SECTION B — PERFORMING OPERATIONS; TRANSPORTING

B07 SEPARATING SOLIDS FROM SOLIDS; SORTING

B07B SEPARATING SOLIDS FROM SOLIDS BY SIEVING, SCREENING, OR SIFTING OR BY USING GAS CURRENTS; OTHER SEPARATING BY DRY METHODS APPLICABLE TO BULK MATERIAL, e.g. LOOSE ARTICLES FIT TO BE HANDLED LIKE BULK MATERIAL (wet separating processes, sorting by processes using fluent material in the same way as liquid B03; combinations of dry separating apparatus with wet separating apparatus B03B; using liquids B03B, B03D; sorting by magnetic or electrostatic separation of solid materials from solid materials or fluids, separation by high voltage electric fields B03C; centrifuges or vortex apparatus for carrying out physical processes B04; hand sorting, postal sorting, sorting by switching or other devices actuated in response to detection or measurement of some feature of articles or samples of material B07C)

Note(s)

This subclass covers:

- any sorting or grading of bulk material or loose articles fit to be handled like bulk material which results automatically from the construction of the apparatus and properties of the material, e.g. by a trap opening under an object of a certain minimum weight, by an aperture of graduated size;
- sorting of articles in so far as the same conditions apply, e.g. sorting of timber by passing it over successively longer openings; the articles may or may not be orientated for the purpose of sorting.

Subclass index

SEPARATING SOLIDS FROM SOLIDS USING NETWORKS, GRATINGS, OR GRIDS.....1/00
SEPARATING SOLIDS FROM SOLIDS USING GAS CURRENTS.....4/00, 7/00, 9/00, 11/00
OTHER SEPARATING; COMBINATIONS.....13/00, 15/00

1/00 Sieving, screening, sifting, or sorting solid materials using networks, gratings, grids, or the like

1/02 • Hand screens
1/04 • Stationary flat screens
1/06 • Cone or disc shaped screens
1/08 • Screens rotating within their own plane
1/10 • Screens in the form of endless moving bands
1/12 • Apparatus having only parallel elements
1/14 • • Roller screens
1/15 • • • using corrugated, grooved or ribbed rollers **[2]**
1/16 • • the elements being movable and in other than roller form
1/18 • Drum screens
1/20 • • Stationary drums with moving interior agitators
1/22 • • Revolving drums
1/24 • • • with fixed or moving interior agitators
1/26 • • • with additional axial or radial movement of the drum
1/28 • Moving screens not otherwise provided for, e.g. swinging, reciprocating, rocking, tilting, or wobbling screens

Note(s)

Group B07B 1/40 takes precedence over groups B07B 1/30-B07B 1/38.

1/30 • • jigging or moving to-and-fro in or approximately in the direction of conveyance
1/32 • • jigging or moving to-and-fro within their own plane transverse to the direction of conveyance
1/34 • • jigging or moving to-and-fro perpendicularly or approximately perpendicularly to the plane of the screen
1/36 • • jigging or moving to-and-fro in more than one direction
1/38 • • oscillating in a circular arc in their own plane; Plansifters
1/40 • • Resonant vibration screens
1/42 • Drive mechanisms, regulating or controlling devices, or balancing devices, specially adapted for screens
1/44 • • Balancing devices
1/46 • Constructional details of screens in general; Cleaning or heating of screens
1/48 • • Stretching devices for screens
1/49 • • • stretching more than one screen or screen section by the same or different stretching means **[2]**
1/50 • • Cleaning
1/52 • • • with brushes or scrapers
1/54 • • • with beating devices
1/55 • • • with fluid jets **[3]**
1/56 • • Heated screens
1/58 • • • heated by heated fluid
1/60 • • • heated by flame heating
1/62 • • • heated by direct electric heating

Separating solids from solids using gas currents

4/00 Separating solids from solids by subjecting their mixture to gas currents (using tables or jigs B03B)

4/02 • while the mixtures fall
4/04 • • in cascades
4/06 • • using revolving drums
4/08 • while the mixtures are supported by sieves, screens, or like mechanical elements

7/00 Selective separation of solid materials carried by, or dispersed in, gas currents (sieves or filters for separating dispersed particles from gases or vapours B01D)
7/01 • using gravity
7/02 • by reversal of direction of flow
7/04 • by impingement against baffle separators
7/06 • by impingement against sieves
7/08 • using centrifugal force
7/083 • • generated by rotating vanes, discs, drums, or brushes
7/086 • • generated by the winding course of the gas stream
7/10 • • having air recirculating within the apparatus
7/12 • with pulsating air currents

9/00 Combinations of apparatus for screening or sifting or for separating solids from solids using gas currents; General arrangement of plant, e.g. flow sheets
9/02 • Combinations of similar or different apparatus for separating solids from solids using gas currents

11/00 Arrangement of accessories in apparatus for separating solids from solids using gas currents
11/02 • Arrangement of air or material conditioning accessories
11/04 • Control arrangements
11/06 • Feeding or discharging arrangements
11/08 • Cleaning arrangements

<u>Other separating, e.g. grading, resulting automatically from the construction of the apparatus used and properties of the material concerned; Combinations</u>

13/00 Grading or sorting solid materials by dry methods, not otherwise provided for; Sorting articles otherwise than by indirectly controlled devices
13/02 • Apparatus for grading using pockets for taking out particles from aggregates
13/04 • according to size
13/05 • • using material mover cooperating with retainer, deflector or discharger (B07B 13/065-B07B 13/075 take precedence) **[3]**
13/065 • • Apparatus for grading or sorting using divergent conveyor belts or cables **[3]**
13/07 • • Apparatus in which aggregates or articles are moved along or past openings which increase in size in the direction of movement **[3]**
13/075 • • Apparatus comprising moving article-receiving openings, the size of which varies as they move **[3]**
13/08 • according to weight (B07B 13/10 takes precedence)
13/10 • using momentum effects
13/11 • • involving travel of particles over surfaces which separate by centrifugal force or by relative friction between particles and such surfaces, e.g. helical sorters **[2]**
13/14 • Details or accessories
13/16 • • Feed or discharge arrangements
13/18 • • Control

15/00 Combinations of apparatus for separating solids from solids by dry methods applicable to bulk material, e.g. loose articles fit to be handled like bulk material (using gas currents B07B 9/00)