

CPC COOPERATIVE PATENT CLASSIFICATION

B PERFORMING OPERATIONS; TRANSPORTING (NOTES omitted)

SHAPING

B31 MAKING ARTICLES OF PAPER, CARDBOARD OR MATERIAL WORKED IN A MANNER ANALOGOUS TO PAPER; WORKING PAPER, CARDBOARD OR MATERIAL WORKED IN A MANNER ANALOGOUS TO PAPER (NOTES omitted)

B31B MAKING CONTAINERS OF PAPER, CARDBOARD OR MATERIAL WORKED IN A MANNER ANALOGOUS TO PAPER (making wound articles, e.g. wound tubes, [B31C](#); combined making and filling [B65B](#))

NOTE

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

- "rigid or semi-rigid containers" includes:
 - containers not deformed by, or not taking-up the shape of, their contents;
 - containers adapted to be temporarily deformed to expel their contents;
 - pallets;
 - trays;
- "flexible containers" includes:
 - containers deformed by, or taking-up the shape of, their contents;
 - containers adapted to be permanently deformed to expel their contents.
- {"mandrel" and "plunger" is sometimes used interchangeably in the art. Care should be taken to note that when the device is moving through folding dies, it is a "plunger", otherwise, the device is a "mandrel". }

<p>50/00 Making rigid or semi-rigid containers, e.g. boxes or cartons</p> <p>NOTE</p> <p>In this group, it is desirable to add the indexing codes of groups B31B 2100/00 – B31B 2120/00.</p> <p>50/002 . {Prebreaking}</p> <p>50/003 . {Straightening the side walls of boxes; Squaring collapsed folded box blanks; Deforming boxes}</p> <p>50/004 . {Closing boxes}</p> <p>50/0042 . . {the boxes having their opening facing in horizontal direction}</p> <p>50/0044 . . {the boxes having their opening facing upwardly}</p> <p>50/0045 . . {the boxes being cylindrical}</p> <p>50/005 . {involving a particular layout of the machinery or relative arrangement of its subunits}</p> <p>50/006 . {Controlling; Regulating; Measuring; Improving safety}</p> <p>50/02 . Feeding or positioning sheets, blanks or webs</p> <p>50/022 . . {Holders for feeding or positioning blanks or webs}</p> <p>50/024 . . . {Rotating holders, e.g. star wheels, drums}</p> <p>50/04 . . Feeding sheets or blanks</p> <p>50/042 . . . {using rolls, belts or chains}</p> <p>50/044 . . . {involving aligning}</p> <p>50/046 . . . {involving changing orientation or changing direction of transport}</p> <p>50/06 . . . from stacks</p> <p>50/062 {from the underside of a magazine}</p>	<p>50/064 {by being moved in the plane they are lying in}</p> <p>50/066 {from above a magazine}</p> <p>50/07 . . . by air pressure or suction</p> <p>50/10 . . Feeding or positioning webs</p> <p>50/102 . . . {using rolls, belts or chains}</p> <p>50/104 . . . {involving aligning}</p> <p>50/106 . . . {involving changing orientation or changing direction of transport}</p> <p>50/12 . . . by air pressure or suction</p> <p>50/14 . Cutting, e.g. perforating, punching, slitting or trimming (cutting window openings B31B 50/83)</p> <p>50/142 . . {using presses or dies}</p> <p>50/144 . . {using tools mounted on belts or chains}</p> <p>50/146 . . {using tools mounted on a drum}</p> <p>50/16 . . Cutting webs</p> <p>50/18 . . . longitudinally</p> <p>50/20 . . Cutting sheets or blanks</p> <p>50/22 . . . Notching; Trimming edges of flaps</p> <p>50/25 . Surface scoring</p> <p>50/252 . . {using presses or dies}</p> <p>50/254 . . {using tools mounted on belts or chains}</p> <p>50/256 . . {using tools mounted on a drum}</p> <p>50/26 . Folding sheets, blanks or webs</p> <p>50/262 . . {involving folding, leading, or trailing flaps of blanks}</p> <p>50/28 . . around mandrels, e.g. for forming bottoms</p> <p>50/282 . . . {involving stripping-off formed boxes from mandrels}</p> <p>50/30 . . . the mandrels moving</p>
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- 50/32 in circular paths
- 50/322 {the mandrels extending radially from the periphery of a drum}
- 50/324 {the mandrels being parallel to the axis of a drum}
- 50/326 {the mandrels extending tangentially to the periphery of a drum}
- 50/34 about their own axes
- 50/36 . . by continuously feeding the sheets, blanks or webs to stationary members, e.g. plates, ploughs or cores
- 50/38 . . . the members being forming-tubes
- 50/40 acting internally
- 50/42 acting externally
- 50/44 . . by plungers moving through folding dies
- 50/442 . . . {having several cooperating plungers and dies fitted on a rotating table or on moving chains}
- 50/444 . . . {having several plungers moving in a closed path and cooperating with stationary folding dies}
- 50/46 . . . and interconnecting side walls
- 50/48 by folding or tucking in locking flaps
- 50/50 by interengaging tongues and slots
- 50/52 . . by reciprocating or oscillating members, e.g. fingers (by plungers moving through folding dies [B31B 50/44](#))
- 50/54 . . . operating on moving material
- 50/56 . . by rotary members co-operating with blades
- 50/58 . . by moving endless belts {or chains}
- 50/585 . . by air jets
- 50/59 . Shaping sheet material under pressure (by folding [B31B 50/26](#); embossing [B31B 50/88](#))
- 50/592 . . {using punches or dies}
- 50/594 . . {Modifying the shape of tubular boxes or of paper bottle necks}
- 50/60 Uniting opposed surfaces or edges; Taping
- 50/61 . . {Uniting opposed edges by injecting thermoplastic material}
- 50/62 . . by adhesives
- 50/622 {Applying glue on already formed boxes}
- 50/624 {Applying glue on blanks}
- 50/626 {Arrangements for permitting the glue to set}
- 50/64 . . by applying heat or pressure, e.g. by welding (to unite areas where adhesives are applied [B31B 50/62](#))
- 50/642 {using sealing jaws or sealing dies}
- 50/644 {Making seals parallel to the direction of movement, i.e. longitudinal sealing}
- 50/645 {Making seals transversally to the direction of movement}
- 50/648 {using tools mounted on belts or chains}
- 50/649 {using tools mounted on a drum}
- 50/66 by high-frequency electric heating
- 50/68 . . by stitching, stapling or riveting
- 50/682 {for closing the bottom flaps of boxes, or for securing bottoms or caps to box bodies}
- 50/684 {for joining the overlapping edges of collapsed blanks to form tubular blanks}
- 50/686 {for attaching hinged covers to boxes}
- 50/70 by corner stapling
- 50/72 . . by applying and securing strips or sheets
- 50/722 {on already formed boxes}
- 50/724 {Applying tapes on the corners of set-up boxes, e.g. involving setting-up}
- 50/726 {for uniting meeting edges of collapsed boxes}
- 50/73 . . by mechanically interlocking integral parts, e.g. by tongues and slots (interconnecting side walls during folding by plungers moving through folding dies [B31B 50/46](#))
- 50/732 {by folding or tucking-in locking flaps}
- 50/734 {interengaging tongues and slots}
- 50/74 . . Auxiliary operations
- 50/741 . . . {Moistening; Drying; Cooling; Heating; Sterilizing}
- 50/742 . . . {Coating; Impregnating; Waterproofing; Decoating}
- 50/743 {Coating or impregnating edges or corners}
- 50/745 {Coating or impregnating formed boxes}
- 50/747 {Coating or impregnating blanks or webs}
- 50/75 {by immersing in a bath}
- 50/753 {by spraying}
- 50/756 {only the interior of the boxes}
- 50/76 . . Opening and distending flattened articles
- 50/78 . . . Mechanically
- 50/782 {by pushing the opposite ends of collapsed blanks towards each other}
- 50/784 {for setting up boxes having their opening facing upwardly}
- 50/786 {by introducing opening fingers in the collapsed blanks}
- 50/787 {Rotating fingers; Two or more fingers moving relatively to each other}
- 50/788 {by introducing the blanks into undeformable holders, e.g. on a drum or on chains}
- 50/80 . . . Pneumatically
- 50/802 {for setting-up boxes having their opening facing upwardly}
- 50/804 {using two or more suction devices on a rotating element}
- 50/81 . . Forming or attaching accessories, e.g. opening devices, closures or tear strings
- 50/811 {Applying strips, strings, laces or ornamental edgings to formed boxes}
- 50/812 {Applying tabs, patches, strips or strings on blanks or webs}
- 50/8121 {Applying tabs on corners of box blanks}
- 50/8122 {Applying patches}
- 50/8123 {the blanks remaining stationary during application of the patches}
- 50/8124 {the patches being taken out of a magazine}
- 50/8125 {Applying strips or strings, e.g. tear strips or strings}
- 50/8126 {parallel to the direction of movement of the webs or the blanks}
- 50/8127 {perpendicular to the direction of movement of the webs or the blanks}
- 50/8128 {the webs or blanks remaining stationary during application of the strips or strings}
- 50/8129 {the webs or blanks moving during application of the strips or strings}
- 50/813 {obliquely to the direction of movement of the webs or blanks or in an irregular path}

- 50/814 . . . {Applying closure elements to blanks, webs or boxes}
- 50/8142 {Applying button-and-string or washer like closure elements}
- 50/8144 {Applying hook-and-loop-type fasteners}
- 50/82 . . . Forming or attaching windows
- 50/83 Cutting window openings
- 50/84 . . . Forming or attaching means for filling or dispensing contents, e.g. valves or spouts
- 50/85 Applying patches or flexible valve inserts, e.g. applying film-like valves
- 50/86 . . . Forming integral handles; Attaching separate handles
- 50/87 {Fitting separate handles on boxes, e.g. on drinking cups}
- 50/88 . . Printing; Embossing
- 50/92 . . Delivering
- 50/94 . . . singly or in succession
- 50/96 in an overlapping arrangement
- 50/98 . . . in stacks or bundles
- 50/99 . using hand tools
- 70/00 Making flexible containers, e.g. envelopes or bags**
- NOTES**
1. Processes or apparatus for making both flexible containers and rigid or semi-rigid containers are classified in group [B31B 50/00](#).
2. In this group, it is desirable to add the indexing codes of groups [B31B 2150/00](#) - [B31B 2170/00](#).
- 70/001 . {Shaping, other than by folding, sheet material under pressure}
- 70/003 . {Opening or distending bags}
- 70/004 . {Closing bags}
- 70/005 . {involving a particular layout of the machinery or relative arrangement of its subunits}
- 70/006 . {Controlling; Regulating; Measuring; Safety measures}
- 70/008 . {Stiffening or reinforcing ([B31B 70/876](#) takes precedence)}
- 70/02 . Feeding or positioning sheets, blanks or webs
- 70/022 . . {Holders for feeding or positioning sheets or webs}
- 70/024 . . . {Rotating holders, e.g. star wheels, drums}
- 70/04 . . Feeding sheets or blanks
- 70/10 . . Feeding or positioning webs
- 70/14 . Cutting, e.g. perforating, punching, slitting or trimming ([cutting window openings B31B 70/83](#))
- 70/142 . . {using presses or dies}
- 70/144 . . {using tools mounted on belts or chains}
- 70/146 . . {using tools mounted on a drum}
- 70/148 . . {Cutting-out portions from the sides of webs or sheets}
- 70/16 . . Cutting webs
- 70/18 . . . longitudinally
- 70/20 . . Cutting sheets or blanks
- 70/25 . {Ruling}
- 70/252 . . {using presses or dies}
- 70/254 . . {using tools mounted on belts or chains}
- 70/256 . . {using tools mounted on a drum}
- 70/26 . Folding sheets, blanks or webs
- 70/261 . . {involving transversely folding, i.e. along a line perpendicular to the direction of movement}
- 70/262 . . {involving longitudinally folding, i.e. along a line parallel to the direction of movement}
- 70/266 . . . {involving gusset-forming}
- 70/28 . . {around mandrels}
- 70/30 . . . {Moving mandrels}
- 70/36 . . by continuously feeding them to stationary members, e.g. plates, ploughs or cores
- 70/44 . . {by plungers moving through folding dies}
- 70/52 . . by reciprocating or oscillating members other than plungers and dies, e.g. by fingers
- 70/56 . . {by rotary members co-operating with blades}
- 70/58 . . {by moving belts or chains}
- 70/60 Uniting opposed surfaces or edges; Taping
- 70/61 . . . {by applying or securing strips or tape}
- 70/62 . . by adhesives
- 70/626 {Arrangements for permitting the glue to set}
- 70/628 {Applying glue on moving webs to form tubular webs}
- 70/64 . . by applying heat or pressure (to unite areas where adhesives are applied [B31B 70/62](#))
- 70/642 {using sealing jaws or sealing dies}
- 70/643 {on piled sheets, e.g. sealing bags arranged in a pile}
- 70/644 {Making seals parallel to the direction of movement, i.e. longitudinal sealing}
- 70/645 {Making seals transversally to the direction of movement}
- 70/648 {using tools mounted on belts or chains}
- 70/649 {using tools mounted on a drum}
- 70/66 by high-frequency electric heating
- 70/68 . . . by stitching, stapling or riveting
- 70/74 . . . Auxiliary operations
- 70/76 . . . {Moistening; Drying; Cooling; Heating}
- 70/79 . . . {Coating; Impregnating; Waterproofing; Decoating}
- 70/81 . . Forming or attaching accessories, e.g. opening devices, closures or tear strings
- 70/812 {Applying patches, strips or strings on sheets or webs}
- 70/8122 {Applying patches}
- 70/8123 {Applying strips}
- 70/813 {Applying closures}
- 70/8131 {Making bags having interengaging closure elements}
- 70/8132 {Applying the closure elements in the machine direction}
- 70/8133 {Applying the closure elements in the cross direction}
- 70/8134 {Applying strings; Making string-closed bags}
- 70/8135 {the strings being applied in the machine direction}
- 70/8136 {the strings being applied in the cross direction}
- 70/8137 {the ends of the strings being attached to the side edges of the bags}
- 70/82 . . . Forming or attaching windows
- 70/822 {by making paper transparent or translucent; by applying transparent melt}
- 70/826 {involving applying window patches}
- 70/83 Cutting window openings
- 70/84 . . . Forming or attaching means for filling or dispensing contents, e.g. valves or spouts

- 70/844 {Applying rigid valves, spouts, or filling tubes}
- 70/85 Applying patches or flexible valve inserts, e.g. applying film-like valves
- 70/853 {Applying valve inserts on tubular webs, e.g. from the inside}
- 70/855 Forming valves integral with the containers
- 70/857 {by deforming the bag, e.g. stretching}
- 70/859 {involving turning the bags inside out}
- 70/86 . . Forming integral handles or mounting separate handles
- 70/864 . . . {Mounting separate handles on bags, sheets or webs}
- 70/866 {Applying handles on a moving web followed by longitudinal folding}
- 70/868 {Applying handles on a moving web followed by transverse folding}
- 70/87 {Applying handles on one side of a moving longitudinally folded web, e.g. after cutting a tubular web longitudinally; Applying handles on both sides of a moving web and folding this web longitudinally afterwards}
- 70/872 . . . {Forming integral handles on bags}
- 70/874 . . . {involving punching or cutting}
- 70/876 . . . {involving application of reinforcement strips or patches; involving reinforcements obtained by folding}
- 70/88 . . Printing; Embossing
- 70/92 . . Delivering
- 70/94 . . . singly or in succession
- 70/942 {by winding up}
- 70/946 {the bags being interconnected}
- 70/96 in an overlapping arrangement
- 70/98 . . . in stacks or bundles
- 70/982 {involving folding of the bags}
- 70/984 {Stacking bags on wicket pins}
- 70/986 {Stacking bags by means of a rotary stacking drum}
- 70/988 {Assembling or block-forming of bags; Loading bags on a mandrel}
- 70/99 . . using hand tools
- 2105/002 . . {Making boxes characterised by the shape of the blanks from which they are formed}
- 2105/0022 . . . {Making boxes from tubular webs or blanks, e.g. with separate bottoms, including tube or bottom forming operations}
- 2105/0024 . . . {Making boxes having all side walls attached to the bottom}
- 2105/0025 . . . {Making boxes by uniting two U-shaped blanks}
- 2105/0027 . . . {Making boxes from blanks consisting of side wall panels integral with a bottom panel and additional side wall panels}
- 2110/00** **Shape of rigid or semi-rigid containers**
- 2110/10 . . . having a cross section of varying size or shape, e.g. conical or pyramidal
- 2110/20 . . . having a curved cross section, e.g. circular
- 2110/30 . . . having a polygonal cross section
- 2110/35 . . . rectangular, e.g. square
- 2110/40 . . . without sidewalls
- 2120/00** **Construction of rigid or semi-rigid containers**
- 2120/002 . . . {having contracted or rolled necks, having shoulders}
- 2120/004 . . . {the bottom of which includes a rim projecting at the edges}
- 2120/10 . . . provided with covers, e.g. lids
- 2120/102 . . . {with a hinged cover}
- 2120/20 . . . provided with two or more compartments
- 2120/25 . . . formed by partitions or like inserts not integral with walls
- 2120/30 . . . collapsible; temporarily collapsed during manufacturing
- 2120/302 . . . {collapsible into a flat condition}
- 2120/40 . . . lined or internally reinforced
- 2120/402 . . . {by applying a liner to already made boxes, e.g. opening or distending of the liner or the box}
- 2120/404 . . . {using vacuum or pressure means to force the liner against the wall}
- 2120/406 . . . {the lining material being a plunger, a web, a sheet or a bag to be forced into the box, e.g. by using heat}
- 2120/407 . . . {involving forming of the liner before inserting}
- 2120/408 . . . {by folding a sheet or blank around an inner tubular liner}
- 2120/50 . . . covered or externally reinforced
- 2120/501 . . . {by applying wrapping material only on the side wall part of a box}
- 2120/502 . . . {having integral corner posts or reinforcements}
- 2120/60 . . . of drawer-and-shell type
- 2120/70 . . . having corrugated or pleated walls

Indexing scheme associated with group B31B 50/00, relating to making of rigid or semi-rigid containers

2100/00 Rigid or semi-rigid containers made by folding single-piece sheets, blanks or webs

- 2100/002 . . {characterised by the shape of the blank from which they are formed}
- 2100/0022 . . . {made from tubular webs or blanks, including by tube or bottom forming operations}
- 2100/0024 . . . {having all side walls attached to the bottom}
- 2100/0026 . . . {having two opposite first side walls attached to the bottom and the other side walls being attached to the first side walls}
- 2100/0028 . . . {made by first folding a sheet to a U-shape, constituting the bottom and two first side walls, after which the two other side walls are formed from these first side walls}

2105/00 Rigid or semi-rigid containers made by assembling separate sheets, blanks or webs

- 2105/001 . . {made from laminated webs, e.g. including laminating the webs}

Indexing scheme associated with group B31B 70/00, relating to making of flexible containers

2150/00 Flexible containers made from sheets or blanks, e.g. from flattened tubes

- 2150/001 . . . {with square or cross bottom}
- 2150/0012 . . . {having their openings facing in the direction of movement}
- 2150/0014 . . . {having their openings facing transversally to the direction of movement}
- 2150/0016 . . . {made from already formed bags}
- 2150/002 . . . {by joining superimposed sheets, e.g. with separate bottom sheets}

- 2150/003 . {made from tubular sheets}
- 2150/10 . the longitudinal axes of the containers being parallel to the direction in which the sheets or blanks are fed
- 2150/20 . the longitudinal axes of the containers being perpendicular to the direction in which the sheets or blanks are fed

2155/00 Flexible containers made from webs

- 2155/001 . {by folding webs longitudinally}
- 2155/0012 . . {having their openings facing in the direction of movement}
- 2155/0014 . . {having their openings facing transversally to the direction of movement}
- 2155/002 . {by joining superimposed webs, e.g. with separate bottom webs}
- 2155/003 . {starting from tubular webs}

2160/00 Shape of flexible containers

- 2160/10 . rectangular and flat, i.e. without structural provision for thickness of contents
- 2160/102 . . {obtained from essentially rectangular sheets}
- 2160/104 . . {obtained from rhombus shaped sheets}
- 2160/106 . . {obtained from sheets cut from larger sheets or webs before finishing the bag forming operations}
- 2160/20 . with structural provision for thickness of contents
- 2160/30 . pointed or tapered

2170/00 Construction of flexible containers

- 2170/10 . interconnected
- 2170/20 . having multi-layered walls, e.g. laminated or lined
- 2170/202 . . {having liners applied in already made bags, e.g. including turning the bags inside out}
- 2170/204 . . {involving folding a web about an already tubular web}
- 2170/30 . having corrugated or pleated walls

2241/00 Making bags or boxes intended for a specific use

- 2241/001 . Making bottle carriers
- 2241/002 . Making egg cartons
- 2241/003 . Making cigarette boxes
- 2241/005 . Making paper bottles
- 2241/006 . Making envelopes holding bar-shaped objects, e.g. cigar holders
- 2241/007 . Making recording disc envelopes
- 2241/008 . Making suction cleaner bags

2247/00 Manual operations for making bags or boxes