B65 CONVEYING, PACKING, STORING, HANDLING THIN OR FILAMENTARY MATERIAL

B65B MACHINES, APPARATUS OR DEVICES FOR, OR METHODS OF, PACKAGING ARTICLES OR MATERIALS:
UNPACKING (bundling and pressing devices for cigars A24C 1/44; paper-bag holders as shop or office accessories A47F 13/08; apparatus for coating, e.g. by dipping, B05C; devices for tensioning and securing binders adapted to be supported by the article or articles to be bound B25B; nailing or stapling devices B25C, B27F; inserting documents in envelopes and closing the latter B43M 3/00, B43M 5/00; labelling B65C; wrappers, containers or other packaging elements, e.g. binders, closures, protective caps, B65D; transport or storage devices B65G; devices for handling sheets or webs of interest apart from their application in packaging machines B65H; applying closure members to bottles, jars or similar containers B67B; hand- or power-operated devices not attached to, or not incorporated in, containers or container closures for opening closed containers B67B 7/00; packaging of matches C06F; wrapping sugar during manufacture C13H; packaging of ammunition or explosive charges F42B 39/00; making containers or receptacles, see the appropriate subclasses)

Notes

(1) This subclass does not cover:
– operations of the types mentioned in Note (2) (a) to (f), employed in the manufacture of articles other than packages, which are covered by other appropriate subclasses, e.g. making confectionery products by casting in moulds formed by wrappers A23G, filling ammunition, e.g. cartridges, F42B 33/02;
– methods of packaging, which are wholly characterised by the form of the package produced, or the form of the container or packaging-element used, which are covered by B65D.

(2) In this subclass, the following terms are used with the meanings indicated:
– “packaging” includes mainly the following operations:
  (a) filling portable containers or receptacles with materials or small articles to form packages;
  (b) inserting articles or groups of articles into containers or receptacles;
  (c) closing filled containers or receptacles otherwise than by metal-, glass-, or wood-working operations;
  (d) enclosing, or partially enclosing, articles or quantities of material, in sheets, strips, blanks, webs, or tubes of thin flexible material, e.g. wrapping;
  (e) bundling articles, e.g. holding articles together in groups by applying string or wire;
  (f) attaching articles to cards, sheets, or webs.
– “package” means the end product of a packaging operation, e.g. a filled and closed container, an article enclosed in a wrapper, a group of articles held together by string or wire, a crate of bottles.
– “materials” includes matter, or masses of articles, which are to be packaged, as distinct from separate or individual articles.

Subclass Index

METHODS AND APPARATUS FOR PACKAGING

Of general application
in individual receptacles: for materials; for objects; closing after filling .............................................. 1/00, 3/00; 5/00; 7/00
enclosing successively in webs; wrapping; by attachment to carriers .............................................. 9/00; 11/00; 15/00
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For particular objects or materials;
under particular conditions
for fragile rod-shaped or tubular objects; for bottles; for other articles presenting special problems .............................................. 19/00; 21/00; 23/00; 25/00
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DETAILS OF APPARATUS AND AUXILIARY DEVICES OR OPERATIONS, NOT OTHERWISE PROVIDED FOR

Relating to contents
supply arrangements;
introducing into containers or wrappers; preservation; purification .............................................. 35/00, 37/00; 39/00; 55/00
other devices or methods ................................ 63/00
Relating to containers
supplying container-forming material; forming containers; forming pockets; holding wrappers during wrapping .............................................. 41/00; 43/00; 47/00; 45/00
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Relating to apparatus: control, safety; adaptation to different requirements; other details .............................................. 57/00; 59/00; 65/00
PACKAGING BY HAND .............................................. 67/00
UNPACKING NOT OTHERWISE PROVIDED FOR .............................................. 69/00
Machines, apparatus, or methods of general application for packaging articles or materials

1/00 Packaging fluent solid material, e.g. powders, granular or loose fibrous material, loose masses of small articles, in individual containers or receptacles, e.g. bags, sacks, boxes, cartons, cans, jars (under special atmospheric or gaseous conditions B65B 31/00)

1/02 Machines characterised by the incorporation of means for making the containers or receptacles (from flat, folded, or tubular webs of flexible sheet material B65B 9/00; making containers or receptacles of interest apart from this application, see the appropriate subclasses)

1/04 Methods of, or means for, filling the material into the containers or receptacles

1/06 . . . by gravity flow
1/08 . . . by vibratory feeders
1/10 . . . by rotary feeders
1/12 . . . of screw type
1/14 . . . of centrifugal type
1/16 . . . by pneumatic means, e.g. by suction
1/18 . . . for filling valve-bags
1/20 . Reducing volume of filled material
1/22 . . . by vibration
1/24 . . . by mechanical compression
1/26 . . . by pneumatic means, e.g. suction
1/28 . Controlling escape of air or dust from containers or receptacles during filling (cleaning of, or removing dust from, containers, wrappers, or packages B65B 55/24)

1/30 Devices or methods for controlling or determining the quantity or quality of the material fed or filled

1/32 . . . by weighing (check-weighing of filled containers or receptacles B65B 1/46; weighing in general G01G)
1/34 . . . Adjusting weight by trickle feed
1/36 . . . by volumetric devices or methods (checking volume of filled material B65B 1/48; volumetric measurement in general G01F)
1/38 . . . by pistons co-operating with measuring chambers
1/40 . . . by timing of filling operations
1/42 . . . and arresting flow by cut-off means
1/44 . . . Checking density of material to be filled
1/46 . . . Check-weighing of filled containers or receptacles (check-weighing in general G01G)
1/48 . . . Checking volume of filled material

3/00 Packaging plastic material, semiliquids, liquids, or mixed solids and liquids, in individual containers or receptacles, e.g. bags, sacks, boxes, cartons, cans, jars (packaging under special atmospheric or gaseous conditions, adding propellants to aerosol containers B65B 31/00; filling bottles or other containers with liquids or semi-liquids by bottling machines B67C; filling of gas bottles at high pressure for storing gases F17C)

3/02 Machines characterised by the incorporation of means for making the containers or receptacles (making containers or receptacles of interest apart from this application, see the appropriate subclasses)

3/04 Methods of, or means for, filling the material into the containers or receptacles

3/06 . . . by gravity flow
3/08 . . . by screw-type feeders
3/10 . . . by application of pressure to material (by screw-type feeders B65B 3/08)

3/12 . . . mechanically, e.g. by pistons or pumps
3/14 . . . pneumatically
3/16 . . . for filling collapsible tubes (for filling valve bags B65B 3/17)
3/17 . . . for filling valve bags
3/18 . Controlling escape of air from containers or receptacles during filling
3/22 . Defoaming liquids in connection with filling
3/24 . Topping-up containers or receptacles to ensure complete filling
3/26 . Methods or devices for controlling the quantity of the material fed or filled
3/28 . . . by weighing (in general G01G)
3/30 . . . by volumetric measurement (in general G01F)
3/32 . . . by pistons co-operating with measuring chambers
3/34 . . . by timing of filling operations
3/36 . . . and arresting flow by cut-off means

5/00 Packaging individual articles in containers or receptacles, e.g. bags, sacks, boxes, cartons, cans, jars

5/02 Machines characterised by incorporation of means for making the containers or receptacles (from flat, folded, or tubular webs of flexible sheet material B65B 9/00; making containers or receptacles of interest apart from this application, see the appropriate subclasses)

5/04 Packaging single articles
5/06 Packaging groups of articles, the groups being treated as single articles
5/08 Packaging groups of articles, the articles being individually guided or for transfer to the containers or receptacles

5/10 Filling containers or receptacles progressively or in stages by introducing successive articles, or layers of articles

5/12 Introducing successive articles, e.g. confectionery products, of different shape or size in predetermined positions

7/00 Closing containers or receptacles after filling (combinations of container-closing apparatus with apparatus for filling containers B65B 1/00, B65B 3/00, B65B 5/00; under special atmospheric or gaseous conditions B65B 31/00; devices for, or methods of, sealing or securing package folds or closures, e.g. twist-off caps, B65B 51/00; shrinking wrappers, containers, container covers or container cover securing members during or after packaging B65B 53/00)

7/01 Machines characterised by incorporation of means for making the closures before applying (making closures, of interest apart from this application, see the relevant subclass) [6]

7/02 Closing containers or receptacles deformed by, or taking-up shape of, contents, e.g. bags, sacks
7/04 . . . by tucking-in mouth portion to form two flaps and subsequently folding-down
7/06 . . . by collapsing mouth portion, e.g. to form a single flap
7/08 . . . and folding
7/10 . . . and rolling-in
7/12 . . . and twisting
7/14 Closing collapsible or resilient tubes, e.g. for toothpaste, for lighter fuel
7/16 Closing semi-rigid or rigid containers or receptacles not deformed by, or not taking-up shape of, contents, e.g. boxes, cartons (closing cans by metal-working operations B21D 51/26)
7/18 . . by collapsing mouth portion and subsequently folding-down or securing flaps
7/20 . . by folding-down preformed flaps
7/22 . . . and inserting flap portions between contents and wall
7/24 . . . and interengaging tongue-and-slot closures
7/26 . . . by closing hinged lids
7/28 . . . by applying separate preformed closures, e.g. lids, covers

9/00 Enclosing successive articles, or quantities of material, e.g. liquids or semiliquids, in flat, folded, or tubular webs of flexible sheet material; Subdividing filled flexible tubes to form packages

9/02 . Enclosing articles, or quantities of material, between opposed webs
9/04 . . one or both webs being formed with pockets for the reception of the articles, or of the quantities of material
9/06 . Enclosing articles, or quantities of material, in a longitudinally-folded web, or in a web folded into a tube about the articles or quantities of material placed upon it
9/08 . . in a web folded and sealed transversely to form pockets which are subsequently filled and then closed by sealing
9/10 . Enclosing articles, or quantities of material, in preformed tubular webs, or in webs formed into tubes around filling nozzles, e.g. extruded tubular webs (sausage making A22C 11/00)
9/12 . . Subdividing filled tubes to form two or more packages by sealing or securing involving displacement of contents
9/13 . . the preformed tubular webs being supplied in a flattened state [3]
9/14 . . Devices for distending the tubular webs [3]
9/15 . . the preformed tubular webs being stored on filling nozzles [3]
9/20 . . the webs being formed into tubes in situ around the filling nozzles [3]
9/22 . . . Forming shoulders; Tube formers [3]
9/24 . . . the tubes being formed in situ by extrusion [3]

11/00 Wrapping, e.g. partially or wholly enclosing, articles, or quantities of material, in strips, sheets, or blanks, of flexible material (bundling articles by applying narrow strips or bands of flexible material B65B 13/00; devices for folding or bending wrappers around contents B65B 49/00; devices for gathering or twisting wrappers B65B 51/00)

11/02 Wrapping articles, or quantities of material, without changing their position during the wrapping operation, e.g. in moulds with hinged folders (by doubling a wrapper and securing its opposed free margins to enclose contents B65B 11/48; by disposing contents between two sheets and securing their opposed free margins B65B 11/50; covering or wrapping cores by winding webs, tapes, or filamentary material B65H 81/00)
11/04 . . the articles being rotated
11/06 Wrapping articles, or quantities of material, by conveying wrapper and contents in defined paths
11/08 . . . in a single straight path
11/10 . . . to fold the wrappers in tubular form about contents
11/12 . . . and then to form closing folds of similar form at opposite ends of the tube
11/14 . . . . the ends of the tube being subsequently twisted
11/16 . . . . to fold the wrappers in channel form about contents and then to close the ends of the channel by folding and finally the mouth of the channel by folding or twisting
11/18 . . . . in two or more straight paths
11/20 . . . . to fold the wrappers in tubular form about contents
11/22 . . . . and then to form closing folds of similar form at opposite ends of the tube
11/24 . . . . the ends of the tube being subsequently twisted
11/26 . . . . to fold the wrappers in channel form about contents and then to close the ends of the channel by folding and finally the mouth of the channel by folding or twisting
11/28 . . . . in a curved path, e.g. on rotary tables or turrets
11/30 . . . . to fold the wrappers in tubular form about contents
11/32 . . . . and then to form closing folds of similar form at opposite ends of the tube
11/34 . . . . the ends of the tube being subsequently twisted
11/36 . . . . to fold the wrappers in channel form about contents and then to close the ends of the channel by folding and finally the mouth of the channel by folding or twisting
11/38 . . . . in a combination of straight and curved paths
11/40 . . . . to fold the wrappers in tubular form about contents
11/42 . . . . and then to form closing folds of similar form at opposite ends of the tube
11/44 . . . . the ends of the tube being subsequently twisted
11/46 . . . . to fold the wrappers in channel form about contents and then to close the ends of the channel by folding and finally the mouth of the channel by folding or twisting
11/48 . . . . to fold a wrapper, e.g. a pocketed wrapper, and securing its opposed free margins to enclose contents
11/50 . . . Enclosing articles, or quantities of material, by disposing contents between two sheets, e.g. pocketed sheets, and securing their opposed free margins (apparatus or devices for forming pockets in or from sheets, blanks or webs B65B 47/00)
11/52 . . . one sheet being rendered plastic, e.g. by heating, and forced by fluid pressure, e.g. vacuum, into engagement with the other sheet and contents, e.g. skin-packaging
11/54 . . Wrapping by causing the wrapper to embrace one end and all sides of the contents, and closing the wrapper onto the opposite end by forming regular or irregular pleats
11/56 . . Rolling articles with wrappers along a supporting surface (for bottles B65B 21/26)
11/58 . . Applying two or more wrappers, e.g. in succession

13/00 Bundling articles (specially adapted for harvesting A01D 37/00; A01D 39/00; A01D 59/00, A01F 1/00; bundling particular articles presenting special problems using string, wire, or narrow tape or band B65B 27/00)
13/02 . Applying and securing binding material around articles or groups of articles, e.g. using strings, wires, strips, bands, or tapes (tying devices in baling presses A01F 15/14, B30B 9/30; applying reinforcing means to non-metal sleepers E01B 31/28) [3]
Machines, apparatus, or methods adapted for packaging operations

19/00 Packaging rod-shaped or tubular articles susceptible to damage by abrasion or pressure, e.g. cigarettes, cigars, macaroni, spaghetti, drinking straws, welding electrodes (final treatment of cigars or cigarettes after manufacture A24C 1/38, A24C 5/60)

19/02 . . . Packaging cigarettes
19/04 . . . Arranging, feeding, or orientating the cigarettes
19/06 . . . Turning individual cigarettes to present printed marks in desired position
19/08 . . . Positioning oval cigarettes in overlapped arrangement
19/10 . . . Arranging cigarettes in layers each comprising a predetermined number
19/12 . . . Inserting the cigarettes, or wrapped groups thereof, into preformed containers
19/14 . . . into pocket boxes, e.g. boxes of rectangular form closed at one end by a flap adapted to be inserted into a slot in the body
19/16 . . . . . . into boxes with two pockets
19/18 . . . . . . into drawer-and-shell type boxes or cartons
19/20 . . . . . . into boxes with hinged lids
19/22 . . . Wrapping the cigarettes; Packaging the cigarettes in containers formed by folding wrapping material around formers

19/24 . . . using hollow mandrels through which groups of cigarettes are fed
19/26 . . . Machines specially adapted for packaging cigars
19/28 . . . Control devices for cigarette or cigar packaging machines (of general application in packaging machines B65B 57/00)
19/30 . . . responsive to presence of faulty articles, e.g. incorrectly-filled cigarettes
19/32 . . . responsive to incorrect grouping of articles or to incorrect filling of packages
19/34 . . . Packaging other rod-shaped articles, e.g. sausages, macaroni, spaghetti, drinking straws, welding electrodes

21/00 Packaging or unpacking of bottles (bundling bottles B65B 27/04)

21/02 . . . into or from preformed containers, e.g. crates
21/04 . . . Arranging, assembling, feeding, or orientating the bottles prior to introduction into, or after removal from, containers
21/06 . . . . . . Forming groups of bottles
21/08 . . . . . . Introducing or removing single bottles, or groups of bottles, e.g. for progressive filling or emptying of containers
21/10 . . . . . . using gravity flow
21/12 . . . . . . using grippers engaging bottles, e.g. bottle necks (grippers in general B25J) [3]
21/14 . . . . . . Introducing or removing groups of bottles, for filling or emptying containers in one operation
21/16 . . . . . . using gravity flow
21/18 . . . . . . using grippers engaging bottles, e.g. bottle necks (grippers in general B25J) [3]
21/20 . . . . . . with means for varying spacing of bottles
21/22 . . . . . . by inverting and raising or lowering the container relative to bottles
21/24 . . . . . . Enclosing bottles in wrappers
21/26 . . . . . . Applying wrappers to individual bottles by operations involving rotation or rolling of the bottles (to articles in general B65B 11/56)

23/00 Packaging fragile or shock-sensitive articles other than bottles: Unpacking eggs (embedding articles in shock-absorbing media B65B 55/20)

23/02 . . . Packaging or unpacking eggs
23/04 . . . Erecting egg trays or cartons from collapsed blanks
23/06 . . . Arranging, feeding, or orientating the eggs to be packed; Removing eggs from trays or cartons
23/08 . . . . . . using grippers (testing, sorting, or cleaning eggs A01K 43/00; egg grippers for cooking purposes A47J 29/06)
23/10 . . . Packaging biscuits
23/12 . . . . . . Arranging, feeding, or orientating the biscuits to be packaged (in connection with baking A21C 15/00)
23/14 . . . . . . Forming groups of biscuits
23/16 . . . . . . Inserting the biscuits, or wrapped groups thereof, into preformed containers
23/18 . . . . . . Wrapping individual biscuits, or groups of biscuits
23/20 . . . . . . Packaging plate glass, tiles, or shingles
23/22 . . . . . . Packaging glass ampoules, lamp bulbs, radio valves or tubes, or the like

25/00 Packaging other articles presenting special problems (bundling B65B 27/00)

25/02 . . . Packaging agricultural or horticultural products
Packaging articles or materials under special atmospheric or gaseous conditions; Adding propellants to aerosol containers

31/06 . . . the nozzle being arranged for insertion into, and withdrawal from, the mouth of a filled container and operating in conjunction with means for sealing the container mouth
31/08 . . . the nozzle being adapted to pierce the container or wrapper
31/10 . . . Adding propellants in solid form to aerosol containers

Packaging articles by applying removable, e.g. strippable, coatings (B65B 11/52 takes precedence; applying liquids or other fluent materials to surfaces in general B05; wrapping cores by winding B65H 81/00) [3]
33/02 . Packaging small articles, e.g. spare parts for machines or engines
33/04 . Packaging large articles, e.g. complete machines, aircraft
33/06 . . . the coating being applied to a supporting layer or framework of sheets or strips of thin flexible material, e.g. cocoon packaging

Details of auxiliary devices applied to, or auxiliary measures taken in, machines, apparatus, or methods, not otherwise provided for

35/00 Supplying, feeding, arranging, or orientating articles to be packaged (cigarettes B65B 19/04; bottles B65B 21/04; eggs B65B 23/06; biscuits B65B 23/12; if not restricted to packaging machines B07C, B65G, B65H)
35/02 . Supply magazines
35/04 . . . with buffer storage devices
35/06 . Separating single articles from loose masses of articles
35/08 . . . using pocketed conveyors
35/10 . Feeding, e.g. conveying, single articles (orientating B65B 35/56)
35/12 . . . by gravity
35/14 . . . by agitators or vibrators
35/16 . . . by grippers
35/18 . . . . by suction-operated grippers
35/20 . . . by reciprocating or oscillatory pushers
35/22 . . . by roller-ways
35/24 . . . by endless belts or chains
35/26 . . . by rotary conveyers
35/28 . . . by pneumatic conveyers
35/30 . Arranging and feeding articles in groups (orientating B65B 35/56)
35/32 . . . by gravity
35/34 . . . by agitators or vibrators
35/36 . . . by grippers
35/38 . . . . by suction-operated grippers
35/40 . . . by reciprocating or oscillatory pushers
35/42 . . . by roller-ways
35/44 . . . by endless belts or chains
35/46 . . . by rotary conveyers
35/48 . . . by pneumatic conveyers
35/50 . Stacking one article, or group of articles, upon another before packaging
35/52 . . . . building-up the stack from the bottom
35/54 . . . . Feeding articles along multiple paths to a single packaging position
35/56 . . . Orientating, i.e. changing the attitude of, articles, e.g. of non-uniform cross-section
35/58 . . . Turning articles by positively-acting means, e.g. to present labelled portions in uppermost position
37/00 Supplying or feeding fluent-solid, plastic, or liquid material, or loose masses of small articles, to be packaged (methods of, or means for, filling individual containers with such materials or articles B65B 1/04, B65B 3/04)

37/02 . by gravity flow
37/04 . by vibratory feeders
37/06 . by pistons or pumps
37/08 . by rotary feeders
37/10 . of screw type
37/12 . of centrifugal type
37/14 . by pneumatic feeders
37/16 . Separating measured quantities from supply (in container-filling machines B65B 1/30, B65B 3/26)
37/18 . by weighing (in general G01G)
37/20 . by volume measurement (in general G01F)

39/00 Nozzles, funnels, or guides for introducing articles or materials into containers or wrappers (nozzles in general B05B; funnels in general B67C 11/00)

39/02 . Expandable or contractible nozzles, funnels, or guides
39/04 . having air-escape, or air-withdrawal, passages
39/06 . adapted to support containers or wrappers
39/08 . by means of clamps
39/10 . operating automatically
39/12 . movable towards, or away from, container or wrapper during filling or depositing
39/14 . movable with a moving container or wrapper during filling or depositing

41/00 Supplying or feeding container-forming sheets or wrapping material (in general B65H)

41/02 . Feeding sheets or wrapper blanks
41/04 . by grippers
41/06 . by suction-operated grippers
41/08 . by reciprocating or oscillating pushers
41/10 . by rollers
41/12 . Feeding webs from rolls
41/14 . by grippers
41/16 . by rollers
41/18 . Registering sheets, blanks, or webs

43/00 Forming, feeding, opening, or setting-up containers or receptacles in association with packaging (forming pockets in sheets, blanks, or webs, by pressing the material into forming dies or moving it through folding dies B65B 47/00)

43/02 . Forming flat bags from individual sheets or blanks
43/04 . Forming flat bags from webs
43/06 . from more than one web
43/08 . Forming three-dimensional containers from sheet material
43/10 . by folding the material
43/12 . Feeding flexible bags or carton blanks in flat or collapsed state; Feeding flat bags connected to form a series or chain
43/14 . Feeding individual bags or carton blanks from piles or magazines
43/16 . by grippers
43/18 . by suction-operated grippers
43/20 . by reciprocating or oscillating pushers
43/22 . by rollers
43/24 . Breaking creases to facilitate setting-up cartons
43/26 . Opening or distending bags; Opening, erecting, or setting-up boxes, cartons, or carton blanks
43/28 . by grippers co-operating with fixed supports
43/30 . by grippers engaging opposed walls, e.g. suction-operated
43/32 . by external pressure diagonally applied
43/34 . by internal pressure
43/36 . applied pneumatically
43/38 . Opening hinged lids
43/39 . Opening-out closure flaps clear of bag, box, or carton mouth
43/40 . Removing separate lids
43/41 . Opening drawer-and-shell cartons
43/42 . Feeding or positioning bags, boxes, or cartons in the distended, opened, or set-up state; Feeding preformed rigid containers, e.g. tins, capsules, glass tubes, glasses, to the packaging position; Locating containers or receptacles at the filling position (by means of filling nozzles B65B 39/00); Supporting containers or receptacles during the filling operation (by filling nozzles B65B 39/00)
43/44 . from supply magazines (B65B 43/46 to B65B 43/52 take precedence) [3]
43/46 . using grippers
43/48 . using reciprocating or oscillating pushers
43/50 . using rotary tables or turrets
43/52 . using roller-ways or endless conveyers
43/54 . Means for supporting containers or receptacles during the filling operation
43/56 . . movable stepwise to position container or receptacle for the reception of successive increments of contents
43/58 . . vertically movable
43/59 . . vertically movable (B65B 43/58 takes precedence) [3]
43/60 . . rotatable
43/62 . . about an axis located at the filling position, e.g. the axis of the container or receptacle

45/00 Apparatus or devices for supporting or holding wrappers during wrapping operation (filling nozzles, funnels, guides B65B 39/00)

47/00 Apparatus or devices for forming pockets or receptacles in or from sheets, blanks, or webs, comprising essentially a die into which the material is pressed or a folding die through which the material is moved

47/02 . with means for heating the material prior to forming
47/04 . by application of mechanical pressure
47/06 . using folding dies
47/08 . by application of fluid pressure
47/10 . by vacuum

49/00 Devices for folding or bending wrappers around contents

49/02 . Fixed or resiliently-mounted folders, e.g. non-driven rollers
49/04 . Ploughs or plates with inclined slots or opposed inclined edges
49/06 . Resilient folders, e.g. brushes, diaphragms
49/08 . Reciprocating or oscillating folders
49/10 . Folders movable in closed non-circular paths
49/12 . Rotary folders
49/14 . Folders forming part of, or attached to, conveyers for partially-wrapped articles
49/16 . Pneumatic means, e.g. air jets
### Devices for, or methods of, sealing or securing package folds or closures, e.g. twisted bag necks

- Applying adhesives or sealing liquids (activating adhesives by applying heat or pressure B65B 51/10)
- Applying separate sealing or securing members, e.g. clips (applying separate lids or covers B65B 7/28)
- Stapling
- Applying adhesive tape (adhesive tape dispensers B65H 35/07)
- Sewing or stitching
- Applying binding material, e.g. to twisted bag necks
- by deformation of the closure [6]
- Applying or generating heat or pressure or combinations thereof (B65B 51/09 takes precedence) [6]
- by resilient means, e.g. brushes
- by reciprocating or oscillating members
- by rotary members
- by endless bands or chains
- by fluid pressure acting directly on folds or on opposed surfaces, e.g. using hot-air jets (shrinking wrappers by heating B65B 53/02)
- by friction or ultrasonic or high-frequency electrical means
- to produce bead seals (combined with severing by heated wires or rods B65B 61/10)
- Devices specially adapted for producing transverse or longitudinal seams in webs or tubes
- Rollers for producing longitudinal and transverse seams simultaneously
- Devices, e.g. jaws, for applying pressure and heat successively, e.g. for subdividing filled tubes (for subdividing filled tubes involving displacement of contents B65B 9/12)
- Cooling, or cooling and pressing, package closures after heat-sealing

### Shrinking wrappers, containers, container covers or container cover securing members during or after packaging

- by heat
- supplied by liquids
- supplied by gases, e.g. hot-air jets

### Preserving, protecting, or purifying packages or package contents in association with packaging

- by packaging under special atmospheric or gaseous conditions B65B 31/00; devices for placing protecting sheets, plugs, or wads over contents B65B 61/22; if not restricted to packaging A23L, A61L)
- Sterilising, e.g. of complete packages
- Sterilising wrappers or receptacles prior to, or during, packaging
- by heat
- by irradiation
- by liquids or gases (B65B 55/06 takes precedence)
- Sterilising contents prior to, or during, packaging
- by heat
- by irradiation
- by liquids or gases (B65B 55/14 takes precedence)
- by adding materials intended to remove free oxygen or to develop inhibitor gases, e.g. vapour-phase inhibitors

### Embedding contents in shock-absorbing media, e.g. plastic foam, granular material

### Immersing contents in protective liquids

### Cleaning of, or removing dust from, containers, wrappers, or packaging

### Automatic control, checking, warning, or safety devices

- registering wrapping or container-forming material fed from rolls B65B 41/18; accident-prevention measures applicable for general use F16P; photoelectric cells H01J, H01L; such devices in general, see the relevant classes)
- responsive to absence, presence, abnormal feed, or misplacement of binding or wrapping material, containers, or packages
- and operating to control, or to stop, the feed of such material, containers, or packages
- and operating to control, or to stop, the feed of articles or material to be packaged
- and operating to stop, or to control the speed of, the machine as a whole
- responsive to absence, presence, abnormal feed, or misplacement of articles or materials to be packaged
- and operating to control, or stop, the feed of wrapping materials, containers, or packages
- and operating to control, or stop, the feed of articles or material to be packaged
- and operating to stop, or to control the speed of, the machine as a whole
- causing operation of audible or visible alarm signals
- Applications of counting devices for controlling the feed of articles (other applications B65B 65/08)

### Arrangements to enable machines to handle articles of different sizes, to produce packages of different sizes, to vary the contents of packages, or to give access for cleaning or maintenance purposes

- Arrangements to enable adjustments to be made while the machine is running (weight or volumetric adjustment of material to be packaged B65B 1/30, B65B 3/26)
- Machines constructed with readily-detachable units or assemblies, e.g. to facilitate maintenance

### Auxiliary devices, not otherwise provided for, for operating on sheets, blanks, webs, binding material, containers or packages

- for perforating, scoring, or applying code or date marks on material prior to packaging
- for severing webs, or for separating joined packages
- by cutting
- using rotary cutters
- using heated wires or cutters
- by tearing along perforations or lines of weakness
- for incorporating, or forming and incorporating, handles or suspension means in packages (attaching, or forming and attaching, string handles or tags to tea-bags B65B 29/04)
- Forming suspension apertures in packages
- for applying or incorporating package-opening or unpacking elements, e.g. tear-strips
- for adding cards, coupons, or other inserts to package contents (adding unpacking elements B65B 61/18; labelling B65C)
- for placing protecting sheets, plugs, or wads over contents, e.g. cotton-wool in bottles of pills
- for shaping or reshaping completed packages
63/00 Auxiliary devices, not otherwise provided for, for operating on articles or materials to be packaged

63/02 for compressing or compacting articles or materials prior to wrapping or insertion in containers or receptacles (tabletting or compressing of powders B30B 11/00)

63/04 for folding or winding articles, e.g. gloves, stockings (folding or winding webs or filamentary material in general B65H 45/00, B65H 54/00; folding textile articles in connection with laundering preparatory to packaging D06F 89/00)

63/06 for forming elongated hanks, e.g. of shoe laces

63/08 for heating or cooling articles or materials to facilitate packaging

65/00 Details peculiar to packaging machines and not otherwise provided for: Arrangements of such details

65/02 Driving gear

65/04 Mechanisms for converting a continuous rotary motion to intermittent rotary motion, e.g. Geneva drives

65/06 coated or treated with anti-friction or anti-sticking materials, e.g. polytetrafluoroethylene

65/08 Devices for counting or registering the number of articles handled, or the number of packages produced by the machine

67/00 Apparatus or devices facilitating manual packaging operations; Sack holders

67/02 Packaging of articles or materials in containers

67/04 Devices facilitating insertion of single articles, or groups or articles, into bags

67/06 Manually-operable devices for closing bag necks, by applying and securing lengths of string, wire, or tape

67/08 Wrapping of articles

67/10 Wrapping-tables

67/12 Sack holders, i.e. stands or frames with means for supporting sacks in the open condition to facilitate filling with articles or materials

69/00 Unpacking of articles or materials, not otherwise provided for

B65C LABELLING OR TAGGING MACHINES, APPARATUS, OR PROCESSES (nailing or stapling in general B25C, B27F; processes for applying decalcomanias B44C 1/16; applying labels for packaging purposes B65B; labels, name-plates G09F)

Note

In this subclass, the following term is used with the meaning indicated:

“labels” covers also decalcomanias, stamps or the like.

1/00 Labelling flat essentially-rigid surfaces (labelling of fabrics B65C 5/00)

1/02 Affixing labels to one flat surface of articles, e.g. of packages, of flat bands

1/04 Affixing labels, e.g. wrap-around labels, to two or more flat surfaces of a polyhedral article

3/00 Labelling other than flat surfaces (of fabrics B65C 5/00)

3/02 Affixing labels to elongated objects, e.g. wires, cables, bars, tubes

3/04 Applying bands or labels to cigars or cigarettes

3/06 Affixing labels to short rigid containers

3/08 to container bodies

3/10 the container being positioned for labelling with its centre-line horizontal

3/12 by rolling the labels onto cylindrical containers, e.g. bottles

3/14 the container being positioned for labelling with its centre-line vertical

3/16 by rolling the labels onto cylindrical containers, e.g. bottles

3/18 to container necks

3/20 to bottle closures (applying closures or capsules to bottles B67B)

3/22 Affixing metal foil coverings

3/24 Affixing labels indicating original state of bottle snap or screw closure

3/26 Affixing labels to non-rigid containers, e.g. bottles made of polythene, boxes to be inflated by internal air pressure prior to labelling

5/00 Labelling fabrics or comparable materials or articles with deformable surface, e.g. paper, fabric rolls, stockings, shoes (affixing labels to non-rigid containers B65C 3/26; by sewing D05B)

5/02 using adhesives

5/04 Thermo-activatable adhesives

5/06 using staples

7/00 Affixing tags (in combination with filling of tea bags B65B 29/04)

9/00 Details of labelling machines or apparatus

9/02 Devices for moving articles, e.g. containers, past labelling station

9/04 having means for rotating the articles

9/06 Devices for presenting articles in predetermined attitude or position at labelling station

9/08 Label feeding

9/10 Label magazines

9/12 Removing separate labels from stacks (for printing B41F)

9/14 by vacuum

9/16 by wetting devices

9/18 Label feeding from strips, e.g. from rolls

9/20 Gluing the labels or articles

9/22 by wetting, e.g. by applying liquid glue or a liquid to a dry glue coating

9/24 by heat

9/25 by thermo-activating the glue [2]

9/26 Devices for applying labels

9/28 Air-blast devices

9/30 Rollers
Co-operating rollers between which articles and labels are fed

- Flexible bands
- Wipers; Pressers
- Label cooling or drying
- Controls; Safety devices
- Label feed control
- by special means responsive to marks on labels or articles (feed control in wrapping B65B)
- Applying date marks, code marks, or the like, to the label during labelling (manually-controlled or operable apparatus having printing equipment B65C 11/02; ticket printing and issuing G07B 1/00)

CONTAINERS FOR STORAGE OR TRANSPORT OF ARTICLES OR MATERIALS, E.G. BAGS, BARRELS, BOTTLES, BOXES, CANS, CARTONS, CRATES, DRUMS, JARS, TANKS, HOPPERS, FORWARDING CONTAINERS; ACCESSORIES, CLOSURES, OR FITTINGS THEREOF; PACKAGING ELEMENTS; PACKAGES

This subclass is intended to be as comprehensive as possible, only excludes containers or packages of a nature clearly confined to a single other subclass, which are classified in that subclass.

In this subclass, groups B65D 5/00, B65D 27/00, B65D 30/00 or B65D 65/00 include constructional features of foldable or erectable container or wrapper blanks as well as the containers or wrappers formed by folding or erecting such blanks.

Containers, packaging elements or packages classified in group B65D 85/00, are also classified according to the constructional or functional features, if such features are of interest.

In this subclass, the following terms or expressions are used with the meanings indicated:

- "rigid or semi-rigid containers" includes:
  - containers not deformed by, or not taking-up the shape of, their contents;
  - containers adapted to be temporarily deformed to expel their contents;
  - pallets;
  - trays;
- "flexible containers" includes:
  - containers deformed by, or taking-up the shape of, their contents;
  - containers adapted to be permanently deformed to expel their contents;
- "packaging elements" includes:
  - elements, other than containers, for covering, protecting, stiffening, or holding together articles or materials to be stored or transported;
  - packaging materials of special type or form not provided for in other subclasses;
- "packages" includes:
  - combinations of containers or packaging elements with articles or materials to be stored or transported;
  - articles joined together for convenience of storage or transport;
  - "paper" includes materials, e.g. cardboard, plastic sheet materials, laminated materials, or metal foils, worked in a manner analogous to paper;
  - "large containers", in groups B65D 88/00 or B65D 90/00, means containers having about the size of containers used in container traffic, sometimes referred to as freight, forwarding or "ISO" (International Standardization Organization) containers, or larger containers.

Tamper-indicating means for containers or closures are classified in the group appropriate to the type of container or closure, e.g. B65D 5/43, B65D 5/54, B65D 17/00, B65D 27/30, B65D 27/34, B65D 33/34, B65D 41/32, B65D 47/36, B65D 49/12, B65D 51/20, B65D 55/06.
General kinds of rigid or semi-rigid containers (large containers B65D 88/00) [3]

1/00 Containers having bodies formed in one piece, e.g. by casting metallic material, by moulding plastics, by blowing vitreous material, by throwing ceramic material, by moulding pulped fibrous material, by deep-drawing operations performed on sheet material (by winding, bending, or folding paper B65D 3/00, B65D 5/00; specially constructed to be opened by cutting, piercing, or tearing of wall portions B65D 17/00; pallets B65D 19/00; details of bottles or of jars B65D 23/00; bundles of articles held together by packaging elements for convenience of storage or transport, e.g. portable segregating carriers for plural receptacles such as beer cans, pop bottles, B65D 71/00) [5]

1/02 Bottles or similar containers with necks or like restricted apertures, designed for pouring contents (thermally insulated containers B65D 81/38, A47J 41/00)

1/04 Multi-cavity bottles

1/06 with closable apertures at bottom

1/08 adapted to discharge drops (droppers B65D 47/18)

1/09 Ampoules (specially adapted for medical or pharmaceutical purposes A61J 1/06) [5]

1/10 Jars, e.g. for preserving foodstuffs

1/12 Cans, casks, barrels, or drums

1/14 characterised by shape

1/16 . . . of curved cross-section, e.g. cylindrical

1/18 . . . of polygonal cross-section

1/20 characterised by location or arrangement of filling or discharge apertures

1/22 Boxes or like containers with side walls of substantial depth for enclosing contents

1/24 with moulded compartments or partitions

1/26 Thin-walled containers, e.g. formed by deep-drawing operations

1/28 . . . formed of laminated material

1/30 . . . Groups of containers joined together end-to-end or side-by-side

1/32 Containers adapted to be temporarily deformed by external pressure to expel contents (containers with disinfecting linings A61L 2/00; liquid-sprayers B05B; oil cans F16N 3/00)

1/34 Trays or like shallow containers

1/36 . . . with moulded compartments or partitions

1/38 Baskets or like containers of skeleton or apertured construction

1/40 Details of walls (other container details B65D 23/00, B65D 25/00)

1/42 . . . Reinforcing or strengthening parts or members

1/44 . . . Corrugations

1/46 . . . Local reinforcements, e.g. adjacent closures

1/48 . . . Reinforcements of dissimilar materials, e.g. metal frames in plastic walls

3/00 Containers having bodies or peripheral walls of curved or partially-curved cross-section made by winding or bending paper without folding along defined lines (with end walls of different materials B65D 6/00, B65D 8/00)

3/02 . . . characterised by shape

3/04 . . . essentially cylindrical

3/06 . . . essentially conical or frusto-conical

3/08 . . . having a cross-section of varying shape, e.g. circular merging into square or rectangular

3/10 characterised by form of integral or permanently-secured end closure

3/12 . . . Flanged discs permanently secured, e.g. by adhesives, by heat-sealing

3/14 . . . Discs fitting within container end and secured by bending, rolling, or folding operations

3/16 . . . Discs without flanges engaging a groove in the container body

3/18 . . . and secured by rolling in the end of the body

3/20 . . . with end portion of body adapted to be closed, by flattening or folding operations, e.g. formed with crease lines or flaps

3/22 . . . with double walls; with walls incorporating air-chambers; with walls made of laminated material

3/24 . . . with several compartments

3/26 Opening arrangements or devices incorporated in, or attached to, containers
Containers of polygonal cross-section, e.g. boxes, cartons, trays, formed by folding or erecting one or more blanks made of paper (pallets B65D 19/00; bundles of articles held together by packaging elements for convenience of storage or transport, e.g. portable segregating carriers for plural receptacles such as beer cans, pop bottles, B65D 71/00; forming foldable or erectable blanks B31B) [5]

5/02 . by folding or erecting a single blank to form a tubular body with or without subsequent folding operations, or the addition of separate elements, to close the ends of the body (B65D 5/36 takes precedence)

5/04 . the tubular body having no end closures (shells of drawer-and-shell type containers B65D 5/38) with end-closing or contents-supporting elements formed by folding inwardly a wall extending from, and continuously around, an end of the tubular body

5/08 . with end closures formed by inward-folding of portions of body, e.g. flaps, interconnected by, or incorporating, gusset folds (by inward-folding of a wall extending continuously around an end of the body and incorporating gusset folds B65D 5/06) with end closures formed by inward-folding of self-locking flaps hinged to tubular body

5/10 . with end closures formed by inward-folding of portions of body, e.g. flaps, interconnected by, or incorporating, gusset folds (by inward-folding of a wall extending continuously around an end of the body and incorporating gusset folds B65D 5/06) with end closures formed separately from tubular body

5/14 . with inset end closures

5/16 . the tubular body being formed with an aperture or removable portion arranged to allow removal or insertion of contents through one or more sides (contents-dispensing means B65D 5/72)

5/18 . by folding a single blank to U-shape to form the base of the container and opposite sides of the body portion, the remaining sides being formed primarily by extensions of one or more of these opposite sides, e.g. flaps hinged thereto (B65D 5/36 takes precedence)

5/20 . by folding-up portions connected to a central panel from all sides to form a container body, e.g. of tray-like form (B65D 5/36 takes precedence)

5/22 . held erect by extensions of one or more sides being double-over to enclose extensions of adjacent sides

5/24 . with adjacent sides interconnected by gusset folds

5/26 . with extensions of opposite sides mutually interlocking to lie against other sides

5/28 . with extensions of sides permanently secured to adjacent sides, with sides permanently secured together by adhesive strips, or with sides held in place solely by rigidity of material

5/30 . with tongue-and-slot or like connections between sides and extensions of other sides

5/32 . having bodies formed by folding and interconnecting two or more blanks (B65D 5/36 takes precedence)

5/34 . one blank forming three sides of the body, and the other blank forming the remaining sides, a hinged lid, and the opposite end closure

5/35 . one blank forming three sides of a four-sided body, and the other blank forming the remaining side, a hinged lid, and the opposite end closure [2]

5/355 . specially adapted to be of variable capacity [6]
B65D

5/498 . . . . . Partitions with one or more flaps formed by folding, and fixed to, or maintained in position by, the sides of the container body (B65D 5/491, B65D 5/496, B65D 5/497 take precedence) [6]

5/499 . . . . . Partitions formed from non-folded strips engaged in slots or grooves in the sides of the container body (B65D 5/491 takes precedence) [6]

5/50 . . . . . Internal supporting or protecting elements for contents (elements formed by inward-folding of a wall extending from, and continuously around, an end of a tubular body B65D 5/06; partitions B65D 5/48)

5/52 . . . . . External stands or display elements for contents

5/54 . . . . . Lines of weakness to facilitate opening of container or dividing it into separate parts by cutting or tearing (break-in flaps, or members adapted to be torn-off, to provide pouring openings B65D 5/70)

5/56 . . . . . Linings or internal coatings

5/58 . . . . . Linings spaced appreciably from container wall

5/60 . . . . . Loose linings

5/62 . . . . . External coverings or coatings

5/63 . . . . . having two or more separate access openings (contents-dispensing means B65D 5/72) [6]

5/64 . . . . . Lids

5/66 . . . . . Hinged lids (B65D 5/34 takes precedence)

5/68 . . . . . Telescope flanged lids

5/70 . . . . . Break-in flaps, or members adapted to be torn-off, to provide pouring openings (B65D 5/74 takes precedence)

5/72 . . . . . Contents-dispensing means

5/74 . . . . . Spouts

5/76 . . . . . for discharging metered quantities

6/00 Containers having bodies formed by interconnecting or uniting two or more rigid, or substantially rigid, components made wholly or mainly of metal, plastics, wood or substitutes therefor (containers having a curved cross-section B65D 8/00; specially constructed to be opened by cutting, piercing, or tearing of wall portions B65D 17/00; pallets B65D 19/00) [3]

6/02 . . . . . characterised by shape [3]

6/04 . . . . . Trays or like containers without lids [3]

6/06 . . . . . of drawer-and-shell type [3]

6/08 . . . . . of skeleton or like apertured construction, e.g. made of interwoven or intermeshing flexible material [3]

6/10 . . . . . with walls comprising multiple panels in spaced face-to-face relationship, e.g. double walls [3]

6/12 . . . . . with walls, e.g. bottoms, movable under influence of contents [3]

6/14 . . . . . with walls comprising laminated panels, e.g. plywood [3]

6/16 . . . . . collapsible [3]

6/18 . . . . . with hinged components [3]

6/20 . . . . . bound by flexible wire, or strip-like, elements [3]

6/22 . . . . . and detachable components [3]


6/26 . . . . . with permanent connections between walls, e.g. corner connections [3]

6/30 . . . . . formed by rolling or by rolling and pressing [3]

6/32 . . . . . formed by soldering, welding, or otherwise uniting opposed surfaces [3]

6/34 . . . . . Reinforcing or strengthening parts or members [3]

6/36 . . . . . Battens, bands, strips or fittings [3]

6/38 . . . . . Deformations, e.g. corrugations [3]

6/40 . . . . . with walls formed with filling or emptying apertures [3]

8/00 Containers having a curved cross-section formed by interconnecting or uniting two or more rigid, or substantially rigid, components made wholly or mainly of metal, plastics, wood or substitutes therefor (specially constructed to be opened by cutting, piercing, or tearing of wall portions B65D 17/00; pallets B65D 19/00) [3]

8/02 . . . . . Arrangements of filling or discharging apertures [3]

8/04 . . . . . characterised by wall construction or by connection between walls [3]

8/06 . . . . . with multiple walls in spaced face-to-face relationship, e.g. double walls [3]

8/08 . . . . . Reinforcing or strengthening parts or members [3]

8/10 . . . . . Battens, bands, strips or fittings [3]

8/12 . . . . . Deformations, e.g. corrugations [3]

8/14 . . . . . collapsible [3]

8/16 . . . . . with walls comprising laminated panels, e.g. plywood [3]

8/18 . . . . . with permanent connections between walls [3]

8/20 . . . . . formed by rolling or by rolling and pressing [3]

8/22 . . . . . formed by soldering, welding, or otherwise uniting opposed surfaces (B65D 8/20 takes precedence) [3]

13/00 Containers having bodies formed by interconnecting two or more rigid, or substantially rigid, components made wholly or mainly of the same material, other than metal, plastics, wood, or substitutes therefor (pallets B65D 19/00) [4]

13/02 . . . . . of glass, pottery, or other ceramic material

17/00 Containers specially constructed to be opened by cutting or piercing, or by tearing of frangible member or portion (opening arrangements or devices for containers made by winding, bending or folding paper B65D 3/00, B65D 5/00; frangible inner closure members associated with caps, lids or covers B65D 51/20; opening devices added or incorporated during filling or closing of containers B65D 77/30; separate devices for opening closed containers B67B 7/00)

17/28 . . . . . about line or point of weakness [3]

17/30 . . . . . using cutting device [3]

17/32 . . . . . having non-detachable member or portion [3]

17/34 . . . . . Arrangement or construction of pull or lift tab (B65D 17/32 takes precedence) [3]

17/347 . . . . . characterised by the connection between the tab and a detachable member or portion of the container [6]

17/353 . . . . . the connecting means being integral with the tab or with the detachable member or portion [6]

17/36 . . . . . adapted for engagement with opening tool, e.g. slotted key (attachments of opening tools, e.g. slotted keys, to containers B65D 17/52) [3]

17/38 . . . . . with strip or tool guide [3]

17/40 . . . . . characterised having the line of weakness extending circumferentially of the container mouth [3]
19 / 00 Pallets or like platforms, with or without side walls, for supporting loads to be lifted or lowered (in devices for lifting or lowering bulky or heavy goods for loading or unloading purposes B66F 9/12)

19 / 02 Rigid pallets with side walls, e.g. box pallets
19 / 04 with bodies moulded or otherwise fabricated in one piece
19 / 06 with bodies formed by uniting or interconnecting two or more components
19 / 08 made wholly or mainly of metal
19 / 10 of skeleton construction, e.g. made of wire
19 / 12 Collapsible pallets
19 / 14 made wholly or mainly of wood
19 / 16 Collapsible pallets
19 / 18 made wholly or mainly of plastics material
19 / 20 made wholly or mainly of paper
19 / 22 Rigid pallets without side walls
19 / 24 with bodies moulded or otherwise fabricated in one piece
19 / 26 with bodies formed by uniting or interconnecting two or more components
19 / 28 made wholly or mainly of metal
19 / 30 of skeleton construction, e.g. made of wire
19 / 31 made wholly or mainly of wood [4]
19 / 32 made wholly or mainly of plastics material
19 / 34 made wholly or mainly of paper
19 / 36 Pallets comprising a flexible load carrier extending between guide elements, e.g. guide tubes
19 / 38 Details or accessories
19 / 40 Elements for spacing platforms from supporting surface
19 / 42 Arrangements or applications of rollers or wheels
19 / 44 Elements or devices for locating articles on platforms

21 / 00 Nestable, stackable, or joinable containers; Containers of variable capacity (large containers B65D 88/00)
21 / 02 Containers specially shaped, or provided with fittings or attachments, to facilitate nesting, stacking, or joining together [5]
21 / 024 for stacking containers lying on their sides, or for joining containers side-by-side, by means which are lateral with respect to the normal orientation of the containers [6]
21 / 028 with interconnecting means forming part of the containers, e.g. dovetails, snap connectors, hook elements [6]
21 / 032 for stacking containers one upon another in the upright or upside down position, e.g. with vertically projecting elements or recesses [6]
21 / 036 having closure means specially adapted for facilitating stacking [6]
21 / 04 Open-ended containers shaped to be nested when empty and to be superposed when full
21 / 06 with movable parts adapted to be placed in alternative positions for nesting the containers when empty and for stacking them when full
21 / 08 Containers of variable capacity (containers of polygonal cross-section adapted to be of variable capacity formed by folding or erecting blanks made of paper B65D 5/355)

Details of rigid or semi-rigid containers not otherwise provided for (for pallets B65D 19/38; of large containers B65D 90/00) [3]
23 / 00 Details of bottles or jars not otherwise provided for (closure-sealing elements B65D 45/00)
23 / 02 Linings or internal coatings
23 / 04 Means for mixing or for promoting flow of contents (hydrodynamic means for influencing the flow of liquids F15D)
23 / 06 Integral drip catchers or drip-preventing means
23 / 08 Coverings or external coatings (wrappers B65D 65/00)
23 / 10 Handles
23 / 12 Means for the attachment of smaller articles
23 / 14 of tags
23 / 16 of thermometers (feeding bottles with thermometers A61J 9/02)

25 / 00 Details of other kinds or types of rigid or semi-rigid containers
25 / 02 Internal fittings (of containers made by folding or erecting blanks made of paper B65D 5/44)
25 / 04 Partitions
25 / 06 adapted to be fitted in two or more alternative positions
25 / 08 with provisions for removing or destroying, e.g. to facilitate mixing of contents
25 / 10 Devices to locate articles in containers
25 / 14 Linings or internal coatings (of containers made by folding or erecting blanks made of paper B65D 5/56)
25 / 16 Loose, or loosely-attached, linings
25 / 18 spaced appreciably from container wall
25 / 20 External fittings (of containers made by folding or erecting blanks made of paper B65D 5/44)
25 / 22 for facilitating lifting or suspending of containers
25 / 24 for spacing bases of containers from supporting surfaces, e.g. legs (for pallets B65D 19/40)
25 / 26 Devices for protecting contents against shock
25 / 28 Handles (of containers made by folding or erecting blanks made of paper B65D 5/46; of bottles or jars B65D 23/10)
25 / 30 Hand holes
25 / 32 Bail handles, i.e. pivoted handles of generally semi-circular shape
25 / 34 Coverings or external coatings (of containers made by folding or erecting blanks made of paper B65D 5/62; for bottles or jars B65D 23/08; wrappers B65D 65/00)
25 / 36 formed by applying sheet material
25 / 38 Devices for discharging contents (incorporated in removable or non-permanently-secured closure members B65D 47/00; for discharging thin flat articles B65D 83/08)
25 / 40 Nozzles or spouts (in general B05B)
25 / 42 Integral or attached nozzles or spouts
25 / 44 . Telescopic or retractable nozzles or spouts
25 / 46 Hinged or pivoted nozzles or spouts
B65D

27/00 Envelopes or like essentially-rectangular containers for postal or other purposes having no structural provision for thickness of contents (with shock-absorbing properties B65D 81/03; letter-cards B42D 15/00)

27/02 . . . with stiffening inserts
27/04 . . . with apertures or windows for viewing contents
27/06 . . . with provisions for repeated re-use
27/08 . . . with two or more compartments
27/10 . . . Chains of interconnected envelopes
27/12 . . . Closures (separate fasteners B42F 1/00)
27/14 . . . using adhesive applied to integral parts, e.g. flaps
27/16 . . . using pressure-sensitive adhesive
27/18 . . . using heat-activatable adhesive
27/20 . . . using self-locking integral or attached elements
27/22 . . . Tongue-and-slot or like closures; Tuck-in flaps
27/24 . . . String closures
27/26 . . . Deformable metallic elements
27/28 . . . Applications of separate closing elements
27/30 . . . with special means for indicating unauthorised opening
27/32 . . . Opening devices incorporated during envelope manufacture (incorporated during closing of envelope B43M 5/00; separate devices for opening envelopes B43M 7/00)

27/34 . . . Lines of weakness
27/36 . . . Finger openings, slots, or gripping tabs
27/38 . . . Tearing-strings or -strips

30/00 Sacks, bags or like containers [3]
30/02 . . . characterised by the material used [3]
30/04 . . . made of fabric [3]
30/06 . . . net-like [3]
30/08 . . . with laminated or multiple walls in spaced face-to-face relationship, e.g. double walls (B65D 30/14, B65D 30/26 take precedence; with shock-absorbing properties B65D 81/03) [3]
30/10 . . . characterised by shape or construction [3]
30/12 . . . Cross bottom bags [3]
30/14 . . . multi-layered [3]
30/16 . . . with rigid end walls, e.g. free standing bags [3]
30/18 . . . with block bottoms [3]
30/20 . . . with folds, e.g. to facilitate collapsing [3]
30/22 . . . with two or more compartments [3]
30/24 . . . Bags having valves [3]
30/26 . . . multi-layered [3]
30/28 . . . Triangular- or conical-shaped bags [3]

33/00 Details of, or accessories for, sacks or bags
33/01 . . . Ventilation or draining of bags (connection of valves to inflatable elastic bodies B60C 29/00) [3]
33/02 . . . Local reinforcements or stiffening inserts, e.g. wires, strings, strips, frames
33/04 . . . Windows or other apertures, e.g. for viewing contents
33/06 . . . Handles
33/08 . . . Hand holes
33/10 . . . formed of similar material to that used for the bag
33/12 . . . String handles
33/14 . . . Suspension means (handles B65D 33/06)
33/16 . . . End- or aperture-closing arrangements or devices (valves of valve bags B65D 30/24; removable stoppers or caps B65D 39/00, B65D 41/00; closures of filled bags B65D 77/10; closing filled bags in association with packaging B65B 7/00, B65B 51/00)
33/17 . . . with brackets, rings or locks [4]
33/18 . . . using adhesive applied to integral parts, e.g. to flaps (of envelopes B65D 27/14)
33/20 . . . using pressure-sensitive adhesive
33/22 . . . using heat-activatable adhesive
33/24 . . . using self-locking integral or attached closure elements, e.g. flaps (B65D 33/25 takes precedence) [4]
33/25 . . . Riveting; Dovetailing; Screwing; using press buttons or slide fasteners [4]
33/26 . . . using staples or stitches
33/28 . . . Strings or strip-like closures [4]
33/30 . . . Deformable or resilient metal or like strips or bands
33/32 . . . Metallic chain closures
33/34 . . . with special means for indicating unauthorised opening
33/36 . . . Means for discharging contents
33/38 . . . Spouts

35/00 Pliable tubular containers adapted to be permanently deformed to expel contents, e.g. collapsible tubes for toothpaste or other plastic or semi-liquid material; Holders therefor
35/02 . . . Body construction
35/04 . . . made in one piece
35/06 . . . from metallic material
35/08 . . . from plastics material
35/10 . . . made by uniting or interconnecting two or more components
35/12 . . . Connections between body and closure-receiving bush
35/14 . . . with linings or inserts
35/16 . . . for minimising or preventing corrosion of body
35/18 . . . for keeping body in rolled state after partial expulsion of contents
35/20 . . . for retracting contents
35/22 . . . with two or more compartments
35/24 . . . with auxiliary devices (linings or inserts B65D 35/14)
35/26 . . . for filling
35/28 . . . for expelling contents
35/30 . . . Pistons
35/32 . . . Winding keys
35/34 . . . connected to, or associated with, tube holders
35/36 . . . for applying contents to surfaces (brushes combined or associated with tubular containers A46B 11/00)
35/38 . . . Nozzles
35/40 . . . for metering discharge
35/42 . . . for preventing loss of removable closure members
35/44 . . . Closures (closure members of interest apart from this association with packaging B65B 7/00, B65B 51/00)
35/46 . . . with valves (bureau accessories for applying liquids, e.g. adhesive, B43M 11/00)
35/48 . . . Hand-operated valves
35/50 . . . opening when tubular containers is deformed
Closure members for rigid or semi-rigid containers or for flexible containers presenting similar closing problems (the closure flaps or lids attached to, or incorporated in, containers, or foldable or erectable container blanks, made of paper B65D 3/00, B65D 5/00; closure walls of containers specially constructed to be opened by cutting, piercing, or tearing of wall portions B65D 17/00; applying closure members to bottles, jars, or similar containers B67B; covers or similar closure members, for pressure vessels in general F16J 13/00). Parts of containers co-operating with closure members or characterised by the form of closure member (for large containers B65D 90/00) [3]

39/00 Closures arranged within necks or pouring openings or in discharge apertures, e.g. stoppers (lids or covers B65D 43/00; with additional securing elements B65D 45/00)

39/02 Disc closures (discs with flanges B65D 39/04)
39/04 Cup-shaped plugs or like hollow flanged members
39/06 Balls
39/08 Threaded or like closure members secured by rotation; Bushes therefor
39/10 . . . with bayonet cams
39/12 . . . expandable, e.g. inflatable
39/14 . . . extending through lateral openings in necks
39/16 . . . with handles or other special means facilitating manual actuation
39/18 . . . with anti-friction or wear-resistant coatings or coverings

41/00 Caps, e.g. crown caps, crown seals, i.e. members having parts arranged for engagement with the external periphery of a neck or wall defining a pouring opening or discharge aperture. Protective cap-like covers for closure members, e.g. decorative covers of metal foil or paper (B65D 45/00 takes precedence; combinations of caps and protective cap-like covers B65D 51/18; making closures by working metal sheet B21D 51/44; affixing labels B65C 3/06)

41/01 . . . specially adapted for accommodating plural sizes [6]
41/02 . . . caps or cap-like covers without lines of weakness, tearing strips, tags, or like opening or removal devices
41/04 . . . threaded or like caps or cap-like covers secured by rotation
41/06 . . . with bayonet cams
41/08 . . . engaging a threaded ring clamped on the external periphery of the neck or wall
41/10 . . . caps or cap-like covers adapted to be secured in position by permanent deformation of the wall-engaging parts
41/12 . . . made of relatively-stiff metallic materials, e.g. crown caps
41/14 . . . made of metallic foil or like thin flexible material
41/16 . . . snap-on caps or cap-like covers
41/17 . . . push-on and twist-off [6]
41/18 . . . non-metallic, e.g. made of paper or plastics
41/20 . . . caps or cap-like covers with membranes, e.g. arranged to be pierced

41/22 . . . caps or cap-like covers with elastic parts adapted to be stretched over the container
41/24 . . . caps or cap-like covers made of shrinkable material or formed in situ by dipping, e.g. using gelatine or celluloid
41/26 . . . caps or cap-like covers serving as, or incorporating, drinking or measuring vessels
41/28 . . . caps combined with stoppers
41/30 . . . deformable caps combined with resilient stoppers to permit re-use as temporary closures
41/32 . . . caps or cap-like covers with lines of weakness, tearing-strips, tags, or like opening or removal devices, e.g. to facilitate formation of pouring openings
41/34 . . . threaded or like caps or cap-like covers
41/36 . . . with bayonet cams
41/38 . . . engaging a threaded ring clamped on the external periphery of the neck or wall
41/40 . . . caps or cap-like covers adapted to be secured in position by permanent deformation of the wall-engaging parts
41/42 . . . made of relatively-stiff metallic material, e.g. crown caps
41/44 . . . made of metallic foil or like thin flexible material
41/46 . . . snap-on caps or cap-like covers
41/47 . . . push-on and twist-off [6]
41/48 . . . non-metallic, e.g. made of paper, plastics
41/50 . . . caps or cap-like covers with membranes, e.g. arranged to be pierced
41/52 . . . caps or cap-like covers with elastic parts adapted to be stretched over the container
41/54 . . . caps or cap-like covers made of shrinkable material or formed in situ by dipping, e.g. using gelatine, celluloid
41/56 . . . caps or cap-like covers serving as, or incorporating, drinking or measuring vessels
41/58 . . . caps or cap-like covers combined with stoppers
41/60 . . . deformable caps combined with resilient stoppers to permit re-use as temporary closures
41/62 . . . secondary protective cap-like outer covers for closure members (arrangements of closures with protective outer cap-like covers or of two or more cooperating closures B65D 51/18)

43/00 Lids or covers for rigid or semi-rigid containers (for cooking vessels A47J 36/06; covers for pressure vessels in general F16J 13/00)

43/02 . . . Removable lids or covers (with means for piercing, cutting, or tearing a frangible inner closure B65D 51/22)
43/03 . . . nestable or stackable (nestable or stackable containers B65D 21/00) [3]
43/04 . . . having a part, or parts, engaging within the mouth of the container and retained by friction or gravity
43/06 . . . having a peripheral channel embracing the rim of the container
43/08 . . . having a peripheral flange fitting over the rim of the container
43/10 . . . . and retained by snapping over beads or projections
43/12 . . . . guided for removal by sliding
43/14 . . . . Non-removable lids or covers
43/16 . . . . hinged for upward or downward movement (hinges of door or similar type E05D)
43/18 . . . . pivoted for movement in plane of container mouth
43/20 . . . . linearly slidable
45/00 Clamping or other pressure-applying devices for securing or retaining closure members (screw-threaded or bayonet connections between stoppers or caps and containers B65D 39/08, B65D 41/04, B65D 41/34; expandible stoppers B65D 39/12; for pressure vessels in general F16J 13/00)

45/02 . . . for applying axial pressure to engage closure with sealing surface

45/04 . . . comprising U-shaped or bifurcated members coacting with containers, e.g. pivoted bails

45/06 . . . with toggle levers, e.g. swing stopper arrangements (forming levers or links by working wire B21F 45/04)

45/08 . . . incorporating springs

45/10 . . . incorporating tightening screws

45/12 . . . associated with locking levers engaging rack teeth for varying the applied pressure

45/14 . . . coacting with inclined grooves in container wall for varying the applied pressure

45/16 . . . Clips, hooks, or clamps, e.g. C-shaped (U-shaped or bifurcated members B65D 45/04)

45/18 . . . of snap-over type

45/20 . . . pivoted

45/22 . . . . resilient

45/24 . . . incorporating pressure-applying means, e.g. screws, toggles

45/26 . . . incorporating tensioning chains

45/28 . . . Elongated members, e.g. leaf springs, located substantially at right angles to closure axis and acting between the face of the closure and abutments on container

45/30 . . . Annular members, e.g. with snap-over action, screw-threaded

45/32 . . . for applying radial pressure, e.g. contractible bands encircling closure member

45/34 . . . lever-operated

47/00 Closures with filling and discharging, or with discharging, devices (dispensers for liquid soap A47K 5/12; desk equipment for applying liquid by contact with surfaces B43M 11/00; fluid delivery valves in general F16K 21/00)

47/02 . . . for initially filling and for preventing subsequent refilling

47/04 . . . Closures with discharging devices other than pumps

47/06 . . . with pouring spouts or tubes; with discharge nozzles or passages (with slidable spouts B65D 47/26)

47/08 . . . having articulated or hinged closures

47/10 . . . having flangible closures

47/12 . . . having removable closures

47/14 . . . and closure-retaining means

47/16 . . . with closures operating automatically when spout is immersed in discharged liquid

47/18 . . . for discharging drops; Dippers (dippers in general B01L 3/00)

47/20 . . . comprising hand-operated members for controlling discharge (B65D 47/34 takes precedence)

47/22 . . . operating with pinching action on flexible tubes

47/24 . . . with poppet valves

47/26 . . . with slide valves, e.g. formed with slidable spouts

47/28 . . . . having linear movement

47/30 . . . with plug valves

47/32 . . . with means for venting [3]

47/34 . . . Closures with discharge by pumping

47/36 . . . Closures with flangible parts adapted to be pierced, torn, or removed, to provide discharge openings (B65D 51/18 takes precedence; caps with pierceable membranes B65D 41/20, B65D 41/50)

47/38 . . . with piercing means arranged to act subsequently as a valve to control the opening

47/40 . . . with drip catchers or drip-preventing means

47/42 . . . with pads or like contents-applying means (brushes combined or associated with containers A46B 11/00; swabs for applying media to the human body from an integral supply A61F 13/40)

47/44 . . . combined with slits opening when container is deformed or when pad is pressed against surface to which contents are to be applied (pliable tubular containers with valves opening when closure is pressed against surface B65D 35/54)

49/00 Arrangements or devices for preventing refilling of containers (integral, or permanently secured, closures for containers specially adapted to be opened by cutting, piercing, or tearing of wall portions B65D 17/00; for initial filling and for preventing subsequent refilling B65D 47/02)

49/02 . . . One-way valves

49/04 . . . Weighted valves

49/06 . . . with additional loading weights

49/08 . . . Spring-loaded valves

49/10 . . . Arrangements of several valves

49/12 . . . by destroying, in the act of opening the container, an integral portion thereof

50/00 Closures with means for discouraging unauthorised opening or removal thereof, with or without indicating means, e.g. child-proof closures (tamper-indicating closures without means for discouraging, see the relevant groups, e.g. B65D 41/32, B65D 51/20; means per se for discouraging or indicating unauthorised opening or removal of closure B65D 55/02) [5]

50/02 . . . openable or removable by the combination of plural actions [5]

50/04 . . . requiring the combination of simultaneous actions, e.g. depress and turn, lift and turn, maintain a part and turn another one (B65D 50/10 takes precedence; caps or covers secured by rotation with bayonet cams B65D 41/06, B65D 41/36) [5]

50/06 . . . requiring the combination of different actions in succession (B65D 50/10 takes precedence) [5]

50/08 . . . openable or removable by closure or container deformation [5]

50/10 . . . disengageable only after alignment of closure parts with container [5]

50/12 . . . Disguised or hidden forms of closures, e.g. dummy closure in association with removable closure forming container base (bottles or similar containers with closable apertures at bottom B65D 1/06) [5]

50/14 . . . openable or removable only by means of special opening member (containers with cutting, punching, or cutter accommodating means B65D 17/42; key-actuated closure locks B65D 55/14) [5]
Closures not otherwise provided for (covers or similar closures as engineering elements for pressure vessels in general F16J 13/00)

- Loosely-engaging lids or covers for jars, cans, or like containers for liquids without means for effecting sealing of container (for cooking-vessels A47J 36/06)
- hinged (B65D 51/10 takes precedence)
- collapsible
- with axial projections fitting within, or around, the walls defining the container openings, e.g. for milk churns
- opening automatically when container is tilted for pouring
- Flexible non-elastic covers
- Rigid discs or spherical members adapted to be held in sealing engagement with mouth of container, e.g. closure plates for preserving jars
- with means for venting air or gas
- Arrangements of closures with protective outer cap-like covers or of two or more co-operating closures (secondary protective cap-like outer covers for caps B65D 41/62)
- Caps, lids, or covers co-operating with an inner closure arranged to be opened by piercing, cutting, or tearing
- having means for piercing, cutting, or tearing the inner closure
- combined with auxiliary devices for non-closing purposes
- with means for keeping contents in position, e.g. resilient means
- with auxiliary containers for additional articles or materials
- for desiccators
- with brushes or rods for applying or stirring contents (droppers B65D 47/18)

Sealing or packing elements (sealings in general F16J 15/00); Sealings formed by liquid or plastic material

- Collars or rings
- Discs
- Sealings formed by liquid or plastic material
- Flexible adhesive strips adapted to seal filling or discharging apertures
- characterised by special adaptation to acid-proof vessels

Accessories for container closures not otherwise provided for

- Locking devices; Means for discouraging or indicating unauthorised opening or removal of closure (protective covers for bottles B65D 23/08; protective cap-like outer covers for bottle or jar closures B65D 41/28; pressure-applying means B65D 45/00; closures with means for discouraging unauthorised opening or removal of closures B65D 50/00) [5]
- Spring clips, e.g. of wire, of sheet metal
- Deformable or tearable wires, strings, or strips (containers specially constructed to be opened by tear-strips, strings or the like B65D 17/00; caps or cap-like closures with tear-strips B65D 41/32); Use of seals (applying labels to bottles B65C 3/06, B65C 9/00; seals per se G09F 3/00)
- Annular elements encircling container necks
- Locking pins

Devices or means with relatively-moving parts cooperating with abutments on bottle or jar (applications of locks B65D 55/14)

Applications of locks, e.g. of permutation or key-controlled locks

Devices preventing loss of removable closure members

Kinds or types of packaging elements

Internal frames or supports for flexible articles, e.g. stiffeners; Separators for articles packaged in stacks or groups, e.g. for preventing adhesion of sticky articles

Plugs, sleeves, caps, or like rigid or semi-rigid elements for protecting parts of articles or for bundling articles, e.g. protectors for screw-threads, corner protectors, end caps for tubes or for bundling rod-shaped articles

Plugs
- Sleeves, e.g. postal tubes
- Caps
- of polygonal cross-section

External frames or supports adapted to be assembled around, or applied to, articles (collapsible containers B65D 5/00, B65D 6/16, B65D 6/24, B65D 8/14)
- Tubular frames with resilient joints

Flexible elongated elements, e.g. straps, for bundling or supporting articles (for supporting pipes, cables or protective tubing F16L 3/137)
- Metallic straps, tapes, or bands; Joints between ends thereof
- Joints produced by deformation of ends of elements
- Joints produced by application of separate securing members, e.g. by deformation thereof
- Joints using buckles, wedges, or like locking members attached to the ends of the elements
- Non-metallic straps, tapes, or bands; Filamentary elements, e.g. strings, threads, wires; Joints between ends thereof
- Joints produced by deformation or tying of ends of elements
- Joints produced by application of separate securing members
- Joints using buckles, wedges, or like locking members attached to the end of the element
- Elements provided with handles or other suspension means

Wrappers or flexible covers; Packaging materials of special type or form (wrappers or envelopes with shock-absorbing properties B65D 81/03; layered products per se B32B; materials per se, see the relevant classes)

Attention is drawn to the definition of “packaging elements” in Note (5) following the title of this subclass.

Wrappers or flexible covers
- non-rectangular
- formed with foldable flaps, e.g. interlocking flaps
- with fastening elements, e.g. slide fasteners
65/10 rectangular
65/12 formed with crease lines to facilitate folding
65/14 with areas coated with adhesive
65/16 with provision for excluding or admitting light
65/18 with some areas transparent and others opaque
65/20 with provision for excluding light of a particular wavelength
65/22 Details
65/24 Tabs or other projections for locating contents
65/26 Opening devices
65/28 Perforations or lines of weakness
65/30 Slits, slots, or cuts
65/32 Tabs or like projections for gripping by the fingers
65/34 Attached tearing-strings or like flexible elements
65/36 Reinforcements to guide tearing
65/38 Packaging materials of special type or form
65/40 Applications of laminates for particular packaging purposes
65/42 Applications of coated or impregnated materials
65/46 Applications of disintegrable, dissolvable or edible materials

67/00 Kinds or types of packaging elements not otherwise provided for
67/02 Clips or clamps for holding articles together for convenience of storage or transport

Kinds or types of packages

69/00 Articles joined together for convenience of storage or transport without the use of packaging elements (joining articles for convenience of packaging B65B 17/02)

71/00 Bundles of articles held together by packaging elements for convenience of storage or transport, e.g. portable segregating carrier for plural elements for convenience of storage or transport, e.g. portable segregating carrier for plural elements for convenience of storage or transport

71/02 Arrangements of flexible binders
71/04 with protecting or supporting elements arranged between binder and articles or materials, e.g. for preventing chafing of binder
71/06 comprising a plurality of articles completely or mainly held together by packaging elements, e.g. under tension [3]
71/08 Wrappers shrunk by heat [3]
71/10 and provided with inserts [5]
71/12 the packaging elements being formed by folding a single blank [5]
71/14 having the shape of a tube, without, or not being characterised by, end walls (sleeves B65D 59/04) [5]
71/16 with article-locating elements (B65D 71/24 takes precedence) [5]
71/18 Tabs inwardly folded from upper or lower wall [5]
71/20 Slits or openings along the foldline of the tubular body [5]
71/22 Openings formed in the sidewall [5]
71/24 with partitions [5]
71/26 extending from upper or lower wall [5]
71/28 characterised by the handle [5]
71/30 unitary with the tubular packaging elements (B65D 71/32 takes precedence) [5]
71/32 formed by finger-holes [5]
71/34 characterised by lines of weakness or the like [5]
71/36 comprising a plurality of articles held together only partially by packaging elements formed by folding a blank [5]
71/40 comprising a plurality of articles held together only partially by packaging elements formed otherwise than by folding a blank [5]
71/42 formed by folding a single blank into a single layer element [5]
71/44 characterised by the handle [5]
71/46 formed by folding a single blank into a tubular element [5]
71/48 characterised by the handle [5]
71/50 comprising a plurality of articles held together only partially by packaging elements formed otherwise than by folding a blank [5]
71/52 Tray-like packaging elements provided with handles for storage or transport of a plurality of articles (B65D 71/12, B65D 71/38, B65D 71/40, B65D 71/50 take precedence) [5]
71/54 without partitions (B65D 71/60, B65D 71/68 take precedence) [5]
71/56 with a single longitudinal partition (B65D 71/60, B65D 71/68 take precedence) [5]
71/58 formed by folding one blank and having vertical partitions (B65D 71/60 takes precedence) [5]
71/60 formed by folding one blank into a tubular element, having upper wall portions provided with openings, through which the articles extend [5]
71/62 with parts of the walls bent against one another to form a longitudinal partition between two rows of articles (B65D 71/64, B65D 71/66 take precedence) [5]
71/64 with walls enclosing the articles almost completely (B65D 71/66 takes precedence) [5]
71/66 for holding only one row of articles [5]
71/68 formed by folding and interconnecting two or more blanks (B65D 71/72 takes precedence) [5]
71/70 Trays provided with projections or recesses in order to assemble multiple articles, e.g. intermediate elements for stacking [5]
71/72 formed by folding one or more blanks, the articles being inserted in openings in a wall [5]

73/00 Packages comprising articles attached to cards, sheets, or webs (cards for buttons, collar-studs, or sleeve-links A44B 7/00; attaching articles to cards, sheets, or webs B65B 15/00)
73/02 Articles, e.g. small electrical components, attached to webs

75/00 Packages comprising articles or materials partially or wholly enclosed in strips, sheets, blanks, tubes, or webs of flexible sheet material, e.g. in folded wrappers (B65D 71/00 takes precedence; wrapping B65B 11/00) [5]
75/02 Articles partially enclosed in folded or wound strips or sheets, e.g. wrapped newspapers
75/04 Articles or materials wholly enclosed in single sheets or wrapper blanks
75/06 in sheets or blanks initially folded to form tubes
75/08 with the ends of the tube closed by folding
75/10 with the ends of the tube closed by twisting
77/04 . Articles or materials enclosed in two or more containers disposed one within another
77/06 . Liquids or semiliquids enclosed in flexible containers disposed within rigid containers
77/08 . Materials, e.g. different materials, enclosed in separate compartments formed during filling of a single container
77/10 . Container closures formed after filling (closing filled containers in association with packaging B65B 7/00, B65B 51/00)
77/12 . . by collapsing and flattening the mouth portion of the container and securing without folding, e.g. by pressure-sensitive adhesive, heat-sealing, welding, applying a separate securing member
77/14 . . by flattening and subsequently folding or rolling the mouth portion
77/16 . . by collapsing and twisting mouth portion
77/18 . . and securing by a deformable clip or binder
77/20 . . by applying separate lids or covers
77/22 . Details
77/24 . . Inserts or accessories added or incorporated during filling of containers (opening devices B65D 77/30)
77/26 . . . Elements or devices for locating or protecting articles
77/28 . . . Cards, coupons, or drinking straws
77/30 . . Opening or contents-removing devices added or incorporated during filling or closing of containers
77/32 . . . Tearing-strings or like flexible elements
77/34 . . . . enclosed in a mouth seal
77/36 . . . . disposed beneath a wrapper, label, or other element of sheet material securing a lid, cover, or container mouth
77/38 . . . Weakened closure seams
77/40 . . . Rigid cutting or tearing devices
79/00 Kinds or details of packages, not otherwise provided for
79/02 . Arrangements or devices for indicating incorrect storage or transport (measuring devices G01)

Containers, packaging elements, or packages, of special types or forms or specially adapted for organisms, articles, or materials presenting particular transport, storage, or dispensing problems

81/00 Containers, packaging elements, or packages, for contents presenting particular transport or storage problems, or adapted to be used for non-packaging purposes after removal of contents
81/02 . specially adapted to protect contents from mechanical damage [6]
81/03 . Wrappers or envelopes with shock-absorbing properties, e.g. bubble films [6]
81/05 . maintaining contents at spaced relation from package walls, or from other contents (B65D 81/03 takes precedence) [6]
81/07 . . using resilient suspension means [6]
81/09 . . using flowable discrete elements of shock-absorbing material, e.g. pellets, popcorn [6]
81/107 . . using blocks of shock-absorbing material [6]
81/113 . . of a shape specially adapted to accommodate contents [6]
81/127 . . using rigid or semi-rigid sheets of shock-absorbing material [6]
81/133 . . of a shape specially adapted to accommodate contents, e.g. trays [6]
B65D

83/00 Containers or packages with special means for dispensing contents (dispensing means incorporated in removable or non-permanently secured container closures B65D 47/00; for shops, stores, offices, bars, or the like A47F 41/00)

Containers, packaging elements or packages, specially adapted for particular articles or materials (B65D 71/00, B65D 83/00 take precedence; hand implements, travelling equipment A45C; cosmetic or toilet equipment A45D; packages for surgical knives, scalpels or blades therefor A61B 17/3215; containers specially adapted for medical or pharmaceutical purposes A61J 1/00; paint cans B44D 3/12; oil cans F16N 3/04; containers for carrying smallarms F41C 33/06; packaging of ammunition or explosive charges F42B 39/00; containers for record carriers, specially adapted for cooperation with the recording or reproducing apparatus G11B 23/00) [5,6]

Note

Containers, packaging elements or packages classified in this group, are also classified according to the constructional or functional features, if such features are of interest. [6]

83/02 . . . for dispensing rod-shaped articles, e.g. needles (cigar or cigarette receptacles or boxes A24F 15/00)
83/04 . . . for dispensing annular, disc-shaped, or spherical or like small articles, e.g. tablets, pills
83/06 . . . for dispensing powdered or granular material (spraying or atomising apparatus in general B05B)
83/08 . . . for dispensing thin flat articles in succession (dispensers for surgical scalpel blades A61B 17/3215)
83/10 . . . for dispensing razor-blades
83/12 . . . for dispensing tickets or tokens
83/14 . . . for delivery of liquid or semi-liquid contents by internal gaseous pressure, i.e. aerosol containers (spraying or atomising apparatus in general B05B; siphons, pumping of fluid by direct contact of another fluid F04F; vessels for containing or storing compressed, liquefied, or solidified gases F17C)
83/16 . . . characterised by the actuating means [5]
83/18 . . . Container-carried hand lever [5]
83/22 . . . with means to disable actuation (B65D 50/00 takes precedence) [5]
83/24 . . . with means to hold valve open [5]
83/26 . . . operating automatically, e.g. periodically [5]
83/28 . . . Nozzles, nozzle fittings or accessories specially adapted therefor [5]
83/30 . . . for guiding the flow of spray [5]
83/32 . . . Dip-tubes [5]
83/34 . . . Cleaning or preventing clogging of the discharge passage [5]
83/36 . . . allowing operation in any orientation [5]
83/38 . . . Details of container body (pressure relief devices B65D 83/70) [5]
83/40 . . . Closure caps (actuator caps B65D 83/20) [5]
83/42 . . . Filling or charging means [5]
83/44 . . . Valves specially adapted therefor; Regulating devices (filling or discharging means B65D 83/42; pressure relief devices B65D 83/70) [5]
83/46 . . . Tilt valves (B65D 83/50 takes precedence) [5]
83/48 . . . Lift valves, e.g. operated by push action (B65D 83/50 takes precedence) [5]
83/50 . . . Non-reclosable valves [5]
83/52 . . . for metering [5]
83/54 . . . Metering valves [5]
83/56 . . . shut-off when inverted [5]
83/58 . . . Separate inlets for gas and material in duct to valve (B65D 83/60 takes precedence) [5]
83/60 . . . Product and propellant separated [5]
83/62 . . . by membrane, bag, or the like [5]
83/64 . . . by piston [5]
83/66 . . . first separated, but finally mixed [5]
83/68 . . . Dispensing two or more products [5]
83/70 . . . Pressure relief devices [5]
83/72 . . . with heating or cooling devices [5]
83/74 . . . heating by exothermic reaction [5]
83/76 . . . for dispensing fluent material by means of a piston or the like (hand tools for discharging fluent material through an outlet orifice by pressure B05C 17/005) [5]

85/00 Containers, packaging elements or packages, specially adapted for particular articles or materials (B65D 71/00, B65D 83/00 take precedence; hand implements, travelling equipment A45C; cosmetic or toilet equipment A45D; packages for surgical knives, scalpels or blades therefor A61B 17/3215; containers specially adapted for medical or pharmaceutical purposes A61J 1/00; paint cans B44D 3/12; oil cans F16N 3/04; containers for carrying smallarms F41C 33/06; packaging of ammunition or explosive charges F42B 39/00; containers for record carriers, specially adapted for cooperation with the recording or reproducing apparatus G11B 23/00) [5,6]
for compressible or flexible articles of other shapes
(for wearing apparel B65D 85/18)
for wearing apparel, i.e. clothes, headgear, shoes
for incompressible or rigid rod-shaped or tubular articles
for macaroni, spaghetti, or like flour products
for needles, nails, or other like elongated small articles
for welding electrodes
for pencils or pens (pencil boxes A45C 11/34)
for articles particularly sensitive to damage by shock or pressure
for eggs
for fruit, e.g. apples, oranges, tomatoes
for biscuits or other bakery products
for optical or other delicate measuring, calculating, or control apparatus
for watches or clocks or components thereof
for ampolles; for lamp bulbs; for electronic valves or tubes
for crockery
for bricks, tiles, or building blocks
for glass sheets
for living organisms, articles, or materials sensitive to changes of environment or atmospheric conditions, e.g. land animals, birds, fish, water plants, non-aquatic plants, flower bulbs, cut flowers, foliage (devices for transporting live fish A01K 63/02)
for living plants; for growing bulbs
for recording discs [3]
for recording-tape cassettes [5]
for ball bearings, washers, buttons, or like spherical or disc-shaped articles (cards for buttons, collar-studs, sleeve-links A44B 7/00) [3]
for sweets or like confectionery products [3]
for stacks of articles; for special arrangements of groups of articles [3]
for bulky articles [3]
for jumbo rolls; for rolls of floor covering [3]
for other web or tape-like material (for recording-tape cassettes B65D 85/575) [3,5]
ound in flat spiral form [3]
. on cores [3]
. wound in helical form [3]
. on cores [3]
. on flat cards [3]
for machines, engines, or vehicles in assembled or dismantled form [3]
for edible or potable liquids, semiliquids, or plastic or pasty materials [3]
with means specially adapted for effervescing the liquids, e.g. for forming bubbles or beer head [7]
for butter, margarine or lard [3]
for cheese [3]
for ice-cream [3]
for milk [3]
Disposable containers or packages with contents which are infused or dissolved in situ [7]
for immersion in the liquid, e.g. tea bags [7]
with features facilitating their suspension [7]
into which liquid is added, e.g. cups preloaded with powder or dehydrated food [7]
for poisons [3]
for corrosive chemicals [3]
for electrical components (small electrical components attached to cards, sheets or webs B65D 73/02; for articles particularly sensitive to damage by shock or pressure B65D 85/30; for ampoules, lamp bulbs, electronic valves or tubes B65D 85/42) [6]
Batteries [6]
Integrated circuits [6]

Note
In groups B65D 88/00 to B65D 90/00, the following expression is used with the meaning indicated: “large containers” means containers having about the size of containers used in container traffic, sometimes referred to as freight, forwarding or “ISO” (International Standardization Organization) containers, or larger containers. [3]

Large containers (component parts, details or accessories B65D 90/00; construction or assembling of bulk storage containers employing civil engineering techniques in situ or off the site E04H 7/00; gas holders of variable capacity F17B; vessels for containing or storing compressed, liquefied or solidified gases F17C) [3]
rigid (B65D 88/34 to B65D 88/78 take precedence; hoppers B65D 88/26) [3]
spherical (B65D 88/12 takes precedence) [3]
cylindrical (B65D 88/12 takes precedence) [3]
with a vertical axis [3]
parallelepipedic (B65D 88/12 takes precedence) [3]
specially adapted for transport (associated with vehicles, see the relevant subclasses of B60 to B64) [3]
by air [3]
flexible (B65D 88/34 to B65D 88/78 take precedence; hoppers B65D 88/26) [3]
bellows-shaped (B65D 88/22 takes precedence; connection of valves to inflatable elastic bodies B60C 29/00) [3]
with rigid end-walls (B65D 88/18, B65D 88/2) take precedence) [3]
specially adapted for transport (associated with vehicles, see the relevant subclasses of B60 to B64) [3]
by air [3]
Hoppers, i.e. containers having funnel-shaped discharge sections (B65D 88/34 to B65D 88/78 take precedence) [3]
Construction or shape of discharge section [3]
specially adapted to facilitate transportation from one utilisation site to another (collapsible hoppers B65D 88/52) [3]
in multiple arrangement [3]
having floating covers, e.g. floating roofs or blankets (venting means B65D 90/34) [3]
with relatively movable sections [3]
with surface water receiver, e.g. drain [3]
with support for aground cover [3]
with sealing means between cover rim and receptacle [3]
with magnetic means acting on the seal [3]
with mechanical means acting on the seal [3]
with fluid means acting on the seal [3]
90/50 . . with resilient foam or stuffed seal [3]
90/52 . . collapsible, i.e. with walls hinged together or detachably connected [3]
90/54 . . characterised by means facilitating filling or emptying (construction or shape of discharge section of hoppers B65D 88/28; gates or closures B65D 90/54; filling or emptying bunkers, hoppers, or like containers B65G 65/30) [3]
90/56 . . by tilting [3]
90/58 . . by displacement of walls [3]
90/60 . . of internal walls [3]
90/62 . . . the walls being deformable [3]
90/64 . . preventing bridge formation [3]
90/66 . . using vibrating or knocking devices [3]
90/68 . . using rotating devices [3]
90/70 . . using fluid jets (B65D 88/72 takes precedence) [3]
90/72 . . Fluidising devices [3]
90/74 . . having means for heating, cooling, aerating or other conditioning of contents [3]
90/76 . . for use underground (manholes, inspection openings, covers therefor B65D 90/10) [3]
90/78 . . for use in or under water (manholes, inspection openings, covers therefor B65D 90/10) [3]

90/00 Component parts, details or accessories for large containers (B65D 88/34 to B65D 88/78 take precedence) [3]
90/02 . . Wall construction [3]
90/04 . . Linings [3]
90/06 . . Covers, e.g. for insulating purposes [3]
90/08 . . Interconnections of wall parts; Sealing means therefor [3]
90/10 . . Manholes; Inspection openings; Covers therefor (safety features B65D 90/22; covers or similar closure members, for pressure vessels in general F16J 13/00) [3]
90/12 . . Supports [3]
90/14 . . Legs, e.g. detachable [3]
90/16 . . Skids [3]
90/18 . . Castors, rolls, or the like, e.g. detachable (castors in general B60B) [3]
90/20 . . Frames or nets, e.g. for flexible containers [3]
90/22 . . Safety features (floating covers B65D 88/34; arrangements of indicating or measuring devices B65D 90/48; fire-fighting A62C) [3]
90/24 . . Spillage-retaining means, e.g. recovery ponds [3]
90/26 . . Overfill prevention (spillage retaining means B65D 90/24; arrangements of indicating or measuring devices B65D 90/48) [3]
90/28 . . Means for preventing or minimising the escape of vapours [3]
90/30 . . Recovery of escaped vapours [3]
90/32 . . Arrangements for preventing, or minimising the effect of, excessive or insufficient pressure (valves per se F16K) [3]
90/34 . . . . Venting means (vehicle fuel tanks characterised by venting means B60K 15/035) [3,5]
90/36 . . . . Weakened parts [3]
90/38 . . . . Means for reducing the vapour space or for reducing the formation of vapour within containers [3]
90/40 . . . . by use of fillings of porous materials [3]
90/42 . . . . by use of particular materials for covering surface of liquids [3]
90/44 . . . . by use of inert gas for filling space above liquid or between contents [3]
90/46 . . . . Arrangements for carrying off, or preventing the formation of electrostatic charges (carrying-off, or preventing the formation of electrostatic charges in general H05F) [3]
90/48 . . . . Arrangements of indicating or measuring devices [3]
90/50 . . . . of leakage-indicating devices (investigating fluid-tightness of structures G01M 3/00) [3]
90/52 . . . Anti-slosh devices (vehicle fuel tanks with means modifying or controlling distribution or motion of fuel, e.g. to prevent noise, surge, splash or fuel starvation, B60K 15/077) [3]
90/54 . . . Gates or closures (for manholes B65D 90/10; covers or similar closure members, for pressure vessels in general F16J 13/00; valves per se F16K) [3]
90/56 . . . operating by deformation of flexible walls [3]
90/58 . . . having closure members sliding in the plane of the opening [3]
90/60 . . . . and having one or more openings [3]
90/62 . . . . having closure members movable out of the plane of the opening [3]
90/64 . . . . having multipart closure members, the parts being brought into closing position one by one according to need [3]
90/66 . . . . Operating devices therefor [3]

B65F GATHERING OR REMOVAL OF DOMESTIC OR LIKE REFUSE (disinfecting refuse A61L; refuse disintegrators B02C; sorting refuse B03B, B07B; handcarts for transporting refuse receptacles B62B; sack holders B65B 67/00; converting refuse into fertilisers C05F; converting refuse into solid fuels C10L; sewers, cesspools E03F; arrangements in buildings for the disposal of refuse E04F 17/10; refuse-consuming furnaces F25G)

1/00 Refuse receptacles (containers not specially adapted for refuse, features of refuse receptacles of general interest B65D)
1/02 . without removable inserts
1/04 . with removable inserts
1/06 . with flexible inserts, e.g. bags or sacks
1/08 . with rigid inserts
1/10 . with refuse filling means, e.g. air-locks
1/12 . with devices facilitating emptying
1/14 . Other constructional features (holders or carriers for hand articles A45F 5/00; fastening devices for wings E05C; hinges E05D)
1/16 . Lids or covers (pedal or hand-lever operated B65D)
3/00 Vehicles particularly adapted for collecting refuse (vehicles in general B60; driving vehicle equipment or auxiliaries B60K; discharging contents by tilting entire vehicles B65G; wheeled apparatus for emptying sewers or cesspools E03F 7/10)

3/02 . . with means for discharging refuse receptacles thereinto (conveyor construction B65G; loaders separate from vehicles B66F; fluid power control systems in general F15B)

3/04 . . Linkages, pivoted arms, or pivoted carriers for raising and subsequently tipping receptacles

3/06 . . . Arrangement or disposition of fluid actuators

3/08 . . . Platform elevators or hoists with guides or runways for raising or tipping receptacles

3/10 . . . Arrangement or disposition of fluid actuators

3/12 . . . Conjoint motion of lids, flaps, and shutters on vehicle and on receptacle; Operation of closures on vehicle conjointly with tipping of receptacle

3/14 . . . with devices for charging, distributing, or compressing refuse in the interior of the tank of a refuse vehicle (B65F 3/02 takes precedence) [2]

3/16 . . . with conveyer wheels (with screw conveyers B65F 3/22) [2]

3/18 . . . with endless conveyers, e.g. elevators [2]

3/20 . . . with charging pistons, plates, or the like (for discharging B65F 3/28) [2]

3/22 . . . with screw conveyers, rotary tanks [2]

3/24 . . . with devices for unloading the tank of a refuse vehicle [2]

3/26 . . . by tipping the tank [2]

3/28 . . . by a lengthwise movement of a wall, e.g. a plate, a piston, or the like (for charging B65F 3/20) [2]

5/00 Gathering or removal of refuse otherwise than by receptacles or vehicles (storage silos, charging or discharging thereof B65G)

7/00 Cleaning or disinfecting devices combined with refuse receptacles or refuse vehicles (such devices see A61L, B08B)

9/00 Transferring of refuse between vehicles or containers with intermediate storage or pressing (presses for baling see B30B 9/30) [4]

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B65G TRANSPORT OR STORAGE DEVICES, E.G. CONVEYERS FOR LOADING OR TIPPING; SHOP CONVEYER SYSTEMS; PNEUMATIC TUBE CONVEYERS (transport or storage devices used in a particular handling or treatment of articles or materials, see the relevant subclass, e.g. in metal-working B21D 43/00, B23Q 7/00, B23Q 41/02; vehicle, railway, sea or aircraft aspects B60 to B64; transportation, conveyor or haulage systems specially adapted for motor vehicle or trailer assembly lines B62D 65/18; in packaging B65B; handling thin or filamentary materials B65H; hoisting, lifting, hauling, e.g. truck loaders B66; handling liquids B67; specially adapted to underground conditions E21F 13/00; storing or distributing gases or liquids F17; in handling radioactive materials G21C 19/00)

Subclass Index

HANDLING AND STORAGE

Loading and unloading.........................65/00, 67/00, 69/00

Transfer, trans-shipment..........................63/00

Storage.............................................1/00, 3/00, 5/00

Piling, unpiling

of articles......................................57/00 to 61/00

of loose material..............................65/28

Assisting manual handling........................7/00, 9/00

CONVEYERS, CHUTES

Mechanical

with endless element.........................15/00 to 23/00

with particular movement.................25/00, 27/00, 29/00, 33/00

other kinds.................................35/00

combinations or systems of general use..........................37/00, 49/00

chutes; roller-ways; projectors..............11/00; 13/00; 31/00

Parts or auxiliary devices applicable to different kinds

rollers; frames; auxiliary handling..................39/00; 41/00; 47/00

control, safety; maintenance ..................43/00; 45/00

Non-mechanical................................51/00, 53/00, 54/00

Storing, Storage devices

1/00 Storing articles, individually or in orderly arrangement, in warehouses or magazines (conveyor combinations in warehouses, magazines, or workshops B65G 37/00; stacking of articles B65G 57/00; removing articles from stacks B65G 59/00; loading machines B65G 65/02; arrangements of articles for drying or baking in kilns or ovens F26, F27)

1/02 . . Storage devices (furniture, shop fittings, table equipment A47B, A47F, A47G; mechanical garages E04H; for data record cards in association with machines for marking or sensing data G06K; coin changers or sorters G07D; coin-freed apparatus G07F)

1/04 . . mechanical

1/06 . . . with means for presenting articles for removal at predetermined position or level (B65G 1/12 takes precedence) [3]

1/07 . . . the upper article of a pile being always presented at the same predetermined level [3]

1/08 . . . the articles being fed by gravity [3]

1/10 . . . with relatively-movable racks to facilitate insertion or removal of articles

1/12 . . . with article supports or holders movable in a closed circuit to facilitate insertion or removal of articles

1/127 . . . the circuit being confined in a vertical plane [3]
Devices assisting manual conveyance of articles over short distances, e.g. in storage depots, warehouses, or factories (chutes B65G 11/00; roller-ways B65G 13/00; luggage carriers A45C 13/38; holders or carriers for hand articles or for use while travelling or camping A45F 5/00; vehicles in general, axles, wheels B60; air-cushion vehicles B60V; handcarts, sledges, features of hand-propelled wheeled devices or pedestrian-controlled, power-driven vehicles equally applicable to handcarts B62B; ship-moving devices B63C, E02C; containers, pallets B65D; air-cushions as bearing elements F16C 29/00)

7/00 Devices for moving or tilting heavy loads (for tilting and emptying barrels or casks B65G 65/24)

7/02 Devices adapted to be interposed between loads and the ground or floor, e.g. crowbars with means for assisting conveyance of loads (crowbars per se B60F 15/00)

7/04 Rollers

7/06 Using fluid at high pressure supplied from an independent source to provide a cushion between load and ground

7/08 for tilting the loads

7/10 for rolling cylindrical loads

7/12 Load-carriers, e.g. hooks, slings, harness, gloves, modified for load-carrying

9/00 Apparatus having suspended load-carriers movable by hand or gravity (manually-operated endless-rope or chain conveyers B65G 17/00; railway systems B61B)

Chutes: Kinds or types of conveyers: Constructional features, details, or auxiliary devices peculiar to conveyers of particular types (feeding or discharging conveyers by devices incorporated in, or operatively associated with, conveyers B65G 47/00; loading or unloading B65G 65/00; escalators or moving walkways B66B 21/00; drag-line scraper conveyers E02F 3/46)

11/00 Chutes (used as storage devices B65G 1/02, B65D 88/26; for sports, games, or amusements A63G 21/00; for refuse disposal in buildings E04F 17/12)

11/02 of straight form

11/04 for mail in buildings

11/06 of helical or spiral form

11/08 with discontinuous guiding surfaces, e.g. arranged in zig-zag or cascade formation

11/10 flexible

11/12 pivotable

11/14 extensible, e.g. telescopic

11/16 Interior surfaces; Linings

11/18 Supports or mountings

11/20 Auxiliary devices, e.g. for deflecting, controlling speed of, or agitating, articles or solids

13/00 Roller-ways (storage devices comprising roller-ways B65G 1/02; endless-chain conveyers comprising load-supporting rollers B65G 17/00; rollers, or arrangements thereof B65G 39/00; in metal-rolling equipment B21B 39/00, B21B 41/00)

13/02 having driven rollers

13/04 all rollers driven

13/06 Roller driving means [3]

13/07 . . . having endless driving elements

13/071 . . . with frictional engagement

13/073 . . . comprising free-wheel gearing

13/07S . . . Braking means [3]

13/08 . . . of curved form; with branch-offs

13/10 . . . Switching arrangements

13/11 Roller frames

13/12 . . . adjustable

15/00 Conveyers having endless load-conveying surfaces, i.e. belts and like continuous members, to whichtractive effort is transmitted by means other than endless driving elements of similar configuration (having load-conveying surfaces formed by interconnected longitudinal links B65G 17/06)

15/02 . . . for conveying in a circular arc

15/04 . . . the load being carried on the lower run of the endless surface

15/06 . . . with oppositely-moving parts of the endless surface located in the same plane and parallel to one another

15/08 . . . the load-carrying surface being formed by a concave or tubular belt, e.g. a belt forming a trough

15/10 . . . comprising two or more co-operating endless surfaces with parallel longitudinal axes, or a multiplicity of parallel elements, e.g. ropes defining an endless surface

15/12 . . . with two or more endless belts

15/14 . . . the load being conveyed between the belts

15/16 . . . between an auxiliary belt and a main belt

15/18 . . . the belts being sealed at their edges (endless-surface conveyers having a single belt with sealed edges B65G 15/08)

15/20 . . . arranged side by side, e.g. for conveyance of flat articles in vertical position (for conveying sheets or like thin flat articles B65H)

15/22 . . . comprising a series of co-operating units

15/24 . . . in tandem

15/26 . . . extensible, e.g. telescopic

15/28 Conveyers with a load-conveying surface formed by a single flat belt, not otherwise provided for

15/30 . . . Belts or like endless load-carriers (co-operating with rails or the like B65G 21/22; with rollers B65G 39/20; belts in general F16G)

15/32 . . . made of rubber or plastics

15/34 . . . with reinforcing layers, e.g. of fabric

15/36 . . . the layers incorporating ropes, chains, or rolled steel sections
Conveyers having an endless traction element, e.g. a chain, transmitting movement to a continuous or substantially-continuous load-carrying surface or to a series of individual load-carriers; Endless-chain conveyers in which the chains form the load-carrying surface (railway systems, detachable load-carriers on rails B61B; escalators or paternosters neither combined nor associated with loading or unloading apparatus B65G 39/00, F16G)

- comprising a load-carrying belt attached to, or resting on, the traction element
- the belt having loops forming load-receiving pockets
- having a load-carrying surface formed by a series of interconnected, e.g. longitudinal, links, plates, or platforms
- the surface being formed by the traction element
- the surface forming a longitudinal trough
- comprising a series of individual load-carriers fixed, or normally fixed, relative to traction element
- with two spaced connections to traction element
- comprising individual load-carriers which are pivotally mounted, e.g. for free-swinging movement (guides inverting or tilting load-carriers for emptying B65G 47/34)
- and move in contact with a guiding surface
- comprising load-carriers suspended from overhead traction chains
- with oppositely-moving parts of the conveyor located in a common plane
- comprising a series of rollers which are moved over a supporting surface by the traction element to effect conveyance of loads or load-carriers
- comprising a series of co-operating units, e.g. interconnected by pivots
- extensible, e.g. telescopic
- Details; Auxiliary devices (belts B65G 15/30; framework B65G 21/00)
- Individual load-carriers (control B65G 17/48)
- having flat surfaces, e.g. platforms, grids, forks
- having concave surfaces, e.g. buckets
- Chains or like traction elements (chains in general F16G); Connections between traction elements and load-carriers

Chains acting as load-carriers
Attaching load-carriers to traction elements
by means excluding relative movements
Means for holding or retaining the loads in fixed position on the load-carriers, e.g. magnetic
Controlling attitudes of load-carriers during movement (guides B65G 21/20; inverting or tilting load-carriers to discharge contents B65G 47/38)

Conveyers comprising an impeller or a series of impellers carried by an endless traction element and arranged to move articles or materials over a supporting surface or underlying material, e.g. endless scraper conveyers

for articles, e.g. for containers
for moving bulk material in open troughs or channels
the impellers being scrapers similar in size and shape to the cross-section of the trough or channel
and attached to a single belt, rope, or chain
and attached to a pair of belts, ropes, or chains
the impellers being plates having an area substantially smaller than that of the trough or channel cross-section
for moving bulk material in closed conduits, e.g. tubes
the impellers being elements having an area substantially smaller than that of the conduit cross-section
Details
Traction chains, ropes, or cables
Impellers, e.g. push-plates, scrapers; Guiding means therefor
Attachment of impellers to traction element
pivotal
Troughs, channels, or conduits
with supporting surface modified to facilitate movement of loads, e.g. friction-reducing devices

Supporting or protective framework or housings for endless load-carriers or traction elements of belt or chain conveyers (supporting framework or bases for conveyers as a whole B65G 41/00)

consisting essentially of struts, ties, or like structural elements
the ties being formed by longitudinal cables or ropes
constructed to facilitate rapid assembly or dismantling
Protective roofs or arch supports therefor
movable, or having interchangeable or relatively-movable parts; Devices for moving framework or parts thereof

to allow adjustment of position of load-carrier or traction element as a whole

to allow adjustment of length or configuration of load-carrier or traction element (tensioning arrangements for belt or chain B65G 23/44)
for conveyers having endless load-carriers movable in curved paths
in three-dimensionally curved paths
Driving gear for endless conveyors (control devices for conveyers in general B65G 43/00); Belt- or chain-tensioning arrangements

23/00

23/02 Belt- or chain-engaging elements
23/04 Drums, rollers, or wheels
23/06 with projections engaging abutments on belts or chains, e.g. sprocket wheels
23/08 with self-contained driving mechanisms, e.g. motors and associated gearing
23/10 arranged intermediate the ends of the conveyers
23/12 Arrangements of co-operating drums or rollers to augment tractive effort applied to the belts
23/14 Endless driving elements extending parallel to belt or chain
23/16 with dogs engaging abutments on belts or chains
23/18 Suction or magnetic elements
23/19 Suction elements [3]
23/20 Screws
23/22 Arrangements or mountings of driving motors
23/23 of electric linear motors [3]
23/24 Gearing between driving motor and belt- or chain-engaging elements (contained in drums, rollers, or wheels B65G 23/08)
23/26 Applications of clutches or brakes
23/28 Arrangements for equalising the drive to several elements
23/30 Variable-speed gearing
23/32 for effecting drive at two or more points spaced along the length of the conveyers
23/34 comprising a single motor coupled to spaced driving elements
23/36 comprising two or more driving motors each coupled to a separate driving element, e.g. at either end of the conveyers
23/38 for effecting intermittent movement of belts or chains
23/40 Applications of pawl-and-ratchet mechanisms or Geneva wheels
23/42 Reciprocating members engaging successive abutments on belts or chains
23/44 Belt- or chain-tensioning arrangements

Conveyers comprising a cyclically-moving, e.g. reciprocating, carrier or impeller which is disengaged from the load during the return part of its movement (jigging B65G 27/00; pumps F04)

25/02 the carrier or impeller having different forward and return paths of movement, e.g. walking-beam conveyers
25/04 the carrier or impeller having identical forward and return paths of movement, e.g. reciprocating conveyers
25/06 having carriers, e.g. belts
25/08 having impellers, e.g. pushers
25/10 with impeller pivotally mounted on a reciprocating bar
25/12 with impeller fixed to a reciprocating bar and the bar being rotated about its longitudinal axis on its return stroke

Jigging conveyers (jigs for wet separation B03B; generating or transmitting mechanical vibrations B06; juggers for screening, sifting, or sorting B07B 1/28)

27/02 comprising helical or spiral channels or conduits for elevation of materials (helical or spiral chutes in general B65G 11/86)
27/04 Load-carriers other than helical or spiral channels or conduits
27/06 Joints connecting load-carrier sections
27/08 Supports or mountings for load-carriers, e.g. framework, bases, spring arrangements
27/10 Applications of devices for generating or transmitting jigging movements
27/12 of shaking devices, i.e. devices for producing movements of low frequency and large amplitude
27/14 of vibrators, i.e. devices for producing movements of high frequency and small amplitude
27/18 Mechanical devices
27/20 Rotating unbalanced masses
27/22 Hydraulic or pneumatic devices
27/24 Electromagnetic devices
27/26 with elastic coupling between vibrator and load-carrier
27/28 with provision for dynamic balancing
27/30 by means of an oppositely-moving mass, e.g. a second conveyer
27/32 with means for controlling direction, frequency, or amplitude of vibration or shaking movement
27/34 comprising a series of co-operating units

Rotary conveyers, e.g. rotating discs, arms, star-wheels, cones (mechanical projectors B65G 31/00; screw or rotary spiral conveyers B65G 33/00)

29/02 for inclined or vertical transit (B65G 15/00, B65G 17/00 take precedence)

Mechanical throwing machines for articles or solid materials (distributors for fertilisers A01C; moulding machines B22C; sandblasting devices B24C; implements for applying plaster E04F 21/06)

31/00 Mechanical throwing machines for articles or solid materials (distributors for fertilisers A01C; moulding machines B22C; sandblasting devices B24C; implements for applying plaster E04F 21/06)
31/02 comprising belts
31/04 comprising discs, drums, or like rotary impellers
33/00 Screw or rotary spiral conveyers (screws for extruding, compressing, kneading, mixing, pumping, or other special operations, see the relevant classes)
33/02 for articles
33/04 conveyed between a single screw and guiding means
33/06 conveyed and guided by parallel screws
33/08 for fluent solid materials
33/10 with non-enclosed screws
33/12 with screws formed by straight tubes or drums having internal threads, or by spiral or helical tubes
33/14 comprising a screw or screws enclosed in a tubular housing
33/16 with flexible screws operating in flexible tubes
33/18 with multiple screws in parallel arrangements
33/20 the housing being rotatable relative to the screw
33/22 . . . with means for retarding material flow at the delivery end of the housing
33/24 . . . Details
33/26 . . . Screws (as gearing elements F16H 25/20)
33/30 . . . with a discontinuous helical surface
33/32 . . . Adaptations of bearings or couplings for supporting or connecting screws (B65G 33/16 takes precedence)
33/34 . . . Applications of driving gear
33/36 . . . for rotating housing and screw at different speeds
33/38 . . . for effecting simultaneous rotation and reciprocation of screw
35/00 Mechanical conveyors not otherwise provided for
35/02 . . . comprising an endless traction element, e.g. a belt, arranged to roll cylindrical articles over a supporting surface
35/04 . . . comprising a flexible load-carrier, e.g. a belt, which is wound-up at one end and paid-out at the other (reciprocating belt conveyers B65G 25/06)
35/06 . . . comprising a load-carrier moving along a path, e.g. a closed path, and adapted to be engaged by any one of a series of traction elements spaced along the path (effecting drive at two or more points spaced along the length of an endless conveyor B65G 23/32)
35/08 . . . comprising trains of unconnected load-carriers, e.g. belt sections, movable in a path, e.g. a closed path, adapted to contact each other and to be propelled by means arranged to engage each load-carrier in turn
37/00 Combinations of mechanical conveyors of the same kind, or of different kinds, of interest apart from their application in particular machines or use in particular manufacturing processes (mechanical storage devices B65G 1/04; series of co-operating belt conveyor units B65G 15/22; series of co-operating chain conveyor units B65G 17/26; sequence control of combined conveyers B65G 43/10; specially adapted for handling radioactive materials G21)
37/02 . . . Flow sheets for conveyor combinations in warehouses, magazines, or workshops

Common features or details of, or auxiliary devices applicable to, conveyers of different kinds or types. Feeding or discharging devices incorporated in, or operatively associated with, conveyers

39/00 Rollers, e.g. drive rollers, or arrangements thereof incorporated in roller-ways or other types of mechanical conveyors (driving gear for rollers of roller-ways B65G 13/06; drive rollers of endless conveyers B65G 23/04; arrangement of rollers in metal-rolling equipment B21B 39/10; friction members F16H 55/32)
39/02 . . . Adaptations of individual rollers and supports therefor
39/04 . . . the rollers comprising a number of roller- forming elements mounted on a single axle
39/06 . . . the roller sleeves being shock-absorbing, e.g. formed by helically-wound wires
39/07 . . . Other adaptations of sleeves
39/071 . . . for aligning belts or sheets
39/073 . . . for cleaning belts
39/08 . . . the rollers being magnetic (in magnetic belt separators B03C 1/00)
39/09 . . . Arrangements of bearing or sealing means
39/10 . . . Arrangements of rollers (on a single axle B65G 39/04)
39/12 . . . mounted on framework
39/14 . . . Spring-supported sets, e.g. permitting troughing of a load-carrying belt
39/16 . . . for aligning belts or chains (for aligning tapes or webs B65H)
39/18 . . . for guiding loads
39/20 . . . attached to moving belts or chains (belts B65G 15/30; chains B65G 17/44)
41/00 Supporting frames or bases for conveyers as a whole, e.g. transportable conveyer frames
41/02 . . . Frames mounted on wheels for movement on rail tracks
43/00 Control, e.g. safety, warning, fault-correcting, devices (for elevators, escalators or moving walkways B66B; in general F16P, G08B)
43/02 . . . detecting dangerous physical condition of load-carriers, e.g. for interrupting the drive in the event of overheating
43/04 . . . detecting slip between driving element and load-carrier, e.g. for interrupting the drive
43/06 . . . interrupting the drive in case of driving-element breakage; Braking or stopping loose load-carriers
43/08 . . . Control devices operated by article or material being fed, conveyed, or discharged
43/10 . . . Sequence control of conveyers operating in combination
45/00 Lubricating, cleaning, or clearing devices
45/02 . . . Lubricating devices
45/04 . . . for rollers [5]
45/06 . . . forming belt troughing structure [5]
45/08 . . . for chains [5]
45/12 . . . comprising scrapers [5]
45/16 . . . with scraper biasing means [5]
45/18 . . . comprising brushes [5]
45/20 . . . comprising screws [5]
45/22 . . . comprising fluid applying means [5]
45/24 . . . comprising plural diverse cleaning devices [5]
45/26 . . . for gathering residue after cleaning [5]
47/00 Article or material-handling devices associated with conveyers; Methods employing such devices (for sorting, e.g. postal, B07C)
47/02 . . . Devices for feeding articles or materials to conveyers
47/04 . . . for feeding articles
47/06 . . . from a single group of articles arranged in orderly pattern, e.g. workpieces in magazines (de-stacking devices B65G 59/00; picking-up flat workpieces B65H)
47/08 . . . . . . spacing or grouping the articles during feeding (during transit by conveyor B65G 47/28)
47/10 . . . from several groups of articles
47/12 . . . from disorderly-arranged article piles or from loose assemblages of articles
47/14 . . . . . . arranging or orientating the articles by mechanical or pneumatic means during feeding (during transit by conveyor B65G 47/24, B65G 47/26)
47/16 . . . for feeding materials in bulk
Devices influencing the relative position or the attitude of articles during transit by conveyers (during feeding B65G 47/14)

47/25 . . . orienting the articles
47/248 . . . by turning over or inverting them (B65G 47/244 takes precedence) [5]
47/252 . . . about an axis substantially perpendicular to the conveying direction [5]
47/256 . . . removing incorrectly orientated articles [5]
47/26 . . . arranging the articles, e.g. varying spacing between individual articles (stacking or de-stacking B65G 57/00, B65G 59/00, B65G 61/00)
47/28 . . . during transit by a single conveyer
47/29 . . . . . . by temporarily stopping movement
47/30 . . . . . . during transit by a series of conveyers
47/31 . . . . . . by varying the relative speeds of the conveyers forming the series
47/32 . . . . . . Applications of transfer devices
47/34 . . . Devices for discharging articles or materials from conveyers (B65G 47/256 takes precedence; sorting in general B07)
47/36 . . . . . . by detaching suspended articles
47/38 . . . . . . by dumping, tripping, or releasing load-carriers
47/40 . . . . . . by tilting conveyer buckets
47/42 . . . . . . operated by article or material being conveyed and discharged
47/44 . . . Arrangements or applications of hoppers or chutes
47/46 . . . . . . with distribution, e.g. automatically, to desired points (in tube mail systems B65G 51/36; postal or like sorting B07C)
47/48 . . . . . . according to bodily destination marks on either articles or load-carriers (marking data records G06K)
47/49 . . . . . . without bodily contact between article or load-carrier and automatic control device
47/50 . . . . . . according to destination signals stored in separate systems (control by programme G05B 19/00)
47/51 . . . . . . according to unprogrammed signals, e.g. influenced by supply situation at destination (volume, flow, or liquid level meters G01F; scales or weighing machines G01G; remote controls G05G)
47/52 . . . Devices for transferring articles or materials between conveyers, i.e. discharging or feeding devices (loading or unloading by means not incorporated in, or not operatively associated with, conveyers B65G 65/00; transfer of workpieces during metal rolling B21B 41/00)
47/53 . . . . . . between conveyers which cross one another [3]
47/54 . . . . . . at least one of which is a roller-way [3]
47/56 . . . . . . to or from inclined or vertical conveyer sections
47/57 . . . . . . for articles
47/58 . . . . . . for materials in bulk
47/60 . . . . . . to or from conveyers of the suspended, e.g. trolley, type
47/61 . . . . . . for articles

47/62 . . . . . . for materials in bulk
47/64 . . . Switching conveyers
47/66 . . . Fixed platforms or combs, e.g. bridges between conveyers
47/68 . . . . . . adapted to receive articles arriving in one layer from one conveyer and to transfer them in individual layers to more than one conveyer, or vice versa, e.g. combining the flows of articles conveyed by more than one conveyer
47/69 . . . . . . the articles being accumulated temporarily
47/70 . . . . . . with precedence controls among incoming article flows
47/71 . . . . . . the articles being discharged to several conveyers
47/72 . . . . . . transferring materials in bulk from one conveyer to several conveyers, or vice versa
47/74 . . . Feeding, transfer, or discharging devices of particular kinds or types
47/76 . . . . . . Fixed or adjustable ploughs or transverse scrapers
47/78 . . . . . . Troughs having discharge openings and closures
47/80 . . . . . . Turntables carrying articles or materials to be transferred, e.g. combined with ploughs or scrapers
47/82 . . . . . . Rotary or reciprocating members for direct action on articles or materials, e.g. pushers, rakes, shovels
47/84 . . . . . . Star-shaped wheels or devices having endless travelling belts or chains, the wheels or devices being equipped with article-engaging elements
47/86 . . . . . . the article-engaging elements being grippers
47/88 . . . . . . Separating or stopping elements, e.g. fingers (attached to star-shaped wheels B65G 47/84)
47/90 . . . . . . Devices for picking-up and depositing articles or materials
47/91 . . . . . . incorporating pneumatic, e.g. suction, grippers
47/92 . . . . . . incorporating electrostatic or magnetic grippers
47/94 . . . . . . Devices for flexing or tilting travelling structures; Throw-off carriages
47/95 . . . . . . adapted for longitudinal delivery
47/96 . . . . . . Devices for tilting links or platforms

49/00 Conveying systems characterised by their application for specified purposes not otherwise provided for (for conveying sheet material B65H)
49/02 . . . for conveying workpieces through baths of liquid
49/04 . . . the workpieces being immersed and withdrawn by movement in a vertical direction
49/05 . . . for fragile or damageable materials or articles [4]
49/06 . . . for fragile sheets, e.g. glass (transporting of glass products during their manufacture C03B 35/00) [4]
49/07 . . . for semiconductor wafers (specially adapted for conveying of semiconductor wafers during manufacture or treatment of semiconductor or electric solid state devices or components H01L 21/677) [5,8]
49/08 . . . for ceramic mouldings (charging, discharging, manipulation with charge in kilns F27D 3/00) [4]
Non-mechanical conveying through pipes or tubes (pipe-line systems F17D); Floating in troughs

51/00 Conveying articles through pipes or tubes by fluid flow or pressure (water roundabouts A63G 3/00; pneumatic railways B61B); Conveying articles over a flat surface, e.g. the base of a trough, by jets located in the surface (pumps F04; fluid dynamics F15D; valves, taps, cocks F16K; pipes, pipe joints, or associated devices F16L)

51/01 . . . Hydraulic transport of articles (B65G 51/04 takes precedence) [6]
51/02 . . . Directly conveying the articles, e.g. slips, sheets, stockings, containers or workpieces, by flowing gases over a flat surface or in troughs [4]
51/03 . . . Conveying the articles in carriers having a cross-section approximating that of the pipe or tube; Tube mail systems
51/04 . . . Despatch carriers for tube mail
51/08 . . . Controlling or conditioning the operating medium (in compressors F04; air-conditioning, e.g. de-watering, in pneumatic systems F16L 55/09)
51/10 . . . at section junctions of pneumatic systems
51/12 . . . . Pneumatic gates
51/14 . . . . . Pneumatic sluices
51/16 . . . . varying, e.g. starting or stopping, gas pressure or flow
51/18 . . . Adaptations of pipes or tubes; Pipe or tube joints
51/20 . . . Braking arrangements
51/22 . . . Arrangements for stopping the carriers en route in order to control carrier sequence; Blocking or separating devices
51/24 . . . Switches
51/26 . . . Stations
51/28 . . . . for despatch
51/30 . . . . for delivery
51/32 . . . . for despatch, delivery, and transit
51/34 . . . . . Two-way operation
51/36 . . . . Other devices for indicating or controlling movements of carriers, e.g. for supervising individual tube sections, for counting carriers, for reporting jams or other operating difficulties
51/38 . . . . Contact devices on interior of tubes for detecting passage of carriers
51/40 . . . . Automatically distributing the carriers to desired stations
51/42 . . . . according to indications on carriers
51/44 . . . . . . without mechanical contact between carriers and controllers
51/46 . . . . . . according to separate signal systems
53/00 Conveying materials in bulk through troughs, pipes, or tubes by floating the materials, or by flow of gas, liquid, or foam (fluidising in connection with loading or unloading B65G 69/06; loaders for hay or like field crops A01D 87/00; fluidising devices facilitating filling or emptying of large containers B65D 88/72; dredging E02F; winning materials out of alluvial deposits E21C 45/00; hydraulic or pneumatic mine-filling-up machines E21F 15/00; fluid dynamics F15D)
53/02 . . . Floating material troughs (air slides B65G 53/04)
53/04 . . . Conveying materials in bulk pneumatically through pipes or tubes; Air slides
53/06 . . . Gas pressure systems operating without fluidisation of the materials
53/08 . . . with mechanical injection of the materials, e.g. by screw

53/10 . . . . . . . with pneumatic injection of the materials by the propelling gas
53/12 . . . . . . . the gas flow acting directly on the materials in a reservoir
53/14 . . . . . . . the gas flow inducing feed of the materials by suction effect
53/16 . . . . . . . Gas pressure systems operating with fluidisation of the materials
53/18 . . . . . . . through a porous wall
53/20 . . . . . . . of an air slide, e.g. a trough
53/22 . . . . . . . the systems comprising a reservoir, e.g. a bunker
53/24 . . . . . . . Gas suction systems
53/26 . . . . . . . operating with fluidisation of the materials
53/28 . . . . . . . Systems utilising a combination of gas pressure and suction (inducing feed of the materials by suction in gas pressure systems B65G 53/14)
53/30 . . . . . . . Conveying materials in bulk through pipes or tubes by liquid pressure
53/32 . . . . . . . Conveying concrete, e.g. for distributing same at building sites (mixing concrete on or by conveyers B28C 5/34)
53/34 . . . . . . . Details
53/36 . . . . . . . Arrangements of containers
53/38 . . . . . . . Modification of material containing walls to facilitate fluidisation
53/40 . . . . . . . Feeding or discharging devices
53/42 . . . . . . . Nozzles (in general B05B)
53/44 . . . . . . . Endless conveyers
53/46 . . . . . . . Gates or sluices, e.g. rotary wheels
53/48 . . . . . . . Screws or like rotary conveyers
53/50 . . . . . . . Pneumatic devices (incorporated in nozzles B65G 53/42)
53/52 . . . . . . . Adaptations of pipes or tubes
53/54 . . . . . . . Flexible pipes or tubes
53/56 . . . . . . . Switches
53/58 . . . . . . . Devices for accelerating or decelerating flow of the materials; Use of pressure generators (controlling pressure of propelling gas B65G 53/66)
53/60 . . . . . . . Devices for separating the materials from propellant gas
53/62 . . . . . . . using liquid
53/64 . . . . . . . in discrete amounts
53/66 . . . . . . . Use of indicator or control devices, e.g. for controlling gas pressure, for controlling proportions of material and gas, for indicating or preventing jamming of material

54/00 Non-mechanical conveyers not otherwise provided for [3]
54/02 . . . . electrostatic, electric, or magnetic [3]
Stacking or de-stacking: Loading or unloading (by means incorporated in, or operatively associated with, conveyors B65G 47/00; lift trucks B60F, B66F; handling sheet material or flat articles made therefrom B65H; cranes B66C; loading or unloading by soil-shifting or like equipment E02F; stacking or de-stacking data record cards in association with machines for marking or sensing data G06K)

Note

In groups B65G 57/00 to B65G 61/00, the following term is used with the meaning indicated:

“stacking” means disposing articles individually or in layers one above each other.

57/00 Stacking of articles (B65G 60/00 takes precedence; stacking of jumbo rolls B41F; stackable containers B65D; feeding, piling, or stacking sheets B65H; stacked delivery of machined products, see the relevant classes for the machines)

57/02 by adding to the top of the stack
57/03 from above
57/04 by suction or magnetic devices
57/06 Gates for releasing articles
57/08 articles being tilted or inverted prior to depositing
57/081 alternate articles being inverted
57/09 from alongside
57/10 by devices, e.g. reciprocating, acting directly on articles for horizontal transport to the top of stack
57/11 the articles being stacked by direct action of the feeding conveyor
57/112 the conveyor being adjustable in height
57/14 the articles being transferred from carriers moving in an endless path adjacent to the stacks (conveyor constructions B65G 15/00 to B65G 35/00; combinations of conveyers B65G 37/00)
57/16 Stacking of articles of particular shape
57/18 elongated, e.g. sticks, rods, bars
57/20 three-dimensional, e.g. cubiform, cylindrical
57/22 in layers, each of predetermined arrangement
57/24 the layers being transferred as a whole, e.g. on pallets
57/26 the arrangement providing for spaces between the articles
57/28 by assembling the articles and tilting the assembled articles to a stacked position
57/30 by adding to the bottom of the stack
57/32 characterised by stacking during transit

59/00 De-stacking of articles (B65G 60/00 takes precedence)
59/02 De-stacking from the top of the stack
59/04 by suction or magnetic devices
59/06 De-stacking from the bottom of the stack
59/08 De-stacking after preliminary tilting of the stack
59/10 De-stacking nested articles
59/12 characterised by de-stacking during transit

60/00 Simultaneously or alternatively stacking and de-stacking of articles

61/00 Use of pick-up or transfer devices or of manipulators for stacking or de-stacking articles not otherwise provided for (manipulators B25J)

63/00 Transferring or trans-shipping at storage areas, railway yards or harbours, Marshalling yard installations (transferring of refuse between vehicles or containers B65F 9/00; dredging, soil shifting E02F; conveyers used in co-operation with coal or like winning apparatus E21C 47/00)

63/02 with essentially-horizontal transit otherwise than by bridge
63/04 with essentially-horizontal transit by bridges equipped with conveyers
63/06 with essentially-vertical transit (hoppers B65D 88/26)

65/00 Loading or unloading (of vehicles B65G 67/00)
65/02 Loading or unloading machines comprising essentially a conveyer for moving the loads associated with a device for picking-up the loads
65/04 with pick-up shovels (construction of shovels E02F)
65/06 with endless scraping or elevating pick-up conveyers
65/08 with reciprocating pick-up conveyers
65/10 Raking or scraping devices
65/12 operations at positions offset from the conveyer centreline
65/14 with jigging pick-up conveyers, e.g. duck-bills
65/16 with rotary pick-up conveyers
65/18 Discs
65/20 Paddle wheels
65/22 Screws

65/23 Devices for tilting and emptying of containers [3]
65/24 for manual tilting of barrels or casks [3]
65/28 Piling or unpiling loose materials in bulk, e.g. coal, manure, timber, not otherwise provided for (by soil-shifting or like equipment E02F)
65/30 Methods or devices for filling or emptying bunkers, hoppers, tanks, or like containers, of interest apart from their use in particular chemical or physical processes or their application in particular machines, e.g. not covered by a single other subclass (devices for tilting and emptying containers B65G 65/23; such containers having means facilitating filling or emptying B65D 88/54) [3]

Note

Methods or devices for filling bunkers, hoppers, or containers are only classified in group B65G 65/30 if they are of general application apart from their use in particular processes or their application in particular machines or if they are not covered by a single other subclass. [5]
67/00 Loading or unloading vehicles (by means incorporated in the vehicles B60 to B64; ground or aircraft-carrier-deck installations B64F; transferring of refuse between vehicles or containers B65F 9/00)

67/02 Loading or unloading land vehicles
67/04 Loading land vehicles
67/06 . Feeding articles or materials from bunkers or funnels
67/08 using endless conveyers
67/10 using conveyers covering the whole length of vehicle trains
67/12 Loading elongated articles, e.g. rails, logs
67/14 Loading hardened bricks, briquettes, or the like
67/16 Loading coke-oven products (discharging coke ovens C10B 33/00)
67/18 Refuelling locomotives with solid fuels (servicing locomotives B61K 11/02)
67/20 Loading covered vehicles
67/22 Loading moving vehicles
67/24 Unloading land vehicles
67/26 using rakes or scrapers
67/28 External transverse blades attached to endless conveyers
67/30 using transportable tipping apparatus
67/32 using fixed tipping installations
67/34 Apparatus for tipping wagons or mine cars (inverting wagons B65G 67/48; platform-lifts with tiltable platforms B66F 7/22)
67/36 endwise
67/38 comprising a turntable
67/40 toward one end only
67/42 sideways
67/44 by passing the vehicles over a stretch of transversely-inclined rails
67/46 Apparatus for lifting and tilting
67/48 Vehicle tipplers (devices for washing or cleaning railroad vehicles B60S)
67/50 Rotary vehicle tipplers, i.e. rotating through 360°
67/52 having several decks
67/54 Vehicle-locking means
67/56 Vehicle and tippler interlocking controls

67/60 Loading or unloading ships (B65G 67/02 takes precedence; arrangement of ship-based loading or unloading equipment for cargo or passengers B63B 27/00) [3]
67/62 using devices influenced by the tide or by the movements of the ship, e.g. devices on pontoons (horizontal loading or unloading platforms B65G 69/22; loading ramps B65G 69/28) [3]

69/00 Auxiliary measures taken, or devices used, in connection with loading or unloading (preventing, minimising, or fighting fire A62C; in vehicles, see the relevant subclasses)

69/02 Filling storage spaces as completely as possible, e.g. application of vibrators
69/04 Spreading-out the materials conveyed over the whole surface to be loaded; Trimming heaps of loose materials
69/06 Fluidising
69/08 Devices for emptying storage spaces as completely as possible (devices preventing the formation of bridges B65D 88/4)
69/10 Obtaining an average product from stored bulk material (for measuring or testing G01)
69/12 Sieving bulk materials during loading or unloading
69/14 Pulverising loaded or unloaded materials
69/16 Preventing pulverisation, deformation, breakage, or other mechanical damage to the goods or materials
69/18 Preventing escape of dust
69/20 Auxiliary treatments, e.g. aerating, heating, humidifying, de-aerating, cooling, de-watering, or drying, during loading or unloading; Loading or unloading in a fluid medium other than air
69/22 Horizontal loading or unloading platforms (pile tables B65H; as road or railway equipment E01F 1/00)
69/24 having platform-level adjusting means
69/26 Rotatable platforms
69/28 Loading ramps; Loading docks (as road or railway equipment E01F 1/00) [1,8]
69/30 Non-permanently installed loading ramps, e.g. transportable [8]
69/32 Shelters, surrounds or sealing arrangements for loading docks [8]
69/34 Accessories, e.g. vehicle restrainers, wheel blockers, positioners or bumpers [8]

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B65B Handling of sheets or webs in apparatus for, or methods of, packaging articles, not of interest apart from their application in packaging machines

B65C Handling of labels in labelling or tagging apparatus

C14B 1/62 Winding or stacking hides or leather in machines or devices for manufacturing leather

D01 to

D07

D21F 2/00 Transferring webs from wet ends to press sections in paper-making

F26B 13/00 Handling fabrics, fibres, yarns or other material in long lengths in drying apparatus

G03B Film-strip handling or handling of pictures in apparatus for taking photographs or for projecting or viewing them

G06K 13/00 to G06M 7/00 Information storage based on relative movement between record carrier and transducer, involving handling record carriers for recording or reproducing

H01F 41/06 Manufacturing coils for magnets, inductances, transformers, by winding

H01G 13/02 Machines for winding capacitors

H04N 1/00 Sheet handling not of interest apart from its use in systems for transmission or reproduction of pictures or patterns not varying in time, e.g. facsimile transmission.

(2) In this subclass:
- the groups relating to thin material, as defined under (i) of Note (3) below, are primarily intended to cover the handling of articles made of paper or cardboard, but also include the handling of articles made of other materials which have similar characteristics or present similar handling problems, e.g. articles made of sheet-plastics or leather;
- the groups relating to filamentary material (groups B65H 49/00 onwards), as defined in Note (3) below, cover only methods or devices of general application or interest.

(3) In this subclass, the following terms or expressions are used with the meanings indicated:
- “handling” includes feeding, folding (other than in the manufacture of products), guiding, orientating, storing, unwinding, and winding;
- “thin material” includes:
  (i) sheets, signatures, envelopes, blanks, and thin piles thereof (hereinafter referred to as “articles”), and
  (ii) webs, tapes, and films, e.g. of paper, fabric, metal foil, or plastics;
- “filamentary material” includes thread, wires, ropes, cables, and hoses;
- “package” means a mass of filamentary material, formed by coiling, depositing, or winding, with or without a supporting core or former or an enclosing container or receptacle.

**Subclass Index**

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Feeding articles to machines; Separating articles from piles; Pile supports (combinations of piling and depiling operations, of interest apart from the single operation of piling or depiling B65H 83/00; recirculating articles B65H 85/00; manipulators B25J)

1/00 Supports or magazines for piles from which articles are to be separated (carriers used for associating, collating, or gathering articles B65H 39/00)
1/02 . adapted to support articles on edge
1/04 . adapted to support articles substantially horizontally, e.g. for separation from top of pile
1/06 . . for separation from bottom of pile
1/08 . with means for advancing the pile to present the articles to a separating device (pressing on piles from which articles are separated from the bottom B65H 1/06)
1/10 . . comprising weights
1/12 . . comprising springs
1/14 . . comprising positively-acting mechanical devices
1/16 . . comprising pneumatic or hydraulic means
1/18 . . controlled by height of pile
1/20 . . controlled by weight of pile; Floating arrangements
1/22 . . moving in direction of plane of articles, e.g. for bodily advancement of fanned-out piles
1/24 . . with means for relieving or controlling pressure of the pile
1/26 . . with auxiliary supports to facilitate introduction or renewal of the pile
1/28 . compartmented to receive piles side by side
1/30 . with means for replenishing the pile during continuous separation of articles therefrom

3/00 Separating articles from piles (associating, collating, or gathering articles B65H 39/00; machines for separating superposed webs B65H 41/00; unpleasing thin material combined with folding B65H 45/26)
3/02 . using friction forces between articles and separator
3/04 . . Endless-belt separators
3/06 . . Rollers or like rotary separators
3/08 . . using pneumatic force
3/10 . . Suction rollers
3/12 . . Suction bands, belts, or tables moving relatively to the pile
3/14 . . Air blasts producing partial vacuum
3/16 . . using magnetic force
3/18 . . using electrostatic force

Tension control; Measuring pre-determined lengths; joining............................59/00, 77/00;
Cores, formers: securing material,
replacing, removing, stripping-off
waste material.................................65/00, 67/00,
            73/00
Treatment during formation of package .........................................................71/00
Machines: control, checking, safety
or warning; driving gear not
otherwise provided for.........................26/00, 43/00,
            63/00; 79/00
Storing ........................................75/00

SUBJECT MATTER NOT PROVIDED FOR
IN OTHER GROUPS OF THIS SUBCLASS .................................................99/00

3/20 . using adhesives
3/22 . by needles or the like engaging the articles
3/24 . by pushers engaging the edges of the articles
3/26 . by separators engaging folds, flaps, or projections of articles
3/28 . by screw or like separators
3/30 . by escapement devices (screw or like separators B65H 3/28); from staggered piles; from piles of articles having staggered formations, e.g. cuts or perforations
3/32 . by elements, e.g. fingers, plates, rollers, inserted or traversed between articles to be separated and remainder of the pile (such elements acting only as supplementary devices to assist separation or prevent double feed B65H 3/50)
3/34 . Article-retaining devices controlling the release of the articles to the separators
3/36 . by separators moved in special paths, e.g. enclosing an area
3/38 . . the paths not enclosing an area
3/40 . by two or more separators acting alternately on the same pile (rotary or oscillating bodies carrying two or more separators B65H 3/42)
3/42 . by two or more separators mounted for movement with, or relative to, rotary or oscillating bodies
3/44 . Simultaneously, alternately, or selectively separating articles from two or more piles
3/46 . Supplementary devices or measures to assist separation or prevent double feed (control means comprising detectors responsive to double feed B65H 7/12)
3/48 . Air blast acting on edges of, or under, articles
3/50 . . Elements, e.g. fingers, plates, rollers, inserted or traversed between articles to be separated and remainder of the pile
3/52 . . Friction retainers acting on under or rear side of article being separated
3/54 . . Pressing or holding devices
3/56 . . Elements, e.g. scrapers, fingers, needles, brushes, acting on separated article or on edge of the pile
3/58 . . Articles spiked, threaded, cemented, or gummed together, to prevent double feed, e.g. piles with gummed edges
3/60 . . Loosening articles in piles
3/62 . . by swinging, agitating, or knocking the pile
3/64 . . by vacuum apparatus
5/00 Feeding articles separated from piles; Feeding articles to machines (identical mechanisms or parts for delivering or advancing articles from machines B65H 29/00)

5/02 . by belts or chains
5/04 . by movable tables or carriages (rotary tables B65H 5/18)
5/06 . by rollers
5/08 . by grippers, e.g. suction grippers
5/10 . Reciprocating or oscillating grippers
5/12 . Revolving grippers, e.g. mounted on arms, frames, or cylinders
5/14 . Details of grippers; Actuating mechanisms therefor
5/16 . by pusher, needles, friction, or like devices adapted to feed single articles along a surface or table
5/18 . by rotary dials or tables
5/20 . by dropping-roller or like device
5/22 . by air-blast or suction device (suction grippers B65H 5/08)
5/24 . Feeding streams of overlapping articles
5/26 . Duplicate, alternate, selective, or coacting feeds
5/28 . Feeding articles in rolled or folded bands
5/30 . Opening devices for folded sheets or signatures
5/32 . Saddle-like members over which partially-unfolded sheets or signatures are fed to signature-gathering, stitching, or like machines
5/34 . Varying the phase of feed relative to the receiving machine
5/36 . Article guides or smoothing, e.g. movable in operation
5/38 . immovable in operation

7/00 Controlling article feeding, separating, pile-advancing, or associated apparatus, to take account of incorrect feeding, absence of articles, or presence of faulty articles

7/02 . by feelers or detectors
7/04 . responsive to absence of articles, e.g. exhaustion of pile (B65H 7/14 takes precedence)
7/06 . responsive to presence of faulty articles or incorrect separation or feed (B65H 7/14 takes precedence)
7/08 . responsive to incorrect front register
7/10 . responsive to incorrect side register (controlling transverse register of webs B65H 23/032)
7/12 . responsive to double feed or separation
7/14 . by photoelectric feelers or detectors
7/16 . Controlling air-supply to pneumatics separators
7/18 . Modifying or stopping actuation of separators
7/20 . Controlling associated apparatus

9/00 Registering, e.g. orientating, articles; Devices therefor

9/02 . Gauge pins
9/04 . Fixed or adjustable stops or gauges (gauge pins B65H 9/02)
9/06 . Movable stops or gauges, e.g. rising and falling front stops
9/08 . Holding devices, e.g. finger, needle, suction, for retaining articles in registered position
9/10 . Pusher or like movable registers; Pusher or gripper devices which move articles into registered position
9/12 . carried by article grippers
9/14 . Retarding or controlling the forward movement of articles as they approach stops
9/16 . Inclined tape, roller, or like article-forwarding side registers
9/18 . Assisting by devices such as reflectors, lenses, transparent sheets, or mechanical indicators
9/20 . Assisting by photoelectric, sonic, or pneumatic indicators

11/00 Feed tables
11/02 . angularly adjustable in plane of articles

13/00 Lifting the ends of piles to facilitate the formation of overlapped piles
15/00 Overturning articles [4]
15/02 . Overturning piles [4]

Feeding webs to or from machines; Winding or unwinding webs; Splicing webs (web-delivering apparatus incorporating devices for performing auxiliary operations B65H 35/00, B65H 37/00; associating two or more webs B65H 39/16; winding or unwinding metal band or like flexible metallic material during manufacture B21C; in selective printing mechanisms B41J; in cinematographic or photographic apparatus G03B; winding, unwinding, or feeding tape to, in, or from, information-processing apparatus G06, G11B)

16/00 Unwinding, paying-out webs [4]
16/02 . Supporting web roll [4]
16/04 . cantilever type [4]
16/06 . both-ends type [4]
16/08 . parallel rollers type [4]
16/10 . Arrangements for effecting positive rotation of web roll [4]

18/00 Winding webs [4]
18/02 . Supporting web roll [4]
18/04 . Interior-supporting [4]
18/06 . Lateral-supporting [4]
18/08 . Web-winding mechanisms [4]
18/10 . Mechanisms in which power is applied to web-roll spindle [4]
18/14 . Mechanisms in which power is applied to web roll, e.g. to effect continuous advancement of web [4]
18/16 . by friction roller [4]
18/20 . the web roll being supported on two parallel rollers at least one of which is driven [4]
18/22 . by friction band [4]
18/26 . Mechanisms for controlling contact pressure on winding-web package, e.g. for regulating the quantity of air between web layers [4]

19/00 Changing the web roll [4]
19/10 . in unwinding mechanisms or in connection with unwinding operations [4]
19/12 . Lifting, transporting, or inserting the web roll; Removing empty core [4]
Apparatus for splicing webs [4]

Mechanisms for delivering webs in superposed folds [4]

Mechanisms for advancing webs to or from the inside of web rolls [4]

Mechanisms for delivering webs in superposed folds and refeeding them from the lower end of the folded assemblies [4]

Arrangements for accumulating surplus web (while changing the web roll B65H 19/14, B65H 19/24) [4]

by making loops [4]

with rollers [4]

having means to optionally advance the web either in one longitudinal direction or in the opposite longitudinal direction [4]

by changing the direction of mechanism driving the web-roll spindle [4]

by changing the direction of mechanism driving the pinch roller [4]

Apparatus for splicing webs (during web-roll changing B65H 19/00)

for premarked, e.g. preprinted, webs

Registering, tensioning, smoothing, or guiding webs (registering articles B65H 9/00; in connection with splicing B65H 21/00; tensioning devices of general interest in connection with the handling of webs, tapes, or filamentary materials B65H 77/00)

transversely (by tentering, gripper, or like apparatus operating on fabric webs D06C)

by tentering devices [4]

by rollers [4]

Delivering articles from machines: Piling articles; Article or web delivery apparatus incorporating devices for performing specified auxiliary operations; Associating or gathering articles or webs; Machines for separating superposed webs (combinations of piling and depiling operations, of interest apart from the single operation of piling or depiling B65H 83/00; recirculating articles B65H 85/00)
31/06 . . . the grippers being carried by rotating members
31/08 . . . the grippers being oscillated in arcuate paths
31/10 . . . the grippers being reciprocated in rectilinear paths
31/12 . . . by means of the nip between two, or between two sets of, moving tapes or bands
31/14 . . . and introducing into a pile
31/16 . . . by contact of one face only with moving tapes, bands, or chains
31/18 . . . and introducing into a pile
31/20 . . . by contact with rotating friction members, e.g. rollers, brushes, or cylinders
31/22 . . . and introducing into a pile
31/24 . . . by air-blast or suction apparatus (dropping articles from suction carriers B65H 29/32)
31/26 . . . by dropping
31/28 . . . from mechanical grippers (grippers engaging the leading edge only B65H 29/02)
31/30 . . . from magnetic holders
31/32 . . . from pneumatic, e.g. suction, carriers
31/34 . . . from supports slid from under the articles
31/36 . . . from tapes, bands, or rollers rolled from under the articles
31/38 . . . by movable piling or advancing arms, frames, plates, or like members with which the articles are maintained in face contact
31/40 . . . Members rotated about an axis perpendicular to direction of article movement, e.g. star-wheels formed by S-shaped members
31/42 . . . Members rotated about an axis parallel to direction of article movement, e.g. helices
31/44 . . . Members oscillated in arcuate paths
31/46 . . . Members reciprocated in rectilinear path
31/48 . . . by tables arranged to be tilted to cause sliding of articles
31/50 . . . Piling apparatus of which the discharge point moves in accordance with the height of the pile
31/51 . . . piling by collecting on the periphery of cylinders [3]
31/52 . . . Stationary guides or smoothers
31/54 . . . Article strippers, e.g. for stripping from advancing elements
31/56 . . . for stripping from elements of machines
31/58 . . . Article switches or diverters
31/60 . . . diverting the stream into alternative paths (B65H 29/62 takes precedence)
31/62 . . . diverting faulty articles from the main stream (control devices detecting faulty articles B65H 43/04)
31/64 . . . directing the components of composite articles into separate paths
31/66 . . . Advancing in streams of overlapping articles
31/68 . . . Reducing the speed of articles as they advance (web retarding devices B65H 23/06)
31/70 . . . Article-bending or stiffening arrangements

31/00 **Pile receivers** (carriers used for associating, collating, or gathering articles B65H 39/00)
31/02 . . . with stationary end support against which pile accumulates
31/04 . . . with movable end support arranged to recede as pile accumulates
31/06 . . . the articles being piled on edge
31/08 . . . the articles being piled one above another
31/10 . . . and applied at the top of the pile
31/12 . . . Devices relieving the weight of the pile or permitting or effecting movement of the pile end support during piling
31/14 . . . Springs (fluid springs B65H 31/16)
31/16 . . . Fluid-pressure devices
31/18 . . . Positively-acting mechanical devices
31/20 . . . adjustable for different article sizes
31/22 . . . removable or interchangeable
31/24 . . . multiple or compartmented, e.g. for alternate, programmed, or selective filling
31/26 . . . Auxiliary devices for retaining articles in the pile
31/28 . . . Bands, chains, or like moving receivers (for articles piled on edge B65H 31/06)
31/30 . . . Arrangements for removing completed piles (bands, chains, or like moving receivers B65H 31/28)
31/32 . . . Auxiliary devices for receiving articles during removal of a completed pile
31/34 . . . Apparatus for squaring-up piled articles
31/36 . . . Auxiliary devices for contacting each article with a front stop as it is piled
31/38 . . . Apparatus for vibrating or knocking the pile during piling
31/40 . . . Separate receivers, troughs, and like apparatus for knocking-up completed piles

33/00 **Forming counted batches in delivery pile or stream of articles**
33/02 . . . by moving a blade or like member into the pile
33/04 . . . by inserting marker slips in pile or stream
33/06 . . . by displacing articles to define batches
33/08 . . . Displacing whole batches, e.g. forming stepped piles
33/10 . . . Displacing the end articles of a batch
33/12 . . . by creating gaps in the stream
33/14 . . . by diverting batches to separate receivers
33/16 . . . by depositing articles in batches on moving supports
33/18 . . . with separators between adjacent batches

35/00 **Delivering articles from cutting or line-perforating machines; Article or web delivery apparatus incorporating cutting or line-perforating devices, e.g. adhesive tape dispensers** (cutting or perforating machines or devices in general B26D, B26F)
35/02 . . . from or with longitudinal slitters or perforators
35/04 . . . from or with transverse cutters or perforators
35/06 . . . from or with blade, e.g. shear-blade, cutters or perforators (from or with revolving blade B65H 35/08)
35/07 . . . Adhesive-tape dispensers [3]
35/08 . . . from or with revolving, e.g. cylinder, cutters or perforators
35/10 . . . from or with devices for breaking partially-cut or perforated webs, e.g. bursters

37/00 **Article or web delivery apparatus incorporating devices for performing specified auxiliary operations** (incorporating cutting or line-perforating devices B65H 35/00)
37/02 . . . for applying adhesive (and securing together B65H 37/04)
37/04 . . . for securing together articles or webs, e.g. by adhesive, stitching, or stapling (adhering replacement to expiring web during change of web roll B65H 19/18) [2]
37/06 . . . for folding
39/00 Associating, collating, or gathering articles or webs
(machines for both collating or gathering and permanently attaching together sheets or signatures B42C 1/00)
39/02 . Associating, collating, or gathering articles from several sources
39/04 . . . from piles
39/041 . . . the piles being disposed in rotary carriers [3]
39/042 . . . the piles being disposed in superposed carriers [3]
39/043 . . . the piles being disposed in juxtaposed carriers [3]
39/045 . . . by collecting in rotary carriers [2]
39/05 . . . by collecting in superposed carriers [2]
39/055 . . . by collecting in juxtaposed carriers [2]
39/06 . . . from delivery streams
39/065 . . . by collecting in rotary carriers [2]
39/07 . . . by collecting in superposed carriers [2]
39/075 . . . by collecting in juxtaposed carriers [2]
39/10 . Associating articles from a single source, e.g. to form a writing pad
39/105 . . . in rotary carriers [3]
39/11 . . . in superposed carriers [3]
39/115 . . . in juxtaposed carriers [3]
39/14 . Associating sheets with webs
39/16 . Associating two or more webs

41/00 Machines for separating superposed webs
43/00 Use of control, checking, or safety devices, e.g. automatic devices comprising an element for sensing a variable
43/02 . detecting, or responding to, absence of articles (B65H 43/08 takes precedence)
43/04 . detecting, or responding to, presence of faulty articles (B65H 43/08 takes precedence; diverting faulty articles from main streams B65H 29/62)
43/06 . detecting, or responding to, completion of pile (B65H 43/08 takes precedence)
43/08 . Photoelectric devices

Folding or unfolding thin material

45/00 Folding thin material (specially adapted for the manufacture or treatment of particular products, see the relevant places, e.g. D06F 89/00) [4]
45/02 . Folding limp material without application of pressure to define or form crease lines (winding or unwinding fabrics for feeding to or from machines B65H 16/00 to B65H 27/00; folding garments for packaging purposes B65B; folding fabrics in sewing machines D05B)
45/04 . . Folding sheets
45/06 . . Folding webs (B65H 20/28 takes precedence)
45/08 . . . longitudinally
45/09 . . . transversely
45/10 . . . in combination with laying, i.e. forming a zig-zag pile
45/101 . . . by a carriage which reciprocates above the laying station
45/103 . . . . . . . by means of swinging or reciprocating guide bars
45/105 . . . . . . . coacting with fold holders
45/107 . . . . . . . Registering or counting the folds; Detecting irregularities in the zig-zag pile
45/12 . . Folding articles or webs with application of pressure to define or form crease lines (B65H 20/28 takes precedence; pleating, kilting, or goffering textile fabrics D06J)
45/14 . . Buckling folders
45/16 . . Rotary folders
45/18 . . Oscillating or reciprocating blade folders (carried on rotary members B65H 45/16)
45/20 . . Zig-zag folders
45/22 . . longitudinal folders, i.e. for folding moving sheet material parallel to the direction of movement
45/24 . . Interfolding sheets, e.g. cigarette or toilet papers
45/26 . . Folding in combination with unrolling (unpiling B65H 3/00)
45/28 . . Folding in combination with cutting (cutting machines B26D)
45/30 . . Folding in combination with creasing, smoothing, or application of adhesive (folding or adhesive-application in article or web delivering B65H 37/00)

47/00 Unfolding thin limp material (B65H 20/28 takes precedence; opening devices for sheets or signatures B65H 5/30)

Unwinding, paying-out, forwarding, winding, coiling, or depositing filamentary material (devices specially adapted or mounted for storing and repeatedly paying-out and re-storing lengths of material B65H 75/34; working or processing wire B21F, B21G; unwinding, paying-out, forwarding, or winding ropes or cables in load-moving apparatus B61B, B65G, B66; creels, warping, beaming, or leasing machines or methods for textile manufacturing purposes D02H)

49/00 Unwinding or paying-out filamentary material: Supporting, storing, or transporting packages from which filamentary material is to be withdrawn or paid-out (winding B65H 54/00; flyers or other guides assisting paying-out B65H 37/00; bobbins, tubes, or other cores for packages B65H 75/00)
49/02 . Methods or apparatus in which packages do not rotate
49/04 . . . Package-supporting devices
49/06 . . . . for a single operative package
49/08 . . . . enclosing the package
49/10 . . . . for one operative package and one or more reserve packages
49/12 . . . . . the reserve packages being mounted to permit manual or automatic transfer to operating position
49/14 . . . . . for several operative packages
49/16 . . . . . . Stands for frameworks
49/18 . Methods or apparatus in which packages rotate (supports or holders, for storing and repeatedly paying-out and rewinding lengths of material provided for particular purposes B65H 75/34)
49/20 . . . Package-supporting devices
49/22 . . . . Overhead suspension devices
49/24 . . . . Rollers
49/26 . . . . Axial shafts or spigots
49/28 . . . . Turntables
49/30 . . . . Swifts or skein holders
49/32 . . . . Stands or frameworks
49/34 . . . . Arrangements for effecting positive rotation of packages

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51/00 Forwarding filamentary material (stretch-spinning methods D01D 5/12; drawing or drafting rovings or the like D01H 5/00)

51/005. Separating a bundle of forwarding filamentary materials into a plurality of groups [4]
51/01. by means of static electricity [4]
51/015. Gathering a plurality of forwarding filamentary materials into a bundle [4]
51/02. Rotary devices, e.g. with helical forwarding surfaces (devices for temporarily storing filamentary material during forwarding B65H 51/20; driven rotary devices for controlling tension B65H 59/18)
51/04. Rollers, pulleys, capstans, or intermeshing rotary elements
51/06. arranged to operate singly
51/08. arranged to operate in groups or in co-operation with other elements
51/10. with opposed coating surfaces, e.g. providing nips
51/12. in spaced relation to provide a series of independent forwarding surfaces around which material is passed or wound
51/14. Aprons, endless belts, lattices, or like driven elements
51/16. Devices for entraining material by flow of liquids or gases, e.g. air-blast devices (blowing slag wool in molten state C03B 37/06)
51/18. Grippin constituents with linear motion
51/20. Devices for temporarily storing filamentary material during forwarding, e.g. for buffer storage
51/22. Reels or cages, e.g. cylindrical, with storing and forwarding surfaces provided by rollers or bars
51/24. with interdigitating bars
51/26. Rollers or bars mounted askew to facilitate movement of filamentary material along them, e.g. pairs of canted rollers
51/28. Arrangements for initiating a forwarding operation
51/30. Devices controlling the forwarding speed to synchronise with supply, treatment, or take-up apparatus (B65H 59/10, B65H 59/38 take precedence)
51/32. Supporting or driving arrangements for forwarding devices

54/00 Winding, coiling, or depositing filamentary material (cores, formers, holders, cans, or receptacles B65H 75/02)

54/02. Winding and traversing material on to reels, bobbins, tubes, or like package cores or formers
54/04. for making packages with closely-wound convolutions
54/06. for making cross-wound packages
54/08. Precision winding arrangements
54/10. for making packages of specified shapes or on specified types of bobbins, tubes, cores, or formers
54/12. on flanged bobbins or spools (B65H 54/20 takes precedence)
54/14. on tubes, cores, or formers having generally-parallel sides, e.g. cops or packages to be loaded into loom shuttles
54/16. forming bottle bobbin packages
54/18. forming spools to be loaded into sewing, lace, embroidery, or like machines
54/20. forming multiple packages
54/22. Automatic winding machines, i.e. machines with servicing units for automatically performing end-finding, interconnecting of successive lengths of material, controlling or fault-detecting of the running material, and replacing or removing of full or empty cores
54/24. having a plurality of winding units moving along an endless path past one or more fixed servicing units
54/26. having one or more servicing units moving along a plurality of fixed winding units
54/28. Traversing devices; Package-shaping arrangements (arrangements for preventing ribbon winding B65H 54/38; grooved, slotted, or split drums for driving of packages B65H 54/46)
54/30. with thread guides reciprocating or oscillating with fixed stroke
54/32. with thread guides reciprocating or oscillating with variable stroke
54/34. for laying subsidiary winding, e.g. transfer tails
54/36. Yarn-guide advancing or raising mechanisms, e.g. cop-building arrangements
54/38. Arrangements for preventing ribbon winding
54/40. Arrangements for rotating packages
54/42. in which the package, core, or former is rotated by frictional contact of its periphery with a driving surface
54/44. in which the package, core, or former is engaged with, or secured to, a driven member rotatable about the axis of the package
54/46. Package drive drums
54/48. Grooved drums
54/50. Slotted or split drums
54/52. Drive contact pressure control, e.g. pressing arrangements
54/54. Arrangements for supporting cores or formers at winding stations; Securing cores or formers to driving members
54/547. Cantilever supporting arrangements [4]
54/553. Both-ends supporting arrangements [4]
54/56. Winding of hanks or skeins
54/58. Swifts or reels adapted solely for the formation of hanks or skeins (B65H 49/30 takes precedence)
54/60. Devices for domestic use
54/62. Binding of skeins
54/64. Winding of balls; Forming hollow objects by winding on to fusible or soluble cores, e.g. forming pressure vessels
54/66. Winding yarns into balls
54/68. Winding on to cards or other flat cores, e.g. of star form
54/70. Other constructional features of yarn-winding machines
54/71. Arrangements for severing filamentary materials [4]
54/72. Framework; Casings; Coverings
54/74. Driving arrangements (arrangements for preventing ribbon winding B65H 54/38; arrangements for rotating packages B65H 54/40)
54/76. Depositing materials in cans or receptacles
54/78. Apparatus in which the depositing device or the receptacle is reciprocated
54/80 . . . . . . Apparatus in which the depositing device or the receptacle is rotated
54/82 . . . . . . and in which coils are formed before deposition
54/84 . . . . . . Arrangements for compacting materials in receptacles
54/86 . Arrangements for taking-up waste material before or after winding or depositing
54/88 . . . by means of pneumatic arrangements, e.g. suction guns [4]

55/00 Wound packages of filamentary material
55/02 . Self-supporting packages
55/04 . characterised by method of winding

57/00 Guides for filamentary materials; Supports therefor
57/02 . Stationary rods or plates
57/04 . Guiding surfaces within slots or grooves
57/06 . Annular guiding surfaces; Eyes, e.g. pigtails
57/08 . . formed of wire or the like
57/10 . . with flared apertures
57/12 . Tubes
57/14 . Pulleys, rollers, or rotary bars
57/16 . formed to maintain a plurality of filaments in spaced relation
57/18 . mounted to facilitate unwinding of material from packages
57/20 . . Flyers (for inserting twist D01H)
57/22 . adapted to prevent excessive ballooning of material
57/24 . . with wear-resistant surfaces
57/26 . . Supports for guides
57/28 . Reciprocating or oscillating guides (traversing devices for winding, coiling, or depositing filamentary material B65H 54/28)

59/00 Adjusting or controlling tension in filamentary material, e.g. for preventing snarling; Applications of tension indicators (tensioning devices of general interest in connection with the handling of webs, tapes, or filamentary material B65H 77/00)
59/02 . by regulating delivery of material from supply package (by contact of package with support B65H 49/02; by controlling speed of driving mechanism of unwinding or paying-out devices B65H 59/38)
59/04 . . . by devices acting on package or support
59/06 . . . by devices acting on material leaving the package
59/08 . . by contact of running length of material with supply package
59/10 . . by devices acting on running material and not associated with supply or take-up devices (by controlling speed of driving mechanism of material-forwarding devices B65H 59/38)
59/12 . . Stationary elements arranged to deflect material from straight path
59/14 . . . and provided with surfaces imposing additional retarding forces on material
59/16 . . Braked elements rotated by material
59/18 . . Driven rotary elements (material-forwarding devices B65H 51/00)
59/20 . . Co-operating surfaces mounted for relative movement
59/22 . . . and arranged to apply pressure to material
59/24 . . . . Surfaces movable automatically to compensate for variation in tension
59/26 . . . and arranged to deflect material from straight path
59/28 . . . . the surfaces being urged towards each other
59/30 . . . . . . Surfaces movable automatically to compensate for variation in tension
59/32 . . . . . . the surfaces being urged away from each other
59/34 . . . . . . Surfaces movable automatically to compensate for variation in tension
59/36 . . . . Floating elements compensating for irregularities in supply or take-up of material (buffer storage devices B65H 51/20)
59/38 . by regulating speed of driving mechanism of unwinding, paying-out, forwarding, winding, or depositing devices, e.g. automatically in response to variations in tension
59/40 . Applications of tension indicators

61/00 Applications of devices for metering predetermined lengths of running material (of general application G01B)

63/00 Warning or safety devices, e.g. automatic fault detectors, stop-motions (safety devices in general F16P; indicating devices in general G08B)
63/02 . responsive to reduction in tension, failure of supply, or breakage, of material
63/024 . . responsive to breakage of materials [4]
63/028 . . . characterised by the detecting or sensing element [4]
63/032 . . . electrical or pneumatic [4]
63/036 . . . characterised by the combination of the detecting or sensing elements with other devices, e.g. stopping devices for material advancing or winding mechanism [4]
63/04 . responsive to excessive tension or irregular operation of apparatus
63/06 . responsive to presence of irregularities in running material, e.g. for severing the material at irregularities
63/08 . responsive to delivery of a measured length of material, completion of winding of a package, or filling of a receptacle

65/00 Securing material to cores or formers (arrangements for securing ends of material to cores, formers, supports or holders, e.g. reels, B65H 75/28) [3]

67/00 Replacing or removing cores, receptacles, or completed packages at paying-out, winding, or depositing stations
67/02 . . Arrangements for removing spent cores or receptacles and replacing by supply packages at paying-out stations (supports for packages B65H 49/04, B65H 49/20)
67/04 . Arrangements for removing completed take-up packages and replacing by cores, formers, or empty receptacles at winding or depositing stations; Transferring material between adjacent full and empty take-up elements
67/044 . . Continuous winding apparatus for winding on two or more winding heads in succession [4]
67/048 . . . . having winding heads arranged on rotary capstan head [4]
67/052 . . . . having two or more winding heads arranged in parallel to each other [4]
67/056 . . . . having two or more winding heads arranged in series with each other [4]
67/06 . Supplying cores, receptacles, or packages to, or transporting from, winding or depositing stations
67/08 . Automatic end-finding and material-interconnecting arrangements (knot-tying devices B65H 69/00)
Methods, apparatus, or devices of general interest or not otherwise provided for in connection with the handling of webs, tapes, or filamentary materials (unwinding, paying-out, forwarding, or winding ropes or cables in load-moving apparatus B61B, B65G, B66)

Storing webs, tapes, or filamentary material, e.g. on reels (fishing reels A01K 89/00; storing means for record carriers, specially adapted for co-operation with the recording or reproducing apparatus G11B 23/02)

Cores, formers, supports, or holders for coiled, wound, or folded material, e.g. reels, spindles, bobbins, cop tubes, cans (packaging aspects B65D 85/67)

Kinds or types (B65H 75/18 takes precedence)

Flat cores, e.g. cards

of circular or polygonal cross-section (cans or receptacles B65H 75/16)

without flanges, e.g. cop tubes

with a single end flange; formed with one end of greater diameter than the barrel

with two end flanges

Cans or receptacles, e.g. sliver cans

Constructional details

Skeleton construction, e.g. formed of wire

collapsible; with removable parts

adjustable in configuration, e.g. expandable

Arrangements for preventing slipping of winding

Arrangements for securing ends of material [3]

Arrangements to facilitate driving or braking

Arrangements to facilitate severing of material

spatially adapted or mounted for storing and repeatedly paying-out and re-storing lengths of material provided for particular purposes, e.g. anchored hoses, power cables (retractors for storing flexible hoses as accessories of dental work stands A61G 15/18; vehicle safety belt retractors B60R 22/34; hose-storing in apparatus or devices for transferring liquids from bulk storage containers or reservoirs into vehicles or portable containers B67D 5/365; clothes-line supports D06F 53/00; spring drums for liftable blinds with horizontal lamellae E06B 9/322; spring drums or tape drums for roll-type closures or roller blinds E06B 9/56; hauling- or hoisting-chains with arrangements for holding electric cables, hoses or the like F16G 13/16; devices for guiding pipes, cables or protective tubing, between relatively movable points, e.g. movable channels, F16L 3/01; flexible rulers or tapes with scales G01B 3/10; electrical features of stored material, see the relevant subclasses, e.g. H02G) [2,5]

without essentially involving the use of a core or former internal to a stored package of material, e.g. with stored material housed within casing or container, or intermittently engaging a plurality of supports as in sinuous or serpentine fashion [2]

involving the use of a core or former internal to, and supporting, a stored package of material [2]

mobile or transportable

attached to, or forming part of, mobile tools or machines

Constructional details

Automatic re-storing devices [2]

Methods of making reels, bobbins, cop tubes, or the like by working an unspecified material, or several materials

Adjusting or controlling tension in material

Driving gear for devices for forwarding, winding, unwinding, or depositing material, not otherwise provided for

Methods, apparatus, or devices for covering or wrapping cores by winding webs, tapes, or filamentary material, not otherwise provided for (forming hollow objects by winding filamentary material on to fusible or soluble cores B65H 54/64; wrapping for the purpose of packaging B65B 11/00; making wound articles of paper B31C)

Covering or wrapping annular or like cores forming a closed or substantially-closed figure

by feeding material obliquely to the axis of the core

Covering or wrapping elongated cores

by feeding material obliquely to the axis of the core

Combinations of piling and depiling operations, e.g. performed simultaneously, of interest apart from the single operation of piling or depiling (B65H 85/00 takes precedence) [5]

performed on the same pile [5]

Recirculating articles, i.e. feeding each article to, and delivering it from, the same machine work-station more than once [5]

Subject matter not provided for in other groups of this subclass [8]