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scorching during the drying operation. The particles in the fluidized bed will freely move along the funnel wall while being cooled, without the need for agitators, vibrators or the like.

While the invention has been particularly described 5 and illustrated in conjunction with a now preferred embodiment, it will be apparent that variations and modifications may occur to those skilled in the art without departing from the spirit and scope thereof, as defined in the appended claims. 10

We claim:

1. A method of forming a fluidized bed of solid particles on a downwardly tapering funnel wall having a circular cross section of downwardly decreasing diameter, comprising the steps of 15

- 1. supplying the solid particles to an upper edge of the funnel wall from above,
- 2. introducing a body of gas through a plurality of slits in the wall in a direction substantially tangential to the circular cross section thereof to form a 20 whirling stream or vortex of the body of gas along said wall, and
- 3. distributing the vortex of gas so that the velocity thereof is in direct proportion to the diameter of the wall, the gas vortex fluidizing the solid particles and conveying them downwardly along the wall in a thin annular bed. 25

2. The method of claim 1, wherein the solid particles are supplied continuously, the particles are conveyed along the wall in circles by the vortex of gas, and are continuously discharged through a coaxial port at the lower end of the funnel. 30

3. The method of claim 1, wherein the body of gas is cold, dehumidified air whereby the particles are cooled in the fluidized bed. 35

4. The method with claim 1, wherein the body of gas is introduced through the slits from a sealed chamber surrounding the conical wall, the gas being supplied to 40

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said chamber at a velocity of about 5 - 30 m/sec.

5. An apparatus for forming a fluidized bed of solid particles, said apparatus comprising in combination:

A. a funnel with a downwardly tapering conical wall having a circular cross section of downwardly decreasing diameter, the funnel having:

- a. an open top,
- b. a discharge port at the lower end for discharging solid particles, and
- c. a plurality of slits disposed about the conical wall and at intervals along the downwardly decreasing diameter;

B. a cover member covering the open funnel top and having:

- a. an inlet port for supplying solid particles to the funnel near an upper edge thereof, and
- b. a gas escape port;

C. a casing surrounding the funnel and forming a chamber therewith; and

D. a duct connected to the casing for supplying gas to the chamber,

- a. said gas being passed by said slits inwardly from the chamber and in a direction substantially tangential to the circular cross section of the conical wall to form a uniform fluidized bed of solid particles within the conical wall of the funnel.

6. The apparatus of claim 5, wherein the slits have substantially tangentially extending baffle members for directing the body of gas therethrough and inwardly.

7. The apparatus of claim 5, wherein the casing is conical, extending substantially concentrically about the funnel and forming an annular fluid-tight chamber therewith.

8. The apparatus of claim 5, wherein the gas escape and discharge ports are coaxial with the conical wall, the inlet port being arranged near the periphery of the cover member.

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