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;

a gas supply line configured to supply a gas; and

a spiral-air-flow-generating component configured to receive the gas from the gas supply line to generate a spiral air flow heading toward the plating solution tank inside the feed pipe.

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

the spiral-air-flow-generating component includes a tubular member, the tubular member having an outer surface configured to contact an inner surface of the feed pipe,

the tubular member has a first end, a second end, and a groove, the first end being disposed on the plating solution tank side and the second end being disposed on a side opposite to the first end, the groove extending from the first end to the second end on the outer surface, and

the gas from the gas supply line is configured to pass through the groove of the tubular member.

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

the groove is formed so as to be inclined with respect to an axial direction of the tubular member.

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

the spiral-air-flow-generating component further includes:

an air flow passage that circumferentially extends and communicates with

the groove; and

an air injection port connected to the gas supply line and communicates with the air flow passage.

5. The powder supply apparatus according to any one of claims 1 to 4, wherein

the feed pipe includes an inlet open end to which the powder is fed and an outlet open end from which the powder comes out, and

the spiral-air-flow-generating component is disposed on the inlet open end of the feed pipe.

6. The powder supply apparatus according to any one of claims 1 to 5, further comprising:

a hopper configured to house the powder; and

a feeder configured to supply the powder from an opening disposed on a lower portion of the hopper to the feed pipe.

7. A plating system comprising:

the powder supply apparatus according to any one of claims 1 to 6;

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.