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(71) Applicant: **Carrier Corporation**
Palm Beach Gardens, FL 33418 (US)

(72) Inventor: **WENG, Jingkai**
Shanghai, 201206 (CN)

(74) Representative: **Dehns**
10 Old Bailey
London EC4M 7NG (GB)

(54) **AIR CONDITIONING SYSTEM**

(57) The invention provides an air conditioning system (100). The air conditioning system (100) comprises: a compressor (105), a four-way valve (104), a first heat exchanger (101), a second heat exchanger (102), a third heat exchanger (103), a first throttling element (106) and a second throttling element (107) with a shut-off function, a reservoir (108), a first solenoid valve (109), a second solenoid valve (110), and a check valve (111) connected through pipelines, wherein the four-way valve (104) has a first port (104a) for communicating with an exhaust port (105a) of the compressor (105), a second port (104b) for communicating with a first end of the first heat exchanger

(101), a third port (104c) for communicating with a first end of the second heat exchanger (102), and a fourth port (104d) for communicating with a second end of the third heat exchanger (103); wherein a second end of the first heat exchanger (101) is connected to a first end of the reservoir (108) through the second solenoid valve (110), and at the same time the second end of the first heat exchanger (101) is connected to the first end of the reservoir (108) through the check valve (111). The air conditioning system (100) according to the invention can effectively achieve the goal of cost reduction and efficiency improvement.

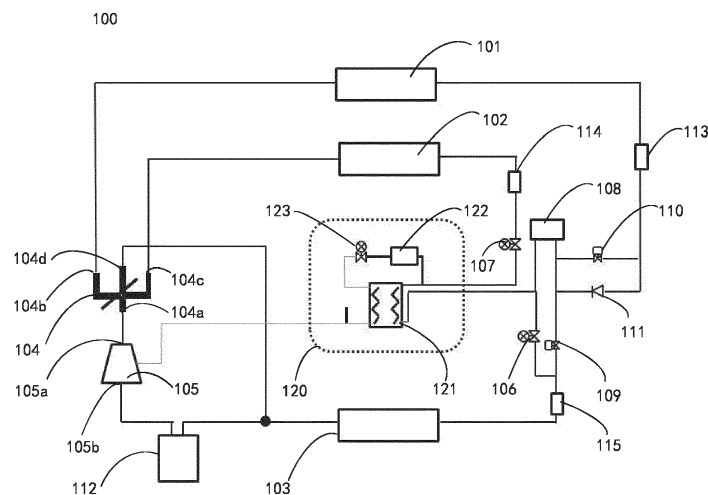


FIG. 1

Description

FIELD OF THE INVENTION

[0001] The invention relates to the field of air conditioning, in particular to an air conditioning system.

BACKGROUND OF THE INVENTION

[0002] With the diversification of building functions, more and more zoning designs are being implemented, so that the need for both cooling and heating can be met in the same building. Four-pipe air conditioning units can well meet the needs of such application places, and save operating costs and equipment investment. However, most of the four-pipe units currently in use have complex structures and numerous components such as valves, making them expensive to produce and not easy for widespread promotion.

SUMMARY OF THE INVENTION

[0003] The invention aims to provide an air conditioning system to at least partially solve or alleviate the problems existing in the prior art.

[0004] According to a first aspect of the invention there is provided an air conditioning system, comprising: a compressor, a four-way valve, a first heat exchanger, a second heat exchanger, a third heat exchanger, a first throttling element and a second throttling element with a shut-off function, a reservoir, a first solenoid valve, a second solenoid valve, and a check valve connected through pipelines,

wherein the four-way valve has a first port for communicating with an exhaust port of the compressor, a second port for communicating with a first end of the first heat exchanger, a third port for communicating with a first end of the second heat exchanger, and a fourth port for communicating with a second end of the third heat exchanger;

wherein a second end of the first heat exchanger is connected to a first end of the reservoir through the second solenoid valve, and at the same time the second end of the first heat exchanger is connected to the first end of the reservoir through the check valve; a second end of the second heat exchanger is connected to a second end of the reservoir through the second throttling element; a first end of the third heat exchanger is connected to the first end of the reservoir through the first solenoid valve, and at the same time the first end of the third heat exchanger is connected to the second end of the reservoir through the first throttling element, and the second end of the third heat exchanger is connected to a suction port of the compressor.

[0005] Optionally, the air conditioning system com-

prises an economizer assembly, wherein the economizer assembly is provided between the second throttling element and the second end of the reservoir, and comprises an intermediate heat exchanger and a throttling bypass for throttling at least a portion of the refrigerant, where the throttling bypass is provided with a throttling device, and the intermediate heat exchanger is communicated to an air replenishment port of the compressor.

[0006] Optionally, the air conditioning system comprises a controller that communicates with the first solenoid valve, the second solenoid valve, the first throttling element, the second throttling element, or any combination thereof.

[0007] Optionally, the air conditioning system has a cooling mode, wherein the controller instructs to turn on the first solenoid valve, the second throttling element, and a first port and a third port of the four-way valve, and to turn off the first throttling element, the second solenoid valve, and a second port and a fourth port of the four-way valve, so that the second throttling element plays a throttling role, thereby allowing the refrigerant of the air conditioning system to sequentially flow through the exhaust port of the compressor, the first port of the four-way valve, the third port of the four-way valve, the second heat exchanger, the second throttling element, the economizer assembly, the reservoir, the first solenoid valve, the third heat exchanger, and the suction port of the compressor.

[0008] Optionally, the air conditioning system has a heating mode, wherein the controller instructs to turn on the second throttling element and instructs to communicate the first port of the four-way valve with the second port of the four-way valve and to communicate the third port of the four-way valve and the fourth port of the four-way valve, and to turn off the first throttling element, the first solenoid valve, and the second solenoid valve, so that the second throttling element plays a throttling role, thereby allowing the refrigerant of the air conditioning system to sequentially flow through the exhaust port of the compressor, the first port of the four-way valve, the second port of the four-way valve, the first heat exchanger, the check valve, the reservoir, the economizer assembly, the second throttling element, the second heat exchanger, the third port of the four-way valve, the fourth port of the four-way valve, and the suction port of the compressor.

[0009] Optionally, the air conditioning system has a defrosting mode, wherein the controller instructs to turn on the second throttling element and the second solenoid valve, and instructs to communicate the first port of the four-way valve and the third port of the four-way valve, and to communicate the second port of the four-way valve and the fourth port of the four-way valve, and to turn off the first throttling element and the first solenoid valve, so that the second throttling element plays a throttling role, thereby allowing the refrigerant of the air conditioning system to sequentially flow through the exhaust port of the compressor, the first port of the four-way

valve, the third port of the four-way valve, the second heat exchanger, the second throttling element, the economizer assembly, the reservoir, the second solenoid valve, the first heat exchanger, the second port of the four-way valve, the fourth port of the four-way valve, and the suction port of the compressor.

[0010] Optionally, the air conditioning system has a cooling and heat recovery mode, wherein the controller instructs to turn on the first throttling element, the first port and the second port of the four-way valve, and to turn off the second throttling element, the first solenoid valve, the second solenoid valve, the third port and the fourth port of the four-way valve, so that the first throttling element plays a throttling role, thereby allowing the refrigerant of the air conditioning system to sequentially flow through the exhaust port of the compressor, the first port of the four-way valve, the second port of the four-way valve, the first heat exchanger, the check valve, the reservoir, the first throttling element, the third heat exchanger, and the suction port of compressor.

[0011] Optionally, the compressor is an Enhanced Vapor Injection compressor.

[0012] Optionally, the air conditioning system comprises a gas-liquid separator, wherein the gas-liquid separator is provided between the suction port of the compressor and the second end of the third heat exchanger.

[0013] Optionally, the second heat exchanger is a fan coil heat exchanger.

[0014] It can be appreciated that the air conditioning system according to the invention can not only simplify pipeline design, but also reduce the number of valves, thus further achieving the goal of cost reduction and efficiency improvement.

BRIEF DESCRIPTION OF THE DRAWINGS

[0015] The invention will become easier to understand by referring to the accompanying drawings. It is easy for those skilled in the art to understand that these drawings are only for illustrative purposes and are not intended to limit the scope of protection of the invention, which is as set out in the appended claims. In addition, similar numbers in the figures are used to denote similar components. Certain exemplary embodiments will now be described in greater detail by way of example only and with reference to the accompanying drawings in which:

FIG. 1 shows a structural schematic diagram of an air conditioning system in a cooling mode and a defrosting mode; and

FIG. 2 shows a structural schematic diagram of an air conditioning system in a heating mode and a cooling and heat recovery mode.

DETAILED DESCRIPTION OF EMBODIMENT(S) OF THE INVENTION

[0016] The invention will be described in detail hereinafter with reference to the exemplary embodiments shown in the accompanying drawings. However, it should be appreciated that the invention can be implemented in many different forms, and should not be construed as being limited to the embodiments set forth herein. These embodiments are provided here for the purpose of making the specification more complete and comprehensive, and fully conveying the concept of the invention to those skilled in the art.

[0017] Referring to FIG. 1, an embodiment of an air conditioning system is illustrated. The air conditioning system 100 consists of a first heat exchanger 101, a second heat exchanger 102, a third heat exchanger 103, a four-way valve 104, a compressor 105, a first throttling element 106 and a second throttling element 107 with a shut-off function, a reservoir 108, a first solenoid valve 109, a second solenoid valve 110, a check valve 111, and other components. In practical applications, the first heat exchanger 101 can be a condenser and the third heat exchanger 103 can be an evaporator, wherein both the first heat exchanger 101 and the third heat exchanger 103 are water side heat exchangers with a water heat exchange structure inside, which can exchange heat with refrigerant or coolant to obtain cold or hot water accordingly. In addition, the second heat exchanger 102 can be a fan coil heat exchanger with one or more parallel fans, and at least one of the fans can be a variable frequency fan or a double speed fan, in order to enhance the heat exchange capacity and effect of the second heat exchanger 102. The reservoir 108 is used to store excess refrigerant or coolant that does not participate in circulation in the air conditioning system 100. Specifically, the four-way valve 104 has a first port 104a for communicating with the exhaust port 105a of the compressor 105, a second port 104b for communicating with the first end of the first heat exchanger 101, a third port 104c for communicating with the first end of the second heat exchanger 102, and a fourth port 104d for communicating with the second end of the third heat exchanger 103. In addition, the second end of the first heat exchanger 101 is connected to the first end of the reservoir 108 through the second solenoid valve 110, and at the same time, the second end of the first heat exchanger 101 is connected to the first end of the reservoir 108 through the check valve 111. The second end of the second heat exchanger 102 is connected to the second end of the reservoir 108 through the second throttling element 107. The first end of the third heat exchanger 103 is connected to the first end of the reservoir 108 through the first solenoid valve 109, and at the same time the first end of the third heat exchanger 103 is connected to the second end of the reservoir 108 through the first throttling element 106, and the second end of the third heat exchanger 103 is connected to the suction port 105b of the

compressor 105. The air conditioning system according to the invention can simplify pipeline design and reduce the number of valves, thereby achieving the goal of cost reduction and efficiency improvement.

[0018] It should be noted that both the first throttling element 106 and the second throttling element 107 can play a role in throttling expansion. However, it can also be made that one is completely turned off, while the other can adjust its opening to play a role in throttling expansion.

[0019] In conjunction with the above embodiments, in other optional embodiments, the air conditioning system 100 further comprises an economizer assembly 120, wherein the economizer assembly 120 is provided between the second throttling element 107 and the second end of the reservoir 108, and includes an intermediate heat exchanger 121 and a throttling bypass for throttling at least a portion of the refrigerant. The throttling bypass is provided with a filter 122 and a throttling device 123, wherein the intermediate heat exchanger 121 is communicated to the air replenishment port of the compressor 105. In this case, the compressor 105 can adopt an Enhanced Vapor Injection compressor to improve the overall operating range of the air conditioning system 100.

[0020] Various possible modifications of the air conditioning system will be described below in conjunction with the appended drawings. In addition, for the purpose of further improving system energy efficiency or reliability, additional components can be added, as will also be exemplarily illustrated below. For example, the air conditioning system 100 further comprises a controller (not shown) that communicates with the first solenoid valve 109, the second solenoid valve 110, the first throttling element 106, the second throttling element 107, or any combination thereof. For example, the air conditioning system 100 also comprises a gas-liquid separator 112, which is located between the suction port 105b of the compressor 105 and the second end of the third heat exchanger 103, thereby ensuring that the compressor 105 does not carry liquid during operation. For another example, the air conditioning system 100 can be configured with a first filter device 113, a second filter device 114, a third filter device 115, etc. on the respective pipelines of the air conditioning system 100, in order to filter out oil droplets or other impurities carried by the refrigerant in the circulation system.

[0021] The air conditioning system 100 can achieve a cooling mode. An illustrative example will be described below in conjunction with FIG. 1

[0022] With continued reference to FIG. 1, specifically, when executing the cooling mode, the controller instructs to turn on the first solenoid valve 109, the second throttling element 107, the first port 104a and the third port 104c of the four-way valve 104, and to turn off the first throttling element 106, the second solenoid valve 110, the second port 104b and the fourth port 104d of the four-way valve 104, so that the second throttling element 107 plays

a throttling role.

[0023] The refrigerant of the air conditioning system 100 first enters the compressor 105 for gas-phase compression, and then flows from the exhaust port 105a of the compressor 105 through the first port 104a of the four-way valve 104 and the third port 104c of the four-way valve 104 into the second heat exchanger 102 for condensation and heat dissipation. Subsequently, the refrigerant flows into the economizer assembly 120 through the second throttling element 107, where the refrigerant can enter the economizer assembly 120 after undergoing throttling expansion in the second throttling element 107. At least a portion of the refrigerant is diverted from the main path of the economizer assembly 120 and enters the throttling bypass, passes sequentially through the filter 122 and the throttling device 123, enters the intermediate heat exchanger 121 after undergoing throttling expansion in the throttling device 123 to exchange heat with the refrigerant on the main path of the economizer assembly 120, and then enters the intermediate stage of the compressor 105 for air replenishment for the compressor 105. When the remaining refrigerant flows out of the main path of the economizer assembly 120 into the reservoir 108, it then flows into the third heat exchanger 103 through the first solenoid valve 109 for evaporation and heat absorption. When the refrigerant passes through the third heat exchanger 103 and returns to the suction port 105b of the compressor 105, the cycle is completed.

[0024] For example, the air conditioning system 100 can also achieve a heating mode. An illustrative example will be described below in conjunction with FIG. 2.

[0025] With continued reference to FIG. 2, specifically, when executing the heating mode, the controller instructs to turn on the second throttling element 107 and instructs to communicate the first port 104a of the four-way valve 104 with the second port 104b of the four-way valve 104, and to communicate the third port 104c of the four-way valve 104 with the fourth port 104d of the four-way valve 104, and to turn off the first throttling element 106, the first solenoid valve 109, and the second solenoid valve 110, so that the second throttling element 107 plays a throttling role.

[0026] The refrigerant of the air conditioning system 100 first enters the compressor 105 for gas-phase compression, and then flows from the exhaust port 105a of the compressor 105 through the first port 104a of the four-way valve 104 and the second port 104b of the four-way valve 104 into the first heat exchanger 101 for condensation and heat dissipation. Subsequently, the refrigerant enters the reservoir 108 through the check valve 111, and flows from the reservoir 108 into the economizer assembly 120. At least a portion of the refrigerant is diverted from the main path of the economizer assembly 120 and enters the throttling bypass, passes sequentially through the filter 122 and the throttling device 123, enters the intermediate heat exchanger 121 after undergoing throttling expansion in the throttling device 123 to exchange

heat with the refrigerant on the main path of the economizer assembly 120, and then enters the intermediate stage of the compressor 105 for air replenishment for the compressor 105. When the remaining refrigerant flows out of the main path of the economizer assembly 120, it flows into the second heat exchanger 102 through the second throttling element 107, where the remaining refrigerant can enter the second heat exchanger 102 for evaporation and heat absorption after undergoing throttling expansion in the second throttling element 107. When the refrigerant passes through the second heat exchanger 102 and returns to the suction port 105b of the compressor 105 through the third port 104c of the four-way valve 104 and the fourth port 104d of the four-way valve 104, the cycle is completed.

[0027] For example, the air conditioning system 100 can also achieve a defrosting mode. An illustrative example will be described below in conjunction with FIG. 1.

[0028] With continued reference to FIG. 1, specifically, when executing the defrosting mode, the controller instructs to turn on the second throttling element 107 and the second solenoid valve 110, and instructs to communicate the first port 104a of the four-way valve 104 with the third port 104c of the four-way valve 104, and to communicate the second port 104b of the four-way valve 104 with the fourth port 104d of the four-way valve 104, and to turn off the first throttling element 106 and the first solenoid valve 109, so that the second throttling element 107 plays a throttling role.

[0029] The refrigerant of the air conditioning system 100 first enters the compressor 105 for gas-phase compression, and then flows from the exhaust port 105a of the compressor 105 through the first port 104a of the four-way valve 104 and the third port 104c of the four-way valve 104 into the second heat exchanger 102 for condensation and heat dissipation. Subsequently, the refrigerant flows into the economizer assembly 120 through the second throttling element 107, where the refrigerant can enter the economizer assembly 120 after undergoing throttling expansion in the second throttling element 107. At least a portion of the refrigerant is diverted from the main path of the economizer assembly 120 and enters the throttling bypass, passes sequentially through the filter 122 and the throttling device 123, enters the intermediate heat exchanger 121 after undergoing throttling expansion in the throttling device 123 to exchange heat with the refrigerant on the main path of the economizer assembly 120, and then enters the intermediate stage of the compressor 105 for air replenishment for the compressor 105. When the remaining refrigerant flows out of the main path of the economizer assembly 120 into the reservoir 108, it then flows into the first heat exchanger 101 through the second solenoid valve 110 for evaporation and heat absorption. When the refrigerant passes through the first heat exchanger 101 and returns to the suction port 105b of the compressor 105 through the second port 104b of the four-way valve 104 and the fourth port 104d of the four-way valve 104, the cycle is com-

pleted.

[0030] For example, the air conditioning system 100 can also achieve a cooling and heat recovery mode. An illustrative example will be described below in conjunction with FIG. 2.

[0031] With continued reference to FIG. 2, specifically, when performing the cooling and heat recovery mode, the controller instructs to turn on the first throttling element 106, the first port 104a and the second port 104b of the four-way valve 104, and to turn off the second throttling element 107, the first solenoid valve 109, the second solenoid valve 110, and the third port 104c and the fourth port 104d of the four-way valve 104, so that the first throttling element 106 plays a throttling role.

[0032] The refrigerant of the air conditioning system 100 first enters the compressor 105 for gas-phase compression, and then flows from the exhaust port 105a of the compressor 105 through the first port 104a of the four-way valve 104 and the second port 104b of the four-way valve 104 into the first heat exchanger 101 for condensation and heat dissipation. Subsequently, the refrigerant passes through the check valve 111 and enters the reservoir 108. When the refrigerant flows out of the reservoir 108 and passes through the first throttling element 106, it flows into the third heat exchanger 103, where the refrigerant can enter the third heat exchanger 103 for evaporation and heat absorption after undergoing throttling expansion in the first throttling element 106. When the refrigerant passes through the third heat exchanger 103 and returns to the suction port 105b of the compressor 105, the cycle is completed. In this case, the second heat exchanger 102 is in an idle state, and the first heat exchanger 101 can recover heat from the refrigerant or coolant to obtain corresponding hot water.

[0033] In the specification, it should be appreciated that the terms "first" and "second" are only used for descriptive purposes and cannot be construed as indicating or implying relative importance or implying the quantity of technical features indicated. Therefore, the features limited with "first" and "second" can explicitly or implicitly include at least one of these features. In the specification, "a plurality of" means at least two, such as two, three, etc., unless otherwise specified.

[0034] In the specification, unless otherwise specified and limited, the terms "connect", "communicate" and other terms should be interpreted in a broad sense, which can be, for example, a fixed connection, a detachable connection, or integrally formed; or can be a direct connection or an indirect connection through an intermediate medium; or can be an internal communication of two components or the interaction relationship between two components, unless otherwise specified. For those skilled in the art, the specific meanings of the above terms in the specification can be interpreted based on specific circumstances.

[0035] The above examples mainly illustrate an air conditioning system of the invention. Although only some embodiments of the invention have been described,

those skilled in the art should be aware that the invention can be implemented in many other forms without deviating from its scope, which is as set out in the appended claims. Therefore, the examples and embodiments illustrated are considered as illustrative rather than restrictive. Without departing from the scope of the invention as defined in the appended claims, the invention may encompass various modifications and substitutions.

Claims

1. An air conditioning system (100), comprising:

a compressor (105), a four-way valve (104), a first heat exchanger (101), a second heat exchanger (102), a third heat exchanger (103), a first throttling element (106) and a second throttling element (107) with a shut-off function, a reservoir (108), a first solenoid valve (109), a second solenoid valve (110), and a check valve (111) connected through pipelines, wherein the four-way valve (104) has a first port (104a) for communicating with an exhaust port (105a) of the compressor (105), a second port (104b) for communicating with a first end of the first heat exchanger (101), a third port (104c) for communicating with a first end of the second heat exchanger (102), and a fourth port (104d) for communicating with a second end of the third heat exchanger (103); wherein a second end of the first heat exchanger (101) is connected to a first end of the reservoir (108) through the second solenoid valve (110), and at the same time the second end of the first heat exchanger (101) is connected to the first end of the reservoir (108) through the check valve (111); a second end of the second heat exchanger (102) is connected to a second end of the reservoir (108) through the second throttling element (107); a first end of the third heat exchanger (103) is connected to the first end of the reservoir (108) through the first solenoid valve (109), and at the same time the first end of the third heat exchanger (103) is connected to the second end of the reservoir (108) through the first throttling element (106), and the second end of the third heat exchanger (103) is connected to a suction port (105b) of the compressor (105).

2. The air conditioning system (100) according to claim 1, wherein the air conditioning system further comprises an economizer assembly (120) provided between the second throttling element (107) and the second end of the reservoir (108), and comprising an intermediate heat exchanger (121) and a throttling bypass for throttling at least a portion of refrigerant, where the throttling bypass is provided with a throt-

tling device (123), and the intermediate heat exchanger is communicated to an air replenishment port of the compressor (105).

3. The air conditioning system (100) according to claim 2, where the air conditioning system further comprises a controller that communicates with the first solenoid valve (109), the second solenoid valve (110), the first throttling element (106), the second throttling element (107), or any combination thereof.

4. The air conditioning system (100) according to claim 3, wherein the air conditioning system has a cooling mode, wherein the controller instructs to turn on the first solenoid valve (109), the second throttling element (107), and a first port (104a) and a third port (104c) of the four-way valve (104), and to turn off the first throttling element (106), the second solenoid valve (110), and a second port (104b) and a fourth port (104d) of the four-way valve (104), so that the second throttling element (107) plays a throttling role, thereby allowing the refrigerant of the air conditioning system to sequentially flow through the exhaust port (105a) of the compressor (105), the first port (104a) of the four-way valve (104), the third port (104c) of the four-way valve (104), the second heat exchanger (102), the second throttling element (107), the economizer assembly (120), the reservoir (108), the first solenoid valve (109), the third heat exchanger (103), and the suction port (105b) of the compressor (105).

5. The air conditioning system (100) according to claim 3, wherein the air conditioning system (100) has a heating mode, wherein the controller instructs to turn on the second throttling element (107) and instructs to communicate the first port (104a) of the four-way valve (104) with the second port (104b) of the four-way valve (104) and to communicate the third port (104c) of the four-way valve (104) with the fourth port (104d) of the four-way valve (104), and to turn off the first throttling element (106), the first solenoid valve (109), and the second solenoid valve (110), so that the second throttling element (107) plays a throttling role, thereby allowing the refrigerant of the air conditioning system to sequentially flow through the exhaust port (105a) of the compressor (105), the first port (104a) of the four-way valve (104), the second port (104b) of the four-way valve (104), the first heat exchanger (101), the check valve (111), the reservoir (108), the economizer assembly (120), the second throttling element (107), the second heat exchanger (102), the third port (104c) of the four-way valve (104), the fourth port (104d) of the four-way valve (104), and the suction port (105b) of the compressor (105).

6. The air conditioning system (100) according to claim

- 3, wherein the air conditioning system has a defrosting mode, wherein the controller instructs to turn on the second throttling element (107) and the second solenoid valve (110), and instructs to communicate the first port (104a) of the four-way valve (104) with the third port (104c) of the four-way valve (104) and to communicate the second port (104b) of the four-way valve (104) with the fourth port (104d) of the four-way valve (104), and to turn off the first throttling element (106) and the first solenoid valve (109), so that the second throttling element (107) plays a throttling role, thereby allowing the refrigerant of the air conditioning system to sequentially flow through the exhaust port (105a) of the compressor (105), the first port (104a) of the four-way valve (104), the third port (104c) of the four-way valve (104), the second heat exchanger (102), the second throttling element (107), the economizer assembly (120), the reservoir (108), the second solenoid valve (110), the first heat exchanger (101), the second port (104b) of the four-way valve (104), the fourth port (104d) of the four-way valve (104), and the suction port (105b) of the compressor (105).
7. The air conditioning system (100) according to claim 3, wherein the air conditioning system has a cooling and heat recovery mode, wherein the controller instructs to turn on the first throttling element (106), the first port (104a) and the second port (104b) of the four-way valve (104), and to turn off the second throttling element (107), the first solenoid valve (109), the second solenoid valve (110), the third port (104c) and the fourth port (104d) of the four-way valve (104), so that the first throttling element (106) plays a throttling role, thereby allowing the refrigerant of the air conditioning system to sequentially flow through the exhaust port (105a) of the compressor (105), the first port (104a) of the four-way valve (104), the second port (104b) of the four-way valve (104), the first heat exchanger (101), the check valve (111), the reservoir (108), the first throttling element (106), the third heat exchanger (103), and the suction port (105b) of compressor (105).
8. The air conditioning system (100) according to any preceding claim, wherein the compressor (105) is an Enhanced Vapor Injection compressor.
9. The air conditioning system (100) according to any preceding claim, wherein the air conditioning system further comprises a gas-liquid separator (112) provided between the suction port (105b) of the compressor (105) and the second end of the third heat exchanger (103).
10. The air conditioning system according to any preceding claim, wherein the second heat exchanger (102) is a fan coil heat exchanger.

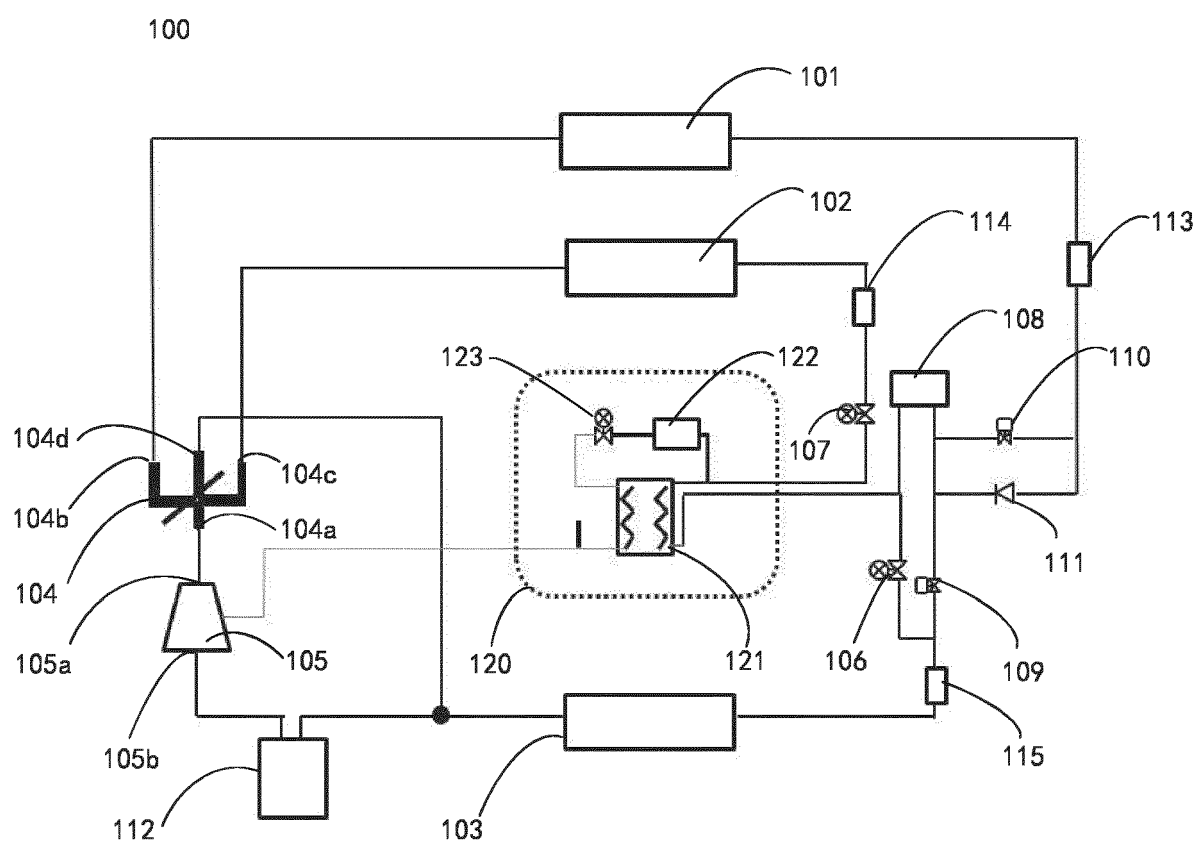


FIG. 1

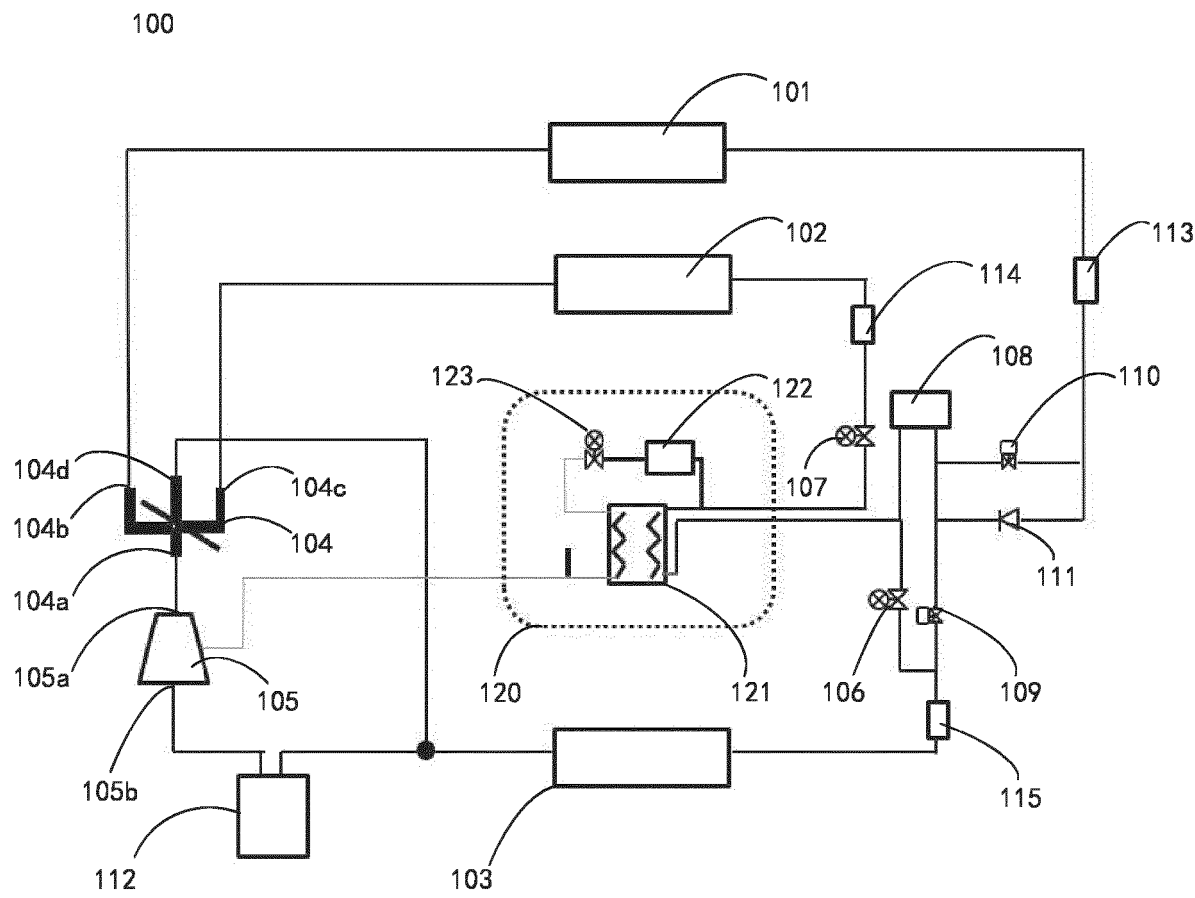


FIG. 2



EUROPEAN SEARCH REPORT

Application Number

EP 24 18 9259

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
Y	US 2022/034565 A1 (WENG JINGKAI [CN] ET AL) 3 February 2022 (2022-02-03) * figures 6-10 * * paragraph [0002] - paragraph [0003] * * paragraph [0053] - paragraph [0067] *	1-10	INV. F25B13/00 F25B29/00 F25B41/24 F25B41/30 F25B41/42 F25B47/02 F25B41/20
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