

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	1/34	• • jiggling or moving to-and-fro perpendicularly or approximately perpendicularly to the plane of the screen
1/02 • Hand screens	1/36	• • jiggling or moving to-and-fro in more than one direction
1/04 • Stationary flat screens	1/38	• • oscillating in a circular arc in their own plane; Plansifters
1/06 • Cone or disc shaped screens	1/40	• • Resonant vibration screens
1/08 • Screens rotating within their own plane	1/42	• Drive mechanisms, regulating or controlling devices, or balancing devices, specially adapted for screens
1/10 • Screens in the form of endless moving bands	1/44	• • Balancing devices
1/12 • Apparatus having only parallel elements	1/46	• Constructional details of screens in general; Cleaning or heating of screens
1/14 • • Roller screens	1/48	• • Stretching devices for screens
1/15 • • • using corrugated, grooved or ribbed rollers [2]	1/49	• • • stretching more than one screen or screen section by the same or different stretching means [2]
1/16 • • the elements being movable and in other than roller form	1/50	• • Cleaning
1/18 • Drum screens	1/52	• • • with brushes or scrapers
1/20 • • Stationary drums with moving interior agitators	1/54	• • • with beating devices
1/22 • • Revolving drums	1/55	• • • with fluid jets [3]
1/24 • • • with fixed or moving interior agitators	1/56	• • Heated screens
1/26 • • • with additional axial or radial movement of the drum	1/58	• • • heated by heated fluid
1/28 • Moving screens not otherwise provided for, e.g. swinging, reciprocating, rocking, tilting, or wobbling screens	1/60	• • • heated by flame heating
	1/62	• • • heated by direct electric heating
<u>Note(s)</u>		
Group B07B 1/40 takes precedence over groups B07B 1/30-B07B 1/38.		
1/30 • • jiggling or moving to-and-fro in or approximately in the direction of conveyance		
1/32 • • jiggling or moving to-and-fro within their own plane transverse to the direction of conveyance		
		<u>Separating solids from solids using gas currents</u>
	4/00	Separating solids from solids by subjecting their mixture to gas currents (using tables or jigs B03B)

B07B

- 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

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

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 conveyer 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)

B07C POSTAL SORTING; SORTING INDIVIDUAL ARTICLES, OR BULK MATERIAL FIT TO BE SORTED PIECE-MEAL, e.g. BY PICKING (specially adapted for a specific purpose covered by another class, see the relevant place, e.g. A43D 33/06, B23Q 7/12)

Note(s)

This subclass covers sorting of materials or articles by hand or by devices actuated, manually or automatically, as a result of inspection or of detection or measurement of some feature of the material or articles.

Subclass index

SORTING CHARACTERISED BY THE METHOD.....5/00, 7/00, 99/00

SORTING ACCORDING TO DESTINATION.....1/00, 3/00

Postal sorting: Similar sorting of documents, e.g. cheques

1/00 **Measures preceding sorting of mail or documents according to destination**

- 1/02 • Forming articles into a stream; Arranging articles in a stream, e.g. spacing, orientating
- 1/04 • • Forming a stream from a bulk; Regulating the stream, e.g. spacing the articles
- 1/06 • • Orientating; Aligning
- 1/10 • Sorting according to size or flexibility
- 1/12 • • Separating letters from parcels
- 1/14 • • Sorting according to length or width
- 1/16 • • Sorting according to thickness or stiffness

- 1/18 • Orientating articles other than in a stream
- 1/20 • Sorting according to orientation, e.g. according to position of stamp

3/00 **Sorting of mail or documents according to destination**

- 3/02 • Apparatus characterised by the means used for distribution
- 3/04 • • Drum-type sorting machines
- 3/06 • • Linear sorting machines in which articles are removed from a stream at selected points
- 3/08 • • using arrangements of conveyers

- 3/10 • Apparatus characterised by the means used for detection of the destination (methods or arrangements for reading and recognising printed or written characters or geometric figures G06K 9/00)
- 3/12 • • using electric or electronic detecting means (B07C 3/14 takes precedence)
- 3/14 • • using light-responsive detecting means
- 3/16 • • using magnetic detecting means
- 3/18 • Devices or arrangements for indicating destination, e.g. by code marks
- 3/20 • Arrangements for facilitating the visual reading of addresses, e.g. display arrangements
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- 5/00 Sorting according to a characteristic or feature of the articles or material being sorted, e.g. by control effected by devices which detect or measure such characteristic or feature; Sorting by manually actuated devices, e.g. switches** (sorting by hand only B07C 7/00; separating solids from solids by sieving, screening, or sifting or by using gas currents or other separating by dry methods applicable to bulk material B07B; sorting of coins G07D) [3]
- 5/02 • Measures preceding sorting, e.g. arranging articles in a stream, orientating
- 5/04 • Sorting according to size
- 5/06 • • measured mechanically
- 5/07 • • • by caliper using relatively moving article-engaging means, e.g. clamps [2]
- 5/08 • • measured electrically or electronically (B07C 5/10 takes precedence)
- 5/10 • • measured by light-responsive means
- 5/12 • • characterised by the application to particular articles, not otherwise provided for (sorting eggs A01K 43/00)
- 5/14 • • • Sorting timber or logs
- 5/16 • Sorting according to weight (sorting eggs A01K 43/00; weighing apparatus *per se* G01G)
- 5/18 • • using a single stationary weighing mechanism
- 5/20 • • • for separating articles of less than a predetermined weight from those of more than that weight
- 5/22 • • using a plurality of stationary weighing mechanisms
- 5/24 • • using moving weighing mechanisms, e.g. moving along a circular path
- 5/26 • • • wherein the counterbalancing effect of the weighing mechanisms is varied during such movement
- 5/28 • • using electrical control means
- 5/30 • • with associated counting means
- 5/32 • • with associated check-weighing means
- 5/34 • Sorting according to other particular properties
- 5/342 • • according to optical properties, e.g. colour
- 5/344 • • according to electric or electromagnetic properties
- 5/346 • • according to radioactive properties
- 5/36 • Sorting apparatus characterised by the means used for distribution
- 5/38 • • Collecting or arranging articles in groups
- 7/00 Sorting by hand only**
- 7/02 • Compartmented furniture, e.g. pigeon-holes (storage racks B65G)
- 7/04 • Apparatus or accessories for hand picking
- 99/00 Subject matter not provided for in other groups of this subclass [2009.01]**