The invention comprises a self-cleaning screening device (11) for separating fine particles from a stream of air and a mixture containing coarse and fine particulates. The device (11) includes a tilted box-like housing formed by walls (12-15), a plurality of elongated screening elements (26) arranged in the housing, and an air cleaning device comprising a blow pipe (31) and a series of nozzles (27) directed at the screening elements through Venturi tubes (25). At periodic intervals, a jet or pulse of air is injected into the Venturi tubes (25) to reverse air flow and rid the screening elements (26) of adhered coarse particles.
FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

<table>
<thead>
<tr>
<th>AT</th>
<th>Austria</th>
<th>FR</th>
<th>France</th>
<th>ML</th>
<th>Mali</th>
</tr>
</thead>
<tbody>
<tr>
<td>AU</td>
<td>Australia</td>
<td>GA</td>
<td>Gabon</td>
<td>MR</td>
<td>Mauritania</td>
</tr>
<tr>
<td>BB</td>
<td>Barbados</td>
<td>GB</td>
<td>United Kingdom</td>
<td>MW</td>
<td>Malawi</td>
</tr>
<tr>
<td>BE</td>
<td>Belgium</td>
<td>HU</td>
<td>Hungary</td>
<td>NL</td>
<td>Netherlands</td>
</tr>
<tr>
<td>BG</td>
<td>Bulgaria</td>
<td>IT</td>
<td>Italy</td>
<td>NO</td>
<td>Norway</td>
</tr>
<tr>
<td>BJ</td>
<td>Benin</td>
<td>JP</td>
<td>Japan</td>
<td>RO</td>
<td>Romania</td>
</tr>
<tr>
<td>BR</td>
<td>Brazil</td>
<td>KP</td>
<td>Democratic People's Republic of Korea</td>
<td>SD</td>
<td>Sudan</td>
</tr>
<tr>
<td>CF</td>
<td>Central African Republic</td>
<td>KR</td>
<td>Republic of Korea</td>
<td>SE</td>
<td>Sweden</td>
</tr>
<tr>
<td>CG</td>
<td>Congo</td>
<td>LI</td>
<td>Liechtenstein</td>
<td>SN</td>
<td>Senegal</td>
</tr>
<tr>
<td>CH</td>
<td>Switzerland</td>
<td>LK</td>
<td>Sri Lanka</td>
<td>SU</td>
<td>Soviet Union</td>
</tr>
<tr>
<td>CM</td>
<td>Cameroon</td>
<td>LU</td>
<td>Luxembourg</td>
<td>TD</td>
<td>Chad</td>
</tr>
<tr>
<td>DE</td>
<td>Germany, Federal Republic of</td>
<td>MG</td>
<td>Monaco</td>
<td>TG</td>
<td>Togo</td>
</tr>
<tr>
<td>DK</td>
<td>Denmark</td>
<td></td>
<td></td>
<td>US</td>
<td>United States of America</td>
</tr>
</tbody>
</table>
AMENDED CLAIMS

[received by the International Bureau on 5 June 1989 (05.06.89);
original claim 1 amended; claims 2-14 unchanged; new claims 15-18 added (3 pages)]

1. An apparatus for continuously separating a mixture of fine and coarse particles comprising:
   (a) a hollow housing having a tubesheet located therein tilted downwardly at an acute angle from the horizontal, said tubesheet separating said housing into a lower fines outlet chamber and an upper pre-screen chamber;
   (b) a plurality of Venturi tubes mounted on said tubesheet;
   (c) a plurality of screen elements mounted on said Venturi tubes;
   (d) means located in said fines outlet chamber for introducing a pulse of a compressed gas through said Venturi tubes to the screen elements;
   (e) an inlet for introducing air and said mixture of fine and coarse particles to said pre-screen chamber mounted in said housing;
   (f) an outlet for coarse particles mounted on said housing and communicating with said pre-screen chamber; and
   (g) an outlet for fine particles mounted in said housing and communicating with said fines outlet chamber.

2. The apparatus of claim 1 wherein said angle is about 45°.

3. The apparatus of claim 1 wherein said screen elements are conical screen elements.

4. The apparatus of claim 3 wherein said conical screen elements are pleated.
5. The apparatus of claim 1 wherein said screen elements are cylindrical.

6. The apparatus of claim 1 wherein said hollow housing is a box and said screen elements are arranged in rows therein.

7. The apparatus of claim 3 wherein said housing is cylindrical.

8. The apparatus of claim 7 wherein said inlet is mounted tangentially in the top portion of said housing.

9. The apparatus of claim 1 wherein said screen elements are planar and carried on more than one side of a rectangular member.

10. The apparatus of claim 1 wherein said inlet is mounted at the top of said housing.

11. The apparatus of claim 1 wherein said inlet is mounted at the bottom of said housing.

12. The apparatus of claim 1 which further comprises a recirculating duct extending from said outlet for coarse particles to said inlet.

13. The apparatus of claim 12 wherein a container for said mixture of fine and coarse particles is connected with said recirculating duct.
14. The apparatus of claim 1 which further comprises a baffle in said housing for directing said mixture of fine and coarse particles to said screen elements.

15. An apparatus for continuously separating a mixture of fine and coarse particles comprising:
   (a) a hollow housing having a tubesheet located therein, said tubesheet separating said housing into a fines outlet chamber and a pre-screen chamber;
   (b) a plurality of Venturi tubes mounted on said tubesheet;
   (c) a plurality of screen elements mounted on said Venturi tubes;
   (d) means located in said fines outlet chamber for introducing a pulse of a compressed gas through said Venturi tubes to the screen elements;
   (e) an inlet for introducing air and said mixture of fine and coarse particles to said pre-screen chamber mounted in said housing;
   (f) an outlet for coarse particles mounted on said housing and communicating with said pre-screen chamber; and
   (g) an outlet for fine particles mounted in said housing and communicating with said fines outlet chamber.

16. The apparatus of claim 15 where the tubesheet is tilted at an acute angle from the horizontal.

17. The apparatus of claim 16 where the screen elements are at an angle to the horizontal.

18. The apparatus of claim 16 where the fines outlet chamber has a bottom wall at an angle to the horizontal and the prescreen chamber is above the tubesheet.