WHAT IS CLAIMED IS:

1. A powder supply apparatus that supplies a powder containing a metal used for a plating to a plating solution, the powder supply apparatus comprising:

a plating solution tank configured to house the plating solution;

a feed pipe configured to feed the powder into the plating solution tank; and

a curtain generating component that generates a tubular curtain of the plating solution so as to cover an outlet of the feed pipe.

2. The powder supply apparatus according to claim 1, wherein

the curtain generating component has a first tubular part and a second tubular part positioned outside the first tubular part,

a discharge port is formed between the first tubular part and the second tubular part, the discharge port discharging the plating solution, and

the discharge port extends between the first tubular part and the second tubular part in a whole circumference direction, the discharge port including a first part and a second part on a cross section perpendicular to an axial direction of the curtain generating component, the first part having a first radial width, the second part having a second radial width larger than the first radial width.

3. The powder supply apparatus according to claim 2, wherein

the discharge port has a plurality of the second parts, and

the plurality of second parts are located at approximately regular intervals in a circumferential direction.

4. The powder supply apparatus according to claim 1, wherein

the curtain generating component includes a first tubular part, a second tubular part, and a discharge port, the second tubular part being positioned outside the first tubular part, the discharge

port being formed between the first tubular part and the second tubular part,

between the first tubular part and the second tubular part, a discharge flow passage is formed, the discharge flow passage communicating with the discharge port to discharge the plating solution,

the second tubular part has a tapered surface on an inner peripheral surface thereof, the tapered surface being inclined such that a distance from the first tubular part becomes close toward the discharge port, and

the discharge flow passage is configured to gradually narrow down toward the discharge port by the tapered surface of the second tubular part.

5. The powder supply apparatus according to claim 4, wherein

the first tubular part extends to the plating solution tank side with respect to the discharge port.

6. The powder supply apparatus according to any one of claims 2 to 5, wherein

the curtain generating component includes:

an inlet for the plating solution; and

a first circumferential flow passage that communicates with the inlet, the first circumferential flow passage circumferentially extending between the first tubular part and the second tubular part.

7. The powder supply apparatus according to claim 6, wherein

the curtain generating component includes a plurality of axial flow passages communicating with the first circumferential flow passage.

8. The powder supply apparatus according to claim 6 depending on claim 2 or 3, wherein

the curtain generating component includes a second circumferential flow passage, the second circumferential flow passage communicating with the respective axial flow passages, the

second circumferential flow passage circumferentially extending between the first tubular part and the second tubular part, and

the second circumferential flow passage communicates with the discharge port.

9. The powder supply apparatus according to claim 7 depending on claim 4, wherein

the plurality of axial flow passages communicate with the discharge flow passage.

10. The e powder supply apparatus according to any one of claims 1 to 9, further comprising

a gas supply line configured to supply a gas to an inside of the feed pipe.

11. A plating system comprising:

the powder supply apparatus according to any one of claims 1 to 10;

a plating bath configured to plate a substrate; and

a plating solution supply pipe that extends from the plating solution tank of the powder supply apparatus to the plating bath.