

# CPC COOPERATIVE PATENT CLASSIFICATION

## B PERFORMING OPERATIONS; TRANSPORTING (NOTES omitted)

### SEPARATING; MIXING

#### B07 SEPARATING SOLIDS FROM SOLIDS; SORTING

**B07B SEPARATING SOLIDS FROM SOLIDS BY SIEVING, SCREENING, SIFTING OR BY USING GAS CURRENTS; SEPARATING BY OTHER 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

In this subclass any sorting or grading of bulk material or loose articles fit to be handled like bulk material 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 is included 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.

#### WARNINGS

- The following IPC groups are not in the CPC scheme. The subject matter for these IPC groups is classified in the following CPC groups:  
[B07B 1/32](#) covered by [B07B 1/30](#)
- In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

|             |   |       |   |
|-------------|---|-------|---|
| <b>1/00</b> | <b>Sieving, screening, sifting, or sorting solid materials using networks, gratings, grids, or the like</b> <a href="#">{(ash-sifters for domestic stoves or ranges F24B 15/007)}</a> | 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   |
| 1/005       | . <a href="#">{Transportable screening plants}</a>  |       |   |
| 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  |       |   |
| 1/145       | . . . <a href="#">{the material to be screened moving along the axis of the parallel elements}</a>  | 1/282 | . . <a href="#">{their jiggling movement being a closed or open curvilinear path in a plane perpendicular to the plane of the screen and parallel or transverse to the direction of conveyance}</a> |
| 1/15        | . . . using corrugated, grooved or ribbed rollers   |       |   |
| 1/155       | . . . . <a href="#">{the rollers having a star shaped cross section}</a>  | 1/284 | . . <a href="#">{with unbalanced weights}</a>   |
| 1/16        | . . the elements being movable and in other than roller form  | 1/286 | . . <a href="#">{with excentric shafts}</a>   |
| 1/18        | . Drum screens  | 1/288 | . . <a href="#">{Tumbling screens}</a>  |
| 1/185       | . . <a href="#">{provided with exchangeable sieve panels}</a>   | 1/30  | . . jiggling or moving to-and-fro <a href="#">{within their own plane}</a> in or approximately in <a href="#">{or transverse to}</a> the direction of conveyance                                    |
| 1/20        | . . Stationary drums with moving interior agitators   |       |   |
| 1/22        | . . Revolving drums   |       |   |

#### NOTE

Group [B07B 1/40](#) takes precedence over groups [B07B 1/30](#) - [B07B 1/38](#).

[{This Note corresponds to IPC Note \(1\) relating to \[B07B 1/30\]\(#\) - \[B07B 1/40\]\(#\).}](#)

- 1/34 . . jiggling or moving to-and-fro perpendicularly or approximately perpendicularly to the plane of the screen
- 1/343 . . . {with mechanical drive elements other than electromagnets}
- 1/346 . . . {with electromagnets}
- 1/36 . . jiggling 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
- 1/4609 . . {constructional details of screening surfaces or meshes}
- 1/4618 . . . {Manufacturing of screening surfaces}
- 1/4627 . . . {Repairing of screening surfaces}
- 1/4636 . . . {Regulation of screen apertures}
- 1/4645 . . . {Screening surfaces built up of modular elements}
- 1/4654 . . . {Corrugated Screening surfaces}
- 1/4663 . . . {Multi-layer screening surfaces}
- 1/4672 . . . {Woven meshes}
- 1/4681 . . . {Meshes of intersecting, non-woven, elements}
- 1/469 . . . {Perforated sheet-like material}
- 1/48 . . Stretching devices for screens
- 1/485 . . . {Devices for alternately stretching and sagging screening surfaces}
- 1/49 . . . stretching more than one screen or screen section by the same or different stretching means
- 1/50 . . Cleaning
- 1/52 . . . with brushes or scrapers
- 1/522 . . . . {with brushes}
- 1/524 . . . . . {the brushes being rotating}
- 1/526 . . . . . {with scrapers}
- 1/528 . . . . . {the scrapers being rotating}
- 1/54 . . . with beating devices
- 1/55 . . . with fluid jets
- 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 4/00](#))**
- 4/02 . while the mixtures fall
- 4/025 . . {the material being slingered or fled out horizontally before falling, e.g. by dispersing elements}
- 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 ([centrifuges B04B](#); [cyclones B04C](#))
- 7/083 . . generated by rotating vanes, discs, drums, or brushes
- 7/086 . . generated by the winding course of the gas stream
- 7/0865 . . . {using the coanda effect of the moving 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 ([grading eggs A01K 43/04](#))**
- 13/003 . {Separation of articles by differences in their geometrical form or by difference in their physical properties, e.g. elasticity, compressibility, hardness}
- 13/006 . {Sorting molded pieces and runners}
- 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)
- 13/065 . . Apparatus for grading or sorting using divergent conveyor belts or cables
- 13/07 . . Apparatus in which aggregates or articles are moved along or past openings which increase in size in the direction of movement
- 13/072 . . . {the openings being rollers with a divergent axis and the material moving substantially along the rollers axis}
- 13/075 . . Apparatus comprising moving article - receiving openings, the size of which varies as they move
- 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
- 13/113
  - . . . {shaking tables (for wet separating [B03B 5/04](#); tables with water impulse [B03B 5/70](#); pneumatic tables [B03B 4/02](#); moving screens [B07B 1/28](#))}
- 13/116
  - . . . {stratification of dry granular material on a continuously travelling surface, e.g. belt conveyor (vanner for wet separation [B03B 5/08](#))}
- 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 wet methods [B03B 7/00](#); using gas currents [B07B 9/00](#))**

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**2201/00** Details applicable to machines for screening using sieves or gratings

- 2201/02
  - . Fastening means for fastening screens to their frames which do not stretch or sag the screening surfaces
- 2201/04
  - . Multiple deck screening devices comprising one or more superimposed screens

**2220/00** Type of materials being separated

- 2220/02
  - . Plastics
- 2220/04
  - . Batteries

**2230/00** Specific aspects relating to the whole [B07B](#) subclass

- 2230/01
  - . Wet separation
- 2230/04
  - . The screen or the screened materials being subjected to ultrasonic vibration