CPC - COOPERATIVE PATENT CLASSIFICATION

B PERFORMING OPERATIONS; TRANSPORTING

NOTES omitted

TRANSPORTING

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; devices for tensioning and securing binders adapted to be supported by the article or articles to be bound B25B 25/00; applying closure members to bottles, jars or similar containers B67B 1/00-B67B 6/00; concurrent cleaning, filling and closing of bottles B67C 7/00; emptying bottles, jars, cans, casks, barrels or similar containers B67C 9/00)

NOTE

The term "packaging" should be understood as including mainly the following operations:

- filling portable containers or receptacles with materials or small articles to form packages
- inserting articles, or groups of articles, into containers or receptacles
- closing filled containers or receptacles otherwise than by metal-, glass-, or wood-working operations
- enclosing, or partially enclosing, articles or quantities of material, in sheets, strips, blanks, webs, or tubes of thin flexible material, e.g. wrapping
- bundling articles, e.g. holding articles together in groups by applying string or wire
- attaching articles to cards, sheets, or webs

Operations of these types employed in the manufacture of articles other than packages are classified in other appropriate subclasses, e.g. making confectionery products by casting in moulds formed by wrappers A23G, filling ammunition cartridges E42B. Methods of packaging which are wholly characterised by the form of the package produced, or the form of the container or packaging-element utilised, are to be classified in B65D rather than in this subclass. In the following elaborations, the term "package" is to be understood as embracing matter, or masses of articles, which are to be packaged, as distinct from separate or individual articles. Machines, apparatus or methods of general application for packaging articles or materials

WARNINGS

1. The following IPC groups are not in the CPC scheme. The subject matter for these IPC groups is classified in the following CPC groups:

B65B 51/09 covered by B65B 51/00

2. In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

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, or jars

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 . Contrrolling escape of air or dust from containers or receptacles during filling
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)
Machines, apparatus or methods of general application for packaging articles or materials

3/00 Packaging plastic material, semiliquids, liquids or mixed solids and liquids, in individual containers or receptacles, e.g. bags, sacks, boxes, cartons, cans, or jars

3/003 . . . (Filling medical containers such as ampoules, vials, syringes or the like)

3/006 . . . (Related operations, e.g. scoring ampoules)

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

3/022 . . . (Making containers by moulding of a thermoplastic material)

3/025 . . . (Making parallelepipedal containers from a single carton blank)

3/027 . . . (Making containers from separate body and end-parts)

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

3/045 . . . (for filling flexible containers having a filling and dispensing spout, e.g. containers of the "bag-in-box"-type)

3/06 . . . by gravity

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

3/30 . . . by volumetric measurement

3/305 . . . [with measuring pockets moving in an endless path]

3/32 . . . by pistons co-operating with measuring chambers

3/323 . . . [with measuring chambers travelling in an endless path]

3/326 . . . [for dosing several products to be mixed]

3/34 . . . by timing of filling operations

3/36 . . . and arresting flow by cut-off means

5/000 Packaging individual articles in containers or receptacles, e.g. bags, sacks, boxes, cartons, cans, jars

5/00 . . . Machines characterised by incorporation of means for making the containers or receptacles (making containers or receptacles of interest apart from this application, see the appropriate subclasses)

5/002 . . . [for making bags]

5/004 . . . [in bags]

5/006 . . . Packaging groups of articles, the groups being treated as single articles

5/008 . . . Packaging groups of articles, the articles being individually gripped or guided 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

5/101 . . . (by gravity (B65B 5/12 and B65B 5/108 take precedence))

5/103 . . . (for packaging pills or tablets)

5/105 . . . (by grippers (B65B 5/12 and B65B 5/108 take precedence))

5/106 . . . (by pushers (B65B 5/12 and B65B 5/108 take precedence))

5/108 . . . (Article support means temporarily arranged in the container)

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

7/000 Closing containers or receptacles after filling

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)

7/02 . . . Closing containers or receptacles deformed by, or taking-up shape, of, contents, e.g. bags, sacks

7/025 . . . [Closing valve bags]

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 tooth paste, 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 or cartons
Machines, apparatus or methods of general application for packaging articles or materials

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 successive articles, or quantities of material between opposed webs

9/03 . [Packaging fluent material (B65B 9/04 takes precedence)]

9/04 . [the webs forming a curtain]

9/05 . one or both webs being formed with pockets for the reception of the articles, or of the quantities of material

9/06 . [for fluent material]

9/07 . [for single articles, e.g. tablets]

2009/047 . [Rotary pocket formers]

9/08 . Enclosing successive 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

NOTE
If an invention involves both continuous and intermittent web motion, it is classified in both groups B65B 9/087 and B65B 9/093.

9/087 . the web advancing continuously

9/093 . the web having intermittent motion

9/10 . Enclosing successive articles, or quantities of material, in preformed tubular webs, or in webs formed into tubes around filling nozzles, e.g. extruded tubular webs

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

9/15 . the preformed tubular webs being stored on filling nozzles

9/18 . Devices for storing tubular webs

9/20 . the webs being formed into tubes in situ around the filling nozzles

NOTE
If an invention involves both continuous and intermittent web motion, it is classified in both groups B65B 9/07 and B65B 9/213.

9/2007 . [Means for stripping or squeezing filled tubes prior to sealing to remove air or products from sealing area]

9/2014 . [Tube advancing means]

9/2021 . [combined with longitudinal welding devices]

9/2028 . [Rollers or belts]

9/2035 . [Tube guiding means]

9/2042 . [Means for altering the cross-section of the tube filling opening prior to transversal sealing, e.g. tube spreading devices (subdividing filled tubes to form two or more packages by sealing involving displacement of contents B65B 9/12)]

9/2049 . [Package shaping devices acting on filled tubes prior to sealing the filling opening (shaping or reshaping completed packages B65B 61/24)]

9/2056 . [Machines for packaging of special type or form]

9/2063 . [The webs being spirally wound around the filling nozzle]

9/207 . the web advancing continuously (B65B 9/22 takes precedence)

9/213 . the web having intermittent motion (B65B 9/22 takes precedence)

9/22 . Forming shoulders; Tube formers

9/24 . the tubes being formed in situ by extrusion
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)

- 11/00 Wrapping, e.g. partially or wholly enclosing, articles or quantities of material, in strips, sheets or blanks, of flexible material

11/04 . . . the articles being rotated
11/06 . . . Wrapping articles, or quantities of material, by conveying wrapper and contents in [common] defined paths
11/08 . . . in a single straight path
11/10 . . . to fold the wrappers in tubular form about contents

11/105 . . . [the axis of the tube being parallel to the conveying direction]
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 . . Enclosing articles, or quantities of material, by folding 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)
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-[, blister-, or bubble-] packaging

WARNING

Group B65B 11/52 is incomplete pending reclassification of documents from group B65B 33/00.

Groups B65B 33/00 and B65B 11/52 should be considered in order to perform a complete search.

13/00 Bundling articles

13/02 . Applying and securing binding material around articles or groups of articles, e.g. using strings, wires, strips, bands or tapes
13/022 . . . [Applying preformed bands of continuous-ring form, e.g. elastic]
13/025 . . . [Hand-held tools]
13/027 . . . . [for applying straps having preformed connecting means, e.g. cable ties]
13/04 . . . with means for guiding the binding material around the articles prior to severing from supply
13/06 . . . Stationary ducts or channels
13/08 . . . Single guide or carrier for the free end of material movable part-away around articles from one side only
13/10 . . . Carriers travelling completely around the articles while holding the free end of material
13/12 . . . . attached to rotating rings
13/14 . . . . Pairs of carriers or guides movable around opposite sides of the articles
13/16 . . . with means for severing the binding material from supply and then applying it around the articles
13/18 . . . Details of, or auxiliary devices used in, bundling machines (or bundling tools)
13/181 . . . [applying edge protecting members during bundling]
13/182 . . . [Affixing labels during bundling]
13/183 . . . [Load orienting means]
Machines, apparatus or methods of general application for packaging articles or materials

B65B

13/184 . . . [Strap accumulators]
13/185 . . . [Details of tools (B65B.13/24 takes precedence)]
13/186 . . . [Supports or tables facilitating tensioning operations]
13/187 . . . [Motor means]
13/188 . . . . . . [pneumatic or hydraulic]
13/189 . . . . . . [using explosives]
13/20 . . . Means for compressing or compacting bundles prior to bundling
13/22 . . . Means for controlling tension of binding means
13/24 . . . Securing ends of binding material
13/26 . . . . . . by knotting
13/265 . . . . . . [Hand tools]
13/28 . . . . . . by twisting
13/285 . . . . . . [Hand tools]
13/30 . . . . . . by deforming the overlapping ends of the strip or band
13/305 . . . . . . [Hand tools]
13/32 . . . . . . by welding, soldering, or heat-sealing; by applying adhesive
13/322 . . . . . . [Friction welding]
13/325 . . . . . . [Ultrasonic welding]
13/327 . . . . . . [Hand tools]
13/34 . . . . . . by applying separate securing members, e.g. deformable clips
13/345 . . . . . . [Hand tools]

15/00 Attaching articles to cards, sheets, strings, webs, or other carriers

15/02 . . . Attaching small articles, e.g. buttons, to cards
15/04 . . . Attaching a series of articles, e.g. small electrical components, to a continuous web [(ammunition filling F42B)]

17/00 Other machines, apparatus, or methods for packaging articles or materials

17/02 . . . Joining articles, e.g. cans, directly to each other for convenience of storage, transport, or handling
17/025 . . . . . . [the articles being joined by a top carrier element]

Machines, apparatus or methods adapted for packaging articles or materials presenting special problems, or for special packaging operations; Unpacking bottles or eggs

19/00 Packaging rod-shaped or tubular articles susceptible to damage by abrasion or pressure, e.g. cigarettes, cigars, macaroni, spaghetti, drinking straws or welding electrodes

19/02 . . . Packaging cigarettes
19/025 . . . . . . [in webs of flexible sheet material]
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
19/105 . . . . . . [using rotary drums for withdrawal of successive layers from a hopper]
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
19/221 . . . . . . [in one or more straight paths (B65B.19/24 takes precedence)]
19/223 . . . . . . [in a curved path; in a combination of straight and curved paths, e.g. on rotary tables or other endless conveyors (B65B.19/24 takes precedence)]
19/225 . . . . . . [the conveyors having continuous movement]
19/226 . . . . . . [using endless conveyors having pockets, each pocket being provided with separate members, e.g. folders (B65B.19/225 takes precedence)]
19/228 . . . . . . [Preparing and feeding blanks]
19/24 . . . using hollow mandrels through which groups of cigarettes are fed
19/245 . . . . . . [carried by continuously driven endless conveyors]
19/26 . . . Machines specially adapted for packaging cigars
19/28 . . . Control devices for cigarette or cigar packaging machines
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 . . . in or from preformed containers, e.g. crates
21/025 . . . . . . [the bottles being arranged in a head-to-bottom formation]
21/04 . . . Arranging, assembling, feeding, or orientating the bottles prior to introduction into, or after removal from, containers ((B65B.21/025 takes precedence))
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
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
21/183 . . . . . . [the grippers moving in an endless path]
21/186 . . . . . . [Inflatable grippers]
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
21/242 . . . . . . [in collapsed carton sleeves]
21/245 . . . . . . [in flexible wrappers, e.g. foils (B65B.21/26 takes precedence)]
Machines, apparatus or methods adapted for packaging articles or materials presenting special problems, or for...

21/247 . . . [Wrapping individual bottles in straw-made wrappers]
21/26 . . . Applying wrappers to individual bottles by operations involving rotation or rolling of the bottles

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
23/10 . . . Packaging biscuits
23/12 . . . Arranging, feeding or orientating the biscuits to be packaged
23/14 . . . Forming groups of biscuits
23/16 . . . Inserting the biscuits, or wrapped groups thereof, into [already] 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)
25/001 . . . [of foodstuffs, combined with their conservation (B65B 25/041, B65B 25/062, B65B 25/067 take precedence)]
25/002 . . . [of information carriers, e.g. records, CD, DVD]
25/003 . . . [of razor blades]
25/005 . . . [of confectionery]
25/006 . . . [of lollipops]
25/007 . . . [of ice-cream]
25/008 . . . [of contact lenses]
25/02 . . . Packaging agricultural or horticultural products
25/023 . . . [Packaging flower bouquets]
25/026 . . . [Packaging flower pots]
25/04 . . . Packaging fruit or vegetables
25/041 . . . [combined with their conservation]
25/043 . . . [of olives]
25/045 . . . [by flotation means]
25/046 . . . [in crates or boxes (B65B 25/045 takes precedence)]
25/048 . . . [in nets]
25/06 . . . Packaging slices or specially-shaped pieces of meat, cheese, or other plastic or tacky products
25/061 . . . [of fish]
25/062 . . . [combined with its conservation]
25/064 . . . [of poultry (processing of poultry A22C 21/00)]
25/065 . . . [of meat]
25/067 . . . [combined with its conservation]
25/068 . . . [of cheese]
25/08 . . . between layers or strips of sheet or web material, e.g. in webs folded to zig-zag form
25/10 . . . Forming sector-shaped packages of cheese or like plastic products
25/12 . . . and enclosing in circular containers
25/14 . . . Packaging paper or like sheets, envelopes, or newspapers, in flat, folded, or rolled form

25/141 . . . [packaging flat articles in boxes]
25/143 . . . [by introducing successive articles]
25/145 . . . [packaging folded articles]
25/146 . . . [packaging rolled-up articles]
25/148 . . . [Jumbo paper rolls]
25/16 . . . Packaging bread or like bakery products, e.g. unsliced loaves
25/18 . . . Wrapping sliced bread
25/20 . . . Packaging garments, e.g. socks, stockings, shirts
25/22 . . . Packaging articles of food, e.g. fish fillets, intended to be cooked in the package
25/24 . . . Packaging annular articles, e.g. tyres

27/00 Bundling particular articles presenting special problems using string, wire, or narrow tape or band; Baling fibrous material, e.g. peat, not otherwise provided for
27/02 . . . Bundling bricks or other building blocks
27/04 . . . Bundling groups of cans or bottles
27/06 . . . Bundling coils of wire or like annular objects
27/08 . . . Bundling paper sheets, envelopes, bags, newspapers, or other thin flat articles
27/083 . . . [Storage receptacles therefor]
27/086 . . . [using more than one tie, e.g. cross-ties]
27/10 . . . Bundling rods, sticks, or like elongated objects
27/105 . . . [by means of adhesive tape]
27/12 . . . Baling or bundling compressible fibrous material, e.g. peat
27/125 . . . [and wrapping or bagging]

29/00 Packaging of materials presenting special problems
29/02 . . . Packaging of substances, e.g. tea, which are intended to be infused in the package

WARNING

Group B65B 29/02 is impacted by reclassification into groups B65B 29/022, B65B 29/025, and B65B 29/028.

Groups B65B 29/02 and B65B 29/022, B65B 29/025 and B65B 29/028 should be considered in order to perform a complete search.

29/022 . . . [packaging infusion material into capsules]

WARNING

Group B65B 29/022 is incomplete pending reclassification of documents from group B65B 29/02.

Groups B65B 29/02 and B65B 29/022 should be considered in order to perform a complete search.

29/025 . . . [packaging infusion material into pods]

WARNING

Group B65B 29/025 is incomplete pending reclassification of documents from group B65B 29/02.

Groups B65B 29/02 and B65B 29/025 should be considered in order to perform a complete search.
Machines, apparatus or methods adapted for packaging articles or materials presenting special problems, or for...

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

33/00 Packaging articles by applying removable, e.g. strippable, coatings (B65B 11/52 takes precedence)

WARNING

Group B65B 33/00 is impacted by reclassification into group B65B 11/52.

Groups B65B 33/00 and B65B 11/52 should be considered in order to perform a complete search.

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

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

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

35/205 . . . (linked to endless conveyors)

35/22 . . . by roller-ways

35/24 . . . by endless belts or chains {B65B 35/205 takes precedence}

35/23 . . . [using cooperating conveyors engaging the articles simultaneously]

35/246 . . . [using extensible or retractable conveyors]

35/26 . . . by rotary conveyors

35/28 . . . by pneumatic conveyors

35/30 . . . Arranging and feeding articles in groups

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

35/405 . . . (linked to endless conveyors)

35/42 . . . by roller-ways

35/44 . . . by endless belts or chains {B65B 35/405 takes precedence}

35/46 . . . by rotary conveyors

35/48 . . . by pneumatic conveyors
Details of, auxiliary devices applied to, or auxiliary measures taken in, machines, apparatus, or methods, not...

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)

37/005 . . . (by endless belts or chains)
37/007 . . . (with flow cut-off means, e.g. valves)
37/009 . . . (Pivoting plates)
37/010 . . . (rotating means)
37/012 . . . (moving linearly)
37/014 . . . (transverse to flow direction)
37/016 . . . (Grids for introducing bottles into cases)
37/018 . . . (Guides or funnels for introducing articles into containers or wrappers)

2039/008 . . . (Strainer means)
2039/009 . . . (Multiple outlets)
37/02 . . . Expansible or contractible nozzles, funnels, or guides
37/04 . . . having air-escape, or air-withdrawal, passages
37/06 . . . adapted to support containers or wrappers
37/08 . . . by means of clamps
37/10 . . . operating automatically
37/12 . . . movable towards or away from container or wrapper during filling or depositing
37/14 . . . movable with a moving container or wrapper during filling or depositing
37/18 . . . (by weighing [(devices or methods for controlling the quantity of material or liquid fed or filled into a container by weighing B65B 1/32, B65B 3/26)]
37/20 . . . by volume measurement
37/00 Nozzles, funnels or guides for introducing articles or materials into containers or wrappers
37/001 . . . (by grippers)
37/002 . . . (pivoting plates)
37/003 . . . (rotating means)
37/004 . . . (moving linearly)
37/005 . . . (transverse to flow direction)
37/006 . . . (Grids for introducing bottles into cases)
37/007 . . . (Guides or funnels for introducing articles into containers or wrappers)

37/00 Supplying or feeding container-forming sheets or wrapping material
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
41/22 . . . Expansible or contractible nozzles, funnels, or guides
41/24 . . . having air-escape, or air-withdrawal, passages
41/26 . . . adapted to support containers or wrappers
41/28 . . . by means of clamps
41/30 . . . operating automatically
41/32 . . . movable towards or away from container or wrapper during filling or depositing
41/34 . . . movable with a moving container or wrapper during filling or depositing
41/36 . . . {in an endless path}
43/00 Forming, feeding, opening or setting-up containers or receptacles in association with packaging (forming pockets in sheets, blanks, 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
43/13 . . . (Feeding flat bags connected to form a series or chain)
43/15 . . . (Feeding carton blanks from individual sheets or webs)
43/16 . . . by grippers
43/18 . . . by suction-operated grippers
43/19 . . . (specially adapted for carton blanks)
43/20 . . . by reciprocating or oscillating pushers
43/23 . . . (specially adapted for carton blanks)
43/25 . . . by grippers operating automatically
43/27 . . . (specially adapted for carton blanks)
43/28 . . . by grippers co-operating with fixed supports
43/29 . . . (specially adapted for carton blanks)
43/30 . . . by grippers engaging opposed walls, e.g. suction-operated
43/32 . . . (specially adapted for boxes, cartons or carton blanks)
43/33 . . . by external pressure diagonally applied
43/34 . . . (to boxes, cartons or carton blanks)
43/36 . . . by internal pressure
43/37 . . . (applied to boxes, cartons or carton blanks)
43/38 . . . applied pneumatically
43/39 . . . (to boxes, cartons or carton blanks)
43/40 . . . Opening hinged lids
43/41 . . . Opening-out closure flaps clear of bag, box, or carton mouth
43/42 . . . Removing separate lids
43/43 . . . Opening drawer-and-shell cartons
43/44 . . . 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)
Details of, auxiliary devices applied to, or auxiliary measures taken in, machines, apparatus, or methods, 

B65B

43/44 . . . from supply magazines
43/46 . . . using grippers
43/465 . . . [for bags]
43/48 . . . using reciprocating or oscillating pushers
43/50 . . . using rotary tables or turrets (B65B 43/46 takes precedence)
43/52 . . . using roller-ways or endless conveyors
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)
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

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, conveyors for partially-wrapped articles
49/16 . . . Pneumatic means, e.g. air jets

51/00 Devices for, or methods of, sealing or securing package folds or closures; Devices for gathering or twisting wrappers, or necks of bags

51/02 . . . Applying adhesives or sealing liquids
51/023 . . . [using applicator nozzles]
51/026 . . . [using rotating applicators]
51/04 . . . Applying separate sealing or securing members, e.g. clips, (applying separate lids or covers B65B 7/28)
51/043 . . . [Applying springy clips around bag necks]
51/046 . . . [Applying a closure element to the mouths of bags]
51/05 . . . Stapling
51/06 . . . Applying adhesive tape
51/062 . . . [to the mouths of bags]
51/065 . . . [to the necks of bags]
51/067 . . . [to the closure flaps of boxes]
51/07 . . . Sewing or stitching

51/08 . . . Applying binding material, e.g. to twisted bag necks
51/10 . . . Applying or generating heat or pressure or combinations thereof (welding of plastics per se B29C 65/02; closing plastic tube ends in general B29C 57/10)

205/105 . . . [Heat seal temperature control]
51/12 . . . by resilient means, e.g. brushes
51/14 . . . by reciprocating or oscillating members (B65B 51/148 takes precedence)
51/142 . . . [Closing bottle necks or tubes]
51/144 . . . [Closing paperboard containers]
51/146 . . . [Closing bags]
51/148 . . . [Hand-operated members]
51/16 . . . by rotary members
51/18 . . . by endless bands or chains
51/20 . . . by fluid pressure acting directly on folds or on opposed surfaces, e.g. using hot-air jets (shrinking wrappers by heating B65B 53/02)
51/22 . . . by friction or ultrasonic or high-frequency electrical means [i.e. by friction or ultrasonic or induction welding]
51/222 . . . [by friction welding]
51/225 . . . [by ultrasonic welding]
51/227 . . . [by induction welding]
51/24 . . . to produce bead seals (combined with severing by heated wires or rods B65B 61/10)
51/26 . . . Devices specially adapted for producing transverse or longitudinal seams in webs or tubes
51/28 . . . Rollers for producing longitudinal and transverse seams simultaneously
51/30 . . . Devices, e.g. jaws, for applying pressure and heat, e.g. for subdividing filled tubes
51/303 . . . [reciprocating along only one axis]
51/306 . . . . . . [Counter-rotating devices]
51/32 . . . Coolting, or cooling and pressing, package closures after heat-sealing

53/00 Shrinking wrappers, containers, or container covers during or after packaging

53/02 . . . by heat
53/04 . . . supplied by liquids
53/06 . . . supplied by gases, e.g. hot-air jets
53/063 . . . [Tunnels]
53/066 . . . [Mobile frames, hoods, posts or the like]

55/00 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)

55/02 . . . Sterilising, e.g. of complete packages
55/022 . . . [of flexible containers having a filling and dispensing spout, e.g. containers of the "bag-in-box"-type (B65B 55/025, B65B 55/027 take precedence)]
55/025 . . . [Packaging in aseptic tunnels]
55/027 . . . [Packaging in aseptic chambers]
55/04 . . . Sterilising wrappers or receptacles prior to, or during, packaging (sterilising bottles B67C 7/00)
55/06 . . . by heat
55/08 . . . by irradiation
55/10 . . . by liquids or gases
Details of, auxiliary devices applied to, or auxiliary measures taken in, machines, apparatus, or methods, not...

55/103 . . . . [Sterilising flat or tubular webs]
55/106 . . . . [Sterilising connected bags]
55/12 . . Sterilising contents prior to, or during, packaging
55/14 . . . . by heat
55/16 . . . . by irradiation
55/18 . . . . by liquids or gases (B65B 55/14 takes precedence)
55/19 . . . . by adding materials intended to remove free oxygen or to develop inhibitor gases, e.g. vapour phase inhibitors
55/20 . Embedding contents in shock-absorbing media, e.g. plastic foam, granular material
55/22 . Immersing contents in protective liquids
55/24 . Cleaning of, or removing dust from, containers, wrappers, or packaging ; Preventing of fouling

57/00 Automatic control, checking, warning, or safety devices (registering wrapping or container-forming material fed from rolls B65B 41/18)
57/005 . [Safety-devices (B65B 57/18 takes precedence)]
57/02 . responsive to absence, presence, abnormal feed, or misplacement of binding or wrapping material, containers, or packages
57/04 . . and operating to control, or to stop, the feed of such material, containers, or packages
57/06 . . and operating to control, or to stop, the feed of articles or material to be packaged
57/08 . . and operating to stop, or to control the speed of, the machine as a whole
57/10 . . responsive to absence, presence, abnormal feed, or misplacement of articles or materials to be packaged
57/12 . . and operating to control, or stop, the feed of wrapping materials, containers, or packages
57/14 . . and operating to control, or stop, the feed of articles or material to be packaged
57/145 . . . [for fluent material]
57/16 . . and operating to stop, or to control the speed of, the machine as a whole
57/18 . Applications of counting devices for controlling the feed of articles (other applications B65B 65/08)
57/20 . Arrangements to enable adjustments related to the packaging material

59/00 Arrangements to enable machines to handle articles of different sizes, to produce packages of different sizes, to vary the contents of packages, to handle different types of packaging material, or to give access for cleaning or maintenance purposes

NOTE
In all subgroups of this main group multi-aspect classification is applied, so that aspects of subject matter that are covered by more than one of its subgroups should be classified in each of those subgroups.

WARNING
Group B65B 59/00 is impacted by reclassification into groups B65B 59/001 and B65B 59/003
Groups B65B 59/00, B65B 59/001, and B65B 59/003 should be considered in order to perform a complete search.

59/01 . [Arrangements to enable adjustments related to the product to be packaged]

WARNING
Group B65B 59/001 is incomplete pending reclassification of documents from groups B65B 59/00, B65B 59/005, and B65B 59/02
All groups listed in this Warning should be considered in order to perform a complete search.

59/003 . [Arrangements to enable adjustments related to the packaging material]

WARNING
Group B65B 59/003 is incomplete pending reclassification of documents from groups B65B 59/00, B65B 59/005, and B65B 59/02
All groups listed in this Warning should be considered in order to perform a complete search.

59/005 . [Adjustable conveying means]

WARNING
Group B65B 59/005 is incomplete pending reclassification of documents from group B65B 59/02
Group B65B 59/005 is also impacted by reclassification into groups B65B 59/001 and B65B 59/003
All groups listed in this Warning should be considered in order to perform a complete search.

59/02 . Arrangements to enable adjustments to be made while the machine is running

WARNING
Group B65B 59/02 is impacted by reclassification into groups B65B 59/001, B65B 59/003, and B65B 59/005
All groups listed in this Warning should be considered in order to perform a complete search.

59/04 . Machines constructed with readily-detachable units or assemblies, e.g. to facilitate maintenance

61/00 Auxiliary devices, not otherwise provided for, for operating on sheets, blanks, webs, binding material, containers or packages
61/002 . [for drying glued or sealed packages]
61/005 . [for removing material by cutting]
61/007 . [Perforating strips of completed packages]
61/02 . for perforating, scoring (, slitting,) or applying code or date marks on material prior to packaging (scoring ampoules B65B 3/006)
61/025 . . [for applying, e.g. printing, code or date marks on material prior to packaging]
61/04 . for severing webs, or for separating joined packages
61/06 . . . by cutting
61/065 . . . (by punching out)
61/08 . . . using rotary cutters
61/10 . . . using heated wires or cutters
61/12 . . by tearing along perforations or lines of weakness
61/14. 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)

61/16. Forming suspension apertures in packages

61/18. for making package-opening or unpacking elements

61/20. for adding cards, coupons or other inserts to package contents (adding unpacking elements B65B 61/18)

63/00 Auxiliary devices, not otherwise provided for, for operating on articles or materials to be packaged

63/005. (for marking or coding articles prior to packaging)

63/02. for compressing or compacting articles or materials prior to wrapping or insertion in containers or receptacles

63/022. (using compressing chambers or plates moving in an endless path)

63/024. (for compressing by winding)

63/026. (for compressing by feeding articles through a narrowing space)

63/028. (by pneumatic means)

63/04. for folding or winding articles, e.g. gloves or stockings

63/045. (for folding garments, e.g. stockings, shirts)

63/06. 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

65/003. (Packaging lines, e.g. general layout)

65/006. (Multiple parallel packaging lines)

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 the insertion of articles or materials into bags (e.g. guides or chutes (sack holders B65B 67/12))

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

67/08. Wrapping of articles

67/085. (using hand-held dispensers for stretch films)

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 (nozzles, funnels or guides adapted to support sacks B65B 39/00)

67/1205. (collapsible or foldable (B65B 67/1216, B65B 67/1244, B65B 67/1255 take precedence))

67/1211. (characterised by mechanisms for moving, e.g. pivoting, lids or frame parts, e.g. pedal-operated (B65B 67/1216 takes precedence; pedal-operated mechanisms for opening or closing container lids B65D 43/26))

67/1216. (co-operating with the door of a cabinet or the like)

67/122. (characterised by means for suspending sacks, e.g. pedal-operated)

67/127. (only by a part of the periphery, e.g. by single points or handles, or by one side or two opposite sides only (B65B 67/1244 takes precedence))

67/1233. (Clamping or holding means)

67/1238. (Inserts or external supports, e.g. baskets, for stiffening sacks in the open condition)

67/1244. (characterised by mechanisms for temporarily closing the mouth of the sack, e.g. pedal-operated (B65B 67/1211, B65B 67/1255 take precedence; final closing or sealing of sacks B65B 7/02, B65B 51/00))

67/125. (comprising resilient closing elements, e.g. inserts, cooperating with the mouth of the sack)

67/1255. (characterised by positively acting means for stretching the mouth of the sack into the open condition, e.g. using springs)

2067/1261. (Holders with lids)

67/1266. (specially adapted for storing or dispensing sacks from a supply)

2067/1272. (the sacks being rolled-up)

67/1277. (for dispensing flexible tubular material gathered up in the shape of a ring)

2067/1283. (Means for gathering, closing or sealing the sacks)

2067/1288. (Inflatable parts)

2067/1294. (Holders for multiple sacks)

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

69/0008. (Opening and emptying bags)

69/0016. (for urine bags or medical drainage bags)

69/0025. (Removing or cutting binding material, e.g. straps or bands)

69/0033. (by cutting (B65B 69/0008-B65B 69/0025 take precedence))

69/0041. (by puncturing)

69/005. (by expelling contents, e.g. by squeezing the container)

69/0058. (Solid contents)
Details of, auxiliary devices applied to, or auxiliary measures taken in, machines, apparatus, or methods, not...

<table>
<thead>
<tr>
<th>Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>69/0066</td>
<td>Heating materials to facilitate their unpacking</td>
</tr>
<tr>
<td>69/0075</td>
<td>Emptying systems for flexible intermediate bulk containers [FIBC]</td>
</tr>
<tr>
<td>69/0083</td>
<td>[using frames whereby the container is only suspended]</td>
</tr>
<tr>
<td>69/0091</td>
<td>[using frames whereby the container is bottom supported]</td>
</tr>
</tbody>
</table>

**Specific aspects of the packaging machine**

<table>
<thead>
<tr>
<th>Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2210/00</td>
<td>Plurality of alternative input or output lines or plurality of alternative packaging units on the same packaging line for improving machine flexibility</td>
</tr>
<tr>
<td>2210/02</td>
<td>Customised on demand packaging by determining a specific characteristic, e.g. shape or height, of articles or material to be packaged and selecting, creating or adapting a packaging accordingly, e.g. making a carton starting from web material</td>
</tr>
<tr>
<td>2210/06</td>
<td>Cleaning nozzles, funnels or guides through which articles are introduced into containers or wrappers</td>
</tr>
<tr>
<td>2210/08</td>
<td>Means for removing bridges formed by the material or article, e.g. anti-clogging devices</td>
</tr>
<tr>
<td>2210/10</td>
<td>Means for automatically detecting and removing jammed straps in strapping machines, e.g. jam clearing devices</td>
</tr>
<tr>
<td>2210/14</td>
<td>Details of wrapping machines with web dispensers for application of a continuous web in layers onto the articles</td>
</tr>
<tr>
<td>2210/16</td>
<td>the web dispenser travelling around the article along a non-rotating ring</td>
</tr>
<tr>
<td>2210/18</td>
<td>the web dispenser being mounted on a rotary ring</td>
</tr>
<tr>
<td>2210/20</td>
<td>the web dispenser being mounted on a rotary arm</td>
</tr>
</tbody>
</table>

**Specific aspects of the packaging operation**

<table>
<thead>
<tr>
<th>Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2220/00</td>
<td>Erecting a carton by pushing a blank into a form</td>
</tr>
<tr>
<td>2220/02</td>
<td>Means for, or method of collapsing containers with walls hinged together or detachably connected (such containers per se B65D 11/18)</td>
</tr>
<tr>
<td>2220/06</td>
<td>Cutting webs along their longitudinal direction</td>
</tr>
<tr>
<td>2220/08</td>
<td>Creating fin seals as the longitudinal seal on horizontal or vertical form fill seal [FFS] machines</td>
</tr>
<tr>
<td>2220/10</td>
<td>Creating an off-center longitudinal seal on horizontal or vertical form fill seal [FFS] machines</td>
</tr>
<tr>
<td>2220/12</td>
<td>Creating additional longitudinal welds on horizontal or vertical form fill seal [FFS] machines for stiffening packages or for creating package edges</td>
</tr>
<tr>
<td>2220/14</td>
<td>Adding more than one type of material or article to the same package</td>
</tr>
<tr>
<td>2220/16</td>
<td>Packaging contents into primary and secondary packaging</td>
</tr>
<tr>
<td>2220/18</td>
<td>the primary packaging being bags the subsequent secondary packaging being rigid containers, e.g. cardboard box</td>
</tr>
<tr>
<td>2220/20</td>
<td>the primary packaging being bags, the secondary packaging being further bags, the primary bags being either finished or formed concurrently with the secondary bags</td>
</tr>
</tbody>
</table>

**Aspects of the final package**

<table>
<thead>
<tr>
<th>Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2230/00</td>
<td>Containers having separate compartments isolated from one another (B65B 29/10 and B65B 2220/16 take precedence)</td>
</tr>
<tr>
<td>2230/02</td>
<td>Cigarette packages having a hinged lid</td>
</tr>
</tbody>
</table>