CLAIMS

1. A gas distribution grid comprising a plurality of trays arranged to form the lateral walls of an inverted cone, said plurality of trays being attached each other to form slots in the overlapping area of adjacent trays.
2. The gas distribution grid according to claim 1 placed at the bottom of a vessel containing a polymer in fluidized conditions.
3. The gas distribution grid according to claim 1, wherein the apex of said inverted cone ranges from 100° to 160°.
4. The gas distribution grid according to claim 1, wherein annular modules of trays are formed by the overlapping of successive trays.
5. The gas distribution grid according to claim 4, wherein each annular module comprises at least 6 trays.
6. The gas distribution grid according to claim 5, wherein each annular module comprises from 10 to 80 trays.
7. The gas distribution grid according to claims 2 and 4, wherein said annular modules of trays are supported by means of bars protruding from the bottom walls of said vessel containing a polymer in fluidization conditions.
8. The gas distribution grid according to claim 1, wherein in said overlapping area a first tray forms the upper part of said slots and the successive tray forms the bottom part of said slots.
9. The gas distribution grid according to claim 1, wherein in the overlapping area of two adjacent trays a number of slots ranging from 3 to 15 slots is present.
10. The gas distribution grid according to claim 1, wherein said slots are formed so as to give a gas outlet which is tangential at the plane of said adjacent trays.
11. The gas distribution grid according to claim 1, wherein each tray forms on a side the lower part of the slots and on the opposite side the upper part of the slots.
12. The gas distribution grid according to claim 1, wherein said slots have a substantially rectangular shape.
13. The gas distribution grid according to claim 1, wherein the axes of said slots is tangential with respect to the plane of said adjacent trays.
14. The gas distribution grid according to claim 2, wherein said vessel containing a polymer in fluidisation conditions is a drier.

15. A fluidized bed reactor for the gas-phase polymerization of α-olefins, said fluidized bed reactor being equipped with a gas distribution grid arranged at its base, a gas circulation system for recycling and cooling the unreacted gas from the top of said reactor to said distribution grid, and a conduit for the continuous discharge of polymer from the reactor, characterized in that said distribution grid comprises a plurality of trays arranged to form the lateral walls of an inverted cone, said plurality of trays being attached each other to form slots in the overlapping area of adjacent trays.

16. The reactor according to claim 15, wherein the inlet of said conduit for the polymer discharge is placed at the center of said distribution grid.

17. A gas-phase process for polymerizing one or more α-olefins in a fluidized bed reactor in the presence of a polymerization catalyst, said fluidized bed reactor being equipped with a fluidization grid arranged at its base, a gas circulation system for cooling and recycling the unreacted gas from the top of said reactor to the distribution grid, the process being characterized in that said unreacted gas continuously flows through the slots of a distribution grid comprising a plurality of trays arranged to form the lateral walls of an inverted cone, said plurality of trays being attached each other to form said slots in the overlapping area of adjacent trays.

18. The process according to claim 17, wherein the polymer is continuously discharged from the reactor by means of a discharge conduit protruding from the apex of said inverted cone.

CLAIMS

1. A gas distribution grid comprising a plurality of trays arranged to form the lateral walls of an inverted cone, said plurality of trays being attached each other to form slots in the overlapping area of successive adjacent trays, wherein annular modules comprising at least 6 trays are formed by the overlapping of successive trays, and

said slots are formed so as to give a gas outlet which is tangential at the plane of said annular modules.

2. The gas distribution grid according to claim 1, wherein the apex of said inverted cone ranges from 100° to 160°.

3. The gas distribution grid according to any of claims 1-2, wherein said annular modules comprise from 10 to 80 trays.

4. The gas distribution grid according to any of claims 1-2, wherein in said overlapping area a first tray forms the upper part of said slots and the successive tray forms the bottom part of said slots.

5. The gas distribution grid according to any of claims 1-2, wherein in the overlapping area of two adjacent trays a number of slots ranging from 3 to 15 slots is present.

6. The gas distribution grid according to any of claims 1-2, wherein each tray forms on a side the lower part of the slots and on the opposite side the upper part of the slots.

7. The gas distribution grid according to any of claims 1-2, wherein said slots have a rectangular shape.

8. A fluidized bed reactor for the gas-phase polymerization of α-olefins, said fluidized bed reactor being equipped with a gas distribution grid arranged at its base, a gas circulation system for recycling and cooling the unreacted gas from the top of said reactor to said distribution grid, and a conduit for the continuous discharge of polymer from the reactor, characterized in that said distribution grid comprises a plurality of trays arranged to form the lateral walls of an inverted cone, said plurality of trays being attached each other to form slots in the overlapping area of successive adjacent trays,

wherein annular modules comprising at least 6 trays are formed by the overlapping of successive trays, and

said slots are formed so as to give a gas outlet which is tangential at the plane of said annular modules.

9. The fluidized bed reactor according to claim 8, wherein the inlet of said conduit for the polymer discharge is placed at the center of said distribution grid.

10. The fluidized bed reactor according to any of claims 8-9, wherein said annular modules of trays are supported by means of bars protruding from the bottom wall of said fluidized bed reactor.

11. A gas-phase process for polymerizing one or more α-olefins in a fluidized bed reactor in the presence of a polymerization catalyst, said fluidized bed reactor being equipped with a fluidization grid arranged at its base, a gas circulation system for cooling and recycling the unreacted gas from the top of said reactor to the distribution grid, the process being characterized in that said unreacted gas continuously flows through the slots of a distribution grid comprising a plurality of trays arranged to form the lateral walls of an inverted cone, said plurality of trays being attached each other to form said slots in the overlapping area of successive adjacent trays,

wherein annular modules comprising at least 6 trays are formed by the overlapping of successive trays, and

said slots are formed so as to give a gas outlet which is tangential at the plane of said annular modules.

12. The process according to claim 11, wherein the polymer is continuously discharged from the reactor by means of a discharge conduit protruding from the apex of said inverted cone.