external temperature differentiation space (130) to form a circulating path by means of a coolant fluid pipeline (103); and having a fluid exhausting path (1060), an exhaust amount regulating device (1061) and a blowing pump (1041);

the split type air conditioning device outdoor unit (2002), having a housing and the external heat exchanger (1021), wherein the external heat exchang-15 er (1021) being provided with the coolant fluid pipeline (103) for allowing the coolant passed from the split type air conditioning device main unit (2001) to heat exchange with the air conditioning object space exhausted fluid (105) by means of the external heat 20 exchanger (1021);

the coolant fluid pipeline (103), which is a circulation pipeline device for coupling the air conditioning device main unit (101) and the external heat exchanger (1021), in which a gas or liquid coolant is circulated; 25 a blowing pump (1041), comprising an air blowing or exhausting fan unit or an air pump driven by an electric motor, for pumping the air conditioning object space exhausted fluid (105) with a temperature differentiation which is pumped from the air condition-30 ing object space (120) through the exhaust amount regulating device (1061) and the fluid exhausting path (1060), so as to exhaust to the external temperature differentiation space (130) through the external heat exchanger (1021); the exhaust amount regulating device (1061), formed by a fluid gate, a shutoff gate or valve for

operating and adjusting the exhaust amount of the air conditioning object space exhausted fluid (105); the fluid exhausting path (1060), which is a fluid passage structure for permitting the exhaust of the air conditioning object space exhausted fluid (105).

[0027] Fig. 9 is a structural schematic view of an embodiment of present invention having the separately mounted fluid exhausting path (1060), the split type air conditioning device main unit (2001) and the split type air conditioning device outdoor unit (2002) with the external heat exchanger airflow exhausting fan unit (104). [0028] As illustrated in Fig. 9, the main configurations are as follows:

a split type air conditioning device main unit (2001), essentially consisted of a throttle device, an internal heat exchanger (203), a compression device, pipelines, a control device (201), an air conditioning airflow blower and a housing, and coupled to a pipeline of the external heat exchanger (1021) mounted in a split type air conditioning device outdoor unit (2002) in an external temperature differentiation space (130) to form a circulating path by means of a coolant fluid pipeline (103); and having a fluid exhausting path (1060) and an exhaust amount regulating device (1061);

the split type air conditioning device outdoor unit (2002), having a housing and the external heat exchanger (1021), wherein the external heat exchanger (1021) being provided with the coolant fluid pipeline (103) for allowing the coolant passed from the split type air conditioning device main unit (2001) to heat exchange with the external airflow (1051) of the external temperature differentiation space (130) of the external heat exchanger (1021) and the air conditioning object space exhausted fluid (105), and having an external heat exchanger airflow exhausting fan unit (104), wherein the external heat exchanger airflow exhausting fan unit (104) comprising an air blowing or exhausting fan unit or an air pump driven by an electric motor, for pumping the external airflow (1051) of the external temperature differentiation space (130) and for pumping the air conditioning object space exhausted fluid (105) with a temperature differentiation from the air conditioning object space (120) through the exhaust amount regulating device (1061) and the fluid exhausting path (1060), enabling two airflows to exhaust to the external temperature differentiation space (130) through the external heat exchanger (1021);

the coolant fluid pipeline (103), which is a circulation pipeline device for coupling the split type air conditioning device main unit (2001) and the external heat exchanger (1021), in which a gas or liquid coolant is circulated;

the exhaust amount regulating device (1061), formed by a fluid gate, a shutoff gate or valve for operating and adjusting the exhaust amount of the air conditioning object space exhausted fluid (105); the fluid exhausting path (1060), which is a fluid passage structure for permitting the exhaust of the air conditioning object space exhausted fluid (105).

[0029] Fig. 10 is a structural schematic view of an embodiment of present invention having the separately mounted blowing pump (1041), the split type air conditioning device main unit (2001) and the split type air conditioning device outdoor unit (2002) without the external heat exchanger airflow exhausting fan unit (104).

[0030] As illustrated in Fig. 10, the main configurations are as follows:

a split type air conditioning device main unit (2001), essentially consisted of a throttle device, an internal heat exchanger (203), a compression device, pipelines, a control device (201), an air conditioning airflow blower and a housing, and coupled to a pipeline of the external heat exchanger (1021) mounted in

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an external temperature differentiation space (130) to form a circulating path by means of a coolant fluid pipeline (103); and having a fluid exhausting path (1060), an exhaust amount regulating device (1061) and a blowing pump (1041);

the split type air conditioning device outdoor unit (2002), having a housing and the external heat exchanger (1021), wherein the external heat exchanger (1021) being provided with the coolant fluid pipeline (103) for allowing the coolant passed from the split type air conditioning device main unit (2001) to heat exchange with the air conditioning object space exhausted fluid (105) by means of the external heat exchanger (1021);

the coolant fluid pipeline (103), which is a circulation ¹⁵ pipeline device for coupling split type air conditioning device main unit (2001) and the external heat exchanger (1021), in which a gas or liquid coolant is circulated;

a blowing pump (1041), comprising an air blowing ²⁰ or exhausting fan unit or an air pump driven by an electric motor, for pumping the air conditioning object space exhausted fluid (105) with a temperature differentiation which is pumped from the air conditioning object space (120) through the exhaust amount ²⁵ regulating device (1061) and the fluid exhausting path (1060), so as to exhaust to the external temperature differentiation space (130) through the external heat exchanger (1021);

the exhaust amount regulating device (1061), *30* formed by a fluid gate, a shutoff gate or valve for operating and adjusting the exhaust amount of the air conditioning object space exhausted fluid (105); the fluid exhausting path (1060), which is a fluid passage structure for permitting the exhaust of the air *35* conditioning object space exhausted fluid (105);

[0031] Fig. 11 is a structural schematic view of an embodiment of present invention having the split type air conditioning device main unit (2001), the split type air conditioning device outdoor unit (2002) with the external heat exchanger airflow exhausting fan unit (104) and the separately mounted blowing pump (1041).

[0032] As illustrated in Fig. 11, the main configurations are as follows:

a split type air conditioning device main unit (2001), essentially consisted of a throttle device, an internal heat exchanger (203), a compression device, pipelines, a control device (201), an air conditioning airflow blower and a housing, and coupled to a pipeline of the external heat exchanger (1021) mounted in an external temperature differentiation space (130) to form a circulating path by means of a coolant fluid pipeline (103); and having a fluid exhausting path (1060), the exhaust amount regulating device (1061) and the blowing pump (1041);

the split type air conditioning device outdoor unit

(2002), having a housing and the external heat exchanger (1021), wherein the external heat exchanger (1021) being provided with the coolant fluid pipeline (103) for allowing the coolant passed from the split type air conditioning device main unit (2001) to heat exchange with the external airflow (1051) of the external temperature differentiation space (130) of the external heat exchanger (1021) and the air conditioning object space exhausted fluid (105), and having an external heat exchanger airflow exhausting fan unit (104), wherein the external heat exchanger airflow exhausting fan unit (104) comprising an air blowing or exhausting fan unit or an air pump driven by an electric motor, for pumping the external airflow (1051) of the external temperature differentiation space (130) and for pumping the air conditioning object space exhausted fluid (105) with a temperature differentiation from the air conditioning object space (120) through the exhaust amount regulating device (1061) and the fluid exhausting path (1060), enabling two airflows to exhaust to the external temperature differentiation space (130) through the external heat exchanger (1021);

the coolant fluid pipeline (103), which is a circulation pipeline device for coupling the split type air conditioning device main unit (2001) and the external heat exchanger (1021), in which a gas or liquid coolant is circulated;

the exhaust amount regulating device (1061), formed by a fluid gate, a shutoff gate or valve for operating and adjusting the exhaust amount of the air conditioning object space exhausted fluid (105); the fluid exhausting path (1060), which is a fluid passage structure for permitting the exhaust of the air conditioning object space exhausted fluid (105).

[0033] Fig. 12 is a structural schematic view of an embodiment of present invention having a water-cooled air conditioning device main unit (2005), a powered fan provided cooling tower (2003) and the separately mounted blowing pump (1041).

[0034] As illustrated in Fig. 12, the main configurations are as follows:

a water-cooled air conditioning device main unit (2005), which is an air conditioning device main unit essentially consisted of a throttle device, an internal heat exchanger (203), a compression device, pipelines, a control device (201), an air conditioning airflow blower water-cooled cooling device and a housing, and a water pipe (107) of the water-cooled condensing device disposed in the water-cooled air conditioning device main unit (2005) being coupled to a water in and out pipe (109) of a water inlet and water exhaust pipeline of the powered fan provided cooling tower (2003) disposed in the external temperature differentiation space (130) so as to form a path of water circulation; and having the fluid exhausting

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path (1060), the exhaust amount regulating device (1061) and the blowing pump (1041), and by means of the blowing pump (1041) to pump the air conditioning object space exhausted fluid (105) through the fluid exhausting path (1060) and the exhaust amount regulating device (1061) to an air inlet of the powered fan provided cooling tower (2003); the powered fan provided cooling tower (2003), comprising a cooling tower equipped with the cooling tower fan unit (108), for example, a counterflow mechanical draft cooling tower, an induced counterflow mechanical draft cooling tower, a counterflow cooling tower, a crossflow mechanical draft cooling tower, or an evaporative cooling tower, and the powered fan provided cooling tower (2003) having an air inlet, 15 so that the air conditioning object space exhausted fluid (105) pumped from the air conditioning object space (120) through the blowing pump (1041) is directed through the fluid exhausting path (1060) into the air inlet of the powered fan provided cooling tower 20 (2003), and passing through the powered fan provided cooling tower (2003) so as to cool the waterflow and then is exhausted to the surrounding through the cooling tower fan unit (108), and having a water in and out pipe (109) for connecting the water pipe 25 (107) so as to allow the cooling water to circulate between the powered fan provided cooling tower (2003) and the water-cooled air conditioning device main unit (2005);

the water pipe (107), disposed between a water- *30* cooled condensing device of the water-cooled air conditioning device main unit (2005) and the water in and out pipe (109) of the powered fan provided cooling tower (2003);

the cooling tower fan unit (108), comprising an air 35 blowing or exhausting fan unit or an air pump driven by an electric motor, and having one or more following operation functions, including: 1) pumping the external airflow (1051) of the external temperature differentiation space (130) to the external tempera-40 ture differentiation space (130) through the inside of the powered fan provided cooling tower (2003); 2) pumping the air conditioning object space exhausted fluid (105) with a temperature differentiation from the 45 air conditioning object space (120) through the exhaust amount regulating device (1061), the blowing pump (1041) and the fluid exhausting path (1060) to the external temperature differentiation space (130) through the powered fan provided cooling tower (2003); 3) enabling the external airflow (1051) and 50 the air conditioning object space exhausted fluid (105) to exhaust commonly to the external temperature differentiation space (130) through the powered fan provided cooling tower (2003);

a water pump (111), for pumping a cooling water 55 between the water-cooled air conditioning device main unit (2005) and the powered fan provided cooling tower (2003) through the water pipe (107) and

the water in and out pipe (109) for cooling circulation; the exhaust amount regulating device (1061), formed by a fluid gate, a shutoff gate or valve for operating and adjusting the exhaust amount of the air conditioning object space exhausted fluid (105); the fluid exhausting path (1060), which is a fluid passage structure for permitting the exhaust of the air conditioning object space exhausted fluid (105).

¹⁰ [0035] Fig. 13 is a structural schematic view of an embodiment of present invention having a water-cooled air conditioning device main unit (2005) and a powered fan provided cooling tower (2003).

[0036] As illustrated in Fig. 13, the main configurations are as follows:

a water-cooled air conditioning device main unit (2005), which is an air conditioning device main unit essentially consisted of a throttle device, an internal heat exchanger (203), a compression device, pipelines, a control device (201), an air conditioning airflow blower water-cooled cooling device and a housing, and a water pipe (107) of the water-cooled condensing device disposed in the water-cooled air conditioning device main unit (2005) being coupled to a water in and out pipe (109) of a water inlet and water exhaust pipeline of the powered fan provided cooling tower (2003) disposed in the external temperature differentiation space (130) so as to form a path of water circulation; and having a fluid exhausting path (1060) and an exhaust amount regulating device (1061) for delivering the air conditioning object space exhausted fluid(105) to an air inlet of the powered fan provided cooling tower (2003);

the powered fan provided cooling tower (2003), comprising a cooling tower equipped with the cooling tower fan unit (108), for example, a counterflow mechanical draft cooling tower, an induced counterflow mechanical draft cooling tower, a counterflow cooling tower, a crossflow mechanical draft cooling tower, or an evaporative cooling tower, and the powered fan provided cooling tower (2003) having an air inlet, so that the air conditioning object space exhausted fluid (105) pumped from the air conditioning object space (120) is directed through the fluid exhausting path (1060) into the air inlet of the powered fan provided cooling tower (2003), and is passing through the powered fan provided cooling tower (2003) so as to cool the waterflow, and then is exhausted to the surrounding through the cooling tower fan unit (108), and having a water in and out pipe (109) for connecting the water pipe (107) so as to allow the cooling water to circulate between the powered fan provided cooling tower (2003) and the water-cooled air conditioning device main unit (2005);

the water pipe (107), disposed between a watercooled condensing device of the water-cooled air conditioning device main unit (2005) and the water in and out pipe (109) of the powered fan provided cooling tower (2003);

the cooling tower fan unit (108), comprising an air blowing or exhausting fan unit or an air pump driven by an electric motor, and having one or more follow-5 ing operation functions, including: 1) pumping the external airflow (1051) of the external temperature differentiation space (130) to the external temperature differentiation space (130) through the inside of 10 the powered fan provided cooling tower (2003); 2) pumping the air conditioning object space exhausted fluid (105) with a temperature differentiation from the air conditioning object space (120) through the exhaust amount regulating device (1061) and the fluid exhausting path (1060) to the external temperature 15 differentiation space (130) through the powered fan provided cooling tower (2003); 3) enabling the external airflow (1051) and the air conditioning object space exhausted fluid (105) to exhaust commonly to the external temperature differentiation space 20 (130) through the powered fan provided cooling tower (2003);

a water pump (111), for pumping a cooling water between the water-cooled air conditioning device main unit (2005) and the powered fan provided cooling tower (2003) through the water pipe (107) and the water in and out pipe (109) for cooling circulation; the exhaust amount regulating device (1061), formed by a fluid gate, a shutoff gate or valve for operating and adjusting the exhaust amount of the air conditioning object space exhausted fluid (105); the fluid exhausting path (1060), which is a fluid passage structure for permitting the exhaust of the air conditioning object space exhausted fluid (105).

[0037] Fig. 14 is a structural schematic view of an embodiment of present invention having a water-cooled air conditioning device main unit (2005), a natural draft cooling tower (2003) and the separately mounted blowing pump (1041).

[0038] As illustrated in Fig. 14, the main configurations are as follows:

a water-cooled air conditioning device main unit 45 (2005), which is an air conditioning device main unit essentially consisted of a throttle device, an internal heat exchanger (203), a compression device, pipelines, a control device (201), an air conditioning airflow blower water-cooled cooling device and a housing, and a water pipe (107) of the water-cooled con-50 densing device disposed in the water-cooled air conditioning device main unit (2005) being coupled to a water in and out pipe (109) of a water inlet and water exhaust pipeline of a natural draft cooling tower (2004) disposed in the external temperature differ-55 entiation space (130) so as to form a path of water circulation; and having the fluid exhausting path (1060), the exhaust amount regulating device (1061)

and the blowing pump (1041), and by means of the blowing pump (1041) to pump the air conditioning object space exhausted fluid (105) to an air inlet of the natural draft cooling tower (2004) through the fluid exhausting path (1060) and the exhaust amount regulating device (1061);

a natural draft cooling tower (2004), comprising a natural draft cooling tower, for example, a crossflow natural draft cooling tower, and the natural draft cooling tower (2004) having an air inlet, and having one or more following operating functions, including: 1) directing the external airflow (1051) from the external temperature differentiation space (130) into the air inlet of the natural draft cooling tower (2004), and passing through the natural draft cooling tower (2004) so as to cool the waterflow, and then exhausting the same to the surrounding through the cooling tower; 2) directing the air conditioning object space exhausted fluid (105) pumped from the air conditioning object space (120) by means of the blowing pump (1041) through the fluid exhausting path (1060) into the air inlet of the natural draft cooling tower (2004), and passing through the natural draft cooling tower (2004) so as to cool the waterflow, and then exhausting the same to the surrounding through the cooling tower; 3) directing the air conditioning object space exhausted fluid (105) and the external airflow (1051) into the air inlet of the natural draft cooling tower (2004), and passing through the natural draft cooling tower (2004) so as to cool the waterflow, and then exhausting the same to the surrounding through the cooling tower; and having a water in and out pipe (109) for coupling the water pipe (107) so as to allow the cooling water to circulate between the natural draft cooling tower (2004) and the water-cooled air conditioning device main unit (2005);

the water pipe (107), disposed between a watercooled condensing device of the water-cooled air conditioning device main unit (2005) and the water in and out pipe (109) of the natural draft cooling tower (2004);

a water pump (111), for pumping a cooling water between the water-cooled air conditioning device main unit (2005) and the powered fan provided cooling tower (2003) through the water pipe (107) and the water in and out pipe (109) for cooling circulation; the exhaust amount regulating device (1061), formed by a fluid gate, a shutoff gate or valve for operating and adjusting the exhaust amount of the air conditioning object space exhausted fluid (105); the fluid exhausting path (1060), which is a fluid passage structure for permitting the exhaust of the air conditioning object space exhausted fluid (105).

[0039] The air conditioning device utilizing temperature differentiation of exhausted gas to even temperature of external heat exchanger is further applied to a spilt type air conditioning device, which mainly includes a split

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type air conditioning device outdoor unit (2002) therein having a split type air conditioning device outdoor main station (2007) and an external heat exchanger (1021) and an airflow exhausting fan unit (104), and a split type air conditioning device indoor unit (2006) therein having an internal heat exchanger (203), a flow regulating device (202), a conditioned airflow blowing fan (204)and a control device (201), and a coolant compressing and circulating loop constructed by a coolant fluid pipeline (103) being installed therebetween, and a fluid exhausting path (1060) being installed from the air conditioning object space (120) to the external heat exchanger (1021) for facilitating the applications in various separated space, illustrated as followings:

Fig. 15 is a structural schematic view of an embodiment of present invention having a split type air conditioning device outdoor unit (2002) composed of an external heat exchanger (1021) and an airflow exhausting fan unit (104) and a split type air conditioning device outdoor main station (2007), having a split type air conditioning device indoor unit (2006) composed of an internal heat exchanger (203), an flow regulating device (202), a control device (201), a conditioned airflow blowing fan (204) and an exhaust amount regulating device (1061), having a coolant compressing and circulating loop constructed by a coolant fluid pipeline (103) installed between the above two, and installing a fluid exhausting path (1060) and introducing external airflow (1051) in the air conditioning object space (120) between the exhaust amount regulating device (1061) and the external heat exchanger (1021);

[0040] As shown FIG. 15, the main configuration is installing a split type air conditioning device outdoor unit (2002) composed of an external heat exchanger (1021) and an airflow exhausting fan unit (104) and a split type air conditioning device outdoor main station (2007), and installing a split type air conditioning device indoor unit (2006) composed of an internal heat exchanger (203), a flow regulating device (202), a control device (201), a conditioned airflow blowing fan (204) and an exhaust amount regulating device (1061), and forming a coolant compressing and circulating loop constructed by a coolant fluid pipeline (103) installed between the above two, and installing a fluid exhausting path (1060) and introducing external airflow (1051) in the air conditioning object space (120) between the exhaust amount regulating device (1061) and the external heat exchanger (1021); and wherein

split type air conditioning device outdoor unit (2002), installed with the split type air conditioning device outdoor main station (2007), the external heat exchanger (1021), the coolant fluid pipeline (103) and the airflow exhausting fan unit (104), wherein the split type air conditioning device outdoor main station (2007) mainly includes a compress device and forms a compressing and circulating loop leaded through the coolant fluid pipeline (103) towards the external heat exchanger (1021) and towards the internal heat exchanger (203) and the flow regulating device (202) in the split type air conditioning device indoor unit (2006) installed in the air conditioning object space (120);

the split type air conditioning device indoor unit (2006) is installed with the internal heat exchanger (203), the flow regulating device (202), the conditioned airflow blowing
fan (204) and provided with a control device (201) for controlling operations of inputting electric energy and driving the air conditioning device; the split type air conditioning device indoor unit (2006) is further installed with the exhaust amount regulating device (1061) and the fluid
exhausting path (1060);

the external heat exchanger (1021) of the split type air conditioning device outdoor unit (2002) is installed with the coolant fluid pipeline (103) allowing the coolant to flow through so as to exchange heat with the external 20 airflow (1051) of the external temperature differentiation space (130) in the external heat exchanger (1021) and the air conditioning object space exhausted fluid (105); the external heat exchanger airflow exhausting fan unit (104) installed on the split type air conditioning device 25 outdoor unit (2002) is constituted by an airflow blowing or airflow exhausting fan unit or an air pump driven by an electric motor, wherein an airflow introducing interval is defined between the fluid exhausting path (1060) and the external heat exchanger (1021) for pumping in the 30 external airflow (1051) of the external temperature differentiation space (130) and for pumping the air conditioning object space exhausted fluid (105) with a temperature differentiation and pumped from the air conditioning object space (120) through the exhaust amount regulating 35 device (1061) and the fluid exhausting path (106), thereby enabling two airflows to exchange heat then being exhausted to the external temperature differentiation space (130) through the external heat exchanger (1021); coolant fluid pipeline (103), constituted by a pipeline de-40 vice for connecting the split type air conditioning device outdoor main station (2007) and the external heat exchanger (1021) and the flow regulating device (202) and the internal heat exchanger (203) of the split type air conditioning device indoor unit (2006) for the purpose of cir-

45 culation, wherein the internal of pipeline allows the gasstate or liquid-state coolant to flow through; exhaust amount regulating device (1061), constituted by a fluid gate, a shutoff gate or valve for operating and

regulating the exhaust amount of the air conditioning object space exhausted fluid (105);

fluid exhausting path (1060), constituted by a fluid passage structure for exhausting the exhaust amount of the air conditioning object space exhausted fluid (105) from the air conditioning object space (120);

55 the coolant fluid pipeline (103) and fluid exhausting path (1060) can be individually installed or jointly constituted as a pipeline structure.

[0041] Fig. 16 is a structural schematic view of an em-

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bodiment of present invention having a split type air conditioning device outdoor unit (2002) composed of an external heat exchanger (1021) and a split type air conditioning device outdoor main station (2007), having a split type air conditioning device indoor unit (2006) composed of an internal heat exchanger (203), an flow regulating device (202), a control device (201), a conditioned airflow blowing fan (204), a blowing pump (1041) and an exhaust amount regulating device (1061), having a coolant compressing and circulating loop constructed by a coolant fluid pipeline (103) installed between the above two, and installing a fluid exhausting path (1060) in the air conditioning object space (120) between the exhaust amount regulating device (1061), the blowing pump (1041) and the external heat exchanger (1021).

[0042] As shown FIG. 16, the main configuration is installing a split type air conditioning device outdoor unit (2002) composed of an external heat exchanger (1021) and a split type air conditioning device outdoor main station (2007), and installing a split type air conditioning device indoor unit (2006) composed of an internal heat exchanger (203), a flow regulating device (202), a control device (201), a conditioned airflow blowing fan (204), a blowing pump (1041) and an exhaust amount regulating device (1061), and forming a coolant compressing and circulating loop constructed by a coolant fluid pipeline (103) installed between the above two, and installing a fluid exhausting path (1060) in the air conditioning object space (120) between the exhaust amount regulating device (1061), the blowing pump (1041)and the external heat exchanger (1021); and wherein

split type air conditioning device outdoor unit (2002), installed with the split type air conditioning device outdoor main station (2007), the external heat exchanger (1021) and the coolant fluid pipeline (103), wherein the split type air conditioning device outdoor main station (2007) mainly includes a compress device and forms a compressing and circulating loop leaded through the coolant fluid pipeline (103) towards the external heat exchanger (1021) and towards the internal heat exchanger (203) and the flow regulating device (202) in the split type air conditioning device indoor unit (2006) installed in the air conditioning object space (120);

the split type air conditioning device indoor unit (2006) is installed with the internal heat exchanger (203), the flow regulating device (202), the conditioned airflow blowing fan (204) and provided with a control device (201) for controlling operations of inputting electric energy and driving the air conditioning device; the split type air conditioning device indoor unit (2006) is further installed with the exhaust amount regulating device (1061), the blowing pump (1041) and the fluid exhausting path (1060);

the external heat exchanger (1021) of the split type air conditioning device outdoor unit (2002) is installed with the coolant fluid pipeline (103) allowing the coolant to flow through so as to exchange heat with the air conditioning object space exhausted fluid (105);

coolant fluid pipeline (103), constituted by a pipeline de-

vice for connecting the split type air conditioning device outdoor main station (2007) and the external heat exchanger (1021) and the flow regulating device (202) and the internal heat exchanger (203) of the split type air con-

ditioning device indoor unit (2006) for the purpose of circulation, wherein the internal of pipeline allows the gasstate or liquid-state coolant to flow through;

exhaust amount regulating device (1061), constituted by a fluid gate, a shutoff gate or valve for operating and regulating the exhaust amount of the air conditioning object space exhausted fluid (105);

fluid exhausting path (1060), constituted by a fluid passage structure for exhausting the exhaust amount of the air conditioning object space exhausted fluid (105) from the air conditioning object space (120);

the coolant fluid pipeline (103) and the fluid exhausting path (1060) can be individually installed or jointly constituted as a pipeline structure.

[0043] Fig. 17 is a structural schematic view of an em-20 bodiment of present invention having a split type air conditioning device outdoor unit (2002) composed of an external heat exchanger (1021) and an airflow exhausting fan unit (104) and a split type air conditioning device outdoor main station (2007), having a split type air condi-25 tioning device indoor unit (2006) composed of an internal heat exchanger (203), an flow regulating device (202), a control device (201) and a conditioned airflow blowing fan (204), having a coolant compressing and circulating loop constructed by a coolant fluid pipeline (103) installed 30 between the above two, and separately mounting a exhaust amount regulating device (1061) in the thermal insulation device (110), and installing a fluid exhausting path (1060) and introducing external airflow (1051) in the air conditioning object space (120) between the exhaust 35 amount regulating device (1061) and the external heat exchanger (1021).

[0044] As shown in FIG. 17, the main configuration is installing a split type air conditioning device outdoor unit (2002) composed of an external heat exchanger (1021) and an airflow exhausting fan unit (104) and a split type air conditioning device outdoor main station (2007), installing a split type air conditioning device indoor unit (2006) composed of an internal heat exchanger (203), an flow regulating device (202), a control device (201) 45 and a conditioned airflow blowing fan (204), forming a coolant compressing and circulating loop constructed by a coolant fluid pipeline (103) installed between the above two, and separately mounting a exhaust amount regulating device (1061) in the thermal insulation device (110), and installing a fluid exhausting path (1060) and introducing external airflow (1051) in the air conditioning object space (120) between the exhaust amount regulating device (1061) and the external heat exchanger (1021); wherein

55 split type air conditioning device outdoor unit (2002), installed with the split type air conditioning device outdoor main station (2007), the external heat exchanger (1021), the coolant fluid pipeline (103) and the airflow exhausting

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fan unit (104), wherein the split type air conditioning device outdoor main station (2007) mainly includes a compress device and forms a compressing and circulating loop leaded through the coolant fluid pipeline (103) towards the external heat exchanger (1021) and towards the internal heat exchanger (203) and the flow regulating device (202) in the split type air conditioning device indoor unit (2006) installed in the air conditioning object space (120);

the split type air conditioning device indoor unit (2006) is installed with the internal heat exchanger (203), the flow regulating device (202), the conditioned airflow blowing fan (204) and provided with a control device (201) for controlling operations of inputting electric energy and driving the air conditioning device;

the thermal insulation device (110) is separately mounted with the exhaust amount regulating device (1061) and the fluid exhausting path (1060);

the external heat exchanger (1021) of the split type air conditioning device outdoor unit (2002) is installed with the coolant fluid pipeline (103) allowing the coolant to flow through so as to exchange heat with the external airflow (1051) of the external temperature differentiation space (130) in the external heat exchanger (1021) and the air conditioning object space exhausted fluid (105); the external heat exchanger airflow exhausting fan unit (104) installed on the split type air conditioning device outdoor unit (2002) is constituted by an airflow blowing or airflow exhausting fan unit or an air pump driven by an electric motor, wherein an airflow introducing interval is defined between the fluid exhausting path (1060) and the external heat exchanger (1021) for pumping in the external airflow (1051) of the external temperature differentiation space (130) and for pumping the air conditioning object space exhausted fluid (105) with a temperature differentiation and pumped from the air conditioning object space (120) through the exhaust amount regulating device (1061) and the fluid exhausting path (106), thereby enabling two airflows to exchange heat then being exhausted to the external temperature differentiation space (130) through the external heat exchanger (1021); coolant fluid pipeline (103), constituted by a pipeline device for connecting the split type air conditioning device outdoor main station (2007) and the external heat exchanger (1021) and the flow regulating device (202) and the internal heat exchanger (203) of the split type air conditioning device indoor unit (2006) for the purpose of circulation, wherein the internal of pipeline allows the gasstate or liquid-state coolant to flow through;

exhaust amount regulating device (1061), constituted by a fluid gate, a shutoff gate or valve for operating and regulating the exhaust amount of the air conditioning object space exhausted fluid (105);

fluid exhausting path (1060), constituted by a fluid passage structure for exhausting the exhaust amount of the air conditioning object space exhausted fluid (105) from the air conditioning object space (120);

the coolant fluid pipeline (103) and the fluid exhausting

path (1060) can be individually installed or jointly constituted as a pipeline structure.

[0045] Fig. 18 is a structural schematic view of an embodiment of present invention having a split type air conditioning device outdoor unit (2002) composed of an external heat exchanger (1021) and a split type air conditioning device outdoor main station (2007), having a split type air conditioning device indoor unit (2006) composed of an internal heat exchanger (203), an flow regulating device (202), a control device (201) and a conditioned airflow blowing fan (204), having a coolant compressing and circulating loop constructed by a coolant fluid pipeline (103) installed between the above two, and separately mounting a blowing pump (1041) and a exhaust amount regulating device (1061) in the thermal insulation device (110), and installing a fluid exhausting path (1060) in the air conditioning object space (120) between the exhaust amount regulating device (1061), the blowing pump (1041) and the external heat exchanger (1021).

20 [0046] As shown in FIG. 18, the main configuration is installing a split type air conditioning device outdoor unit (2002) composed of an external heat exchanger (1021) and a split type air conditioning device outdoor main station (2007), and installing a split type air conditioning de-25 vice indoor unit (2006) composed of an internal heat exchanger (203), a flow regulating device (202), a control device (201), a conditioned airflow blowing fan (204), and forming a coolant compressing and circulating loop constructed by a coolant fluid pipeline (103) installed be-30 tween the above two, and separately mounting a blowing pump (1041) and a exhaust amount regulating device (1061) in the thermal insulation device (110), and installing a fluid exhausting path (1060) in the air conditioning object space (120) between the exhaust amount regu-35 lating device (1061), the blowing pump (1041) and the

external heat exchanger (1021); wherein
split type air conditioning device outdoor unit (2002), installed with the split type air conditioning device outdoor main station (2007), the external heat exchanger (1021)
and the coolant fluid pipeline (103), wherein the split type air conditioning device outdoor main station (2007) mainly includes a compress device and forms a compressing and circulating loop leaded through the coolant fluid pipeline (103) towards the external heat exchanger (1021)
and towards the internal heat exchanger (203) and the flow regulating device (202) in the split type air condition-

ing device indoor unit (2006) installed in the air conditioning object space (120); the split type air conditioning device indoor unit (2006) is

installed with the internal heat exchanger (203), the flow regulating device (202), the conditioned airflow blowing fan (204) and provided with a control device (201) for controlling operations of inputting electric energy and driving the air conditioning device;

⁵⁵ The thermal insulation device (110) is separately mounted with the exhaust amount regulating device (1061), the blowing pump (1041) and the fluid exhausting path (1060);

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the external heat exchanger (1021) of the split type air conditioning device outdoor unit (2002) is installed with the coolant fluid pipeline (103) allowing the coolant to flow through so as to exchange heat with the air conditioning object space exhausted fluid (105);

coolant fluid pipeline (103), constituted by a pipeline device for connecting the split type air conditioning device outdoor main station (2007) and the external heat exchanger (1021) and the flow regulating device (202) and the internal heat exchanger (203) of the split type air conditioning device indoor unit (2006) for the purpose of circulation, wherein the internal of pipeline allows the gasstate or liquid-state coolant to flow through;

blowing pump (1041), constituted by an air blowing or air exhausting fan unit or an air pump driven by an electric motor, for pumping the air conditioning object space exhausted fluid (105) with a relative temperature differentiation from the air conditioning object space (120) through the exhaust amount regulating device (1061) and the fluid exhausting path (1060) and exchanging heat while flowing through the external heat exchanger (1021) then being exhausted to the external temperature differentiation space (130);

exhaust amount regulating device (1061), constituted by a fluid gate, a shutoff gate or valve for operating and regulating the exhaust amount of the air conditioning object space exhausted fluid (105);

fluid exhausting path (1060), constituted by a fluid passage structure for exhausting the exhaust amount of the air conditioning object space exhausted fluid (105) from the air conditioning object space (120);

the coolant fluid pipeline (103) and the fluid exhausting path (1060) can be individually installed or jointly constituted as a pipeline structure.

[0047] Fig. 19 is a structural schematic view of an embodiment of present invention having a split type air conditioning device outdoor unit (2002) composed of an external heat exchanger (1021) and an airflow exhausting fan unit (104) and a split type air conditioning device outdoor main station (2007), having a split type air conditioning device indoor unit (2006) composed of an internal heat exchanger (203), an flow regulating device (202), a control device (201) and a conditioned airflow blowing fan (204), having a coolant compressing and circulating loop constructed by a coolant fluid pipeline (103) installed between the above two, and separately mounting a blowing pump (1041) and a exhaust amount regulating device (1061) in the thermal insulation device (110), and installing a fluid exhausting path (1060) and introducing external airflow (1051) in the air conditioning object space (120) between the exhaust amount regulating device (1061), the blowing pump (1041) and the external heat exchanger (1021).

[0048] As shown in FIG. 19, the main configuration is installing a split type air conditioning device outdoor unit (2002) composed of an external heat exchanger (1021) and an airflow exhausting fan unit (104) and a split type air conditioning device outdoor main station (2007), in-

stalling a split type air conditioning device indoor unit (2006) composed of an internal heat exchanger (203), an flow regulating device (202), a control device (201) and a conditioned airflow blowing fan (204), forming a coolant compressing and circulating loop constructed by a coolant fluid pipeline (103) installed between the above two, and separately mounting a blowing pump (1041) and a exhaust amount regulating device (1061) in the thermal insulation device (110), and installing a fluid exhausting path (1060) and introducing external airflow (1051) in the air conditioning object space (120) between the exhaust amount regulating device (1061), the blowing pump (1041) and the external heat exchanger (1021);

wherein
split type air conditioning device outdoor unit (2002), installed with the split type air conditioning device outdoor main station (2007), the external heat exchanger (1021), the coolant fluid pipeline (103) and the airflow exhausting fan unit (104), wherein the split type air conditioning device outdoor main station (2007) mainly includes a compress device and forms a compressing and circulating loop leaded through the coolant fluid pipeline (103) to-

wards the external heat exchanger (1021) and towards the internal heat exchanger (203) and the flow regulating device (202) in the split type air conditioning device indoor unit (2006) installed in the air conditioning object space (120);

the split type air conditioning device indoor unit (2006) is installed with the internal heat exchanger (203), the flow regulating device (202), the conditioned airflow blowing fan (204) and provided with a control device (201) for controlling operations of inputting electric energy and driving the air conditioning device;

the thermal insulation device (110) is separately mounted with the exhaust amount regulating device (1061), the blowing pump (1041) and the fluid exhausting path (1060);

the external heat exchanger (1021) of the split type air conditioning device outdoor unit (2002) is installed with the coolant fluid pipeline (103) allowing the coolant to flow through so as to exchange heat with the external airflow (1051) of the external temperature differentiation space (130) in the external heat exchanger (1021) and the air conditioning object space exhausted fluid (105);

the external heat exchanger airflow exhausting fan unit 45 (104) installed on the split type air conditioning device outdoor unit (2002) is constituted by an airflow blowing or airflow exhausting fan unit or an air pump driven by an electric motor, wherein an airflow introducing interval 50 is defined between the fluid exhausting path (1060) and the external heat exchanger (1021) for pumping in the external airflow (1051) of the external temperature differentiation space (130) and for pumping the air conditioning object space exhausted fluid (105) with a temperature 55 differentiation and pumped from the air conditioning object space (120) through the exhaust amount regulating device (1061) and the fluid exhausting path (106), thereby enabling two airflows to exchange heat then being

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exhausted to the external temperature differentiation space (130) through the external heat exchanger (1021); coolant fluid pipeline (103), constituted by a pipeline device for connecting the split type air conditioning device outdoor main station (2007) and the external heat exchanger (1021) and the flow regulating device (202) and the internal heat exchanger (203) of the split type air conditioning device indoor unit (2006) for the purpose of circulation, wherein the internal of pipeline allows the gasstate or liquid-state coolant to flow through;

exhaust amount regulating device (1061), constituted by a fluid gate, a shutoff gate or valve for operating and regulating the exhaust amount of the air conditioning object space exhausted fluid (105);

fluid exhausting path (1060), constituted by a fluid passage structure for exhausting the exhaust amount of the air conditioning object space exhausted fluid (105) from the air conditioning object space (120);

the coolant fluid pipeline (103) and the fluid exhausting path (1060) can be individually installed or jointly constituted as a pipeline structure.

[0049] Fig. 20 is a structural schematic view of an embodiment of present invention having a split type air conditioning device outdoor unit (2002) composed of an external heat exchanger (1021) and an airflow exhausting fan unit (104), having a split type air conditioning device outdoor main station (2007) which is individually installed, having a split type air conditioning device indoor unit (2006) composed of an internal heat exchanger (203), an flow regulating device (202), a control device (201), a conditioned airflow blowing fan (204) and an exhaust amount regulating device (1061), having a coolant compressing and circulating loop constructed by a coolant fluid pipeline (103) installed between the above three, and installing a fluid exhausting path (1060) and introducing external airflow (1051) in the air conditioning object space (120) between the exhaust amount regulating device (1061) and the external heat exchanger (1021). [0050] As shown in FIG. 20, the main configuration is installing a split type air conditioning device outdoor unit (2002) composed of an external heat exchanger (1021) and an airflow exhausting fan unit (104), installing a split type air conditioning device outdoor main station (2007) which is individually installed, and installing a split type air conditioning device indoor unit (2006) composed of an internal heat exchanger (203), a flow regulating device (202), a control device (201), a conditioned airflow blowing fan (204) and an exhaust amount regulating device (1061), and forming a coolant compressing and circulating loop constructed by a coolant fluid pipeline (103) installed between the above three, and installing a fluid exhausting path (1060) and introducing external airflow (1051) in the air conditioning object space (120) between the exhaust amount regulating device (1061) and the ex-

split type air conditioning device outdoor unit (2002), installed with the external heat exchanger (1021), the coolant fluid pipeline (103), the airflow exhausting fan unit

ternal heat exchanger (1021); wherein

(104) and the individually installed split type air conditioning device outdoor main station (2007), wherein the split type air conditioning device outdoor main station (2007) mainly includes a compress device and forms a compressing and circulating loop leaded through the coolant fluid pipeline (103) towards the external heat exchanger (1021) and towards the internal heat exchanger (203) and the flow regulating device (202) in the split type air conditioning device indoor unit (2006) installed in the air conditioning object space (120);

the split type air conditioning device indoor unit (2006) is installed with the internal heat exchanger (203), the flow regulating device (202), the conditioned airflow blowing fan (204) and provided with a control device (201) for

controlling operations of inputting electric energy and driving the air conditioning device; the split type air conditioning device indoor unit (2006) is further installed with the exhaust amount regulating device (1061) and the fluid exhausting path (1060);

20 the external heat exchanger (1021) of the split type air conditioning device outdoor unit (2002) is installed with the coolant fluid pipeline (103) allowing the coolant to flow through so as to exchange heat with the external airflow (1051) of the external temperature differentiation 25 space (130) in the external heat exchanger (1021) and the air conditioning object space exhausted fluid (105); the external heat exchanger airflow exhausting fan unit (104) installed on the split type air conditioning device outdoor unit (2002) is constituted by an airflow blowing 30 or airflow exhausting fan unit or an air pump driven by an electric motor, wherein an airflow introducing interval is defined between the fluid exhausting path (1060) and the external heat exchanger (1021) for pumping in the external airflow (1051) of the external temperature differ-35 entiation space (130) and for pumping the air conditioning object space exhausted fluid (105) with a temperature differentiation and pumped from the air conditioning object space (120) through the exhaust amount regulating device (1061) and the fluid exhausting path (106), there-40 by enabling two airflows to exchange heat then being exhausted to the external temperature differentiation space (130) through the external heat exchanger (1021); coolant fluid pipeline (103), constituted by a pipeline device for connecting the split type air conditioning device 45 outdoor main station (2007) which is individually installed and the external heat exchanger (1021) and the flow regulating device (202) and the internal heat exchanger (203) of the split type air conditioning device indoor unit

(2006) for the purpose of circulation, wherein the internal of pipeline allows the gas-state or liquid-state coolant to flow through; exhaust amount regulating device (1061), constituted by

a fluid gate, a shutoff gate or valve for operating and regulating the exhaust amount of the air conditioning object space exhausted fluid (105);

fluid exhausting path (1060), constituted by a fluid passage structure for exhausting the exhaust amount of the air conditioning object space exhausted fluid (105) from

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the air conditioning object space (120);

the coolant fluid pipeline (103) and the fluid exhausting path (1060) can be individually installed or jointly constituted as a pipeline structure.

[0051] Fig. 21 is a structural schematic view of an embodiment of present invention having a split type air conditioning device outdoor unit (2002) composed of an external heat exchanger (1021), having a split type air conditioning device outdoor main station (2007) which is individually installed, having a split type air conditioning device indoor unit (2006) composed of an internal heat exchanger (203), an flow regulating device (202), a control device (201), a conditioned airflow blowing fan (204), a blowing pump (1041) and an exhaust amount regulating device (1061), having a coolant compressing and circulating loop constructed by a coolant fluid pipeline (103) installed between the above three, and installing a fluid exhausting path (1060) in the air conditioning object space (120) between the exhaust amount regulating device (1061), the blowing pump (1041) and the external heat exchanger (1021).

[0052] As shown in FIG. 21, the main configuration is installing a split type air conditioning device outdoor unit (2002) composed of an external heat exchanger (1021), installing a split type air conditioning device outdoor main station (2007) which is individually installed, and installing a split type air conditioning device indoor unit (2006) composed of an internal heat exchanger (203), a flow regulating device (202), a control device (201), a conditioned airflow blowing fan (204), a blowing pump (1041) and an exhaust amount regulating device (1061), and forming a coolant compressing and circulating loop constructed by a coolant fluid pipeline (103) installed between the above three, and installing a fluid exhausting path (1060) in the air conditioning object space (120) between the exhaust amount regulating device (1061), the blowing pump (1041) and the external heat exchanger (1021); wherein

split type air conditioning device outdoor unit (2002), installed with the external heat exchanger (1021), the coolant fluid pipeline (103) and the individually installed split type air conditioning device outdoor main station (2007), wherein the split type air conditioning device outdoor main station (2007) mainly includes a compress device and forms a compressing and circulating loop leaded through the coolant fluid pipeline (103) towards the external heat exchanger (1021) and towards the internal heat exchanger (203) and the flow regulating device (202) in the split type air conditioning device indoor unit (2006) installed in the air conditioning object space (120); the split type air conditioning device indoor unit (2006) is installed with the internal heat exchanger (203), the flow regulating device (202), the conditioned airflow blowing fan (204) and provided with a control device (201) for controlling operations of inputting electric energy and driving the air conditioning device; the split type air conditioning device indoor unit (2006) is further installed with the exhaust amount regulating device (1061), the blowing

pump (1041) and the fluid exhausting path (1060); the external heat exchanger (1021) of the split type air conditioning device outdoor unit (2002) is installed with the coolant fluid pipeline (103) allowing the coolant to flow through so as to exchange heat with the air condi-

tioning object space exhausted fluid (105);
coolant fluid pipeline (103), constituted by a pipeline device for connecting the split type air conditioning device outdoor main station (2007) which is individually installed
and the external heat exchanger (1021) and the flow regulating device (202) and the internal heat exchanger (203) of the split type air conditioning device indoor unit

(2006) for the purpose of circulation, wherein the internal of pipeline allows the gas-state or liquid-state coolant to flow through;

blowing pump (1041), constituted by an air blowing or air exhausting fan unit or an air pump driven by an electric motor, for pumping the air conditioning object space exhausted fluid (105) with a relative temperature differentiation from the air conditioning object space (120)

through the exhaust amount regulating device (1061) and the fluid exhausting path (1060) and flowing through the external heat exchanger (1021) then being exhausted to the external temperature differentiation space (130);

25 exhaust amount regulating device (1061), constituted by a fluid gate, a shutoff gate or valve for operating and regulating the exhaust amount of the air conditioning object space exhausted fluid (105);

fluid exhausting path (1060), constituted by a fluid passage structure for exhausting the exhaust amount of the air conditioning object space exhausted fluid (105) from the air conditioning object space (120);

the coolant fluid pipeline (103) and the fluid exhausting path (1060) can be individually installed or jointly constituted as a pipeline structure.

[0053] Fig. 22 is a structural schematic view of an embodiment of present invention having a split type air conditioning device outdoor unit (2002) composed of an external heat exchanger (1021) and an airflow exhausting
 fan unit (104), having a split type air conditioning device

outdoor main station (2007) which is individually installed, having a split type air conditioning device indoor unit (2006) composed of an internal heat exchanger (203), an flow regulating device (202), a control device
 45 (201) and a conditioned airflow blowing fan (204), having

a coolant compressing and circulating loop constructed by a coolant fluid pipeline (103) installed between the above three, and separately mounting a exhaust amount regulating device (1061) in the thermal insulation device
 (110), and installing a fluid exhausting path (1060) and introducing external airflow (1051) in the air conditioning object space (120) between the exhaust amount regulation.

(1021).
[0054] As shown in FIG. 22, the main configuration is installing a split type air conditioning device outdoor unit
(2002) composed of an external heat exchanger (1021) and an airflow exhausting fan unit (104) installing a split

lating device (1061) and the external heat exchanger

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type air conditioning device outdoor main station (2007) which is individually installed, and installing a split type air conditioning device indoor unit (2006) composed of an internal heat exchanger (203), a flow regulating device (202), a control device (201) and a conditioned airflow blowing fan (204), and forming a coolant compressing and circulating loop constructed by a coolant fluid pipeline (103) installed between the above three, and separately mounting a exhaust amount regulating device (1061) in the thermal insulation device (110), and installing a fluid exhausting path (1060) and introducing external airflow (1051) in the air conditioning object space (120) between the exhaust amount regulating device (1061) and the external heat exchanger (1021); wherein split type air conditioning device outdoor unit (2002), installed with the external heat exchanger (1021), the coolant fluid pipeline (103), the airflow exhausting fan unit (104) and the individually installed split type air conditioning device outdoor main station (2007), wherein the split type air conditioning device outdoor main station (2007) mainly includes a compress device and forms a compressing and circulating loop leaded through the coolant fluid pipeline (103) towards the external heat exchanger (1021) and towards the internal heat exchanger (203) and the flow regulating device (202) in the split type air conditioning device indoor unit (2006) installed in the air conditioning object space (120);

the split type air conditioning device indoor unit (2006) is installed with the internal heat exchanger (203), the flow regulating device (202), the conditioned airflow blowing fan (204) and provided with a control device (201) for controlling operations of inputting electric energy and driving the air conditioning device;

the thermal insulation device (110) is separately mounted with the exhaust amount regulating device (1061) and the fluid exhausting path (1060);

the external heat exchanger (1021) of the split type air conditioning device outdoor unit (2002) is installed with the coolant fluid pipeline (103) allowing the coolant to flow through so as to exchange heat with the external airflow (1051) of the external temperature differentiation space (130) in the external heat exchanger (1021) and the air conditioning object space exhausted fluid (105); the external heat exchanger airflow exhausting fan unit (104) installed on the split type air conditioning device outdoor unit (2002) is constituted by an airflow blowing or airflow exhausting fan unit or an air pump driven by an electric motor, wherein an airflow introducing interval is defined between the fluid exhausting path (1060) and the external heat exchanger (1021) for pumping in the external airflow (1051) of the external temperature differentiation space (130) and for pumping the air conditioning object space exhausted fluid (105) with a temperature differentiation and pumped from the air conditioning object space (120) through the exhaust amount regulating device (1061) and the fluid exhausting path (106), thereby enabling two airflows to exchange heat then being exhausted to the external temperature differentiation

space (130) through the external heat exchanger (1021); coolant fluid pipeline (103), constituted by a pipeline device for connecting the split type air conditioning device outdoor main station (2007) which is individually installed and the external heat exchanger (1021) and the flow regulating device (202) and the internal heat exchanger

(203) of the split type air conditioning device indoor unit
(2006) for the purpose of circulation, wherein the internal of pipeline allows the gas-state or liquid-state coolant to
10 flow through;

exhaust amount regulating device (1061), constituted by a fluid gate, a shutoff gate or valve for operating and regulating the exhaust amount of the air conditioning object space exhausted fluid (105);

¹⁵ fluid exhausting path (1060), constituted by a fluid passage structure for exhausting the exhaust amount of the air conditioning object space exhausted fluid (105) from the air conditioning object space (120);

the coolant fluid pipeline (103) and the fluid exhausting path (1060) can be individually installed or jointly constituted as a pipeline structure.

[0055] Fig. 23 is a structural schematic view of an embodiment of present invention having a split type air conditioning device outdoor unit (2002) composed of an external heat exchanger (1021), having a split type air conditioning device outdoor main station (2007) which is individually installed, having a split type air conditioning device indoor unit (2006) composed of an internal heat exchanger (203), an flow regulating device (202), a control device (201) and a conditioned airflow blowing fan (204), having a coolant compressing and circulating loop constructed by a coolant fluid pipeline (103) installed between the above three, and separately mounting a blowing pump (1041) and a exhaust amount regulating device (1061) in the thermal insulation device (110), and installing a fluid exhausting path (1060) and introducing external airflow (1051) in the air conditioning object space (120) between the exhaust amount regulating device (1061), the blowing pump (1041) and the external heat

exchanger (1021). [0056] As shown in FIG. 23, the main configuration is installing a split type air conditioning device outdoor unit (2002) composed of an external heat exchanger (1021), installing a split type air conditioning device outdoor main station (2007) which is individually installed, and installing a split type air conditioning device indoor unit (2006) composed of an internal heat exchanger (203), a flow regulating device (202), a control device (201) and a conditioned airflow blowing fan (204), and forming a coolant compressing and circulating loop constructed by a coolant fluid pipeline (103) installed between the above three, and separately mounting a blowing pump (1041) and a exhaust amount regulating device (1061) in the thermal insulation device (110), and installing a fluid exhausting path (1060) in the air conditioning object space (120) between the exhaust amount regulating device (1061), the a blowing pump (1041) and the external heat exchanger (1021); wherein

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split type air conditioning device outdoor unit (2002), installed with the external heat exchanger (1021), the coolant fluid pipeline (103) and the individually installed split type air conditioning device outdoor main station (2007), wherein the split type air conditioning device outdoor main station (2007) mainly includes a compress device and forms a compressing and circulating loop leaded through the coolant fluid pipeline (103) towards the external heat exchanger (1021) and towards the internal heat exchanger (203) and the flow regulating device (202) in the split type air conditioning device indoor unit (2006) installed in the air conditioning object space (120); the split type air conditioning device indoor unit (2006) is installed with the internal heat exchanger (203), the flow regulating device (202), the conditioned airflow blowing fan (204) and provided with a control device (201) for controlling operations of inputting electric energy and driving the air conditioning device;

the thermal insulation device (110) is separately mounted with the exhaust amount regulating device (1061), the blowing pump (1041) and the fluid exhausting path (1060);

the external heat exchanger (1021) of the split type air conditioning device outdoor unit (2002) is installed with the coolant fluid pipeline (103) allowing the coolant to flow through so as to exchange heat with the air conditioning object space exhausted fluid (105);

coolant fluid pipeline (103), constituted by a pipeline device for connecting the split type air conditioning device outdoor main station (2007) and the external heat exchanger (1021) and the flow regulating device (202) and the internal heat exchanger (203) of the split type air conditioning device indoor unit (2006) for the purpose of circulation, wherein the internal of pipeline allows the gasstate or liquid-state coolant to flow through;

blowing pump (1041), constituted by an air blowing or air exhausting fan unit or an air pump driven by an electric motor, for pumping the air conditioning object space exhausted fluid (105) with a relative temperature differentiation from the air conditioning object space (120) through the exhaust amount regulating device (1061) and the fluid exhausting path (1060) and flowing through the external heat exchanger (1021) then being exhausted to the external temperature differentiation space (130);

exhaust amount regulating device (1061), constituted by a fluid gate, a shutoff gate or valve for operating and regulating the exhaust amount of the air conditioning object space exhausted fluid (105);

fluid exhausting path (1060), constituted by a fluid passage structure for exhausting the exhaust amount of the air conditioning object space exhausted fluid (105) from the air conditioning object space (120);

the coolant fluid pipeline (103) and the fluid exhausting path (1060) can be individually installed or jointly constituted as a pipeline structure.

[0057] Fig. 24 is a structural schematic view of an embodiment of present invention having a split type air conditioning device outdoor unit (2002) composed of an external heat exchanger (1021) and an airflow exhausting fan unit (104), having a split type air conditioning device outdoor main station (2007) which is individually installed, having a split type air conditioning device indoor unit (2006) composed of an internal heat exchanger (203), an flow regulating device (202), a control device (201) and a conditioned airflow blowing fan (204), having a coolant compressing and circulating loop constructed by a coolant fluid pipeline (103) installed between the above three, and separately mounting a blowing pump (1041) and a exhaust amount regulating device (1061) in the thermal insulation device (110) and installing a fluid

exhausting path (1060) and introducing external airflow (1051) in the air conditioning object space (120) between the exhaust amount regulating device (1061), the blowing pump (1041) and the external heat exchanger (1021).

[0058] As shown in FIG. 24, the main configuration is installing a split type air conditioning device outdoor unit (2002) composed of an external heat exchanger (1021) and an airflow exhausting fan unit (104), installing a split type air conditioning device outdoor main station (2007) which is individually installed, and installing a split type air conditioning device indoor unit (2006) composed of an internal heat exchanger (203), a flow regulating device (202), a control device (201) and a conditioned airflow blowing fan (204), and forming a coolant compressing and circulating loop constructed by a coolant fluid pipeline (103) installed between the above three, and separately mounting a blowing pump (1041) and a exhaust amount regulating device (1061) in the thermal insulation device (110), and installing a fluid exhausting path (1060) and introducing external airflow (1051) in the air conditioning object space (120) between the exhaust amount regulating device (1061), the blowing pump (1041) and 35 the external heat exchanger (1021); wherein

split type air conditioning device outdoor unit (2002), installed with the external heat exchanger (1021), the coolant fluid pipeline (103), the airflow exhausting fan unit (104) and the individually installed split type air condi-40 tioning device outdoor main station (2007), wherein the split type air conditioning device outdoor main station (2007) mainly includes a compress device and forms a compressing and circulating loop leaded through the coolant fluid pipeline (103) towards the external heat ex-45 changer (1021) and towards the internal heat exchanger (203) and the flow regulating device (202) in the split type air conditioning device indoor unit (2006) installed in the air conditioning object space (120);

the split type air conditioning device indoor unit (2006) is installed with the internal heat exchanger (203), the flow regulating device (202), the conditioned airflow blowing fan (204) and provided with a control device (201) for controlling operations of inputting electric energy and driving the air conditioning device;

55 the thermal insulation device (110) is separately mounted with the exhaust amount regulating device (1061), the blowing pump (1041) and the fluid exhausting path (1060);

the external heat exchanger (1021) of the split type air conditioning device outdoor unit (2002) is installed with the coolant fluid pipeline (103) allowing the coolant to flow through so as to exchange heat with the external airflow (1051) of the external temperature differentiation 5 space (130) in the external heat exchanger (1021) and the air conditioning object space exhausted fluid (105); the external heat exchanger airflow exhausting fan unit (104) installed on the split type air conditioning device 10 outdoor unit (2002) is constituted by an airflow blowing or airflow exhausting fan unit or an air pump driven by an electric motor, wherein an airflow introducing interval is defined between the fluid exhausting path (1060) and the external heat exchanger (1021) for pumping in the 15 external airflow (1051) of the external temperature differentiation space (130) and for pumping the air conditioning object space exhausted fluid (105) with a temperature differentiation and pumped from the air conditioning object space (120) through the exhaust amount regulating device (1061) and the fluid exhausting path (106), there-20 by enabling two airflows to exchange heat then being exhausted to the external temperature differentiation space (130) through the external heat exchanger (1021); coolant fluid pipeline (103), constituted by a pipeline device for connecting the split type air conditioning device 25 outdoor main station (2007) which is individually installed and the external heat exchanger (1021) and the flow regulating device (202) and the internal heat exchanger (203) of the split type air conditioning device indoor unit (2006) for the purpose of circulation, wherein the internal 30 of pipeline allows the gas-state or liquid-state coolant to flow through;

exhaust amount regulating device (1061), constituted by a fluid gate, a shutoff gate or valve for operating and regulating the exhaust amount of the air conditioning object space exhausted fluid (105);

fluid exhausting path (1060), constituted by a fluid passage structure for exhausting the exhaust amount of the air conditioning object space exhausted fluid (105) from the air conditioning object space (120);

the coolant fluid pipeline (103) and the fluid exhausting path (1060) can be individually installed or jointly constituted as a pipeline structure.

[0059] In summary, the air conditioning device utilizing temperature differentiation of exhausted gas to even tem-45 perature of external heat exchanger relates to a cooling/ heating air conditioning device for regulating temperature, which pumps an airflow exhausted from a space in an air conditioning object such as inside of a room or vehicle to the external through the external heat exchang-50 er disposed at the external of the air conditioning object such as outside of the room or vehicle so as to equalize the temperature of the fluid flowing through the internal of the external heat exchanger by means of the temperature difference between the internal and external of the 55 air conditioning object for achieving an energy saving effect.

Claims

1. An air conditioning device utilizing temperature differentiation of exhausted gas to even temperature of external heat exchanger, which relates to a cooling/heating air conditioning device for regulating temperature, which pumps the air conditioning object space exhausted fluid (105) in an air conditioning object such as the indoor or the internal of a vehicle, and/or pumps the external airflow (1051) through the external heat exchanger (1021) disposed at the external of the air conditioning object such as the outdoor or the outside of a vehicle, so as to perform heat exchange with the coolant fluid pipeline (103) passing through the internal of the external heat exchanger device by means of the temperature differentiation between the two fluids; when the air conditioning device is operated as a cooler, the airflow of a relatively lower temperature exhausted from the space of the air conditioning object such as the inside of the room can be used to facilitate the decreasing of the temperature of the external heat exchanger which is disposed outdoors as a condenser, and when the air conditioning device is operated as a heat pump to supply hot air, the exhausted airflow of a relatively higher temperature can be used to facilitate the increasing of the temperature of the external heat exchanger which is disposed outdoors as an evaporator, and the main configurations are as follows:

> an air conditioning device main unit (101), essentially consisted of a throttle device, an internal heat exchanger (203), a compression device, pipelines, a control device (201), an air conditioning airflow blower and a housing, and coupled to a pipeline of the external heat exchanger (1021) mounted in an external temperature differentiation space (130) to form a circulating path by means of a coolant fluid pipeline (103); and having exhaust amount regulating device (1061) and a fluid exhausting path (1060) for the air conditioning object space exhausted fluid (105) to flow through, and further to exhaust to the external temperature differentiation space (130) through the external heat exchanger (1021);

> the external heat exchanger (1021), provided with the coolant fluid pipeline (103) for allowing the coolant passed from the main unit to heat exchange with the external airflow (1051) of the external temperature differentiation space (130) of the external heat exchanger (1021) and the air conditioning object space exhausted fluid (105);

> a blowing pump (1041) or an external heat exchanger airflow exhausting fan unit (104) is installed at one or more than one of the three lo-

cations including the fluid exhausting path (1060) or the inlet side or the outlet side of the external heat exchanger (1021), so as to pump the air conditioning object space exhausted fluid (105) to exhaust to the external temperature differentiation space (130) through the external heat exchanger (1021);

said external heat exchanger airflow exhausting fan unit (104) and said blowing pump (1041), comprising an air blowing or exhausting fan unit 10 or an air pump driven by an electric motor, for pumping the air conditioning object space exhausted fluid (105) with a temperature differentiation from the air conditioning object space 15 (120) through the exhaust amount regulating device (1061) and the fluid exhausting path (1060), or for simultaneously pumping the air conditioning object space exhausted fluid (105) and the external airflow (1051), so as to exhaust to the external temperature differentiation space (130) 20 through the external heat exchanger (1021), enabling two airflows to exhaust to the external temperature differentiation space (130) through the external heat exchanger (1021);

the coolant fluid pipeline (103), which is a circu- ²⁵ lation pipeline device for coupling the air conditioning device main unit (101) and the external heat exchanger (1021), in which a gas or liquid coolant is circulated;

the exhaust amount regulating device (1061), *30* formed by a fluid gate, a shutoff gate or valve for operating and adjusting the exhaust amount of the air conditioning object space exhausted fluid (105);

the fluid exhausting path (1060), which is a fluid ³⁵ passage structure for permitting the exhaust of the air conditioning object space exhausted fluid (105);

the operating principles thereof are as follows:

--When operated as the function to supply cold air to the air conditioning object space (120), by utilizing both or one of the external heat exchanger airflow exhausting fan unit 45 (104) and/or the exhaust amount regulating device (1061) to pump the air conditioning object space exhausted fluid (105) at a relatively lower temperature in an indoor air conditioning object space (120), or simultaneously pump the air conditioning object 50 space exhausted fluid (105) and the external airflow (1051) flowing through the external heat exchanger (1021), the effect of lowing the temperature of the external heat exchanger (1021) is enhanced, and thereby 55 facilitating the enhancing of the cooling air conditioning efficiency;

--when operated as an heat pump function

to supply hot air to the air conditioning object space (120), by pumping the air conditioning object space exhausted fluid (105) having relatively higher temperature to the external heat exchanger (1021) through the external heat exchanger (1021), the effect of raising the temperature of the external heat exchanger (1021) is enhanced, and thereby facilitating to enhance the heating air conditioning efficiency;

the air conditioning device utilizing temperature differentiation of exhausted gas to even temperature of external heat exchanger of the present invention includes to pump the airflow passing through the external of the external heat exchanger (1021) by means of the external heat exchanger airflow exhausting fan unit (104), and /or the blowing pump (1041);

according to the air conditioning device utilizing temperature differentiation of exhausted gas to even temperature of external heat exchanger, with a thermal insulation device (110) constructed in the object location, the air conditioning object space (120) and the external temperature differentiation space (130) can be insulated, the thermal insulation structure (110) includes the wall of a building, the housing of a carrier or the enclosure of a mechanism made of a heat insulation material or a material having even better heat insulation properties;

according to the air conditioning device utilizing temperature differentiation of exhausted gas to even temperature of external heat exchanger, the mentioned air conditioning object space (120) is often defined as the internal of a building or the internal of a vehicle or the internal of a boat or the internal of an aircraft or the internal of an equipment device, which allows the air conditioning device to perform temperatureraising regulation or temperature-lowering regulation; the mentioned air conditioning object space exhausted fluid (105) is defined as the airflow exhausted from the internal of the air conditioning object space (120) and flowing through the external heat exchanger (1021);

according to the air conditioning device utilizing temperature differentiation of exhausted gas to even temperature of external heat exchanger, the mentioned external temperature differentiation space (130) is defined as the external space insulated from the air conditioning object space (120) through the thermal insulation device (110);

according to the air conditioning device utilizing temperature differentiation of exhausted gas to even temperature of external heat exchanger, the mentioned external airflow (1051) is defined

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as the airflow surrounding the external temperature differentiation space (130);

in the air conditioning device utilizing temperature differentiation of exhausted gas to even temperature of external heat exchanger, the temperature of the air conditioning object space exhausted fluid (105) includes higher than that of an heat exchanger to the external disposed externally of an temperature regulator;

in the air conditioning device utilizing temperature differentiation of exhausted gas to even temperature of external heat exchanger, the temperature of the air conditioning object space exhausted fluid (105) includes lower than that 15 of an heat exchanger to the external disposed externally of an temperature regulator;

in the air conditioning device utilizing temperature differentiation of exhausted gas to even temperature of external heat exchanger, the exhausted air conditioning object space exhausted 20 fluid (105) includes to heat exchange with the coolant fluid pipeline (103) disposed in the external heat exchanger (1021) in the external space or a surface of the external heat exchanger (1021);

the air conditioning device utilizing temperature differentiation of exhausted gas to even temperature of external heat exchanger of the present invention is formed by applying the aforementioned operating principles to various types of 30 air conditioning devices including integral air conditioning devices, or split type air conditioning devices, or using the cooling tower to replace the cooling tower type air conditioning device of the external heat exchanger (1021). 35

2. An air conditioning device utilizing temperature differentiation of exhausted gas to even temperature of external heat exchanger as claimed in claim 1, wherein it includes to be applied to an integral air 40 conditioning device with an external heat exchanger airflow exhausting fan unit (104) and a fluid exhausting path (106) so as to pump an air conditioning object space exhausted fluid (105) and an external airflow (1051) to flow together through an external heat exchanger (1021), and the main configurations are as follows:

> an air conditioning device main unit (101), essentially consisted of a throttle device, an inter-50 nal heat exchanger (203), a compression device, pipelines, a control device (201), an air conditioning airflow blower and a housing, and coupled to a pipeline of the external heat exchanger (1021) mounted in an external temperature dif-55 ferentiation space (130) to form a circulating path by means of a coolant fluid pipeline (103); and having an exhaust amount regulating de

vice (1061), and a fluid exhausting path (106) formed by a housing for allowing air conditioning object space exhausted fluid (105) to flow to the external heat exchanger (1021);

the external heat exchanger (1021), provided with the coolant fluid pipeline (103) for allowing the coolant passed from the main unit to heat exchange with the external airflow (1051) of the external temperature differentiation space (130) of the external heat exchanger (1021) and the air conditioning object space exhausted fluid (105);

the coolant fluid pipeline (103), which is a circulation pipeline device for coupling the air conditioning device main unit (101) and the external heat exchanger (1021), in which a gas or liquid coolant is circulated;

an external heat exchanger airflow exhausting fan unit (104), comprising an air blowing or exhausting fan unit or an air pump driven by an electric motor, for pumping the external airflow (1051) of the external temperature differentiation space (130) and for pumping the air conditioning object space exhausted fluid (105) with a temperature differentiation which is pumped from the air conditioning object space (120) through the exhaust amount regulating device (1061) and the fluid exhausting path (106), enabling two airflows to exhaust to the external temperature differentiation space (130) through the external heat exchanger (1021);

the exhaust amount regulating device (1061), formed by a fluid gate, a shutoff gate or valve for operating and adjusting the exhaust amount of the air conditioning object space exhausted fluid (105):

the fluid exhausting path (106), which is a fluid passage structure for permitting the exhaust of the air conditioning object space exhausted fluid (105):

whereby an integral air conditioning device assembly (1000) is formed by the abovementioned structures.

45 **3.** An air conditioning device utilizing temperature differentiation of exhausted gas to even temperature of external heat exchanger as claimed in claim 1, wherein it includes to be applied to an integral air conditioning device without a heat exchanger airflow exhausting fan unit (104) and a ventilating device (1041) commonly constructed with a fluid exhausting path (106) so as to pump an air conditioning object space exhausted fluid (105) to flow through an external heat exchanger (1021), and the main configurations are as follows:

> an air conditioning device main unit (101), essentially consisted of a throttle device, an inter-

nal heat exchanger (203), a compression device, pipelines, a control device (201), an air conditioning airflow blower and a housing, and coupled to a pipeline of the external heat exchanger (1021) mounted in an external temperature differentiation space (130) to form a circulating path by means of a coolant fluid pipeline (103); and having a fluid exhausting path (106) formed by a housing, and having an exhaust amount regulating device (1061) and the blowing pump (1041);

the external heat exchanger (1021), provided with the coolant fluid pipeline (103) for allowing the coolant passed from the main unit to heat exchange with the air conditioning object space exhausted fluid (105) through the external heat exchanger (1021);

the coolant fluid pipeline (103), which is a circulation pipeline device for coupling the air conditioning device main unit (101) and the external ²⁰ heat exchanger (1021), in which a gas or liquid coolant is circulated;

a blowing pump (1041), comprising an air blowing or exhausting fan unit or an air pump driven by an electric motor, for pumping the air conditioning object space exhausted fluid (105) with a temperature differentiation from the air conditioning object space (120) through the exhaust amount regulating device (1061) and the fluid exhausting path (106), so as to exhaust to the external temperature differentiation space (130) through the external heat exchanger (1021); the exhaust amount regulating device (1061),

formed by a fluid gate, a shutoff gate or valve for operating and adjusting the exhaust amount ³⁵ of the air conditioning object space exhausted fluid (105);

the fluid exhausting path (106), which is a fluid passage structure for permitting the exhaust of the air conditioning object space exhausted fluid 40 (105);

whereby an integral air conditioning device assembly (1000) is formed by the abovementioned structures.

4. An air conditioning device utilizing temperature differentiation of exhausted gas to even temperature of external heat exchanger as claimed in claim 1, wherein it includes to be applied to a fluid exhausting path (1060) and an external heat exchanger airflow 50 exhausting fan unit (104) so as to pump an air conditioning object space exhausted fluid (105) and an external airflow (1051) to flow together through an external heat exchanger (1021) in the air conditioning device assembly (1000), and the main configurations are as follows:

an air conditioning device main unit (101), es-

sentially consisted of a throttle device, an internal heat exchanger (203), a compression device, pipelines, a control device (201), an air conditioning airflow blower and a housing, and coupled to a pipeline of the external heat exchanger (1021) mounted in an external temperature differentiation space (130) to form a circulating path by means of a coolant fluid pipeline (103); and having a fluid exhausting path (1060) and an exhaust amount regulating device (1061);

the external heat exchanger (1021), provided with the coolant fluid pipeline (103) for allowing the coolant passed from the main unit to heat exchange with the external airflow (1051) of the external temperature differentiation space (130) of the external heat exchanger (1021) and the air conditioning object space exhausted fluid (105);

the coolant fluid pipeline (103), which is a circulation pipeline device for coupling the air conditioning device main unit (101) and the external heat exchanger (1021), in which a gas or liquid coolant is circulated;

an external heat exchanger airflow exhausting fan unit (104), comprising an air blowing or exhausting fan unit or an air pump driven by an electric motor, for pumping the external airflow (1051) of the external temperature differentiation space (130) and for pumping the air conditioning object space exhausted fluid (105) with a temperature differentiation which is pumped from the air conditioning object space (120) through the exhaust amount regulating device (1061) and the fluid exhausting path (1060), enabling two airflows to exhaust to the external temperature differentiation space (130) through the external heat exchanger (1021);

whereby an air conditioning device assembly (1000) is formed by the abovementioned structures;

the exhaust amount regulating device (1061), formed by a fluid gate, a shutoff gate or valve for operating and adjusting the exhaust amount of the air conditioning object space exhausted fluid (105);

the fluid exhausting path (1060), which is a fluid passage structure for permitting the exhaust of the air conditioning object space exhausted fluid (105).

5. An air conditioning device utilizing temperature differentiation of exhausted gas to even temperature of external heat exchanger as claimed in claim 1, wherein it includes to be applied to a separately mounted blowing pump (1041) and an exhaust amount regulating device (1061) and having an air conditioning device assembly (1000) without the external heat exchanger airflow exhausting fan unit

(104), and the main configurations are as follows:

an air conditioning device main unit (101), essentially consisted of a throttle device, an internal heat exchanger (203), a compression device, pipelines, a control device (201), an air conditioning airflow blower and a housing, and coupled to a pipeline of the external heat exchanger (1021) mounted in an external temperature differentiation space (130) to form a circulating path by means of a coolant fluid pipeline (103); and having a fluid exhausting path (1060), an exhaust amount regulating device (1061), a blowing pump (1041);

the external heat exchanger (1021), provided15with the coolant fluid pipeline (103) for allowingthe coolant passed from the main unit to heatexchange with the external heat exchanger(1021) and the air conditioning object space exhausted fluid (105);20

the coolant fluid pipeline (103), which is a circulation pipeline device for coupling the air conditioning device main unit (101) and the external heat exchanger (1021), in which a gas or liquid coolant is circulated;

whereby an air conditioning device assembly (1000) is formed by the abovementioned structures;

a blowing pump (1041), comprising an air blowing or exhausting fan unit or an air pump driven 30 by an electric motor, for pumping the air conditioning object space exhausted fluid (105) with a temperature differentiation from the air conditioning object space (120) through the exhaust amount regulating device (1061) and the fluid 35 exhausting path (1060), so as to exhaust to the external temperature differentiation space (130) through the external heat exchanger (1021);

the exhaust amount regulating device (1061), formed by a fluid gate, a shutoff gate or valve ⁴⁰ for operating and adjusting the exhaust amount of the air conditioning object space exhausted fluid (105);

the fluid exhausting path (1060), which is a fluid passage structure for permitting the exhaust of 45 the air conditioning object space exhausted fluid (105).

6. An air conditioning device utilizing temperature differentiation of exhausted gas to even temperature 50 of external heat exchanger as claimed in claim 1, wherein it includes to be applied to an air conditioning device assembly (1000) mounted with an external heat exchanger airflow exhausting fan unit (104) and the fluid exhausting path (1060) and the blowing 55 pump (1041), and the main configurations are as follows:

an air conditioning device main unit (101), essentially consisted of a throttle device, an internal heat exchanger (203), a compression device, pipelines, a control device (201), an air conditioning airflow blower and a housing, and coupled to a pipeline of the external heat exchanger (1021) mounted in an external temperature differentiation space (130) to form a circulating path by means of a coolant fluid pipeline (103); and having a fluid exhausting path (1060) and a blowing pump (1041);

the external heat exchanger (1021), provided with the coolant fluid pipeline (103) for allowing the coolant passed from the main unit to heat exchange with the external airflow (1051) of the external temperature differentiation space (130) of the external heat exchanger (1021) and the air conditioning object space exhausted fluid (105);

the coolant fluid pipeline (103), which is a circulation pipeline device for coupling the air conditioning device main unit (101) and the external heat exchanger (1021), in which a gas or liquid coolant is circulated;

an external heat exchanger airflow exhausting fan unit (104), comprising an air blowing or exhausting fan unit or an air pump driven by an electric motor, for pumping the external airflow (1051) of the external temperature differentiation space (130) and for pumping the air conditioning object space exhausted fluid (105) with a temperature differentiation which is pumped from the air conditioning object space (120) through the exhaust amount regulating device (1061) and the fluid exhausting path (1060) by the blowing pump (1041), enabling two airflows to exhaust to the external temperature differentiation space (130) through the external heat exchanger (1021);

whereby an air conditioning device assembly (1000) is formed by the abovementioned structures;

a blowing pump (1041), comprising an air blowing or exhausting fan unit or an air pump driven by an electric motor, for pumping the air conditioning object space exhausted fluid (105) with a temperature differentiation from the air conditioning object space (120) through the exhaust amount regulating device (1061) and the fluid exhausting path (1060), so as to exhaust to the external temperature differentiation space (130) through the external heat exchanger (1021), enabling two airflows to exhaust to the external temperature differentiation space (130) through the external heat exchanger (1021);

the exhaust amount regulating device (1061), formed by a fluid gate, a shutoff gate or valve for operating and adjusting the exhaust amount of the air conditioning object space exhausted fluid (105);

the fluid exhausting path (1060), which is a fluid passage structure for permitting the exhaust of the air conditioning object space exhausted fluid 5 (105).

7. An air conditioning device utilizing temperature differentiation of exhausted gas to even temperature of external heat exchanger as claimed in claim 1, wherein it includes to be applied to a split type air conditioning device outdoor unit (2002) with an external heat exchanger airflow exhausting fan unit (104) and a split type air conditioning device main unit (2001) mounted with the fluid exhausting path 15 (1060), and the main configurations are as follows:

a split type air conditioning device main unit (2001), essentially consisted of a throttle device, an internal heat exchanger (203), a compres-20 sion device, pipelines, a control device (201), an air conditioning airflow blower and a housing, and coupled to a pipeline of the external heat exchanger (1021) mounted in a splittype air conditioning device outdoor unit (2002) in an exter-25 nal temperature differentiation space (130) to form a circulating path by means of a coolant fluid pipeline (103); and having a fluid exhausting path (1060) and an exhaust amount regulating device (1061); 30

the split type air conditioning device outdoor unit (2002), having a housing and the external heat exchanger (1021), wherein the external heat exchanger (1021) being provided with the coolant fluid pipeline (103) for allowing the coolant 35 passed from the split type air conditioning device main unit (2001) to heat exchange with the external airflow (1051) of the external temperature differentiation space (130) of the external heat exchanger (1021) and the air conditioning object 40 space exhausted fluid (105), and having an external heat exchanger airflow exhausting fan unit (104), wherein the external heat exchanger airflow exhausting fan unit (104) comprising an 45 air blowing or exhausting fan unit or an air pump driven by an electric motor, for pumping the external airflow (1051) of the external temperature differentiation space (130) and for pumping the air conditioning object space exhausted fluid (105) with a temperature differentiation from the 50 air conditioning object space (120) through the exhaust amount regulating device (1061) and the fluid exhausting path (1060), and enabling two airflows to exhaust to the external temperature differentiation space (130) through the ex-55 ternal heat exchanger (1021);

the coolant fluid pipeline (103), which is a circulation pipeline device for coupling the air condi-

tioning device main unit (101) and the external heat exchanger (1021), in which a gas or liquid coolant is circulated;

the exhaust amount regulating device (1061), formed by a fluid gate, a shutoff gate or valve for operating and adjusting the exhaust amount of the air conditioning object space exhausted fluid (105);

the fluid exhausting path (1060), which is a fluid passage structure for permitting the exhaust of the air conditioning object space exhausted fluid (105).

8. An air conditioning device utilizing temperature differentiation of exhausted gas to even temperature of external heat exchanger as claimed in claim 1, wherein it includes to be applied to the split type air conditioning device main unit (2001) commonly constructed with the blowing pump (1041) and having a split type air conditioning device outdoor unit (2002) without the external heat exchanger airflow exhausting fan unit (104), and the main configurations are as follows:

> a split type air conditioning device main unit (2001), essentially consisted of a throttle device, an internal heat exchanger (203), a compression device, pipelines, a control device (201), an air conditioning airflow blower and a housing, and coupled to a pipeline of the external heat exchanger (1021) mounted in a split type air conditioning device outdoor unit (2002) in an external temperature differentiation space (130) to form a circulating path by means of a coolant fluid pipeline (103); and having a fluid exhausting path (1060), an exhaust amount regulating device (1061) and a blowing pump (1041); the split type air conditioning device outdoor unit (2002), having a housing and the external heat exchanger (1021), wherein the external heat exchanger (1021) being provided with the coolant fluid pipeline (103) for allowing the coolant passed from the split type air conditioning device main unit (2001) to heat exchange with the air conditioning object space exhausted fluid (105) by means of the external heat exchanger (1021); the coolant fluid pipeline (103), which is a circulation pipeline device for coupling the air conditioning device main unit (101) and the external heat exchanger (1021), in which a gas or liquid coolant is circulated;

a blowing pump (1041), comprising an air blowing or exhausting fan unit or an air pump driven by an electric motor, for pumping the air conditioning object space exhausted fluid (105) with a temperature differentiation which is pumped from the air conditioning object space (120) through the exhaust amount regulating device (1061) and the fluid exhausting path (1060), so as to exhaust to the external temperature differentiation space (130) through the external heat exchanger (1021);

the exhaust amount regulating device (1061), formed by a fluid gate, a shutoff gate or valve for operating and adjusting the exhaust amount of the air conditioning object space exhausted fluid (105);

the fluid exhausting path (1060), which is a fluid ¹⁰ passage structure for permitting the exhaust of the air conditioning object space exhausted fluid (105).

 9. An air conditioning device utilizing temperature differentiation of exhausted gas to even temperature of external heat exchanger as claimed in claim 1, wherein it includes to be applied to the separately mounted fluid exhausting path (1060), the split type air conditioning device main unit (2001) and the split type air conditioning device outdoor unit (2002) with the external heat exchanger airflow exhausting fan unit (104), and the main configurations are as follows:

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a split type air conditioning device main unit (2001), essentially consisted of a throttle device, an internal heat exchanger (203), a compression device, pipelines, a control device (201), an air conditioning airflow blower and a housing, and coupled to a pipeline of the external heat exchanger (1021) mounted in a split type air conditioning device outdoor unit (2002) in an external temperature differentiation space (130) to form a circulating path by means of a coolant fluid pipeline (103); and having a fluid exhausting path (1060) and an exhaust amount regulating device (1061);

the split type air conditioning device outdoor unit 40 (2002), having a housing and the external heat exchanger (1021), wherein the external heat exchanger (1021) being provided with the coolant fluid pipeline (103) for allowing the coolant passed from the split type air conditioning device 45 main unit (2001) to heat exchange with the external airflow (1051) of the external temperature differentiation space (130) of the external heat exchanger (1021) and the air conditioning object space exhausted fluid (105), and having an external heat exchanger airflow exhausting fan 50 unit (104), wherein the external heat exchanger airflow exhausting fan unit (104) comprising an air blowing or exhausting fan unit or an air pump driven by an electric motor, for pumping the external airflow (1051) of the external temperature 55 differentiation space (130) and for pumping the air conditioning object space exhausted fluid (105) with a temperature differentiation from the

air conditioning object space (120) through the exhaust amount regulating device (1061) and the fluid exhausting path (1060), enabling two airflows to exhaust to the external temperature differentiation space (130) through the external heat exchanger (1021);

the coolant fluid pipeline (103), which is a circulation pipeline device for coupling the split type air conditioning device main unit (2001) and the external heat exchanger (1021), in which a gas or liquid coolant is circulated;

the exhaust amount regulating device (1061), formed by a fluid gate, a shutoff gate or valve for operating and adjusting the exhaust amount of the air conditioning object space exhausted fluid (105);

the fluid exhausting path (1060), which is a fluid passage structure for permitting the exhaust of the air conditioning object space exhausted fluid (105).

10. an air conditioning device utilizing temperature differentiation of exhausted gas to even temperature of external heat exchanger as claimed in claim 1, wherein it includes to be applied to the separately mounted blowing pump (1041), the split type air conditioning device main unit (2001) and the split type air conditioning device outdoor unit (2002) without the external heat exchanger airflow exhausting fan unit (104), and the main configurations are as follows:

a split type air conditioning device main unit (2001), essentially consisted of a throttle device, an internal heat exchanger (203), a compression device, pipelines, a control device (201), an air conditioning airflow blower and a housing, and coupled to a pipeline of the external heat exchanger (1021) mounted in an external temperature differentiation space (130) to form a circulating path by means of a coolant fluid pipeline (103); and having a fluid exhausting path (1060), an exhaust amount regulating device (1061) and a blowing pump (1041);

the split type air conditioning device outdoor unit (2002), having a housing and the external heat exchanger (1021), wherein the external heat exchanger (1021) being provided with the coolant fluid pipeline (103) for allowing the coolant passed from the split type air conditioning device main unit (2001) to heat exchange with the air conditioning object space exhausted fluid (105) by means of the external heat exchanger (1021); the coolant fluid pipeline (103), which is a circulation pipeline device for coupling split type air conditioning device main unit (2001) and the external heat exchanger (1021), in which a gas or liquid coolant is circulated;

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a blowing pump (1041), comprising an air blowing or exhausting fan unit or an air pump driven by an electric motor, for pumping the air conditioning object space exhausted fluid (105) with a temperature differentiation which is pumped from the air conditioning object space (120) through the exhaust amount regulating device (1061) and the fluid exhausting path (1060), so as to exhaust to the external temperature differentiation space (130) through the external heat 10 exchanger (1021);

the exhaust amount regulating device (1061), formed by a fluid gate, a shutoff gate or valve for operating and adjusting the exhaust amount of the air conditioning object space exhausted fluid (105);

the fluid exhausting path (1060), which is a fluid passage structure for permitting the exhaust of the air conditioning object space exhausted fluid (105).

11. An air conditioning device utilizing temperature differentiation of exhausted gas to even temperature of external heat exchanger as claimed in claim 1, wherein it includes to be applied to the split type air 25 conditioning device main unit (2001), the split type air conditioning device outdoor unit (2002) with the external heat exchanger airflow exhausting fan unit (104) and the separately mounted blowing pump (1041), and the main configurations are as follows: 30

> a split type air conditioning device main unit (2001), essentially consisted of a throttle device, an internal heat exchanger (203), a compression device, pipelines, a control device (201), an 35 air conditioning airflow blower and a housing, and coupled to a pipeline of the external heat exchanger (1021) mounted in an external temperature differentiation space (130) to form a circulating path by means of a coolant fluid pipeline 40 (103); and having a fluid exhausting path (1060), the exhaust amount regulating device (1061) and the blowing pump (1041);

> the split type air conditioning device outdoor unit 45 (2002), having a housing and the external heat exchanger (1021), wherein the external heat exchanger (1021) being provided with the coolant fluid pipeline (103) for allowing the coolant passed from the split type air conditioning device main unit (2001) to heat exchange with the ex-50 ternal airflow (1051) of the external temperature differentiation space (130) of the external heat exchanger (1021) and the air conditioning object space exhausted fluid (105), and having an external heat exchanger airflow exhausting fan 55 unit (104), wherein the external heat exchanger airflow exhausting fan unit (104) comprising an air blowing or exhausting fan unit or an air pump

driven by an electric motor, for pumping the external airflow (1051) of the external temperature differentiation space (130) and for pumping the air conditioning object space exhausted fluid (105) with a temperature differentiation from the air conditioning object space (120) through the exhaust amount regulating device (1061) and the fluid exhausting path (1060), enabling two airflows to exhaust to the external temperature differentiation space (130) through the external heat exchanger (1021);

the coolant fluid pipeline (103), which is a circulation pipeline device for coupling the split type air conditioning device main unit (2001) and the external heat exchanger (1021), in which a gas or liquid coolant is circulated;

the exhaust amount regulating device (1061), formed by a fluid gate, a shutoff gate or valve for operating and adjusting the exhaust amount of the air conditioning object space exhausted fluid (105):

the fluid exhausting path (1060), which is a fluid passage structure for permitting the exhaust of the air conditioning object space exhausted fluid (105).

12. An air conditioning device utilizing temperature differentiation of exhausted gas to even temperature of external heat exchanger as claimed in claim 1, wherein it includes to be applied to a water-cooled air conditioning device main unit (2005), a powered fan provided cooling tower (2003) and the separately mounted blowing pump (1041), and the main configurations are as follows:

> a water-cooled air conditioning device main unit (2005), which is an air conditioning device main unit essentially consisted of a throttle device, an internal heat exchanger (203), a compression device, pipelines, a control device (201), an air conditioning airflow blower water-cooled cooling device and a housing, and a water pipe (107) of the water-cooled condensing device disposed in the water-cooled air conditioning device main unit (2005) being coupled to a water in and out pipe (109) of a water inlet and water exhaust pipeline of the powered fan provided cooling tower (2003) disposed in the external temperature differentiation space (130) so as to form a path of water circulation; and having the fluid exhausting path (1060), the exhaust amount regulating device (1061) and the blowing pump (1041), and by means of the blowing pump (1041) to pump the air conditioning object space exhausted fluid (105) through the fluid exhausting path (1060) and the exhaust amount regulating device (1061) to an air inlet of the powered fan provided cooling tower (2003);

the powered fan provided cooling tower (2003), comprising a cooling tower equipped with the cooling tower fan unit (108), for example, a counterflow mechanical draft cooling tower, an induced counterflow mechanical draft cooling tow-5 er, a counterflow cooling tower, a crossflow mechanical draft cooling tower, or an evaporative cooling tower, and the powered fan provided cooling tower (2003) having an air inlet, so that the air conditioning object space exhausted fluid (105) pumped from the air conditioning object space (120) through the blowing pump (1041) is directed through the fluid exhausting path (1060) into the air inlet of the powered fan provided cooling tower (2003), and passing through 15 the powered fan provided cooling tower (2003) so as to cool the waterflow and then is exhausted to the surrounding through the cooling tower fan unit (108), and having a water in and out pipe (109) for connecting the water pipe (107) so as 20 to allow the cooling water to circulate between the powered fan provided cooling tower (2003) and the water-cooled air conditioning device main unit (2005);

the water pipe (107), disposed between a watercooled condensing device of the water-cooled air conditioning device main unit (2005) and the water in and out pipe (109) of the powered fan provided cooling tower (2003);

the cooling tower fan unit (108), comprising an air blowing or exhausting fan unit or an air pump driven by an electric motor, and having one or more following operation functions, including: 1) pumping the external airflow (1051) of the external temperature differentiation space (130) to the external temperature differentiation space (130) through the inside of the powered fan provided cooling tower (2003); 2) pumping the air conditioning object space exhausted fluid (105) with a temperature differentiation from the air conditioning object space (120) through the ex-

haust amount regulating device (1061), the blowing pump (1041) and the fluid exhausting path (1060) to the external temperature differentiation space (130) through the powered fan ⁴⁵ provided cooling tower (2003); 3) enabling the external airflow (1051) and the air conditioning object space exhausted fluid (105) to exhaust commonly to the external temperature differentiation space (130) through the powered fan provided cooling tower (2003);

a water pump (111), for pumping a cooling water between the water-cooled air conditioning device main unit (2005) and the powered fan provided cooling tower (2003) through the water 55 pipe (107) and the water in and out pipe (109) for cooling circulation;

the exhaust amount regulating device (1061),

formed by a fluid gate, a shutoff gate or valve for operating and adjusting the exhaust amount of the air conditioning object space exhausted fluid (105);

- the fluid exhausting path (1060), which is a fluid passage structure for permitting the exhaust of the air conditioning object space exhausted fluid (105).
- 10 13. An air conditioning device utilizing temperature differentiation of exhausted gas to even temperature of external heat exchanger as claimed in claim 1, wherein it includes to be applied to a water-cooled air conditioning device main unit (2005) and a powered fan provided cooling tower (2003), and the main configurations are as follows:

a water-cooled air conditioning device main unit (2005), which is an air conditioning device main unit essentially consisted of a throttle device, an internal heat exchanger (203), a compression device, pipelines, a control device (201), an air conditioning airflow blower water-cooled cooling device and a housing, and a water pipe (107) of the water-cooled condensing device disposed in the water-cooled air conditioning device main unit (2005) being coupled to a water in and out pipe (109) of a water inlet and water exhaust pipeline of the powered fan provided cooling tower (2003) disposed in the external temperature differentiation space (130) so as to form a path of water circulation; and having a fluid exhausting path (1060) and an exhaust amount regulating device (1061) for delivering the air conditioning object space exhausted fluid(105) to an air inlet of the powered fan provided cooling tower (2003);

the powered fan provided cooling tower (2003), comprising a cooling tower equipped with the cooling tower fan unit (108), for example, a counterflow mechanical draft cooling tower, an induced counterflow mechanical draft cooling tower, a counterflow cooling tower, a crossflow mechanical draft cooling tower, or an evaporative cooling tower, and the powered fan provided cooling tower (2003) having an air inlet, so that the air conditioning object space exhausted fluid (105) pumped from the air conditioning object space (120) is directed through the fluid exhausting path (1060) into the air inlet of the powered fan provided cooling tower (2003), and is passing through the powered fan provided cooling tower (2003) so as to cool the waterflow, and then is exhausted to the surrounding through the cooling tower fan unit (108), and having a water in and out pipe (109) for connecting the water pipe (107) so as to allow the cooling water to circulate between the powered fan provided

cooling tower (2003) and the water-cooled air conditioning device main unit (2005);

the water pipe (107), disposed between a watercooled condensing device of the water-cooled air conditioning device main unit (2005) and the water in and out pipe (109) of the powered fan provided cooling tower (2003);

the cooling tower fan unit (108), comprising an air blowing or exhausting fan unit or an air pump driven by an electric motor, and having one or ¹⁰ more following operation functions, including: 1) pumping the external airflow (1051) of the external temperature differentiation space (130) to the external temperature differentiation space (130) through the inside of the powered fan pro-¹⁵

vided cooling tower (2003); 2) pumping the air conditioning object space exhausted fluid (105) with a temperature differentiation from the air conditioning object space (120) through the exhaust amount regulating device (1061) and the ²⁰ fluid exhausting path (1060) to the external temperature differentiation space (130) through the powered fan provided cooling tower (2003); 3) enabling the external airflow (1051) and the air

conditioning object space exhausted fluid (105) ²⁵ to exhaust commonly to the external temperature differentiation space (130) through the powered fan provided cooling tower (2003);

a water pump (111), for pumping a cooling water between the water-cooled air conditioning device main unit (2005) and the powered fan provided cooling tower (2003) through the water pipe (107) and the water in and out pipe (109) for cooling circulation;

the exhaust amount regulating device (1061), *35* formed by a fluid gate, a shutoff gate or valve for operating and adjusting the exhaust amount of the air conditioning object space exhausted fluid (105);

the fluid exhausting path (1060), which is a fluid ⁴⁰ passage structure for permitting the exhaust of the air conditioning object space exhausted fluid (105).

14. An air conditioning device utilizing temperature differentiation of exhausted gas to even temperature of external heat exchanger as claimed in claim 1, wherein it includes to be applied to a water-cooled air conditioning device main unit (2005), a natural draft cooling tower (2003) and the separately mounted blowing pump (1041), and the main configurations are as follows:

> a water-cooled air conditioning device main unit (2005), which is an air conditioning device main ⁵⁵ unit essentially consisted of a throttle device, an internal heat exchanger (203), a compression device, pipelines, a control device (201), an air

conditioning airflow blower water-cooled cooling device and a housing, and a water pipe (107) of the water-cooled condensing device disposed in the water-cooled air conditioning device main unit (2005) being coupled to a water in and out pipe (109) of a water inlet and water exhaust pipeline of a natural draft cooling tower (2004) disposed in the external temperature differentiation space (130) so as to form a path of water circulation; and having the fluid exhausting path (1060), the exhaust amount regulating device (1061) and the blowing pump (1041), and by means of the blowing pump (1041) to pump the air conditioning object space exhausted fluid (105) to an air inlet of the natural draft cooling tower (2004) through the fluid exhausting path (1060) and the exhaust amount regulating device (1061);

a natural draft cooling tower (2004), comprising a natural draft cooling tower, for example, a crossflow natural draft cooling tower, and the natural draft cooling tower (2004) having an air inlet, and having one or more following operating functions, including: 1) directing the external airflow (1051) from the external temperature differentiation space (130) into the air inlet of the natural draft cooling tower (2004), and passing through the natural draft cooling tower (2004) so as to cool the waterflow, and then exhausting the same to the surrounding through the cooling tower; 2) directing the air conditioning object space exhausted fluid (105) pumped from the air conditioning object space (120) by means of the blowing pump (1041) through the fluid exhausting path (1060) into the air inlet of the natural draft cooling tower (2004), and passing through the natural draft cooling tower (2004) so as to cool the waterflow, and then exhausting the same to the surrounding through the cooling tower; 3) directing the air conditioning object space exhausted fluid (105) and the external airflow (1051) into the air inlet of the natural draft cooling tower (2004), and passing through the natural draft cooling tower (2004) so as to cool the waterflow, and then exhausting the same to the surrounding through the cooling tower; and having a water in and out pipe (109) for coupling the water pipe (107) so as to allow the cooling water to circulate between the natural draft cooling tower (2004) and the water-cooled air conditioning device main unit (2005);

the water pipe (107), disposed between a watercooled condensing device of the water-cooled air conditioning device main unit (2005) and the water in and out pipe (109) of the natural draft cooling tower (2004);

a water pump (111), for pumping a cooling water between the water-cooled air conditioning de-

vice main unit (2005) and the powered fan provided cooling tower (2003) through the water pipe (107) and the water in and out pipe (109) for cooling circulation;

the exhaust amount regulating device (1061), formed by a fluid gate, a shutoff gate or valve for operating and adjusting the exhaust amount of the air conditioning object space exhausted fluid (105);

the fluid exhausting path (1060), which is a fluid ¹⁰ passage structure for permitting the exhaust of the air conditioning object space exhausted fluid (105).

- 15. An air conditioning device utilizing temperature dif-15 ferentiation of exhausted gas to even temperature of external heat exchanger as claimed in claim 1, wherein it further applied to a spilt type air conditioning device, which mainly includes a split type air conditioning device outdoor unit (2002) therein having 20 a split type air conditioning device outdoor main station (2007) and an external heat exchanger (1021) and an airflow exhausting fan unit (104), and a split type air conditioning device indoor unit (2006) therein having an internal heat exchanger (203), a flow reg-25 ulating device (202), a conditioned airflow blowing fan (204) and a control device (201), and a coolant compressing and circulating loop constructed by a coolant fluid pipeline (103) being installed therebetween, and a fluid exhausting path (1060) being in-30 stalled from the air conditioning object space (120) to the external heat exchanger (1021) for facilitating the applications in various separated space.
- 16. An air conditioning device utilizing temperature dif-35 ferentiation of exhausted gas to even temperature of external heat exchanger as claimed in claim 15, wherein the main configuration is installing a split type air conditioning device outdoor unit (2002) composed of an external heat exchanger (1021) and an 40 airflow exhausting fan unit (104) and a split type air conditioning device outdoor main station (2007), and installing a split type air conditioning device indoor unit (2006) composed of an internal heat exchanger 45 (203), a flow regulating device (202), a control device (201), a conditioned airflow blowing fan (204) and an exhaust amount regulating device (1061), and forming a coolant compressing and circulating loop constructed by a coolant fluid pipeline (103) installed between the above two, and installing a fluid ex-50 hausting path (1060) and introducing external airflow (1051) in the air conditioning object space (120) between the exhaust amount regulating device (1061) and the external heat exchanger (1021); and wherein split type air conditioning device outdoor unit (2002), 55 installed with the split type air conditioning device outdoor main station (2007), the external heat exchanger (1021), the coolant fluid pipeline (103) and

the airflow exhausting fan unit (104), wherein the split type air conditioning device outdoor main station (2007) mainly includes a compress device and forms a compressing and circulating loop leaded through the coolant fluid pipeline (103) towards the external heat exchanger (1021) and towards the internal heat exchanger (203) and the flow regulating device (202) in the split type air conditioning device indoor unit (2006) installed in the air conditioning object space (120);

the split type air conditioning device indoor unit (2006) is installed with the internal heat exchanger (203), the flow regulating device (202), the conditioned airflow blowing fan (204) and provided with a control device (201) for controlling operations of inputting electric energy and driving the air conditioning device; the split type air conditioning device indoor unit (2006) is further installed with the exhaust amount regulating device (1061) and the fluid exhausting path (1060);

the external heat exchanger (1021) of the split type air conditioning device outdoor unit (2002) is installed with the coolant fluid pipeline (103) allowing the coolant to flow through so as to exchange heat with the external airflow (1051) of the external temperature differentiation space (130) in the external heat exchanger (1021) and the air conditioning object space exhausted fluid (105);

the external heat exchanger airflow exhausting fan unit (104) installed on the split type air conditioning device outdoor unit (2002) is constituted by an airflow blowing or airflow exhausting fan unit or an air pump driven by an electric motor, wherein an airflow introducing interval is defined between the fluid exhausting path (1060) and the external heat exchanger (1021) for pumping in the external airflow (1051) of the external temperature differentiation space (130) and for pumping the air conditioning object space exhausted fluid (105) with a temperature differentiation and pumped from the air conditioning object space (120) through the exhaust amount regulating device (1061) and the fluid exhausting path (106), thereby enabling two airflows to exchange heat then being exhausted to the external temperature differentiation space (130) through the external heat exchanger (1021);

coolant fluid pipeline (103), constituted by a pipeline device for connecting the split type air conditioning device outdoor main station (2007) and the external heat exchanger (1021) and the flow regulating device (202) and the internal heat exchanger (203) of the split type air conditioning device indoor unit (2006) for the purpose of circulation, wherein the internal of pipeline allows the gas-state or liquid-state coolant to flow through;

exhaust amount regulating device (1061), constituted by a fluid gate, a shutoff gate or valve for operating and regulating the exhaust amount of the air condi-

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tioning object space exhausted fluid (105);

fluid exhausting path (1060), constituted by a fluid passage structure for exhausting the exhaust amount of the air conditioning object space exhausted fluid (105) from the air conditioning object space (120);

the coolant fluid pipeline (103) and fluid exhausting path (1060) can be individually

installed or jointly constituted as a pipeline structure.

17. An air conditioning device utilizing temperature differentiation of exhausted gas to even temperature of external heat exchanger as claimed in claim 15, wherein the main configuration is installing a split 15 type air conditioning device outdoor unit (2002) composed of an external heat exchanger (1021) and a split type air conditioning device outdoor main station (2007), and installing a split type air conditioning device indoor unit (2006) composed of an internal heat exchanger (203), a flow regulating device (202), a 20 control device (201), a conditioned airflow blowing fan (204), a blowing pump (1041) and an exhaust amount regulating device (1061), and forming a coolant compressing and circulating loop constructed by a coolant fluid pipeline (103) installed between the 25 above two, and installing a fluid exhausting path (1060) in the air conditioning object space (120) between the exhaust amount regulating device (1061), the blowing pump (1041)and the external heat ex-30 changer (1021); and wherein

split type air conditioning device outdoor unit (2002), installed with the split type air conditioning device outdoor main station (2007), the external heat exchanger (1021) and the coolant fluid pipeline (103), wherein the split type air conditioning device outdoor ³⁵ main station (2007) mainly includes a compress device and forms a compressing and circulating loop leaded through the coolant fluid pipeline (103) towards the external heat exchanger (1021) and towards the internal heat exchanger (203) and the flow ⁴⁰ regulating device (202) in the split type air conditioning device indoor unit (2006) installed in the air conditioning object space (120);

the split type air conditioning device indoor unit (2006) is installed with the internal heat exchanger (203), the flow regulating device (202), the conditioned airflow blowing fan (204) and provided with a control device (201) for controlling operations of inputting electric energy and driving the air conditioning device; the split type air conditioning device in 50 door unit (2006) is further installed with the exhaust amount regulating device (1061), the blowing pump (1041) and the fluid exhausting path (1060);

the external heat exchanger (1021) of the split type air conditioning device outdoor unit (2002) is installed with the coolant fluid pipeline (103) allowing the coolant to flow through so as to exchange heat with the air conditioning object space exhausted fluid

(105);

coolant fluid pipeline (103), constituted by a pipeline device for connecting the split type air conditioning device outdoor main station (2007) and the external heat exchanger (1021) and the flow regulating device (202) and the internal heat exchanger (203) of the split type air conditioning device indoor unit (2006) for the purpose of circulation, wherein the internal of pipeline allows the gas-state or liquid-state coolant to flow through;

exhaust amount regulating device (1061), constituted by a fluid gate, a shutoff gate or valve for operating and regulating the exhaust amount of the air conditioning object space exhausted fluid (105);

- fluid exhausting path (1060), constituted by a fluid passage structure for exhausting the exhaust amount of the air conditioning object space exhausted fluid (105) from the air conditioning object space (120);
- the coolant fluid pipeline (103) and the fluid exhausting path (1060) can be individually installed or jointly constituted as a pipeline structure.
- 18. An air conditioning device utilizing temperature differentiation of exhausted gas to even temperature of external heat exchanger as claimed in claim 15, wherein the main configuration is installing a split type air conditioning device outdoor unit (2002) composed of an external heat exchanger (1021) and an airflow exhausting fan unit (104) and a split type air conditioning device outdoor main station (2007), installing a split type air conditioning device indoor unit (2006) composed of an internal heat exchanger (203), an flow regulating device (202), a control device (201) and a conditioned airflow blowing fan (204), forming a coolant compressing and circulating loop constructed by a coolant fluid pipeline (103) installed between the above two, and separately mounting a exhaust amount regulating device (1061) in the thermal insulation device (110), and installing a fluid exhausting path (1060) and introducing external airflow (1051) in the air conditioning object space (120) between the exhaust amount regulating device (1061) and the external heat exchanger (1021); wherein

split type air conditioning device outdoor unit (2002), installed with the split type air conditioning device outdoor main station (2007), the external heat exchanger (1021), the coolant fluid pipeline (103) and the airflow exhausting fan unit (104), wherein the split type air conditioning device outdoor main station (2007) mainly includes a compress device and forms a compressing and circulating loop leaded through the coolant fluid pipeline (103) towards the external heat exchanger (1021) and towards the internal heat exchanger (203) and the flow regulating device (202) in the split type air conditioning device indoor unit (2006) installed in the air conditioning object space

(120);

the split type air conditioning device indoor unit (2006) is installed with the internal heat exchanger (203), the flow regulating device (202), the conditioned airflow blowing fan (204) and provided with a control device (201) for controlling operations of inputting electric energy and driving the air conditioning device;

the thermal insulation device (110) is separately mounted with the exhaust amount regulating device (1061) and the fluid exhausting path (1060);

the external heat exchanger (1021) of the split type air conditioning device outdoor unit (2002) is installed with the coolant fluid pipeline (103) allowing the coolant to flow through so as to exchange heat ¹⁵ with the external airflow (1051) of the external temperature differentiation space (130) in the external heat exchanger (1021) and the air conditioning object space exhausted fluid (105);

the external heat exchanger airflow exhausting fan 20 unit (104) installed on the split type air conditioning device outdoor unit (2002) is constituted by an airflow blowing or airflow exhausting fan unit or an air pump driven by an electric motor, wherein an airflow introducing interval is defined between the fluid exhaust-25 ing path (1060) and the external heat exchanger (1021) for pumping in the external airflow (1051) of the external temperature differentiation space (130) and for pumping the air conditioning object space exhausted fluid (105) with a temperature differenti-30 ation and pumped from the air conditioning object space (120) through the exhaust amount regulating device (1061) and the fluid exhausting path (106), thereby enabling two airflows to exchange heat then being exhausted to the external temperature differ-35 entiation space (130) through the external heat exchanger(1021);

coolant fluid pipeline (103), constituted by a pipeline device for connecting the split type air conditioning device outdoor main station (2007) and the external 40 heat exchanger (1021) and the flow regulating device (202) and the internal heat exchanger (203) of the split type air conditioning device indoor unit (2006) for the purpose of circulation, wherein the internal of pipeline allows the gas-state or liquid-state 45 coolant to flow through;

exhaust amount regulating device (1061), constituted by a fluid gate, a shutoff gate or valve for operating and regulating the exhaust amount of the air conditioning object space exhausted fluid (105);

fluid exhausting path (1060), constituted by a fluid passage structure for exhausting the exhaust amount of the air conditioning object space exhausted fluid (105) from the air conditioning object space (120);

the coolant fluid pipeline (103) and the fluid exhausting path (1060) can be individually installed or jointly constituted as a pipeline structure. 19. An air conditioning device utilizing temperature differentiation of exhausted gas to even temperature of external heat exchanger as claimed in claim 15, wherein the main configuration is installing a split type air conditioning device outdoor unit (2002) composed of an external heat exchanger (1021) and a split type air conditioning device outdoor main station (2007), and installing a split type air conditioning device indoor unit (2006) composed of an internal heat exchanger (203), a flow regulating device (202), a control device (201), a conditioned airflow blowing fan (204), and forming a coolant compressing and circulating loop constructed by a coolant fluid pipeline (103) installed between the above two, and separately mounting a blowing pump (1041) and a exhaust amount regulating device (1061) in the thermal insulation device (110), and installing a fluid exhausting path (1060) in the air conditioning object space (120) between the exhaust amount regulating device (1061), the blowing pump (1041) and the external heat exchanger (1021); wherein

split type air conditioning device outdoor unit (2002), installed with the split type air conditioning device outdoor main station (2007), the external heat exchanger (1021) and the coolant fluid pipeline (103), wherein the split type air conditioning device outdoor main station (2007) mainly includes a compress device and forms a compressing and circulating loop leaded through the coolant fluid pipeline (103) towards the external heat exchanger (1021) and towards the internal heat exchanger (203) and the flow regulating device (202) in the split type air conditioning device indoor unit (2006) installed in the air conditioning object space (120);

the split type air conditioning device indoor unit (2006) is installed with the internal heat exchanger (203), the flow regulating device (202), the conditioned airflow blowing fan (204) and provided with a control device (201) for controlling operations of inputting electric energy and driving the air conditioning device;

the thermal insulation device (110) is separately mounted with the exhaust amount regulating device (1061), the blowing pump (1041) and the fluid exhausting path (1060);

the external heat exchanger (1021) of the split type air conditioning device outdoor unit (2002) is installed with the coolant fluid pipeline (103) allowing the coolant to flow through so as to exchange heat with the air conditioning object space exhausted fluid (105);

coolant fluid pipeline (103), constituted by a pipeline device for connecting the split type air conditioning device outdoor main station (2007) and the external heat exchanger (1021) and the flow regulating device (202) and the internal heat exchanger (203) of the split type air conditioning device indoor unit (2006) for the purpose of circulation, wherein the in-

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ternal of pipeline allows the gas-state or liquid-state coolant to flow through;

blowing pump (1041), constituted by an air blowing or air exhausting fan unit or an air pump driven by an electric motor, for pumping the air conditioning object space exhausted fluid (105) with a relative temperature differentiation from the air conditioning object space (120) through the exhaust amount regulating device (1061) and the fluid exhausting path (1060) and exchanging heat while flowing through the external heat exchanger (1021) then being exhausted to the external temperature differentiation space (130);

exhaust amount regulating device (1061), constituted by a fluid gate, a shutoff gate or valve for operating and regulating the exhaust amount of the air conditioning object space exhausted fluid (105);

fluid exhausting path (1060), constituted by a fluid passage structure for exhausting the exhaust amount of the air conditioning object space exhausted fluid (105) from the air conditioning object space (120);

the coolant fluid pipeline (103) and the fluid exhausting path (1060) can be

individually installed or jointly constituted as a pipe- ²⁵ line structure.

20. An air conditioning device utilizing temperature differentiation of exhausted gas to even temperature of external heat exchanger as claimed in claim 15, 30 wherein the main configuration is installing a split type air conditioning device outdoor unit (2002) composed of an external heat exchanger (1021) and an airflow exhausting fan unit (104) and a split type air conditioning device outdoor main station (2007), in-35 stalling a split type air conditioning device indoor unit (2006) composed of an internal heat exchanger (203), an flow regulating device (202), a control device (201) and a conditioned airflow blowing fan 40 (204), forming a coolant compressing and circulating loop constructed by a coolant fluid pipeline (103) installed between the above two, and separately mounting a blowing pump (1041) and a exhaust amount regulating device (1061) in the thermal insulation device (110), and installing a fluid exhaust-45 ing path (1060) and introducing external airflow (1051) in the air conditioning object space (120) between the exhaust amount regulating device (1061), the blowing pump (1041) and the external heat ex-50 changer (1021); wherein

split type air conditioning device outdoor unit (2002), installed with the split type air conditioning device outdoor main station (2007), the external heat exchanger (1021), the coolant fluid pipeline (103) and the airflow exhausting fan unit (104), wherein the split 55 type air conditioning device outdoor main station (2007) mainly includes a compress device and forms a compressing and circulating loop leaded through the coolant fluid pipeline (103) towards the external heat exchanger (1021) and towards the internal heat exchanger (203) and the flow regulating device (202) in the split type air conditioning device indoor unit (2006) installed in the air conditioning object space (120);

the split type air conditioning device indoor unit (2006) is installed with the internal heat exchanger (203), the flow regulating device (202), the conditioned airflow blowing fan (204) and provided with a control device (201) for controlling operations of inputting electric energy and driving the air conditioning device;

the thermal insulation device (110) is separately mounted with the exhaust amount regulating device (1061), the blowing pump (1041) and the fluid exhausting path (1060);

the external heat exchanger (1021) of the split type air conditioning device outdoor unit (2002) is installed with the coolant fluid pipeline (103) allowing the coolant to flow through so as to exchange heat with the external airflow (1051) of the external temperature differentiation space (130) in the external heat exchanger (1021) and the air conditioning object space exhausted fluid (105);

the external heat exchanger airflow exhausting fan unit (104) installed on the split type air conditioning device outdoor unit (2002) is constituted by an airflow blowing or airflow exhausting fan unit or an air pump driven by an electric motor, wherein an airflow introducing interval is defined between the fluid exhausting path (1060) and the external heat exchanger (1021) for pumping in the external airflow (1051) of the external temperature differentiation space (130) and for pumping the air conditioning object space exhausted fluid (105) with a temperature differentiation and pumped from the air conditioning object space (120) through the exhaust amount regulating device (1061) and the fluid exhausting path (106), thereby enabling two airflows to exchange heat then being exhausted to the external temperature differentiation space (130) through the external heat exchanger(1021):

coolant fluid pipeline (103), constituted by a pipeline device for connecting the split type air conditioning device outdoor main station (2007) and the external heat exchanger (1021) and the flow regulating device (202) and the internal heat exchanger (203) of the split type air conditioning device indoor unit (2006) for the purpose of circulation, wherein the internal of pipeline allows the gas-state or liquid-state coolant to flow through;

exhaust amount regulating device (1061), constituted by a fluid gate, a shutoff gate or valve for operating and regulating the exhaust amount of the air conditioning object space exhausted fluid (105);

fluid exhausting path (1060), constituted by a fluid passage structure for exhausting the exhaust
amount of the air conditioning object space exhausted fluid (105) from the air conditioning object space (120);

the coolant fluid pipeline (103) and the fluid exhausting path (1060) can be individually installed or jointly 5 constituted as a pipeline structure.

21. An air conditioning device utilizing temperature differentiation of exhausted gas to even temperature 10 of external heat exchanger as claimed in claim 15, wherein the main configuration is installing a split type air conditioning device outdoor unit (2002) composed of an external heat exchanger (1021) and an airflow exhausting fan unit (104), installing a split 15 type air conditioning device outdoor main station (2007) which is individually installed, and installing a split type air conditioning device indoor unit (2006) composed of an internal heat exchanger (203), a flow regulating device (202), a control device (201), a conditioned airflow blowing fan (204) and an exhaust 20 amount regulating device (1061), and forming a coolant compressing and circulating loop constructed by a coolant fluid pipeline (103) installed between the above three, and installing a fluid exhausting path (1060) and introducing external airflow (1051) in the 25 air conditioning object space (120) between the exhaust amount regulating device (1061) and the external heat exchanger (1021); wherein

split type air conditioning device outdoor unit (2002), installed with the external heat exchanger (1021), 30 the coolant fluid pipeline (103), the airflow exhausting fan unit (104) and the individually installed split type air conditioning device outdoor main station (2007), wherein the split type air conditioning device outdoor main station (2007) mainly includes a com-35 press device and forms a compressing and circulating loop leaded through the coolant fluid pipeline (103) towards the external heat exchanger (1021) and towards the internal heat exchanger (203) and 40 the flow regulating device (202) in the split type air conditioning device indoor unit (2006) installed in the air conditioning object space (120);

the split type air conditioning device indoor unit (2006) is installed with the internal heat exchanger (203), the flow regulating device (202), the conditioned airflow blowing fan (204) and provided with a control device (201) for controlling operations of inputting electric energy and driving the air conditioning device; the split type air conditioning device indoor unit (2006) is further installed with the exhaust 50 amount regulating device (1061) and the fluid exhausting path (1060);

the external heat exchanger (1021) of the split type air conditioning device outdoor unit (2002) is installed with the coolant fluid pipeline (103) allowing ⁵⁵ the coolant to flow through so as to exchange heat with the external airflow (1051) of the external temperature differentiation space (130) in the external heat exchanger (1021) and the air conditioning object space exhausted fluid (105);

the external heat exchanger airflow exhausting fan unit (104) installed on the split type air conditioning device outdoor unit (2002) is constituted by an airflow blowing or airflow exhausting fan unit or an air pump driven by an electric motor, wherein an airflow introducing interval is defined between the fluid exhausting path (1060) and the external heat exchanger (1021) for pumping in the external airflow (1051) of the external temperature differentiation space (130) and for pumping the air conditioning object space exhausted fluid (105) with a temperature differentiation and pumped from the air conditioning object space (120) through the exhaust amount regulating device (1061) and the fluid exhausting path (106), thereby enabling two airflows to exchange heat then being exhausted to the external temperature differentiation space (130) through the external heat exchanger(1021);

coolant fluid pipeline (103), constituted by a pipeline device for connecting the split type air conditioning device outdoor main station (2007) which is individually installed and the external heat exchanger (1021) and the flow regulating device (202) and the internal heat exchanger (203) of the split type air conditioning device indoor unit (2006) for the purpose of circulation, wherein the internal of pipeline allows the gas-state or liquid-state coolant to flow through;

exhaust amount regulating device (1061), constituted by a fluid gate, a shutoff gate or valve for operating and regulating the exhaust amount of the air conditioning object space exhausted fluid (105);

fluid exhausting path (1060), constituted by a fluid passage structure for exhausting the exhaust amount of the air conditioning object space exhausted fluid (105) from the air conditioning object space (120);

the coolant fluid pipeline (103) and the fluid exhausting path (1060) can be

individually installed or jointly constituted as a pipeline structure.

45 22. An air conditioning device utilizing temperature differentiation of exhausted gas to even temperature of external heat exchanger as claimed in claim 15, wherein the main configuration is installing a split type air conditioning device outdoor unit (2002) composed of an external heat exchanger (1021), installing a split type air conditioning device outdoor main station (2007) which is individually installed, and installing a split type air conditioning device indoor unit (2006) composed of an internal heat exchanger
55 (203), a flow regulating device (202), a control device (201), a conditioned airflow blowing fan (204), a blowing pump (1041) and an exhaust amount regulating device (1061), and forming a coolant com-

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pressing and circulating loop constructed by a coolant fluid pipeline (103) installed between the above three, and installing a fluid exhausting path (1060) in the air conditioning object space (120) between the exhaust amount regulating device (1061), the blowing pump (1041) and the external heat exchanger (1021); wherein

split type air conditioning device outdoor unit (2002), installed with the external heat exchanger (1021), 10 the coolant fluid pipeline (103) and the individually installed split type air conditioning device outdoor main station (2007), wherein the split type air conditioning device outdoor main station (2007) mainly includes a compress device and forms a compress-15 ing and circulating loop leaded through the coolant fluid pipeline (103) towards the external heat exchanger (1021) and towards the internal heat exchanger (203) and the flow regulating device (202) in the split type air conditioning device indoor unit (2006) installed in the air conditioning object space 20 (120);

the split type air conditioning device indoor unit (2006) is installed with the internal heat exchanger (203), the flow regulating device (202), the conditioned airflow blowing fan (204) and provided with a 25 control device (201) for controlling operations of inputting electric energy and driving the air conditioning device; the split type air conditioning device indoor unit (2006) is further installed with the exhaust amount regulating device (1061), the blowing pump 30 (1041) and the fluid exhausting path (1060);

the external heat exchanger (1021) of the split type air conditioning device outdoor unit (2002) is installed with the coolant fluid pipeline (103) allowing the coolant to flow through so as to exchange heat 35 with the air conditioning object space exhausted fluid (105);

coolant fluid pipeline (103), constituted by a pipeline device for connecting the split type air conditioning 40 device outdoor main station (2007) which is individually installed and the external heat exchanger (1021) and the flow regulating device (202) and the internal heat exchanger (203) of the split type air conditioning device indoor unit (2006) for the pur-45 pose of circulation, wherein the internal of pipeline allows the gas-state or liquid-state coolant to flow through;

blowing pump (1041), constituted by an air blowing or air exhausting fan unit or an air pump driven by an electric motor, for pumping the air conditioning 50 object space exhausted fluid (105) with a relative temperature differentiation from the air conditioning object space (120) through the exhaust amount regulating device (1061) and the fluid exhausting path (1060) and flowing through the external heat ex-55 changer (1021) then being exhausted to the external temperature differentiation space (130);

exhaust amount regulating device (1061), constitut-

ed by a fluid gate, a shutoff gate or valve for operating and regulating the exhaust amount of the air conditioning object space exhausted fluid (105);

fluid exhausting path (1060), constituted by a fluid passage structure for exhausting the exhaust amount of the air conditioning object space exhausted fluid (105) from the air conditioning object space (120):

the coolant fluid pipeline (103) and the fluid exhausting path (1060) can be individually installed or jointly constituted as a pipeline structure.

23. An air conditioning device utilizing temperature differentiation of exhausted gas to even temperature of external heat exchanger as claimed in claim 15, wherein the main configuration is installing a split type air conditioning device outdoor unit (2002) composed of an external heat exchanger (1021) and an airflow exhausting fan unit (104) installing a split type air conditioning device outdoor main station (2007) which is individually installed, and installing a split type air conditioning device indoor unit (2006) composed of an internal heat exchanger (203), a flow regulating device (202), a control device (201) and a conditioned airflow blowing fan (204), and forming a coolant compressing and circulating loop constructed by a coolant fluid pipeline (103) installed between the above three, and separately mounting a exhaust amount regulating device (1061) in the thermal insulation device (110), and installing a fluid exhausting path (1060) and introducing external airflow (1051) in the air conditioning object space (120) between the exhaust amount regulating device (1061) and the external heat exchanger (1021); wherein

split type air conditioning device outdoor unit (2002), installed with the external heat exchanger (1021), the coolant fluid pipeline (103), the airflow exhausting fan unit (104) and the individually installed split type air conditioning device outdoor main station (2007), wherein the split type air conditioning device outdoor main station (2007) mainly includes a compress device and forms a compressing and circulating loop leaded through the coolant fluid pipeline (103) towards the external heat exchanger (1021) and towards the internal heat exchanger (203) and the flow regulating device (202) in the split type air conditioning device indoor unit (2006) installed in the air conditioning object space (120);

the split type air conditioning device indoor unit (2006) is installed with the internal heat exchanger (203), the flow regulating device (202), the conditioned airflow blowing fan (204) and provided with a control device (201) for controlling operations of inputting electric energy and driving the air conditioning device:

the thermal insulation device (110) is separately mounted with the exhaust amount regulating device

(1061) and the fluid exhausting path (1060);

the external heat exchanger (1021) of the split type air conditioning device outdoor unit (2002) is installed with the coolant fluid pipeline (103) allowing the coolant to flow through so as to exchange heat with the external airflow (1051) of the external temperature differentiation space (130) in the external heat exchanger (1021) and the air conditioning object space exhausted fluid (105);

the external heat exchanger airflow exhausting fan 10 unit (104) installed on the split type air conditioning device outdoor unit (2002) is constituted by an airflow blowing or airflow exhausting fan unit or an air pump driven by an electric motor, wherein an airflow introducing interval is defined between the fluid exhaust-15 ing path (1060) and the external heat exchanger (1021) for pumping in the external airflow (1051) of the external temperature differentiation space (130) and for pumping the air conditioning object space exhausted fluid (105) with a temperature differenti-20 ation and pumped from the air conditioning object space (120) through the exhaust amount regulating device (1061) and the fluid exhausting path (106), thereby enabling two airflows to exchange heat then being exhausted to the external temperature differ-25 entiation space (130) through the external heat exchanger (1021);

coolant fluid pipeline (103), constituted by a pipeline device for connecting the split type air conditioning device outdoor main station (2007) which is individually installed and the external heat exchanger (1021) and the flow regulating device (202) and the internal heat exchanger (203) of the split type air conditioning device indoor unit (2006) for the purpose of circulation, wherein the internal of pipeline allows the gas-state or liquid-state coolant to flow through;

exhaust amount regulating device (1061), constituted by a fluid gate, a shutoff gate or valve for operating and regulating the exhaust amount of the air conditioning object space exhausted fluid (105);

fluid exhausting path (1060), constituted by a fluid passage structure for exhausting the exhaust amount of the air conditioning object space exhausted fluid (105) from the air conditioning object space ⁴⁵ (120);

the coolant fluid pipeline (103) and the fluid exhausting path (1060) can be individually installed or jointly constituted as a pipeline structure.

24. An air conditioning device utilizing temperature differentiation of exhausted gas to even temperature of external heat exchanger as claimed in claim 15, wherein the main configuration is installing a split type air conditioning device outdoor unit (2002) composed of an external heat exchanger (1021), installing a split type air conditioning device outdoor main station (2007) which is individually installed, and installing a split type air conditioning device indoor unit (2006) composed of an internal heat exchanger (203), a flow regulating device (202), a control device (201) and a conditioned airflow blowing fan (204), and forming a coolant compressing and circulating loop constructed by a coolant fluid pipeline (103) installed between the above three, and separately mounting a blowing pump (1041) and a exhaust amount regulating device (1061) in the thermal insulation device (110), and installing a fluid exhausting path (1060) in the air conditioning object space (120) between the exhaust amount regulating device (1061), the a blowing pump (1041) and the external heat exchanger (1021); wherein

split type air conditioning device outdoor unit (2002), installed with the external heat exchanger (1021), the coolant fluid pipeline (103) and the individually installed split type air conditioning device outdoor main station (2007), wherein the split type air conditioning device outdoor main station (2007) mainly includes a compress device and forms a compressing and circulating loop leaded through the coolant fluid pipeline (103) towards the external heat exchanger (1021) and towards the internal heat exchanger (203) and the flow regulating device (202) in the split type air conditioning device indoor unit (2006) installed in the air conditioning object space (120);

the split type air conditioning device indoor unit (2006) is installed with the internal heat exchanger (203), the flow regulating device (202), the conditioned airflow blowing fan (204) and provided with a control device (201) for controlling operations of inputting electric energy and driving the air conditioning device;

the thermal insulation device (110) is separately mounted with the exhaust amount regulating device (1061), the blowing pump (1041) and the fluid exhausting path (1060);

the external heat exchanger (1021) of the split type air conditioning device outdoor unit (2002) is installed with the coolant fluid pipeline (103) allowing the coolant to flow through so as to exchange heat with the air conditioning object space exhausted fluid (105);

coolant fluid pipeline (103), constituted by a pipeline device for connecting the split type air conditioning device outdoor main station (2007) and the external heat exchanger (1021) and the flow regulating device (202) and the internal heat exchanger (203) of the split type air conditioning device indoor unit (2006) for the purpose of circulation, wherein the internal of pipeline allows the gas-state or liquid-state coolant to flow through;

blowing pump (1041), constituted by an air blowing or air exhausting fan unit or an air pump driven by an electric motor, for pumping the air conditioning object space exhausted fluid (105) with a relative

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temperature differentiation from the air conditioning object space (120) through the exhaust amount regulating device (1061) and the fluid exhausting path (1060) and flowing through the external heat exchanger (1021) then being exhausted to the external temperature differentiation space (130); exhaust amount regulating device (1061), constituted by a fluid gate, a shutoff gate or valve for operating and regulating the exhaust amount of the air conditioning object space exhausted fluid (105); fluid exhausting path (1060), constituted by a fluid passage structure for exhausting the exhaust amount of the air conditioning object space exhausted fluid (105) from the air conditioning object space (120);

the coolant fluid pipeline (103) and the fluid exhausting path (1060) can be individually installed or jointly constituted as a pipeline structure.

25. An air conditioning device utilizing temperature dif-20 ferentiation of exhausted gas to even temperature of external heat exchanger as claimed in claim 15, wherein the main configuration is installing a split type air conditioning device outdoor unit (2002) composed of an external heat exchanger (1021) and an 25 airflow exhausting fan unit (104), installing a split type air conditioning device outdoor main station (2007) which is individually installed, and installing a split type air conditioning device indoor unit (2006) composed of an internal heat exchanger (203), a flow 30 regulating device (202), a control device (201) and a conditioned airflow blowing fan (204), and forming a coolant compressing and circulating loop constructed by a coolant fluid pipeline (103) installed between the above three, and separately mounting 35 a blowing pump (1041) and a exhaust amount regulating device (1061) in the thermal insulation device (110), and installing a fluid exhausting path (1060) and introducing external airflow (1051) in the air conditioning object space (120) between the exhaust 40 amount regulating device (1061), the blowing pump (1041) and the external heat exchanger (1021); wherein

split type air conditioning device outdoor unit (2002), 45 installed with the external heat exchanger (1021), the coolant fluid pipeline (103), the airflow exhausting fan unit (104) and the individually installed split type air conditioning device outdoor main station (2007), wherein the split type air conditioning device outdoor main station (2007) mainly includes a com-50 press device and forms a compressing and circulating loop leaded through the coolant fluid pipeline (103) towards the external heat exchanger (1021) and towards the internal heat exchanger (203) and the flow regulating device (202) in the split type air 55 conditioning device indoor unit (2006) installed in the air conditioning object space (120);

the split type air conditioning device indoor unit

(2006) is installed with the internal heat exchanger (203), the flow regulating device (202), the conditioned airflow blowing fan (204) and provided with a control device (201) for controlling operations of inputting electric energy and driving the air conditioning device;

the thermal insulation device (110) is separately mounted with the exhaust amount regulating device (1061), the blowing pump (1041) and the fluid exhausting path (1060);

the external heat exchanger (1021) of the split type air conditioning device outdoor unit (2002) is installed with the coolant fluid pipeline (103) allowing the coolant to flow through so as to exchange heat with the external airflow (1051) of the external temperature differentiation space (130) in the external heat exchanger (1021) and the air conditioning object space exhausted fluid (105);

the external heat exchanger airflow exhausting fan unit (104) installed on the split type air conditioning device outdoor unit (2002) is constituted by an airflow blowing or airflow exhausting fan unit or an air pump driven by an electric motor, wherein an airflow introducing interval is defined between the fluid exhausting path (1060) and the external heat exchanger (1021) for pumping in the external airflow (1051) of the external temperature differentiation space (130) and for pumping the air conditioning object space exhausted fluid (105) with a temperature differentiation and pumped from the air conditioning object space (120) through the exhaust amount regulating device (1061) and the fluid exhausting path (106), thereby enabling two airflows to exchange heat then being exhausted to the external temperature differentiation space (130) through the external heat exchanger (1021);

coolant fluid pipeline (103), constituted by a pipeline device for connecting the split type air conditioning device outdoor main station (2007) which is individually installed and the external heat exchanger (1021) and the flow regulating device (202) and the internal heat exchanger (203) of the split type air conditioning device indoor unit (2006) for the purpose of circulation, wherein the internal of pipeline allows the gas-state or liquid-state coolant to flow through;

exhaust amount regulating device (1061), constituted by a fluid gate, a shutoff gate or valve for operating and regulating the exhaust amount of the air conditioning object space exhausted fluid (105);

fluid exhausting path (1060), constituted by a fluid passage structure for exhausting the exhaust amount of the air conditioning object space exhausted fluid (105) from the air conditioning object space (120);

the coolant fluid pipeline (103) and the fluid exhausting path (1060) can be individually installed or jointly constituted as a pipeline structure.



FIG. 1



FIG. 2







130

FIG. 4



FIG. 5



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FIG. 6



FIG. 7

EP 2 463 597 A2



FIG. 8



FIG. 9



FIG. 10



FIG. 11



FIG. 12







FIG. 14



FIG. 15



FIG. 16



FIG. 17



FIG. 18





FIG. 20



FIG. 21



FIG. 22





FIG. 24