

**CPC****COOPERATIVE PATENT CLASSIFICATION****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](#), [B65B 13/00](#); nailing or stapling devices per se [B25C](#), [B27F](#); {cutting or severing in general [B26D](#), [B26F](#);} inserting documents in envelopes and closing the latter [B43M 3/00](#), [B43M 5/00](#); wrappers, containers or other packaging elements, e.g. binders protective caps [B65D](#); stacking articles in, or removing them from, pallets [B65G](#); devices for handling sheets or webs of interest apart from their application in packaging machines [B65H](#); packaging of matches [C06F](#); wrapping sugar during manufacture [C13B 45/00](#); {filling of grease guns [F16N 37/02](#); packing of shotgun cartridges for immediate use [F42B](#); wrapping of coins [G07D 9/00](#)}; making containers or receptacles per se, see the appropriate subclasses)

**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 [F42B](#)

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 used to mean 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

In the following elaborations, the term "materials" 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

**WARNING**

The following IPC groups are not used in the CPC scheme. Subject matter covered by these groups is classified in the following CPC groups:

B65B

(continued)

B65B 51/09 covered by [B65B 51/00](#)**Machines, apparatus or methods of general application for packaging articles or materials**

- B65B 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](#))**
- B65B 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 appropriate subclasses)
- B65B 1/04**      .    Methods of, or means for, filling the material into the containers or receptacles
- B65B 1/06**      .    .    by gravity flow
- B65B 1/08**      .    .    by vibratory feeders
- B65B 1/10**      .    .    by rotary feeders
- B65B 1/12**      .    .    .    of screw type
- B65B 1/14**      .    .    .    of centrifugal type
- B65B 1/16**      .    .    by pneumatic means, e.g. by suction
- B65B 1/18**      .    .    for filling valve-bags
- B65B 1/20**      .    Reducing volume of filled material
- B65B 1/22**      .    .    by vibration
- B65B 1/24**      .    .    by mechanical compression
- B65B 1/26**      .    .    by pneumatic means, e.g. suction
- B65B 1/28**      .    Controlling escape of air or dust from containers or receptacles during filling (cleaning of, or removing dust from, container wrappers or packages [B65B 55/24](#))
- B65B 1/30**      .    Devices or methods for controlling or determining the quantity or quality or the material fed or filled
- B65B 1/32**      .    .    by weighing (check-weighing of filled containers or receptacles [B65B 1/46](#); weighing in general [G01G](#))
- B65B 1/34**      .    .    .    Adjusting weight by trickle feed
- B65B 1/36**      .    .    by volumetric devices or methods (checking volume of filled material [B65B 1/48](#); volumetric measurement in general [G01F](#))
- B65B 1/363**      .    .    .    {with measuring pockets moving in an endless path}
- B65B 1/366**      .    .    .    .    {about a horizontal axis of symmetry}
- B65B 1/38**      .    .    .    by pistons co-operating with measuring chambers
- B65B 1/385**      .    .    .    .    {moving in an endless path}
- B65B 1/40**      .    .    by timing of filling operations
- B65B 1/42**      .    .    .    and arresting flow by cut-off means
- B65B 1/44**      .    .    Checking density of material to be filled
- B65B 1/46**      .    .    Check-weighing of filled containers or receptacles (check-weighing in general [G01G](#))

B65B 1/48	<ul style="list-style-type: none"> <li>Checking volume of filled material</li> </ul>
<b>B65B 3/00</b>	<b>Packaging plastic material, semi-liquids, liquids, or mixed solids and liquids, in individual containers or receptacles, e.g. bags, sacks, boxes, cartons, cans, jars</b> (packaging under special atmospheric or gaseous conditions, adding propellants to aerosol containers <a href="#">B65B 31/00</a> ; filling bottles or other containers with liquids or semi-liquids by bottling machines <a href="#">B67C</a> ; filling of gas bottles at high pressure for storing gases <a href="#">F17C</a> )
B65B 3/003	<ul style="list-style-type: none"> <li>{Filling medical containers such as ampoules, vials, syringes or the like}</li> </ul>
B65B 3/006	<ul style="list-style-type: none"> <li>{Related operations, e.g. scoring ampoules}</li> </ul>
B65B 3/02	<ul style="list-style-type: none"> <li>Machines characterised by the incorporation of means for making the containers or receptacles (making containers or receptacles of interest apart from this application, see appropriate subclasses)</li> </ul>
B65B 3/022	<ul style="list-style-type: none"> <li>{Making containers by moulding of a thermoplastic material}</li> </ul>
B65B 3/025	<ul style="list-style-type: none"> <li>{Making parallelepipedal containers from a single carton blank}</li> </ul>
B65B 3/027	<ul style="list-style-type: none"> <li>{Making containers from separate body and end-parts}</li> </ul>
B65B 3/04	<ul style="list-style-type: none"> <li>Methods of, or means for, filling the material into the containers or receptacles</li> </ul>
B65B 3/045	<ul style="list-style-type: none"> <li>{for filling flexible containers having a filling and dispensing spout, e.g. containers of the "bag-in-box"-type}</li> </ul>
B65B 3/06	<ul style="list-style-type: none"> <li>by gravity flow</li> </ul>
B65B 3/08	<ul style="list-style-type: none"> <li>by screw-type feeders</li> </ul>
B65B 3/10	<ul style="list-style-type: none"> <li>by application of pressure to material (by screw-type feeders <a href="#">B65B 3/08</a>)</li> </ul>
B65B 3/12	<ul style="list-style-type: none"> <li>mechanically, e.g. by pistons or pumps</li> </ul>
B65B 3/14	<ul style="list-style-type: none"> <li>pneumatically</li> </ul>
B65B 3/16	<ul style="list-style-type: none"> <li>for filling collapsible tubes (for filling valve bags <a href="#">B65B 3/17</a>)</li> </ul>
B65B 3/17	<ul style="list-style-type: none"> <li>for filling valve bags</li> </ul>
B65B 3/18	<ul style="list-style-type: none"> <li>Controlling escape of air from containers or receptacles during filling</li> </ul>
B65B 3/22	<ul style="list-style-type: none"> <li>Defoaming liquids in connection with filling</li> </ul>
B65B 3/24	<ul style="list-style-type: none"> <li>Topping-up containers or receptacles to ensure complete filling</li> </ul>
B65B 3/26	<ul style="list-style-type: none"> <li>Methods or devices for controlling the quantity of the material fed or filled</li> </ul>
B65B 3/28	<ul style="list-style-type: none"> <li>by weighing (in general <a href="#">G01G</a>)</li> </ul>
B65B 3/30	<ul style="list-style-type: none"> <li>by volumetric measurement (in general <a href="#">G01F</a>)</li> </ul>
B65B 3/305	<ul style="list-style-type: none"> <li>{with measuring pockets moving in an endless path}</li> </ul>
B65B 3/32	<ul style="list-style-type: none"> <li>by pistons co-operating with measuring chambers</li> </ul>
B65B 3/323	<ul style="list-style-type: none"> <li>{with measuring chambers travelling in an endless path}</li> </ul>
B65B 3/326	<ul style="list-style-type: none"> <li>{for dosing several products to be mixed}</li> </ul>
B65B 3/34	<ul style="list-style-type: none"> <li>by timing of filling operations</li> </ul>
B65B 3/36	<ul style="list-style-type: none"> <li>and arresting flow by cut-off means</li> </ul>
<b>B65B 5/00</b>	<b>Packaging individual articles in containers or receptacles, e.g. bags, sacks, boxes, cartons, cans, jars</b>

- B65B 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 appropriate subclasses)
- B65B 5/022
  - . . {for making bags}
- B65B 5/024
  - . . {for making containers from preformed blanks}
- B65B 5/026
  - . . . {for making trays}
- B65B 5/028
  - . . . {for making containers from two or more blanks ([B65B 5/026](#) takes precedence)}
- B65B 5/04
  - . Packaging single articles
- B65B 5/045
  - . . {in bags}
- B65B 5/06
  - . Packaging groups of articles, the groups being treated as single articles
- B65B 5/061
  - . . {Filled bags}
- B65B 5/062
  - . . {Confectionery}
- B65B 5/064
  - . . {Potato chips}
- B65B 5/065
  - . . {Gable-topped container}
- B65B 5/067
  - . . {in bags ([B65B 5/061](#) - [B65B 5/065](#) take precedence)}
- B65B 5/068
  - . . {in trays ([B65B 5/061](#) - [B65B 5/065](#) take precedence)}
- B65B 5/08
  - . Packaging groups of articles, the articles being individually gripped or guided for transfer to the containers or receptacles
- B65B 5/10
  - . Filling containers or receptacles progressively or in stages by introducing successive articles, or layers of articles
- B65B 5/101
  - . . {by gravity ([B65B 5/12](#) and [B65B 5/108](#) take precedence)}
- B65B 5/103
  - . . . {for packaging pills or tablets}
- B65B 5/105
  - . . {by grippers ([B65B 5/12](#) and [B65B 5/108](#) take precedence)}
- B65B 5/106
  - . . {by pushers ([B65B 5/12](#) and [B65B 5/108](#) take precedence)}
- B65B 5/108
  - . . {Article support means temporarily arranged in the container}
- B65B 5/12
  - . . Introducing successive articles, e.g. confectionery products, of different shape or size in predetermined positions
- B65B 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](#))
- B65B 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)
- B65B 7/02
  - . Closing containers or receptacles deformed by, or taking-up shape, of, contents, e.g. bags, sacks
- B65B 7/025
  - . . {Closing valve bags}
- B65B 7/04
  - . . by tucking-in mouth portion to form two flaps and subsequently folding-down
- B65B 7/06
  - . . by collapsing mouth portion, e.g. to form a single flap
- B65B 7/08
  - . . . and folding
- B65B 7/10
  - . . . and rolling-in
- B65B 7/12
  - . . . and twisting

- B65B 7/14 . Closing collapsible or resilient tubes, e.g. for tooth paste, for lighter fuel
- B65B 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](#); [stoppering or capping bottles or jars B67B](#))
- B65B 7/161 . . {Sealing filled ampoules}
- B65B 7/162 . . {by feeding web material to securing means}
- B65B 7/164 . . . {Securing by heat-sealing}
- B65B 7/165 . . . {Securing by deformation of the web material}
- B65B 7/167 . . . {Securing by heat-shrinking}
- B65B 7/168 . . {by applying and securing double closures}
- B65B 7/18 . . by collapsing mouth portion and subsequently folding-down or securing flaps
- B65B 7/20 . . by folding-down preformed flaps
- B65B 7/22 . . . and inserting flap portions between contents and wall
- B65B 7/24 . . . and interengaging tongue and slot closures
- B65B 7/26 . . by closing hinged lids
- B65B 7/28 . . by applying separate preformed closures, e.g. lids, covers
- B65B 7/2807 . . . {Feeding closures}
- B65B 7/2814 . . . . {the closures being interconnected}
- B65B 7/2821 . . . {applying plugs or threadless stoppers ([for bottles or jars B67B 1/04](#))}
- B65B 7/2828 . . . {inserting and rotating screw stoppers ([for bottles or jars B67B 1/06](#))}
- B65B 7/2835 . . . {applying and rotating preformed threaded caps ([for bottles or jars B67B 3/20](#))}
- B65B 7/2842 . . . {Securing closures on containers ([in general B65B 51/00](#))}
- B65B 7/285 . . . . {by deformation of the closure}
- B65B 7/2857 . . . . . {and the container rim}
- B65B 7/2864 . . . . {by adhesive tape}
- B65B 7/2871 . . . . {by gluing}
- B65B 7/2878 . . . . {by heat-sealing}
- B65B 7/2885 . . . . {by heat-shrinking ([in general B65B 53/02](#))}
- B65B 7/2892 . . . . {by deformation of the container rim}
  
- B65B 9/00** **Enclosing successive articles, or quantities of material, e.g. liquids or semi-liquids, in flat, folded, or tubular webs of flexible sheet material; Subdividing filled flexible tubes to form packages**
- B65B 9/02 . Enclosing successive articles, or quantities of material between opposed webs
- B65B 9/023 . . {Packaging fluent material ([B65B 9/04 takes precedence](#))}
- B65B 9/026 . . {the webs forming a curtain}
- B65B 9/04 . . one or both webs being formed with pockets for the reception of the articles, or of the quantities of material
- B65B 9/042 . . . {for fluent material}
- B65B 9/045 . . . {for single articles, e.g. tablets}
- B65B 2009/047 . . . {Rotary pocket formers}

- B65B 9/06 . 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 9/067](#) and [B65B 9/073](#).

- B65B 2009/063 . . {Forming shoulders}
- B65B 9/067 . . the web advancing continuously ([B65B 9/08](#) takes precedence)
- B65B 9/073 . . the web having intermittent motion ([B65B 9/08](#) takes precedence)
- B65B 9/08 . . in a web folded and sealed transversely to form pockets which are subsequently filled and then closed by sealing

**NOTE**

If an invention involves both continuous and intermittent web motion, it is classified in both groups [B65B 9/087](#) and [B65B 9/093](#).

- B65B 9/087 . . . the web advancing continuously
- B65B 9/093 . . . the web having intermittent motion
- B65B 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 ([sausage making A22C 11/00](#))
- B65B 9/12 . . Subdividing filled tubes to form two or more packages by sealing or securing involving displacement of contents ([sausage making A22C 11/00](#))
- B65B 9/13 . . the preformed tubular webs being supplied in a flattened state
- B65B 9/135 . . . {for palletised loads}
- B65B 9/14 . . . Devices for distending tubes supplied in the flattened state
- B65B 9/15 . . the preformed tubular webs being stored on filling nozzles
- B65B 9/18 . . . Devices for storing tubular webs
- B65B 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 9/207](#) and [B65B 9/213](#).

- B65B 9/2007 . . . {Means for stripping or squeezing filled tubes prior to sealing to remove air or products from sealing area}
- B65B 9/2014 . . . {Tube advancing means}
- B65B 9/2021 . . . . {combined with longitudinal welding devices}
- B65B 9/2028 . . . . {Rollers or belts}
- B65B 9/2035 . . . {Tube guiding means}
- B65B 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](#))}

- B65B 9/2049 . . . {Package shaping devices acting on filled tubes prior to sealing the filling opening (shaping or reshaping completed packages [B65B 61/24](#))}
- B65B 9/2056 . . . {Machines for packages of special type or form}
- B65B 9/2063 . . . . {The webs being spirally wound around the filling nozzle}
- B65B 9/207 . . . the web advancing continuously ([B65B 9/22](#) takes precedence)
- B65B 9/213 . . . the web having intermittent motion ([B65B 9/22](#) takes precedence)
- B65B 9/22 . . . Forming shoulders; Tube formers
- B65B 9/24 . . the tubes being formed in situ by extrusion
  
- B65B 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](#))
- B65B 2011/002 . {Prestretching mechanism in wrapping machines}
- B65B 11/004 . {in blanks, e.g. sheets precut and creased for folding (devices for folding or bending wrappers around contents [B65B 49/00](#))}
- B65B 11/006 . {Helical strip wrapping combined with roping}
- B65B 11/008 . {by webs revolving around articles moved along the axis of revolution}
- B65B 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](#))
- B65B 11/025 . . {by webs revolving around stationary articles}
- B65B 11/04 . the articles being rotated {(wrapping devices for round bales [A01F 15/071](#))}
- B65B 11/045 . . {by rotating platforms supporting the articles}
- B65B 11/06 . Wrapping articles, or quantities of material, by conveying wrapper and contents in {common} defined paths
- B65B 11/08 . . in a single straight path
- B65B 11/10 . . . to fold the wrappers in tubular form about contents
- B65B 11/105 . . . . {the axis of the tube being parallel to the conveying direction}
- B65B 11/12 . . . . and then to form closing folds of similar form at opposite ends of the tube
- B65B 11/14 . . . . the ends of the tube being subsequently twisted
- B65B 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
- B65B 11/18 . . in two or more straight paths
- B65B 11/20 . . . to fold the wrappers in tubular form about contents
- B65B 11/22 . . . . and then to form closing folds of similar form at opposite ends of the tube
- B65B 11/24 . . . . the ends of the tube being subsequently twisted
- B65B 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



- B65B 11/28 . . . in a curved path, e.g. on rotary tables or turrets
- B65B 11/30 . . . . to fold the wrappers in tubular form about contents
- B65B 11/32 . . . . . and then to form closing folds of similar form at opposite ends of the tube
- B65B 11/34 . . . . . the ends of the tube being subsequently twisted
- B65B 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
- B65B 11/38 . . . in a combination of straight and curved paths
- B65B 11/40 . . . . to fold the wrappers in tubular form about contents
- B65B 11/42 . . . . . and then to form closing folds of similar form at opposite ends of the tube
- B65B 11/44 . . . . . the ends of the tube being subsequently twisted
- B65B 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
- B65B 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
- B65B 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](#))
- B65B 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
- B65B 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
- B65B 11/56 . . . Rolling articles with wrappers along a supporting surface ([for bottles B65B 21/26](#))
- B65B 11/58 . . . Applying two or more wrappers, e.g. in succession
- B65B 11/585 . . . {to stacked articles, e.g. pallettised loads}
- B65B 13/00** **Bundling articles** ([bundling particular articles presenting special problems using string, wire or narrow tape or band B65B 27/00](#); [straining wire in general B21F 9/00](#); [connecting wire to wire in general B21F 15/00](#))
- B65B 13/02 . . . Applying and securing binding material around articles or groups of articles, e.g. using strings, wires, strips, bands, tapes ([specially adapted for harvesting A01D 37/00, A01D 39/00, A01D 59/00, A01F 1/00](#); [tying devices in baling presses A01F 15/14, B30B 9/30](#); [applying reinforcing means to non-metal sleepers E01B 31/28](#))
- B65B 13/022 . . . {Applying preformed bands of continuous-ring form, e.g. elastic}
- B65B 13/025 . . . {Hand-held tools}
- B65B 13/027 . . . . {for applying straps having preformed connecting means, e.g. cable ties}
- B65B 13/04 . . . with means for guiding the binding material around the articles prior to severing from supply
- B65B 13/06 . . . . Stationary ducts or channels
- B65B 13/08 . . . . Single guide or carrier for the free end of material movable part-away around articles from one side only
- B65B 13/10 . . . . Carriers travelling completely around the articles while holding the free end of material
- B65B 13/12 . . . . . attached to rotating rings



B65B 13/14	. . . Pairs of carriers or guides movable around opposite sides of the articles
B65B 13/16	. . with means for severing the binding material from supply and then applying it around the articles
B65B 13/18	. Details of, or auxiliary devices used in, bundling machines {or bundling tools}
B65B 13/181	. . {applying edge protecting members during bundling}
B65B 13/182	. . {Affixing labels during bundling (labelling machines in general <a href="#">B65C</a> )}
B65B 13/183	. . {Load orienting means}
B65B 13/184	. . {Strap accumulators}
B65B 13/185	. . {Details of tools ( <a href="#">B65B 13/24</a> takes precedence)}
B65B 13/186	. . . {Supports or tables facilitating tensioning operations}
B65B 13/187	. . . {Motor means}
B65B 13/188	. . . . {pneumatic or hydraulic}
B65B 13/189	. . . . {using explosives}
B65B 13/20	. . Means for compressing or compacting bundles prior to bundling
B65B 13/22	. . Means for controlling tension of binding means
B65B 13/24	. . Securing ends of binding material
B65B 13/26	. . . by knotting
B65B 13/265	. . . . {Hand tools}
B65B 13/28	. . . by twisting
B65B 13/285	. . . . {Hand tools}
B65B 13/30	. . . by deforming the overlapping ends of the strip or band
B65B 13/305	. . . . {Hand tools}
B65B 13/32	. . . by welding, soldering, or heat-sealing; by applying adhesive
B65B 13/322	. . . . {Friction welding}
B65B 13/325	. . . . {Ultrasonic welding}
B65B 13/327	. . . . {Hand tools}
B65B 13/34	. . . by applying separate securing members, e.g. deformable clips
B65B 13/345	. . . . {Hand tools}
<b>B65B 15/00</b>	<b>Attaching articles to cards, sheets, strings, webs, or other carriers</b>
B65B 15/02	. Attaching small articles, e.g. buttons, to cards ( <a href="#">cards for buttons, collar-studs, or sleeve-links A44B 7/00</a> )
B65B 15/04	. Attaching a series of articles, e.g. small electrical components, to a continuous web {(ammunition filling <a href="#">F42B</a> ; placing of electric components on belts holding the terminals <a href="#">H05K 13/003</a> )}
<b>B65B 17/00</b>	<b>Other machines, apparatus, or methods for packaging articles or materials</b>
B65B 17/02	. Joining articles, e.g. cans, directly to each other for convenience of storage, transport, or handling
B65B 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**

- B65B 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](#))
- B65B 19/02**      .    Packaging cigarettes {(auxiliary devices for drying glued or sealed packages [B65B 61/002](#))}
- B65B 19/025**      .    .    {in webs of flexible sheet material}
- B65B 19/04**      .    .    Arranging, feeding, or orientating the cigarettes
- B65B 19/06**      .    .    .    Turning individual cigarettes to present printed marks in desired position
- B65B 19/08**      .    .    .    Positioning oval cigarettes in overlapped arrangement
- B65B 19/10**      .    .    .    Arranging cigarettes in layers each comprising a predetermined number
- B65B 19/105**      .    .    .    .    {using rotary drums for withdrawal of successive layers from a hopper}
- B65B 19/12**      .    .    Inserting the cigarettes, or wrapped groups thereof, into preformed containers
- B65B 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
- B65B 19/16**      .    .    .    .    into boxes with two pockets
- B65B 19/18**      .    .    .    into drawer-and-shell type boxes or cartons
- B65B 19/20**      .    .    .    into boxes with hinged lids
- B65B 19/22**      .    .    Wrapping the cigarettes; Packaging the cigarettes in containers formed by folding wrapping material around formers
- B65B 19/221**      .    .    .    {in one or more straight paths ([B65B 19/24](#) takes precedence)}
- B65B 19/223**      .    .    .    {in a curved path; in a combination of straight and curved paths, e.g. on rotary tables or other endless conveyers ([B65B 19/24](#) takes precedence)}
- B65B 19/225**      .    .    .    .    {the conveyers having continuous movement}
- B65B 19/226**      .    .    .    .    {using endless conveyers having pockets, each pocket being provided with separate members, e.g. folders ([B65B 19/225](#) takes precedence)}
- B65B 19/228**      .    .    .    {Preparing and feeding blanks (in general [B65B 41/00](#))}
- B65B 19/24**      .    .    .    using hollow mandrels through which groups of cigarettes are fed
- B65B 19/245**      .    .    .    .    {carried by continuously driven endless conveyers}
- B65B 19/26**      .    Machines specially adapted for packaging cigars
- B65B 19/28**      .    Control devices for cigarette or cigar packaging machines (of general application in packaging machines [B65B 57/00](#))
- B65B 19/30**      .    .    responsive to presence of faulty articles, e.g. incorrectly filled cigarettes
- B65B 19/32**      .    .    responsive to incorrect grouping of articles or to incorrect filling of packages
- B65B 19/34**      .    Packaging other rod-shaped articles, e.g. sausages, macaroni, spaghetti, drinking straws, welding electrodes
- B65B 21/00**      **Packaging or unpacking of bottles** (bundling bottles [B65B 27/04](#))
- B65B 21/02**      .    in or from preformed containers, e.g. crates
- B65B 21/025**      .    .    {the bottles being arranged in a head-to-bottom formation}

- B65B 21/04 . . Arranging, assembling, feeding, or orientating the bottles prior to introduction into, or after removal from, containers [{\(B65B 21/025 takes precedence\)}](#)
- B65B 21/06 . . . Forming groups of bottles
- B65B 21/08 . . Introducing or removing single bottles, or groups of bottles, e.g. for progressive filling or emptying of containers
- B65B 21/10 . . . using gravity flow
- B65B 21/12 . . . using grippers engaging bottles, e.g. bottle necks [\(grippers in general B25J\)](#)
- B65B 21/14 . . Introducing or removing groups of bottles, for filling or emptying containers in one operation
- B65B 21/16 . . . using gravity flow
- B65B 21/18 . . . using grippers engaging bottles, e.g. bottle necks [\(grippers in general B25J\)](#)
- B65B 21/183 . . . . [{the grippers moving in an endless path}](#)
- B65B 21/186 . . . . [{Inflatable grippers}](#)
- B65B 21/20 . . . . with means for varying spacing of bottles
- B65B 21/22 . . . by inverting and raising or lowering the container relative to bottles
- B65B 21/24 . Enclosing bottles in wrappers
- B65B 21/242 . . [{in collapsed carton sleeves}](#)
- B65B 21/245 . . [{in flexible wrappers, e.g. foils \(B65B 21/26 takes precedence\)}](#)
- B65B 21/247 . . [{Wrapping individual bottles in straw-made wrappers}](#)
- B65B 21/26 . . Applying wrappers to individual bottles by operations involving rotation or rolling of the bottles [\(to articles in general B65B 11/56; {straw-made wrappers B65B 21/247}\)](#)

**B65B 23/00 Packaging fragile or shock-sensitive articles other than bottles; Unpacking eggs [\(embedding articles in shock-absorbing media B65B 55/20\)](#)**

- B65B 23/02 . Packaging or unpacking eggs
- B65B 23/04 . . Erecting egg trays or cartons from collapsed blanks
- B65B 23/06 . . Arranging, feeding, or orientating the eggs to be packed; Removing eggs from trays or cartons
- B65B 23/08 . . . using grippers [\(testing, sorting, or cleaning eggs A01K 43/00; egg grippers for cooking purposes A47J 29/06\)](#)
- B65B 23/10 . Packaging biscuits
- B65B 23/12 . . Arranging, feeding, or orientating the biscuits to be packaged [\(in connection with baking A21C 15/00\)](#)
- B65B 23/14 . . . Forming groups of biscuits
- B65B 23/16 . . Inserting the biscuits, or wrapped groups thereof, into [{already}](#) preformed containers
- B65B 23/18 . . Wrapping individual biscuits, or groups of biscuits
- B65B 23/20 . Packaging plate glass, tiles, or shingles [{\(measures for preventing damage to stacked glass sheets B65G 49/068\)}](#)
- B65B 23/22 . Packaging glass ampoules, lamp bulbs, radio valves or tubes, or the like

**B65B 25/00 Packaging other articles presenting special problems [\(bundling B65B 27/00\)](#)**

- B65B 25/001 . {of foodstuffs, combined with their conservation ([B65B 25/041](#), [B65B 25/062](#), [B65B 25/067](#) take precedence)}
- B65B 25/002 . {packaging of information carriers, e.g. records, CD, DVD}
- B65B 25/003 . {packaging of razor blades}
- B65B 25/005 . {packaging of confectionery}
- B65B 25/006 . . {packaging of lollipops}
- B65B 25/007 . {packaging of ice-cream}
- B65B 25/008 . {packaging of contact lenses}
- B65B 25/02 . Packaging agricultural or horticultural products
- B65B 25/023 . . {Packaging flower bouquets}
- B65B 25/026 . . {Packaging flower pots}
- B65B 25/04 . . Packaging fruit or vegetables ([bag or sack-filling devices associated with digging harvesters A01D 33/10](#))
- B65B 25/041 . . . {combined with their conservation}
- B65B 25/043 . . . {of olives}
- B65B 25/045 . . . {by flotation means}
- B65B 25/046 . . . {in crates or boxes ([B65B 25/045](#) takes precedence)}
- B65B 25/048 . . . {in nets}
- B65B 25/06 . Packaging slices or specially-shaped pieces of meat, cheese, or other plastic or tacky products
- B65B 25/061 . . {of fish}
- B65B 25/062 . . . {combined with its conservation}
- B65B 25/064 . . {of poultry ([processing of poultry A22C 21/00](#))}
- B65B 25/065 . . {of meat}
- B65B 25/067 . . . {combined with its conservation}
- B65B 25/068 . . {of cheese}
- B65B 25/08 . . between layers or strips of sheet or web material, e.g. in webs folded to zig-zag form
- B65B 25/10 . . Forming sector-shaped packages of cheese or like plastic products
- B65B 25/12 . . . and enclosing in circular containers
- B65B 25/14 . Packaging paper or like sheets, envelopes, or newspapers, in flat, folded, or rolled form
- B65B 25/141 . . {packaging flat articles in boxes}
- B65B 25/143 . . . {by introducing successive articles}
- B65B 25/145 . . {packaging folded articles}
- B65B 25/146 . . {packaging rolled-up articles}
- B65B 25/148 . . . {Jumbo paper rolls}
- B65B 25/16 . Packaging bread or like bakery products, e.g. unsliced loaves
- B65B 25/18 . . Sliced bread ([cutting or slicing machines specially adapted for bakeries A21C 15/04](#); [breadslicing machines or apparatus B26D](#))
- B65B 25/20 . Packaging garments, e.g. socks, stockings, shirts
- B65B 25/22 . Packaging articles of food, e.g. fish fillets, intended to be cooked in the package

- B65B 25/24
  - . Packaging annular articles, e.g. tyres
- B65B 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 (bundling articles in general [B65B 13/00](#))**
- B65B 27/02
  - . Bundling bricks or other building blocks
- B65B 27/04
  - . Bundling groups of cans or bottles
- B65B 27/06
  - . Bundling coils of wire or like annular objects
- B65B 27/08
  - . Bundling paper sheets, envelopes, bags, newspapers, or other thin flat articles
- B65B 27/083
  - . . {Storage receptacles therefor}
- B65B 27/086
  - . . {using more than one tie, e.g. cross-ties}
- B65B 27/10
  - . Bundling rods, sticks, or like elongated objects
- B65B 27/105
  - . . {by means of adhesive tape}
- B65B 27/12
  - . Baling or bundling compressible fibrous material, e.g. peat ([baling presses for straw, hay, or the like A01F 15/00](#); [baling presses in general B30B 9/30](#))
- B65B 27/125
  - . . {and wrapping or bagging}
- B65B 29/00**

**Packaging of materials presenting special problems**
- B65B 29/02
  - . Packaging of substances, e.g. tea, which are intended to be infused in the package
- B65B 29/04
  - . . Attaching, or forming and attaching, string handles or tags to tea bags
- B65B 29/06
  - . Packaging of substances to which a further ingredient, e.g. water, is to be added in the package by the user for mixing prior to dispensing
- B65B 29/08
  - . Packaging of edible materials intended to be cooked in the package ([infusible substances B65B 29/02](#))
- B65B 29/10
  - . Packaging two or more different substances isolated from one another in the package but capable of being mixed without opening the package, e.g. forming packages containing a resin and hardener isolated by a frangible partition
- B65B 31/00**

**Packaging articles or materials under special atmospheric or gaseous conditions; Adding propellants to aerosol containers (auxiliary treatments during loading or unloading in a fluid medium other than air [B65G 69/20](#))**
- B65B 31/003
  - . {Adding propellants in fluid form to aerosol containers (in solid form [B65B 31/10](#))}
- B65B 31/006
  - . {Adding fluids for preventing deformation of filled and closed containers or wrappers}
- B65B 31/02
  - . Filling, closing, or filling and closing, containers {or wrappers} in chambers maintained under vacuum or super-atmospheric pressure or containing a special atmosphere, e.g. of inert gas
- B65B 31/021
  - . . {the containers or wrappers being interconnected}
- B65B 31/022
  - . . {the chambers moving in an endless path}
- B65B 31/024
  - . . {specially adapted for wrappers or bags ([B65B 31/021](#), [B65B 31/022](#) take precedence)}
- B65B 31/025
  - . . {specially adapted for rigid or semi-rigid containers ([B65B 31/021](#), [B65B 31/022](#) take precedence)}
- B65B 31/027
  - . . . {closed by a stopper}
- B65B 31/028
  - . . . {closed by a lid sealed to the upper rim of the container, e.g. tray-like container}

- B65B 31/04 . Evacuating, pressurising, or gasifying filled containers or wrappers, {or containers or wrappers to be filled,} by means of nozzles through which air or other gas, e.g. an inert gas, is withdrawn or supplied (nozzles for introducing articles or materials into containers [B65B 39/00](#))
- B65B 31/041 . . {the nozzles acting from above on containers or wrappers open at their top ([B65B 31/044](#) take precedence)}
- B65B 31/042 . . . {the nozzles being arranged for insertion into, and withdrawal from, the container or wrapper}
- B65B 31/043 . . {the nozzles acting horizontally between an upper and a lower part of the container or wrapper, e.g. between container and lid}
- B65B 31/044 . . {the nozzles being combined with a filling device ([B65B 31/043](#) takes precedence)}
- B65B 31/045 . . . {of Vertical Form-Fill-Seal [VFFS] machines}
- B65B 31/046 . . {the nozzles co-operating, or being combined, with a device for opening or closing the container or wrapper ([B65B 31/06](#) takes precedence)}
- B65B 31/047 . . . {the nozzles co-operating with a check valve in the opening of the container or wrapper}
- B65B 31/048 . . . {specially adapted for wrappers or bags}
- B65B 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
- B65B 31/08 . . the nozzle being adapted to pierce the container or wrapper
- B65B 31/10 . Adding propellants in solid form to aerosol containers
- B65B 33/00** **Packaging articles by applying removable, e.g. strippable, coatings** (applying liquids or other fluent materials to surfaces in general [B05](#); wrapping cores by winding [B65H 81/00](#))
- B65B 33/02 . Packaging small articles, e.g. spare parts for machines or engines
- B65B 33/04 . Packaging large articles, e.g. complete machines, aircraft
- B65B 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**

- B65B 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](#); {adjustable conveying means [B65B 59/005](#)} if not restricted to packaging machines [B07C](#), [B65G](#), [B65H](#))
- B65B 35/02 . Supply magazines
- B65B 35/04 . . with buffer storage devices
- B65B 35/06 . Separating single articles from loose masses of articles
- B65B 35/08 . . using pocketed conveyers
- B65B 35/10 . Feeding, e.g. conveying, single articles (orientating [B65B 35/56](#))
- B65B 35/12 . . by gravity
- B65B 35/14 . . by agitators or vibrators

- B65B 35/16 . . by grippers
- B65B 35/18 . . . by suction-operated grippers
- B65B 35/20 . . by reciprocating or oscillatory pushers
- B65B 35/205 . . . {linked to endless conveyers}
- B65B 35/22 . . by roller-ways
- B65B 35/24 . . by endless belts or chains {(B65B 35/205 takes precedence)}
- B65B 35/243 . . . {using cooperating conveyers engaging the articles simultaneously}
- B65B 35/246 . . . {using extensible or retractable conveyers}
- B65B 35/26 . . by rotary conveyers
- B65B 35/28 . . by pneumatic conveyers
- B65B 35/30 . Arranging and feeding articles in groups (orientating B65B 35/56)
- B65B 35/32 . . by gravity
- B65B 35/34 . . by agitators or vibrators
- B65B 35/36 . . by grippers
- B65B 35/38 . . . by suction-operated grippers
- B65B 35/40 . . by reciprocating or oscillatory pushers
- B65B 35/405 . . . {linked to endless conveyers}
- B65B 35/42 . . by roller-ways
- B65B 35/44 . . by endless belts or chains {(B65B 35/405 takes precedence)}
- B65B 35/46 . . by rotary conveyers
- B65B 35/48 . . by pneumatic conveyers
- B65B 35/50 . . Stacking one article, or group of articles, upon another before packaging
- B65B 35/52 . . . building-up the stack from the bottom
- B65B 35/54 . . Feeding articles along multiple paths to a single packaging position
- B65B 35/56 . Orientating, i.e. changing the attitude of, articles, e.g. of non-uniform cross-section
- B65B 35/58 . . Turning articles by positively-acting means, e.g. to present labelled portions in uppermost position

**B65B 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)**

- B65B 37/005 . {by endless belts or chains}
- B65B 37/02 . by gravity flow
- B65B 37/04 . by vibratory feeders
- B65B 37/06 . by pistons or pumps
- B65B 37/08 . by rotary feeders
- B65B 37/10 . . of screw type
- B65B 37/12 . . of centrifugal type
- B65B 37/14 . by pneumatic feeders
- B65B 37/16 . Separating measured quantities from supply (in container-filling machines B65B 1/30, B65B 3/26)



B65B 37/18 . . by weighing (in general [G01G](#))

B65B 37/20 . . by volume measurement (in general [G01F](#))

### **B65B 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](#))

B65B 39/001 . {with flow cut-off means, e.g. valves}

B65B 39/002 . . {Pivoting plates}

B65B 39/003 . . {Rotating means}

B65B 39/004 . . {moving linearly}

B65B 39/005 . . . {transverse to flow direction}

B65B 39/006 . {Grids for introducing bottles into cases}

B65B 39/007 . {Guides or funnels for introducing articles into containers or wrappers}

B65B 2039/008 . {Strainer means}

B65B 2039/009 . {Multiple outlets}

B65B 39/02 . Expansible or contractible nozzles, funnels, or guides

B65B 39/04 . having air-escape, or air-withdrawal, passages

B65B 39/06 . adapted to support containers or wrappers

B65B 39/08 . . by means of clamps

B65B 39/10 . . . operating automatically

B65B 39/12 . movable towards or away from container or wrapper during filling or depositing

B65B 39/14 . movable with a moving container or wrapper during filling or depositing

B65B 39/145 . . {in an endless path}

### **B65B 41/00**

**Supplying or feeding container-forming sheets or wrapping material** (in general [B65H](#))

B65B 41/02 . Feeding sheets or wrapper blanks

B65B 41/04 . . by grippers

B65B 41/06 . . . by suction-operated grippers

B65B 41/08 . . by reciprocating or oscillating pushers

B65B 41/10 . . by rollers

B65B 41/12 . Feeding webs from rolls

B65B 41/14 . . by grippers

B65B 41/16 . . by rollers

B65B 41/18 . Registering sheets, blanks, or webs

### **B65B 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](#))

B65B 43/02 . Forming flat bags from individual sheets or blanks

B65B 43/04 . Forming flat bags from webs

B65B 43/06 . . from more than one web

B65B 43/08 . Forming three-dimensional containers from sheet material

- B65B 43/10 . . by folding the material
- B65B 43/12 . Feeding flexible bags or carton blanks in flat or collapsed state; Feeding flat bags connected to form a series or chain
- B65B 43/123 . . {Feeding flat bags connected to form a series or chain}
- B65B 43/126 . . {Feeding carton blanks in flat or collapsed state}
- B65B 43/14 . . Feeding individual bags or carton blanks from piles or magazines {(shopping bag dispensing systems [A47F 9/042](#))}
- B65B 43/145 . . . {Feeding carton blanks from piles or magazines}
- B65B 43/16 . . . by grippers
- B65B 43/165 . . . . {specially adapted for carton blanks}
- B65B 43/18 . . . . by suction-operated grippers
- B65B 43/185 . . . . . {specially adapted for carton blanks}
- B65B 43/20 . . . by reciprocating or oscillating pushers
- B65B 43/205 . . . . {specially adapted for carton blanks}
- B65B 43/22 . . . by rollers
- B65B 43/225 . . . . {specially adapted for carton blanks}
- B65B 43/24 . Breaking creases to facilitate setting-up cartons
- B65B 43/26 . Opening or distending bags; Opening, erecting, or setting-up boxes, cartons, or carton blanks
- B65B 43/262 . . {opening of valve bags (filling of valve bags [B65B 1/18](#), [B65B 3/17](#))}
- B65B 43/265 . . {Opening, erecting or setting-up boxes, cartons or carton blanks}
- B65B 43/267 . . {Opening of bags interconnected in a web}
- B65B 43/28 . . by grippers co-operating with fixed supports
- B65B 43/285 . . . {specially adapted for boxes, cartons or carton blanks}
- B65B 43/30 . . by grippers engaging opposed walls, e.g. suction-operated
- B65B 43/305 . . . {specially adapted for boxes, cartons or carton blanks}
- B65B 43/32 . . by external pressure diagonally applied
- B65B 43/325 . . . {to boxes, cartons or carton blanks}
- B65B 43/34 . . by internal pressure
- B65B 43/345 . . . {applied to boxes, cartons or carton blanks}
- B65B 43/36 . . . applied pneumatically
- B65B 43/365 . . . . {to boxes, cartons or carton blanks}
- B65B 43/38 . Opening hinged lids
- B65B 43/39 . . Opening-out closure flaps clear of bag, box, or carton mouth
- B65B 43/40 . Removing separate lids
- B65B 43/41 . Opening drawer-and-shell cartons
- B65B 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](#))
- B65B 43/44 . . from supply magazines

- B65B 43/46 . . . using grippers
- B65B 43/465 . . . {for bags}
- B65B 43/48 . . . using reciprocating or oscillating pushers
- B65B 43/50 . . . using rotary tables or turrets {(B65B 43/46 takes precedence)}
- B65B 43/52 . . . using roller-ways or endless conveyers
- B65B 43/54 . . . Means for supporting containers or receptacles during the filling operation
- B65B 43/56 . . . . movable stepwise to position container or receptacle for the reception of successive increments of contents
- B65B 43/58 . . . . vertically movable
- B65B 43/59 . . . . vertically movable (B65B 43/58 takes precedence)
- B65B 43/60 . . . . rotatable
- B65B 43/62 . . . . about an axis located at the filling position, e.g. the axis of the container or receptacle

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

**B65B 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**

- B65B 47/02 . . with means for heating the material prior to forming
- B65B 47/04 . . by application of mechanical pressure
- B65B 47/06 . . . using folding dies
- B65B 47/08 . . by application of fluid pressure
- B65B 47/10 . . . by vacuum

**B65B 49/00**      **Devices for folding or bending wrappers around contents**

- B65B 49/02 . . Fixed or resiliently-mounded folders, e.g. non-driven rollers
- B65B 49/04 . . . Ploughs or plates with inclined slots or opposed inclined edges
- B65B 49/06 . . Resilient folders, e.g. brushes, diaphragms
- B65B 49/08 . . Reciprocating or oscillating folders
- B65B 49/10 . . Folders movable in closed non-circular paths
- B65B 49/12 . . Rotary folders
- B65B 49/14 . . Folders forming part of, or attached to, conveyers for partially-wrapped articles
- B65B 49/16 . . Pneumatic means, e.g. air jets

**B65B 51/00**      **Devices for, or methods of, sealing or securing package folds or closures; Devices for gathering or twisting wrappers, or necks of bags**

- B65B 51/02 . . Applying adhesives or sealing liquids (activating adhesives by applying heat or pressure B65B 51/10)
- B65B 51/023 . . . {using applicator nozzles}
- B65B 51/026 . . . {using rotating applicators}
- B65B 51/04 . . Applying separate sealing or securing members, e.g. clips, (applying separate lids or covers B65B 7/28)

- B65B 51/043 . . {Applying springy clips around bag necks}
- B65B 51/046 . . {Applying a closure element to the mouths of bags}
- B65B 51/05 . . Stapling
- B65B 51/06 . . Applying adhesive tape {(adhesive tape dispensers [B65H 35/0006](#))}
- B65B 51/062 . . . {to the mouths of bags}
- B65B 51/065 . . . {to the necks of bags}
- B65B 51/067 . . . {to the closure flaps of boxes}
- B65B 51/07 . . Sewing or stitching
- B65B 51/08 . . Applying binding material, e.g. to twisted bag necks
- B65B 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](#))}
- B65B 2051/105 . . {Heat seal temperature control}
- B65B 51/12 . . by resilient means, e.g. brushes
- B65B 51/14 . . by reciprocating or oscillating members ([B65B 51/148](#) takes precedence)
- B65B 51/142 . . . {Closing bottle necks or tubes}
- B65B 51/144 . . . {Closing paperboard containers}
- B65B 51/146 . . . {Closing bags}
- B65B 51/148 . . . {Hand-operated members}
- B65B 51/16 . . by rotary members
- B65B 51/18 . . by endless bands or chains
- B65B 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](#))
- B65B 51/22 . . by friction or ultrasonic or high-frequency electrical means, {i.e. by friction or ultrasonic or induction welding}
- B65B 51/222 . . . {by friction welding}
- B65B 51/225 . . . {by ultrasonic welding}
- B65B 51/227 . . . {by induction welding}
- B65B 51/24 . . to produce bead seals (combined with severing by heated wires or rods [B65B 61/10](#))
- B65B 51/26 . . Devices specially adapted for producing transverse or longitudinal seams in webs or tubes
- B65B 51/28 . . . Rollers for producing longitudinal and transverse seams simultaneously
- B65B 51/30 . . . Devices, e.g. jaws, for applying pressure and heat, e.g. for subdividing filled tubes (for subdividing filled tubes involving displacement of contents [B65B 9/12](#))
- B65B 51/303 . . . . {reciprocating along only one axis}
- B65B 51/306 . . . . {Counter-rotating devices}
- B65B 51/32 . . Cooling, or cooling and pressing, package closures after heat-sealing
- B65B 53/00** **Shrinking wrappers, containers, or container covers during or after packaging**
- B65B 53/02 . . by heat
- B65B 53/04 . . supplied by liquids

- B65B 53/06 . . . supplied by gases, e.g. hot-air jets
- B65B 53/063 . . . {Tunnels}
- B65B 53/066 . . . {Mobile frames, hoods, posts or the like}
  
- B65B 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](#); if not restricted to packaging [A23L](#), [A61L](#))
  - B65B 55/02 . Sterilising, e.g. of complete packages
  - B65B 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)}
  - B65B 55/025 . . {Packaging in aseptic tunnels}
  - B65B 55/027 . . {Packaging in aseptic chambers}
  - B65B 55/04 . . Sterilising wrappers or receptacles prior to, or during, packaging {(sterilising bottles [B67C 7/00](#))}
  - B65B 55/06 . . . by heat
  - B65B 55/08 . . . by irradiation
  - B65B 55/10 . . . by liquids or gases
  - B65B 55/103 . . . . {Sterilising flat or tubular webs}
  - B65B 55/106 . . . . {Sterilising connected bags}
  - B65B 55/12 . . Sterilising contents prior to, or during, packaging
  - B65B 55/14 . . . by heat
  - B65B 55/16 . . . by irradiation
  - B65B 55/18 . . . by liquids or gases ([B65B 55/14](#) takes precedence)
  - B65B 55/19 . . . by adding materials intended to remove free oxygen or to develop inhibitor gases, e.g. vapour phase inhibitors
  - B65B 55/20 . Embedding contents in shock-absorbing media, e.g. plastic foam, granular material
  - B65B 55/22 . Immersing contents in protective liquids
  - B65B 55/24 . Cleaning of, or removing dust from, containers, wrappers, or packaging; {Preventing of fouling}
  
- B65B 57/00** **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](#); {factory control systems [G05B 19/418](#); operation of audible or visible signals besides this application [G08G](#)}; photoelectric cells [H01J](#), [H01L](#); such devices in general see the relevant classes)
  - B65B 57/005 . {Safety-devices ([B65B 57/18](#) takes precedence)}
  - B65B 57/02 . responsive to absence, presence, abnormal feed, or misplacement of binding or wrapping material, containers, or packages
  - B65B 57/04 . . and operating to control, or to stop, the feed of such material, containers, or packages
  - B65B 57/06 . . and operating to control, or to stop, the feed of articles or material to be packaged
  - B65B 57/08 . . and operating to stop, or to control the speed of, the machine as a whole
  - B65B 57/10 . responsive to absence, presence, abnormal feed, or misplacement of articles or materials to be packaged

- B65B 57/12
  - . . and operating to control, or stop, the feed of wrapping materials, containers, or packages
- B65B 57/14
  - . . and operating to control, or stop, the feed of articles or material to be packaged
- B65B 57/145
  - . . . {for fluent material}
- B65B 57/16
  - . . and operating to stop, or to control the speed of, the machine as a whole
- B65B 57/18
  - . causing operation of audible or visible alarm signals
- B65B 57/20
  - . Application of counting devices for controlling the feed of articles (other applications [B65B 65/08](#))
  
- B65B 59/00**

**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**
- B65B 59/005
  - . {Adjustable conveying means ([B65B 59/02](#) takes precedence)}
- B65B 59/02
  - . 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](#))
- B65B 59/04
  - . Machines constructed with readily-detachable units or assemblies, e.g. to facilitate maintenance
  
- B65B 61/00**

**Miscellaneous auxiliary devices operating on sheets, blanks, webs, binding material, containers, or packages, and not otherwise provided for (operating on articles or materials to be packaged and not otherwise provided for [B65B 63/00](#))**
- B65B 61/002
  - . {for drying glued or sealed packages}
- B65B 61/005
  - . {for removing material by cutting}
- B65B 61/007
  - . {Perforating strips of completed packages}
- B65B 61/02
  - . for perforating, scoring, {slitting,} or applying code or date marks on material prior to packaging {(scoring ampoules [B65B 3/006](#))}
- B65B 61/025
  - . . {for applying, e.g. printing, code or date marks on material prior to packaging}
- B65B 61/04
  - . for severing webs, or for separating joined packages
- B65B 61/06
  - . . by cutting
- B65B 61/065
  - . . . {by punching out}
- B65B 61/08
  - . . . using rotary cutters
- B65B 61/10
  - . . . using heated wires or cutters
- B65B 61/12
  - . . by tearing along perforations or lines of weakness
- B65B 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](#))
- B65B 61/16
  - . . Forming suspension apertures in packages
- B65B 61/18
  - . for making package-opening or unpacking elements
- B65B 61/182
  - . . {by applying tear-strips or tear-tapes}
- B65B 61/184
  - . . {by applying tabs over discharge openings, e.g. over discharge openings defined by tear or score lines}
- B65B 61/186
  - . . {by applying or incorporating rigid fittings, e.g. discharge spouts}
- B65B 61/188
  - . . {by applying or incorporating profile-strips, e.g. for reclosable bags}

- B65B 61/20
  - . for adding cards, coupons, or other inserts to package contents {e.g. for adding or applying accessories or inserts to the inside or the outside of a container} (adding unpacking elements [B65B 61/18](#); labelling [B65C](#))
- B65B 61/202
  - . . {for attaching articles to the outside of a container ([B65B 61/205](#) takes precedence)}
- B65B 61/205
  - . . {for adding drinking straws to a container}
- B65B 61/207
  - . . {for inserting partitions between package contents}
- B65B 61/22
  - . . for placing protecting sheets, plugs, or wads over contents, e.g. cotton-wool in bottles of pills
- B65B 61/24
  - . for shaping or reshaping completed packages
- B65B 61/26
  - . for marking or coding completed packages
- B65B 61/28
  - . for discharging completed packages from machines
- B65B 63/00**

**Miscellaneous auxiliary devices operating on articles or materials to be packaged and not otherwise provided for** (operating on sheets, blanks, webs, binding material, or packages, and not otherwise provided for [B65B 61/00](#))
- B65B 63/005
  - . {for marking or coding articles prior to packaging}
- B65B 63/02
  - . for compressing or compacting articles or materials prior to wrapping or insertion in containers or receptacles (tableting or compressing of powders [B30B 11/00](#))
- B65B 63/022
  - . . {using compressing chambers or plates moving in an endless path}
- B65B 63/024
  - . . {for compressing by winding}
- B65B 63/026
  - . . {for compressing by feeding articles through a narrowing space}
- B65B 63/028
  - . . {by pneumatic means}
- B65B 63/04
  - . for folding or winding articles, e.g. gloves, stockings ({[B65B 63/024](#) takes precedence;} 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](#))
- B65B 63/045
  - . . {for folding garments, e.g. stockings, shirts}
- B65B 63/06
  - . . Forming elongated hanks, e.g. of shoe laces
- B65B 63/08
  - . for heating or cooling articles or materials to facilitate packaging
- B65B 65/00**

**Details peculiar to packaging machines and not otherwise provided for; Arrangements of such details**
- B65B 65/003
  - . {Packaging lines, e.g. general layout}
- B65B 65/006
  - . . {Multiple parallel packaging lines}
- B65B 65/02
  - . Driving gear
- B65B 65/04
  - . Mechanisms for converting a continuous rotary motion to intermittent rotary motion, e.g. Geneva drives
- B65B 65/06
  - . coated or treated with anti-friction or anti-sticking materials, e.g. polytetrafluoroethylene
- B65B 65/08
  - . Devices for counting or registering the number of articles handled, or the number of packages produced by the machine
- B65B 67/00**

**Apparatus or devices facilitating manual packaging operations; Sack holders**
- B65B 67/02
  - . Packaging of articles or materials in containers



- B65B 67/04 . . Devices facilitating the insertion of articles or materials into bags {e.g. guides or chutes (sack holders B65B 67/12)}
- B65B 67/06 . . Manually-operable devices for closing bag necks, by applying and securing lengths of string, wire or tape
- B65B 67/08 . Wrapping of articles
- B65B 67/085 . . {using hand-held dispensers for stretch films}
- B65B 67/10 . . Wrapping-tables
- B65B 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 39/06)}
- B65B 67/1205 . . {collapsible or foldable (B65B 67/1216, B65B 67/1244, B65B 67/1255 take precedence)}
- B65B 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)}
- B65B 67/1216 . . {co-operating with the door of a cabinet or the like}
- B65B 67/1222 . . {characterised by means for suspending sacks, e.g. pedal-operated}
- B65B 67/1227 . . . {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)}
- B65B 67/1233 . . . {Clamping or holding means}
- B65B 67/1238 . . {Inserts or external supports, e.g. baskets, for stiffening sacks in the open condition}
- B65B 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)}
- B65B 67/125 . . . {comprising resilient closing elements, e.g. inserts, cooperating with the mouth of the sack}
- B65B 67/1255 . . {characterised by positively acting means for stretching the mouth of the sack into the open condition, e.g. using springs}
- B65B 2067/1261 . . {Holders with lids}
- B65B 67/1266 . . {specially adapted for storing or dispensing sacks from a supply}
- B65B 2067/1272 . . . {the sacks being rolled-up}
- B65B 67/1277 . . . {for dispensing flexible tubular material gathered up in the shape of a ring}
- B65B 2067/1283 . . {Means for gathering, closing or sealing the sacks}
- B65B 2067/1288 . . {Inflatable parts}
- B65B 2067/1294 . . {Holders for multiple sacks}
  
- B65B 69/00** **Unpacking of articles or materials, not otherwise provided for**
- B65B 69/0008 . {Opening and emptying bags}
- B65B 69/0016 . . {for urine bags or medical drainage bags}
- B65B 69/0025 . {Removing or cutting binding material, e.g. straps or bands}
- B65B 69/0033 . {by cutting (B65B 69/0008-B65B 69/0025 take precedence)}
- B65B 69/0041 . . {by puncturing}
- B65B 69/005 . {by expelling contents, e.g. by squeezing the container}

- B65B 69/0058 . . {Solid contents}
  - B65B 69/0066 . {Heating materials to facilitate their unpacking}
  - B65B 69/0075 . {Emptying systems for flexible intermediate bulk containers [FIBC]}
  - B65B 69/0083 . . {using frames whereby the container is only suspended}
  - B65B 69/0091 . . {using frames whereby the container is bottom supported}
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#### **B65B 2210/00      Specific aspects of the packaging machine**

- B65B 2210/02 . Plurality of alternative input or output lines or plurality of alternative packaging units on the same packaging line for improving machine flexibility
- B65B 2210/04 . 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
- B65B 2210/06 . Sterilising or cleaning machinery or conduits ([cleaning machinery in general B08B](#))
- B65B 2210/08 . . Cleaning nozzles, funnels or guides through which articles are introduced into containers or wrappers
- B65B 2210/10 . Means for removing bridges formed by the material or article, e.g. anti-clogging devices
- B65B 2210/12 . Means for automatically detecting and removing jammed straps in strapping machines, e.g. jam clearing devices
- B65B 2210/14 . Details of wrapping machines with web dispensers for application of a continuous web in layers onto the articles
- B65B 2210/16 . . the web dispenser travelling around the article along a non-rotating ring
- B65B 2210/18 . . the web dispenser being mounted on a rotary ring
- B65B 2210/20 . . the web dispenser being mounted on a rotary arm

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

#### **B65B 2220/00      Specific aspects of the packaging operation**

- B65B 2220/02 . Erecting a carton by pushing a blank into a form
- B65B 2220/04 . Means for, or method of collapsing containers with walls hinged together or detachably connected ([such containers per se B65D 11/18](#))
- B65B 2220/06 . Cutting webs along their longitudinal direction
- B65B 2220/08 . Creating fin seals as the longitudinal seal on horizontal or vertical form fill seal [FFS] machines
- B65B 2220/10 . Creating an off-center longitudinal seal on horizontal or vertical form fill seal [FFS] machines
- B65B 2220/12 . Creating additional longitudinal welds on horizontal or vertical form fill seal [FFS] machines for stiffening packages or for creating package edges
- B65B 2220/14 . Adding more than one type of material or article to the same package
- B65B 2220/16 . Packaging contents into primary and secondary packaging
- B65B 2220/18 . . the primary packaging being bags the subsequent secondary packaging being rigid containers, e.g. cardboard box

- B65B 2220/20
  - . . the primary packaging being bags, the secondary packaging being further bags, the primary bags being either finished or formed concurrently with the secondary bags
- B65B 2220/22
  - . Interconnected packages concurrently produced from the same web, the packages not being separated from one another
- B65B 2220/24
  - . Cooling filled packages ([cooling articles or materials to be packaged B65B 63/08](#); [cooling package closures after heat sealing B65B 51/32](#))
- B65B 2230/00**
  - Aspects of the final package**
- B65B 2230/02
  - . Containers having separate compartments isolated from one another ([B65B 29/10](#) and [B65B 2220/16](#) take preference).
- B65B 2230/04
  - . Cigarette packages having a hinged lid