

# 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)

#### B31F MECHANICAL WORKING OR DEFORMATION OF PAPER, CARDBOARD OR MATERIAL WORKED IN A MANNER ANALOGOUS TO PAPER (making layered products not composed wholly of paper or cardboard [B32B](#))

- |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                     |        |                                                                                                                                                     |
|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>1/00</b> | <b>Mechanical deformation without removing material, e.g. in combination with laminating</b>                                                                                                                                                                                                                                                                                                                                                        |        |                                                                                                                                                     |
| 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> )}                                                                                                                                                                                                                       | 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> )}    |
| 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> )} | 1/0048 | . . . {Bending plates, sheets or webs at right angles to the axis of the article being formed and joining the edges}                                |
| 1/0009      | . . . {of plates, sheets or webs}                                                                                                                                                                                                                                                                                                                                                                                                                   | 1/0051 | . . . . {for making articles of definite length}                                                                                                    |
| 1/0012      | . . . . {combined with making folding lines ( <a href="#">B31F 1/0022</a> takes precedence)}                                                                                                                                                                                                                                                                                                                                                        | 1/0054 | . . . . . {using internal forming surfaces, e.g. mandrels}                                                                                          |
| 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)}                                                                                                                                                                                                                          | 1/0058 | . . . . . {Machines therefor having additional mandrels, e.g. mounted on a turntable, or on chains ( <a href="#">B31F 1/0064</a> takes precedence)} |
| 1/0019      | . . . . {the plates, sheets or webs moving continuously ( <a href="#">B31F 5/08</a> takes precedence)}                                                                                                                                                                                                                                                                                                                                              | 1/0061 | . . . . . {for making articles of indefinite length}                                                                                                |
| 1/0022      | . . . . . {combined with making folding lines}                                                                                                                                                                                                                                                                                                                                                                                                      | 1/0064 | . . . . . {using internal forming surfaces, on, e.g. mandrels}                                                                                      |
| 1/0025      | . . . . . {Making the folding lines using rotary tools}                                                                                                                                                                                                                                                                                                                                                                                             | 1/0067 | . . . . . {using only external forming surfaces, e.g. sleeves}                                                                                      |
| 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}                                                                                                                                                                                                                                                                        | 1/007  | . . . . . {for making articles with multilayered walls}                                                                                             |
| 1/0032      | . . . {of tubes}                                                                                                                                                                                                                                                                                                                                                                                                                                    | 1/0074 | . . . . {Making essentially non-hollow profiles, e.g. rods, ropes, cords}                                                                           |
| 1/0035      | . . {Straightening or flattening}                                                                                                                                                                                                                                                                                                                                                                                                                   | 1/0077 | . {Shaping by methods analogous to moulding, e.g. deep drawing techniques}                                                                          |
| 1/0038      | . . {Rim-rolling}                                                                                                                                                                                                                                                                                                                                                                                                                                   | 1/008  | . {Shaping of tube ends, e.g. flanging, bellling, closing, rim-rolling or corrugating; Fixing elements to tube ends}                                |
| 1/0041      | . . . {combined with joining}                                                                                                                                                                                                                                                                                                                                                                                                                       |        | <b>WARNING</b>                                                                                                                                      |
|             | <b>WARNING</b>                                                                                                                                                                                                                                                                                                                                                                                                                                      |        | Group <a href="#">B31F 1/008</a> is impacted by reclassification into group <a href="#">B31F 5/00</a> .                                             |
|             | Group <a href="#">B31F 1/0041</a> is impacted by reclassification into group <a href="#">B31F 5/00</a> .                                                                                                                                                                                                                                                                                                                                            |        | Groups <a href="#">B31F 1/008</a> and <a href="#">B31F 5/00</a> should be considered in order to perform a complete search.                         |
|             | Groups <a href="#">B31F 1/0041</a> and <a href="#">B31F 5/00</a> should be considered in order to perform a complete search.                                                                                                                                                                                                                                                                                                                        | 1/0083 | . . {Closing}                                                                                                                                       |
|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 1/0087 | . . {Rim-rolling}                                                                                                                                   |

- 1/009 . . . {combined with joining, e.g. for fixing a closure element}
- WARNING**
- Group [B31F 1/009](#) is impacted by reclassification into group [B31F 5/00](#).
- Groups [B31F 1/009](#) and [B31F 5/00](#) should be considered in order to perform a complete search.
- 1/0093 . . {Fixing elements to tube ends}
- 1/0096 . {Lining or sheathing ([folding the edge of the sheathing B31F 1/0016](#), [B31F 1/0029](#))}
- 1/07 . Embossing {, i.e. producing impressions formed by locally deep-drawing, e.g. using rolls provided with complementary profiles} ([B31F 1/128](#) takes precedence; [corrugating B31F 1/20](#); [embossing in combination with printing B41F 19/02](#), [B41M 1/24](#); [typewriters for embossing B41J 3/38](#); [stamping in combination with deforming B41K 3/36](#))
- 1/08 . Creasing ([corrugating B31F 1/20](#); [zig-zag folding B65H 45/20](#) {; [combined with folding B31F 1/0012](#), [B31F 1/0022](#); [grooving by cutting B26D 3/06](#), [B26D 3/08](#); [by milling grooves B23C 3/30](#); [of plastics material B29C 53/06](#))
- 1/10 . . by rotary tools
- 1/12 . Crêping
- 1/122 . . {the paper being submitted to an additional mechanical deformation other than crêping, e.g. for making it elastic in all directions}
- 1/124 . . {Multiple crêping, e.g. forming crêpes under different angles}
- 1/126 . . {including making of the paper to be crêped}
- 1/128 . . {Making paper elastic in all directions, other than by crêping ([B31F 1/122](#) takes precedence)}
- 1/14 . . by doctor blades arranged crosswise to the web
- 1/145 . . . {Blade constructions}
- 1/16 . . by elastic belts ([B31F 1/18](#) takes precedence)}
- 1/18 . . by tools arranged in the direction of web feed {; Longitudinal crêping, i.e. providing paper with crêpes parallel to the direction of web movement, e.g. for making paper elastic transversely to this direction}
- 1/20 . Corrugating; Corrugating combined with laminating to other layers
- 1/205 . . {Corrugating tubes ([corrugating tube ends B31F 1/008](#); [making tubes, not otherwise provided for, B31F 7/004](#); [corrugating metal tubes B21D 15/00](#))}
- 1/22 . . Making webs in which the channel of each corrugation is longitudinal with the web feed
- 1/225 . . . {combined with uniting the corrugated web to flat webs; Making corrugated-web structures}
- 1/24 . . Making webs in which the channel of each corrugation is transverse to the web feed
- 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}
- 1/32 . . Corrugating already corrugated webs
- 1/36 . Moistening and heating webs to facilitate mechanical deformation and drying deformed webs ([\(during corrugating B31F 1/28\)](#))

## 5/00 Attaching together sheets, strips or webs; Reinforcing edges

### **WARNING**

Group [B31F 5/00](#) is incomplete pending reclassification of documents from groups [B31F 1/0041](#), [B31F 1/008](#) and [B31F 1/009](#).

Groups [B31F 5/00](#), [B31F 1/0041](#), [B31F 1/008](#) and [B31F 1/009](#) should be considered in order to perform a complete search.

- 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 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 coatings, e.g. on paper or cardboard

## 2201/00 Mechanical deformation of paper or cardboard without removing material

- 2201/07 . Embossing
- 2201/0702 . . by tools working discontinuously
- 2201/0705 . . . Hand operated
- 2201/0707 . . by tools working continuously
- 2201/0715 . . . The tools being 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
- 2201/0748 . . . . . having a dissimilar profile
- 2201/0751 . . . . . and having a self-centering profile
- 2201/0753 . . . . . Roller supporting, positioning, driving means
- 2201/0754 . . . The tools being other than rollers, e.g. belts or plates

- 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