

# 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 meaning 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.

##### 50/00 Making rigid or semi-rigid containers, e.g. boxes or cartons

##### NOTE

In this group, it is desirable to add the indexing codes of groups [B31B 2100/00](#) – [B31B 2120/00](#).

- |         |  |        |  |
|---------|--|--------|--|
| 50/002  | • {Prebreaking}  | 50/07  | • . . . by air pressure or suction   |
| 50/003  | • {Straightening the side walls of boxes; Squaring collapsed folded box blanks; Deforming boxes} | 50/10  | • . . Feeding or positioning webs  |
| 50/004  | • {Closing boxes}  | 50/102 | • . . . {using rolls, belts or chains}   |
| 50/0042 | • . {the boxes having their opening facing in horizontal direction}                              | 50/104 | • . . . {involving aligning}   |
| 50/0044 | • . {the boxes having their opening facing upwardly}   | 50/106 | • . . . {involving changing orientation or changing direction of transport}  |
| 50/0045 | • . {the boxes being cylindrical}  | 50/12  | • . . . by air pressure or suction   |
| 50/005  | • {involving a particular layout of the machinery or relative arrangement of its subunits}       | 50/14  | • Cutting, e.g. perforating, punching, slitting or trimming ( <a href="#">cutting window openings B31B 50/83</a> ) |
| 50/006  | • {Controlling; Regulating; Measuring; Improving safety}   | 50/142 | • . {using presses or dies}  |
| 50/02   | • Feeding or positioning sheets, blanks or webs  | 50/144 | • . {using tools mounted on belts or chains}   |
| 50/022  | • . {Holders for feeding or positioning blanks or webs}  | 50/146 | • . {using tools mounted on a drum}  |
| 50/024  | • . . {Rotating holders, e.g. star wheels, drums}  | 50/16  | • . Cutting webs   |
| 50/04   | • . Feeding sheets or blanks   | 50/18  | • . . longitudinally   |
| 50/042  | • . . {using rolls, belts or chains}   | 50/20  | • . Cutting sheets or blanks   |
| 50/044  | • . . {involving aligning}   | 50/22  | • . . Notching; Trimming edges of flaps  |
| 50/046  | • . . {involving changing orientation or changing direction of transport}                        | 50/25  | • Surface scoring  |
| 50/06   | • . . . from stacks  | 50/252 | • . {using presses or dies}  |
| 50/062  | • . . . . {from the underside of a magazine}   | 50/254 | • . {using tools mounted on belts or chains}   |
| 50/064  | • . . . . {by being moved in the plane they are lying in}  | 50/256 | • . {using tools mounted on a drum}  |
| 50/066  | • . . . . {from above a magazine}  | 50/26  | • Folding sheets, blanks or webs   |
|         |  | 50/262 | • . {involving folding, leading, or trailing flaps of blanks}  |
|         |  | 50/28  | • . around mandrels, e.g. for forming bottoms  |
|         |  | 50/282 | • . . {involving stripping-off formed boxes from mandrels}   |
|         |  | 50/30  | • . . . the mandrels moving  |
|         |  | 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**
- Processes or apparatus for making both flexible containers and rigid or semi-rigid containers are classified in group [B31B 50/00](#).
  - 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}
- 70/002 . . {using punches or dies}
- 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 . {Surface scoring}
- 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

**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}
- 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 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**