

CLAIMS

1. A purge stocker for purging the inside of a storage container storing a product with purge gas, the purge stocker comprising:

a first supply unit including N first purge apparatuses (N is an integer equal to or larger than 2) each having a first supporting unit configured to support the storage container, a first supply pipe configured to supply the purge gas into the storage container supported by the first supporting unit, and a first flow rate adjusting unit configured to measure a mass flow rate of the purge gas in the first supply pipe and individually provide flow rate control;

a second supply unit including M second purge apparatuses (M is a positive integer between 2 and N, inclusive) each having a second supporting unit configured to support the storage container and a second supply pipe configured to supply the purge gas into the storage container supported by the second supporting unit, a main pipe connected with each of the second supply pipe and configured to supply the purge gas to the second supply pipe, and a second flow rate adjusting unit configured to measure a mass flow rate of the purge gas in the main pipe and provide collective flow rate control; and

a transferring device configured to transfer the storage container between the first supply unit and the second supply unit, wherein

the second flow rate adjusting unit collectively controls a flow rate of the purge gas supplied from the second supply pipes of the M second purge apparatuses to the storage container, and

the second supply unit supplies the storage containers with the purge gas through the second supply pipes when the storage containers are supported by the second supporting units.

2. The purge stocker according to claim 1, wherein, when all of the second supporting units in the M second purge apparatuses support the storage containers, the second supply unit supplies the storage containers with the purge gas through the second supply pipes.

3. The purge stocker according to claim 2, wherein

when the number of storage containers reaches M that have been supplied with the purge gas at a certain flow rate for a certain period in the first supply unit, the transferring device transfers the M storage containers from the first supply

unit to the second supply unit, and

upon completion of transfer of the M storage containers, the second supply unit supplies the storage containers with the purge gas through the second supply pipes.

4. The purge stocker according to any one of claims 1 to 3, wherein the second flow rate adjusting unit adjusts the flow rate of the purge gas in the main pipe to a set flow rate determined based on the number of storage containers connected with the second supply pipes in the second supply unit.

5. The purge stocker according to any one of claims 1 to 4, wherein, when starting supplying the purge gas to the storage container, the first flow rate adjusting unit increases the flow rate of the purge gas in the first supply pipe in a continuous or stepwise manner to obtain a certain supply flow rate.

6. The purge stocker according to any one of claims 1 to 5, wherein, when at least one of the storage containers is delivered out of the second supply unit, the transferring device transfers as many storage containers as the delivered storage containers from the first supply unit to the second supply unit.

7. The purge stocker according to any one of claims 1 to 6, further comprising:
one or more empty storage containers storing no products, wherein
when at least one of the storage containers is delivered out of the second supply unit, the transferring device transfers as many empty storage containers as the delivered storage containers to the second supply unit.

8. A purging method for a purge stocker configured to purge the inside of a storage container storing a product with purge gas, the purge stocker including: a first supply unit including N first purge apparatuses (N is an integer equal to or larger than 2) having a first supporting unit configured to support the storage container, a first supply pipe configured to supply the purge gas into the storage container supported by the first supporting unit, and a first flow rate adjusting unit configured to measure a mass flow rate of the purge gas in the first supply pipe and individually provide flow rate control; a second supply unit including M second purge apparatuses (M is a positive integer between 2 and N, inclusive) having a second supporting unit configured to support the storage container and a second supply pipe configured to supply the purge

gas into the storage container supported by the second supporting unit, a main pipe connected with the second supply pipe and configured to supply the purge gas to the second supply pipes, and a second flow rate adjusting unit configured to measure a mass flow rate of the purge gas in the main pipe and providing collective flow rate control; and a transferring device configured to transfer the storage container between the first supply unit and the second supply unit, the purging method comprising:

collectively controlling a flow rate of the purge gas supplied from the second supply pipes of the M second purge apparatuses to the storage container with the second flow rate adjusting unit; and

when the storage containers are supported by the second supporting units, supplying the storage containers with the purge gas through the second supply pipes in the second supply unit.