CLAIMS

1. A system for producing heat transfer between two or more media, ~~in a closed circuit, with low energy consumption,~~ for household, commercial or industrial use, wherein the system is usable for air conditioning a space ~~capable of being used for producing heat transfer~~, the system comprising:

- a confined pipeline circuit, wherein the confined pipeline circuit comprises pipes (8) in order for forming the confined pipeline circuit, wherein the confined pipeline circuit is closed at one of its ends, wherein some of the pipes (8) are pipes with plates or fins, wherein the pipes (8) form a heat exchanger (34),

- one or more forcing units connected to the confined pipeline circuit and capable of increasing or decreasing the pressure of a fluid in said confined pipeline circuit,

Formatted: List Paragraph, Left, Bulleted + Level: 1 + Aligned at: 1.88 cm + Indent at: 2.51 cm

~~a. a cylinder (1), which comprises in its interior at least one piston (2) which is joined to a plunger (27), the plunger (27) being moved alternatingly under the actuation of a directional control valve (29) which receives a hydraulic fluid from a hydraulic pump (32);~~

~~b. at least one closed chamber (5) connected to the cylinder (1), said closed chamber (5) comprising at least one pipe (8), WHEREIN the thermal working fluid is compressed in said closed chamber (5), producing a change from the liquid to the solid state or vice versa or from a solid state to another solid state or vice versa; and~~

- ~~c.~~ a control system (11), configured to control the forcing unit for controlling the pressure and a contraction of the fluid in the confined pipeline circuit in such a way as to induce the change of state of the fluid from the liquid state or supercritical fluid state to the solid or partially solid state and vice versa,

- one or more pressure and temperature sensors of the confined loop, configured to supply information to the control system. ~~in which the~~

Formatted: List Paragraph, Left, Bulleted + Level: 1 + Aligned at: 1.88 cm + Indent at: 2.51 cm

~~actuation of the directional control valve (29) is regulated according to the temperature and pressure obtained in the closed chamber (5), WHEREIN said heat transfer system further comprises:~~

~~d. at least one heat exchanger (34), which is formed by the pipe (8); and~~

~~e. ventilation ducts (31), which are situated at the outlet of the heat exchanger (34) and which achieves control of the cooled or heated fluid in the pipe (8).~~

2. The system ~~for producing heat transfer~~ according to ~~C~~claim 1, wherein the one or more forcing units comprises a device capable of increasing or decreasing the pressure of the fluid, wherein said device is a plunger, a piston, and a pump for moving the device ~~WHEREIN the pipes (8) are connected to more than one cylinder (1) in order to improve heat transfer~~.

3. The system for producing heat transfer according to Claim 1, wherein~~WHEREIN~~ the pipes (8) are capillary tubes.

4. Use of a system according to any of the preceding claims for producing heat transfer between two or more media, for household, commercial or industrial use.

~~4. The system for producing heat transfer according to Claim 1, WHEREIN the pipes (8) have an internal diameter of between 0.5 mm and 6 mm.~~

~~5. The system for producing heat transfer according to Claim 1, WHEREIN said system further comprises auxiliary equipment in the form of heaters, coolers, radiators, thermostats or humidifiers.~~

~~6. The system for producing heat transfer according to Claim 1, WHEREIN said system further comprises a fan (30) for improving heat transfer.~~

~~7. The system for producing heat transfer according to Claim 1, WHEREIN said system further comprises ventilation flaps, which control the flow of air entering the ventilation ducts (31) in order to expel or introduce heat or cold.~~

~~8. The system for producing heat transfer according to Claim 6,~~

~~WHEREIN the direction of the fans is reversed in order to use the heat transfer system in the heating or cooling mode.~~

~~9. The system for producing heat transfer according to Claim 1, WHEREIN the hydraulic pump (32) is actuated by an electric motor (28).~~

~~10. The system for producing heat transfer according to Claim 1, WHEREIN said system further comprises unidirectional valves (26), which are actuated electronically and connected to the cylinder (1) to prevent the piston (2) from returning.~~

~~11. The system for producing heat transfer according to Claim 1, WHEREIN said system further comprises fill valves (33) for introducing the state changing fluid into the cylinder (1) and the pipes (8).~~

~~12. The system for producing heat transfer according to any one of Claims 1, 5, 6, 9, 10 and 11, WHEREIN the directional control valve (29) which receives a hydraulic fluid from a hydraulic pump (32), the thermostats or humidifiers, the fan (30), the electric motor (28), the unidirectional valves (26) and the fill valves (33) are connected to the control system (11).~~

~~13. The system for producing heat transfer according to Claim 1, WHEREIN the pipes (8) are connected to Peltier cells for heating and cooling.~~

5~~14~~. A method for producing heat transfer in between two or more media, ~~in a closed circuit, with low energy consumption,~~ for household, commercial or industrial use, wherein the method is used for air conditioning a space~~capable of being used for producing heat transfer~~, the method comprising:

a) introducing a ~~thermal working~~ fluid into a confined pipeline circuit connected to one or more forcing units, wherein the confined pipeline circuit comprises~~closed chamber (5) connected to a cylinder (1), said closed chamber (5) comprising at least one secondary~~ pipes (8) in order for forming the confined pipeline circuit, wherein the confined pipeline circuit is closed at one of its ends, wherein some of the pipes (8) are pipes with plates or fins, wherein the pipes (8) form a heat exchanger (34).~~;~~

b) compressing a~~the thermal working~~ fluid in said confined pipeline circuit by means of the one or more forcing units.~~closed chamber (5) by means of a cylinder (1), which comprises in its interior at least one piston (2) which is joined to a plunger (27), the plunger (27) being moved alternatingly under the actuation of a directional control valve (29), which receives a hydraulic fluid from a hydraulic pump (32);~~

c) controlling the forcing unit with a control system for controlling the pressure and a contraction of the fluid in the confined pipeline circuit in such a way as to induce change of state of the fluid, from liquid state or supercritical fluid state to the solid or partially solid state or vice versa,~~regulating the actuation of the directional control valve (29) with respect to the temperature and pressure obtained in the closed chamber (5) via a control unit (11), WHEREIN said method further comprises the steps of:~~

~~d) producing the change of state of the thermal working fluid, from liquid to solid or vice versa or from a solid state to another solid state or vice versa by virtue of the pressure increase and in accordance with the phase diagram of each thermal working fluid, yielding or delivering heat to a heat exchanger (34) formed by the pipe (8) and yielding or delivering heat to ventilation ducts (31) situated at the outlet of the heat exchanger (34), thus achieving control of the cooled or heated fluid in the pipe (8);~~

d~~e~~) decompressing the~~ thermal working~~ fluid in said confined pipeline circuit~~closed chamber (5)~~ in order to re-induce the change of state.~~ by virtue of the drop in pressure, in accordance with the phase diagram of each thermal working fluid;~~

~~f) repeating step b) through step e) until the desired temperature is attained in the household, commercial or industrial environment.~~