CLAIMS

1. An inside air control apparatus (100) for adjusting a composition of inside air in a storage (2), comprising:

a composition adjuster (200) configured to separate inflow air to be treated into first air and second air having different compositions;

a first inflow path (111) in which outside air outside the storage (2) flows toward the composition adjuster (200);

a second inflow path (112) in which the inside air flows toward the composition adjuster (200);

a first outflow path (131) in which the first air having flowed out from the composition adjuster (200) flows;

a second outflow path (132) in which the second air having flowed out from the composition adjuster (200) flows;

an outlet switching mechanism (135) configured to switch between a state where the first outflow path (131) communicates with an inside of the storage (2) and the second outflow path (132) communicates with an outside of the storage (2) and a state where the second outflow path (132) communicates with the inside of the storage (2) and the first outflow path (131) communicates with the outside of the storage (2);

a first valve (116) provided on the first inflow path (111);

a second valve (117) provided on the second inflow path (112); and

a controller (180) configured to control the first valve (116) and the second valve (117) to switch among a state where the first valve (116) is in an open state and the second valve (117) is in a closed state, a state where the first valve (116) is a closed state and the second valve (117) is in an open state, and a state where the first valve (116) and the second valve (117) are in an

open state.

2. An inside air control apparatus (100) for adjusting a composition of inside air in a storage (2), comprising:

a composition adjuster (200) configured to separate inflow air to be treated into first air and second air having different compositions;

a first inflow path (111) in which outside air outside the storage (2) flows toward the composition adjuster (200);

a second inflow path (112) in which the inside air flows toward the composition adjuster (200);

a first outflow path (131) in which the first air having flowed out from the composition adjuster (200) flows;

a second outflow path (132) in which the second air having flowed out from the composition adjuster (200) flows;

an outlet switching mechanism (135) configured to switch between a state where the first outflow path (131) communicates with an inside of the storage (2) and the second outflow path (132) communicates with an outside of the storage (2) and a state where the second outflow path (132) communicates with the inside of the storage (2) and the first outflow path (131) communicates with the outside of the storage (2); and

an inlet switching mechanism (115) configured to switch among a state where the composition adjuster (200) communicates with the first inflow path (111) and is disconnected from the second inflow path (112), a state where the composition adjuster (200) communicates with the second inflow path (112) and is disconnected from the first inflow path (111), and a state where the composition adjuster (200) communicates with the first inflow path (111) and the second inflow path (112).

3. The inside air control apparatus (100) of claim 1 or 2, further comprising:

an air supply (110) configured to send, to the composition adjuster (200), air sucked in from the first inflow path (111) and the second inflow path (112).

4. The inside air control apparatus (100) of claim 1, wherein

each of the first valve (116) and the second valve (117) is a control valve having a variable opening degree.

5. The inside air control apparatus (100) of claim 1 or 2, further comprising:

a switching mechanism (165) configured to switch between a state where the inside air is sent to the second inflow path (112) and a state where the inside air is discharged to the outside of the storage (2).

6. The inside air control apparatus (100) of claim 5, further comprising:

an inside air flow path (166) having ends, one of which communicates with the inside of the storage (2); and

an exhaust flow path (167) having ends, one of which communicates with the outside of the storage (2),

wherein

the switching mechanism (165) is a three-way valve connected to the second inflow path (112), the inside air flow path (166), and the exhaust flow path (167), and switching between a state where the inside air flow path (166) communicates with the second inflow path (112) and a state where the inside air flow path (166) communicates with the exhaust flow path (167).

7. The inside air control apparatus (100) of any one of claims 1 to 6, wherein the composition adjuster (200) separates the air to be treated into the first air having a nitrogen concentration higher than that of the air to be treated and an oxygen concentration lower than that of the air to be treated and the second air having a nitrogen concentration lower than that of the air to be treated and an oxygen concentration higher than that of the air to be treated.

8. A refrigeration apparatus comprising:

the inside air control apparatus (100) of any one of claims 1 to 7; and

a refrigerant circuit (30) configured to perform a refrigeration cycle to adjust an internal temperature of the storage (2).

9. A transport container comprising:

the refrigeration apparatus (10) of claim 8; and

a container body (2) provided with the refrigeration apparatus (10) and serving as the storage.