

**B31 MAKING PAPER ARTICLES; WORKING PAPER** (making layered products not composed wholly of paper or cardboard B32B; handling thin material, e.g. sheets, webs, B65H)

**Notes**

- (1) This class covers subject matter restricted to adaptations or associations of handling sheets, webs, or blanks peculiar to paper-working, e.g. bag or box making, machinery.
- (2) This class does not cover:
  - making articles directly from paper pulp, which is covered by D21J;
  - handling sheets, webs, or blanks of wider applicability, irrespective of whether described or claimed only for paper-working machinery, which is regarded as being of a more comprehensive nature and is covered by B65H.
- (3) In this class, the following term is used with the meaning indicated:
  - “paper” covers material worked in a manner analogous to paper, e.g. plastics sheet materials, laminated materials or metal foils.

**B31B MAKING BOXES, CARTONS, ENVELOPES, OR BAGS** (incising, scoring, in general B26D 3/08; combined making and filling B65B)

**Notes**

- (1) In this subclass, envelopes or bags are regarded as being essentially flexible containers, the final shape of which is determined by their contents.
- (2) In this subclass, the following expression is used with the meaning indicated:
  - “boxes or cartons” includes bags formed similarly to cartons, trays with upstanding side-walls, barrels, tubes and cups, other than articles formed by winding.

**Subclass Index**

MAKING IN GENERAL ..... 1/00, 47/00,  
49/00

**MAKING BOXES OR CARTONS**

Characterised by the method of making

by folding a single piece ..... 3/00, 5/00  
by assembling pieces ..... 13/00, 17/00  
by other shaping under pressure ..... 43/00

Characterised by the kind of articles

lined or reinforced articles ..... 7/00, 9/00,  
15/00  
other specified articles ..... 11/00, 13/00,  
45/00

**MAKING ENVELOPES OR BAGS**

Characterised by the method of making

from sheets ..... 21/00,  
31/00 to 35/00  
from webs ..... 23/00, 37/00  
by other shaping under pressure ..... 43/00

Characterised by the kind of articles

flat rectangular articles ..... 19/00 to 23/00  
articles with bases provided for thickness ..... 29/00 to 37/00  
other specified articles ..... 25/00, 27/00,  
39/00, 41/00, 45/00

**1/00 Box, carton, envelope or bag making machinery characterised by performing specific operations**  
(machinery for performing operations of general application, see the appropriate subclasses)

1/02 . Feeding or positioning sheets, blanks, or webs  
1/04 . . Feeding sheets or blanks  
1/06 . . . from stacks  
1/08 . . . during envelope- or bag-making operations  
1/10 . . Feeding or positioning webs  
1/12 . . by air pressure or suction  
1/14 . Cutting, e.g. perforating, punching, slitting, trimming  
1/16 . . Cutting webs to form sheets or blanks  
1/18 . . Slitting webs longitudinally  
1/20 . . Cutting sheets or blanks  
1/22 . . . Notching; Trimming edges of flaps  
1/24 . . . Making window openings  
1/25 . Surface scoring (cutting through material B31B 1/14) [2]  
1/26 . Folding sheets, blanks, or webs  
1/28 . . around mandrels, including bottom-forming operations

1/30 . . . the mandrels moving  
1/32 . . . . in circular paths  
1/34 . . . . about their own axes  
1/36 . . by continuously feeding same to stationary members, e.g. plates, ploughs, cores  
1/38 . . . the members being forming-tubes  
1/40 . . . . acting internally  
1/42 . . . . acting externally  
1/44 . . by plungers moving through folding dies  
1/46 . . . and interconnecting side walls during such movement  
1/48 . . . . by folding or tucking in locking flaps  
1/50 . . . . . by interengaging tongues and slots  
1/52 . . by reciprocating or oscillating members, e.g. fingers other than plungers and dies  
1/54 . . . operating on moving material  
1/56 . . by rotary members co-operating with blades  
1/58 . . by moving endless belts  
1/60 . Uniting opposed surfaces or edges; Taping  
1/62 . . by adhesives  
1/64 . . by applying heat or pressure

|      |   |
|------|---|
| 1/66 | . . . high-frequency electric heating   |
| 1/68 | . . . by stitching, stapling, or riveting   |
| 1/70 | . . . by corner stapling  |
| 1/72 | . . . by applying and securing strips or sheets   |
| 1/74 | . Auxiliary operations  |
| 1/76 | . . . Opening and distending flattened articles   |
| 1/78 | . . . . mechanically  |
| 1/80 | . . . . pneumatically   |
| 1/82 | . . . Attaching windows   |
| 1/84 | . . . Forming valves or applying valve inserts<br>(connection of valves to inflatable elastic bodies<br>B60C 29/00)           |
| 1/86 | . . . Forming integral handles or mounting separate<br>handles (making separate handles by multi-step<br>processes B31D 1/06) |
| 1/88 | . . . Printing or embossing   |
| 1/90 | . . . Attaching accessories not otherwise provided for,<br>e.g. opening or closure devices, tear strings                      |
| 1/92 | . . . Delivering  |
| 1/94 | . . . . singly or in succession   |
| 1/96 | . . . . . in overlapping arrangement  |
| 1/98 | . . . . . in stacks or bundles  |

### **Machinery for making boxes or cartons**

|             |   |
|-------------|---|
| <b>3/00</b> | <b>Machinery characterised by making boxes or cartons<br/>by folding single-piece sheets, blanks, or webs<br/>(B31B 5/00 takes precedence)</b>  |
| 3/02        | . and having means for feeding or positioning sheets,<br>blanks, or webs  |
| 3/14        | . and having means for cutting, e.g. perforating,<br>punching, slitting, trimming   |
| 3/26        | . and having means for folding sheets, blanks, or webs  |
| 3/28        | . . . around mandrels, including bottom-forming<br>operations   |
| 3/30        | . . . . the mandrels moving   |
| 3/32        | . . . . . in circular paths   |
| 3/34        | . . . . . about their own axes  |
| 3/36        | . . . by continuously feeding same to stationary<br>members, e.g. plates, ploughs, cores  |
| 3/44        | . . . by plungers moving through folding dies   |
| 3/46        | . . . . and interconnecting side walls during such<br>movement  |
| 3/48        | . . . . . by folding or tucking in locking flaps  |
| 3/50        | . . . . . by interengaging tongues and slots  |
| 3/52        | . . . by reciprocating or oscillating members,<br>e.g. fingers other than plungers and dies   |
| 3/60        | . and having means for uniting opposed surfaces or<br>edges, or for taping  |
| 3/64        | . . . by applying heat or pressure  |
| 3/72        | . . . by applying and securing strips or sheets   |
| 3/74        | . and having means for effecting auxiliary operations   |
| <b>5/00</b> | <b>Machinery characterised by making boxes or cartons<br/>by folding single-piece sheets which can be set-up<br/>from a collapsed condition, including setting-up and<br/>recollapsing to break creases</b> |
| 5/02        | . and having means for feeding or positioning sheets  |
| 5/14        | . and having means for cutting, e.g. perforating,<br>punching, slitting, trimming   |
| 5/26        | . and having means for folding sheets, blanks, or webs  |
| 5/36        | . . . by continuously feeding same to stationary<br>members, e.g. plates, ploughs, cores  |
| 5/60        | . and having means for uniting opposed surfaces or<br>edges, or for taping  |
| 5/74        | . and having means for effecting auxiliary operations   |

|              |   |
|--------------|---|
| 5/76         | . . . Opening and distending flattened articles   |
| 5/78         | . . . . mechanically  |
| 5/80         | . . . . pneumatically   |
| <b>7/00</b>  | <b>Machinery characterised by making lined or<br/>internally-reinforced boxes or cartons (B31B 11/00<br/>takes precedence)</b>  |
| 7/02         | . and having means for feeding or positioning sheets,<br>blanks, or webs  |
| 7/14         | . and having means for cutting, e.g. perforating,<br>punching, slitting, trimming   |
| 7/26         | . and having means for folding sheets, blanks, or webs  |
| 7/28         | . . . around mandrels, including bottom-forming<br>operations   |
| 7/30         | . . . . the mandrels moving   |
| 7/32         | . . . . . in circular paths   |
| 7/44         | . . . by plungers moving through folding dies   |
| 7/46         | . . . . and interconnecting side walls during such<br>movement  |
| 7/60         | . and having means for uniting opposed surfaces or<br>edges, or for taping  |
| 7/74         | . and having means for effecting auxiliary operations   |
| <b>9/00</b>  | <b>Machinery characterised by making boxes or cartons<br/>having shouldered walls</b>   |
| 9/02         | . and having means for feeding or positioning sheets,<br>blanks, or webs  |
| 9/14         | . and having means for cutting, e.g. perforating,<br>punching, slitting, trimming   |
| 9/26         | . and having means for folding sheets, blanks, or webs  |
| 9/60         | . and having means for uniting opposed surfaces or<br>edges, or for taping  |
| 9/74         | . and having means for effecting auxiliary operations   |
| <b>11/00</b> | <b>Machinery characterised by making boxes or cartons<br/>having partitions or like inserts not integral with<br/>walls (making partitions, inserts, or reinforcements for<br/>boxes or cartons B31D)</b> |
| 11/02        | . and having means for feeding or positioning sheets,<br>blanks, or webs  |
| 11/14        | . and having means for cutting, e.g. perforating,<br>punching, slitting, trimming   |
| 11/26        | . and having means for folding sheets, blanks, or webs  |
| 11/60        | . and having means for uniting opposed surfaces or<br>edges, or for taping  |
| 11/74        | . and having means for effecting auxiliary operations   |
| <b>13/00</b> | <b>Machinery characterised by assembling drawer-and-<br/>shell boxes or cartons</b>   |
| 13/02        | . and having means for feeding or positioning sheets,<br>blanks, or webs  |
| 13/14        | . and having means for cutting, e.g. perforating,<br>punching, slitting, trimming   |
| 13/26        | . and having means for folding sheets, blanks, or webs  |
| 13/28        | . . . around mandrels, including bottom-forming<br>operations   |
| 13/30        | . . . . the mandrels moving   |
| 13/32        | . . . . . in circular paths   |
| 13/34        | . . . . . about their own axes  |
| 13/60        | . and having means for uniting opposed surfaces or<br>edges, or for taping  |
| 13/74        | . and having means for effecting auxiliary operations   |
| <b>15/00</b> | <b>Machinery characterised by making covered or<br/>externally-reinforced boxes or cartons</b>  |
| 15/02        | . and having means for feeding or positioning sheets,<br>blanks, or webs  |

- 15/14 . and having means for cutting, e.g. perforating, punching, slitting, trimming
- 15/26 . and having means for folding sheets, blanks, or webs
- 15/60 . and having means for uniting opposed surfaces or edges, or for taping
- 15/74 . and having means for effecting auxiliary operations
- 17/00 Machinery characterised by making other boxes or cartons by assembling several separate sheets, blanks, or webs**
- 17/02 . and having means for feeding or positioning sheets, blanks, or webs
- 17/14 . and having means for cutting, e.g. perforating, punching, slitting, trimming
- 17/26 . and having means for folding sheets, blanks, or webs
- 17/28 . . around mandrels, including bottom-forming operations
- 17/30 . . . the mandrels moving
- 17/32 . . . . in circular paths
- 17/44 . . by plungers moving through folding dies
- 17/46 . . . and interconnecting side walls during such movement
- 17/52 . . by reciprocating or oscillating members, e.g. fingers other than plungers and dies
- 17/60 . and having means for uniting opposed surfaces or edges, or for taping
- 17/74 . and having means for effecting auxiliary operations

#### **Machinery for making envelopes or bags**

##### **Note**

Machinery for making boxes or cartons as well as envelopes or bags is classified in groups B31B 3/00 to B31B 17/00.

- 19/00 Machinery characterised by making rectangular envelopes or bags of flat form, i.e. without structural provision at the base for thickness of contents (B31B 21/00, B31B 23/00 take precedence)**
- 19/02 . and having means for feeding or positioning sheets, blanks, or webs
- 19/10 . . Feeding or positioning webs
- 19/14 . and having means for cutting, e.g. perforating, punching, slitting, trimming
- 19/16 . . Cutting webs to form sheets or blanks
- 19/18 . . Slitting webs longitudinally
- 19/20 . . Cutting sheets or blanks
- 19/26 . and having means for folding sheets, blanks, or webs
- 19/36 . . by continuously feeding same to stationary members, e.g. plates, ploughs, cores
- 19/52 . . by reciprocating or oscillating members, e.g. fingers other than plungers and dies
- 19/60 . and having means for uniting opposed surfaces or edges, or for taping
- 19/62 . . by adhesives
- 19/64 . . by applying heat or pressure
- 19/66 . . . high-frequency electric heating
- 19/68 . . by stitching, stapling, or riveting
- 19/74 . and having means for effecting auxiliary operations
- 19/82 . . Attaching windows
- 19/84 . . Forming valves or applying valve inserts (connection of valves to inflatable elastic bodies B60C 29/00)
- 19/86 . . Forming integral handles or mounting separate handles (making separate handles by multi-step processes B31D 1/06)

- 19/88 . . Printing or embossing
- 19/90 . . Attaching accessories not otherwise provided for, e.g. opening or closure devices, tear strings
- 19/92 . . Delivering
- 19/94 . . . singly or in succession
- 19/96 . . . . in overlapping arrangement
- 19/98 . . . . in stacks or bundles
- 21/00 Machinery characterised by making rectangular envelopes or bags of flat form, i.e. without structural provision at the base for thickness of contents, from sheets or blanks, e.g. from flattened tubes**
- 21/02 . and having means for feeding or positioning sheets or blanks
- 21/14 . and having means for cutting, e.g. perforating, punching, slitting, trimming
- 21/26 . and having means for folding sheets or blanks
- 21/60 . and having means for uniting opposed surfaces or edges, or for taping
- 21/74 . and having means for effecting auxiliary operations
- 23/00 Machinery characterised by making rectangular envelopes or bags of flat form, i.e. without structural provision at the base for thickness of contents, from webs, e.g. from flattened tubular webs (machinery characterised by cutting sheets or blanks from webs and working them to form such envelopes or bags B31B 21/00)**
- 23/02 . and having means for feeding or positioning webs
- 23/14 . and having means for cutting, e.g. perforating, punching, slitting, trimming
- 23/26 . and having means for folding webs
- 23/60 . and having means for uniting opposed surfaces or edges, or for taping
- 23/74 . and having means for effecting auxiliary operations
- 25/00 Machinery characterised by making pointed or tapered envelopes or bags**
- 25/02 . and having means for feeding or positioning sheets, blanks, or webs
- 25/14 . and having means for cutting, e.g. perforating, punching, slitting, trimming
- 25/26 . and having means for folding sheets, blanks, or webs
- 25/60 . and having means for uniting opposed surfaces or edges, or for taping
- 25/74 . and having means for effecting auxiliary operations
- 27/00 Machinery characterised by making interconnected envelopes or bags**
- 27/02 . and having means for feeding or positioning sheets, blanks, or webs
- 27/14 . and having means for cutting, e.g. perforating, punching, slitting, trimming
- 27/26 . and having means for folding sheets, blanks, or webs
- 27/60 . and having means for uniting opposed surfaces or edges, or for taping
- 27/74 . and having means for effecting auxiliary operations
- 29/00 Machinery characterised by making envelopes or bags with structural provision at the base for thickness or contents (B31B 31/00 to B31B 37/00 take precedence)**
- 29/02 . and having means for feeding or positioning sheets, blanks, or webs
- 29/14 . and having means for cutting, e.g. perforating, punching, slitting, trimming
- 29/26 . and having means for folding sheets, blanks, or webs

## B31B

|       |   |             |  |
|-------|---|-------------|--|
| 29/60 | . and having means for uniting opposed surfaces or edges, or for taping   | 37/14       | . and having means for cutting, e.g. perforating, punching, slitting, trimming   |
| 29/74 | . and having means for effecting auxiliary operations   | 37/26       | . and having means for folding webs  |
| 29/84 | . . Forming valves or applying valve inserts (connection of valves to inflatable elastic bodies B60C 29/00)   | 37/60       | . and having means for uniting opposed surfaces or edges, or for taping  |
| 31/00 | <b>Machinery characterised by making envelopes or bags with structural provision at the base for thickness of contents, from sheets or blanks, e.g. from flattened tubes</b> (B31B 33/00, B31B 35/00 take precedence)   | 37/74       | . and having means for effecting auxiliary operations  |
| 31/02 | . and having means for feeding or positioning sheets or blanks  | 39/00       | <b>Machinery characterised by making lined envelopes or bags</b>   |
| 31/14 | . and having means for cutting, e.g. perforating, punching, slitting, trimming  | 39/02       | . and having means for feed or positioning sheets, blanks, or webs   |
| 31/26 | . and having means for folding sheets or blanks   | 39/14       | . and having means for cutting, e.g. perforating, punching, slitting, trimming   |
| 31/60 | . and having means for uniting opposed surfaces or edges, or for taping   | 39/26       | . and having means for folding sheets, blanks or webs  |
| 31/74 | . and having means for effecting auxiliary operations   | 39/60       | . and having means for uniting opposed surfaces or edges, or for taping  |
| 33/00 | <b>Machinery characterised by making envelopes or bags with structural provision at the base for thickness of contents, from sheets or blanks, e.g. from flattened tubes, the longitudinal axes of the envelopes or bags being parallel to the direction in which the sheets or blanks are fed</b>      | 39/74       | . and having means for effecting auxiliary operations  |
| 33/02 | . and having means for feeding or positioning sheets or blanks  | 39/84       | . . Forming valves or applying valve inserts (connection of valves to inflatable elastic bodies B60C 29/00)  |
| 33/14 | . and having means for cutting, e.g. perforating, punching, slitting, trimming  | 41/00       | <b>Machinery characterised by making envelopes or bags of other specific form or construction</b>  |
| 33/26 | . and having means for folding sheets or blanks   | 41/02       | . and having means for feeding or positioning sheets, blanks, or webs  |
| 33/60 | . and having means for uniting opposed surfaces or edges, or for taping   | 41/14       | . and having means for cutting, e.g. perforating, punching, slitting, trimming   |
| 33/74 | . and having means for effecting auxiliary operations   | 41/26       | . and having means for folding sheets, blanks or webs  |
| 35/00 | <b>Machinery characterised by making envelopes or bags with structural provision at the base for thickness of contents, from sheets or blanks, e.g. from flattened tubes, the longitudinal axes of the envelopes or bags being perpendicular to the direction in which the sheets or blanks are fed</b> | 41/60       | . and having means for uniting opposed surfaces or edges, or for taping  |
| 35/02 | . and having means for feeding or positioning sheets or blanks  | 41/74       | . and having means for effecting auxiliary operations  |
| 35/14 | . and having means for cutting, e.g. perforating, punching, slitting, trimming  | 43/00       | <b>Machinery characterised by making containers by shaping, otherwise than by folding, sheet material under pressure</b>   |
| 35/26 | . and having means for folding sheets or blanks   | 45/00       | <b>Machinery characterised by making containers having corrugated or pleated walls</b>   |
| 35/60 | . and having means for uniting opposed surfaces or edges, or for taping   | 47/00       | <b>Hand tools for making envelopes, bags, boxes or cartons</b>   |
| 35/74 | . and having means for effecting auxiliary operations   | 47/02       | . for making envelopes or bags without preshaped bottoms   |
| 37/00 | <b>Machinery characterised by making envelopes or bags with structural provision at the base for thickness of contents, from webs, e.g. from tubular webs</b> (machinery characterised by cutting sheets or blanks from webs and working them to form such envelopes or bags B31B 31/00)                | 47/04       | . for making envelopes or bags with preshaped bottoms  |
| 37/02 | . and having means for feeding or positioning webs  | 49/00       | <b>Machinery, accessories or processes not provided for in groups B31B 1/00 to B31B 47/00</b> (forms or constructions of boxes, cartons, envelopes or bags B65D) [2] |
|       |   | <b>Note</b> |  |
|       |   |             | Processes dependent on the use of specific machinery provided for in groups B31B 1/00 to B31B 45/00 are classified in those groups. [2]                              |
|       |   | 49/02       | . for making boxes or cartons  |
|       |   | 49/04       | . for making envelopes or bags   |

**B31C MAKING WOUND ARTICLES, E.G. WOUND TUBES** (characteristics relating to the working of plastics B29; shaping of plastics or substances in a plastic state B29C)

**Note**

In this subclass, the following term is used with the meaning indicated:

- “winding” means forming two or more complete convolutions.

**Subclass Index**

**MAKING WOUND ARTICLES  
CHARACTERISED BY THE METHOD  
USED**

|                                |            |
|--------------------------------|------------|
| Winding around mandrels.....   | 1/00, 3/00 |
| Winding without mandrels ..... | 5/00       |
| Winding separate webs .....    | 9/00       |

**MAKING WOUND ARTICLES  
CHARACTERISED BY THE SHAPE OF  
THE ARTICLES PRODUCED**

|   |                     |
|---|---------------------|
| Tubes .....   | 1/00, 3/00,<br>5/00 |
| Cones .....   | 7/00                |
| Other shapes .....                                    | 9/00, 13/00         |
| <b>AFTER-TREATMENTS, COMBINED<br/>MACHINERY</b> ..... | 11/00               |

|             |   |              |  |
|-------------|---|--------------|--|
| <b>1/00</b> | <b>Forming paper tubes or pipes by feeding at right angles to the winding mandrel centre line</b> | <b>7/04</b>  | . . on two or more mandrels  |
| <b>1/02</b> | . Machines therefor having additional mandrels  | <b>7/06</b>  | . . . and inserting into a cone end a bottom to form a container   |
| <b>1/04</b> | . and forming a tube end into a container bottom  | <b>7/08</b>  | . Forming pointed cones  |
| <b>1/06</b> | . and inserting into a tube end a bottom to form a container                                      | <b>7/10</b>  | . . on two or more mandrels  |
| <b>1/08</b> | . Accessories of machines therefor not otherwise provided for                                     | <b>9/00</b>  | <b>Simultaneous forming of cylindrical and conical shapes by winding separate webs, e.g. forming bottles</b> (winding blanks B31B) |
| <b>3/00</b> | <b>Forming paper tubes or pipes by feeding obliquely to the winding mandrel centre line</b>       | <b>11/00</b> | <b>Paper-winding machinery combined with other machinery</b>   |
| <b>3/02</b> | . and inserting into a tube end a bottom to form a container                                      | <b>11/02</b> | . for additionally shaping the articles  |
| <b>3/04</b> | . Seam processing   | <b>11/04</b> | . for applying impregnating by coating-substances during the winding   |
| <b>5/00</b> | <b>Forming paper tubes or pipes without mandrels</b>  | <b>11/06</b> | . for drying the wound and impregnated articles  |
| <b>7/00</b> | <b>Forming conical paper articles by winding</b> (winding blanks B31B)                            | <b>13/00</b> | <b>Making wound articles not otherwise provided for</b>  |
| <b>7/02</b> | . Forming truncated cones   |              |  |

**B31D MAKING OTHER PAPER ARTICLES** (manufacture by dry processes of articles made from particles or fibres consisting of wood or other lignocellulosic or like organic material B27N; making layered products not composed wholly of paper or cardboard B32B; making cardboard or paper D21F, D21H, making articles from wood pulp D21J)

**Note**

This subclass covers the making, otherwise than by winding, of articles other than boxes, cartons, envelopes, bags, and tubes from paper, other than from paper pulp.

|             |  |              |   |
|-------------|--|--------------|---|
| <b>1/00</b> | <b>Multiple-step processes for making flat articles</b>                            | <b>5/00</b>  | <b>Multiple-step processes for making three-dimensional articles</b> (assembly of garlands A41G 1/00; making receptacles or containers B31B; making tubes B31B, B31C) |
| <b>1/02</b> | . the articles being labels or tags (means or processes for attaching threads D05) | <b>5/02</b>  | . including pressing  |
| <b>1/04</b> | . the articles being napkins, handkerchiefs, towels, doilies, or the like          | <b>5/04</b>  | . including folding or pleating, e.g. Chinese lanterns  |
| <b>1/06</b> | . the articles being handles   |              |   |
| <b>3/00</b> | <b>Making articles of cellular structure, e.g. insulating board</b>                | <b>99/00</b> | <b>Subject matter not provided for in other groups of this subclass [8]</b>   |
| <b>3/02</b> | . honeycombed structures   |              |   |
| <b>3/04</b> | . cellular packaging articles, e.g. for bottles                                    |              |   |

**B31F MECHANICAL WORKING OR DEFORMATION OF PAPER OR CARDBOARD** (cutting, trimming, in general B26; incising, scoring, in general B26D 3/08; making layered products not composed wholly of paper or cardboard B32B; multi-ply material of paper or cardboard, its manufacture D21H)

**1/00 Mechanical deformation of paper or cardboard without removing material including combined deformation and laminating** (embossing combined with application of ink, type marking presses, selective embossing machines B41F, B41J, B41K, B41M; machines or apparatus for embossing decorations or marks B44B 5/00; artists hand tools for embossing B44B 11/04; producing decorative effects by processes for stamping ornamental designs on surfaces B44C 1/24; mechanical deformation during paper or board making, kinds of paper or board D21) [2]

1/07 . Embossing (corrugating B31F 1/20) [3]

1/08 . Creasing (corrugating B31F 1/20; zig-zag folding B65H 45/20) [2]

1/10 . . by rotary tools

1/12 . Crêping paper

1/14 . . by doctor blades arranged crosswise to the web

1/16 . . by elastic belts

1/18 . . by tools arranged in the direction of web feed

1/20 . Corrugating; Corrugating combined with laminating to other paper or cardboard layers (corrugating veneer B27D) [2]

1/22 . . Making webs in which the channel of each corrugation is longitudinal with the web feed

1/24 . . Making webs in which the channel of each corrugation is transverse to the web feed

1/26 . . . by interengaging toothed cylinders [2]

1/28 . . . . combined with uniting the corrugated webs to flat webs

1/29 . . . by making use of rods, e.g. co-operating with a toothed cylinder [2]

1/30 . . . Tools secured to endless chains

1/32 . . Corrugating already corrugated webs

1/36 . Moistening and heating webs to facilitate mechanical deformation and drying deformed webs

**5/00 Attaching together paper or cardboard sheets, strips, or webs; Reinforcing edges of paper or cardboard** (means for applying adhesive or glue B05C; stapling in box or like making B31B; attaching the replacement web to the expiring web during web-roll changing B65H 19/18; apparatus for splicing webs during handling B65H 21/00)

5/02 . by crimpling or slotting

5/04 . by exclusive use of adhesives

5/06 . by adhesive tape

5/08 . . for reinforcing edges

**7/00 Processes for working paper not otherwise provided for**

7/02 . Breaking the coating on paper