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(54) Title: AN AIR CONDITIONER SYSTEM WITH SUPER CRITICAL FLUID CONTROLLED OPERATION

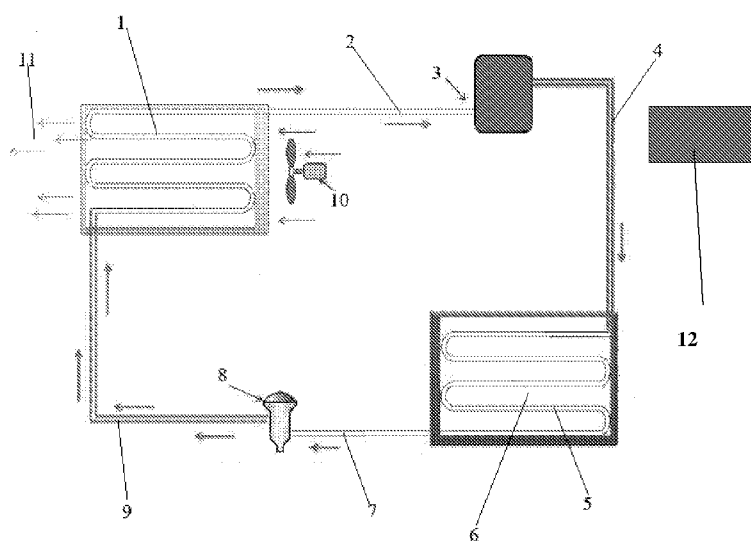


FIG. 2

(57) Abstract: The present invention relates to an air conditioner system with super critical fluid controlled operation. The present invention focuses on the utilization of super-critical state through varying the pressure and temperature in the air condition circuit system. In a preferred embodiment this modulation of specific enthalpy is done by varying the pressure before throttling. The refrigerant is cooled down as far as it is feasible by means of the available cooling medium, and the pressure regulated to give the required enthalpy. The present invention efficiently designed to provide the heat exchange mechanism that counters the problems associated with the currently available refrigerant by providing eco-friendly, economical, compact and efficient for medium to large scale requirements eg. buildings, cold storage, commercial spaces, etc.



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I Claim:

1. An air conditioner system with super critical fluid controlled operations comprises:

an evaporator coil (2) wherein, a refrigerant gets converted
5 from liquid to gas and thereby cooling the evaporator coil (2);

a fan (10) is disposed to cause air to flow through the evaporator coil (2);

a condenser coil (5) wherein, the refrigerant is liquefied to said temperature, wherein the condenser coil (5) cools the
10 refrigerant below its critical temperature;

a throttling valve (8) is disposed at an condenser outlet (7) reducing the refrigerant pressure, wherein the throttling valve (8) reduces the pressure of the said refrigerant;

a compressor (3) wherein, reducing said pressure in the
15 evaporator coil (2) and increasing the said pressure in the condenser coil (5); characterized by,

placing a cooling tower (12) proximal to the compressor (3) wherein, the cooling tower (12) provides of cold water flowing continuous by taking away latent of vaporization of the
20 refrigerant;

wherein, the refrigerant is a natural gas refrigerant.

2. The air conditioner system with super critical fluid controlled operations as claimed in claim 1, wherein the natural gas refrigerant is selected from not limited to carbon dioxide,
5 ethane, nitrous oxide, etc.