CLAIMS

1. A discharge mechanism comprising a drive unit that moves a rod reciprocally, and a discharge unit including a liquid chamber allowing the rod to pass therein and a valve seat communicated with a nozzle, the nozzle discharging therefrom a liquid mixed with solid particles with an operation of moving the valve seat and a tip of the rod relatively away from each other,

wherein the discharge unit includes an inflow path through which the liquid mixed with the solid particles flows into the liquid chamber, and an outflow path through which the liquid mixed with the solid particles in the liquid chamber flows out,

the inflow path and the outflow path are connected in a V-shape near the valve seat,

the liquid chamber is disposed in a valley portion of the V-shape, and the valve seat is disposed at a lower end of the liquid chamber, which corresponds to a lower end of the V-shape,

the valve seat comprises a communication hole that communicates the liquid chamber and the nozzle with each other,

an upper surface of the valve seat is formed as a conical surface,

the liquid is discharged from the nozzle in a linear form or in the form of a droplet by driving the rod in a manner of opening and closing the communication hole of a nozzle, the communication hole being closed when the tip of rod contacts a bottom portion of the upper surface,

a discharge block includes the inflow path and the outflow path, which are connected to liquid pipes by fixtures, and the liquid chamber therein,

the upper surface has a larger area than a contact area of the tip of the rod,

one end of the inflow path is connected to an inflow pipe, the inflow path being formed to extend upwards such that a center axis of the liquid chamber and a center axis of the inflow path defines an acute angle, and

one end of the outflow path is connected to an outflow pipe, the outflow path being formed to extend upwards such that the center axis of the liquid chamber and a center axis of the outflow path defines an acute angle,

characterized in that

an angle formed by the center axis of the liquid chamber and the center axis of the outflow path is greater than an angle formed by the center axis of the liquid chamber and the center axis of the inflow path.

2. A discharge mechanism comprising a drive unit that moves a rod reciprocally, and a discharge unit including a liquid chamber allowing the rod to pass therein and a valve seat communicated with a nozzle, the nozzle discharging therefrom a liquid mixed with solid particles with an operation of moving the valve seat and a tip of the rod relatively away from each other,

wherein the discharge unit includes an inflow path through which the liquid mixed with the solid particles flows into the liquid chamber, and an outflow path through which the liquid mixed with the solid particles in the liquid chamber flows out,

the inflow path and the outflow path are connected in a V-shape near the valve seat,

the liquid chamber is disposed in a valley portion of the V-shape,

and the valve seat is disposed at a lower end of the liquid chamber, which corresponds to a lower end of the V-shape,

the valve seat comprises a communication hole that communicates the liquid chamber and the nozzle with each other,

an upper surface of the valve seat is formed as a conical surface,

the liquid is discharged from the nozzle in a linear form or in the form of a droplet by driving the rod in a manner of opening and closing the communication hole of a nozzle, the communication hole being closed when the tip of rod contacts a bottom portion of the upper surface,

a discharge block includes the inflow path and the outflow path, which are connected to liquid pipes by fixtures, and the liquid chamber therein,

the upper surface has a larger area than a contact area of the tip of the rod,

one end of the inflow path is connected to an inflow pipe, the inflow path being formed to extend upwards such that a center axis of the liquid chamber and a center axis of the inflow path defines an acute angle, and

one end of the outflow path is connected to an outflow pipe, the outflow path being formed to extend upwards such that the center axis of the liquid chamber and a center axis of the outflow path defines an acute angle,

characterized in that

an angle formed by the center axis of the liquid chamber and the center axis of the outflow path is smaller than an angle formed by the center axis of the liquid chamber and the center axis of the inflow path.

3. The discharge mechanism according to claim 1 or 2, wherein the valve seat and the nozzle are fixed to the lower end of the liquid chamber with the aid of a cap-like member in a detachable manner.

4. The discharge mechanism according to claim 1, wherein the outflow path and the valve seat are connected substantially without a level difference.

5. The discharge mechanism according to claim 2, wherein the inflow path and the valve seat are connected substantially without a level difference.

6. The discharge mechanism according to any one of claims 1 to 5, wherein the center axis of the inflow path and the center axis of the outflow path are connected linearly when viewed from above.

7. The discharge mechanism according to any one of claims 1 to 5, wherein the center axis of the inflow path and the center axis of the outflow path are connected at an angle formed therebetween when viewed from above.

8. A liquid material discharge device comprising:

the discharge mechanism according to any one of claims 1 to 7;

a container that stores a liquid mixed with solid particles;

a pump that feeds the liquid mixed with the solid particles under pressure; and

the liquid pipes through which the discharge mechanism, the container, and the pump are connected to form a circulation path.

9. The liquid material discharge device according to claim 8, wherein the inflow path of the discharge mechanism and the pump are connected through a plurality of regulators, and the outflow path of the discharge mechanism and the container are connected through a regulator.