

# CPC COOPERATIVE PATENT CLASSIFICATION

## B31F MECHANICAL WORKING OR DEFORMATION OF PAPER OR CARDBOARD (making layered products not composed wholly of paper or cardboard [B32B](#))

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| <p><b>1/00 Mechanical deformation of paper or cardboard without removing material, e.g. in combination with laminating</b></p> <p>1/0003 . {Shaping by bending, folding, twisting, straightening, flattening or rim-rolling; Shaping by bending, folding or rim-rolling combined with joining; Apparatus therefor (<a href="#">shaping of tube ends B31F 1/008</a>)}</p> <p>1/0006 . . {Bending or folding; Folding edges combined with joining; Reinforcing edges during the folding thereof; (<a href="#">creasing B31F 1/08</a>, <a href="#">crêping paper B31F 1/12</a>, <a href="#">corrugating B31F 1/20</a>; bending and joining <a href="#">B31F 1/0045</a>; Reinforcing edges <a href="#">per se B31F 5/08</a>; making wound articles <a href="#">B31C</a>, folding thin material <a href="#">per se B65H 45/00</a>)}</p> <p>1/0009 . . . {of plates, sheets or webs}</p> <p>1/0012 . . . . {combined with making folding lines (<a href="#">B31F 1/0022</a> takes precedence)}</p> <p>1/0016 . . . . {Folding edges; Folding edges combined with joining; Reinforcing edges during the folding thereof, e.g. by introducing a thread; Folding the edges of a sheathing (<a href="#">B31F 1/0029</a> takes precedence)}</p> <p>1/0019 . . . . {the plates, sheets or webs moving continuously (<a href="#">B31F 5/08</a> takes precedence)}</p> <p>1/0022 . . . . . {combined with making folding lines}</p> <p>1/0025 . . . . . {Making the folding lines using rotary tools}</p> <p>1/0029 . . . . . {Folding edges; Folding edges combined with joining; Reinforcing edges during the folding thereof, e.g. by introducing a thread; Folding the edges of a sheathing}</p> <p>1/0032 . . . {of tubes}</p> <p>1/0035 . . {Straightening or flattening}</p> <p>1/0038 . . {Rim-rolling}</p> <p>1/0041 . . . {combined with joining}</p> <p>1/0045 . . {Bending or folding combined with joining (<a href="#">Folding edges combined with joining B31F 1/0016</a>, <a href="#">B31F 1/0029</a>)}</p> <p>1/0048 . . . {Bending plates, sheets or webs at right angles to the axis of the article being formed and joining the edges}</p> <p>1/0051 . . . . {for making articles of definite length}</p> <p>1/0054 . . . . . {using internal forming surfaces, e.g. mandrels}</p> <p>1/0058 . . . . . {Machines therefor having additional mandrels, e.g. mounted on a turntable, or on chains (<a href="#">B31F 1/0064</a> takes precedence)}</p> <p>1/0061 . . . . . {for making articles of indefinite length}</p> <p>1/0064 . . . . . {using internal forming surfaces, on, e.g. mandrels}</p> <p>1/0067 . . . . . {using only external forming surfaces, e.g. sleeves}</p> <p>1/007 . . . . {for making articles with multilayered walls}</p> <p>1/0074 . . . . {Making essentially non-hollow profiles, e.g. rods, ropes, cords}</p> | <p>1/0077 . {Shaping by methods analogous to moulding, e.g. deep drawing techniques}</p> <p>1/008 . {Shaping of tube ends, e.g. flanging, bellling, closing, rim-rolling, corrugating; Fixing elements to tube ends}</p> <p>1/0083 . . {Closing}</p> <p>1/0087 . . {Rim-rolling}</p> <p>1/009 . . . {combined with joining, e.g. for fixing a closure element}</p> <p>1/0093 . . {Fixing elements to tube ends}</p> <p>1/0096 . {Lining or sheathing (<a href="#">folding the edge of the sheathing B31F 1/0016</a>, <a href="#">B31F 1/0029</a>)}</p> <p>1/07 . Embossing {, i.e. producing impressions formed by locally deep-drawing, e.g. using rolls provided with complementary profiles} (<a href="#">B31F 1/128</a> takes precedence; <a href="#">corrugating B31F 1/20</a>; <a href="#">embossing in combination with printing B41F 19/02</a>, <a href="#">B41M 1/24</a>; <a href="#">typewriters for embossing B41J 3/38</a>; <a href="#">stamping in combination with deforming B41K 3/36</a>)</p> <p>1/08 . Creasing (<a href="#">corrugating B31F 1/20</a>; <a href="#">zig-zag folding B65H 45/20</a> {; combined with folding <a href="#">B31F 1/0012</a>, <a href="#">B31F 1/0022</a>; <a href="#">grooving by cutting B26D 3/06</a>, <a href="#">B26D 3/08</a>; by <a href="#">milling grooves B23C 3/30</a>; of plastics material <a href="#">B29C 53/06</a>)}</p> <p>1/10 . . by rotary tools</p> <p>1/12 . Crêping paper or cardboard {, i.e. providing paper or cardboard with small irregular crinkles; Making paper or cardboard elastic in all directions}</p> <p>1/122 . . {the paper being submitted to an additional mechanical deformation other than crêping, e.g. for making it elastic in all directions}</p> <p>1/124 . . {Multiple crêping, e.g. forming crêpes under different angles}</p> <p>1/126 . . {including making of the paper to be crêped}</p> <p>1/128 . . {Making paper elastic in all directions, other than by crêping (<a href="#">B31F 1/122</a> takes precedence)}</p> <p>1/14 . . by doctor blades arranged crosswise to the web</p> <p>1/145 . . . {Blade constructions}</p> <p>1/16 . . by elastic belts {(<a href="#">B31F 1/18</a> takes precedence)}</p> <p>1/18 . . by tools arranged in the direction of web feed; {Logitudinal crêping, i.e. providing paper with crêpes parallel to the direction of web movement, e.g. for making paper elastic transversely to this direction}</p> <p>1/20 . Corrugating; Corrugating combined with laminating to other paper or cardboard layers</p> <p>1/205 . . {Corrugating tubes (<a href="#">corrugating tube ends B31F 1/008</a>; Making tubes, not otherwise provided for, <a href="#">B31F 7/004</a>; <a href="#">Corrugating metal tubes B21D 15/00</a>)}</p> <p>1/22 . . Making webs in which the channel of each corrugation is longitudinal with the web feed</p> <p>1/225 . . . {combined with uniting the corrugated web to flat webs; Making corrugated-web structures}</p> <p>1/24 . . Making webs in which the channel of each corrugation is transverse to the web feed</p> |
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- 1/242 . . . {the corrugations being obliquely inclined to the web feed ([B31F 1/247](#), [B31F 1/30](#) take precedence)}
- 1/245 . . . {by feeding the webs in a channel larger than the thickness of the webs by means of rollers, e.g. involving prefolding}
- 1/247 . . . {by reciprocating members}
- 1/26 . . . by interengaging toothed cylinders {cylinder constructions ([B31F 1/242](#) takes precedence)}
- 1/28 . . . . combined with uniting the corrugated webs to flat webs; {Making double-faced corrugated cardboard}
- 1/2804 . . . . . {Methods}
- 1/2809 . . . . . {characterised by the chemical composition of the glue}
- 1/2813 . . . . . {Making corrugated cardboard of composite structure, e.g. comprising two or more corrugated layers}
- 1/2818 . . . . . {Glue application specially adapted therefor}
- 1/2822 . . . . . {involving additional operations}
- 1/2827 . . . . . {Edge treatment}
- 1/2831 . . . . . {Control}
- 1/2836 . . . . . {Guiding, e.g. edge alignment; Tensioning}
- 1/284 . . . . . {Warp prevention}
- 1/2845 . . . . . {Details, e.g. provisions for drying, moistening, pressing}
- 1/285 . . . . . {Heating or drying equipment}
- 1/2854 . . . . . {Means for keeping the sheet in contact with one of the corrugating rollers after corrugating, but before applying the facer sheet, e.g. by air pressure, suction or pressing fingers}
- 1/2859 . . . . . {Pressing fingers}
- 1/2863 . . . . . {Corrugating cylinders; Supporting or positioning means therefor; Drives therefor}
- 1/2868 . . . . . {Exchangeable corrugating cylinders (means for changing cutting members in shearing devices [B23D 35/008](#))}
- 1/2872 . . . . . {Spraying devices, e.g. for moistening purposes; Lubricating devices}
- 1/2877 . . . . . {Pressing means for bringing facer sheet and corrugated webs into contact or keeping them in contact, e.g. rolls, belts}
- 1/2881 . . . . . {for bringing a second facer sheet into contact with an already single faced corrugated web}
- 1/2886 . . . . . {Additionally reinforcing, e.g. by applying resin or wire}
- 1/289 . . . . . {from discrete sheets}
- 1/2895 . . . . . {from corrugated webs having corrugations of particular shape}
- 1/29 . . . by making use of rods, e.g. co-operating with a toothed cylinder {combined with uniting the corrugated web to flat webs ([B31F 1/30](#) takes precedence)}
- 1/30 . . . Tools secured to endless chains {, e.g. toothed belts; combined with uniting the corrugated web to flat webs}
- 1/305 . . . . {with sets of interengaging tools each secured to endless chains}
- 5/32 . . Corrugating already corrugated webs
- 5/36 . . Moistening and heating webs to facilitate mechanical deformation and drying deformed webs {(during corrugating [B31F 1/28](#))}
- 5/00 Attaching together paper or cardboard sheets, strips or webs {or other preformed paper articles (joining by rim-rolling [B31F 1/0041](#), [B31F 1/009](#); closing tube ends by inserting an element [B31F 1/008](#), making boxes [B31B](#))}; Reinforcing edges of paper or cardboard**
  - 5/001 . {by stapling or riveting}
  - 5/003 . {by stitching}
  - 5/005 . {by folding ([rim-rolling B31F 1/0041](#))}
  - 5/006 . {using a strip, e.g. profiled ([B31F 5/06](#) takes precedence)}
  - 5/008 . {by friction, e.g. obtained ultrasonic vibrations}
  - 5/02 . by crimping or slotting {or perforating}
  - 5/022 . . {using a rotary tool}
  - 5/025 . . {by slotting}
  - 5/027 . . {by perforating, e.g. by folding over the partially cut part}
  - 5/04 . by exclusive use of adhesives
  - 5/06 . by adhesive tape
  - 5/08 . . for reinforcing edges; {Applying a strip or tape to an edge, e.g. for decorating, for protecting}
  - 5/085 . . . {combined with folding the strip around the edge, or applying an already folded strip on (folding edges [B31F 1/0016](#), [B31F 1/0029](#))}
- 7/00 Processes for working paper or cardboard not otherwise provided for**
  - 7/002 . {tubular articles, e.g. changing the cross-section}
  - 7/004 . {Making tubes}
  - 7/006 . {edges, e.g. sheet edges}
  - 7/008 . {Repairing}
  - 7/02 . Breaking the coating on paper or cardboard
- 2201/00 Mechanical deformation of paper or cardboard without removing material**
  - 2201/07 . Embossing (not used)
  - 2201/0702 . . by tools working discontinuously
  - 2201/0705 . . . Hand operated
  - 2201/0707 . . by tools working continuously
  - 2201/071 . . . Type and characteristics of the embossing tools (not used)
  - 2201/0712 . . . . Other than rollers, e.g. belts, plates
  - 2201/0715 . . . . Rollers
  - 2201/0717 . . . . Methods and means for forming the embossments
  - 2201/072 . . . . . Laser engraving
  - 2201/0723 . . . . . Characteristics of the rollers
  - 2201/0725 . . . . . Hardness
  - 2201/0728 . . . . . Material
  - 2201/073 . . . . . Rollers having a multilayered structure
  - 2201/0733 . . . . . Pattern
  - 2201/0735 . . . . . Pattern inclined with respect to the axis of the roller
  - 2201/0738 . . . . . Cross sectional profile of the embossments
  - 2201/0741 . . . . . Roller cooperating with a non-even counter roller
  - 2201/0743 . . . . . having a matching profile
  - 2201/0746 . . . . . and having a self-centering profile

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- 2201/0748 . . . . . having a dissimilar profile
- 2201/0751 . . . . . and having a self-centering profile
- 2201/0753 . . . . . Roller supporting, positioning, driving means
- 2201/0756 . . Characteristics of the incoming material, e.g. creped, embossed, corrugated
- 2201/0758 . . Characteristics of the embossed product
- 2201/0761 . . . Multi-layered
- 2201/0764 . . . . the layers being nested
- 2201/0766 . . . . the layers being superposed tip to tip
- 2201/0769 . . . . the layers being shifted
- 2201/0771 . . Other aspects of the embossing operations
- 2201/0774 . . . Multiple successive embossing operations
- 2201/0776 . . . Exchanging embossing tools
- 2201/0779 . . Control
- 2201/0782 . . Layout of the complete embossing machine, of the embossing line
- 2201/0784 . . Auxiliary operations
- 2201/0787 . . . Applying adhesive
- 2201/0789 . . . Joining plies without adhesive
- 2201/0792 . . . Printing
- 2201/0794 . . . Cutting
- 2201/0797 . . . Perforating