CLAIMS

1. A discharge valve unit configured to be attached to a fluid device, the fluid device including a housing including an inlet and a first reservoir for liquid that has flowed from the inlet, the fluid device including a first valve mechanism including a first discharge hole for liquid provided in the first reservoir and a float accommodated in the first reservoir and configured to open and close the first discharge hole, the discharge valve unit comprising:

a valve case configured to be detachably attached to the housing, the valve case including a second reservoir for liquid configured to communicate with the first reservoir not through the first discharge hole but through a communication hole when the valve case is attached to the housing; and

a second valve mechanism disposed in the second reservoir, the second valve mechanism including a second discharge hole for liquid having an opening diameter larger than an opening diameter of the first discharge hole, and including a valve member accommodated in the second reservoir and configured to open and close the second discharge hole, wherein

the second valve mechanism includes a spring configured to bias the valve member in a valve opening direction, and when a pressure of the second reservoir increases to a predetermined value, the valve member closes the second discharge hole under the pressure against a biasing force of the spring.

2. The discharge valve unit according to claim 1, wherein

the valve case is attached to a lower portion of the first reservoir in the housing, and an upper portion of the valve case has the communication hole configured to allow the second reservoir to communicate with the first reservoir.

3. The discharge valve unit according to claim 2, wherein

the second discharge hole is open in a top-bottom direction at a bottom of the second reservoir,

the valve member has a disc shape and is disposed above the second discharge hole, and

the spring is disposed below the valve member and biases the valve member upward.

4. The discharge valve unit according to claim 3, wherein

the spring has one end connected to a lower surface of the valve member and supports the valve member, and

the second valve mechanism includes a baffle disposed above the valve member in the second reservoir, the baffle being configured to prevent liquid flowing down to the second reservoir from the first reservoir through the communication hole from hitting an upper surface of the valve member.

5. The discharge valve unit according to claim 4, wherein

the valve member is pushed against the baffle by a biasing force of the spring.

6. The discharge valve unit according to claim 5, wherein

a position of the baffle in the top-bottom direction is changeable.

7. The discharge valve unit according to any one of claims 1 to 6, wherein

the valve case includes an external thread portion configured to be attached to the housing by screwing.

8. A fluid device comprising:

a housing including an inlet and a first reservoir for liquid that has flowed in the housing from the inlet;

a first valve mechanism including a first discharge hole for liquid provided in the first reservoir, and a float accommodated in the first reservoir and configured to open and close the first discharge hole; and

the discharge valve unit according to any one of claims 1 to 7 configured to be attached to the housing.

9. The fluid device according to claim 8, further comprising

a separation mechanism disposed above the first reservoir in the housing and configured to separate liquid included in a gas that has flowed from the inlet, wherein

the housing has an outlet from which a gas separated from liquid by the separation mechanism flows out, and

the first reservoir stores liquid separated by the separation mechanism.

10. The fluid device according to claim 8, further comprising:

a separation mechanism disposed above the first reservoir in the housing and configured to separate liquid included in a gas that has flowed from the inlet; and

a pressure reducing mechanism disposed in the housing and configured to reduce a pressure of a gas separated from liquid by the separation mechanism and hold the reduced pressure at a predetermined pressure, wherein

the housing has an outlet from which a gas whose pressure has been reduced by the pressure reducing mechanism flows out, and

the first reservoir stores liquid separated by the separation mechanism.