Claims

1. A screen plate (1) for screening plants for mechanical classification of polysilicon including fine fraction comprising

a feed region (2) for polysilicon, a profiled region (3) having peaks (32) and valleys (31), a region (4) having slots (41), wherein the slots (41) follow on from the valleys (31), and a takeoff region (5), wherein the slots (41) increase in size in the direction of the takeoff region (5), wherein

the peaks (32) of the profiled region (3) also continue into the region (4) having slots (41) so that the entire screen plate (1) is profiled, the screen plate (1), however, having slots (41) instead of valleys (31) at its rear end in the direction of conveyance and

a width of the slots (41) at a beginning of the takeoff region (5) is adjusted depending on the fine fraction to be removed,

the height of the peaks (32) and the maximum width of the slots (41) in the takeoff region (5) configured such that either a fines fraction of polysilicon which can pass through a mesh screen having square mesh apertures of 8 mm x 8 mm or a fines fraction of polysilicon which can pass through a mesh screen having square mesh apertures of 1 mm x 1 mm, is removed from the polysilicon.

2. The screen plate as claimed in claim 1 which is made of one or more materials selected from the group consisting of plastic, ceramic, glass, diamond, amorphous carbon, silicon and metal.

3. The screen plate as claimed in claim 1 or as claimed in claim 2 comprising a metallic main body and a coating or lining of one or more materials selected from the group consisting of plastic, ceramic, glass, diamond, amorphous carbon and silicon.

4. The screen plate as claimed in any of claims 1 to 3 comprising a coating of titanium nitride, titanium carbide, aluminum titanium nitride or DLC (diamond-like carbon).

5. The screen plate as claimed in claim 1 or as claimed in claim 2 which is made of hard metal or which is lined or coated with a hard metal.

6. The screen plate as claimed in any of claims 1 to 5, wherein the width of the slots (41) at the beginning of the takeoff region (5) is up to 200 mm.

7. The screen plate as claimed in any of claims 1 to 6, wherein an opening angle of the valleys (31) is greater than 1° and less than 180°.

8. The screen plate as claimed in any of claims 1 to 7, wherein the valleys (31) are 1 to 200 mm deep.

9. A method for mechanical classification of polysilicon with a screening plant, wherein the polysilicon is fed onto a screen plate (1) as claimed in any of claims 1 to 8, which is set into vibration such that the polysilicon executes a motion in the direction of the takeoff region (5), wherein small particle-size polysilicon collects in the valleys (31) of the screen plate (1) and falls through the slots (41) of the screen plate (1) and is thus separated from a polysilicon feed, wherein the screen plate has an angle of inclination to the horizontal of 5° to 20°.