CLAIMS

[Claim 1] An air control system (100) for adjusting a composition of inside air in a storage (2), the air control system (100) comprising:

a dehumidifying unit (130) having a first separation membrane (134) for allowing water vapor to permeate therethrough and configured to dehumidify target air; and

a composition adjuster (120) having a second separation membrane (124) for separating the target air dehumidified by the dehumidifying unit (130) into first air and second air having different compositions,

the first air or second air having flowed out of the composition adjuster (120) being supplied to the storage (2).

[Claim 2] The air control system (100) of claim 1, further comprising:

an air pump (110) configured to supply the target air to the dehumidifying unit (130); and

a first throttle mechanism (171) provided for a passage of the target air from the dehumidifying unit (130) toward the composition adjuster (120).

[Claim 3] The air control system (100) of claim 2, wherein

the composition adjuster (120) takes air having not permeated through the second separation membrane (124) as the first air and air having permeated through the second separation membrane (124) as the second air, and

the air control system (100) further comprises a second throttle mechanism (172) provided for a passage of the first air having flowed out of the composition adjuster (120).

[Claim 4] The air control system (100) of any one of claims 1 to 3, wherein the dehumidifying unit (130) applies water vapor having permeated through the first separation membrane (134) to the first air or the second air having flowed out of the composition adjuster (120) toward an inside of the storage (2).

[Claim 5] The air control system (100) of any one of claims 1 to 3, further comprising:

a humidifying unit (200) configured to apply water vapor to the first air or second air having flowed out of the composition adjuster (120) toward the inside of the storage (2).

[Claim 6] The air control system (100) of any one of claims 1 to 3, further comprising:

a gas-liquid separator (113) configured to separate water in a liquid state from the target air to be sent to the dehumidifying unit (130).

[Claim 7] The air control system (100) of any one of claims 1 to 3, wherein the dehumidifying unit (130) has a first space (135, 136) through which the target air flows, and a second space (137) separated from the first space (135, 136) by the first separation membrane (134),

the air control system (100) further comprises:

a flow path through which the target air is sent to the first space (135, 136);

a flow path through which the target air having flowed out of the first space (135, 136) is sent to the composition adjuster (120);

a flow path (170) through which the first air or the second air having flowed out of the composition adjuster (120) is sent to the second space (137); and

a flow path (180) through which the first air or the second air having flowed out of the second space (137) is sent to the storage (2).

[Claim 8] A refrigeration apparatus comprising:

the air control system (100) of any one of claims 1 to 3; and

a refrigerant circuit (30) configured to perform a refrigeration cycle to adjust an internal temperature of the storage.

[Claim 9] A transport container comprising:

the refrigeration apparatus (10) of claim 8; and

a container body (2) to which the refrigeration apparatus (10) is attached and which forms the storage.