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(54) **Heat absorbing or dissipating device with double-scroll piping transmitting temperature difference fluid**

(57) The present invention relates to a device, which is composed of one or more parallel or quasi-parallel installed fluid piping by series or parallel connection, each

piping is specifically distributed by one or more double-scroll arrangement for transmitting thermal conductive fluid, and the double-scroll fluid piping constitutes fluid flow uniformly distributed by temperature difference.

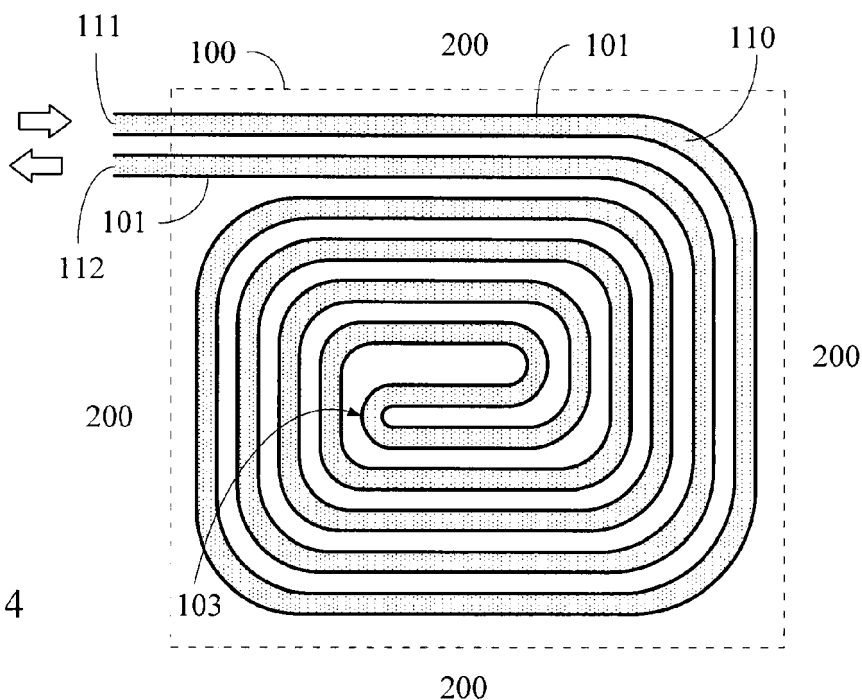


Fig. 4

Description

BACKGROUND OF THE INVENTION

(a) Field of the Invention

[0001] The present invention relates to the heat absorbing or dissipating device with double-scroll piping transmitting temperature difference fluid, which is composed of one or more parallel or quasi-parallel installed fluid piping by series or parallel connection, and each piping is specifically distributed by one or more double-scroll arrangement for transmitting thermal conductive fluid with temperature difference constituted by gaseous or liquid state fluid, gaseous to liquid state fluid, or liquid to gaseous state fluid, and by means of the double-scroll fluid piping constituting the fluid flow uniformly distributed by temperature difference, thereby the fluids passing through neighboring piping flow in reverse direction, so as to produce heat absorbing or dissipating function onto the passively heat dissipation or absorption receiving article or space thereby forming a more uniform temperature distribution status on the passively heat dissipation or absorption receiving article or space.

(b) Description of the Prior

[0002] For the conventional heat absorbing or dissipating devices by passing through thermal conductive fluid as the heat absorbing or dissipating body constituted by gaseous or liquid state fluid, gaseous to liquid state fluid, or liquid to gaseous state fluid such as engine cooling water radiators, heat absorbing cooling energy discharge devices utilizing thermal conductive fluid, or heat dissipating warming energy discharge devices utilizing thermal conductive fluid such as warming devices, heaters, or the warming energy transfer device, as the flow direction of the thermal conductive fluid is fixed, larger temperature difference is formed between different positions on the heat absorbing or dissipating body of the thermal conductive fluid.

SUMMARY OF THE INVENTION

[0003] The present invention relates to the heat absorbing or dissipating device with double-scroll piping transmitting temperature difference fluid, which is composed of one or more parallel or quasi-parallel installed fluid piping in series or parallel connection, and each piping is specifically distributed by one or more double-scroll arrangement for transmitting thermal conductive fluid with temperature difference constituted by gaseous or liquid state fluid, gaseous to liquid state fluid, or liquid to gaseous state fluid.

BRIEF DESCRIPTION OF THE DWAWINGS

[0004]

FIG. 1 is a main structural schematic view of a heat absorbing or dissipating device for being passed through by thermal conductive fluid at fixed flow direction being constituted by conventional heat absorbing or dissipating gaseous or liquid state fluid or gaseous to liquid state fluid, or liquid to gaseous state fluid;

FIG 2 is a temperature difference distribution diagram of FIG. 1 being operated for the heat absorbing cooling energy discharge device function;

FIG 3 is a temperature difference distribution diagram of FIG. 1 being operated for the heat dissipating warming energy discharge device function;

FIG. 4 is a main structural schematic view of an embodiment, according to the present invention;

FIG. 5 is a temperature difference distribution diagram formed on the structure shown in FIG. 4 being operated for heat absorbing cooling energy discharge device function;

FIG. 6 is a temperature difference distribution diagram formed on the structure shown in FIG. 4 being operated for heat dissipating warming energy discharge device function;

FIG. 7 is a main structural schematic view of another embodiment, according to the present invention;

FIG. 8 is a temperature difference distribution diagram formed on the structure shown in FIG. 7 being operated for heat absorbing cooling energy discharge device function;

FIG. 9 is a temperature difference distribution diagram formed on the structure shown in FIG. 7 being operated for heat dissipating warming energy discharge device function;

FIG. 10 is a main structural schematic view of still another embodiment, according to the present invention;

FIG. 11 is a temperature difference distribution diagram formed on the structure shown in FIG. 10 being operated for heat absorbing cooling energy discharge device function;

FIG. 12 is a temperature difference distribution diagram formed on the structure shown in FIG. 10 being operated for heat dissipating warming energy discharge device function;

FIG. 13 is a main structural schematic view of the structure shown in FIG. 4, which directly transmits thermal energy to the passively heat dissipation or absorption receiving article or space;

FIG. 14 is a main structural schematic view of the structure shown in FIG. 7, which directly transmits thermal energy to the passively heat dissipation or absorption receiving article or space;

FIG. 15 is a main structural schematic view of the structure shown in FIG. 10, which directly transmits thermal energy to the passively heat dissipation or absorption receiving article or space;

FIG. 16 shows the first practical application of the fluid piping 101 shown in FIG 4 via the heat absorbing

or dissipating thermal energy transmission body 100 to be combined with the piping structural body transmitting the passively receiving heat absorbing or dissipating thermal conductive fluid 100', according to the present invention;

FIG. 17 shows the second practical application of the fluid piping 101 shown in FIG. 7 via the heat absorbing or dissipating thermal energy transmission body 100 to be combined with the piping structural body transmitting the passively receiving heat absorbing or dissipating thermal conductive fluid 100', according to the present invention;

FIG. 18 shows the third practical application of the fluid piping 101 shown in FIG. 10 via the heat absorbing or dissipating thermal energy transmission body 100 to be combined with the piping structural body transmitting the passively receiving heat absorbing or dissipating thermal conductive fluid 100', according to the present invention;

FIG. 19 shows the first practical application of the fluid piping 101 shown in FIG. 4 via the heat absorbing or dissipating thermal energy transmission body 100 to be combined with multiple sets of the piping structural body transmitting the passively receiving heat absorbing or dissipating thermal conductive fluid 100', according to the present invention;

FIG. 20 shows the second practical applications of the fluid piping 101 shown in FIG. 7 via the heat absorbing or dissipating thermal energy transmission body 100 to be combined with multiple sets of the piping structural body transmitting the passively receiving heat absorbing or dissipating thermal conductive fluid 100', according to the present invention;

FIG. 21 shows the third practical applications of the fluid piping 101 shown in FIG. 10 via the heat absorbing or dissipating thermal energy transmission body 100 to be combined with multiple sets of the piping structural body transmitting the passively receiving heat absorbing or dissipating thermal conductive fluid 100', according to the present invention;

FIG. 22 is a structural view of an embodiment, wherein the fluid piping 101 is additionally connected with the independent thermal conductive plate 300, according to the present invention;

FIG. 23 is a sectional drawing of line A-A in FIG. 22;

FIG. 24 is a structural schematic view of an embodiment, wherein common thermal conductive plate 400 is installed at the fluid piping 101, according to the present invention;

FIG. 25 is a sectional drawing of line B-B in FIG. 24;

FIG. 26 is a structural schematic view of an embodiment, wherein the thermal conductive plate 350 with temperature insulating slots is installed at the fluid piping 101, according to the present invention;

FIG. 27 is a sectional drawing of line C-C in FIG. 26; and

FIG. 28 is an operation system schematic view, wherein thermal conductive fluid is periodically bi-

directionally pumped by a bi-directional fluid pump, according to the present invention.

DESCRIPTION OF MAIN COMPONENT SYMBOLS

[0005]

100 : Heat absorbing or dissipating thermal energy transmission body
 100' : Piping structural body transmitting the passively receiving heat absorbing or dissipating thermal conductive fluid
 101 : Fluid piping
 103 : Piping steering structure
 110 : Thermal conductive fluid
 111 : Fluid inlet
 112 : Fluid outlet
 200 : Passively heat dissipation or absorption receiving article in solid, or colloid, or liquid, or gaseous state or space
 300 : Independent thermal conductive plate
 350 : Thermal conductive plate with temperature insulating slots
 400 : Common thermal conductive plate
 500 : Control device
 600 : Bidirectional fluid pumping device

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0006] FIG 1 is a main structural schematic view of a conventional heat absorbing or dissipating device for being passed through by thermal conductive fluid at fixed flow direction being constituted by heat absorbing or dissipating gaseous or liquid state fluid or gaseous to liquid state fluid, or liquid to gaseous state fluid. As shown in FIG. 1, the heat absorbing or dissipating device assembly conventionally is composed by the thermal conductive fluid 110, which is constituted by gaseous or liquid state fluid, or gaseous to liquid state fluid, or liquid to gaseous state fluid, passing through the fluid piping 101 to combine with the heat absorbing or dissipating thermal energy transmission body 100 for 1) passing through the thermal conductive fluid 110 in the fluid piping 101 to perform cooling or heating functions through the heat absorbing or dissipating thermal energy transmission body 100 onto passively heat dissipation or absorption receiving article in solid, or colloid, or liquid, or gaseous state or space 200; or 2) passing through the thermal conductive fluid 110 in the fluid piping 101 to reversely receive the surrounding cooling or heating energy of the heat absorbing or dissipating thermal energy transmission body 100 to perform cooling or heating functions; wherein the item 1) is often applied in engine cooling water radiators, heat absorbing cooling energy discharge devices utilizing the thermal conductive fluid 110, or heat dissipating warming energy discharge devices utilizing the thermal conductive fluid 110 such as warming devices,

heaters, evaporators, condensers, or the cooling or warming energy transfer device; the latter item 2) is often applied in cooling or warming energy transfer devices; and in the item 1) application, the thermal conductive fluid 110 is inputting via the inlet of the fluid piping 101 at one side end of the heat absorbing or dissipating thermal energy transmission body 100 and outputting via another side end thereby forming a larger temperature difference between the inlet and outlet of the fluid piping 101 of the heat absorbing or dissipating thermal energy transmission body 100 passed by the thermal conductive fluid 110, and similarly in the item 2) application, it will form a larger temperature difference between the inlet and outlet of the fluid piping 101 of the heat absorbing or dissipating thermal energy transmission body 100, which are the defects of the conventional heat absorbing or dissipating device.

[0007] FIG. 2 is a temperature difference distribution diagram of FIG. 1 being operated for the heat absorbing cooling energy discharge device function. Fig 2 shows that the thermal conductive fluid 110 in unidirectional flow direction as shown in FIG. 1 being operated in the conventional heat dissipating warming energy discharge functions appears in unidirectional flow path distribution, wherein when the thermal conductive fluid 110 passes through the fluid piping 101, a larger temperature difference distribution status forms between the inlet and outlet of the thermal conductive fluid 110 of the heat absorbing or dissipating thermal energy transmission body 100.

[0008] FIG. 3 is a temperature difference distribution diagram of FIG. 1 being operated for the heat dissipating warming energy discharge device function. FIG. 3 shows that the thermal conductive fluid 110 in unidirectional flow direction as shown in FIG. 1 being operated in the conventional heat absorbing cooling energy discharge function appears in unidirectional flow path distribution, wherein when the thermal conductive fluid 110 passes through the fluid piping 101, a larger temperature difference distribution status forms between the inlet and outlet of the thermal conductive fluid 110 of the heat absorbing or dissipating thermal energy transmission body 100.

[0009] Aiming to above phenomenon, the present invention innovatively discloses a heat absorbing or dissipating device by thermal conductive fluid passing through, wherein the piping with double-scroll arrangement transmits the temperature difference fluids in different flow directions according to the temperature difference, so as to produce heat absorbing or dissipating function onto the passively heat dissipation or absorption receiving article or space, thereby forming a more uniform temperature distribution status on the passively heat dissipation or absorption receiving article or space.

[0010] FIG. 4 is a main structural schematic view of an embodiment, according to the present invention. As shown in FIG. 4, the main structure comprises the following:

- --Heat absorbing or dissipating thermal energy

transmission body 100: made of thermal conductive material in solid, or colloid, or liquid, or gaseous state for receiving the thermal energy of the thermal conductive fluid 110 constituted by gaseous or liquid state fluid, gaseous to liquid state fluid, or liquid to gaseous state fluid inside the combined fluid piping 101 with double-scroll arrangement transmitting the temperature difference fluids in different flow directions according to the temperature difference, so as to perform heat absorbing cooling energy discharge operating function or heat dissipating warming energy discharge operating function onto the passively heat dissipation or absorption receiving article in solid, or colloid, or liquid, or gaseous state or space 200, wherein the number of the heat absorbing or dissipating thermal energy transmission bodies 100 can be one or more than one; and

- --Fluid piping 101: made of good thermal conductive material, wherein the fluid piping 101 is parallel or quasi-parallel double-scroll piping structure, and the arrangement of the double-scroll piping structure is that the fluid piping with temperature difference and transmitting the temperature difference fluids in different flow directions are arranged to be the neighboring piping, thus the thermal conductive fluid forms a more uniform temperature distribution status on the heat absorption or dissipation body, so as to produce heat absorbing or dissipating function onto the passively heat dissipation or absorption receiving article or space; it is characterized by that the outer of the piping with double-scroll arrangement is the piping inlet and outlet side, which is installed with fluid inlet 111 and fluid outlet 112, and the fluid piping near the center of the scroll in a reverse turn is the piping steering structure 103 for transmitting fluid, thus the thermal conductive fluid 110 constituted by gaseous or liquid state fluid, gaseous to liquid state fluid, or liquid to gaseous state fluid is transmitted through the fluid inlet 111 to the fluid outlet 112 placed at both ends of the fluid piping, thereby the fluids in the fluid piping passing through neighboring piping flow in reverse directions, so as to through the heat absorbing or dissipating thermal energy transmission body 100 transmit thermal energy to the passively heat dissipation or absorption receiving article in solid, or colloid, or liquid, or gaseous state or space 200; and

said fluid piping 101 is constituted by one or more piping by series or parallel connection, and each piping is distributed by one or more double-scroll arrangement for transmitting the thermal conductive fluid 110 constituted by gaseous or liquid state fluid, gaseous to liquid state fluid, or liquid to gaseous state fluid through the fluid inlet 111 and the fluid outlet 112 placed at both ends of the fluid piping 101, for the thermal conductive fluids 110 passing through the neighboring fluid piping 101 in reverse flow directions, so as to transmit thermal energy

to the heat absorbing or dissipating thermal energy transmission body 100 made of thermal conductive material in solid, or colloid, or liquid, or gaseous state; and the fluid piping 101 is parallel or quasi-parallel distributed in a plane structure or three-dimensional structure in the heat absorbing or dissipating thermal energy transmission body 100 for performing heat absorbing or dissipating function onto the passively heat dissipation or absorption receiving article in solid, or colloid, or liquid, or gaseous state or space 200.

[0011] The structural relationships between the heat absorbing or dissipating thermal energy transmission body 100 and the fluid piping 101 as shown in Fig. 4 can be constituted by one or more relationships as following, including:

- (1) the heat absorbing or dissipating thermal energy transmission body 100 is in an assembled structure with the fluid piping 101;
- (2) the heat absorbing or dissipating thermal energy transmission body 100 is in an integral structure with the fluid piping 101;
- (3) the function of the heat absorbing or dissipating thermal energy transmission body 100 is directly provided by the fluid piping 101;
- (4) the function of the heat absorbing or dissipating thermal energy transmission body 100 is provided by the fluid piping 101 additionally installed with the independent thermal conductive plate 300 which does not connect with the neighboring piping;
- (5) the function of the heat absorbing or dissipating thermal energy transmission body 100 is provided by the common thermal conductive plate 400 connected between the neighboring fluid piping 101; and
- (6) the function of the heat absorbing or dissipating thermal energy transmission body 100 is provided by the thermal conductive plate 350 with temperature insulating slots connected between the neighboring fluid piping 101.

[0012] FIG. 5 is a temperature difference distribution diagram formed on the structure shown in FIG. 4 being operated for heat absorbing cooling energy discharge device function. As shown in FIG. 5, in the heat absorbing or dissipating thermal energy transmission body 100, the thermal conductive fluid 110 passing through inlet of the fluid piping 101 is at lower temperature, the thermal conductive fluid 110 passing through outlet of the fluid piping 101 is at higher temperature, and the heat absorbing or dissipating thermal energy transmission body 100 demonstrates the middle temperature, which is more uniformly distributed, between the temperatures of the inputting thermal conductive fluid 110 and the outputting thermal conductive fluid 110, for performing the heat absorbing and cooling energy discharge function onto the passively heat dissipation or absorption receiving article in solid, or colloid, or liquid, or gaseous state or space 200 to prevent the local low temperature from being too low.

[0013] FIG. 6 is a temperature difference distribution diagram formed on the structure shown in FIG. 4 being operated for heat dissipating warming energy discharge device function. As shown in FIG. 6, in the heat absorbing or dissipating thermal energy transmission body 100, the thermal conductive fluid 110 passing through inlet of the fluid piping 101 is at higher temperature, the thermal conductive fluid 110 passing through outlet of the fluid piping 101 is at lower temperature, and the heat absorbing or dissipating thermal energy transmission body 100 demonstrates the middle temperature, which is more uniformly distributed, between the temperatures of the inputting thermal conductive fluid 110 and the outputting thermal conductive fluid 110, for performing the heat dissipating and warming energy discharge function onto the passively heat dissipation or absorption receiving article in solid, or colloid, or liquid, or gaseous state or space 200 to prevent the local high temperature from being too high.

[0014] FIG. 7 is a main structural schematic view of another embodiment, according to the present invention. As shown in FIG. 7, the further structure including:

- Heat absorbing or dissipating thermal energy transmission body 100: made of thermal conductive material in solid, or colloid, or liquid, or gaseous state for receiving the thermal energy of the thermal conductive fluid 110 constituted by gaseous or liquid state fluid, gaseous to liquid state fluid, or liquid to gaseous state fluid inside the combined fluid piping 101 with double-scroll arrangement transmitting the temperature difference fluids in different flow directions according to the temperature difference, so as to perform heat absorbing cooling energy discharge operating function or heat dissipating warming energy discharge operating function onto the passively heat dissipation or absorption receiving article in solid, or colloid, or liquid, or gaseous state or space 200, wherein the number of the heat absorbing or dissipating thermal energy transmission bodies 100 can be one or more than one; and
- Fluid piping 101: made of good thermal conductive material, wherein the fluid piping 101 is parallel or quasi-parallel double-scroll piping structure, and the arrangement of the double-scroll piping structure is that the fluid piping with temperature difference and transmitting the temperature difference fluids in different flow directions are arranged to be the neighboring piping, thus the thermal conductive fluid forms a more uniform temperature distribution status on the heat absorption or dissipation body, so as to produce heat absorbing or dissipating function onto the passively heat dissipation or absorption receiving article or space; it is characterized by that the outer of the piping with double-scroll arrangement is the piping steering structure 103, and the fluid piping near the center of the scroll with reverse turn is used as the piping inlet and outlet side for transmitting fluid and is installed with the fluid inlet 111 and the fluid

outlet 112, thus the thermal conductive fluid 110 constituted by gaseous or liquid state fluid, gaseous to liquid state fluid, or liquid to gaseous state fluid is transmitted through the fluid inlet 111 and the fluid outlet 112 placed at both ends of the fluid piping, thereby the fluids in the fluid piping passing through neighboring piping flow in reverse directions, so as to through the heat absorbing or dissipating thermal energy transmission body 100 transmit thermal energy to the passively heat dissipation or absorption receiving article in solid, or colloid, or liquid, or gaseous state or space 200; and

the fluid piping 101 is constituted by one or more series or parallel connected fluid piping with one or more double-scroll arrangement distributed for transmitting the thermal conductive fluid 110 constituted by gaseous or liquid state fluid, gaseous to liquid state fluid, or liquid to gaseous state fluid through the fluid inlet 111 and the fluid outlet 112 placed at both ends of the fluid piping 101, for the thermal conductive fluids 110 passing through the neighboring fluid piping 101 in reverse flow directions, so as to transmit thermal energy to the heat absorbing or dissipating thermal energy transmission body 100 made of thermal conductive material in solid, or colloid, or liquid, or gaseous state; and
the fluid piping 101 is parallel or quasi-parallel distributed in a plane structure or three-dimensional structure in the heat absorbing or dissipating thermal energy transmission body 100 for performing heat absorbing or dissipating function onto the passively heat dissipation or absorption receiving article in solid, or colloid, or liquid, or gaseous state or space 200.

[0015] The structural relationships between the heat absorbing or dissipating thermal energy transmission body 100 and the fluid piping 101 as shown in Fig. 7 can be constituted by one or more relationships as following, including:

- (1) the heat absorbing or dissipating thermal energy transmission body 100 is in an assembled structure with the fluid piping 101;
- (2) the heat absorbing or dissipating thermal energy transmission body 100 is in an integral structure with the fluid piping 101;
- (3) the function of the heat absorbing or dissipating thermal energy transmission body 100 is directly provided by the fluid piping 101;
- (4) the function of the heat absorbing or dissipating thermal energy transmission body 100 is provided by the fluid piping 101 additionally installed with the independent thermal conductive plate 300 which does not connect with the neighboring piping;
- (5) the function of the heat absorbing or dissipating thermal energy transmission body 100 is provided by the common thermal conductive plate 400 connected between the neighboring fluid piping 101; and
- (6) the function of the heat absorbing or dissipating

thermal energy transmission body 100 is provided by the thermal conductive plate 350 with temperature insulating slots connected between the neighboring fluid piping 101.

[0016] FIG. 8 is a temperature difference distribution diagram formed on the structure shown in FIG 7 being operated for heat absorbing cooling energy discharge device function. As shown in FIG. 8, in the heat absorbing or dissipating thermal energy transmission body 100, the thermal conductive fluid 110 passing through inlet of the fluid piping 101 is at lower temperature, the thermal conductive fluid 110 passing through outlet of the fluid piping 101 is at higher temperature, and the heat absorbing or dissipating thermal energy transmission body 100 demonstrates the middle temperature, which is more uniformly distributed, between the temperatures of the inputting thermal conductive fluid 110 and the outputting thermal conductive fluid 110, for performing the heat absorbing and cooling energy discharge function onto the passively heat dissipation or absorption receiving article in solid, or colloid, or liquid, or gaseous state or space 200 to prevent the local low temperature from being too low.

[0017] FIG. 9 is a temperature difference distribution diagram formed on the structure shown in FIG. 7 being operated for heat dissipating warming energy discharge device function. As shown in FIG. 9, in the heat absorbing or dissipating thermal energy transmission body 100, the thermal conductive fluid 110 passing through inlet of the fluid piping 101 is at higher temperature, the thermal conductive fluid 110 passing through outlet of the fluid piping 101 is at lower temperature, and the heat absorbing or dissipating thermal energy transmission body 100 demonstrates the middle temperature, which is more uniformly distributed, between the temperatures of the inputting thermal conductive fluid 110 and the outputting thermal conductive fluid 110, for performing the heat dissipating and warming energy discharge function onto the passively heat dissipation or absorption receiving article in solid, or colloid, or liquid, or gaseous state or space 200 to prevent the local high temperature from being too high.

[0018] FIG. 10 is a main structural schematic view of still another embodiment, according to the present invention. As shown in FIG. 10, the further structure including:

- --Heat absorbing or dissipating thermal energy transmission body 100: made of thermal conductive material in solid, or colloid, or liquid, or gaseous state for receiving the thermal energy of the thermal conductive fluid 110 constituted by gaseous or liquid state fluid, gaseous to liquid state fluid, or liquid to gaseous state fluid inside the combined fluid piping 101 with double-scroll arrangement transmitting the temperature difference fluids in different flow directions according to the temperature difference, so as to perform heat absorbing cooling energy discharge operating function or heat dissipating warming energy discharge operating function onto the passively

heat dissipation or absorption receiving article in solid, or colloid, or liquid, or gaseous state or space 200, wherein the number of the heat absorbing or dissipating thermal energy transmission bodies 100 can be one or more than one; and

- --Fluid piping 101: made of good thermal conductive material, wherein the fluid piping 101 is parallel or quasi-parallel double-scroll piping structure, and the arrangement of the double-scroll piping structure is that the fluid piping with temperature difference and transmitting the temperature difference fluids in different flow directions are arranged to be the neighboring piping, thus the thermal conductive fluid forms a more uniform temperature distribution status on the heat absorption or dissipation body, so as to produce heat absorbing or dissipating function onto the passively heat dissipation or absorption receiving article or space; it is characterized by that the outer of the piping with double-scroll arrangement is the piping steering structure 103, the piping near the middle part of the lateral of the piping with double-scroll arrangement is end side of the piping inlet and outlet, and is installed with fluid inlet 111 and fluid outlet 112, and the most lateral and near the center of the scroll are in a reverse turn to be used as the piping steering structure 103 for transmitting fluid, thus from the fluid inlet 111 and the fluid outlet 112 at both ends of the fluid piping to transmit the thermal conductive fluid 110 constituted by gaseous or liquid state fluid, gaseous to liquid state fluid, or liquid to gaseous state fluid, causing the fluids passing through neighboring piping in reverse flow directions, and through the heat absorbing or dissipating thermal energy transmission body 100 transmit thermal energy to the passively heat dissipation or absorption receiving article in solid, or colloid, or liquid, or gaseous state or space 200; and

the fluid piping 101 is constituted by one or more series or parallel connection fluid piping with one or more double-scroll arrangement distributed for transmitting the thermal conductive fluid 110 constituted by gaseous or liquid state fluid, gaseous to liquid state fluid, or liquid to gaseous state fluid through the fluid inlet 111 and the fluid outlet 112 placed at both ends of the fluid piping 101, so as to cause the thermal conductive fluids 110 passing through the neighboring fluid piping 101 in reverse flow directions, thereby to transmit thermal energy to the heat absorbing or dissipating thermal energy transmission body 100 made of thermal conductive material in solid, or colloid, or liquid, or gaseous state; and the fluid piping 101 is parallel or quasi-parallel distributed in a plane structure or three-dimensional structure in the heat absorbing or dissipating thermal energy transmission body 100 for performing heat absorbing or dissipating function onto the passively heat dissipation or absorption receiving article in solid, or colloid, or liquid, or gaseous state or space 200.

[0019] The structural relationships between the heat absorbing or dissipating thermal energy transmission body 100 and the fluid piping 101 as shown in Fig. 10 can be constituted by one or more relationships as following, including:

- (1) the heat absorbing or dissipating thermal energy transmission body 100 is in an assembled structure with the fluid piping 101;
- (2) the heat absorbing or dissipating thermal energy transmission body 100 is in an integral structure with the fluid piping 101;
- (3) the function of the heat absorbing or dissipating thermal energy transmission body 100 is directly provided by the fluid piping 101;
- (4) the function of the heat absorbing or dissipating thermal energy transmission body 100 is provided by the fluid piping 101 additionally installed with the independent thermal conductive plate 300 which does not connect with the neighboring piping;
- (5) the function of the heat absorbing or dissipating thermal energy transmission body 100 is provided by the common thermal conductive plate 400 connected between the neighboring fluid piping 101; and
- (6) the function of the heat absorbing or dissipating thermal energy transmission body 100 is provided by the thermal conductive plate 350 with temperature insulating slots connected between the neighboring fluid piping 101.

[0020] FIG. 11 is a temperature difference distribution diagram formed on the structure shown in FIG. 10 being operated for heat absorbing cooling energy discharge device function. As shown in FIG. 11, in the heat absorbing or dissipating thermal energy transmission body 100, the thermal conductive fluid 110 passing through inlet of the fluid piping 101 is at lower temperature, the thermal conductive fluid 110 passing through outlet of the fluid piping 101 is at higher temperature, and the heat absorbing or dissipating thermal energy transmission body 100 demonstrates the middle temperature, which is more uniformly distributed, between the temperatures of the inputting thermal conductive fluid 110 and the outputting thermal conductive fluid 110, for performing the heat absorbing and cooling energy discharge function onto the passively heat dissipation or absorption receiving article in solid, or colloid, or liquid, or gaseous state or space 200 to prevent the local low temperature from being too low.

[0021] FIG. 12 is a temperature difference distribution diagram formed on the structure shown in FIG. 10 being operated for heat dissipating warming energy discharge device function. As shown in FIG. 12, in the heat absorbing or dissipating thermal energy transmission body 100, the thermal conductive fluid 110 passing through inlet of the fluid piping 101 is at higher temperature, the thermal conductive fluid 110 passing through outlet of the fluid piping 101 is at lower temperature, and the heat absorb-

ing or dissipating thermal energy transmission body 100 demonstrates the middle temperature, which is more uniformly distributed, between the temperatures of the inputting thermal conductive fluid 110 and the outputting thermal conductive fluid 110, for performing the heat dissipating and warming energy discharge function onto the passively heat dissipation or absorption receiving article in solid, or colloid, or liquid, or gaseous state or space 200 to prevent the local high temperature from being too high.

[0022] For the heat absorbing or dissipating device with double-scroll piping transmitting temperature difference fluid, beside of transferring thermal energy via the heat absorbing or dissipating thermal energy transmission body 100, the fluid piping 101 can be parallel or quasi-parallel distributed in a plane structure or three-dimensional structure to directly constitute the structural body for the thermal conductive fluid 110 constituted by gaseous or liquid state fluid, gaseous to liquid state fluid, or liquid to gaseous state fluid passing through to directly perform heat dissipating warming energy discharge or heat absorbing cooling energy discharge on passively heat dissipation or absorption receiving article in solid, or colloid, or liquid, or gaseous state or space 200.

[0023] FIG. 13 is a main structural schematic view of the structure shown in FIG. 4, which directly transmits thermal energy to the passively heat dissipation or absorption receiving article or space.

[0024] FIG. 14 is a main structural schematic view of the structure shown in FIG. 7, which directly transmits thermal energy to the passively heat dissipation or absorption receiving article or space.

[0025] FIG. 15 is a main structural schematic view of the structure shown in FIG. 10, which directly transmits thermal energy to the passively heat dissipation or absorption receiving article or space.

[0026] By way of said fluid piping 101 transmitting the thermal conductive fluid 110, the fluid piping 101 is parallel or quasi-parallel distributed in a plane structure or three-dimensional structure to constitute a common structural body, in which the common structural body with uniformly distributed whole temperature performs heat absorbing or dissipating function onto the passively heat dissipation or absorption receiving article in solid, or colloid, or liquid, or gaseous state or space 200.

[0027] For the heat absorbing or dissipating device with double-scroll piping transmitting temperature difference fluid, the structural relationships between the passively heat dissipation or absorption receiving article in solid, or colloid, or liquid, or gaseous state or space 200 and the fluid piping 101 include that the fluid piping 101 and the passively heat dissipation or absorption receiving article in solid, or colloid, or liquid, or gaseous state or space 200 directly construct the common structural body, and transmit thermal energy to the passively heat dissipation or absorption receiving article in solid, or colloid, or liquid, or gaseous state or space 200, in which:

the relevant fluid piping is parallel or quasi-parallel distributed in a plane structure or three-dimensional structure to constitute the piping structural body transmitting the passively receiving heat absorbing or dissipating thermal conductive fluid 100' in place of the passively heat dissipation or absorption receiving article in solid, or colloid, or liquid, or gaseous state or space 200; and

by way of the fluid piping 101 transmitting the thermal conductive fluid 110 constituted by gaseous or liquid state fluid, gaseous to liquid state fluid, or liquid to gaseous state fluid, and through the heat absorbing or dissipating thermal energy transmission body 100 transmits thermal energy, thus the piping structural body transmitting the passively receiving heat absorbing or dissipating thermal conductive fluid 100' passively receives heat absorption or dissipation.

[0028] FIG. 16 shows the first practical application of the fluid piping 101 shown in FIG 4 via the heat absorbing or dissipating thermal energy transmission body 100 to be combined with the piping structural body transmitting the passively receiving heat absorbing or dissipating thermal conductive fluid 100', according to the present invention.

[0029] FIG. 17 shows the second practical application of the fluid piping 101 shown in FIG. 7 via the heat absorbing or dissipating thermal energy transmission body 100 to be combined with the piping structural body transmitting the passively receiving heat absorbing or dissipating thermal conductive fluid 100', according to the present invention.

[0030] FIG. 18 shows the third practical application of the fluid piping 101 shown in FIG. 10 via the heat absorbing or dissipating thermal energy transmission body 100 to be combined with the piping structural body transmitting the passively receiving heat absorbing or dissipating thermal conductive fluid 100', according to the present invention.

[0031] FIG. 19 shows the first practical application of the fluid piping 101 shown in FIG. 4 via the heat absorbing or dissipating thermal energy transmission body 100 to be combined with multiple sets of the piping structural body transmitting the passively receiving heat absorbing or dissipating thermal conductive fluid 100', according to the present invention.

[0032] FIG. 20 shows the second practical applications of the fluid piping 101 shown in FIG. 7 via the heat absorbing or dissipating thermal energy transmission body 100 to be combined with multiple sets of the piping structural body transmitting the passively receiving heat absorbing or dissipating thermal conductive fluid 100', according to the present invention.

[0033] FIG. 21 shows the third practical applications of the fluid piping 101 shown in FIG. 10 via the heat absorbing or dissipating thermal energy transmission body 100 to be combined with multiple sets of the piping structural body transmitting the passively receiving heat ab-

sorbing or dissipating thermal conductive fluid 100', according to the present invention.

[0034] As the heat absorbing or dissipating device with double-scroll piping transmitting temperature difference fluid, for further improving effects of heat absorption or dissipation, the independent thermal conductive plate 300 is additionally installed at the fluid piping 101 and/or the piping structural body transmitting the passively receiving heat absorbing or dissipating thermal conductive fluid 100', so as to improve effects of heat absorption or dissipation.

[0035] FIG. 22 is a structural view of an embodiment, wherein the fluid piping 101 is additionally connected with the independent thermal conductive plate 300, according to the present invention.

[0036] FIG. 23 is a sectional drawing of line A-A in FIG. 22.

[0037] As the heat absorbing or dissipating device with double-scroll piping transmitting temperature difference fluid, for further improving effects of heat absorption or dissipation, the common thermal conductive plate 400 is installed at the fluid piping 101 and/or the piping structural body transmitting the passively receiving heat absorbing or dissipating thermal conductive fluid 100', so as to improve effects of heat absorption or dissipation.

[0038] FIG. 24 is a structural schematic view of an embodiment, wherein the common thermal conductive plate 400 is installed at the fluid piping 101, according to the present invention.

[0039] FIG. 25 is a sectional drawing of line B-B in FIG. 24.

[0040] As the heat absorbing or dissipating device with double-scroll piping transmitting temperature difference fluid, in order to take the structure stability, manufacturing process, and the need for independent thermal conductive function in to consideration, the thermal conductive plate 350 with temperature insulating slots further can be additionally installed between the fluid piping 101 to increase effects of heat absorption or dissipation.

[0041] FIG. 26 is a structural schematic view of an embodiment, wherein the thermal conductive plate 350 with temperature insulating slots is installed at the fluid piping 101, according to the present invention

[0042] FIG. 27 is a sectional drawing of line C-C in FIG. 26.

[0043] As the heat absorbing or dissipating device with double-scroll piping transmitting temperature difference fluid, the fluid passing through the fluid piping 101 and/or the piping structural body transmitting the passively receiving heat absorbing or dissipating thermal conductive fluid 100' can be controlled by the control device 500 to drive bidirectionally fluid pumping device 600 for periodic forward/reverse pumping operation, to periodically bidirectionally pump the thermal conductive fluid 110, and to improve effects of equalizing temperature.

[0044] The bidirectional fluid pumping device 600 is used for periodic forward/reverse pumping under the control of the control device 500 constituted by the elec-

tromechanical device, electronic device, or microcomputer and related software.

[0045] FIG 28 is an operation system schematic view, wherein thermal conductive fluid is periodically bi-directionally pumped by a bi-directional fluid pump, according to the present invention.

[0046] For applications of the heat absorbing or dissipating device with double-scroll piping transmitting temperature difference fluid, one or more methods based afore operating principles according to application structural needs and cost considerations can be used to make the following designs, including:

- --for the heat absorbing or dissipating device with double-scroll piping transmitting temperature difference fluid, the fluid piping 101 and/or the piping structural body transmitting the passively receiving heat absorbing or dissipating thermal conductive fluid 100' and the heat absorbing or dissipating thermal energy transmission body 100 can be constituted by an integral type structure;
- --for the heat absorbing or dissipating device with double-scroll piping transmitting temperature difference fluid, the fluid piping 101 and/or the piping structural body transmitting the passively receiving heat absorbing or dissipating thermal conductive fluid 100' and the heat absorbing or dissipating thermal energy transmission body 100 can be constituted by an assembled structure;
- --for the heat absorbing or dissipating device with double-scroll piping transmitting temperature difference fluid, the fluid piping 101 and/or the piping structural body transmitting the passively receiving heat absorbing or dissipating thermal conductive fluid 100' and the heat absorbing or dissipating thermal energy transmission body 100 can be constituted by the structural unit of the single structural body in plate, block, or multi-fins shape, or the structural unit assembled by fins, and can be constituted by at least one structural unit, as needed;
- --for the heat absorbing or dissipating device with double-scroll piping transmitting temperature difference fluid, it can be composed by one or more than one, and among the respectively belonged fluid piping are in serial, parallel, or serial-parallel connection, and can be made of various geometric shapes ;
- --for the heat absorbing or dissipating device with double-scroll piping transmitting temperature difference fluid, the thermal conductive fluid 110 passing through the fluid piping 101 and/or the piping structural body transmitting the passively receiving heat absorbing or dissipating thermal conductive fluid 100' can be transported by pumping, and/or evaporation, and/or heat-cold natural circulation;
- --for the heat absorbing or dissipating device with double-scroll piping transmitting temperature difference fluid, the warming or cooling energy is dis-

charged to the liquid state passively heat dissipation or absorption receiving article or space 200 through using the cold-heat natural convection of fluid in temperature difference, and/or forced fluid pumping to generate thermal transfer function of convection, and/or radiation, and/or conduction; or the warming or cooling energy is discharged to the passively heat dissipation or absorption receiving article in solid, or colloid, or liquid, or gaseous state or space 200 through conduction;

- --for the heat absorbing or dissipating device with double-scroll piping transmitting temperature difference fluid, the thermal conductive fluid 110 passing through the fluid piping 101 and/or the piping structural body transmitting the passively receiving heat absorbing or dissipating thermal conductive fluid 100' is closed-loop circulated or open-loop released;
- --for the heat absorbing or dissipating device with double-scroll piping transmitting temperature difference fluid, the fluid inlets and the fluid outlets of the various fluid piping can be installed with same or different pointing direction within three-dimensional space; and
- --for the heat absorbing or dissipating device with double-scroll piping transmitting temperature difference fluid, there are various installation modes of the fluid piping, including that the fluid piping is composed of tubular structure, and/or the fluid piping is composed of plate sheet structure for fluid flow, and/or the pore-like fluid piping is composed of blocky structure for fluid flow.

[0047] The heat absorbing or dissipating device with double-scroll piping transmitting temperature difference fluid of present invention can be applied for various heat absorbing, or heat dissipating, or cooling heat conducting application devices, such as the cooling water radiators of the engine, or cooling energy discharge device using thermal conductive fluid for heat absorbing, or warming energy discharge device using thermal conductive fluid for heat dissipating, such as thermal energy transfer for warming equipments, heater, or thermal energy transfer devices, or heating or cooling for ceilings, walls or floors of the buildings, or cooling of photovoltaic panels, or heating or cooling for electrical machine or power machineries, or heat absorption and dissipation of various machine casings, heat pipe structures, structure casings, various chips or semiconductor components, ventilation devices, or the heat absorption, heat dissipation or thermal energy transfer for information, audio, image devices, various lamp or LED devices, or the heat absorption of the evaporator or heat dissipation or thermal energy transfer of condensers of air conditioning devices, or thermal energy transfer of mechanical devices, or heat dissipation of frictional heat loss, or heat dissipation or thermal energy transfer of electric heater or other electric heating home appliances or cooking devices, or heat absorption or thermal energy transfer of flame heating stoves or cooking

devices, or heat absorption, heat dissipation or thermal energy transfer of earth layer or water thermal energy, plant or housing building or building material or building structure devices, heat absorbing or dissipation of water tower, or heat absorption, heat dissipation or thermal energy transfer of batteries or fuel cells; and applied for thermal energy transfer in home appliances, industrial products, electronic products, electrical machines or mechanical devices, power generation equipments, buildings, air conditioning devices, industrial equipments or industrial manufacturing process.

Claims

1. A heat absorbing or dissipating device with double-scroll piping transmitting temperature difference fluid, wherein the device is composed of one or more parallel or quasi-parallel installed piping by series or parallel connection, and each piping is specifically distributed by one or more double-scroll arrangement for transmitting thermal conductive fluid with temperature difference constituted by gaseous or liquid state fluid, gaseous to liquid state fluid, or liquid to gaseous state fluid, and by means of the double-scroll fluid piping constituting the fluid flow uniformly distributed by temperature difference, thereby the fluids passing through neighboring piping flow in reverse direction, so as to produce heat absorbing or dissipating function onto the passively heat dissipation or absorption receiving article or space thereby forming a more uniform temperature distribution status on the passively heat dissipation or absorption receiving article or space, the main components including:

- --Heat absorbing or dissipating thermal energy transmission body 100: made of thermal conductive material in solid, or colloid, or liquid, or gaseous state for receiving the thermal energy of the thermal conductive fluid 110 constituted by gaseous or liquid state fluid, gaseous to liquid state fluid, or liquid to gaseous state fluid inside the combined fluid piping 101 with double-scroll arrangement transmitting the temperature difference fluids in different flow directions according to the temperature difference, so as to perform heat absorbing cooling energy discharge operating function or heat dissipating warming energy discharge operating function onto the passively heat dissipation or absorption receiving article in solid, or colloid, or liquid, or gaseous state or space 200, wherein the number of the heat absorbing or dissipating thermal energy transmission bodies 100 is one or more than one; and

- --Fluid piping 101: made of good thermal conductive material, wherein the fluid piping 101 is

parallel or quasi-parallel double-scroll piping structure, and the arrangement of the double-scroll piping structure is that the fluid piping with temperature difference and transmitting the temperature difference fluids in different flow directions are arranged to be the neighboring piping, thus the thermal conductive fluid forms a more uniform temperature distribution status on the heat absorption or dissipation body, so as to produce heat absorbing or dissipating function onto the passively heat dissipation or absorption receiving article or space; it is **characterized by** that the outer of the piping with double-scroll arrangement is the piping inlet and outlet side, which is installed with fluid inlet 111 and fluid outlet 112, and the fluid piping near the center of the scroll in a reverse turn is the piping steering structure 103 for transmitting fluid, thus the thermal conductive fluid 110 constituted by gaseous or liquid state fluid, gaseous to liquid state fluid, or liquid to gaseous state fluid is transmitted through the fluid inlet 111 to the fluid outlet 112 placed at both ends of the fluid piping, thereby the fluids in the fluid piping passing through neighboring piping flow in reverse directions, so as to through the heat absorbing or dissipating thermal energy transmission body 100 transmit thermal energy to the passively heat dissipation or absorption receiving article in solid, or colloid, or liquid, or gaseous state or space 200; and said fluid piping 101 is constituted by one or more piping by series or parallel connection, and each piping is distributed by one or more double-scroll arrangement for transmitting the thermal conductive fluid 110 constituted by gaseous or liquid state fluid, gaseous to liquid state fluid, or liquid to gaseous state fluid through the fluid inlet 111 and the fluid outlet 112 placed at both ends of the fluid piping 101, for the thermal conductive fluids 110 passing through the neighboring fluid piping 101 in reverse flow directions, so as to transmit thermal energy to the heat absorbing or dissipating thermal energy transmission body 100 made of thermal conductive material in solid, or colloid, or liquid, or gaseous state; and the fluid piping 101 is parallel or quasi-parallel distributed in a plane structure or three-dimensional structure in the heat absorbing or dissipating thermal energy transmission body 100 for performing heat absorbing or dissipating function onto the passively heat dissipation or absorption receiving article in solid, or colloid, or liquid, or gaseous state or space 200.

2. The heat absorbing or dissipating device with double-scroll piping transmitting temperature difference fluid as claimed in Claim 1, wherein the structural relationships between the heat absorbing or dissi-

pating thermal energy transmission body 100 and the fluid piping 101 are constituted by one or more relationships as following, including:

- (1) the heat absorbing or dissipating thermal energy transmission body 100 is in an assembled structure with the fluid piping 101;
- (2) the heat absorbing or dissipating thermal energy transmission body 100 is in an integral structure with the fluid piping 101;
- (3) the function of the heat absorbing or dissipating thermal energy transmission body 100 is directly provided by the fluid piping 101;
- (4) the function of the heat absorbing or dissipating thermal energy transmission body 100 is provided by the fluid piping 101 additionally installed with the independent thermal conductive plate 300 which does not connect with the neighboring piping;
- (5) the function of the heat absorbing or dissipating thermal energy transmission body 100 is provided by the common thermal conductive plate 400 connected between the neighboring fluid piping 101; and
- (6) the function of the heat absorbing or dissipating thermal energy transmission body 100 is provided by the thermal conductive plate 350 with temperature insulating slots connected between the neighboring fluid piping 101.

3. The heat absorbing or dissipating device with double-scroll piping transmitting temperature difference fluid as claimed in Claim 1 or claim 2, wherein the further structure including:

- Heat absorbing or dissipating thermal energy transmission body 100: made of thermal conductive material in solid, or colloid, or liquid, or gaseous state for receiving the thermal energy of the thermal conductive fluid 110 constituted by gaseous or liquid state fluid, gaseous to liquid state fluid, or liquid to gaseous state fluid inside the combined fluid piping 101 with double-scroll arrangement transmitting the temperature difference fluids in different flow directions according to the temperature difference, so as to perform heat absorbing cooling energy discharge operating function or heat dissipating warming energy discharge operating function onto the passively heat dissipation or absorption receiving article in solid, or colloid, or liquid, or gaseous state or space 200, wherein the number of the heat absorbing or dissipating thermal energy transmission bodies 100 is one or more than one; and
- Fluid piping 101: made of good thermal conductive material, wherein the fluid piping 101 is parallel or quasi-parallel double-scroll piping

structure, and the arrangement of the double-scroll piping structure is the the fluid piping with temperature difference and transmitting the temperature difference fluids in different flow directions are arranged to be the neighboring piping, thus the thermal conductive fluid forms a more uniform temperature distribution status on the heat absorption or dissipation body, so as to produce heat absorbing or dissipating function onto the passively heat dissipation or absorption receiving article or space; it is **characterized by** that the outer of the piping with double-scroll arrangement is the piping steering structure 103, and the fluid piping near the center of the scroll with reverse turn is used as the piping inlet and outlet side for transmitting fluid and is installed with the fluid inlet 111 and the fluid outlet 112, thus the thermal conductive fluid 110 constituted by gaseous or liquid state fluid, gaseous to liquid state fluid, or liquid to gaseous state fluid is transmitted through the fluid inlet 111 and the fluid outlet 112 placed at both ends of the fluid piping, thereby the fluids in the fluid piping passing through neighboring piping flow in reverse directions, so as to through the heat absorbing or dissipating thermal energy transmission body 100 transmit thermal energy to the passively heat dissipation or absorption receiving article in solid, or colloid, or liquid, or gaseous state or space 200; and the fluid piping 101 is constituted by one or more series or parallel connected fluid piping with one or more double-scroll arrangement distributed for transmitting the thermal conductive fluid 110 constituted by gaseous or liquid state fluid, gaseous to liquid state fluid, or liquid to gaseous state fluid through the fluid inlet 111 and the fluid outlet 112 placed at both ends of the fluid piping 101, for the thermal conductive fluids 110 passing through the neighboring fluid piping 101 in reverse flow directions, so as to transmit thermal energy to the heat absorbing or dissipating thermal energy transmission body 100 made of thermal conductive material in solid, or colloid, or liquid, or gaseous state; and the fluid piping 101 is parallel or quasi-parallel distributed in a plane structure or three-dimensional structure in the heat absorbing or dissipating thermal energy transmission body 100 for performing heat absorbing or dissipating function onto the passively heat dissipation or absorption receiving article in solid, or colloid, or liquid, or gaseous state or space 200.

4. The heat absorbing or dissipating device with double-scroll piping transmitting temperature difference fluid as claimed in Claim 1 or claim 2, wherein the further structure including:

--Heat absorbing or dissipating thermal energy transmission body 100: made of thermal conductive material in solid, or colloid, or liquid, or gaseous state for receiving the thermal energy of the thermal conductive fluid 110 constituted by gaseous or liquid state fluid, gaseous to liquid state fluid, or liquid to gaseous state fluid inside the combined fluid piping 101 with double-scroll arrangement transmitting the temperature difference fluids in different flow directions according to the temperature difference, so as to perform heat absorbing cooling energy discharge operating function or heat dissipating warming energy discharge operating function onto the passively heat dissipation or absorption receiving article in solid, or colloid, or liquid, or gaseous state or space 200, wherein the number of the heat absorbing or dissipating thermal energy transmission bodies 100 is one or more than one; and

--Fluid piping 101: made of good thermal conductive material, wherein the fluid piping 101 is parallel or quasi-parallel double-scroll piping structure, and the arrangement of the double-scroll piping structure is that the fluid piping with temperature difference and transmitting the temperature difference fluids in different flow directions are arranged to be the neighboring piping, thus the thermal conductive fluid forms a more uniform temperature distribution status on the heat absorption or dissipation body, so as to produce heat absorbing or dissipating function onto the passively heat dissipation or absorption receiving article or space; it is **characterized by** that the outer of the piping with double-scroll arrangement is the piping steering structure 103, the piping near the middle part of the lateral of the piping with double-scroll arrangement is end side of the piping inlet and outlet, and is installed with fluid inlet 111 and fluid outlet 112, and the most lateral and near the center of the scroll are in a reverse turn to be used as the piping steering structure 103 for transmitting fluid, thus from the fluid inlet 111 and the fluid outlet 112 at both ends of the fluid piping to transmit the thermal conductive fluid 110 constituted by gaseous or liquid state fluid, gaseous to liquid state fluid, or liquid to gaseous state fluid, causing the fluids passing through neighboring piping in reverse flow directions, and through the heat absorbing or dissipating thermal energy transmission body 100 transmit thermal energy to the passively heat dissipation or absorption receiving article in solid, or colloid, or liquid, or gaseous state or space 200; and the fluid piping 101 is constituted by one or more series or parallel connection fluid piping with one or more double-scroll arrangement distributed

for transmitting the thermal conductive fluid 110 constituted by gaseous or liquid state fluid, gaseous to liquid state fluid, or liquid to gaseous state fluid through the fluid inlet 111 and the fluid outlet 112 placed at both ends of the fluid piping 101, so as to cause the thermal conductive fluids 110 passing through the neighboring fluid piping 101 in reverse flow directions, thereby to transmit thermal energy to the heat absorbing or dissipating thermal energy transmission body 100 made of thermal conductive material in solid, or colloid, or liquid, or gaseous state; and the fluid piping 101 is parallel or quasi-parallel distributed in a plane structure or three-dimensional structure in the heat absorbing or dissipating thermal energy transmission body 100 for performing heat absorbing or dissipating function onto the passively heat dissipation or absorption receiving article in solid, or colloid, or liquid, or gaseous state or space 200.

5. The heat absorbing or dissipating device with double-scroll piping transmitting temperature difference fluid as claimed in any one of the preceding claims, wherein beside of transferring thermal energy via the heat absorbing or dissipating thermal energy transmission body 100, the fluid piping 101 is parallel or quasi-parallel distributed in a plane structure or three-dimensional structure to directly constitute the structural body for the thermal conductive fluid 110 constituted by gaseous or liquid state fluid, gaseous to liquid state fluid, or liquid to gaseous state fluid passing through to directly perform heat dissipating warming energy discharge or heat absorbing cooling energy discharge on passively heat dissipation or absorption receiving article in solid, or colloid, or liquid, or gaseous state or space 200.
6. The heat absorbing or dissipating device with double-scroll piping transmitting temperature difference fluid as claimed in any one of the preceding claims, wherein the structural relationships between the passively heat dissipation or absorption receiving article in solid, or colloid, or liquid, or gaseous state or space 200 and the fluid piping 101 include that the fluid piping 101 and the passively heat dissipation or absorption receiving article in solid, or colloid, or liquid, or gaseous state or space 200 directly construct the common structural body, and transmit thermal energy to the passively heat dissipation or absorption receiving article in solid, or colloid, or liquid, or gaseous state or space 200, in which:

the relevant fluid piping is parallel or quasi-parallel distributed in a plane structure or three-dimensional structure to constitute the piping structural body transmitting the passively receiving heat absorbing or dissipating thermal con-

ductive fluid 100' in place of the passively heat dissipation or absorption receiving article in solid, or colloid, or liquid, or gaseous state or space 200.

7. The heat absorbing or dissipating device with double-scroll piping transmitting temperature difference fluid as claimed in any one of the preceding claims, wherein the independent thermal conductive plate 300, and/or the common thermal conductive plate 400, and/or the thermal conductive plate with temperature insulating slots 350 are additionally installed at the fluid piping 101 and/or the piping structural body transmitting the passively receiving heat absorbing or dissipating thermal conductive fluid 100', so as to improve effects of heat absorption or dissipation.
8. The heat absorbing or dissipating device with double-scroll piping transmitting temperature difference fluid as claimed in any one of the preceding claims, wherein the fluid passing through the fluid piping 101 and/or the piping structural body transmitting the passively receiving heat absorbing or dissipating thermal conductive fluid 100' can be controlled by the control device 500 to drive bidirectionally fluid pumping device 600 for periodic forward/reverse pumping operation, to periodically bidirectionally pump the thermal conductive fluid 110, and to improve effects of equalizing temperature; and the bidirectional fluid pumping device 600 is used for periodic forward/reverse pumping under the control of the control device 500 constituted by the electro-mechanical device, electronic device, or microcomputer and related software.
9. The heat absorbing or dissipating device with double-scroll piping transmitting temperature difference fluid as claimed in any one of the preceding claims, wherein the fluid piping 101 and/or the piping structural body transmitting the passively receiving heat absorbing or dissipating thermal conductive fluid 100' and the heat absorbing or dissipating thermal energy transmission body 100 are constituted by an integral type structure.
10. The heat absorbing or dissipating device with double-scroll piping transmitting temperature difference fluid as claimed in any one of claims 1 to 8, wherein the fluid piping 101 and/or the piping structural body transmitting the passively receiving heat absorbing or dissipating thermal conductive fluid 100' and the heat absorbing or dissipating thermal energy transmission body 100 are constituted by an assembled structure.
11. The heat absorbing or dissipating device with double-scroll piping transmitting temperature difference

- fluid as claimed in any one of the preceding claims, wherein the fluid piping 101 and/or the piping structural body transmitting the passively receiving heat absorbing or dissipating thermal conductive fluid 100' and the heat absorbing or dissipating thermal energy transmission body 100 are constituted by the structural unit of the single structural body in plate, block, or multi-fins shape, or the structural unit assembled by fins, and are constituted by at least one structural unit, as needed.
12. The heat absorbing or dissipating device with double-scroll piping transmitting temperature difference fluid as claimed in any one of the preceding claims, wherein it can be composed by one or more than one, and among the respectively belonged fluid piping are connected in serial, parallel, or serial-parallel connection, and can be made of various geometric shapes.
 13. The heat absorbing or dissipating device with double-scroll piping transmitting temperature difference fluid as claimed in any one of the preceding claims, wherein the thermal conductive fluid 110 passing through the fluid piping 101 and/or the piping structural body transmitting the passively receiving heat absorbing or dissipating thermal conductive fluid 100' is transported by pumping, and/or evaporation, and/or heat-cold natural circulation.
 14. The heat absorbing or dissipating device with double-scroll piping transmitting temperature difference fluid as claimed in any one of the preceding claims, wherein the warming or cooling energy is discharged to the liquid state passively heat dissipation or absorption receiving article or space 200 through using the cold-heat natural convection of fluid in temperature difference, and/or forced fluid pumping to generate thermal transfer function of convection, and/or radiation, and/or conduction; or the warming or cooling energy is discharged to the passively heat dissipation or absorption receiving article in solid, or colloid, or liquid, or gaseous state or space 200 through conduction.
 15. The heat absorbing or dissipating device with double-scroll piping transmitting temperature difference fluid as claimed in any one of the preceding claims, wherein the thermal conductive fluid 110 passing through the fluid piping 101 and/or the piping structural body transmitting the passively receiving heat absorbing or dissipating thermal conductive fluid 100' is closed-loop circulated or open-loop released.
 16. The heat absorbing or dissipating device with double-scroll piping transmitting temperature difference fluid as claimed in any one of the preceding claims, wherein the fluid inlets and the fluid outlets of the various fluid piping are installed with same or different pointing direction within three-dimensional space.
 17. The heat absorbing or dissipating device with double-scroll piping transmitting temperature difference fluid as claimed in any one of the preceding claims, wherein there are various installation modes of the fluid piping, including that the fluid piping is composed of tubular structure, and/or the fluid piping is composed of plate sheet structure for fluid flow, and/or the pore-like fluid piping is composed of blocky structure for fluid flow.
 18. The heat absorbing or dissipating device with double-scroll piping transmitting temperature difference fluid as claimed in any one of the preceding claims, wherein the device is applied for various heat absorbing, or heat dissipating, or cooling heat conducting application devices, such as the cooling water radiators of the engine, or cooling energy discharge device using thermal conductive fluid for heat absorbing, or warming energy discharge device using thermal conductive fluid for heat dissipating, such as thermal energy transfer for warming equipments, heater or thermal energy transfer devices, or heating or cooling for ceilings, walls or floors of the buildings, or cooling of photovoltaic panels, or heating or cooling for electrical machine or power machineries, or heat absorption and dissipation of various machine casings, heat pipe structures, structure casings, various chips or semiconductor components, ventilation devices, or the heat absorption, heat dissipation or thermal energy transfer for information, audio, image devices, various lamp or LED devices, or the heat absorption of the evaporator or heat dissipation or thermal energy transfer of condensers of air conditioning devices, or thermal energy transfer of mechanical devices, or heat dissipation of frictional heat loss, or heat dissipation or thermal energy transfer of electric heater or other electric heating home appliances or cooking devices, or heat absorption or thermal energy transfer of flame heating stoves or cooking devices, or heat absorption, heat dissipation or thermal energy transfer of earth layer or water thermal energy, plant or housing building or building material or building structure devices, heat absorbing or dissipation of water tower, or heat absorption, heat dissipation or thermal energy transfer of batteries or fuel cells; and applied for thermal energy transfer in home appliances, industrial products, electronic products, electrical machines or mechanical devices, power generation equipments, buildings, air conditioning devices, industrial equipments or industrial manufacturing process.

Fig. 1 (Prior Art)

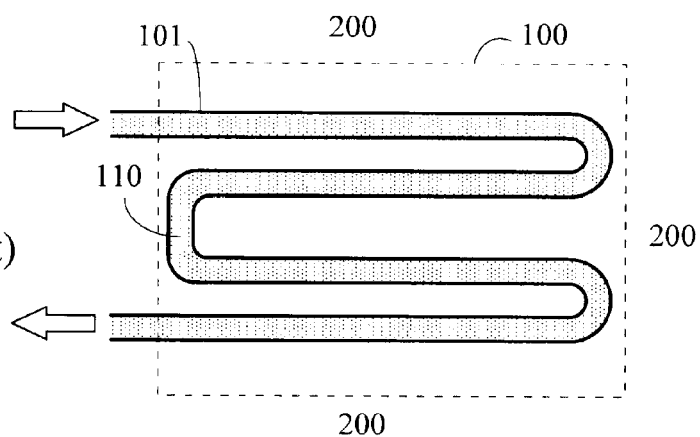


Fig. 2 (Prior Art)

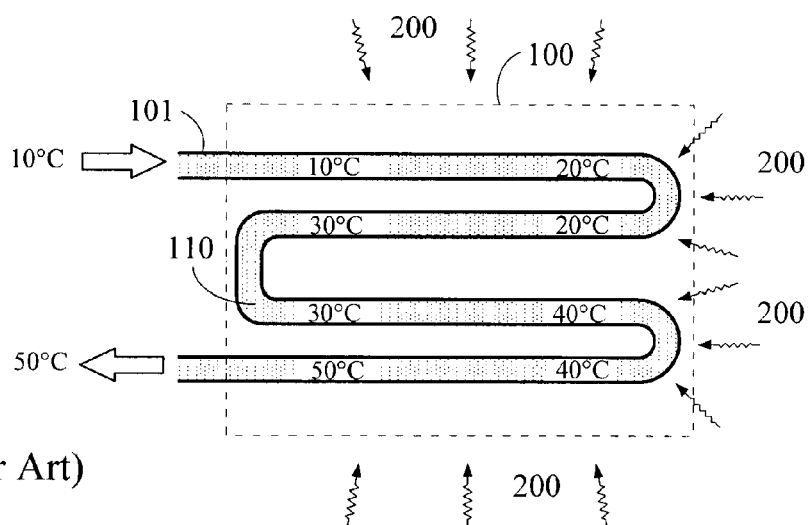
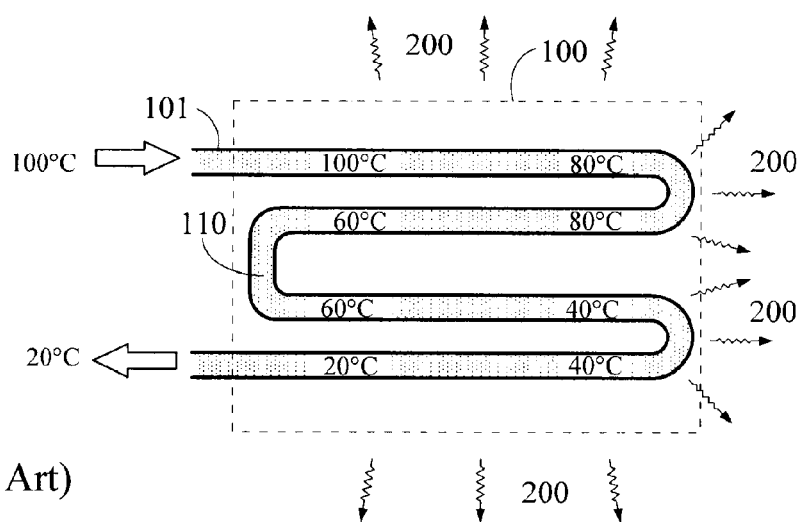
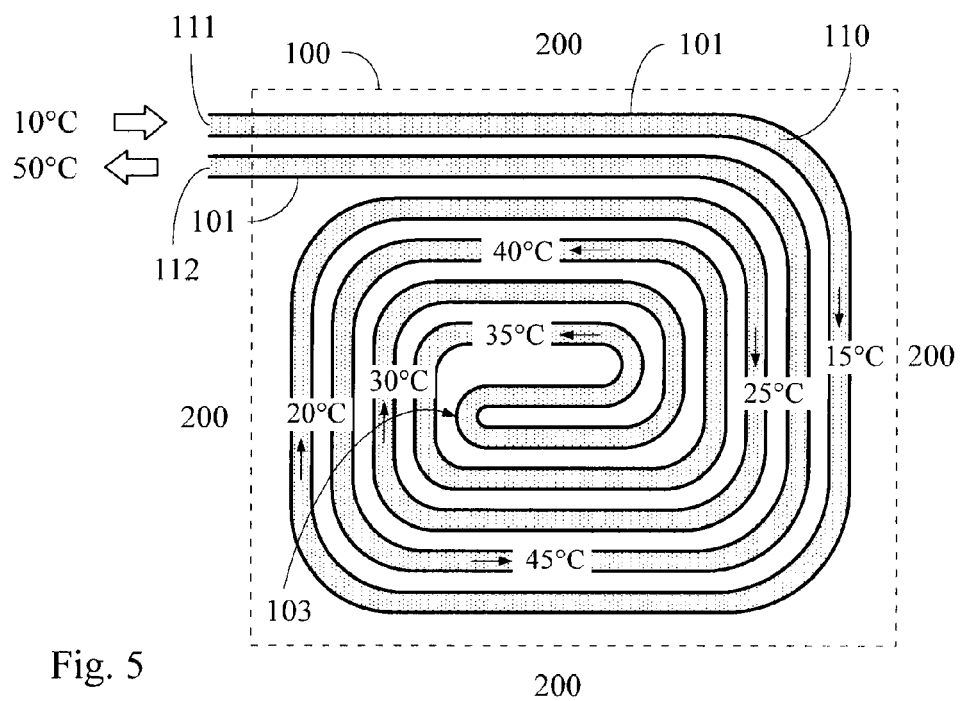
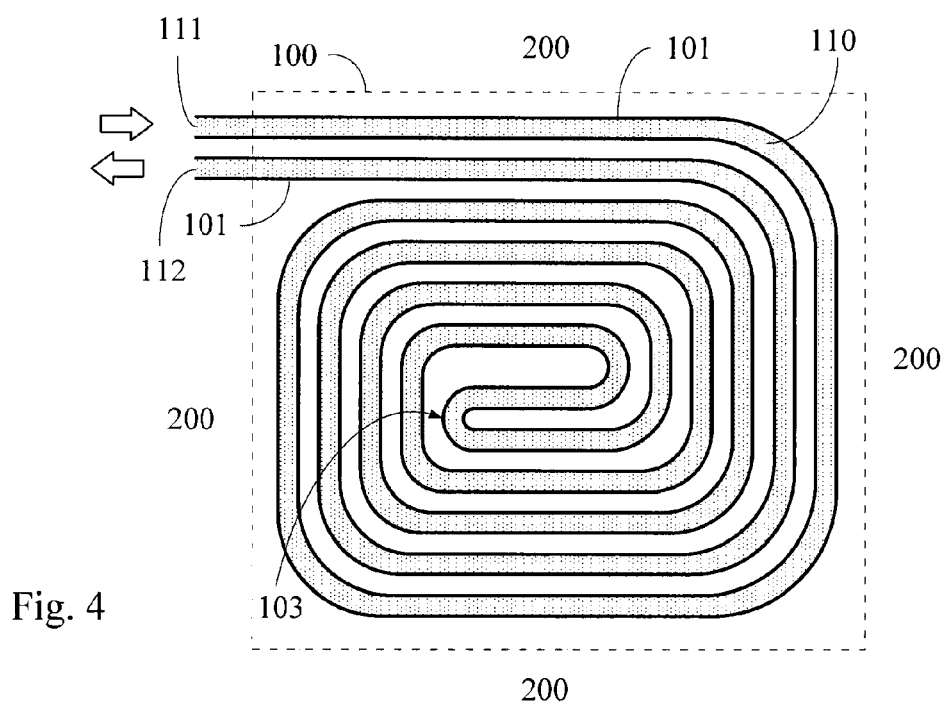
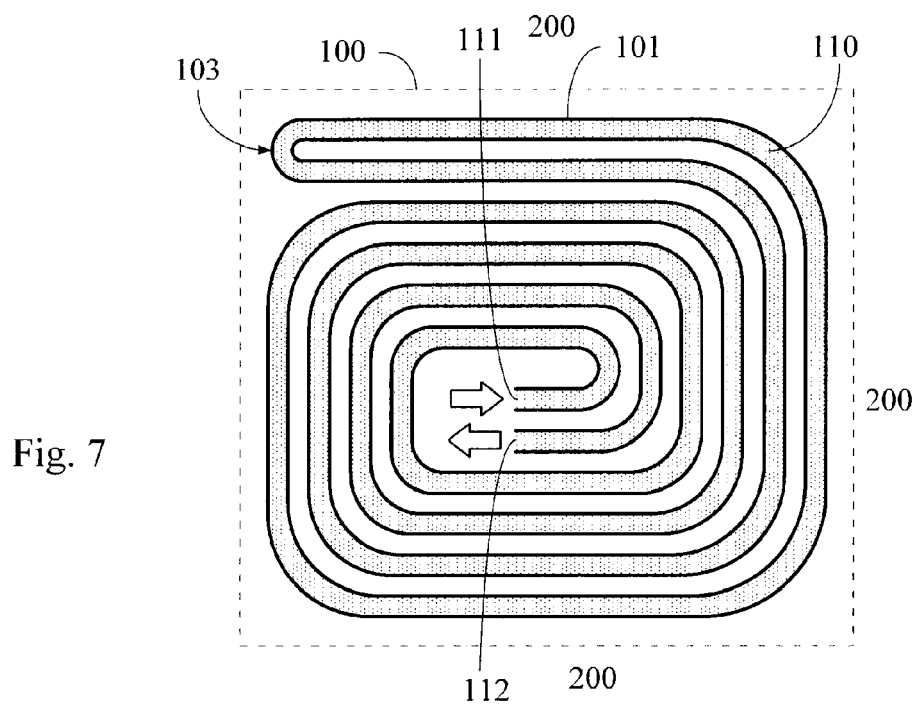
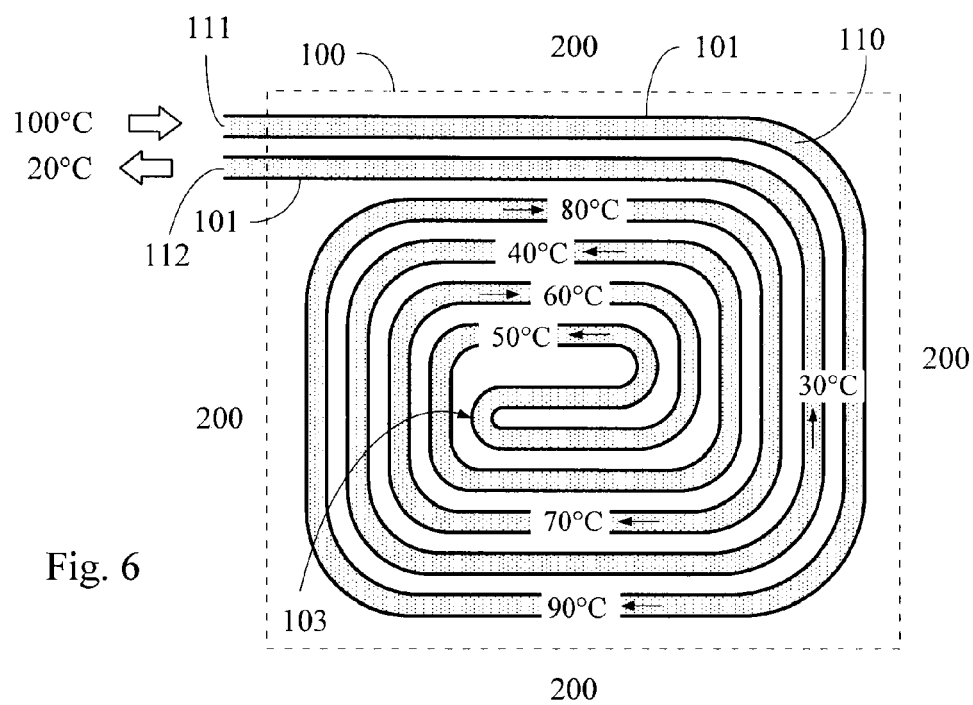
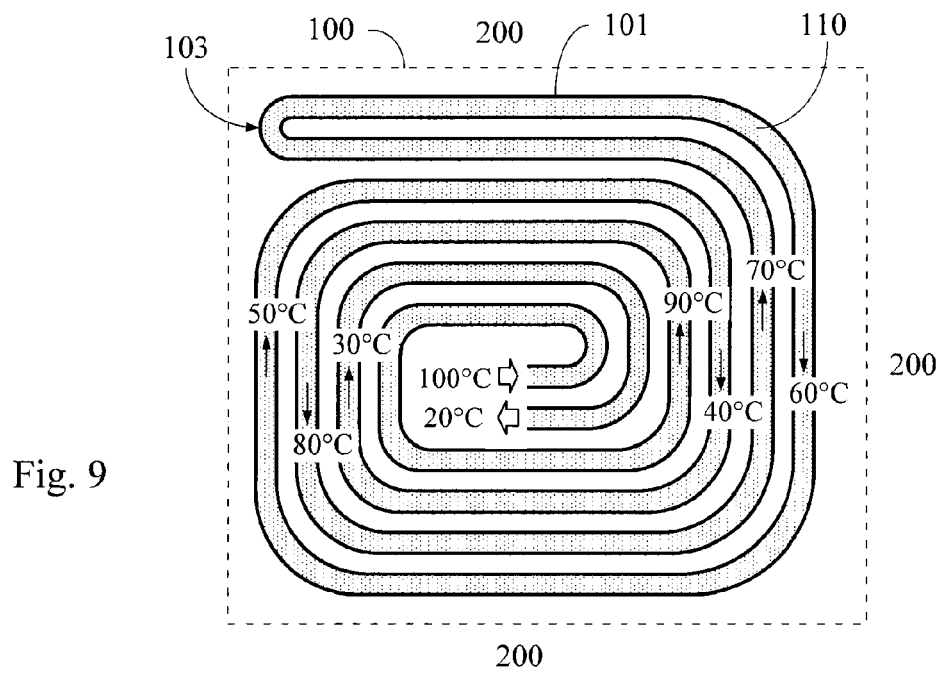
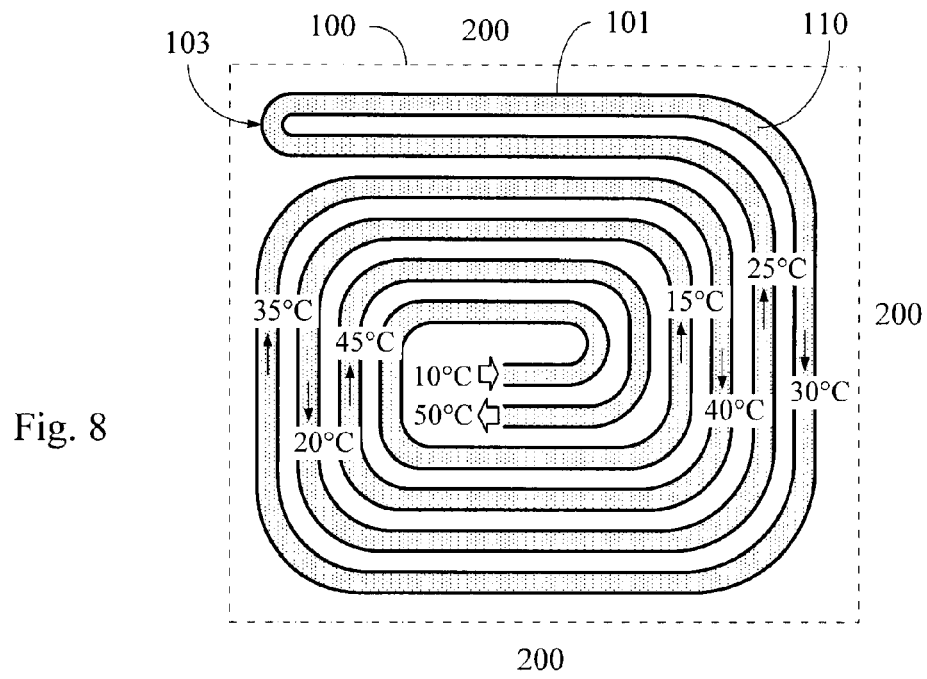


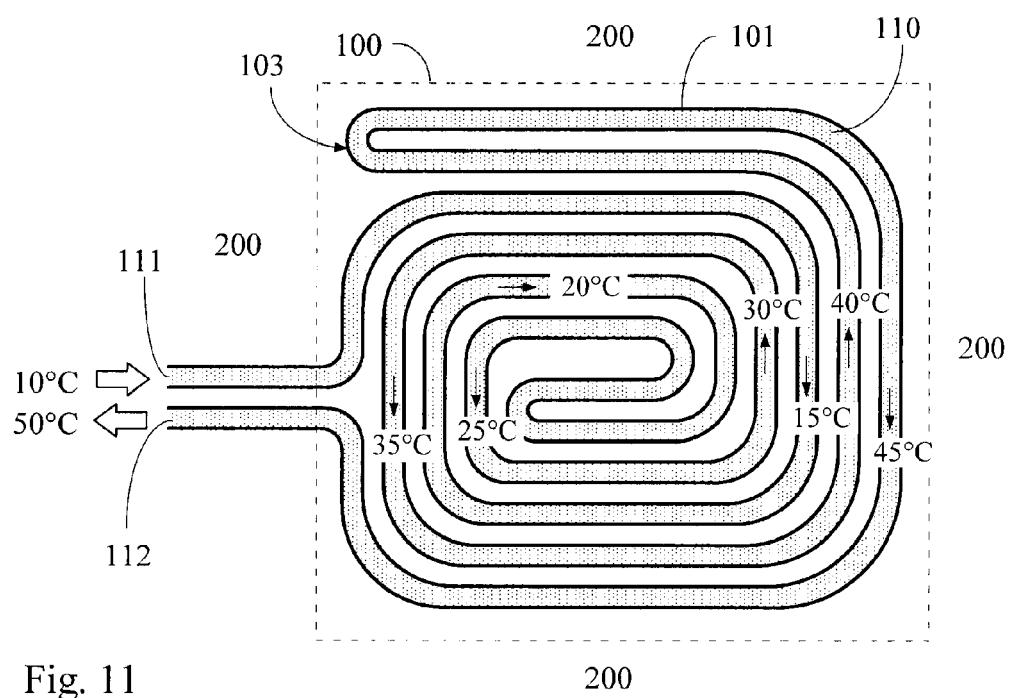
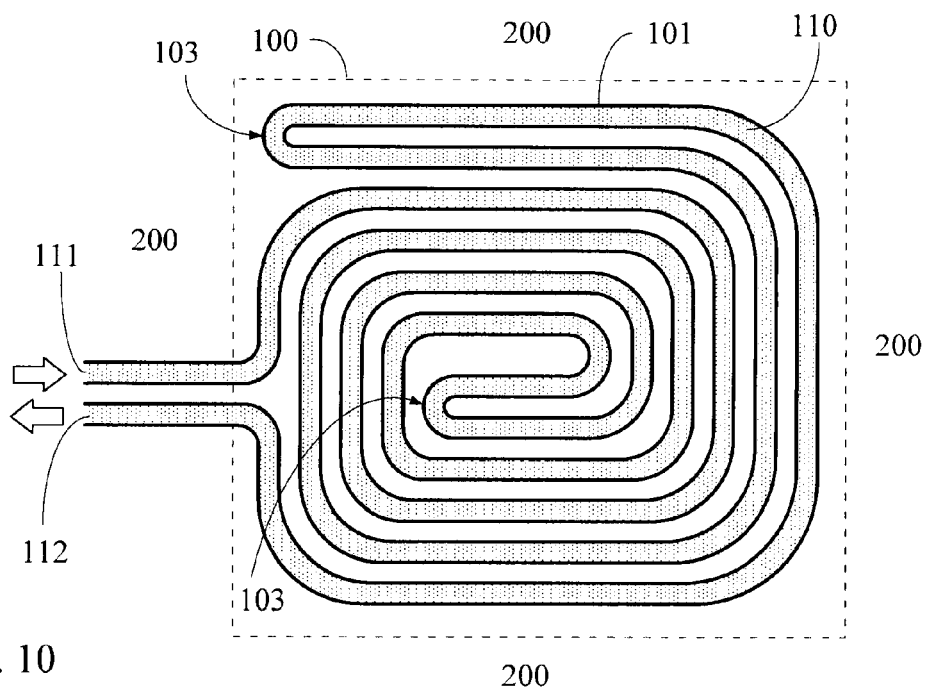
Fig. 3 (Prior Art)











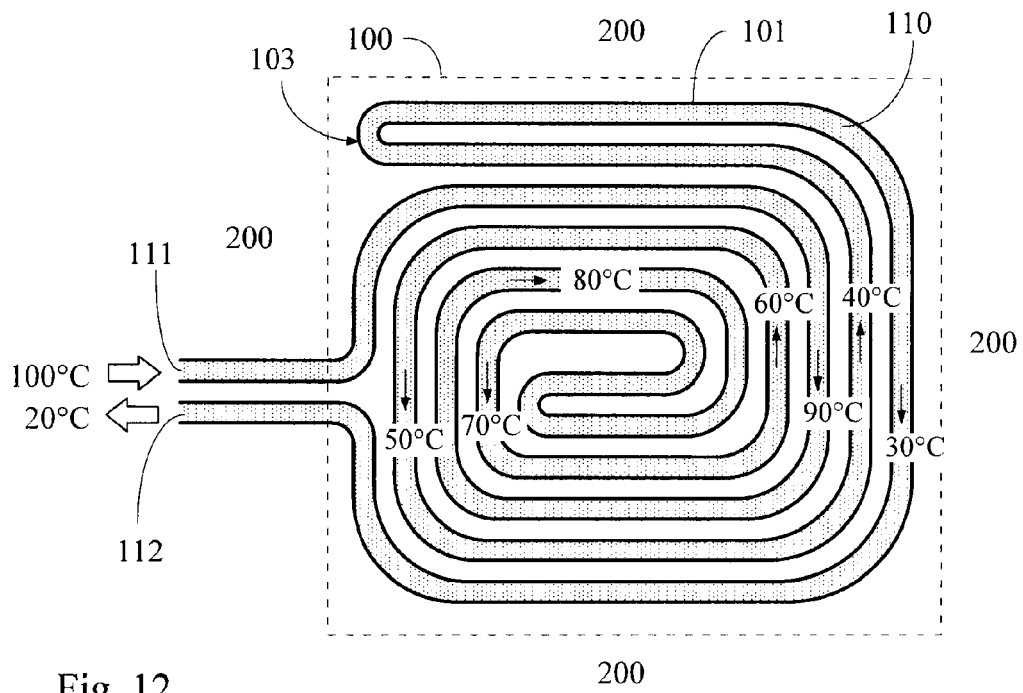


Fig. 12

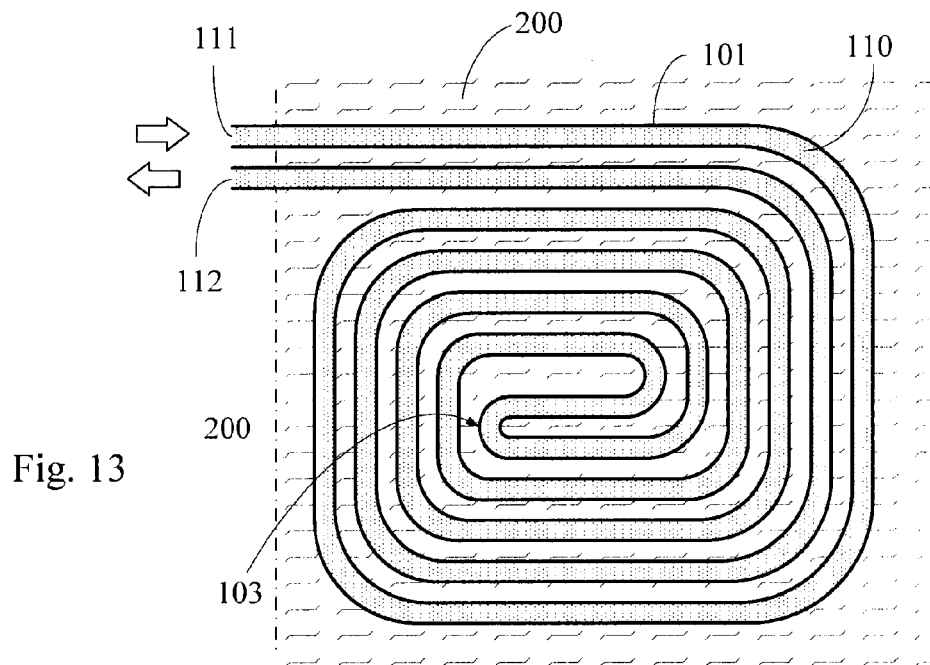


Fig. 13

Fig. 14

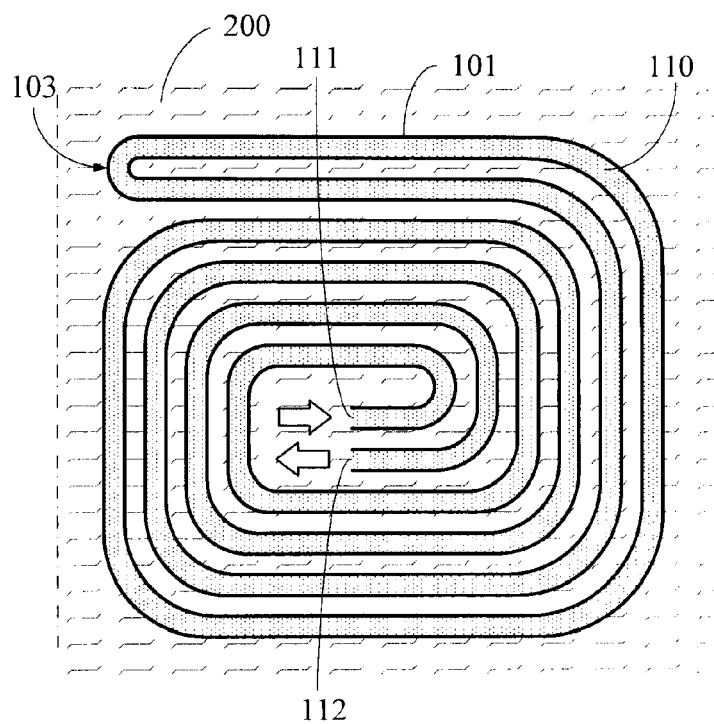
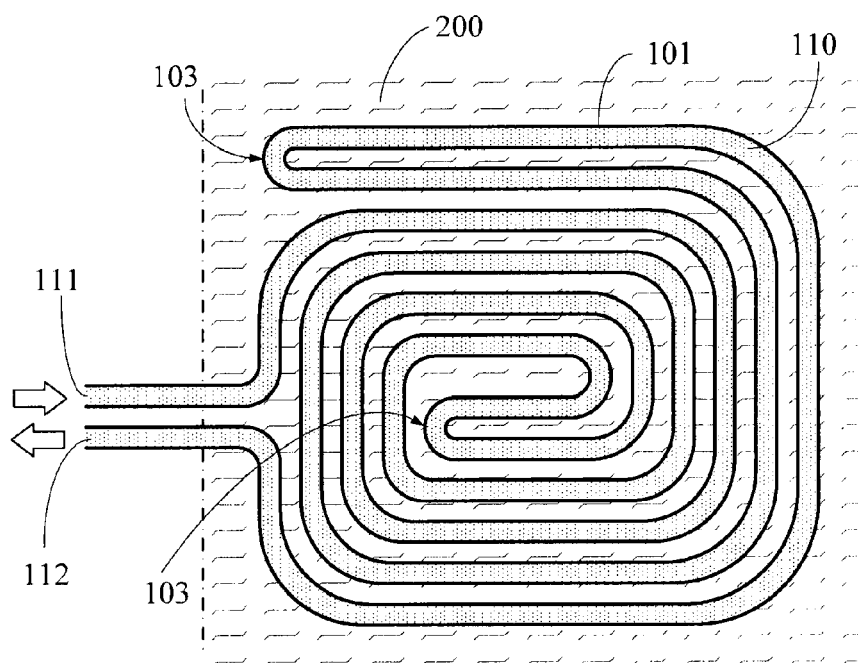


Fig. 15



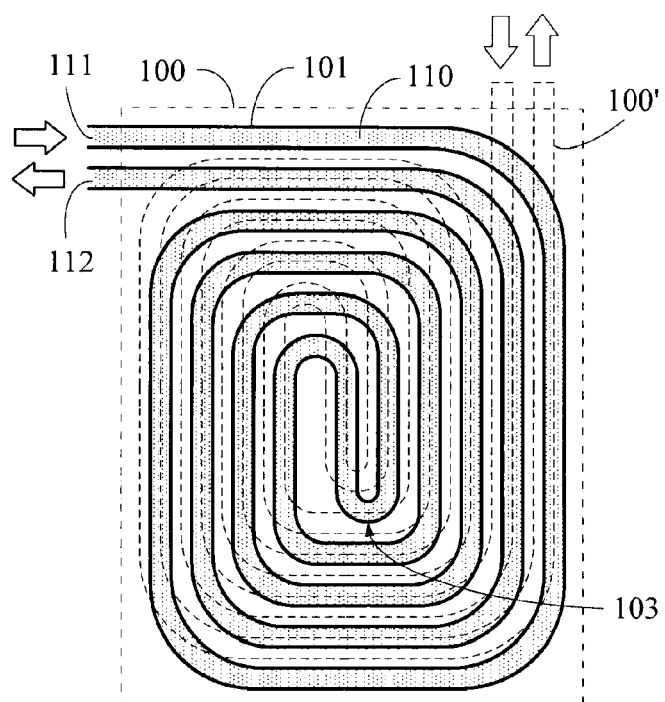


Fig. 16

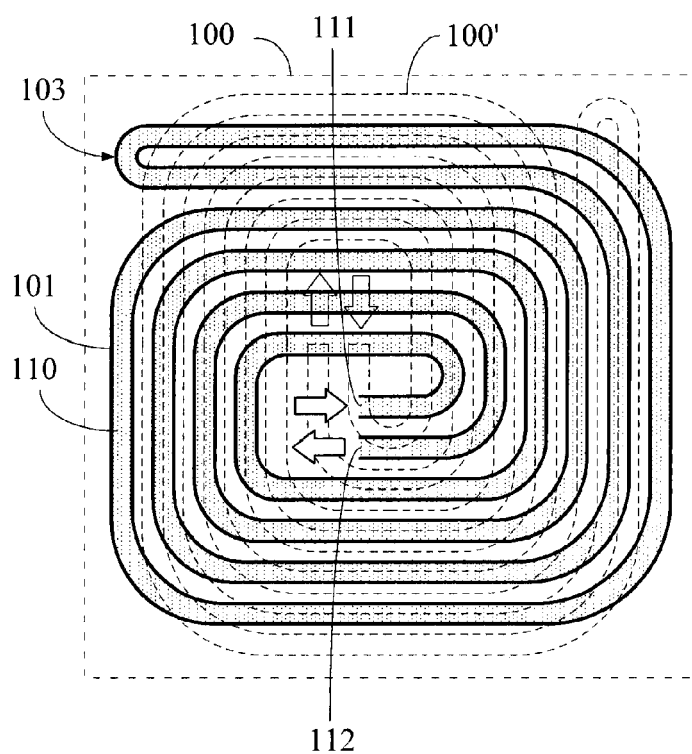
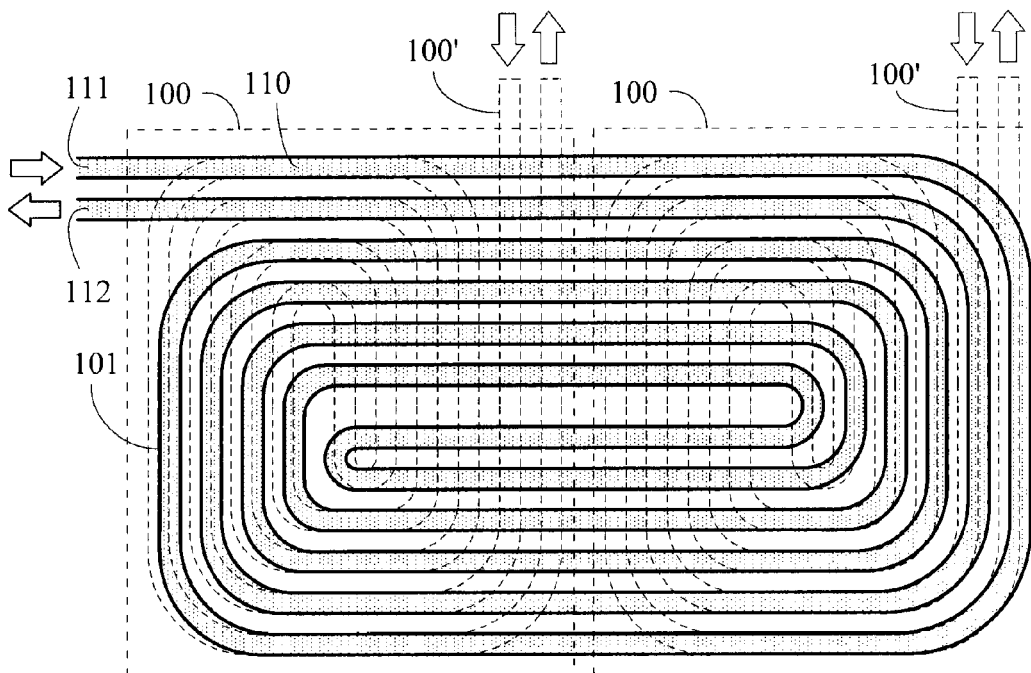
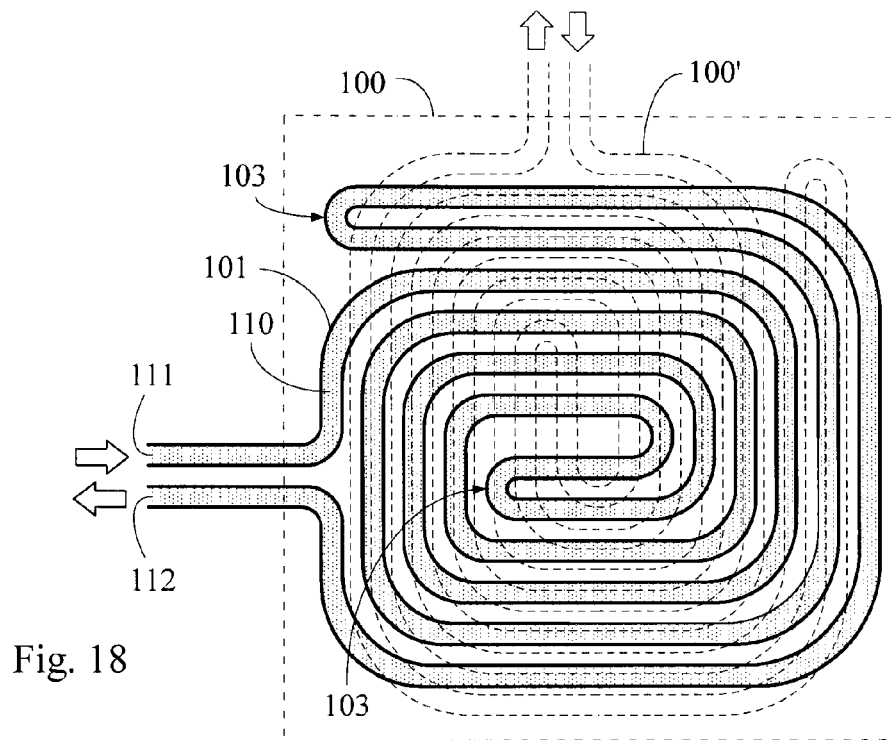


Fig. 17



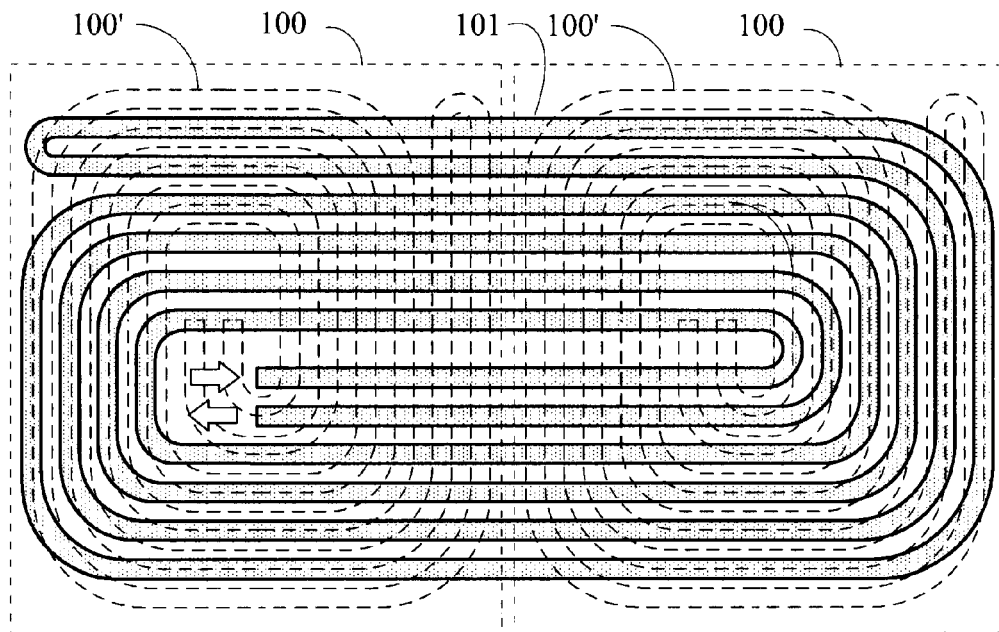


Fig. 20

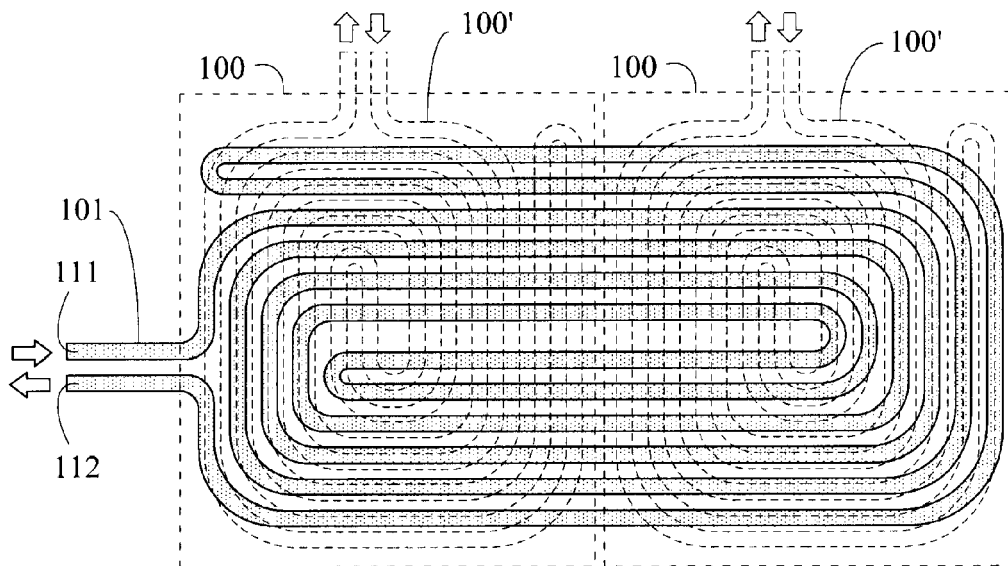


Fig. 21

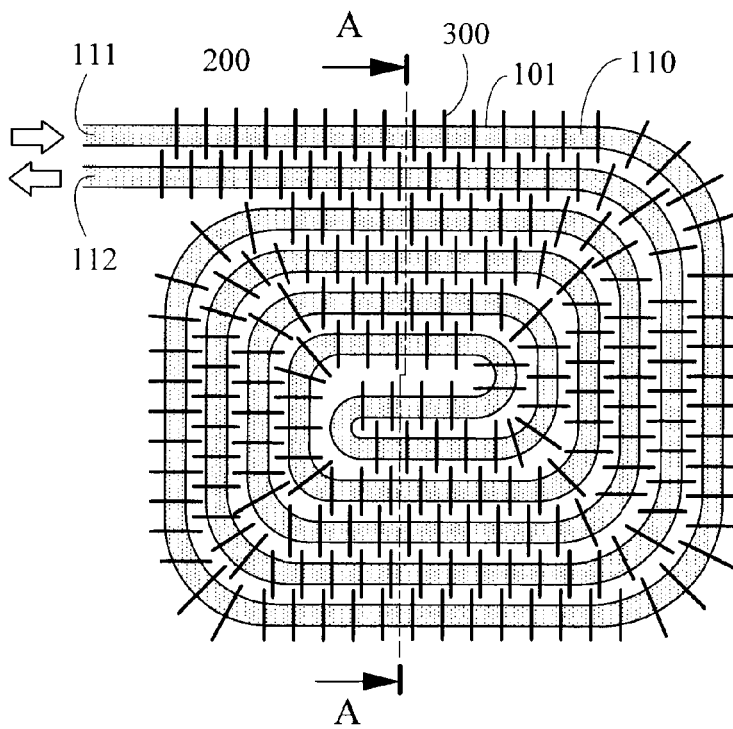


Fig. 22

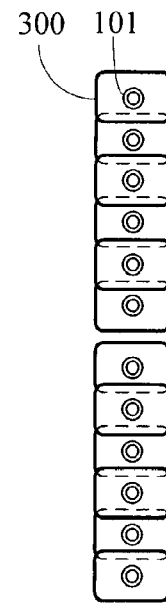


Fig. 23

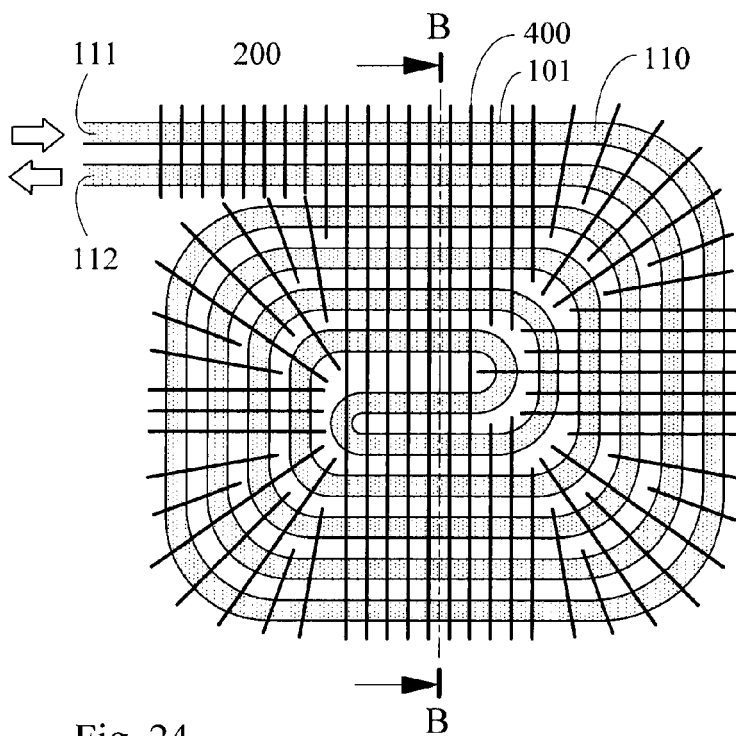


Fig. 24

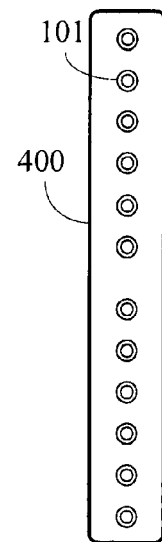


Fig. 25

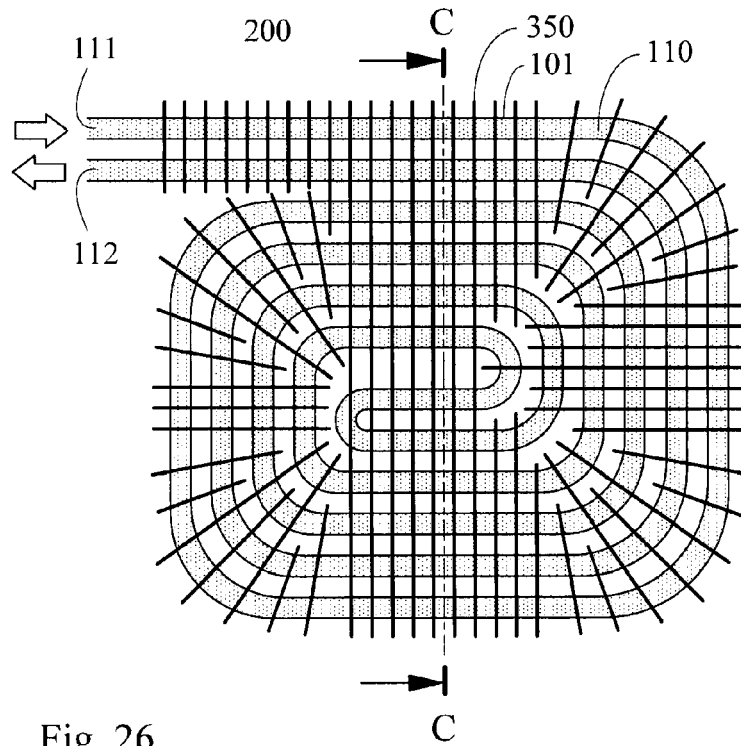


Fig. 26

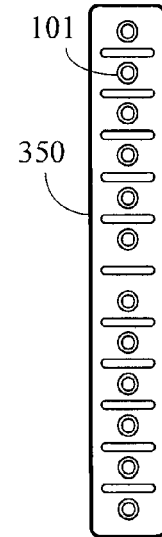


Fig. 27

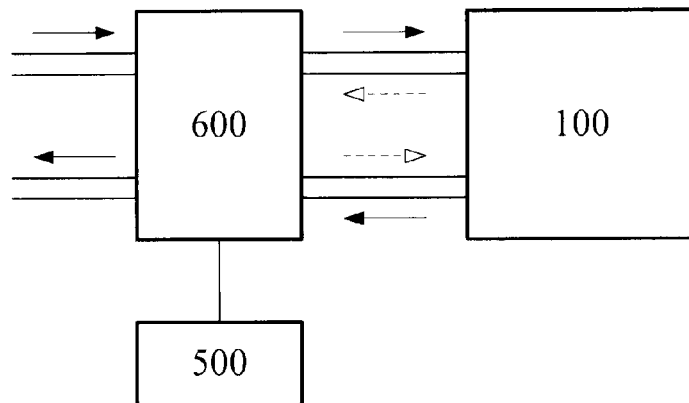


Fig. 28