

# International Patent Classification

2012.01

Section D

TEXTILES; PAPER



World Intellectual Property Organization

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## SECTION D — TEXTILES; PAPER

### CONTENTS OF SECTION

(References and notes omitted)

<b>Subsection</b>	<b><u>TEXTILES OR FLEXIBLE MATERIALS NOT OTHERWISE PROVIDED FOR</u></b>	
<b>D01</b>	<b>NATURAL OR ARTIFICIAL THREADS OR FIBRES; SPINNING.....</b>	<b>3</b>
D01B	Mechanical treatment of natural fibrous or filamentary material to obtain fibres or filaments, e.g. for spinning.....	3
D01C	Chemical treatment of natural filamentary or fibrous material to obtain filaments or fibres for spinning; Carbonising rags to recover animal fibres.....	4
D01D	Mechanical methods or apparatus in the manufacture of artificial filaments, threads, fibres, bristles, or ribbons.....	4
D01F	Chemical features in the manufacture of artificial filaments, threads, fibres, bristles, or ribbons; Apparatus specially adapted for the manufacture of carbon filaments.....	5
D01G	Preliminary treatment of fibres, e.g. for spinning.....	7
D01H	Spinning or twisting.....	9
<b>D02</b>	<b>YARNS; MECHANICAL FINISHING OF YARNS OR ROPES; WARPING OR BEAMING.....</b>	<b>12</b>
D02G	Crimping or curling fibres, filaments, yarns, or threads; Yarns or threads.....	12
D02H	Warping, beaming, or leasing.....	13
D02J	Finishing or dressing of filaments, yarns, threads, cords, ropes, or the like.....	14
<b>D03</b>	<b>WEAVING.....</b>	<b>14</b>
D03C	Shedding mechanisms; Pattern cards or chains; Punching of cards; Designing patterns.....	14
D03D	Woven fabrics; Methods of weaving; Looms.....	16
D03J	Auxiliary weaving apparatus; Weavers' tools; Shuttles.....	19
<b>D04</b>	<b>BRAIDING; LACE-MAKING; KNITTING; TRIMMINGS; NON-WOVEN FABRICS.....</b>	<b>19</b>
D04B	Knitting.....	19
D04C	Braiding or manufacture of lace, including bobbin-net or carbonised lace; Braiding machines; Braid; Lace.....	22
D04D	Trimmings; Ribbons, tapes, or bands, not otherwise provided for.....	23
D04G	Making nets by knotting of filamentary material; Making knotted carpets or tapestries; Knotting not otherwise provided for.....	23
D04H	Making textile fabrics, e.g. from fibres or filamentary material; Fabrics made by such processes or apparatus, e.g. felts, non-woven fabrics; Cotton-wool; Wadding.....	23
<b>D05</b>	<b>SEWING; EMBROIDERING; TUFTING.....</b>	<b>26</b>
D05B	Sewing.....	26
D05C	Embroidering; Tufting.....	30
<b>D06</b>	<b>TREATMENT OF TEXTILES OR THE LIKE; LAUNDERING; FLEXIBLE MATERIALS NOT OTHERWISE PROVIDED FOR.....</b>	<b>31</b>
D06B	Treating textile materials by liquids, gases, or vapours.....	31
D06C	Finishing, dressing, tentering, or stretching textile fabrics.....	33
D06F	Laundrying, drying, ironing, pressing or folding textile articles.....	34
D06G	Mechanical or pressure cleaning of carpets, rugs, sacks, hides, or other skin or textile articles or fabrics; Turning inside-out flexible tubular or other hollow articles.....	38
D06H	Marking, inspecting, seaming, or severing textile materials.....	38
D06J	Pleating, kilting, or goffering textile fabrics or wearing apparel.....	39
D06L	Bleaching, e.g. optical bleaching, dry-cleaning, or washing fibres, threads, yarns, fabrics, feathers, or made-up fibrous goods; Bleaching leather or furs.....	39
D06M	Treatment, not provided for elsewhere in class.....	40
D06N	Wall, floor, or like covering materials, e.g. linoleum, oilcloth, artificial leather, roofing felt, consisting of a fibrous web coated with a layer of macromolecular material; Flexible sheet material not otherwise provided for.....	45
D06P	Dyeing or printing textiles; Dyeing leather, furs, or solid macromolecular substances in any form.....	46
D06Q	Decorating textiles.....	48

## Section D

### **D07 ROPES; CABLES OTHER THAN ELECTRIC.....48**

D07B Ropes or cables in general.....48

### **Subsection PAPER**

### **D21 PAPER-MAKING; PRODUCTION OF CELLULOSE.....50**

D21B Fibrous raw materials or their mechanical treatment.....50

D21C Production of cellulose by removing non-cellulose substances from cellulose- containing materials; Regeneration of pulping liquors; Apparatus therefor.....50

D21D Treatment of the materials before passing to the paper-making machine.....51

D21F Paper-making machines; Methods of producing paper thereon.....51

D21G Calenders; Accessories for paper-making machines.....52

D21H Pulp compositions; Preparation thereof not covered by subclasses ; Impregnating or coating of paper; Treatment of finished paper not covered by class ; Paper not otherwise provided for.....53

D21J Fibreboard; Manufacture of articles from cellulosic fibrous suspensions or from papier-mâché.....57

### **D99 SUBJECT MATTER NOT OTHERWISE PROVIDED FOR IN THIS SECTION.....57**

D99Z Subject matter not otherwise provided for in this section.....57

# TEXTILES OR FLEXIBLE MATERIALS NOT OTHERWISE PROVIDED FOR

## D01 NATURAL OR ARTIFICIAL THREADS OR FIBRES; SPINNING

### Note(s)

In this class, the following terms are used with the meanings indicated:

- "fibre" means a relatively-short, elongated member of natural or artificial material;
- "filament" means an endless or quasi-endless, elongated member of natural or artificial material;
- "yarn" means a unitary assembly of fibres, usually produced by spinning;
- "thread" means an assembly of yarns or filaments, usually produced by twisting.

### D01B MECHANICAL TREATMENT OF NATURAL FIBROUS OR FILAMENTARY MATERIAL TO OBTAIN FIBRES OR FILAMENTS, e.g. FOR SPINNING (crude extraction of asbestos fibres from ores B03B; apparatus for retting D01C)

### Note(s)

Attention is drawn to the Note following the title of class D01.

### Subclass index

#### TREATMENT OF PLANT MATERIAL

Separation of fibres from plant material.....	1/00
Hackling or heckling machines.....	5/00

#### TREATMENT OF ANIMAL FIBRES

De-burring, washing, scouring.....	3/00
Obtaining silk fibres.....	7/00

OTHER TREATMENTS.....	9/00
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<b>1/00 Mechanical separation of fibres from plant material, e.g. seeds, leaves, stalks</b>	1/44 • • • • Framework; Casings; Coverings; Grids
1/02 • Separating vegetable fibres from seeds, e.g. cotton	1/46 • • • • Driving arrangements
1/04 • • Ginning	1/48 • • Drying retted fibres
1/06 • • • Roller gins, e.g. Macarthy type	1/50 • Obtaining fibres from other specified vegetable matter, e.g. peat, Spanish moss
1/08 • • • Saw gins	
1/10 • Separating vegetable fibres from stalks or leaves	<b>3/00 Mechanical removal of impurities from animal fibres</b> (carbonising rags to recover animal fibres D01C 5/00) [2]
1/12 • • Rippling	3/02 • De-burring machines or apparatus (de-burring arrangements forming part of, or intimately associated with, carding or drafting machines, e.g. burr-crushing rollers, D01G)
1/14 • • Breaking or scutching, e.g. of flax; Decorticating	3/04 • Machines or apparatus for washing or scouring loose wool fibres
1/16 • • • with devices dependent on a bending action to break or loosen fibre-bearing materials (crushing rollers D01B 1/22)	3/06 • • with circular movement of either wool or liquid
1/18 • • • with stamping devices	3/08 • • with longitudinal movement of either wool or liquid
1/20 • • • with scraping devices	3/10 • • Details of machines or apparatus
1/22 • • • with crushing or breaking rollers or plates	
1/24 • • • with toothed or other pointed devices	<b>5/00 Hackling or heckling machines</b> (hand heckling tools D01G 33/00)
1/26 • • • with beaters rotating about an axis parallel to the fibre bundle	5/02 • Details
1/28 • • • with beaters rotating about an axis perpendicular to the fibre bundle	5/04 • • Apparatus for feeding, holding, or conveying materials to or in machines
1/30 • • • Details of machines	5/06 • • Construction, mounting, or operating features of heckling devices
1/32 • • • Feeding arrangements	5/08 • • Arrangements for removing, or disposing of, tow or waste
1/34 • • • • Devices holding fibres or fibre-bearing materials during treatment	5/10 • • Touch pins or other ending devices
1/36 • • • • • Conveying devices, e.g. moving bands or ropes	5/12 • • Framework; Casings; Coverings
1/38 • • • • • Delivery or discharge arrangements	
1/40 • • • • • Arrangements for disposing of non-fibrous materials	
1/42 • • • • • employing liquids	

## D01B

- |             |   |             |  |
|-------------|---|-------------|--|
| 5/14        | • • Driving arrangements                                    | 7/04        | • Reeling silk   |
| 5/16        | • • Arrangements for confining or removing dust or the like | 7/06        | • Obtaining silk from cocoons or portions thereof not suitable for reeling (de-gumming silk D01C 3/02)     |
| <b>7/00</b> | <b>Obtaining silk fibres or filaments</b>                   | <b>9/00</b> | <b>Other mechanical treatment of natural fibrous or filamentary material to obtain fibres or filaments</b> |
| 7/02        | • Cleaning or classifying silk cocoons                      |             |  |

## D01C CHEMICAL TREATMENT OF NATURAL FILAMENTARY OR FIBROUS MATERIAL TO OBTAIN FILAMENTS OR FIBRES FOR SPINNING; CARBONISING RAGS TO RECOVER ANIMAL FIBRES

### Note(s)

1. Attention is drawn to the Note following the title of class D01.
2. Processes using enzymes or micro-organisms in order to:
  - i. liberate, separate or purify a pre-existing compound or composition, or to
  - ii. treat textiles or clean solid surfaces of materialsare further classified in subclass C12S.

- |             |  |             |   |
|-------------|--|-------------|---|
| <b>1/00</b> | <b>Treatment of vegetable material</b>   | 3/02        | • De-gumming silk   |
| 1/02        | • by chemical methods to obtain bast fibres  |             |   |
| 1/04        | • Bacteriological retting  | <b>5/00</b> | <b>Carbonising rags to recover animal fibres</b> (chemical removal of vegetable impurities from threads or fabrics of animal fibres D06M) |
| <b>3/00</b> | <b>Treatment of animal material, e.g. chemical scouring of wool</b> (recovery of lanolin or wool wax C11B 11/00) |             |   |

## D01D MECHANICAL METHODS OR APPARATUS IN THE MANUFACTURE OF ARTIFICIAL FILAMENTS, THREADS, FIBRES, BRISTLES, OR RIBBONS (working or processing of metal wire B21F; fibres or filaments of softened glass, minerals or slag C03B 37/00)

### Note(s)

1. Attention is drawn to the Note following the title of class D01.
2. Apparatus specially adapted for the manufacture of carbon filaments are classified in group D01F 9/12.

### Subclass index

MECHANICAL TREATMENT OF FILAMENT-FORMING MATERIAL.....	1/00
PRODUCTION OF ARTIFICIAL FIBRES	
Methods.....	5/00
Spinnerette packs; formation of filaments; collecting the newly-spun products.....	4/00, 5/00, 7/00
Physical treatment during manufacture.....	10/00
Other operations.....	11/00
COMPLETE MACHINES; DETAILS.....	13/00, 4/02, 7/00, 11/04

- |             |   |             |  |
|-------------|---|-------------|--|
| <b>1/00</b> | <b>Treatment of filament-forming or like material</b><br>(working of plastics or substances in a plastic state, in general B29) | 4/08        | • Supporting spinnerettes or other parts of spinnerette packs [3]                                |
| 1/02        | • Preparation of spinning solutions   | <b>5/00</b> | <b>Formation of filaments, threads, or the like</b>  |
| 1/04        | • Melting filament-forming substances   | 5/02        | • Starting the formation   |
| 1/06        | • Feeding liquid to the spinning head (constructions of pumps F04)  | 5/04        | • Dry spinning methods   |
| 1/09        | • • Pressure, temperature or feeding rate regulation [3]  | 5/06        | • Wet spinning methods   |
| 1/10        | • Filtering or de-aerating the spinning solution or melt  | 5/08        | • Melt-spinning methods  |
| <b>4/00</b> | <b>Spinnerette packs; Cleaning thereof</b> (D01D 5/24, D01D 5/253, D01D 5/28 take precedence) [3]                               | 5/084       | • • Heating filaments, threads or the like, leaving the spinnerettes [3]                         |
| 4/02        | • Spinnerettes (alloys therefor C22C) [3]   | 5/088       | • • Cooling filaments, threads or the like, leaving the spinnerettes [3]                         |
| 4/04        | • Cleaning spinnerettes or other parts of the spinnerette packs (cleaning in general B08B) [3]                                  | 5/092       | • • in shafts or chimneys [3]  |
| 4/06        | • Distributing spinning solution or melt to spinning nozzles [3]  | 5/096       | • • Humidity control, or oiling, of filaments, threads or the like, leaving the spinnerettes [3] |
|             |   | 5/098       | • • with simultaneous stretching [4]   |
|             |   | 5/10        | • • using organic materials  |
|             |   | 5/11        | • Flash-spinning [3]   |

- 5/12 • Stretch-spinning methods (finishing by stretching D02J 1/22)
- 5/14 • • with flowing liquid stretching media
- 5/16 • • using rollers, or like mechanical devices, e.g. snubbing pins
- 5/18 • by means of rotating spinnerets
- 5/20 • with varying denier along their length
- 5/22 • with a crimped or curled structure; with a special structure to simulate wool (producing crimped or curled effects in filaments or threads after formation D02G 1/00)
- 5/23 • • by asymmetrical cooling of filaments, threads, or the like, leaving the spinnerettes [3]
- 5/24 • with a hollow structure; Spinnerette packs therefor (D01D 5/38 takes precedence; producing tubes of plastic material B29D; addition of agents forming hollow filaments D01F 1/08) [3]
- 5/247 • • Discontinuous hollow structure or microporous structure [3]
- 5/253 • with a non-circular cross section; Spinnerette packs therefor (D01D 5/38 takes precedence) [3]
- 5/26 • Formation of staple fibres (by flash-spinning D01D 5/11)
- 5/28 • while mixing different spinning solutions or melts during the spinning operation; Spinnerette packs therefor
- 5/30 • • Conjugate filaments; Spinnerette packs therefor [3]
- 5/32 • • • Side-by-side structure; Spinnerette packs therefor [3]
- 5/34 • • • Core-skin structure; Spinnerette packs therefor [3]
- 5/36 • • • Matrix structure; Spinnerette packs therefor [3]
- 5/38 • Formation of filaments, threads, or the like during polymerisation [3]
- 5/40 • by applying a shearing force to a dispersion or solution of filament formable polymers, e.g. by stirring [3]
- 5/42 • by cutting films into narrow ribbons or filaments or by fibrillation of films [3]
- 7/00 **Collecting the newly-spun products** (collecting newly-spun products with the imparting of twist D01H)
- 7/02 • in centrifugal spinning pots [3]
- 10/00 **Physical treatment of artificial filaments or the like during manufacture, i.e. during a continuous production process before the filaments have been collected** (finishing D02J) [4]
- 10/02 • Heat treatment (heating for finishing D02J 13/00) [4]
- 10/04 • Supporting filaments or the like during their treatment [4]
- 10/06 • Washing or drying [4]
- 11/00 **Other features of manufacture**
- 11/02 • Opening bundles to space the threads or filaments from one another
- 11/04 • Fixed guides
- 11/06 • Coating with spinning solutions or melts
- 13/00 **Complete machines for producing artificial threads**
- 13/02 • Elements of machines in combination

**D01F CHEMICAL FEATURES IN THE MANUFACTURE OF ARTIFICIAL FILAMENTS, THREADS, FIBRES, BRISTLES, OR RIBBONS; APPARATUS SPECIALLY ADAPTED FOR THE MANUFACTURE OF CARBON FILAMENTS [2]**

**Note(s)**

Attention is drawn to the Note following the title of class D01.

**Subclass index**

GENERAL PROCESSES.....	1/00
FILAMENTS AND MANUFACTURE THEREOF	
From cellulose or derivatives; from proteins.....	2/00, 4/00
From synthetic resins.....	6/00
From other materials.....	9/00
Multicomponent filaments.....	8/00
AFTER-TREATMENT; RECOVERY OF STARTING MATERIAL.....	11/00, 13/00

**1/00 General methods for the manufacture of artificial filaments or the like**

- 1/02 • Addition of substances to the spinning solution or to the melt (addition of substances to viscose D01F 2/08)
- 1/04 • • Pigments
- 1/06 • • Dyes
- 1/07 • • for making fire- or flame-proof filaments [4]
- 1/08 • • for forming hollow filaments
- 1/09 • • for making electroconductive or anti-static filaments [4]
- 1/10 • • Other agents for modifying properties [2]

**2/00 Monocomponent artificial filaments or the like of cellulose or cellulose derivatives; Manufacture thereof [2]**

- 2/02 • from solutions of cellulose in acids, bases, or salts [2]
- 2/04 • • from cuprammonium solutions [2]
- 2/06 • from viscose (preparation of alkali cellulose C08B) [2]
- 2/08 • • Composition of the spinning solution or the bath (preparing or dissolving cellulose xanthate C08B) [2]
- 2/10 • • • Addition to the spinning solution or spinning bath of substances which exert their effect equally well in either [2]
- 2/12 • • • Addition of delustring agents to the spinning solution [2]

- 2/14 • • • Addition of pigments [2]
- 2/16 • • • Addition of dyes to the spinning solution [2]
- 2/18 • • • Addition to the spinning solution of substances to influence ripening [2]
- 2/20 • • • for the manufacture of hollow threads [2]
- 2/22 • • by the dry spinning process [2]
- 2/24 • from cellulose derivatives [2]
- 2/26 • • from nitrocellulose [2]
- 2/28 • • from organic cellulose esters or ethers, e.g. cellulose acetate [2]
- 2/30 • • • by the dry spinning process [2]

**4/00 Monocomponent artificial filaments or the like of proteins; Manufacture thereof [2]**

- 4/02 • from fibroin [2]
- 4/04 • from casein [2]
- 4/06 • from globulins, e.g. groundnut protein [2]

**6/00 Monocomponent artificial filaments or the like of synthetic polymers; Manufacture thereof [2]**

**Note(s) [2006.01]**

In this group, the percentage for determining the major constituent is expressed in mole percent.

- 6/02 • from homopolymers obtained by reactions only involving carbon-to-carbon unsaturated bonds [2]
- 6/04 • • from polyolefins [2]
- 6/06 • • • from polypropylene [2]
- 6/08 • • from polymers of halogenated hydrocarbons [2]
- 6/10 • • • from polyvinyl chloride or polyvinylidene chloride [2]
- 6/12 • • • from polymers of fluorinated hydrocarbons [2]
- 6/14 • • from polymers of unsaturated alcohols, e.g. polyvinyl alcohol, or of their acetals or ketals [2]
- 6/16 • • from polymers of unsaturated carboxylic acids or unsaturated organic esters, e.g. polyacrylic esters, polyvinyl acetate [2]
- 6/18 • • from polymers of unsaturated nitriles, e.g. polyacrylonitrile, polyvinylidene cyanide [2]
- 6/20 • • from polymers of cyclic compounds with one carbon-to-carbon double bond in the side chain [2]
- 6/22 • • • from polystyrene [2]
- 6/24 • • from polymers of aliphatic compounds with more than one carbon-to-carbon double bond [2]
- 6/26 • • from other polymers [2]
- 6/28 • from copolymers obtained by reactions only involving carbon-to-carbon unsaturated bonds [2]
- 6/30 • • comprising olefins as the major constituent [2]
- 6/32 • • comprising halogenated hydrocarbons as the major constituent [2]
- 6/34 • • comprising unsaturated alcohols, acetals, or ketals as the major constituent [2]
- 6/36 • • comprising unsaturated carboxylic acids or unsaturated organic esters as the major constituent [2]
- 6/38 • • comprising unsaturated nitriles as the major constituent [2]
- 6/40 • • Modacrylic fibres, i.e. containing 35 to 85% acrylonitrile [2]
- 6/42 • • comprising cyclic compounds containing one carbon-to-carbon double bond in the side chain as major constituent [2]
- 6/44 • from mixtures of polymers obtained by reactions only involving carbon-to-carbon unsaturated bonds as major constituent with other polymers or low-molecular-weight compounds [2]

- 6/46 • • of polyolefins [2]
- 6/48 • • of polymers of halogenated hydrocarbons [2]
- 6/50 • • of polyalcohols, polyacetals or polyketals [2]
- 6/52 • • of polymers of unsaturated carboxylic acids or unsaturated esters [2]
- 6/54 • • of polymers of unsaturated nitriles [2]
- 6/56 • • of polymers of cyclic compounds with one carbon-to-carbon double bond in the side chain [2]
- 6/58 • from homopolycondensation products [2]
- 6/60 • • from polyamides (from polyamino acids or polypeptides D01F 6/68) [2]
- 6/62 • • from polyesters [2]
- 6/64 • • • from polycarbonates [2]
- 6/66 • • from polyethers [2]
- 6/68 • • from polyaminoacids or polypeptides [2]
- 6/70 • • from polyurethanes [2]
- 6/72 • • from polyureas [2]
- 6/74 • • from polycondensates of cyclic compounds, e.g. polyimides, polybenzimidazoles [2]
- 6/76 • • from other polycondensation products [2]
- 6/78 • from copolycondensation products [2]
- 6/80 • • from copolyamides [2]
- 6/82 • • from polyester amides or polyether amides [2]
- 6/84 • • from copolyesters [2]
- 6/86 • • from polyetheresters [2]
- 6/88 • from mixtures of polycondensation products as major constituent with other polymers or low-molecular-weight compounds [2]
- 6/90 • • of polyamides [2]
- 6/92 • • of polyesters [2]
- 6/94 • • of other polycondensation products [2]
- 6/96 • from other synthetic polymers [2]

**8/00 Conjugated, i.e. bi- or multicomponent, artificial filaments or the like; Manufacture thereof [2]**

- 8/02 • from cellulose, cellulose derivatives, or proteins [2]
- 8/04 • from synthetic polymers [2]
- 8/06 • • with at least one polyolefin as constituent [2]
- 8/08 • • with at least one polyacrylonitrile as constituent [2]
- 8/10 • • with at least one other macromolecular compound obtained by reactions only involving carbon-to-carbon unsaturated bonds as constituent [2]
- 8/12 • • with at least one polyamide as constituent [2]
- 8/14 • • with at least one polyester as constituent [2]
- 8/16 • • with at least one other macromolecular compound obtained otherwise than by reactions only involving carbon-to-carbon unsaturated bonds [2]
- 8/18 • from other substances [2]

**9/00 Artificial filaments or the like of other substances; Manufacture thereof; Apparatus specially adapted for the manufacture of carbon filaments [5]**

- 9/02 • of reaction products of rubber with acids or acid anhydrides, e.g. sulfur dioxide
- 9/04 • of alginates
- 9/08 • of inorganic material (working or processing of metal wire B21F; from softened glass, minerals, or slags C03B 37/00; incandescent bodies F21H, H01K 1/02, H01K 3/02) [2]
- 9/10 • • by decomposition of organic substances (D01F 9/12 takes precedence) [2]
- 9/12 • • Carbon filaments; Apparatus specially adapted for the manufacture thereof [2, 5]
- 9/127 • • • by thermal decomposition of hydrocarbon gases or vapours [5]



- 9/133 • • • • Apparatus therefor [5]  
 9/14 • • • by decomposition of organic filaments [2, 5]  
 9/145 • • • • from pitch or distillation residues [5]  
 9/15 • • • • • from coal pitch [5]  
 9/155 • • • • • from petroleum pitch [5]  
 9/16 • • • • from products of vegetable origin or derivatives thereof, e.g. from cellulose acetate (D01F 9/18 takes precedence) [2, 5]  
 9/17 • • • • • from lignin [5]  
 9/18 • • • • from proteins, e.g. from wool [2]  
 9/20 • • • • from polyaddition, polycondensation or polymerisation products (D01F 9/145, D01F 9/16, D01F 9/18 take precedence) [2, 5]  
 9/21 • • • • • from macromolecular compounds obtained by reactions only involving carbon-to-carbon unsaturated bonds [5]  
 9/22 • • • • • • from polyacrylonitriles [2, 5]  
 9/24 • • • • • from macromolecular compounds obtained otherwise than by reactions only involving carbon-to-carbon unsaturated bonds [5]  
 9/26 • • • • • • from polyesters [5]  
 9/28 • • • • • • from polyamides [5]

- 9/30 • • • • • • from aromatic polyamides [5]  
 9/32 • • • • Apparatus therefor [5]

- 11/00 Chemical after-treatment of artificial filaments or the like during manufacture** (finishing D06M) [2]  
 11/02 • of cellulose, cellulose derivatives, or proteins [2]  
 11/04 • of synthetic polymers [2]  
 11/06 • • of macromolecular compounds obtained by reactions only involving carbon-to-carbon unsaturated bonds [2]  
 11/08 • • of macromolecular compounds obtained otherwise than by reactions only involving carbon-to-carbon unsaturated bonds [2]  
 11/10 • of carbon [2]  
 11/12 • • with inorganic substances [5]  
 11/14 • • with organic compounds, e.g. macromolecular compounds [5]  
 11/16 • • by physicochemical methods [5]  
**13/00 Recovery of starting material, waste material, or solvents during the manufacture of artificial filaments or the like** [2]  
 13/02 • of cellulose, cellulose derivatives, or proteins [2]  
 13/04 • of synthetic polymers [2]

**D01G PRELIMINARY TREATMENT OF FIBRES, e.g. FOR SPINNING** (winding or unwinding, conducting or guiding laps, webs, slivers, or rovings in general, sliver or roving cans, depositing in sliver or roving cans B65H; preparation of fibres for paper-making D21)

#### Note(s)

Attention is drawn to the Note following the title of class D01.

#### Subclass index

##### OPERATIONS BEFORE CARDING; MACHINES THEREFOR

- Opening fibre bales; separating and sorting of fibres; opening or cleaning fibres.....7/00, 5/00, 9/00  
 Severing of continuous filaments; roughening of fibres.....1/00, 3/00  
 Recovery of fibres by breaking-up fibre-containing articles.....11/00  
 Mixing of fibres, or of fibres with non-fibrous materials.....13/00

##### CARDING OR SUBSEQUENT OPERATIONS; MACHINES THEREFOR

- Feeding or conveying fibres for machines; lap-forming; lap-winding; lubricating fibres.....23/00, 25/00, 27/00, 29/00  
 Carding and burr-crushing, combing.....15/00, 19/00

##### SILK-DRESSING; TREATMENT OF OAKUM.....17/00, 35/00

##### COMBINATION OF MACHINES OR PROCESSES FOR CONTINUOUS PROCESSING.....21/00

##### WARNING OR SAFETY DEVICES.....31/00

##### HAND TOOLS FOR TREATMENT OF FIBRES.....33/00

##### OTHER PRELIMINARY TREATMENTS.....99/00

- 1/00 Severing continuous filaments or long fibres, e.g. stapling** (drafting arrangements, twisting arrangements D01H)  
 1/02 • to form staple fibres not delivered in strand form  
 1/04 • • by cutting  
 1/06 • Converting tows to slivers or yarns, e.g. in direct spinning  
 1/08 • • by stretching or abrading  
 1/10 • • by cutting  
**3/00 Roughening of fibres**  
**5/00 Separating, e.g. sorting, fibres** (separating fibres of differing lengths in silk-dressing machines D01G 17/00; in combing machines D01G 19/00)

- 7/00 Breaking or opening fibre bales**  
 7/02 • by means of beater arms  
 7/04 • by means of toothed members  
 7/06 • Details of apparatus or machines  
 7/08 • • Arrangements for feeding bales to comminuting elements  
 7/10 • • Arrangements for discharging fibres  
 7/12 • • Framework; Casings; Coverings; Grids  
 7/14 • • Driving arrangements  
**9/00 Opening or cleaning fibres, e.g. scutching cotton** (scutching flax or like fibres D01B; making cellulose wadding in paper-making machines D21F 11/14)  
 9/02 • by agitation within a moving receptacle  
 9/04 • by means of beater arms

## D01G

- 9/06 • by means of toothed members
- 9/08 • by means of air draught arrangements
- 9/10 • • using foraminous cylinders (foraminous suction cylinders for lap-forming D01G 25/00)
- 9/12 • Combinations of opening or cleaning machines
- 9/14 • Details of machines or apparatus
- 9/16 • • Feeding arrangements (fibre-feeding apparatus of general application in fibre-treating machines D01G 23/00)
- 9/18 • • Arrangements for discharging fibres
- 9/20 • • Framework; Casings; Coverings; Grids
- 9/22 • • Driving arrangements
- 11/00 Disintegrating fibre-containing articles to obtain fibres for re-use**
- 11/02 • Opening, unravelling, or teasing ropes or like fibrous strands to obtain fibres for re-use
- 11/04 • Opening rags to obtain fibres for re-use (mechanical treatment of rags for paper-making D21B)
- 13/00 Mixing, e.g. blending, fibres; Mixing non-fibrous materials with fibres** (mixing of fibres combined with other operations, e.g. bale-breaking or fibre-opening, see the appropriate groups for such operations)
- 15/00 Carding machines or accessories; Card clothing; Burr-crushing or removing arrangements associated with carding or other preliminary-treatment machines** (de-burring apparatus or machines operating independently D01B)
- 15/02 • Carding machines
- 15/04 • • with worker and stripper or like rollers operating in association with a main cylinder
- 15/06 • • • Garnett machines
- 15/08 • • with flats or like members or endless card sheets operating in association with a main cylinder
- 15/10 • • with other apparatus, e.g. drafting devices, in integral or closely-associated combination (web-dividing apparatus D01G 15/46; burr-crushing or removing arrangements D01G 15/94)
- 15/12 • • Details
- 15/14 • • • Constructional features of carding elements, e.g. for facilitating attachment of card clothing
- 15/16 • • • • Main cylinders; Breasts
- 15/18 • • • • Workers; Strippers; Doffers (doffers specially adapted for web dividing D01G 15/54)
- 15/20 • • • • Feed rollers; Takers-in
- 15/22 • • • • Fancies
- 15/24 • • • • Flats or like members
- 15/26 • • • Arrangements or disposition of carding elements
- 15/28 • • • Supporting arrangements for carding elements; Arrangements for adjusting relative positions of carding elements
- 15/30 • • • • Bends
- 15/32 • • • Framework; Casings; Coverings
- 15/34 • • • Grids; Dirt knives; Angle blades
- 15/36 • • • Driving or speed control arrangements
- 15/38 • • • • for use during the grinding of card clothing
- 15/40 • • • Feeding apparatus (fibre-feeding apparatus of general application to fibre-treating machines, e.g. hopper feeders, D01G 23/00)
- 15/42 • • • • Feeding from laps
- 15/44 • • • • Intermediate feeds
- 15/46 • • • Doffing or like arrangements for removing fibres from carding elements; Web-dividing apparatus; Condensers (lap-forming devices D01G 25/00; fibre condensing guides D01H 5/72)
- 15/48 • • • • Stripping-combs
- 15/50 • • • • Stripping-rollers or like devices
- 15/52 • • • • Web-dividing arrangements
- 15/54 • • • • • employing doffers specially adapted for web dividing
- 15/56 • • • • • employing tapes
- 15/58 • • • • Sliver or like rubbing apparatus
- 15/60 • • • • • Constructions of rubbing leathers
- 15/62 • • • • Slubbing-winding apparatus (winding apparatus of general application to the winding of filamentary material B65H)
- 15/64 • • • • Drafting or twisting apparatus associated with doffing arrangements or with web-dividing apparatus
- 15/66 • • • • • with arrangements inserting false twist (false-twist devices D01H)
- 15/68 • • • • • with arrangements inserting permanent twist, e.g. spinning
- 15/70 • • Arrangements for producing decorative or fancy effects in products
- 15/72 • • Arrangements for returning waste to be re-carded
- 15/74 • • Air draught arrangements (air draught arrangements for stripping or for removing dust or fly D01G 15/76)
- 15/76 • Stripping or cleaning carding surfaces; Maintaining cleanliness of carding area
- 15/78 • • Arrangements for stripping flats
- 15/80 • • Arrangements for stripping cylinders or rollers
- 15/82 • • Arrangements for confining or removing dust, fly, or the like
- 15/84 • Card clothing; Manufacture thereof not otherwise provided for (arrangements for driving carding-machine elements during grinding D01G 15/38; grinding card clothing B24B)
- 15/86 • • with flexible non-metallic backing
- 15/88 • • formed from metal sheets or strips
- 15/90 • • Lags, e.g. for jute cards
- 15/92 • • Attaching card clothing to carding elements
- 15/94 • Burr-crushing or removing arrangements
- 15/96 • • Burr-crushing rollers
- 15/98 • • Morel or like apparatus
- 17/00 Silk-dressing machines**
- 19/00 Combing machines**
- 19/02 • with pinned circles, e.g. Noble
- 19/04 • with pinned cylinders, e.g. rectilinear
- 19/06 • Details
- 19/08 • • Feeding apparatus
- 19/10 • • Construction, mounting, or operating features of combing elements
- 19/12 • • Devices for laying or holding fibres in combs, e.g. dabbing brushes
- 19/14 • • Drawing-off and delivery apparatus
- 19/16 • • • Nipper mechanisms
- 19/18 • • • Roller, or roller and apron, devices, e.g. operating to draw-off fibres continuously
- 19/20 • • • • operating to draw-off fibres intermittently
- 19/22 • • Arrangements for removing, or disposing of, noil or waste
- 19/24 • • Framework; Casings; Coverings

19/26	• • Driving arrangements	27/00	<b>Lap- or sliver-winding devices, e.g. for products of cotton scutchers, jute cards, or worsted gill boxes</b>
19/28	• • Air draught or like pneumatic arrangements	27/02	• with lap roll or the like loaded to provide firm packages
19/30	• • Heating arrangements	27/04	• with automatic discharge of lap roll or the like
21/00	<b>Combinations of machines, apparatus, or processes, e.g. for continuous processing</b> (D01G 1/06, D01G 9/12, D01G 15/46, D01G 15/94 take precedence)	29/00	<b>Arrangements for lubricating fibres, e.g. in gill boxes</b> (processes involving the use of particular lubricants D06M 15/00)
23/00	<b>Feeding fibres to machines; Conveying fibres between machines</b> (D01G 21/00 takes precedence; intermediate feeds in carding machines D01G 15/40)	31/00	<b>Warning or safety devices, e.g. automatic fault detectors, stop motions</b> (safety devices of general application F16P; indicating devices of general application G08B)
23/02	• Hoppers; Delivery shoots	33/00	<b>Hand tools for treatment of fibres</b>
23/04	• • with means for regulating of feed	35/00	<b>Treatment of oakum</b>
23/06	• Arrangements in which a machine or apparatus is regulated in response to changes in the volume or weight of fibres fed, e.g. piano motions (arrangements in which draft is regulated in response to irregularities in fibre supply D01H)	99/00	<b>Subject matter not provided for in other groups of this subclass [2010.01]</b>
23/08	• Air draught or like pneumatic arrangements		
25/00	<b>Lap-forming devices not integral with machines specified above</b> (forming mats or batts of continuous filaments for non-woven fabrics D04H)		
D01H	<b>SPINNING OR TWISTING</b> (unwinding, paying-out, forwarding, winding, or coiling filamentary material, not intimately associated with spinning or twisting, B65H; cores, formers, supports, or holders for coiled or wound material, e.g. bobbins, B65H; twisting oakum D01G 35/00; crimping or curling of fibres, filaments, or yarns D02G 1/00; making chenille D03D, D04D 3/00; testing yarns, rovings, slivers, fibres, or fibre webs G01)		

**Note(s)**

Attention is drawn to the Note following the title of class D01.

**Subclass index****SPINNING OR TWISTING MACHINES**

With continuous wind-up; with intermittent wind-up.....	1/00, 3/00
Open-end spinning.....	4/00
Drafting machines or arrangements.....	5/00
Spinning or twisting arrangements.....	7/00

**COMMON STRUCTURAL FEATURES, DETAILS, OR ACCESSORIES**

Replacing bobbins; confining or removing dust or fly.....	9/00, 11/00
Other structural features, details, or accessories.....	13/00
Piecing arrangements; hand tools.....	15/00, 17/00

**Kinds or types of spinning or twisting machines; Drafting machines or arrangements; Twisting arrangements**

<b>1/00</b>	<b>Spinning or twisting machines in which the product is wound-up continuously</b> (open-end spinning machines D01H 4/00) [5]	1/20	• • Driving or stopping arrangements (for open-end spinning machines D01H 4/12, D01H 4/20, D01H 4/42; safety devices D01H 13/14) [5]
1/02	• ring type	1/22	• • • for rollers (regulating or varying draft D01H 5/32)
1/04	• flyer type	1/24	• • • for twisting arrangements, e.g. spindles (braking arrangements for spindles D01H 7/22; interrelated flyer and bobbin drive mechanisms D01H 7/50)
1/06	• cap type	1/241	• • • • driven by belt [2]
1/08	• cup, pot, or disc type, in which annular masses of yarn are formed by centrifugal action	1/242	• • • • driven by toothed wheels [2]
1/10	• for imparting multiple twist, e.g. two-for-one twisting	1/243	• • • • driven by friction discs [2]
1/11	• Spinning by false-twisting [5]	1/244	• • • • each spindle driven by an electric motor [2]
1/115	• • using pneumatic means [5]	1/26	• • • • with two or more speeds; with variable-speed arrangements
1/14	• Details (drafting arrangements D01H 5/00; twisting arrangements D01H 7/00)	1/28	• • • for two or more machine elements possessing different characteristics but in operative association
1/16	• • Framework; Casings; Coverings		
1/18	• • Supports for supply packages		

## D01H

- 1/30 • • • with two or more speeds; with variable-speed arrangements
- 1/32 • • • for complete machines
- 1/34 • • • with two or more speeds; with variable-speed arrangements
- 1/36 • • Package-shaping arrangements, e.g. building motions
- 1/38 • • Arrangements for winding reserve lengths of yarn on take-up packages, e.g. transfer tails
- 1/40 • • Arrangements for connecting continuously-delivered material to bobbins or the like
- 1/42 • • Guards or protectors for yarns or threads, e.g. separator plates, anti-ballooning devices (anti-ballooning devices on spindles D01H 7/18)

### 3/00 **Spinning or twisting machines in which the product is wound-up intermittently, e.g. mules**

- 3/02 • Details (drafting arrangements D01H 5/00; twisting arrangements D01H 7/00)
- 3/04 • • Carriages; Mechanisms effecting carriage movements
- 3/06 • • • Carriages; Carriage rails; Squaring motions
- 3/08 • • • Drawing-out or taking-in motions
- 3/10 • • • Moving-creel arrangements, e.g. for twiners
- 3/12 • • Package-shaping motions; Faller arrangements
- 3/14 • • Roller-driving arrangements (drafting arrangements of general application in spinning machines D01H 5/18)
- 3/16 • • Spindle-driving arrangements (spindles, spindle bearings, spindle supports D01H 7/04)
- 3/18 • • • Tin rollers; Driving arrangements intimately associated with tin rollers
- 3/20 • • • Spindle-driving arrangements during drawing-out or backing-off
- 3/22 • • • Spindle-driving arrangements during taking-in
- 3/24 • • • • Quadrant motions; Nosing motions
- 3/26 • • Driving or stopping arrangements not otherwise provided for; Locking motions (safety devices D01H 13/14)

### 4/00 **Open-end spinning machines or arrangements for imparting twist to independently moving fibres separated from slivers; Piecing arrangements therefor; Covering endless core threads with fibres by open-end spinning techniques [5]**

#### Note(s)

In this group, the expression "open-end spinning" covers such expressions as "break spinning", "ringless spinning", "rotor spinning" and "friction spinning", but does not cover the expression "spinning by false-twisting".

- 4/02 • imparting twist by a fluid, e.g. air vortex [5]
- 4/04 • imparting twist by contact of fibres with a running surface [5]
- 4/06 • • co-operating with suction means (D01H 4/08, D01H 4/16 take precedence) [5]
- 4/08 • • Rotor spinning, i.e. the running surface being provided by a rotor [5]
- 4/10 • • • Rotors [5]
- 4/12 • • • Rotor bearings; Arrangements for driving or stopping (control therefor D01H 4/42) [5]
- 4/14 • • • • Rotor driven by an electric motor [5]
- 4/16 • • Friction spinning, i. e. the running surface being provided by a pair of closely spaced friction drums, e.g. at least one suction drum [5]

- 4/18 • • • Friction drums, e.g. arrangement of suction holes [5]
- 4/20 • • • Drum bearings; Arrangements for driving or stopping (control therefor D01H 4/42) [5]
- 4/22 • • Cleaning of running surfaces [5]
- 4/24 • • • in rotor spinning [5]
- 4/26 • • • in friction spinning [5]
- 4/28 • using electrostatic fields [5]
- 4/30 • Arrangements for separating slivers into fibres; Orienting or straightening fibres [5]
- 4/32 • • using opening rollers [5]
- 4/34 • • using air-jet streams [5]
- 4/36 • • with means for taking away impurities [5]
- 4/38 • Channels for feeding fibres to the yarn forming region [5]
- 4/40 • Removing running yarn from the yarn forming region, e.g. using tubes [5]
- 4/42 • Control of driving or stopping [5]
- 4/44 • • in rotor spinning [5]
- 4/46 • • in friction spinning [5]
- 4/48 • Piecing arrangements; Control therefor [5]
- 4/50 • • for rotor spinning [5]
- 4/52 • • for friction spinning [5]
- 5/00 **Drafting machines or arrangements** (arrangements in which draft is dependent on linear movement of take-up spindles, e.g. in mules, D01H 3/00; devices for combing or orienting fibres for open-end spinning machines D01H 4/30)
- 5/02 • Gill boxes or other drafting machines employing fallers or like pinned bars (lubricating fibres in gill boxes D01G 29/00)
- 5/04 • • with pinned bars actuated by screw members
- 5/06 • • • Intersecting gill boxes
- 5/08 • • with bars connected by links, chains, or the like
- 5/10 • • with pinned bars unconnected with each other but actuated through pressure of one against another
- 5/12 • • Details
- 5/14 • • • Pinned bars
- 5/16 • • • Framework; Casings; Coverings
- 5/18 • Drafting machines or arrangements without fallers or like pinned bars
- 5/20 • • in which fibres are controlled by contact with stationary or reciprocating surfaces
- 5/22 • • in which fibres are controlled by rollers only
- 5/24 • • • with porcupines or like pinned rotary members
- 5/26 • • in which fibres are controlled by one or more endless aprons
- 5/28 • • in which fibres are controlled by inserting twist during drafting (mules D01H 3/00; constructions of false-twist devices D02G 1/04)
- 5/30 • • incorporating arrangements for severing continuous filaments, e.g. in direct spinning (converting tows to slivers or yarns D01G 1/06)
- 5/32 • • Regulating or varying draft
- 5/34 • • • by manual adjustments
- 5/36 • • • according to a pre-arranged pattern, e.g. to produce slubs
- 5/38 • • • in response to irregularities in material
- 5/40 • • • • employing mechanical time-delay devices
- 5/42 • • • • employing electrical time-delay devices
- 5/44 • • Adjusting drafting elements, e.g. altering ratch
- 5/46 • • Loading arrangements
- 5/48 • • • using weights
- 5/50 • • • using springs

- 5/52 • • • using fluid pressure
  - 5/54 • • • using magnetic arrangements
  - 5/56 • • Supports for drafting elements (saddles or top roller arms forming essential components of weighting arrangements D01H 5/48)
  - 5/58 • • Arrangements for traversing drafting elements (traversing arrangements for roving guides D01H 13/06)
  - 5/60 • • Arrangements maintaining drafting elements free of fibre accumulations
  - 5/62 • • • Non-rotary cleaning pads or plates; Scrapers
  - 5/64 • • • Rollers or aprons with cleaning surfaces
  - 5/66 • • • Suction devices
  - 5/68 • • • • Suction end-catchers
  - 5/70 • • Constructional features of drafting elements
  - 5/72 • • • Fibre-condensing guides (guides for slivers, rovings, or yarns applicable solely for spinning, twisting, curling, or crimping purposes D01H 13/04)
  - 5/74 • • • Rollers
  - 5/76 • • • • Loose-boss assemblies
  - 5/78 • • • • with flutes or other integral surface characteristics
  - 5/80 • • • • with covers; Cots or covers
  - 5/82 • • • • Arrangements for coupling roller sections
  - 5/84 • • • • Porcupines
  - 5/86 • • • Aprons; Apron supports; Apron-tensioning arrangements
  - 5/88 • • • • Cradles; Tensors
  - 7/00 Spinning or twisting arrangements** (for open-end spinning D01H 4/00) [5]
  - 7/02 • for imparting permanent twist
  - 7/04 • • Spindles (spindle bearings, supports therefor, in general F16C)
  - 7/06 • • • Stationary spindles with package-holding sleeves
  - 7/08 • • • Mounting arrangements
  - 7/10 • • • • Spindle supports; Rails; Rail supports, e.g. poker guides
  - 7/12 • • • • Bolsters; Bearings
  - 7/14 • • • • Holding-down arrangements
  - 7/16 • • • Arrangements for coupling bobbins or like to spindles
  - 7/18 • • • Arrangements on spindles for suppressing yarn balloons (thread guards or protectors D01H 1/42)
  - 7/20 • • • Lubricating arrangements
  - 7/22 • • • Braking arrangements
  - 7/24 • • Flyer or like arrangements (multiple-twist arrangements D01H 7/86)
  - 7/26 • • • Flyer constructions
  - 7/28 • • • • arranged to guide material over exterior of legs
  - 7/30 • • • • with guide channels formed in legs, e.g. slubbing flyers
  - 7/32 • • • • • with pressing devices
  - 7/34 • • • • • with haul pulleys or like arrangements
  - 7/36 • • • • • with traversing devices
  - 7/38 • • • • • Ring flyers
  - 7/40 • • • Flyer supports, e.g. rails
  - 7/42 • • • Arrangements coupling flyers to spindles
  - 7/44 • • • Drag arrangements for bobbins or flyers
  - 7/46 • • • Devices attached to, or integral with, flyers for temporarily increasing twist in material passing to them
  - 7/48 • • • Eyes or like guiding arrangements (D01H 7/46 takes precedence)
  - 7/50 • • • Interrelated flyer and bobbin drive mechanisms, e.g. winding-on motions for cotton-roving frames (package-building mechanisms D01H 1/36)
  - 7/52 • • Ring-and-traveller arrangements
  - 7/54 • • • with fixed rings
  - 7/56 • • • with freely-rotatable rings; with braked or dragged rings
  - 7/58 • • • with driven rings
  - 7/60 • • • Rings or travellers; Manufacture thereof not otherwise provided for (hand tools for applying travellers to rings D01H 17/02)
  - 7/62 • • • Arrangements providing lubricant for travellers
  - 7/64 • • • Ring supports, e.g. ring rails (poker guides or other rail supports D01H 7/10)
  - 7/66 • • Cap arrangements
  - 7/68 • • • Cap constructions
  - 7/70 • • • Arrangements for supporting caps on spindles
  - 7/72 • • • Bobbin-supporting arrangements, e.g. bobbin rails (poker guides or other rail supports D01H 7/10)
  - 7/74 • • Cup or like arrangements
  - 7/76 • • • Rotary discs
  - 7/78 • • • Constructions of cups, e.g. spinning boxes
  - 7/80 • • • • adapted to collect wet yarns
  - 7/82 • • • Casings or guards for rotary cups or the like
  - 7/84 • • • Spindles or yarn carriers for co-operation with rotary cups (removing yarn from centrifugal cups on to yarn carriers D01H 9/06)
  - 7/86 • • Multiple-twist arrangements, e.g. two-for-one twisting devices
  - 7/88 • • Hollow-spindle arrangements (D01H 7/86 takes precedence)
  - 7/90 • • Arrangements with two or more twisting devices in combination (D01H 7/86, D01H 7/88 take precedence)
  - 7/92 • for imparting transient twist
- Common features or details of, or accessories for, spinning or twisting machines of various kinds or types**
- 9/00 Arrangements for replacing or removing bobbins, cores, receptacles, or completed packages at paying-out or take-up stations** (arrangements of general interest in the winding of filamentary material B65H)
  - 9/02 • for removing completed take-up packages and replacing by bobbins, cores, or receptacles at take-up stations; Transferring material between adjacent full and empty take-up elements
  - 9/04 • • Doffing arrangements integral with spinning or twisting machines
  - 9/06 • • • Removing yarn from centrifugal cups on to yarn carriers
  - 9/08 • • Doffing arrangements independent of spinning or twisting machines
  - 9/10 • • • Doffing carriages
  - 9/12 • • • Manual cop-tube applying apparatus; Stands for cop-tube applying apparatus
  - 9/14 • • for preparing machines for doffing of yarns (stop motions responsive to delivery of a measured length of material D01H 13/24)
  - 9/16 • • Yarn-severing arrangements

## D01H

- 9/18 • for supplying bobbins, cores, receptacles, or completed packages to, or transporting from, paying-out or take-up stations (D01H 9/10 takes precedence)
- 11/00 Arrangements for confining or removing dust, fly, or the like** (cleaning of running surfaces in open-end spinning machines D01H 4/22; separation in general B01D; cleaning in general B08B; air-conditioning F24F, e.g. by filtering F24F 3/16) [5]
- 13/00 Other common constructional features, details, or accessories** (for open-end spinning D01H 4/00) [5]
  - 13/02 • Roller arrangements not otherwise provided for
  - 13/04 • Guides for slivers, rovings, or yarns; Smoothing dies (fibre-condensing guides D01H 5/72)
  - 13/06 • • Traversing arrangements
  - 13/08 • Twist arresters
  - 13/10 • Tension devices
  - 13/12 • Arrangements preventing snarls or inadvertent doubling of yarns (suction end-catchers D01H 5/68)
  - 13/14 • Warning or safety devices, e.g. automatic fault detectors, stop motions (warning or safety devices for filamentary material, not intimately associated with spinning or like machines B65H; safety devices of general application F16P; indicating devices of general application G08B)
  - 13/16 • • responsive to reduction in material tension, failure of supply, or breakage, of material
- 13/18 • • • stopping supply only
- 13/20 • • responsive to excessive tension or irregular operation of apparatus
- 13/22 • • responsive to presence of irregularities in running material
- 13/24 • • responsive to delivery of a measured length of material, completion of winding of a package or filling of a receptacle
- 13/26 • Arrangements facilitating the inspection or testing of yarns or the like in connection with spinning or twisting
- 13/28 • Heating or cooling arrangements
- 13/30 • Moistening, sizing, oiling, waxing, colouring, or drying yarns or the like as incidental measures during spinning or twisting
- 13/32 • Counting, measuring, recording, or registering devices (in general, see in the appropriate subclass of section G, e.g. G01B)
- 15/00 Piecing arrangements** (for open-end spinning machines D01H 4/48; in machines for producing textile fabrics, see the appropriate subclasses) [5]
  - 15/007 • for two-for-one twisting machines [5]
  - 15/013 • Carriages travelling along the machines [5]
- 17/00 Hand tools** (cop-tube applying apparatus D01H 9/12)
  - 17/02 • Arrangements for storing ring travellers; Devices for applying travellers to rings

## D02 YARNS; MECHANICAL FINISHING OF YARNS OR ROPES; WARPING OR BEAMING

### Note(s)

In this class, the following terms are used with the meanings indicated:

- "fibre" means a relatively-short, elongated member of natural or artificial material;
- "filament" means an endless or quasi-endless, elongated member of natural or artificial material;
- "yarn" means a unitary assembly of fibres, usually produced by spinning;
- "thread" means an assembly of yarns or filaments, usually produced by twisting.

## D02G CRIMPING OR CURLING FIBRES, FILAMENTS, YARNS, OR THREADS; YARNS OR THREADS

### Note(s)

Attention is drawn to the Note following the title of class D02.

- 1/00 Producing crimped or curled fibres, filaments, yarns, or threads, giving them latent characteristics** (yarns per se D02G 3/00; during formation of artificial filaments, threads, or the like D01D 5/22; general aspects of chemical treatment D06M)
  - 1/02 • by twisting, fixing the twist and backtwisting, i.e. by imparting false twist
  - 1/04 • • Devices for imparting false twist
  - 1/06 • • • Spindles
  - 1/08 • • • Rollers
  - 1/10 • using knife edges, e.g. heated knife edges, for edge crimping
  - 1/12 • using stuffer boxes
  - 1/14 • using grooved rollers or gear-wheel-type members
  - 1/16 • using jets or streams of turbulent gases, e.g. air, steam
  - 1/18 • by combining fibres, filaments, or yarns, having different shrinkage characteristics
- 1/20 • Combinations of two or more of the above-mentioned operations or devices; After-treatments for fixing crimp or curl
- 3/00 Yarns or threads, e.g. fancy yarns; Processes or apparatus for the production thereof, not otherwise provided for** (for producing crimped or curled yarns D02G 1/00)
  - 3/02 • Yarns or threads characterised by the material or by the materials from which they are made
  - 3/04 • • Blended or other yarns or threads containing components made from different materials
  - 3/06 • • Threads formed from strip material other than paper
  - 3/08 • • Paper yarns or threads
  - 3/10 • • Yarns or threads formed from collagenous materials, e.g. catgut
  - 3/12 • • Threads containing metallic filaments or strips
  - 3/14 • • Horse-hair threads

- |  |   |
|--|---|
| 3/16 • • Yarns or threads made from mineral substances<br>3/18 • • • from glass or the like<br>3/20 • • • from asbestos<br>3/22 • Yarns or threads characterised by constructional features<br>3/24 • • Bulkied yarns or threads, e.g. formed from staple fibre components with different relaxation characteristics<br>3/26 • • with characteristics dependent on the amount or direction of twist<br>3/28 • • • Doubled, plied, or cabled threads<br>3/30 • • • Crêped or other highly-twisted yarns or threads<br>3/32 • • Elastic yarns or threads | 3/34 • • Yarns or threads having slubs, knops, spirals, loops, tufts, or other irregular or decorative effects, i.e. effect yarns<br>3/36 • • Cored or coated yarns or threads (elastic yarns or threads D02G 3/32)<br>3/38 • • Threads in which fibres, filaments, or yarns are wound with other yarns or filaments (covering endless core threads with fibres by using open-end spinning techniques D01H 4/00)<br>3/40 • • Yarns in which fibres are united by adhesives; Impregnated yarns or threads<br>3/42 • • Chenille threads<br>3/44 • Yarns or threads characterised by the purpose for which they are designed<br>3/46 • • Sewing-cottons or the like<br>3/48 • • Tyre cords |
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## D02H WARPING, BEAMING, OR LEASING

### Note(s)

Attention is drawn to the Note following the title of class D02.

### Subclass index

CREELS.....	1/00
WARPING; BEAMING; WARPING AND BEAMING COMBINED.....	3/00, 5/00, 7/00
LEASING.....	9/00
OTHER MACHINES AND METHODS.....	11/00
DETAILS OF MACHINES.....	13/00

- |   |   |
|---|---|
| <b>1/00 Creels, i.e. apparatus for supplying a multiplicity of individual threads</b><br><br><b>3/00 Warping machines</b><br><br><b>5/00 Beaming machines</b><br>5/02 • combined with apparatus for sizing or other treatment of warps (sizing <u>per se</u> D06B)<br><br><b>7/00 Combined warping and beaming machines</b><br><br><b>9/00 Leasing</b><br>9/02 • Lease rods or bands<br><br><b>11/00 Methods or apparatus not provided for in groups D02H 1/00-D02H 9/00, e.g. for cleaning the warp</b><br><br><b>13/00 Details of machines of the other groups of this subclass</b><br>13/02 • Stop motions<br>13/04 • • responsive to breakage, slackness, or excessive tension of threads, with detectors for individual threads or small groups of threads<br>13/06 • • • mechanical | 13/08 • • • electrical<br>13/10 • • responsive to thread-measuring devices, e.g. stopping the machine when required length of warp has been wound<br>13/12 • Variable-speed driving mechanisms<br>13/14 • • controlled automatically by tension in the warp<br>13/16 • Reeds, combs, or other devices for determining the spacing of threads<br>13/18 • • with adjustable spacing<br>13/20 • • with fixed spacing<br>13/22 • Tensioning devices<br>13/24 • • for individual threads<br>13/26 • • for threads in warp form (controlling the driving of beams, or the like, to keep tension constant D02H 13/14)<br>13/28 • Warp beams (cloth beams D03D 49/20)<br>13/30 • • with flanges<br>13/32 • • • adjustable<br>13/34 • • sectional<br>13/36 • • Means for attaching warp to beam<br>13/38 • Storage racks for beams |
|---|---|

## D02H

**D02J FINISHING OR DRESSING OF FILAMENTS, YARNS, THREADS, CORDS, ROPES, OR THE LIKE** (curling or crimping D02G; by treatment with liquids, gases or vapours D06B; finishing other than by liquid treatment, of yarns in warp or sheet form D06C; for chemical matters, see D06L, D06M, D06P, D06Q; treatment during rope-making, apparatus for treating ropes auxiliary to rope-making D07B)

### Note(s)

Attention is drawn to the Note following the title of class D02.

### Subclass index

MODIFYING THE STRUCTURE, FORM, OR SURFACE.....1/00, 3/00  
REMOVING UNDESIRABLE BODIES.....7/00  
COMBINATIONS OF ABOVE PROCESSES NOT COVERED BY ONE SINGLE GROUP.....11/00  
HEATING OR COOLING OPERATIONS NOT SPECIFIC TO ONE OF THE ABOVE PROCESSES.....13/00

<b>1/00</b>	<b>Modifying the structure or properties resulting from a particular structure; Modifying, retaining, or restoring the physical form or cross-sectional shape, e.g. by use of dies or squeeze rollers</b> (modifying only the surface D02J 3/00)	3/04	• by brushing
1/02	• Bulking, e.g. looping (by crimping, by curling D02G)	3/06	• by polishing, e.g. glazing, glossing
1/04	• Compacting	3/08	• • by compressing, e.g. by calendering or ironing
1/06	• Imparting irregularity, e.g. slubbing or other non-uniform features, e.g. high- and low-shrinkage or strengthened and weakened sections	3/10	• by indenting
1/08	• Interlacing constituent filaments without breakage thereof, e.g. by use of turbulent air streams	3/12	• by removing projecting ends of fibres
1/12	• Modifying stretch/bulk properties of textured yarns or the like by after-treatment	3/14	• • by shearing
1/14	• Rendering uniform or evening non-uniform features	3/16	• • by singeing
1/16	• Rubbing or similar working, e.g. to redistribute or remove fibres	3/18	• Treating with particulate, semi-solid, or solid substances, e.g. wax (during package formation B65H 71/00; waxing yarns or the like as incidental measures during spinning or twisting D01H 13/30)
1/18	• Separating or spreading		
1/20	• Stressing or stress-relieving, e.g. by vibration or subjection to electrostatic stress or electric discharge	<b>7/00</b>	<b>Cleaning, e.g. removing dust, loose fibres, charred ends</b> (in combination with the shearing, singeing, or otherwise removing of projecting fibre ends D02J 3/12, D02J 3/14, D02J 3/16)
1/22	• Stretching or tensioning, shrinking or relaxing, e.g. by use of overfeed and underfeed apparatus, or preventing stretch (stretch spinning D01D 5/12)	<b>11/00</b>	<b>Combinations, not covered by any one of groups D02J 1/00-D02J 7/00, of processes provided for in such groups; Plant for carrying-out such combinations of processes</b>
<b>3/00</b>	<b>Modifying the surface</b>	<b>13/00</b>	<b>Heating or cooling the yarn, thread, cord, rope, or the like, not specific to any one of the processes provided for in this subclass</b> (heating, cooling, or drying during spinning or twisting D01H; drying of yarns, or the like, in general F26B)
3/02	• by abrading, scraping, scuffing, cutting, or nicking (preliminary roughening of fibres, e.g. for spinning, D01G 3/00)		

## D03 WEAVING

**D03C SHEDDING MECHANISMS; PATTERN CARDS OR CHAINS; PUNCHING OF CARDS; DESIGNING PATTERNS**

### Subclass index

SHEDDING MECHANISMS  
Dobbies; jacquards; cam and other direct-acting mechanisms.....1/00, 3/00, 5/00  
Healds.....9/00  
Selvedge mechanisms not forming part of shedding mechanisms.....11/00  
Other shedding mechanisms.....7/00, 13/00  
PATTERN CARDS OR CHAINS; CARD-PUNCHING; METHODS OR DEVICES FOR PREPARING PATTERNS.....15/00, 17/00, 19/00

<b>1/00</b>	<b>Dobbies</b>	1/02	• Single-lift dobbies, i.e. dobbies in which the same
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- draw-knife or equivalent operates for every pick (D03C 1/10 takes precedence)
- 1/04 • • Open-shed single-lift dobbies
  - 1/06 • Double-lift dobbies, i.e. dobbies in which separate draw-knives or equivalent operate on alternate picks
  - 1/08 • • reversible, i.e. correct sheds open automatically when the loom is driven backwards
  - 1/10 • Centre-shed dobbies, i.e. shed formed by lifting some threads and lowering the others from central shed-closed position
  - 1/12 • Dobbies employing toothed gearing instead of draw-knives
  - 1/14 • Features common to dobbies of different types (stop motions acting on defective operation of shedding mechanisms D03D 51/46)
  - 1/16 • • Arrangements of dobby in relation to loom
  - 1/18 • • Knives; Knife frames
  - 1/20 • • Hooks; Lifters
  - 1/22 • • Needles; Needle boxes; Needle boards
  - 1/24 • • Cylinders; Cylinder battens
  - 1/26 • • Facilitating engagement of lifting-hooks with draw-knives
  - 1/28 • • • by creating and then eliminating back-lash between hooks and knives
  - 1/30 • • • wherein all the hooks are disengaged from the knives, and selected hooks then re-engaged
  - 1/32 • • • wherein all the hooks are engaged with the knives, and unselected hooks then disengaged
  - 1/34 • • Arrangements wherein warp threads pass one another at different heights to avoid congestion
  - 1/36 • • Card- or chain-saving arrangements, e.g. cross-border dobbies
- 3/00 Jacquards** (controlling jacquard by scanning design D03C 17/06; for gripper Axminster looms D03D 39/08)
- 3/02 • Single-lift jacquards
  - 3/04 • • of open-shed type
  - 3/06 • Double-lift jacquards
  - 3/08 • • of open-shed type
  - 3/10 • Centre-shed jacquards
  - 3/12 • Multiple-shed jacquards, i.e. jacquards which move warp threads to several different heights, e.g. for weaving pile fabrics
  - 3/14 • Jacquards not employing lifting-hooks, e.g. employing knotted cords in conjunction with keyhole slots
  - 3/16 • Verdol or other jacquards having intermediate power-operated needles between reading needles and lifting-hooks
  - 3/18 • Selvage jacquards
  - 3/20 • Electrically-operated jacquards
  - 3/22 • Fluid-operated jacquards
  - 3/24 • Features common to jacquards of different types
  - 3/26 • • General arrangements of jacquards, or disposition in relation to loom
  - 3/28 • • Pick-finding arrangements; Arrangements for preventing next shed from being opened during stopping of loom
- 3/30 • • Arrangements wherein hooks are positively operated to close shed
  - 3/32 • • Jacquard driving mechanisms
  - 3/34 • • • Cylinder operating mechanisms
  - 3/36 • • • Griffe operating mechanisms
  - 3/38 • • Comber boards
  - 3/40 • • Constructions of lifting-cords
  - 3/42 • • Arrangements of lifting-cords
  - 3/44 • • Lingoes
- 5/00 Cam or other direct-acting shedding mechanisms, i.e. operating heald frames without intervening power-supplying devices**
- 5/02 • operated by rotating cams
  - 5/04 • • Construction or shape of cams (cams in general F16H 53/00)
  - 5/06 • operated by cam devices other than rotating cams
- 7/00 Leno or similar shedding mechanisms**
- 7/02 • Gauze healds
  - 7/04 • Mechanisms having discs oscillating about a weftwise axis and having apertures for warp threads
  - 7/06 • Mechanisms having eyed needles for moving warp threads from side to side of other warp threads
  - 7/08 • Devices for twisting warp threads repeatedly in the same direction
- 9/00 Healds; Heald frames** (for leno shedding D03C 7/00)
- 9/02 • Healds
  - 9/04 • • Metal healds
  - 9/06 • Heald frames
- 11/00 Selvage shedding mechanisms not forming part of main shedding mechanism** (selvage jacquards D03C 3/18; leno selvage mechanism D03C 7/00)
- 13/00 Shedding mechanisms not otherwise provided for**
- 15/00 Pattern cards or chains**
- 15/02 • Chains of metal, wood, or similar material with projecting pattern-indicating elements
  - 15/04 • Cards or paper perforated to indicate pattern
  - 15/06 • Apparatus for setting pegs in, or removing pegs from, pattern cards
  - 15/08 • Apparatus for interconnecting, e.g. by lacing, or disconnecting pattern cards
- 17/00 Card-punching apparatus** (marking record carriers in digital fashion G06K)
- 17/02 • manually-controlled, i.e. holes to be punched determined by the operator
  - 17/04 • • power-operated
  - 17/06 • automatic, i.e. design scanned optically or otherwise to control punching apparatus or to control loom jacquard directly
- 19/00 Methods or devices concerned with designing or making patterns, not provided for in other groups of this subclass**

**D03D WOVEN FABRICS; METHODS OF WEAVING; LOOMS****Note(s)**

1. Class D06 takes precedence over this subclass in respect of processes involving both weaving and finishing steps and in respect of the finished fabrics.
2. A method of weaving is classified in the group designating the fabric woven unless the method is characterised by the operation of a particular loom rather than by the production of a particular fabric. In this case, the method is classified in the group for the loom.
3. In this subclass, if there is any doubt as to which of the essential features is the most important (this is usually the most restrictive feature), the groups designating woven fabrics should be considered in the order in which they appear at each level of indentation, except that groups designating woven pile fabrics are to be considered as taking precedence over groups designating other woven fabrics.

**Subclass index****WOVEN FABRICS OR CORRESPONDING WEAVING METHODS**

Characterised by: the construction of the yarn or the material; their shape; their resiliency; their elasticity.....	15/00, 3/00, 7/00, 17/00
Kinds of woven fabrics	
open-work fabrics; woven pile fabrics; gauze; lappet- or swivel-woven.....	9/00, 27/00, 19/00, 21/00
with special disposition of warp or weft threads; multi-ply fabrics not otherwise provided for.....	13/00, 11/00
for specified articles.....	1/00
other kinds.....	25/00
Selvages.....	5/00, 47/40
General weaving methods not special to a particular fabric or loom.....	23/00

**LOOMS OR CORRESPONDING METHODS OF WEAVING**

Hand looms.....	29/00
Characterised by the article to be woven: lappet or swivel type for embroidery-like decoration; for narrow ribbon-like fabrics; for pile fabric; other types for other kinds of fabrics.....	31/00, 35/00, 39/00, 41/00
Characterised by their construction: circular; with change-boxes; with automatic weft replenishment; of shuttleless type.....	37/00, 43/00, 45/00, 47/00
Multiple looms.....	33/00
General details and constructional features.....	49/00
Driving; starting, stopping the loom.....	51/00

**Woven fabrics; Methods of weaving other than those characterised by the operation of a particular loom**

<b>1/00 Woven fabrics designed to make specified articles</b>	<b>13/00 Woven fabrics characterised by the special disposition of the warp or weft threads, e.g. with curved weft threads, with discontinuous warp threads, with diagonal warp or weft</b>
1/02 • Inflatable articles	
1/04 • Sack- or bag-like articles	<b>15/00 Woven fabrics characterised by the material or construction of the yarn or other warp or weft elements used</b>
1/06 • Curtain heading tapes	15/02 • the warp or weft elements being of stiff material, e.g. wire, cane, slat
1/08 • Ladder tapes (ladder tapes for venetian blinds E06B 9/382)	15/04 • woven to produce shapes or effects upon differential shrinkage
<b>3/00 Woven fabrics characterised by their shape</b>	15/06 • using scaffolding threads, i.e. threads removed after weaving
3/02 • Tubular fabrics	15/08 • using stretchable or elastic threads (woven fabrics whose elastic or stretch properties are due to the manner of weaving D03D 17/00)
3/04 • Endless fabrics	15/10 • using threads having high or low coefficients of friction
3/06 • Fabrics of varying width	15/12 • using heat-resistant or fireproof threads
3/08 • Arched, corrugated, or like fabrics	
<b>5/00 Selvages</b>	<b>17/00 Woven fabrics having elastic or stretch properties due to manner of weaving</b> (fabrics using stretchable or elastic threads D03D 15/08)
<b>7/00 Woven fabrics designed to be resilient, i.e. to recover from compressive stress</b>	<b>19/00 Gauze or leno-woven fabrics</b>
<b>9/00 Open-work fabrics</b> (ladder-tape fabrics D03D 1/08)	<b>21/00 Lappet- or swivel-woven fabrics</b>
<b>11/00 Double or multi-ply fabrics not otherwise provided for</b>	
11/02 • Fabrics formed with pockets, tubes, loops, folds, tucks, or flaps (fabrics for curtain heading tapes D03D 1/06; fabrics consisting of a single tube D03D 3/02)	

<b>23/00</b>	<b>General weaving methods not special to the production of any particular woven fabric or the use of any particular loom; Weaves not provided for in any other single group</b>	<b>45/00</b>	<b>Looms with automatic weft replenishment</b> (automatic replenishment in smallware looms D03D 35/00, in circular looms D03D 37/00; bobbins rewound on loom D03J 1/12)
<b>25/00</b>	<b>Woven fabrics not otherwise provided for</b>	45/02	• Controlling replenishment
<b>27/00</b>	<b>Woven pile fabrics</b>	45/04	• • Pirn feelers or other detectors for initiating replenishment (weft stop motions D03D 51/34)
27/02	• wherein the pile is formed by warp or weft	45/06	• • • mechanical
27/04	• • Weft pile fabrics	45/08	• • • • of the side-slip type
27/06	• • Warp pile fabrics	45/10	• • • electrical
27/08	• • • Terry fabrics	45/12	• • • optical
27/10	• • Fabrics woven face-to-face, e.g. double velvet	45/14	• • Storing the need for replenishment or the colour required until the spent shuttle returns to the replenishing end of the loom
27/12	• wherein pile tufts are inserted during weaving	45/16	• • • selecting thereby weft of correct colour
27/14	• • with tufts around warps	45/18	• • Shuttle feelers or other devices for preventing replenishment if shuttle is incorrectly positioned in shuttle box (shuttle stop motions D03D 51/40)
27/16	• • with tufts around wefts	45/20	• Changing bobbins, cops, or other shuttle stock
27/18	• Chenille fabrics	45/22	• • effected with shuttle in normal shuttle box
<b><u>Looms: Methods of weaving characterised by the operation of particular looms</u></b>		45/24	• • effected otherwise than in normal box
<b>29/00</b>	<b>Hand looms</b>	45/26	• • Magazines
<b>31/00</b>	<b>Lappet, swivel or other looms for forming embroidery-like decoration on fabrics</b>	45/28	• • • for one type of thread, e.g. same colour
<b>33/00</b>	<b>Multiple looms, i.e. two or more looms assembled together, whether or not they have mechanisms in common</b> (D03D 35/00 takes precedence)	45/30	• • • • rotary
<b>35/00</b>	<b>Smallware looms, i.e. looms for weaving ribbons or other narrow fabrics</b> (D03D 47/00 takes precedence)	45/32	• • • for several types of thread, e.g. multicolour
<b>37/00</b>	<b>Circular looms</b> (looms for weaving separate fabrics disposed in a circle or polygon D03D 33/00)	45/34	• Shuttle changing
<b>39/00</b>	<b>Pile-fabric looms</b>	45/36	• • fresh shuttle being substituted for spent shuttle in the same cell of shuttle box
39/02	• Axminster looms, i.e. wherein pile tufts are inserted during weaving	45/38	• • Shuttle box with an extra cell which is used only during replenishment
39/04	• • Spool Axminster looms	45/40	• • • the spent shuttle being received in the normal cell and the fresh shuttle being picked from the extra cell
39/06	• • • Tuft yarn tube or spool frames	45/42	• • • the spent shuttle being received in the extra cell and the fresh shuttle being picked from the normal cell
39/08	• • Gripper Axminster looms	45/44	• • Magazines
39/10	• Wire-tapestry looms, e.g. for weaving velvet or Brussels or Wilton carpets, the pile being formed over weftwise wires	45/46	• • • for one type of thread, e.g. single colour
39/12	• • Mechanisms for operating the pile wires	45/48	• • • for several types of threads, e.g. multicolour
39/14	• • Construction of the pile wires, e.g. pile wires which cut	45/50	• Cutting, holding, manipulating, or disposing of, weft ends
39/16	• Double-plush looms, i.e. for weaving two pile fabrics face-to-face	45/52	• • Cutting weft of depleted shuttle near shuttle and holding the piece attached to the fabric
39/18	• • Separating the two plush layers, e.g. by cutting	45/54	• • Cutting fresh weft and holding the piece attached to the fabric
39/20	• Looms forming pile over warpwise wires	45/56	• • Cutting depleted and fresh wefts at selvage
39/22	• Terry looms	45/58	• • Removing tip bunch or fresh weft end from fresh bobbin
39/24	• Devices for cutting the pile on the loom (pile wires which cut D03D 39/14; separating two plush layers D03D 39/18)	45/60	• • • substantially by air stream or suction
<b>41/00</b>	<b>Looms not otherwise provided for, e.g. for weaving chenille yarn; Details peculiar to these looms</b>	45/62	• • Disposing of waste pieces of cut weft end (D03D 45/58 takes precedence)
<b>43/00</b>	<b>Looms with change-boxes</b>	<b>47/00</b>	<b>Looms in which bulk supply of weft does not pass through shed, e.g. shuttleless looms, gripper shuttle looms, dummy shuttle looms</b> (circular looms D03D 37/00)
43/02	• with drop boxes	47/02	• wherein loops of continuous weft thread are inserted, i.e. double picks (D03D 47/27 takes precedence) [3]
43/04	• • Operating mechanisms	47/04	• • by a reciprocating needle having a permanently-threaded eye
43/06	• with rotary boxes	47/06	• • by a pivoted having a permanently-threaded eye
43/08	• • Operating mechanisms	47/08	• • • the path of the needle being modified by cams, linkages, or other means
43/10	• Weft catchers, i.e. means for preventing entanglement of wefts	47/10	• • by a forked needle pushing loop of weft through shed

## D03D

- 47/12 • wherein single picks of weft thread are inserted, i.e. with shedding between each pick (D03D 47/27 takes precedence) [3]
- 47/14 • • by a gripper needle taking the end of the weft through the shed
- 47/16 • • by a gripper needle entering the shed empty and drawing the weft as it retracts
- 47/18 • • two weft inserters meeting at or near the middle of the shed and transferring the weft from one to the other
- 47/20 • • Constructional features of the thread-engaging device on the inserters
- 47/22 • • • adapted for working a loop of weft part-way inserted in the shed and then straightened-out
- 47/23 • • • Thread grippers (in dummy or gripper shuttles D03J 5/06) [3]
- 47/24 • • by gripper or dummy shuttle (travelling-wave-shed looms D03D 47/26; inserting mechanisms for shuttles D03D 49/24; gripper or dummy shuttles per se D03J 5/06)
- 47/25 • • • inserted from only one side of loom [3]
- 47/26 • • Travelling-wave-shed looms
- 47/27 • Drive or guide mechanisms for weft inserting [3]
- 47/28 • wherein the weft itself is projected into the shed
- 47/30 • • by gas jet
- 47/32 • • by liquid jet
- 47/34 • Handling the weft between bulk storage and weft-inserting means
- 47/36 • • Measuring and cutting the weft
- 47/38 • • Weft pattern mechanisms
- 47/39 • wherein cane, straw, slats, material for hair-cloth or similar material is handled [3]
- 47/40 • Forming selvedges
- 47/42 • • by knitting or interlacing loops of weft
- 47/44 • • • with additional selvedge thread
- 47/46 • • by selvedge shuttle or other device passing selvedge thread through loop of weft (by knitting D03D 47/44)
- 47/48 • • by inserting cut end of weft in next shed, e.g. by tucking, by blowing
- 47/50 • • by adhesion
- 49/00 Details or constructional features not peculiar to looms of a particular type (temples D03J 1/22)**
- 49/02 • Construction of loom framework
- 49/04 • Control of the tension in warp or cloth
- 49/06 • • Warp let-off mechanisms (construction of warp beam D02H)
- 49/08 • • • Warp beam brakes
- 49/10 • • • Driving the warp beam to let the warp off
- 49/12 • • Controlling warp tension by means other than let-off mechanisms
- 49/14 • • • Compensating for tension differences during shedding
- 49/16 • • • Warp supplied by creel
- 49/18 • • Devices for indicating warp tension (measuring tension of threads in general G01L 5/04)
- 49/20 • • Take-up motions; Cloth beams (storage racks for beams D02H)
- 49/22 • • Back rests; Lease rods; Brest beams
- 49/24 • Mechanisms for inserting shuttle in shed (shuttles per se D03J 5/00)
- 49/26 • • Picking mechanisms, e.g. for propelling gripper shuttles or dummy shuttles
- 49/28 • • • Driving mechanisms for the picker stick
- 49/30 • • • • operated by cam
- 49/32 • • • • operated by previously-loaded spring or equivalent
- 49/34 • • • • operated by liquid or gas pressure
- 49/36 • • • Pickers; Arresting means therefor (check straps D03D 49/40)
- 49/38 • • • Picking sticks; Arresting means therefor (check straps D03D 49/40)
- 49/40 • • • Check straps; Lug straps; Similar strap components
- 49/42 • • whereby the shuttle is propelled by liquid or gas pressure
- 49/44 • • whereby the shuttle is propelled by electric or magnetic means
- 49/46 • • wherein the shuttle is pushed or pulled positively (travelling-wave-shed type looms D03D 47/26)
- 49/48 • • positioning shuttle in readiness for picking
- 49/50 • • Devices or arrangements concerning insertion of the weft, not otherwise provided for
- 49/52 • Shuttle boxes (change-boxes D03D 43/00)
- 49/54 • • Braking means; Swells
- 49/56 • • • Shuttle relief mechanisms, i.e. reducing shuttle swell pressure before picking
- 49/58 • Shuttle guards
- 49/60 • Construction or operation of slay
- 49/62 • • Reeds mounted on slay
- 49/64 • • wherein the slay dwells or moves slowly while the weft is being inserted
- 49/66 • • Shuttle races
- 49/68 • Reeds or beat-up combs not mounted on the slay (loose reed stop motion D03D 51/42)
- 49/70 • Devices for cutting weft threads (cutting weft in looms with automatic weft replenishment D03D 45/50; apparatus for slitting fabric D03J 1/08)
- 51/00 Driving, starting, or stopping arrangements; Automatic stop motions**
- 51/02 • General arrangements of driving mechanism
- 51/04 • Manual controls
- 51/06 • using particular methods of stopping
- 51/08 • • stopping at definite point in weaving cycle, or moving to such point after stopping
- 51/10 • • stopping suddenly
- 51/12 • for adjusting speed
- 51/14 • for reducing speed temporarily
- 51/16 • for varying speed cyclically
- 51/18 • Automatic stop motions
- 51/20 • • Warp stop motions
- 51/22 • • • mechanical
- 51/24 • • • • wherein droppers are suspended on individual warp threads or small groups of threads
- 51/26 • • • • Detector healds
- 51/28 • • • electrical
- 51/30 • • • • wherein droppers are suspended on individual warp threads or small groups of threads
- 51/32 • • • • Detector healds
- 51/34 • • Weft stop motions
- 51/36 • • • Centre weft forks
- 51/38 • • • Side weft forks
- 51/40 • • Shuttle stop motions
- 51/42 • • • Loose reed mechanisms
- 51/44 • • acting on defective operation of loom mechanisms
- 51/46 • • • of shedding mechanisms

**D03J AUXILIARY WEAVING APPARATUS; WEAVERS' TOOLS; SHUTTLES**

<b>1/00</b>	<b>Auxiliary apparatus combined with or associated with looms</b>	<b>3/02</b>	• Reed and heald hooks
1/02	• for treating warp, e.g. cleaning, moistening	<b>3/04</b>	• Shuttle-threading tools (threading devices in shuttles D03J 5/20)
1/04	• for treating weft		
1/06	• for treating fabric (cutting pile on the loom D03D 39/24)	<b>5/00</b>	<b>Shuttles</b> (swivel shuttles D03D 31/00; shuttles for smallware looms D03D 35/00; circular loom shuttles D03D 37/00; selvedge shuttles D03D 47/46)
1/08	• • for slitting fabric	5/02	• Construction of shuttle body
1/10	• for indicating pattern to weaver	5/04	• • Shuttle tips
1/12	• transferring bobbins between loom and winding station (bobbin-winding machines B65H)	5/06	• Dummy shuttles; Gripper shuttles
1/13	• for leasing warp (leasing in general D02H 9/00) [2]	5/08	• Supports for pirns, bobbins, or cops
1/14	• Apparatus for threading warp stop-motion droppers, healds, or reeds	5/10	• • Pegs or spindles
1/16	• Apparatus for joining warp ends (knot-tying tools D03J 3/00)	5/12	• • • removable
1/18	• • for joining, e.g. tying, a complete series of fresh warp threads to the used warp threads	5/14	• • • pivoted
1/20	• Measuring length of fabric or number of picks woven	5/16	• • Bobbin clamps, e.g. for automatic bobbin-changing loom shuttles
1/22	• Temples	5/18	• • for coreless cops, i.e. shuttles having no peg or bobbin clamp
1/24	• Mirrors or other arrangements for inspecting loom parts	5/20	• Devices in shuttles for threading (separate tools for threading shuttles D03J 3/04)
		5/22	• • for self-threading, i.e. threading automatically when shuttle is picked
<b>3/00</b>	<b>Weavers' tools, e.g. knot-tying tools</b>	5/24	• Tension devices

**D04 BRAIDING; LACE-MAKING; KNITTING; TRIMMINGS; NON-WOVEN FABRICS****D04B KNITTING****Note(s)**

1. In this subclass, groups designating machines, apparatus, devices, or implements include processes characterised by, or dependent on, their use, and the products of such processes.
2. Knitted products, i.e. fabrics, articles, are classified in this subclass only if they have constructional features which are of interest from the knitting aspect.

**Subclass index****WEFT KNITTING AND MACHINES THEREFOR**

General processes or knitted articles.....	1/00
Hand tools or implements; knitting apparatus or machines for domestic use.....	3/00, 5/00, 7/08
Flat-bed knitting machines:	
with independently-movable needles; with fixed needles.....	7/00, 11/00
Circular knitting machines:	
with independently-movable needles; with fixed spring or bearded needles.....	9/00, 13/00
Details or auxiliary devices incorporated in the machines.....	15/00, 35/00

**WARP KNITTING AND MACHINES THEREFOR**

General processes and knitted articles.....	21/00
Machines	
flat-bed; other types.....	23/00, 25/00
details or auxiliary devices incorporated in the machines.....	27/00, 35/00

**AUXILIARY APPARATUS USED WITH KNITTING MACHINES.....37/00****CROCHETING AND APPARATUS THEREFOR**

Processes; tools or implements.....	31/00, 33/00
Details or auxiliary devices incorporated in the apparatus.....	35/00

**REPAIRING; UNRAVELLING.....17/00, 19/00****PROCESSES AND KNITTING MACHINES NOT OTHERWISE PROVIDED FOR.....39/00**

**Weft knitting; Machines therefor****1/00 Weft knitting processes for the production of fabrics or articles not dependent on the use of particular machines; Fabrics or articles defined by such processes**

- 1/02 • Pile fabrics or articles having similar surface features
- 1/04 • • characterised by thread material
- 1/06 • Non-run fabrics or articles
- 1/08 • • characterised by thread material
- 1/10 • Patterned fabrics or articles
- 1/12 • • characterised by thread material
- 1/14 • Other fabrics or articles characterised primarily by the use of particular thread materials
- 1/16 • • synthetic threads
- 1/18 • • elastic threads
- 1/20 • • • crimped threads
- 1/22 • specially adapted for knitting goods of particular configuration
- 1/24 • • wearing apparel
- 1/26 • • • stockings
- 1/28 • • • gloves

**3/00 Hand tools or implements for weft knitting**

- 3/02 • Needles
- 3/04 • Finger protectors; Thread tensioners
- 3/06 • Ball holders or receptacles

**5/00 Weft knitting apparatus or machines without needles for domestic use (with needles D04B 7/08)****7/00 Flat-bed knitting machines with independently-movable needles (straight-bar machines with fixed needles D04B 11/00)**

- 7/02 • with one set of needles
- 7/04 • with two sets of needles
- 7/06 • • for purl work or Links-Links loop formation
- 7/08 • for domestic use
- 7/10 • with provision for narrowing or widening to produce fully-fashioned goods
- 7/12 • with provision for incorporating pile threads
- 7/14 • with provision for incorporating internal threads in laid-in fabrics
- 7/16 • for producing fabrics consisting of, or incorporating, elastic threads
- 7/18 • • incorporated as weft or inlaid threads
- 7/20 • with provision for changing the fabric construction, e.g. from plain to rib-loop fabric
- 7/22 • with special provision for commencing goods, e.g. with non-run edges
- 7/24 • for producing patterned fabrics
- 7/26 • • with colour patterns
- 7/28 • • with stitch patterns
- 7/30 • specially adapted for knitting goods of particular configuration
- 7/32 • • tubular goods
- 7/34 • • • gloves

**9/00 Circular weft knitting machines with independently-movable needles (with fixed spring or bearded needles D04B 13/00)**

- 9/02 • with one set of needles
- 9/04 • • with spring or bearded needles
- 9/06 • with needle cylinder and dial for ribbed goods
- 9/08 • • for interlock goods

- 9/10 • with two needle cylinders for purl work or for Links-Links loop formation
- 9/12 • with provision for incorporating pile threads
- 9/14 • with provision for incorporating loose fibres, e.g. in high-pile fabrics
- 9/16 • with provision for incorporating internal threads in laid-in fabrics
- 9/18 • with provision for splicing by incorporating reinforcing threads
- 9/20 • with provision for narrowing or widening; with reciprocatory action, e.g. for knitting of flat portions
- 9/22 • with provision for changing the fabric construction, e.g. from plain to rib-loop fabric
- 9/24 • with special provision for commencing goods, e.g. with non-run edges
- 9/26 • for producing patterned fabrics
- 9/28 • • with colour patterns
- 9/30 • • • by striping
- 9/32 • • • • by wrap striping
- 9/34 • • • by plating
- 9/36 • • • Intarsia work obtained by reciprocatory action
- 9/38 • • with stitch patterns
- 9/40 • with provision for transfer of knitted goods from one machine to another
- 9/42 • specially adapted for producing goods of particular configuration
- 9/44 • • elongated tubular articles of small diameter, e.g. coverings for cables (sheathing electric cables H01B 13/22)
- 9/46 • • stockings, or portions thereof
- 9/48 • • • non-run stockings
- 9/50 • • • • micromesh stockings
- 9/52 • • • surgical stockings
- 9/54 • • • welts, e.g. double or turned welts
- 9/56 • • • heel or toe portions
- 9/58 • • gloves

**11/00 Straight-bar knitting machines with fixed needles (flat-bed machines with independently-movable needles D04B 7/00)**

- 11/02 • with one set of needles
- 11/04 • with two sets of needles
- 11/06 • with provision for narrowing or widening to produce fully-fashioned goods
- 11/08 • with provision for incorporating pile threads
- 11/10 • with provision for incorporating internal threads in laid-in fabrics
- 11/12 • for producing fabrics from, or incorporating, elastic threads
- 11/14 • with provision for changing the fabric construction, e.g. from plain to rib-loop fabric
- 11/16 • with special provision for commencing goods, e.g. with non-run edges
- 11/18 • for producing patterned fabrics
- 11/20 • • with colour patterns
- 11/22 • • with stitch patterns
- 11/24 • with provision for transfer of knitted goods from one machine to another
- 11/26 • specially adapted for producing goods of particular configuration
- 11/28 • • stockings, or portions thereof
- 11/30 • • • non-run stockings
- 11/32 • • • welts, e.g. double or turned welts
- 11/34 • • • heel or toe portions
- 11/36 • • other wearing apparel

- 13/00 Circular weft knitting machines with fixed spring or bearded needles, e.g. loop-wheel machines** (with independently-movable needles D04B 9/00)
- 13/02 • with horizontal needles
- 15/00 Details of, or auxiliary devices incorporated in, weft knitting machines, restricted to machines of this kind** (details or auxiliary devices not so restricted D04B 35/00)
- 15/02 • Loop-transfer points
- 15/04 • • for straight-bar knitting machines
- 15/06 • Sinkers
- 15/08 • Needle latch openers; Brushes
- 15/10 • Needle beds
- 15/12 • • Shogging devices therefor
- 15/14 • Needle cylinders
- 15/16 • • Driving devices for reciprocatory action
- 15/18 • Dials
- 15/20 • Needle bars
- 15/22 • • Driving devices therefor
- 15/24 • Sinker heads; Sinker bars
- 15/26 • Slurcocks
- 15/28 • Needle pressers
- 15/30 • Driving devices for thread-carrier rods
- 15/32 • Cam systems or assemblies for operating knitting instruments
- 15/34 • • for dials
- 15/36 • • for flat-bed knitting machines
- 15/38 • Devices for supplying, feeding, or guiding threads to needles
- 15/40 • • Holders or supports for thread packages
- 15/42 • • • Frames for assemblies of two or more reels
- 15/44 • • Tensioning devices for individual threads
- 15/46 • • • for elastic threads
- 15/48 • • • Thread-feeding devices
- 15/50 • • • for elastic threads
- 15/52 • • • for straight-bar knitting machines
- 15/54 • • Thread guides
- 15/56 • • • for flat-bed knitting machines
- 15/58 • • • for circular knitting machines; Thread-changing devices
- 15/60 • • • • with thread-clamping or -severing devices
- 15/61 • • • • • arranged within needle circle
- 15/62 • • • • with thread knotters
- 15/64 • • • for straight-bar knitting machines
- 15/66 • Devices for determining or controlling patterns
- 15/68 • • characterised by the knitting instruments used
- 15/70 • • • in flat-bed knitting machines
- 15/72 • • • in straight-bar knitting machines
- 15/74 • • • Pattern drums
- 15/76 • • • Pattern wheels
- 15/78 • • • Electrical devices
- 15/80 • • characterised by the thread guides used
- 15/82 • • characterised by the needle cams used
- 15/84 • • Jacquard cards or mechanisms (stamping apparatus therefor D03C)
- 15/86 • • • in flat-bed knitting machines
- 15/88 • Take-up or draw-off devices for knitting products
- 15/90 • • for flat-bed knitting machines
- 15/92 • • pneumatic
- 15/94 • Driving-gear not otherwise provided for
- 15/96 • • in flat-bed knitting machines
- 15/98 • • in straight-bar knitting machines
- 15/99 • • electrically controlled

## Repairing or unravelling knitted fabrics

- 17/00 Repairing knitted fabrics by knitting operations**
- 17/02 • by darning
- 17/04 • by picking-up dropped stitches
- 19/00 Unravelling knitted fabrics**

## Warp knitting; Machines therefor

- 21/00 Warp knitting processes for the production of fabrics or articles not dependent on the use of particular machines; Fabrics or articles defined by such processes**
- 21/02 • Pile fabrics or articles having similar surface features
- 21/04 • • characterised by thread material
- 21/06 • Patterned fabrics or articles (open-work fabrics D04B 21/10)
- 21/08 • • characterised by thread material
- 21/10 • Open-work fabrics
- 21/12 • • characterised by thread material
- 21/14 • Fabrics characterised by the incorporation by knitting, in one or more thread, fleece, or fabric layers, of reinforcing, binding, or decorative threads; Fabrics incorporating small auxiliary elements, e.g. for decorative purposes (pile fabrics D04B 21/02; non-woven fabrics in general D04H)
- 21/16 • • incorporating synthetic threads
- 21/18 • • incorporating elastic threads
- 21/20 • specially adapted for knitting articles of particular configuration
- 23/00 Flat warp knitting machines**
- 23/02 • with two sets of needles
- 23/04 • with independently-movable knitting needles
- 23/06 • for producing fabrics consisting of, or incorporating, elastic threads
- 23/08 • with provision for incorporating pile threads
- 23/10 • for knitting through thread, fleece, or fabric layers, or around elongated core material
- 23/12 • with provision for incorporating unlooped wefts extending from selvedge to selvedge
- 23/14 • with provision for incorporating small auxiliary elements, e.g. for decorative purposes
- 23/16 • specially adapted for producing fabrics, or article blanks, of particular form or configuration
- 23/18 • • with provision for narrowing or widening
- 23/20 • • for producing stocking blanks
- 23/22 • with special thread-guiding means
- 23/24 • with cut needle presser arrangements to produce patterns
- 25/00 Warp knitting machines not otherwise provided for**
- 25/02 • Tubular machines
- 25/04 • Milanese machines
- 25/06 • Galloon crocheting machines
- 25/08 • • for producing pile fabrics
- 25/10 • • for producing patterned fabrics
- 25/12 • • • with independently-movable weft-thread guides controlled by Jacquard mechanisms
- 25/14 • • specially adapted for producing articles of particular configuration

## D04B

<b>27/00</b>	<b>Details of, or auxiliary devices incorporated in, warp knitting machines, restricted to machines of this kind</b> (details or auxiliary devices not so restricted D04B 35/00)	35/02	• Knitting tools or instruments not provided for in group D04B 15/00 or D04B 27/00 (needle manufacture B21G 1/00)
27/02	• Warp-thread guides	35/04	• • Latch needles
27/04	• Sinkers	35/06	• • Sliding-tongue needles
27/06	• Needle bars; Sinker bars	35/08	• • Spring or bearded needles
27/08	• • Driving devices therefor	35/10	• Indicating, warning, or safety devices, e.g. stop motions
27/10	• Devices for supplying, feeding, or guiding threads to needles	35/12	• • responsive to thread consumption
27/12	• • Tensioning devices for individual threads	35/14	• • responsive to thread breakage
27/14	• • Thread tensioning rod arrangements	35/16	• • • with detectors associated with a series of threads
27/16	• • Warp beams; Bearings therefor	35/18	• • responsive to breakage, misplacement, or malfunctioning of knitting instruments
27/18	• • • Warp beam braking devices for thread tensioning	35/20	• • responsive to defects, e.g. holes in knitted products
27/20	• • • Warp beam driving devices	35/22	• Devices for preparatory treatment of threads
27/22	• • • • electrically controlled	35/24	• • by moistening or lubricating
27/24	• • Thread guide bar assemblies	35/26	• • by heating
27/26	• • • Shogging devices therefor	35/28	• Devices for lubricating machine parts (in general F16N)
27/28	• • • • with arrangements to reduce the number of members of pattern chains	35/30	• Devices for controlling temperature of machine parts
27/30	• • • • with driving-gear comprising force-multiplication devices	35/32	• Devices for removing lint or fluff
27/32	• • • with independently-movable thread guides controlled by Jacquard mechanisms	35/34	• Devices for cutting knitted fabrics
27/34	• Take-up or draw-off devices for knitted products	35/36	• Devices for printing, coating, or napping knitted fabrics
27/36	• • with temples		
<b>Crocheting; Apparatus therefor</b>			
<b>31/00</b>	<b>Crocheting processes for the production of fabrics or articles</b>	<b>37/00</b>	<b>Auxiliary apparatus or devices for use with knitting machines</b> (Jacquard cards, pattern chains, apparatus for punching same D03C)
31/02	• Crocheted strips or threads	37/02	• with weft knitting machines
		37/04	• • for inserting or adjusting pattern pins or like elements in pattern drums or wheels
<b>33/00</b>	<b>Crocheting tools or apparatus</b> (galloon crocheting machines for warp knitting D04B 25/06)	37/06	• with warp knitting machines
<hr/>			
<b>35/00</b>	<b>Details of, or auxiliary devices incorporated in, knitting machines, not otherwise provided for</b>	<b>39/00</b>	<b>Knitting processes, apparatus or machines, not otherwise provided for</b>
		39/02	• with work carrier in screw form
		39/04	• adapted for combined weft and warp knitting
		39/06	• adapted for combined knitting and weaving
		39/08	• Sewing machines modified for knitting

## D04C BRAIDING OR MANUFACTURE OF LACE, INCLUDING BOBBIN-NET OR CARBONISED LACE; BRAIDING MACHINES; BRAID; LACE (machines for making soles from strips of material A43D 29/00; cane working B27J 1/00)

<b>1/00</b>	<b>Braid or lace, e.g. pillow-lace; Processes for the manufacture thereof</b>	3/14	• • Spool carriers
1/02	• made from particular materials	3/16	• • • for horizontal spools
1/04	• • Carbonised or like lace	3/18	• • • for vertical spools
1/06	• Braid or lace serving particular purposes	3/20	• • Arrangement of bobbin heads and guides or track plates in the machine
1/08	• • Tulle fabrics	3/22	• • Guides or track plates (with means for controlling spool carriers D04C 3/24)
1/10	• • • Pattern tulle fabrics	3/24	• • Devices for controlling spool carriers to obtain patterns, e.g. devices on guides or track plates
1/12	• • Cords, lines, or tows		
<b>3/00</b>	<b>Braiding or lacing machines</b>	3/26	• • • by stopping bobbin heads
3/02	• with spool carriers guided by track plates or by bobbin heads exclusively	3/28	• • • by stopping only the spool carrier
3/04	• • with spool carriers guided and reciprocating in non-endless paths	3/30	• • • by controlling switches of guides or track plates
3/06	• • with spool carriers moving always in the same direction in endless paths	3/32	• Pattern input
3/08	• • with means for superimposing threads or braids	3/34	• Beater or beat-up mechanisms
3/10	• • with means for forming edge loops, ears, or eyes	3/36	• Frames
3/12	• • with means for introducing core threads	3/38	• • Driving-gear; Starting or stopping mechanisms
		3/40	• for making tubular braids by circulating strand supplies around braiding centre at equal distances



- |   |   |
|---|---|
| <p>3/42 • • with means for forming sheds by controlling guides for individual threads</p> <p>3/44 • • with means for forming sheds by subsequently diverting various threads using the same guiding means</p> <p>3/46 • • with thread carriers supported on rolls</p> <p>3/48 • Auxiliary devices</p> <p><b>5/00 Twist or bobbin-net lace-making machines</b> (bobbins B65H 75/02)</p> <p>5/02 • Net looms for tulle fabrics</p> <p>5/04 • Net or lace curtain machines</p> <p>5/06 • Machines for making twist-lace fabrics</p> <p>5/08 • Bobbin carriages</p> | <p>5/10 • Bobbin-carriage guides; Drives for swinging bobbin carriages</p> <p>5/12 • Drives for advancing bobbin carriages</p> <p>5/14 • • Pattern input</p> <p>5/16 • Warp thread feeding or guiding devices</p> <p>5/18 • • Guide bars; Guiding means therefor; Pattern input by control thereof</p> <p>5/20 • • Jacks or pickers; Pattern input by control thereof</p> <p>5/22 • Delivery devices</p> <p>5/24 • Driving-gear; Starting or stopping mechanisms</p> <p>5/26 • Auxiliary devices</p> <p><b>7/00 Tools or apparatus for braiding or lacing by hand</b></p> |
|---|---|

**D04D TRIMMINGS; RIBBONS, TAPES, OR BANDS, NOT OTHERWISE PROVIDED FOR** (fittings or trimmings for hats, e.g. hat bands, A42C 5/00; decorating art B44; yarns or threads D02G; weaving D03; braid or lace D04C; non-woven fabrics D04H)

**Note(s)**

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

- "trimmings" means decorative or ornamental articles made wholly or partly of textile or analogous material, or strips of textile or analogous material intended to be used for decorative or ornamental purposes, not otherwise provided for.
- |  |  |
|--|--|
| <p><b>1/00 Ropes or like decorative or ornamental elongated trimmings made from filamentary material</b> (ropes or cords in general D07B)</p> <p>1/02 • by twisting strands around centrally arranged cores</p> <p>1/04 • by threading or stringing pearls or beads on filamentary material</p> <p><b>3/00 Chenille trimmings</b> (chenille yarns D02G; making chenille trimmings by weaving D03D)</p> <p><b>5/00 Fringes</b> (tasselled D04D 7/08)</p> <p><b>7/00 Decorative or ornamental textile articles</b></p> <p>7/02 • Flat articles</p> <p>7/04 • Three-dimensional articles (ornamental buttons A44B 1/04)</p> | <p>7/06 • • Ball-like tufts, e.g. pompons</p> <p>7/08 • • Tassels or tasselled fringes</p> <p>7/10 • • Decorative bow structures (neckties with ready-made knots or bows A41D 25/02)</p> <p><b>9/00 Ribbons, tapes, welts, bands, beadings, or other decorative or ornamental strips, not otherwise provided for</b> (made by laminating B32B; binders for packaging purposes B65D; adhesive tape C09J 7/02; made by weaving D03; made by braiding D04C)</p> <p>9/02 • made by lengthwise folding of fabric strip</p> <p>9/04 • built-up from several strips or elements</p> <p>9/06 • made by working plastics</p> <p><b>11/00 Ribbon-threading apparatus or devices</b> (needles D05B)</p> |
|--|--|

**D04G MAKING NETS BY KNOTTING OF FILAMENTARY MATERIAL; MAKING KNOTTED CARPETS OR TAPESTRIES; KNOTTING NOT OTHERWISE PROVIDED FOR** (binding knotters for harvesters A01D 59/04; wire netting B21F; tying articles by knotting B65B; knotting in association with winding or unwinding B65H 69/00; knotting in weaving D03J; making nets, carpets, or tapestries by other techniques, see the relevant subclasses)

- |  |  |
|--|--|
| <p><b>1/00 Making nets by knotting of filamentary material</b></p> <p>1/02 • in machines</p> <p>1/04 • • using a single thread</p> <p>1/06 • • using a single thread and a series of threads</p> <p>1/08 • • using two series of threads</p> | <p><b>3/00 Making knotted carpets or tapestries</b></p> <p>3/02 • by hand; Tools therefor</p> <p>3/04 • in machines</p> <p><b>5/00 Knotting not otherwise provided for</b></p> |
|--|--|

**D04H MAKING TEXTILE FABRICS, e.g. FROM FIBRES OR FILAMENTARY MATERIAL** (weaving D03; knitting D04B; braiding D04C; net-making D04G; sewing D05B; tufting D05C; finishing non-woven fabrics D06); **FABRICS MADE BY SUCH PROCESSES OR APPARATUS, e.g. FELTS, NON-WOVEN FABRICS; COTTON-WOOL; WADDING** (non-woven fabrics having an intermediate or external layer of a different kind, e.g. of woven fabric, B32B)

**Note(s)**

1. In this subclass, the following expression is used with the meaning indicated:

- "non-woven fabrics" means fabrics formed wholly or partly of textile material by processes comprising operations other than the weaving, knitting, braiding, lacing, or knotting of yarns, threads, or filaments for which provision is made in other subclasses of section D. This expression includes felts, cotton-wool and wadding.
- 2. In this subclass:
  - some of the non-woven fabrics can also be regarded as "layered products" within the meaning of subclass B32B, and further classification in that subclass should be considered in accordance with the notes thereto;
  - in cases where the making of non-woven fabrics involves the use of particular chemical compounds or compositions, e.g. for treating or bonding fibres, filaments, or yarns, further classification in other appropriate subclasses should also be considered.
- 3. By varying the proportions of fibres or threads, and the chemical compounds or compositions, the final products may be given the appearance of paper, cardboard, leather, or the like.

#### Subclass index

#### TYPES AND CONSTRUCTIONAL FEATURES OF NON-WOVEN FABRICS; APPARATUS AND PROCESSES FOR PRODUCING THEM

From short fibres; from long fibres; from mixture of short and long fibres.....	1/00, 3/00, 5/00
Pile fabrics.....	11/00
Other non-woven fabrics.....	13/00
FELTING APPARATUS; NEEDLING MACHINES.....	17/00, 18/00

#### Kinds or types of non-woven fabrics; Apparatus or processes for making such products

##### 1/00 Non-woven fabrics formed wholly or mainly of staple fibres or like relatively short fibres

- 1/02 • Cotton wool; Wadding
- 1/04 • from fleeces or layers composed of fibres having existing or potential cohesive properties, e.g. natural fibres, prestretched or fibrillated artificial fibres (felting apparatus D04H 17/00) [1, 2012.01]
- 1/06 • • by treatment to produce shrinking, swelling, crimping or curling of fibres [1, 2012.01]
- 1/067 • • • Regenerated cellulose series [2012.01]
- 1/073 • • • Acrylonitrile series [2012.01]
- 1/08 • • and hardened by felting; Felts or felted products [1, 2012.01]
- 1/09 • • • Silk [2012.01]
- 1/10 • • • Felts made from mixtures of fibres
- 1/12 • • • • and incorporating artificial organic fibres
- 1/14 • • • • and incorporating inorganic fibres
- 1/16 • • • Laminated felts in which the separate layers are united by a felting process
- 1/20 • • • Felts incorporating inserts or attachments, e.g. for ornamental purposes
- 1/22 • • • Three-dimensional articles formed by felting processes
- 1/24 • • • Covers felted on to three-dimensional articles
- 1/26 • • Wood pulp [2012.01]
- 1/28 • • Regenerated cellulose series [2012.01]
- 1/30 • • Collagen [2012.01]
- 1/32 • • Synthetic pulp [2012.01]
- 1/40 • from fleeces or layers composed of fibres without existing or potential cohesive properties [1, 2012.01]
- 1/407 • • containing absorbing substances, e.g. activated carbon [2012.01]
- 1/413 • • containing granules other than absorbent substances [2012.01]
- 1/42 • • characterised by the use of certain kinds of fibres insofar as this use has no preponderant influence on the consolidation of the fleece [1, 2012.01]
- 1/4209 • • • Inorganic fibres [2012.01]
- 1/4218 • • • • Glass fibres [2012.01]
- 1/4226 • • • • characterised by the apparatus for manufacturing the glass fleece [2012.01]
- 1/4234 • • • • Metal fibres [2012.01]

- 1/4242 • • • • Carbon fibres [2012.01]
- 1/425 • • • Cellulose series [2012.01]
- 1/4258 • • • • Regenerated cellulose series [2012.01]
- 1/4266 • • • Natural fibres not provided for in group D04H 1/425 [2012.01]
- 1/4274 • • • Rags; Fabric scraps [2012.01]
- 1/4282 • • • Addition polymers [2012.01]
- 1/4291 • • • • Olefin series [2012.01]
- 1/43 • • • • Acrylonitrile series [2012.01]
- 1/4309 • • • • Polyvinyl alcohol [2012.01]
- 1/4318 • • • • Fluorine series [2012.01]
- 1/4326 • • • Condensation or reaction polymers [2012.01]
- 1/4334 • • • • Polyamides [2012.01]
- 1/4342 • • • • Aromatic polyamides [2012.01]
- 1/435 • • • • Polyesters [2012.01]
- 1/4358 • • • • Polyurethanes [2012.01]
- 1/4366 • • • • Phenol series [2012.01]
- 1/4374 • • • using different kinds of webs, e.g. by layering webs [2012.01]
- 1/4382 • • • Stretched reticular film fibres; Composite fibres; Mixed fibres; Ultrafine fibres; Fibres for artificial leather [2012.01]
- 1/4391 • • • characterised by the shape of the fibres [2012.01]
- 1/44 • • the fleeces or layers being consolidated by mechanical means, e.g. by rolling
- 1/45 • • • by forming intermeshing loops or stitches from some of the fibres [4]
- 1/46 • • • by needling or like operations to cause entanglement of fibres (D04H 1/45 takes precedence; needling machines D04H 18/00) [4, 2012.01]
- 1/48 • • • • in combination with at least one other method of consolidation [1, 2012.01]
- 1/482 • • • • • in combination with shrinkage [2012.01]
- 1/485 • • • • • in combination with weld-bonding [2012.01]
- 1/488 • • • • • in combination with bonding agents [2012.01]
- 1/49 • • • • • entanglement by fluid jet in combination with another consolidation means [2012.01]
- 1/492 • • • • • by fluid jet (D04H 1/49 takes precedence) [2012.01]

- 1/495 • • • • • for formation of patterns, e.g. drilling or rearrangement [2012.01]
- 1/498 • • • • • entanglement of layered webs [2012.01]
- 1/50 • • • • • by treatment to produce shrinking, swelling, crimping or curling of fibres (in combination with needling D04H 1/482) [1, 2012.01]
- 1/52 • • • • • by applying or inserting filamentary binding elements
- 1/54 • • • • • by welding together the fibres, e.g. by partially melting or dissolving (in combination with needling D04H 1/485) [1, 2012.01]
- 1/541 • • • • • Composite fibres e.g. sheath-core, sea-island or side-by-side; Mixed fibres [2012.01]
- 1/542 • • • • • Adhesive fibres [2012.01]
- 1/544 • • • • • Olefin series [2012.01]
- 1/545 • • • • • Polyvinyl alcohol [2012.01]
- 1/546 • • • • • Polyvinyl acetate [2012.01]
- 1/548 • • • • • Acrylonitrile series [2012.01]
- 1/549 • • • • • Polyamides [2012.01]
- 1/55 • • • • • Polyesters [2012.01]
- 1/551 • • • • • Resins thereof not provided for in groups D04H 1/544-D04H 1/55 [2012.01]
- 1/552 • • • • • by applying solvents or auxiliary agents [2012.01]
- 1/554 • • • • • by radio-frequency heating [2012.01]
- 1/555 • • • • • by ultrasonic heating [2012.01]
- 1/556 • • • • • by infrared heating [2012.01]
- 1/558 • • • • • in combination with mechanical or physical treatments other than embossing [2012.01]
- 1/559 • • • • • the fibres being within layered webs [2012.01]
- 1/56 • • • • • in association with fibre formation, e.g. immediately following extrusion of staple fibres
- 1/58 • • • • • by applying, incorporating or activating chemical or thermoplastic bonding agents, e.g. adhesives (in combination with needling D04H 1/488) [1, 2012.01]
- 1/587 • • • • • characterised by the bonding agents used [2012.01]
- 1/593 • • • • • to layered webs [2012.01]
- 1/60 • • • • • the bonding agent being applied in dry state, e.g. thermo-activatable agents in solid or molten state, and heat being applied subsequently
- 1/62 • • • • • at spaced points or locations
- 1/64 • • • • • the bonding agent being applied in wet state, e.g. chemical agents in dispersions or solutions [1, 2012.01]
- 1/645 • • • • • Impregnation followed by a solidification process [2012.01]
- 1/65 • • • • • using mixed or composite fibres [2012.01]
- 1/655 • • • • • characterised by the apparatus for applying bonding agents [2012.01]
- 1/66 • • • • • at spaced points or locations (D04H 1/68 takes precedence) [1, 2012.01]
- 1/68 • • • • • the bonding agent being applied in the form of foam [1, 2012.01]
- 1/70 • • • • • characterised by the method of forming fleeces or layers, e.g. reorientation of fibres [4, 2012.01]
- 1/72 • • • • • the fibres being randomly arranged [1, 2012.01]
- 1/724 • • • • • forming webs during fibre formation, e.g. flash-spinning [2012.01]
- 1/728 • • • • • by electro-spinning [2012.01]
- 1/732 • • • • • by fluid current, e.g. air-lay [2012.01]
- 1/736 • • • • • characterised by the apparatus for arranging fibres (D04H 1/728, D04H 1/732 take precedence) [2012.01]
- 1/74 • • • • • the fibres being orientated, e.g. in parallel
- 1/76 • • • • • otherwise than in a plane, e.g. in a tubular way [2012.01]
- 3/00 Non woven fabrics formed wholly or mainly of yarns or like filamentary material of substantial length [1, 2012.01]**
- 3/002 • • • • • Inorganic yarns or filaments [2012.01]
- 3/004 • • • • • Glass yarns or filaments [2012.01]
- 3/005 • • • • • Synthetic yarns or filaments (D04H 3/013 takes precedence) [2012.01]
- 3/007 • • • • • Addition polymers [2012.01]
- 3/009 • • • • • Condensation or reaction polymers [2012.01]
- 3/011 • • • • • Polyesters [2012.01]
- 3/013 • • • • • Regenerated cellulose series [2012.01]
- 3/015 • • • • • Natural yarns or filaments [2012.01]
- 3/016 • • • • • characterised by the fineness [2012.01]
- 3/018 • • • • • characterised by the shape [2012.01]
- 3/02 • • • • • characterised by the method of forming fleeces or layers, e.g. reorientation of yarns or filaments [4]
- 3/03 • • • • • at random [1, 2012.01]
- 3/033 • • • • • reorientation immediately after yarn or filament formation [2012.01]
- 3/037 • • • • • reorientation by liquid [2012.01]
- 3/04 • • • • • in rectilinear paths, e.g. crossing at right angles [1, 2012.01]
- 3/045 • • • • • for net manufacturing [2012.01]
- 3/05 • • • • • in another pattern, e.g. zig-zag, sinusoidal
- 3/07 • • • • • otherwise than in a plane, e.g. in a tubular way [1, 2012.01]
- 3/073 • • • • • Hollow cylinder shaped [2012.01]
- 3/077 • • • • • Stick, rod or solid cylinder shaped [2012.01]
- 3/08 • • • • • characterised by the method of strengthening or consolidating
- 3/10 • • • • • with bonds between yarns or filaments made mechanically [1, 2012.01]
- 3/105 • • • • • by needling (needling machines D04H 18/00) [2012.01]
- 3/11 • • • • • by fluid jet [2012.01]
- 3/115 • • • • • by applying or inserting filamentary binding elements [2012.01]
- 3/12 • • • • • with filaments or yarns secured together by chemical or thermo-activatable bonding agents, e.g. adhesives, applied or incorporated in liquid or solid form
- 3/14 • • • • • with bonds between thermoplastic yarns or filaments produced by welding [1, 2012.01]
- 3/147 • • • • • Composite yarns or filaments [2012.01]
- 3/153 • • • • • Mixed yarns or filaments [2012.01]
- 3/16 • • • • • with bonds between thermoplastic filaments produced in association with filament formation, e.g. immediately following extrusion [4]
- 5/00 Non woven fabrics formed of mixtures of relatively short fibres and yarns or like filamentary material of substantial length [1, 2012.01]**
- 5/02 • • • • • strengthened or consolidated by mechanical methods, e.g. needling (needling machines D04H 18/00) [1, 2012.01]
- 5/03 • • • • • by fluid jet [2012.01]

## D04H

- |   |   |
|---|---|
| <p>5/04 • strengthened or consolidated by applying or incorporating chemical or thermo-activatable bonding agents in solid or liquid form</p> <p>5/06 • strengthened or consolidated by welding-together thermoplastic fibres, filaments, or yarns</p> <p>5/08 • <i>characterised by the method of forming fleeces or layers, e.g. reorientation of fibres or yarns [4, 2012.01]</i></p> <p>5/10 • <i>otherwise than in a plane, e.g. in a tubular way [2012.01]</i></p> <p>5/12 • <i>Glass fibres [2012.01]</i></p> <p><b>11/00 Non-woven pile fabrics</b> (layered products forming non-woven pile fabrics B32B)</p> <p>11/04 • formed by zig-zag folding of a fleece or layer of staple fibres, filaments, or yarns, strengthened or consolidated at the folds</p> | <p>11/08 • formed by creation of a pile on at least one surface of a non-woven fabric without addition of pile-forming material, e.g. by needling, by differential shrinking (needling machines D04H 18/00)</p> <p><b>13/00 Other non-woven fabrics</b></p> <p>13/02 • Production of non-woven fabrics by partial defibrillating of oriented thermoplastics films [4]</p> <hr/> <p><b>17/00 Felting apparatus</b></p> <p>17/10 • for felting between rollers, e.g. heated rollers</p> <p>17/12 • • Multi-roller apparatus</p> <p><b>18/00 Needling machines [1, 2012.01]</b></p> <p>18/02 • <i>with needles [2012.01]</i></p> <p>18/04 • <i>with water jets [2012.01]</i></p> |
|---|---|

## D05 SEWING; EMBROIDERING; TUFTING

**D05B SEWING** (appliances for the tailoring trade A41H; sewing tables A47B 29/00; sewing in bookbinding B42B 2/00; sewing machines modified for knitting D04B 39/08)

### Note(s)

In this subclass, the groups designating sewing apparatus or machines cover also sewing processes dependent on their use, and the thread seams produced thereby.

### Subclass index

#### TYPES OF MACHINES

- General types for making thread seams without lateral movement.....1/00
- Special-purpose or automatic machines
  - with lateral movement of needle or work.....3/00
  - for sewing quilts or mattresses, sacks, leather goods.....11/00, 13/00, 15/00
  - for temporarily connecting articles.....5/00
  - linking machines; hem-stitch machines; for making thread and welded seams.....7/00, 9/00, 17/00
  - programme-controlled.....19/00, 21/00
- Other types of sewing machines.....23/00
- Combination of machines; machines incorporating devices for other purposes than sewing.....25/00, 81/00

#### THE WORK; MACHINE ELEMENTS RELATING THERETO

- For feeding, pressing, holding, supplying, or removing the work.....27/00, 29/00, 31/00, 33/00
- Devices for slitting, grooving, or cutting the work.....37/00
- Work-piece carriers, work- collecting devices.....39/00, 41/00
- Other elements relating to the work.....35/00

#### SEWING-THREAD; MACHINE ELEMENTS RELATING THERETO

- Needle thread
  - spool-pin assemblies.....43/00
  - measuring length of thread used; regulating tension; severing thread.....45/00, 47/00, 65/00
  - take-up, needle-thread guard, break detectors, thread laying; needle holders.....49/00, 51/00, 53/00, 55/00
- Lower thread
  - loop takers; loop manipulators; tension; severing thread.....57/00, 61/00, 63/00, 65/00
  - bobbin winding or changing.....59/00
  - Lubricating, waxing, or colouring thread.....67/00

#### OTHER ELEMENTS OF SEWING MACHINES; ACCESSORIES

- Driving or control; lubricating or cooling; lighting equipment.....69/00, 71/00, 79/00
- Accessories
  - guards for operator.....83/00
  - casings; frames or tables; covers or portable enclosures.....73/00, 75/00, 77/00

#### HAND SEWING

- Tools and accessories; stitches or stitch seams.....91/00, 93/00
- Preparatory or finishing operations.....95/00
- Hand-sewing processes and apparatus for other special work, or not otherwise provided for.....97/00

NEEDLES; NEEDLE-THREADING DEVICES; SEAM-RIPPING.....85/00, 87/00, 89/00

<b>1/00</b>	<b>General types of sewing apparatus or machines without mechanism for lateral movement of the needle or the work or both</b>	<b>13/02</b>	• for closing filled bags or sacks (combined with bag- or sack-filling apparatus B65B)
1/02	• for making single-thread seams	<b>15/00</b>	<b>Machines for sewing leather goods</b> (making pseudo-lock-stitch seams D05B 1/16)
1/04	• • Running-stitch seams	15/02	• Shoe sewing machines
1/06	• • Single chain-stitch seams	15/04	• • for lock-stitch work (D05B 15/08 takes precedence)
1/08	• for making multi-thread seams	15/06	• • • Welt sewing machines
1/10	• • Double chain-stitch seams	15/08	• • • for lock-stitch work
1/12	• • Lock-stitch seams	15/10	• • Lining sewing machines
1/14	• • Combined or alternative chain-stitch and lock-stitch seams	<b>17/00</b>	<b>Sewing machines for concurrently making thread and welded seams</b> (for making non-welded fluid-tight seams D05B 1/26)
1/16	• • Pseudo-lock-stitch seams in which the thread loops do not positively interlock (shoe or welt sewing machines D05B 15/02)	<b>19/00</b>	<b>Programme-controlled sewing machines</b> (with devices for automatically controlling movement of work-carrier D05B 21/00; devices for stopping drive when sewing tools have reached a predetermined position D05B 69/22)
1/18	• • Seams for protecting or securing edges (zig-zag sewing machines D05B 3/02, D05B 3/04)	19/02	• Sewing machines having electronic memory or micro-processor control unit [6]
1/20	• • • Overedge seams	19/04	• • characterised by memory aspects [6]
1/22	• • • combined with joining or securing seams	19/06	• • • Physical exchange of memory [6]
1/24	• for making blind-stitch seams	19/08	• • • Arrangements for inputting stitch or pattern data to memory [6]
1/26	• for making fluid-tight seams (sewing machines for concurrently making thread and welded seams D05B 17/00)	19/10	• • • Arrangements for selecting combinations of stitch or pattern data from memory [6]
<b><u>Special-purpose or automatic sewing apparatus or machines</u></b>		19/12	• • characterised by control of operation of machine [6]
<b>3/00</b>	<b>Sewing apparatus or machines with mechanism for lateral movement of the needle or the work or both for making ornamental pattern seams, for sewing buttonholes, for reinforcing openings, or for fastening articles, e.g. buttons, by sewing</b> (programme-controlled sewing machines D05B 19/00; with devices for automatically controlling movement of work-carrier D05B 21/00) [6]	19/14	• • • Control of needle movement, e.g. varying amplitude or period of needle movement [6]
3/02	• with mechanisms for needle-bar movement	19/16	• • • Control of workpiece movement, e.g. modulation of travel of feed dog [6]
3/04	• with mechanisms for work feed	<b>21/00</b>	<b>Sewing machines with devices for automatically controlling movement of work-carrier relative to stitch-forming mechanism in order to obtain particular configuration of seam, e.g. programme-controlled for sewing collars, for attaching pockets</b>
3/06	• for sewing buttonholes (buttonholes A41F 1/02)	<b>23/00</b>	<b>Sewing apparatus or machines not otherwise provided for</b> (for making zip closures A44B 19/00)
3/08	• • for buttonholes with eyelet ends	<hr/>	
3/10	• for making piped openings	<b>25/00</b>	<b>Sewing units consisting of combinations of several sewing machines</b>
3/12	• for fastening articles by sewing	<b><u>Sewing-machine elements for feeding, positioning, handling, or treating the work</u></b>	
3/14	• • perforated or press buttons	<b>27/00</b>	<b>Work-feeding means for sewing machines</b>
3/16	• • shank buttons	27/02	• with feed dogs having horizontal and vertical movements
3/18	• • hooks or eyelets	27/04	• • arranged above the workpieces
3/20	• • labels (labelling fabrics otherwise than by sewing B65C 5/00; labels or securing means therefor, in general G09F 3/00)	27/06	• • arranged above and below the workpieces
3/22	• • Article-, e.g. button-, feed mechanisms therefor	27/08	• • with differential feed motions
3/24	• formed by general-purpose sewing machines modified by attachments, e.g. by detachable devices	27/10	• with rotary circular feed members
<b>5/00</b>	<b>Sewing machines for temporarily connecting articles, e.g. pairs of socks</b>	27/12	• • rotating continuously
<b>7/00</b>	<b>Linking machines, e.g. for joining knitted fabrics</b>	27/14	• • rotating discontinuously
<b>9/00</b>	<b>Hem-stitch sewing machines</b>	27/16	• • with differential feed motions
<b>11/00</b>	<b>Machines for sewing quilts or mattresses</b> (control of workpiece-holding frames, or of sewing machines, in order to obtain particular seam configuration D05B 21/00)		
<b>13/00</b>	<b>Machines for sewing sacks</b>		

## D05B

- 27/18 • • Feed cups
- 27/20 • constituted by sewing needles
- 27/22 • with means for setting length of stitch
- 27/24 • Feed-dog lifting and lowering devices
- 27/26 • in machines for sewing leather
- 29/00 Pressers or presser feet for sewing machines** (for feeding D05B 27/04)
  - 29/02 • Presser-control devices
  - 29/04 • Pressers in machines for sewing leather
  - 29/06 • Presser feet
  - 29/08 • • comprising relatively-movable parts
  - 29/10 • • with rollers
  - 29/12 • Presser-foot attachment
- 31/00 Workpiece holders or hold-downs in machines for sewing leather**
  - 31/02 • Welt guides
- 33/00 Devices incorporated in sewing machines for supplying or removing the work**
  - 33/02 • and connected, for synchronous operation, with the work-feeding devices of the sewing machine
- 35/00 Work-feeding or work-handling elements for sewing machines, not otherwise provided for**
  - 35/02 • for facilitating seaming; Hem-turning elements; Hemmers
  - 35/04 • • with movable tools
  - 35/06 • for attaching bands, ribbons, strips, or tapes or for binding
  - 35/08 • for ruching, gathering, casing, or filling lace, ribbons, or bindings; Pleating devices; Cuttlers; Gathering feet; Crimpers; Curlers; Rufflers
  - 35/10 • Edge guides
  - 35/12 • Indicators for positioning work, e.g. with graduated scales
- 37/00 Devices incorporated in sewing machines for slitting, grooving, or cutting** (severing sewing-threads D05B 65/00)
  - 37/02 • Slitting or grooving devices
  - 37/04 • Cutting devices
  - 37/06 • • with oscillating tools
  - 37/08 • • with rotatable tools
  - 37/10 • • with heated tools
- 39/00 Workpiece carriers for sewing machines** (for automatically controlling movement of work-carrier to obtain particular configuration of seam D05B 21/00; in general A41H 15/00)
- 41/00 Work-collecting devices for sewing machines**

### Sewing-machine elements for supplying, handling, or treating thread material

- 43/00 Spool-pin assemblies incorporated in sewing machines**
- 45/00 Applications of measuring devices for determining the length of threads used in sewing machines** (measuring devices in embroidery machines D05C, in general G01B)
- 47/00 Needle-thread tensioning devices for sewing machines; Applications of tensometers in sewing machines**

- 47/02 • Manually-controlled tensioning devices
- 47/04 • Automatically-controlled tensioning devices
- 47/06 • Applications of tensometers (application of tension indicators in handling thin or filamentary material B65H 59/40; for embroidery machines D05C 11/08; tensometers in general G01L)
- 49/00 Take-up devices, e.g. levers, for the needle thread of sewing machines**
  - 49/02 • operated by cams or linkages
  - 49/04 • rotary
  - 49/06 • for machines for sewing leather
- 51/00 Applications of needle-thread guards in sewing machines; Thread-break detectors for sewing machines** (for embroidery machines D05C 11/00)
- 53/00 Thread- or cord-laying mechanisms for sewing machines; Thread fingers for sewing machines**
- 55/00 Needle holders for sewing machines; Needle bars for sewing machines** (needles D05B 85/00)
  - 55/02 • Devices for fastening needles to needle bars
  - 55/04 • Devices for inserting needles
  - 55/06 • Needle guides; Needle protectors (finger-protecting devices D05B 83/00)
  - 55/08 • Driving arrangements for curved needles
  - 55/10 • Needle bars for multiple-needle sewing machines
  - 55/12 • • with provision for varying the distance between the needles
  - 55/14 • Needle-bar drives
  - 55/16 • • with provision for disengaging individual needle bars
- 57/00 Loop takers, e.g. loopers, for sewing machines**
  - 57/02 • for chain-stitch sewing machines, e.g. oscillating
  - 57/04 • • rotary
  - 57/06 • for overedge-stitch sewing machines
  - 57/08 • for lock-stitch sewing machines
  - 57/10 • • Shuttles
  - 57/12 • • • oscillating
  - 57/14 • • • with rotary hooks
  - 57/16 • • • with bobbin casings guided in tracks
  - 57/18 • • • with bobbin casings held by removable caps
  - 57/20 • • • with bobbin casings held by magnetic forces
  - 57/22 • • with spool-size bobbin for lower thread
  - 57/24 • • • with lower-thread packages mounted for controlled sliding movements
  - 57/26 • Bobbin holders or casings; Bobbin holder or case guards; Bobbin discharge devices
  - 57/28 • Applications of bobbins for storing the lower thread
  - 57/30 • Driving-gear for loop takers
  - 57/32 • • in chain-stitch sewing machines
  - 57/34 • • in overedge-stitch sewing machines
  - 57/36 • • in lock-stitch sewing machines
  - 57/38 • • • Shuttle drives

- 59/00 Applications of bobbin-winding or -changing devices in sewing machines; Indicating or control devices associated therewith**
  - 59/02 • Devices for determining or indicating the length of thread still on the bobbin
  - 59/04 • Devices for changing the bobbin
- 61/00 Loop holders; Loop spreaders for sewing machines; Stitch-forming fingers for sewing machines**

**63/00 Devices associated with the loop-taker thread of sewing machines, e.g. for tensioning**

- 63/02 • Loop-taker thread take-up levers
- 63/04 • Loop-taker thread guards

**65/00 Devices for severing the needle or lower thread in sewing machines**

- 65/02 • controlled by the sewing mechanisms
- 65/04 • controlled by the workpieces
- 65/06 • and for disposing of the severed thread end

**67/00 Devices incorporated in sewing machines for lubricating, waxing, or colouring the threads****Driving-gear, control, lubricating, or cooling devices for sewing machines****69/00 Driving-gear or control devices for sewing machines**

- 69/02 • Mechanical drives
- 69/04 • • Manual drives
- 69/06 • • Pedal drives
- 69/08 • Fluid drives, e.g. pneumatic
- 69/10 • Electrical or electromagnetic drives
- 69/12 • • using rotary electric motors
- 69/14 • Devices for changing speed or for reversing direction of rotation
- 69/16 • • mechanical
- 69/18 • • electric
- 69/20 • Control devices responsive to the number of stitches made
- 69/22 • Devices for stopping drive when sewing tools have reached a predetermined position (electric motor control systems in general H02P)
- 69/24 • • Applications of devices for indicating or ascertaining sewing-tool position
- 69/26 • • with automatic means to reduce speed of drive, e.g. in one or more steps
- 69/28 • Applications of servo devices for tool-positioning purposes
- 69/30 • Details (work-feeding drives D05B 27/00; needle-bar drives D05B 55/14; loop-taker drives D05B 57/30)
- 69/32 • • Vibration-minimising devices
- 69/34 • • Hand-wheel clutches
- 69/36 • Devices for stopping drive when abnormal conditions occur, e.g. thread breakage

**71/00 Lubricating or cooling devices for sewing machines**

- 71/02 • Loop-taker lubricating devices
- 71/04 • Needle cooling devices

**Casings, supports, covers, or accessories for sewing machines; Sewing machines combined with auxiliary devices serving purposes other than sewing****73/00 Casings for sewing machines**

- 73/02 • Upper casings
- 73/04 • Lower casings
- 73/06 • • for free-arm sewing machines
- 73/08 • • for column-type sewing machines
- 73/10 • • Devices for converting free-arm sewing machines into flat-bed machines
- 73/12 • • Slides; Needle plates

**75/00 Frames, stands, tables, or other furniture adapted to carry sewing machines (furniture aspects A47B, A47C)**

- 75/02 • for drop-head sewing machines
- 75/04 • with noise-suppressing devices
- 75/06 • Arrangements, e.g. hinges, for mounting sewing-machine casings to frames, stands, or tables

**77/00 Covers, or portable enclosures, for sewing machines****79/00 Incorporations or adaptations of lighting equipment for sewing machines****81/00 Sewing machines incorporating devices serving purposes other than sewing, e.g. for blowing air, for grinding****83/00 Guards or like devices for preventing injury to operator of sewing machines (machine safety devices in general F16P)****Needles; Needle threaders; Seam-ripping devices****85/00 Needles (surgical needles A61B 17/06; manufacture of needles B21G 1/00)**

- 85/02 • with slotted eyes
- 85/04 • Spring or bearded needles
- 85/06 • Curved needles
- 85/08 • Flexible needles
- 85/10 • Hollow needles
- 85/12 • Coated needles
- 85/14 • Latch needles

**87/00 Needle-threading devices**

- 87/02 • with mechanical means for moving thread through needle eye
- 87/04 • with optical devices to assist threading

**89/00 Seam-ripping devices****Hand sewing****91/00 Tools, implements, or accessories for hand sewing (needles, needle threaders D05B 85/00, D05B 87/00; appliances for the tailoring trade A41H)**

- 91/02 • Bodkins
- 91/04 • Thimbles; Finger shields; Palm protectors
- 91/06 • Work holders or supports
- 91/08 • • Mushrooms; Darning eggs
- 91/10 • • Hoops or frames (for embroidery D05C)
- 91/12 • Tool receptacles
- 91/14 • Thread-spool pins
- 91/16 • Thread-spool receptacles

**93/00 Stitches; Stitch seams for hand sewing**

- 93/02 • strengthened by auxiliary elements, e.g. rivets, staples

**95/00 Preparatory or finishing operations in connection with hand sewing**

- 95/04 • Softening material prior to sewing
- 95/06 • Flattening, pounding, or pressing stitched seams (in shoemaking A43D 8/44)

**97/00 Hand sewing processes or apparatus for special work or not otherwise provided for**

- 97/02 • Hand-guided apparatus
- 97/04 • for darning
- 97/06 • • using apparatus with latch or bearded needles
- 97/08 • using special threads or wires

## D05B

97/10 • for attaching buttons or fasteners

97/12 • for attaching patches or like small pieces of fabric

**D05C EMBROIDERING** (programme-controlled sewing machines with embroidering capability D05B 19/00, D05B 21/00); **TUFTING** (making non-woven fabrics D04H; sewing D05B)

### Subclass index

HAND EMBROIDERY.....	1/00
EMBROIDERING MACHINES	
General types of machines.....	3/00
Machines with automatic control or for special kinds of embroidery.....	5/00, 7/00
Details.....	9/00, 11/00, 13/00
Auxiliary devices.....	13/00
MAKING PILE FABRICS BY INSERTING LOOPS.....	15/00
EMBROIDERED OR TUFTED PRODUCTS.....	17/00

#### **1/00 Apparatus, devices, or tools for hand embroidering**

- 1/02 • Work frames
- 1/04 • • circular
- 1/06 • Needles specially adapted for hand embroidering (sewing needles D05B 85/00); Holders for needles or threads
- 1/08 • Patterns for hand embroidering; Manufacture thereof

### Embroidering machines

#### **3/00 General types of embroidering machines**

- 3/02 • with vertical needles
- 3/04 • with horizontal needles

#### **5/00 Embroidering machines with arrangements for automatic control of a series of individual steps**

- 5/02 • by electrical or magnetic control devices
- 5/04 • by input of recorded information, e.g. on perforated tape
- 5/06 • • with means for recording the information

#### **7/00 Special-purpose or automatic embroidering machines**

- 7/02 • with accessories for peculiar kinds of embroidery
- 7/04 • for boring or jogging
- 7/06 • for embroidering festoons
- 7/08 • for attaching cords, tapes, bands, or the like
- 7/10 • for separating and burning-off parts of the base fabric (making patterns or designs on fabrics by singeing or etching D06C 23/02)
- 7/12 • for making cotton buttons

#### **9/00 Appliances for holding or feeding the base fabric in embroidering machines**

- 9/02 • in machines with vertical needles
- 9/04 • • Work holders, e.g. frames
- 9/06 • • • Feeding arrangements therefor, e.g. influenced by patterns, operated by pantographs
- 9/08 • in machines with horizontal needles
- 9/10 • • Work holders or carriers
- 9/12 • • • Holding or stretching arrangements for the base fabric in embroidery work holders
- 9/14 • • • Suspension or balancing arrangements therefor
- 9/16 • • • Feeding arrangements therefor
- 9/18 • Movement of the base fabric in one of the two directions controlled by embroidering needles

9/20 • Movement of the base fabric controlled by the presser feet; Driving arrangements therefor

9/22 • Adjusting or registering devices for the base fabric, e.g. for alignment with respect to the needles

#### **11/00 Devices for guiding, feeding, handling, or treating the threads in embroidering machines; Machine needles; Operating or control mechanisms therefor**

- 11/02 • Machine needles
- 11/04 • • Arrangements for fastening or inserting in bars or carriers
- 11/06 • • Needle-driving or control mechanisms
- 11/08 • Thread-tensioning arrangements
- 11/10 • • Guides, e.g. resilient
- 11/12 • • Rollers
- 11/14 • • Stop motions responsive to thread tension or breakage
- 11/16 • Arrangements for repeating thread patterns or for changing threads
- 11/18 • Shuttles
- 11/20 • Arrangements for cutting the needle or lower threads
- 11/22 • Arrangements for cutting-out broken threads
- 11/24 • incorporating devices for dyeing or impregnating the threads

#### **13/00 Auxiliary devices incorporated in embroidering machines, not otherwise provided for; Ancillary apparatus for use with embroidering machines**

- 13/02 • Counting, measuring, indicating, warning, or safety devices
- 13/04 • Lubricating devices
- 13/06 • Apparatus for filling or threading shuttles

#### **15/00 Making pile fabrics or articles having similar surface features by inserting loops into a base material** (layered products B32B; non-woven pile fabrics D04H 11/00)

- 15/02 • Rooting of hair in doll heads or wigs (wigs A41G 3/00; hair or wigs for doll heads A63H 3/44)
- 15/04 • Tufting
- 15/06 • • Hand tufting needles
- 15/08 • • Tufting machines
- 15/10 • • • operating with a plurality of needles, e.g. in one row
- 15/12 • • • in more than one row



15/14	• • •	Arrangements or devices for holding or feeding the base material (D05C 15/26 takes precedence)	15/30	• • • •	by moving the tufting tools laterally
15/16	• • •	Arrangements or devices for manipulating threads (D05C 15/26 takes precedence)	15/32	• • • •	by altering the loop length
15/18	• • • •	Thread feeding or tensioning arrangements	15/34	• • • •	by inserting loops of different nature or colour
15/20	• • • •	Arrangements or devices, e.g. needles, for inserting loops; Driving mechanisms therefor	15/36	• • • •	by selective cutting of loops
15/22	• • • •	Loop-catching arrangements, e.g. loopers; Driving mechanisms therefor	15/38	•	by passing thread material in zig-zag manner through spaced layers of base material and subsequently cutting along a central plane
15/24	• • • •	Loop cutters; Driving mechanisms therefor	17/00	<b>Embroidered or tufted products; Base fabrics specially adapted for embroidered work; Inserts for producing surface irregularities in embroidered products</b> (layered products B32B; non-woven pile fabrics D04H 11/00)	
15/26	• • •	with provision for producing patterns	17/02	•	Tufted products
15/28	• • • •	by moving the base material laterally			

## D06 TREATMENT OF TEXTILES OR THE LIKE; LAUNDERING; FLEXIBLE MATERIALS NOT OTHERWISE PROVIDED FOR

**D06B TREATING TEXTILE MATERIALS BY LIQUIDS, GASES, OR VAPOURS** (applying liquids to surfaces in general B05; conveying in general, handling webs or filaments in general B65; treating leather C14C; mechanical removal of impurities from animal fibres D01B; laundering D06F; chemical matters, see D06L-D06Q) [2]

### Note(s)

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

- "fabric" includes yarns in warp or sheet form;
- "textile material" includes fabrics, yarns or other fibrous materials;
- "indefinite length" means an extent of material having the characteristic that the longitudinal dimension is effectively infinite in so far as the procedure for advancing or moving the material is concerned.

### Subclass index

#### FLUID TREATMENT

Applying to the surface of, or forcing through, material.....	1/00, 5/00
Passing material through the treating fluid.....	3/00
Solvent-treating.....	9/00
Local treating.....	11/00
Mercerising.....	7/00
Other treatments.....	13/00, 17/00, 19/00, 21/00

REMOVAL OF TREATING FLUID.....15/00

GENERAL APPARATUS.....23/00

**1/00 Applying liquids, gases, or vapours on to textile materials to effect treatment, e.g. washing, dyeing, bleaching, sizing, impregnating** (mercerising D06B 7/00; solvent-treatment D06B 9/00; treatment of selected parts of textile materials D06B 11/00; with aid of vibration D06B 13/00; transfer application of finishing agents D06M 23/00) [4]

1/02 • by spraying or projecting (D06B 1/08 takes precedence; spraying in general B05) [2]

1/04 • by pouring or allowing to flow on to the surface of the textile material [2]

1/06 • • flowing along an inclined surface [2]

1/08 • from outlets being in, or almost in, contact with the textile material [2]

1/10 • by contact with a member carrying the treating material [2]

1/12 • • by rubbing contact, e.g. with brushes or pads [2]

1/14 • • with a roller [2]

1/16 • • • the treating material being supplied from inside the roller [2]

**3/00 Passing of textile materials through liquids, gases, or vapours to effect treatment, e.g. washing, dyeing, bleaching, sizing, impregnating** (mercerising D06B 7/00; solvent-treatment D06B 9/00; treatment of selected parts of textile materials D06B 11/00; with aid of vibration D06B 13/00) [2]

3/02 • of fibres, slivers, or rovings [2]

3/04 • of yarns, threads, or filaments [2]

3/06 • • individually handled [2]

3/08 • • as hanks [2]

3/09 • • as packages, e.g. cheeses [3]

3/10 • of fabrics (D06B 3/24, D06B 3/28, D06B 3/32 take precedence; jiggers D06B 3/32) [2]

3/12 • • in zig-zag manner over series of guiding means [2]

3/14 • • in wound form [2]

3/16 • • in superimposed, i.e. stack-packed, form [2]

3/18 • • combined with squeezing, e.g. in padding machines [2]

- 3/20 • • with means to improve the circulation of the treating material on the surface of the fabric [2]
- 3/22 • • only one side of the fabric coming into contact with the guiding means [2]
- 3/24 • of fabrics in roped form [2]
- 3/26 • • in superimposed, i.e. stack-packed, form [2]
- 3/28 • of fabrics propelled by, or with the aid of, jets of the treating material [2]
- 3/30 • of articles, e.g. stockings [2]
- 3/32 • of open-width materials backwards and forwards between beaming rollers during treatment; Jiggers [2]
- 3/34 • Driving arrangements of machines or apparatus [2]
- 3/36 • • Drive control [2]
- 5/00 Forcing liquids, gases, or vapours through textile materials to effect treatment, e.g. washing, dyeing, bleaching, sizing, impregnating** (mercerising D06B 7/00; solvent-treatment D06B 9/00; treatment of selected parts of textile materials D06B 11/00; with aid of vibration D06B 13/00) [2]
  - 5/02 • through moving materials of indefinite length [2]
  - 5/04 • • through slivers or rovings [2]
  - 5/06 • • through yarns, threads, or filaments [2]
  - 5/08 • • through fabrics [2]
  - 5/10 • • using centrifugal force [2]
  - 5/12 • through materials of definite length [2]
  - 5/14 • • through fibres, slivers, or rovings [2]
  - 5/16 • • through yarns, threads, or filaments [2]
  - 5/18 • • • through beamed warp [2]
  - 5/20 • • • through hanks [2]
  - 5/22 • • through fabrics [2]
  - 5/24 • • through articles, e.g. stockings [2]
  - 5/26 • • using centrifugal force [2]
- 7/00 Mercerising, e.g. lustring by mercerising** [2]
  - 7/02 • of slivers [2]
  - 7/04 • of yarns, threads, or filaments [2]
  - 7/06 • • of hanks of yarns [2]
  - 7/08 • of fabrics of indefinite length [2]
  - 7/10 • of tubular fabrics or tubular articles [2]
- 9/00 Solvent-treatment of textile materials** (dry-cleaning D06F 43/00) [2]
  - 9/02 • solvent-dyeing [2]
  - 9/04 • Successively applying two or more different solvent-based treating materials [2]
  - 9/06 • with recovery of the solvent [2]
- 11/00 Treatment of selected parts of textile materials, e.g. partial dyeing** [2]
- 13/00 Treatment of textile materials with liquids, gases, or vapours with aid of vibration** [2]
- 15/00 Removing liquids, gases, or vapours from textile materials in association with treatment of the materials by liquids, gases, or vapours** (drying F26B) [2]
 

**Note(s)**

Group D06B 15/12 takes precedence over groups D06B 15/02-D06B 15/10.
- 15/02 • by squeezing rollers [2]
- 15/04 • by suction [2]
- 15/06 • by vibrating the textile material [2]
- 15/08 • by scraping [2]
- 15/09 • by jets of gases [3]
- 15/10 • by use of centrifugal force [2]
- 15/12 • up to the moisture regain of textile material [2]
- 17/00 Storing of textile materials in association with the treatment of the materials by liquids, gases, or vapours** (carriers or supports specially adapted therefor D06B 23/04) [2]
  - 17/02 • in superimposed, i.e. stack-packed, form; J-boxes [2]
  - 17/04 • in wound form [2]
  - 17/06 • in festooned form [3]
- 19/00 Treatment of textile materials by liquids, gases, or vapours, not provided for in groups D06B 1/00-D06B 17/00** [2]
- 21/00 Successive treatments of textile materials by liquids, gases, or vapours** (successive treatments in which the characteristics of a single treatment are of interest only, or in which all treatments have characteristics provided for in a single main group, see the relevant groups for the single treatment) [2]
  - 21/02 • the treatments being performed in a single container [2]
- 23/00 Component parts, details, or accessories of apparatus or machines, specially adapted for the treating of textile materials, not restricted to a particular kind of apparatus, provided for in groups D06B 1/00-D06B 21/00** [2]
  - 23/02 • Rollers [2]
  - 23/04 • Carriers or supports for textile materials to be treated [2]
  - 23/06 • Guiding means for preventing filaments, yarns, or threads from sticking together [2]
  - 23/08 • Untwisting devices [2]
  - 23/10 • Devices for dyeing samples (D06B 23/12 takes precedence) [2]
  - 23/12 • Means for taking samples from textile materials during or after treatment [2]
  - 23/14 • Containers, e.g. vats [2]
  - 23/16 • • with means for introducing or removing textile materials without modifying container pressure [2]
  - 23/18 • • Sealing arrangements [2]
  - 23/20 • Arrangements of apparatus for treating processing-liquids, -gases, or -vapours, e.g. purification, filtration, distillation (such apparatus per se, see the relevant classes for the apparatus) [2]
  - 23/22 • • for heating [2]
  - 23/24 • Means for regulating the amount of treating material picked up by the textile material during its treatment [2]
  - 23/26 • • in response to a test conducted on the textile material [2]
  - 23/28 • • in response to a test conducted on the treating material [2]
  - 23/30 • Means for cleaning apparatus or machines, or parts thereof [2]

**D06C FINISHING, DRESSING, TENTERING, OR STRETCHING TEXTILE FABRICS** (chemical matters, see D06L-D06Q; drying F26B) [2]

### Note(s)

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

- "fabric" includes yarns in warp or sheet form.

### Subclass index

#### GENERAL TREATMENTS

Without elimination of material

- heating or cooling.....7/00
- stretching or tentering; shaping or stretching; shrinking by compressing.....3/00, 5/00, 21/00
- calendering, ironing, or glazing; fulling; breaking or softening.....15/00, 17/00, 19/00

With slight elimination of material

- singeing; teasing or napping; shearing or cropping.....9/00, 11/00, 13/00

For decoration.....23/00

#### SPECIAL TREATMENTS

Making patterns or designs.....23/00

Treating selvages or edges.....25/00

#### FINISHING OR DRESSING NOT OTHERWISE PROVIDED FOR

Compound processes or apparatus; other treatments.....27/00, 29/00

- 
- |       |   |       |   |
|-------|---|-------|---|
| 3/00  | <b>Stretching, tentering, or spreading textile fabrics; Producing elasticity in textile fabrics</b> (shaping or stretching tubular fabrics upon cores or internal frames D06C 5/00; removing skew or disorientation of weft threads in woven fabrics D06H 3/12)   | 13/06 | • Removing floats   |
| 3/02  | • by endless chain or like apparatus (hooks or pin-blocks D06C 3/10)  | 13/08 | • Cutting pile loops (on the loom D03D 39/24)   |
| 3/04  | • • Tentering clips   | 13/10 | • Splitting double pile fabrics (on the loom D03D 39/16)  |
| 3/06  | • by rotary disc, roller, or like apparatus   | 13/12 | • Trimming hosiery or seamed edges of fabrics   |
| 3/08  | • by frames or like apparatus   | 15/00 | <b>Calendering, pressing, ironing, glossing, or glazing textile fabrics</b> (shrinking by compressing D06C 21/00; for making patterns or designs D06C 23/00; domestic, laundry, or like ironing or pressing D06F) |
| 3/10  | • Hooks, pin-blocks, or like apparatus  | 15/02 | • between co-operating press or calender rolls  |
| 5/00  | <b>Shaping or stretching of tubular fabrics upon cores or internal frames</b> (supports simply for drying D06F 59/00)   | 15/04 | • between rollers and co-operating concave surfaces (D06C 15/06 takes precedence)   |
| 7/00  | <b>Heating or cooling textile fabrics</b> (hosiery boarding D06C 5/00; singeing D06C 9/00; treating with liquids, gases, or vapours D06B; processes comprising combined chemical and mechanical treatment D06M; during operations provided for elsewhere, <u>see</u> the relevant groups for such operations) | 15/06 | • between rollers and co-operating moving surfaces formed of flexible material, e.g. bands  |
| 7/02  | • Setting   | 15/08 | • Rollers therefor  |
| 7/04  | • Carbonising or oxidising  | 15/10 | • between flat plates of a press  |
| 9/00  | <b>Singeing</b> (for making patterns or designs D06C 23/02)   | 15/12 | • • for pressing a pile of fabrics  |
| 9/02  | • by flame  | 15/14 | • Beetling  |
| 9/04  | • by contact with heated elements   | 17/00 | <b>Fulling</b>  |
| 11/00 | <b>Teasing, napping, or otherwise roughening or raising pile of textile fabrics</b> (for making patterns or designs D06C 23/00)   | 17/02 | • by rollers  |
| 13/00 | <b>Shearing, clipping, or cropping surfaces of textile fabrics; Pile cutting; Trimming seamed edges</b> (for making patterns or designs D06C 23/00; cutting or severing fabrics D06H)   | 17/04 | • by hammers or beaters   |
| 13/02 | • Arrangements for detecting the presence of a seam in the fabric to lift the shearing blade  | 19/00 | <b>Breaking or softening of fabrics</b> (by stretching D06C 3/00; by calendering, pressing, or beetling D06C 15/00; by fulling D06C 17/00)  |
| 13/04 | • Shearing lace or embroidery, e.g. cutting loose threads   | 21/00 | <b>Shrinking by compressing</b>   |
|       |   | 23/00 | <b>Making patterns or design on fabrics</b> (by printing B41F; decoration in general B44)   |
|       |   | 23/02 | • by singeing, teasing, shearing, etching, or brushing  |
|       |   | 23/04 | • by shrinking, embossing, moireing, or crêping   |
|       |   | 25/00 | <b>Treating selvages or other edges, e.g. stiffening</b> (trimming edges D06C 13/12; forming selvages on the loom, e.g. by adhesive, D03D 47/40)  |
|       |   | 27/00 | <b>Compound processes or apparatus, for finishing or dressing textile fabrics, not otherwise provided for</b>   |

## D06C

29/00 Finishing or dressing, of textile fabrics, not provided

for in the other groups of this subclass

**D06F LAUNDERING, DRYING, IRONING, PRESSING OR FOLDING TEXTILE ARTICLES** (apparatus for blocking, pressing, steaming, or stretching hats A42C; treating textile materials by liquids, gases or vapors D06B; chemical matters, see D06L, D06M)

### Note(s)

1. This subclass covers:
  - domestic or laundry dry-cleaning apparatus using volatile solvents;
  - domestic, laundry, or tailors' ironing or other hot-pressing of clothes, linen, or other textile articles.
2. This subclass does not cover apparatus for wringing, washing, dry-cleaning, ironing, or other hot-pressing of textiles in manufacturing operations, which is covered by subclasses D06B, D06C.

### Subclass index

RECEPTACLES; REMOVABLE DEVICES FOR USE WITH DIFFERENT RECEPTACLES.....	1/00, 7/00
HAND IMPLEMENTS.....	5/00
IMPLEMENTS FOR WASHING BY HAND	
Receptacles; hand rubbing apparatus.....	1/00, 3/00
WASHING MACHINES	
using brushes, rollers.....	9/00, 11/00
with stationary receptacle: using agitators; using beating or squeezing means; with agitation of liquid;	
with additional drying means.....	13/00, 15/00, 17/00, 18/00
with moving receptacle	
with rotary movement, e.g. oscillatory: for washing; for washing and draining; for washing and	
draining with additional drying means.....	21/00, 23/00, 25/00
with bodily movements, e.g. reciprocating or swinging.....	27/00
using vibrations for washing.....	19/00
Details of above machines.....	1/00, 7/00, 37/00, 39/00
Combinations with other apparatus or machines.....	29/00, 31/00
Control of washing operations.....	33/00
Other washing machines or methods.....	35/00
RINSING APPARATUS.....	29/00, 41/00
DRY-CLEANING.....	43/00
EXPELLING WATER FROM LINEN; SMOOTHING BY COLD ROLLING	
by rollers; by presses.....	45/00, 47/00
by centrifugal movement of the receptacle.....	23/00, 25/00, 49/00
Apparatus not otherwise provided for.....	51/00
DRYING; AIRING	
Clothes-lines; clothes-pegs; other supporting means.....	53/00, 55/00, 57/00
Driers.....	58/00
Special supports retaining shape of articles to be dried.....	59/00
Other drying.....	60/00
IRONING; PRESSING	
Ironing	
by hand:	
Irons; accessories; ironing boards.....	75/00, 77/00, 79/00, 81/00
by machine:	
using rollers; using rollers coacting with table; using rollers coacting with curved surfaces.....	61/00, 63/00, 65/00
Details.....	67/00
Other ironing machines.....	69/00
Pressing	
Hot or cold pressing; smoothing by use of formers with heat or steam.....	71/00, 73/00
Coverings or pads for equipment, elements interposed between article and ironing or pressing surface....	83/00, 85/00
AUXILIARY APPARATUS; LAUNDRY SYSTEMS	
Conditioning; folding; starching; counting, sorting, marking.....	87/00, 89/00, 91/00, 93/00
Laundry systems, arrangements of apparatus or machines.....	95/00

### Washing; Rinsing; Dry-cleaning

- 1/00 Washing receptacles** (of washing machines  
D06F 37/00, D06F 39/00)
- 1/02 • Wash-tubs, Supports therefor

- 1/04 • • the tub walls or bottom having corrugations  
(rubbing boards D06F 3/02)
- 1/06 • Wash-boiler receptacles
- 1/08 • • with special means for water circulation by heat,  
e.g. fountain-washers

1/10	• Covers; Handles	19/00	<b>Washing machines using vibrations for washing purposes</b> (devices of the vibrator type adapted to be used independently of any particular receptacle D06F 7/04)
1/12	• Racks or other rigid open containers of skeleton or like apertured construction supporting clothes in washing receptacles		
3/00	<b>Hand rubbing apparatus</b> (corrugated tub-walls D06F 1/04)	21/00	<b>Washing machines with receptacles, e.g. perforated, having a rotary movement, e.g. oscillatory movement</b> (with receptacles serving both for washing and centrifugally draining D06F 23/00, D06F 25/00; with receptacles moving bodily about an axis D06F 27/00; programme control aspects D06F 33/00)
3/02	• Rubbing boards	21/02	• about a horizontal axis
3/04	• Hand rubbers, e.g. gloves with corrugated surfaces	21/04	• • within an enclosing receptacle
5/00	<b>Hand implements for washing purposes, e.g. sticks</b> (hand rubbing appliances D06F 3/00; brushes A46B)	21/06	• about a vertical axis
5/02	• Plungers, dollies, pounders, squeezers, or the like	21/08	• • within an enclosing receptacle
5/04	• • adapted for removable mounting on receptacles such as wash-tubs	21/10	• about an inclined axis
5/06	• Grippers	21/12	• the receptacle having a wobbling motion
7/00	<b>Washing devices adapted to be used independently of any particular receptacle, e.g. for removable mounting on wash-tubs, bath-tubs, or the like</b>	21/14	• with rubbing or beating means not secured to, or forming part of, the receptacle
7/02	• of the rotary-impeller type	23/00	<b>Washing machines with receptacles, e.g. perforated, having a rotary movement, e.g. oscillatory movement, the receptacle serving both for washing and centrifugally draining</b> (with further drying means D06F 25/00; programme control aspects D06F 33/00)
7/04	• of the vibrator type	23/02	• and rotating or oscillating about a horizontal axis
7/06	• agitating the washing liquid by air	23/04	• and rotating or oscillating about a vertical axis
9/00	<b>Brushing-type washing machines</b>	23/06	• and rotating or oscillating about an inclined axis
11/00	<b>Washing machines using rollers, e.g. of the mangle type</b>	25/00	<b>Washing machines with receptacles, e.g. perforated, having a rotary movement, e.g. oscillatory movement, the receptacle serving both for washing and centrifugally draining and having further drying means, e.g. using hot air</b> (programme-control aspects D06F 33/00; details concerning drying only D06F 58/00)
13/00	<b>Washing machines having receptacles, stationary for washing purposes, with agitators therein contacting the articles being washed</b> (plungers or the like adapted for removable mounting on receptacles D06F 5/04; washing devices adapted to be used independently of any particular receptacle D06F 7/00)	27/00	<b>Washing machines with receptacles moving bodily, e.g. reciprocating, swinging</b>
13/02	• wherein the agitator has an oscillatory rotary motion only	29/00	<b>Combinations of a washing machine with other separate apparatus in a common frame or the like, e.g. with rinsing apparatus</b>
13/04	• wherein the agitator has an axial motion only	29/02	• with liquid-extracting apparatus (with roller wringer D06F 45/12)
13/06	• wherein the agitator has both rotary, e.g. oscillating rotary, motion and axial motion	31/00	<b>Washing installations comprising an assembly of several washing machines or washing units, e.g. continuous flow assemblies</b>
13/08	• wherein the agitator has a gyratory or orbital motion	33/00	<b>Controlling a series of operations in washing machines, e.g. programme-control arrangements for washing and drying cycles</b> (D06F 31/00 takes precedence)
15/00	<b>Washing machines having beating, rubbing, or squeezing means in receptacles stationary for washing purposes</b> (plungers or the like adapted for removable mounting on receptacles D06F 5/04; mangle-type washing machines D06F 11/00)	33/02	• electrically
15/02	• wherein the articles being washed are squeezed by a flexible diaphragm or bag	33/04	• non-electrically
17/00	<b>Washing machines having receptacles, stationary for washing purposes, wherein the washing action is effected solely by circulation or agitation of the washing liquid</b> (washing devices adapted to be used independently of any particular receptacle D06F 7/00; using vibrations for washing purposes D06F 19/00)	33/06	• • substantially mechanically
17/02	• by pumps (D06F 17/04 takes precedence)	33/08	• • substantially hydraulically
17/04	• solely by water jets	33/10	• • substantially pneumatically
17/06	• by rotary impellers	35/00	<b>Washing machines, apparatus, or methods not otherwise provided for</b>
17/08	• • Driving arrangements for the impeller	37/00	<b>Details of washing machines of kinds covered by groups D06F 21/00-D06F 25/00, restricted to machines of these kinds</b> (details of more general application D06F 39/00; details concerning drying only D06F 58/00)
17/10	• • Impellers		
17/12	• solely by gases, e.g. air or steam, introduced into the washing liquid	37/02	• Rotary receptacles, e.g. drums
18/00	<b>Washing machines having receptacles, stationary for washing purposes, and having further drying means</b> (details concerning drying only D06F 58/00) [3]		

## D06F

- 37/04 • • adapted for rotation or oscillation about a horizontal or inclined axis
- 37/06 • • • Ribs, lifters, or rubbing means forming part of the receptacle
- 37/08 • • • Partitions
- 37/10 • • • Doors; Securing means therefor
- 37/12 • • adapted for rotation or oscillation about a vertical axis
- 37/14 • • • Ribs or rubbing means forming part of the receptacle
- 37/16 • • • Partitions
- 37/18 • • • Doors or covers; Securing means therefor
- 37/20 • Mountings, e.g. resilient mountings, for the rotary receptacle, motor, tub, or casing; preventing or damping vibrations (damping vibrations in general F16F)
- 37/22 • • in machines with a receptacle rotating or oscillating about a horizontal axis
- 37/24 • • in machines with a receptacle rotating or oscillating about a vertical axis
- 37/26 • Casings; Tubs
- 37/28 • • Doors; Security means therefor
- 37/30 • Driving arrangements
- 37/32 • • for rotating the receptacle at one speed only
- 37/34 • • • in opposite directions, e.g. oscillating
- 37/36 • • for rotating the receptacle at more than one speed
- 37/38 • • • in opposite directions
- 37/40 • • for driving the receptacle and an agitator or impeller, e.g. alternatively
- 37/42 • Safety arrangements, e.g. for stopping rotation of the receptacle upon opening of the casing door

### **39/00 Details of washing machines in so far as such details are not special to washing machines of groups D06F 21/00-D06F 25/00 or to any particular type of washing machine defined in groups D06F 9/00-D06F 19/00 or D06F 27/00**

- 39/02 • Devices for adding soap or other washing agents
- 39/04 • Heating arrangements
- 39/06 • Arrangements for preventing or destroying scum
- 39/08 • Liquid supply or discharge arrangements (supplying liquid detergent D06F 39/02)
- 39/10 • Filtering arrangements
- 39/12 • Casings; Tubs
- 39/14 • • Doors or covers; Securing means therefor

### **41/00 Rinsing apparatus**

### **43/00 Dry-cleaning apparatus using volatile solvents (D06F 9/00-D06F 41/00 take precedence)**

- 43/02 • having one rotary cleaning receptacle only
- 43/04 • having more than one rotary cleaning receptacle
- 43/06 • wherein the articles to be cleaned are passed through a cleaning chamber or bath
- 43/08 • Associated apparatus for handling and recovering the solvents (separate apparatus for purifying dry-cleaning solvents B01D)

## **Expelling water from the linen; Smoothing by cold rolling**

### **45/00 Wringing machines with two or more co-operating rollers; Similar cold-smoothing apparatus**

- 45/02 • wherein the pressure is transmitted by spring means
- 45/04 • • with hand-operated quick-release means
- 45/06 • • with automatically-operated quick-release means
- 45/08 • wherein the pressure is applied by fluid means

- 45/10 • with three or more co-operating rollers
- 45/12 • combined with washing machines
- 45/14 • with means for removable attachment to washing machines, tables or other supports (combined with tables A47B)
- 45/16 • Details
- 45/18 • • Driving or control arrangements for rotation of the rollers
- 45/20 • • Toggle or other lever means for transmitting pressure to the rollers
- 45/22 • • Rollers
- 45/24 • • Frames guiding or housing the roller shafts; Stands for supporting the roller framework
- 45/26 • • Draining boards; Feed or discharge boards; Stripping means
- 45/28 • • Belt arrangements for guiding the linen between the rollers

### **47/00 Apparatus of the press type for expelling water from the linen**

- 47/02 • by a mechanically-actuated ram
- 47/04 • by a fluid-actuated ram
- 47/06 • by a flexible diaphragm
- 47/08 • Covers; Securing means therefor

### **49/00 Domestic spin-dryers or similar spin-dryers not suitable for industrial use (centrifuges in general B04B)**

- 49/02 • Bowl construction
- 49/04 • Bowl drive
- 49/06 • Mountings, e.g. resilient mountings, for the bowl or casings; Preventing or damping vibrations (damping vibrations in general F16F)
- 49/08 • Liquid discharge arrangements

### **51/00 Apparatus for expelling or draining water from the linen, not provided for in groups D06F 45/00-D06F 49/00**

- 51/02 • by twisting

## **Drying; Airing**

### **53/00 Clothes-lines; Supports therefor (drying frames incorporating clothes-lines D06F 57/00; supports or holders specially adapted or mounted for storing and repeatedly paying-out and restoring lengths of lines B65H 75/34; ropes, cables D07B)**

- 53/02 • Clothes-lines
- 53/04 • Supports, e.g. poles, props for clothes-lines (poles in general E04H)

### **55/00 Clothes-pegs**

- 55/02 • with pivoted clamping members

### **57/00 Supporting means, other than simple clothes-lines, for linen or garments to be dried or aired (in combination with means for heating or positive air circulation D06F 58/00, F26B; adapted to retain the shape of particular articles being dried D06F 59/00; clothing hangers, e.g. suit hangers, A47G 25/14)**

- 57/02 • mounted on pillar, e.g. rotatably
- 57/04 • • and having radial arms, e.g. collapsible
- 57/06 • comprising vertical members connected by horizontal bars
- 57/08 • Folding stands (D06F 57/06 takes precedence)
- 57/10 • • of the lazy-tongs type

- 57/12 • specially adapted for attachment to walls, ceilings, stoves, or other structures or objects
- 58/00 Domestic laundry driers** (drying in general F26B) [2]
- 58/02 • having drier drums rotating about a horizontal axis [3]
- 58/04 • • Details (controlling or regulating arrangements D06F 58/28) [3]
- 58/06 • • • Mountings for the rotating drums [3]
- 58/08 • • • Driving arrangements [3]
- 58/10 • Drying cabinets or drying chambers having heating or ventilating means [3]
- 58/12 • • having conveying means for moving clothes, e.g. along an endless track [3]
- 58/14 • • Collapsible drying cabinets; Wall mounted collapsible hoods [3]
- 58/16 • having heatable surfaces for contacting the laundry (D06F 59/00 takes precedence) [3]
- 58/18 • Detachable or door-mounted drying arrangements for washing machines [3]
- 58/20 • General details of domestic laundry driers (D06F 59/00 takes precedence) [3]
- 58/22 • • Lint collecting arrangements [3]
- 58/24 • • Condensing arrangements [3]
- 58/26 • • Heating arrangements, e.g. gas heating equipment (D06F 58/18 takes precedence) [3]
- 58/28 • • Controlling or regulating (controlling or regulating in general G05) [3]
- 59/00 Supports adapted to retain the shape of particular articles being dried, e.g. incorporating heating means**
- 59/02 • for garments
- 59/04 • • for gloves
- 59/06 • • for stockings
- 59/08 • for curtains, table cloths, or other articles of sheet form
- 60/00 Drying not provided for in groups D06F 53/00-D06F 59/00 [2009.01]**

### **Ironing; Pressing**

- 61/00 Ironing machines using two or more co-operating pressing rollers**
- 61/02 • with two rollers
- 61/04 • with three or more rollers one above the other
- 61/06 • with successive pairs of rollers
- 61/08 • with one central roller co-operating with a plurality of circumferential rollers
- 61/10 • with two or more central rollers co-operating with a plurality of circumferential rollers
- 63/00 Ironing machines having a roller or rollers coacting with a fixed or moving flat bed or table** (coverings or pads D06F 83/00)
- 63/02 • with two or more rollers co-acting with a fixed or moving flat bed or table
- 65/00 Ironing machines with rollers rotating against curved surfaces**
- 65/02 • with one roller only
- 65/04 • • the bed being urged against the roller by hand or foot
- 65/06 • • the bed being urged against the roller by power
- 65/08 • • the roller being urged against the bed
- 65/10 • with two or more rollers co-operating with two or more curved surfaces

- 67/00 Details of ironing machines provided for in groups D06F 61/00, D06F 63/00, or D06F 65/00** (coverings or pads for ironing or pressing members D06F 83/00)
- 67/02 • Rollers; Heating arrangements therefor
- 67/04 • Arrangements for feeding or spreading the linen
- 67/06 • Means for stripping the linen from the rollers
- 67/08 • Beds; Heating arrangements therefor [2]
- 67/10 • Driving arrangements [2]
- 69/00 Ironing machines not otherwise provided for**
- 69/02 • using endless or other ironing or pressing belts or aprons
- 69/04 • with relatively-sliding flat surfaces
- 71/00 Apparatus for hot-pressing clothes, linen, or other textile articles, i.e. wherein there is substantially no relative movement between pressing element and article while pressure is being applied to the article; Similar machines for cold-pressing clothes, linen, or other textile articles** (smoothing by cold rolling between two or more co-operating rollers D06F 45/00; devices, for household use, for cold-pressing garments A47G)
- 71/02 • actuated wholly by hand or foot (D06F 71/08 takes precedence)
- 71/04 • power-actuated (D06F 71/08 takes precedence)
- 71/06 • • fluid-actuated
- 71/08 • wherein one or more of the pressing elements is moved laterally between successive pressing operations (laundry systems or arrangements of apparatus or machines D06F 95/00)
- 71/10 • • by movement about a vertical axis
- 71/12 • • by movement about a horizontal axis
- 71/14 • • by a rectilinear movement
- 71/16 • having a pressing element or buck adapted to provide interior support for a garment to be pressed (D06F 71/18 takes precedence)
- 71/18 • specially adapted for pressing particular garments or parts thereof (for pressing seams D06F 71/30)
- 71/20 • • for pressing shirts
- 71/22 • • for pressing collars
- 71/24 • • for pressing cuffs
- 71/26 • • for pressing shoulders or necks
- 71/28 • • for pressing sleeves, trousers, or other tubular garments or tubular parts of garments
- 71/29 • • • Trousers [4]
- 71/30 • specially adapted for pressing seams
- 71/32 • Details
- 71/34 • • Heating arrangements; Arrangements for supplying or removing steam or other gases
- 71/36 • • Pressing elements (for use in pressing particular garments or parts thereof D06F 71/18; coverings or pads therefor D06F 83/00)
- 71/38 • • Feeding arrangements (feeding by lateral movement of pressing elements D06F 71/08)
- 71/40 • • Holders or stretchers for the article to be pressed
- 73/00 Apparatus for smoothing or removing creases from garments or other textile articles by formers, cores, stretchers, or internal frames, with the application of heat or steam** (stretchers for drying purposes D06F 59/00; combined with external pressure means D06F 71/00; stretchers for use with presses D06F 71/40; dress forms for the tailoring trade A41H; garment stretchers without the application of heat A47G 25/00)
- 73/02 • having one or more treatment chambers [4]

## D06F

### 75/00 Hand irons

- 75/02 • Externally-heated hand irons; Hand irons internally heated by means other than electricity, e.g. by solid fuel, by steam
- 75/04 • • by pre-heated block
- 75/06 • • with means for supplying steam or liquid to the article being ironed (D06F 75/32 takes precedence)
- 75/08 • Hand irons internally heated by electricity
- 75/10 • • with means for supplying steam to the article being ironed (D06F 75/32 takes precedence)
- 75/12 • • • the steam being produced from water supplied to the iron from an external source
- 75/14 • • • the steam being produced from water in a reservoir carried by the iron
- 75/16 • • • • the reservoir being heated to produce the steam
- 75/18 • • • • the water being fed slowly, e.g. drop by drop, from the reservoir to a steam generator
- 75/20 • • • Arrangements for discharging the steam to the article being ironed
- 75/22 • • with means for supplying liquid to the article being ironed (D06F 75/10 takes precedence)
- 75/24 • • Arrangements of the heating means within the iron; Arrangements for distributing, conducting, or storing the heat (electric heating in general H05B)
- 75/26 • • Temperature control or indicating arrangements (thermally-actuated switches H01H)
- 75/28 • • Arrangements for attaching, protecting, or supporting the electric supply cable
- 75/30 • Hand irons of special external shape or form
- 75/32 • Attachments for converting hand irons to steam irons
- 75/34 • Handles; Handle mountings
- 75/36 • Casings
- 75/38 • Sole plates (D06F 75/20 takes precedence)
- 75/40 • Stands or supports attached to the iron

### 77/00 Arrangements for exerting pressure on, lifting, or guiding hand irons

### 79/00 Accessories for hand irons

- 79/02 • Stands or supports neither attached to, nor forming part of, the iron or ironing board

- 79/04 • Stoves or other heating means specially adapted for heating irons externally (stoves in general F24)
- 79/06 • Means, not forming part of the iron, for cooling the iron

### 81/00 Ironing boards (coverings or pads therefor D06F 83/00; combined with tables, mounted in kitchen cabinets A47B; tables in general A47B; combined with ladders E06C)

- 81/02 • with collapsible underframe
- 81/04 • • with means for adjusting height
- 81/06 • attachable to independent supports, e.g. walls
- 81/08 • incorporating heating, steaming, or forced ventilation means
- 81/10 • Top board elements
- 81/12 • Sleeve boards; Attaching means therefor
- 81/14 • Means for attaching covers

### 83/00 Coverings or pads for ironing or pressing members

### 85/00 Independent elements for interposition between the article and the ironing or pressing surface

## Other laundry apparatus or systems

### 87/00 Apparatus for moistening or otherwise conditioning the article to be ironed or pressed (apparatus for smoothing or removing creases from garments or other textile articles by formers, cores, stretchers or internal frames, with the application of heat or steam D06F 73/00)

### 89/00 Apparatus for folding textile articles with or without stapling [4]

- 89/02 • of textile articles to be worn, e.g. shirts [4]

### 91/00 Starching apparatus

### 93/00 Counting, sorting, or marking arrangements specially adapted for laundry purposes

### 95/00 Laundry systems or arrangements of apparatus or machines; Mobile laundries (D06F 31/00 takes precedence; laundries as buildings E04H)

## D06G MECHANICAL OR PRESSURE CLEANING OF CARPETS, RUGS, SACKS, HIDES, OR OTHER SKIN OR TEXTILE ARTICLES OR FABRICS; TURNING INSIDE-OUT FLEXIBLE TUBULAR OR OTHER HOLLOW ARTICLES (mechanical preparation or mechanical treatment of bed feathers B68G 3/00)

### 1/00 Beating, brushing, or otherwise mechanically cleaning or pressure cleaning carpets, rugs, sacks, hides, or other skin or textile articles or fabrics (brushes A46B; suction cleaners A47L; domestic cleaning apparatus A47L; cleaning in general B08B; apparatus for cleaning bed feathers B68G 3/00)

### 3/00 Turning inside-out flexible tubular or other hollow articles (in combination with inspecting D06H 3/16)

- 3/02 • by mechanical means
- 3/04 • pneumatically

### 5/00 Mechanical, vacuum, or pressure cleaning in combination with the turning inside-out of flexible tubular or other hollow articles

## D06H MARKING, INSPECTING, SEAMING, OR SEVERING TEXTILE MATERIALS (seaming by sewing D05B; in connection with manufacturing, see the relevant subclasses)

### Subclass index

MARKING, METERING, INSPECTING.....1/00, 3/00  
SEAMING BY PROCESSES NOT OTHERWISE PROVIDED FOR.....5/00



## APPARATUS OR PROCESSES FOR CUTTING OR OTHERWISE SEVERING.....7/00

**1/00 Marking textile materials; Marking in combination with metering or inspecting**

- 1/02 • Marking by printing or analogous processes
- 1/04 • by attaching threads, tags, or the like

**3/00 Inspecting textile materials** (testing physical properties of textile materials G01N, e.g. investigating the presence of flaws, defects or contamination using optical means G01N 21/88)

- 3/02 • visually (D06H 3/12, D06H 3/14, D06H 3/16 take precedence)
- 3/04 • • wherein the material is supported on a table
- 3/06 • • wherein the material is supported on a drum
- 3/08 • by photo-electric or television means (D06H 3/12, D06H 3/14, D06H 3/16 take precedence)
- 3/10 • by non-optical apparatus (D06H 3/12, D06H 3/14, D06H 3/16 take precedence)
- 3/12 • Detecting or automatically correcting errors in the position of weft threads in woven fabrics
- 3/14 • Detecting and removing metal particles, e.g. broken needles, or card clothing, from fabrics
- 3/16 • Inspecting hosiery or other tubular fabric; Inspecting in combination with turning inside-out, classifying, or other handling (turning inside-out per se D06G 3/00)

**5/00 Seaming textile materials****7/00 Apparatus or processes for cutting, or otherwise severing, specially adapted for the cutting, or otherwise severing, of textile materials** (severing for making buttonholes A41H; hand cutting tools in general B26B; cutting machines in general B26D; severing otherwise than by cutting in general B26F; trimming seamed edges, shearing surfaces of fabrics, shearing lace or embroidery, e.g. cutting loose threads D06C)

- 7/02 • transversely (D06H 7/14 takes precedence)
- 7/04 • longitudinally (D06H 7/14 takes precedence)
- 7/06 • • Removing selvedge edges
- 7/08 • • for cutting tubular fabric longitudinally
- 7/10 • obliquely
- 7/12 • • cutting a tubular fabric helically
- 7/14 • Cutting fabrics by cutting the weft or warp threads while making special provision to avoid cutting warp or weft threads, respectively, adjacent to the cut
- 7/16 • specially adapted for cutting lace or embroidery
- 7/18 • Cutting rolls of material without unwinding
- 7/20 • Tearing
- 7/22 • Severing by heat or by chemical agents
- 7/24 • Devices specially adapted for cutting-out samples

**D06J PLEATING, KILTING, OR GOFFERING TEXTILE FABRICS OR WEARING APPAREL** (corrugating, creasing, or otherwise deforming paper, or material worked in a manner analogous to paper, without removing material B31F; by weaving D03D; by sewing D05B; apparatus for pressing or setting formed pleats D06C)**1/00 Pleating, kilting, or goffering textile fabrics or wearing apparel**

- 1/02 • continuously and transversely to the direction of feed
- 1/04 • • by co-operating ribbed or grooved rollers or belts
- 1/06 • • by reciprocating blades

- 1/08 • • • which introduce the folds between rollers or belts
- 1/10 • continuously and longitudinally to the direction of feed
- 1/12 • Forms of pleats or the like

**D06L BLEACHING, e.g. OPTICAL BLEACHING, DRY-CLEANING, OR WASHING FIBRES, THREADS, YARNS, FABRICS, FEATHERS, OR MADE-UP FIBROUS GOODS; BLEACHING LEATHER OR FURS** (treatment of fibres or filaments of glass, mineral wool, or slag wool C03; chemical treatment of fibrous material to obtain fibres for spinning D01; for mechanical matters, see D06B, D06C, D06F; bleaching paper pulp or cotton linters D21)**Note(s)**

Processes using enzymes or micro-organisms in order to:

- i. liberate, separate or purify a pre-existing compound or composition, or to
- ii. treat textiles or clean solid surfaces of materials

are further classified in subclass C12S.

**1/00 Dry-cleaning or washing fibres, threads, yarns, fabrics, feathers, or made-up fibrous goods**

- 1/02 • using organic solvents
- 1/04 • • together with additives (D06L 1/06 takes precedence)
- 1/06 • • De-sizing
- 1/08 • • Multi-step processes
- 1/10 • • Regeneration of used chemical baths
- 1/12 • using aqueous baths
- 1/14 • • De-sizing
- 1/16 • • Multi-step processes

- 1/18 • • Working under pressure in closed vessels
- 1/20 • • combined with mechanical means
- 1/22 • Processes involving successive treatments with aqueous and organic materials

**3/00 Bleaching fibres, threads, yarns, fabrics, feathers, or made-up fibrous goods, leather, or furs**

- 3/02 • using compounds which develop oxygen (D06L 3/06 takes precedence)
- 3/04 • by irradiation or ozonisation
- 3/06 • using compounds which contain halogen

## D06L

- |      |                                 |      |                                       |
|------|---------------------------------|------|---------------------------------------|
| 3/08 | • • chlorites; chlorine dioxide | 3/12 | • Optical bleaching                   |
| 3/10 | • using reducing agents         | 3/14 | • Multi-step processes                |
| 3/11 | • using enzymes [7]             | 3/16 | • • combined with cleaning or washing |

**D06M TREATMENT, NOT PROVIDED FOR ELSEWHERE IN CLASS D06, OF FIBRES, THREADS, YARNS, FABRICS, FEATHERS, OR FIBROUS GOODS MADE FROM SUCH MATERIALS** (surface treatment of fibres or filaments from glass, minerals or slags C03C 25/00; treatment of textiles by mechanical means, see D06B-D06J)

### Note(s)

1. In each of the groups D06M 11/00-D06M 15/00, in the absence of an indication to the contrary, a substance is classified in the last appropriate place.
2. In this subclass:
  - a. Within each one of main groups D06M 11/00-D06M 15/00, a mixture of substances is classified at least according to the essential ingredient. If more than one ingredient is essential, the mixture is classified, in the absence of an indication to the contrary, according to the essential ingredient which belongs to the last appropriate place in the sequence of substance.
  - b. Treatment by mixtures of substances covered by two or more of main groups D06M 11/00-D06M 15/00 is classified in each appropriate main group.
3. In this subclass, the treatment of textiles, not provided for elsewhere in class D06, is classified according to the following principles:
  - a. Treatment of textiles characterised by the treating agent in groups D06M 11/00-D06M 16/00.
  - b. Treatment of textiles characterised by the process in group D06M 23/00.
4. Processes using enzymes or micro-organisms in order to:
  - i. liberate, separate or purify a pre-existing compound or composition, or to
  - ii. treat textiles or clean solid surfaces of materialsare further classified in subclass C12S.
5. Attention is drawn to Note (3) after the title of section C, which Note indicates to which version of the periodic table of chemical elements the IPC refers.

### Subclass index

#### TREATMENT OF FIBRES, THREADS, YARNS, FABRICS, OR FIBROUS ARTICLES

with inorganic substances.....	11/00
with non-macromolecular organic substances.....	13/00
graft polymerisation.....	14/00
with macromolecular substances.....	15/00
BIOCHEMICAL TREATMENT.....	16/00
PHYSICAL TREATMENT.....	10/00
TREATMENT CHARACTERISED BY THE PROCESS.....	23/00
TREATMENT OF FEATHERS.....	19/00
PRODUCING MULTI-LAYER FABRICS.....	17/00

**10/00 Physical treatment of fibres, threads, yarns, fabrics, or fibrous goods made from such materials, e.g. ultrasonic, corona discharge, irradiation, electric currents, magnetic fields; Physical treatment combined with treatment with chemical compounds or elements [2, 5]**

- |       |  |
|-------|--|
| 10/02 | • ultrasonic or sonic; Corona discharge [5]  |
| 10/04 | • Physical treatment combined with treatment with chemical compounds or elements (graft polymerisation using wave energy or particle radiation D06M 14/18) [5] |
| 10/06 | • • Inorganic compounds or elements [5]  |
| 10/08 | • • Organic compounds [5]  |
| 10/10 | • • • Macromolecular compounds [5]   |

**11/00 Treating fibres, threads, yarns, fabrics, or fibrous goods made from such materials, with inorganic substances or complexes thereof; Such treatment combined with mechanical treatment, e.g. mercerising** (D06M 10/00 takes precedence; decorating textiles by local treatment D06Q 1/00) [5]

### Note(s)

1. In this group, the following term is used with the meaning indicated:

- "treatment" means, in the absence of an indication to the contrary, the treatment which leads to the end product, e.g. treatment with barium sulfate can mean treatment with barium chloride and with sulfuric acid in two separate steps.

2. If a compound used in the treatment is characterised by its cation, classification for this aspect is made in main group D06M 11/00 only and not in groups D06M 11/01-D06M 11/80; metallisation by treatment with a metal salt, followed by reduction, is classified in group D06M 11/83.
3. In this group, it is desirable to add the indexing codes of group D06M 101/00.

- |       |  |
|-------|--|
| 11/01 | • with hydrogen, water or heavy water; with hydrides of metals or complexes thereof; with boranes, diboranes, silanes, disilanes, phosphines, diphosphines, stibines, distibines, arsines, or diarsines or complexes thereof [5] |
| 11/05 | • • with water, e.g. steam; with heavy water [5]   |
| 11/07 | • with halogens; with halogen acids or salts thereof; with oxides or oxyacids of halogens or salts thereof [5]   |
| 11/09 | • • with free halogens or interhalogen compounds [5]   |

- 11/11 • • with halogen acids or salts thereof [5]
- 11/13 • • • Ammonium halides or halides of elements of the first Group of the Periodic System [5]
- 11/155 • • • Halides of elements of the second Group of the Periodic System [5]
- 11/17 • • • Halides of elements of the third Group of the Periodic System [5]
- 11/20 • • • Halides of elements of the fourth Group of the Periodic System, e.g. zirconyl chloride [5]
- 11/22 • • • Halides of elements of the fifth Group of the Periodic System [5]
- 11/24 • • • Halides of elements of the sixth Group of the Periodic System, e.g. chromyl chloride [5]
- 11/26 • • • Halides of elements of the seventh Group of the Periodic System (interhalogen compounds D06M 11/09) [5]
- 11/28 • • • Halides of elements of the eighth Group of the Periodic System [5]
- 11/30 • • with oxides of halogens, oxyacids of halogens or their salts, e.g. with perchlorates [5]
- 11/32 • with oxygen, ozone, ozonides, oxides, hydroxides or percompounds; Salts derived from anions with an amphoteric element-oxygen bond (with water or heavy water D06M 11/05; with oxides or oxyacids of halogens D06M 11/30; bleaching D06L) [5]
- 11/34 • • with oxygen, ozone or ozonides [5]
- 11/36 • • with oxides, hydroxides or mixed oxides; with salts derived from anions with an amphoteric element-oxygen bond [5]
- 11/38 • • • Oxides or hydroxides of elements of the first Group of the Periodic System (producing patterns by locally destroying or modifying the fibres by chemical action D06Q 1/02) [5]
- 11/40 • • • • combined with, or in absence of, mechanical tension, e.g. slack mercerising [5]
- 11/42 • • • • Oxides or hydroxides of copper, silver or gold [5]
- 11/44 • • • Oxides or hydroxides of elements of the second Group of the Periodic System; Zincates; Cadmates [5]
- 11/45 • • • Oxides or hydroxides of elements of the third Group of the Periodic System; Aluminates [5]
- 11/46 • • • Oxides or hydroxides of elements of the fourth Group of the Periodic System; Titanates; Zirconates; Stannates; Plumbates [5]
- 11/47 • • • Oxides or hydroxides of elements of the fifth Group of the Periodic System; Vanadates; Niobates; Tantalates; Arsenates; Antimonates; Bismuthates [5]
- 11/48 • • • Oxides or hydroxides of chromium, molybdenum or tungsten; Chromates; Dichromates; Molybdates; Tungstates [5]
- 11/49 • • • Oxides or hydroxides of elements of the eighth Group of the Periodic System; Ferrates; Cobaltates; Nickelates; Ruthenates; Osmates; Rhodates; Iridates; Palladates; Platinates [5]
- 11/50 • • with hydrogen peroxide or peroxides of metals; with persulfuric, permanganic, pernitric, percarbonic acids or their salts [5]
- 11/51 • with sulfur, selenium, tellurium, polonium or compounds thereof (with persulfuric acids or their salts D06M 11/50) [5]
- 11/52 • • with selenium, tellurium, polonium or their compounds; with sulfur, dithionites or compounds containing sulfur and halogens, with or without oxygen; by sulfohalogenation with chlorosulfonic acid; by sulfohalogenation with a mixture of sulfur dioxide and free halogens [5]
- 11/53 • • with hydrogen sulfide or its salts; with polysulfides [5]
- 11/54 • • with sulfur dioxide; with sulfurous acid or its salts (D06M 11/52 takes precedence) [5]
- 11/55 • • with sulfur trioxide; with sulfuric acid or thiosulfuric acid or their salts [5]
- 11/56 • • • Sulfates or thiosulfates other than of elements of the third Group of the Periodic System [5]
- 11/57 • • • Sulfates or thiosulfates of elements of the third Group of the Periodic System, e.g. alums [5]
- 11/58 • with nitrogen or compounds thereof, e.g. with nitrides (with ammonium halides D06M 11/13) [5]
- 11/59 • • with ammonia; with complexes of organic amines with inorganic substances [5]
- 11/60 • • • Ammonia as a gas or in solution [5]
- 11/61 • • • Liquid ammonia [5]
- 11/62 • • • Complexes of metal oxides or complexes of metal salts with ammonia or with organic amines [5]
- 11/63 • • with hydroxylamine or hydrazine [5]
- 11/64 • • with nitrogen oxides; with oxyacids of nitrogen or their salts (with pernitric acids or their salts D06M 11/50) [5]
- 11/65 • • • Salts of oxyacids of nitrogen [5]
- 11/66 • • with sulfamic acid or its salts [5]
- 11/67 • • with cyanogen or compounds thereof, e.g. with cyanhydric acid, cyanic acid, isocyanic acid, thiocyanic acid, isothiocyanic acid or their salts, or with cyanamides; with carbamic acid or its salts (with dicyanamides D06M 13/432) [5]
- 11/68 • with phosphorus or compounds thereof, e.g. with chlorophosphonic acid or salts thereof (with phosphines or diphosphines D06M 11/01; with selenium or tellurium compounds D06M 11/52; with polyphosphazene or derivatives thereof D06M 15/673) [5]
- 11/69 • • with phosphorus; with halides or oxyhalides of phosphorus; with chlorophosphonic acid or its salts [5]
- 11/70 • • with oxides of phosphorus; with hypophosphorous, phosphorous or phosphoric acids or their salts [5]
- 11/71 • • • Salts of phosphoric acids [5]
- 11/72 • • with metaphosphoric acids or their salts; with polyphosphoric acids or their salts; with perphosphoric acids or their salts [5]
- 11/73 • with carbon or compounds thereof (D06M 11/67 takes precedence) [5]
- 11/74 • • with carbon or graphite; with carbides; with graphitic acids or their salts [5]
- 11/75 • • with phosgene; with compounds containing both carbon and sulfur, e.g. thiophosgene (with thiocyanic acid D06M 11/67; with thiocarbamic acid D06M 13/425; with thiourea D06M 13/432) [5]
- 11/76 • • with carbon oxides or carbonates (D06M 11/75 takes precedence; with percarbonic acids or their salts D06M 11/50; with urea D06M 13/432) [5]
- 11/77 • with silicon or compounds thereof (with silanes or disilanes D06M 11/01) [5]
- 11/78 • • with silicon; with halides or oxyhalides of silicon; with fluorosilicates [5]
- 11/79 • • with silicon dioxide, silicic acids or their salts [5]
- 11/80 • with boron or compounds thereof, e.g. borides (with boranes or diboranes D06M 11/01; with boron carbides D06M 11/74) [5]

- 11/81 • • with boron; with boron halides; with fluoroborates [5]
- 11/82 • • with boron oxides; with boric, meta- or perboric acids or their salts, e.g. with borax [5]
- 11/83 • with metals; with metal-generating compounds, e.g. metal carbonyls; Reduction of metal compounds on textiles (decorating textiles by locally metallising D06Q 1/04) [5]
- 11/84 • combined with mechanical treatment (combined with mechanical tension, e.g. mercerising, D06M 11/40) [5]
- 13/00 Treating fibres, threads, yarns, fabrics or fibrous goods made from such materials with non-macromolecular organic compounds** (D06M 10/00, D06M 14/00 take precedence; treatment with complexes of organic amines with inorganic substances D06M 11/59); **Such treatment combined with mechanical treatment** [4, 5]
- Note(s)**
- In this group, the following term is used with the meaning indicated:
    - "treatment" means, in the absence of an indication to the contrary, the treatment which leads to the end product, e.g. treatment with chloroacetic acid can mean treatment with chloroacetylchloride and saponification in two separate steps.
  - In this group, it is desirable to add the indexing codes of group D06M 101/00.
- 13/02 • with hydrocarbons
- 13/03 • • with unsaturated hydrocarbons, e.g. alkenes, alkynes [5]
- 13/07 • • • Aromatic hydrocarbons [5]
- 13/08 • with halogenated hydrocarbons
- 13/10 • with compounds containing oxygen
- 13/11 • • Compounds containing epoxy groups or precursors thereof [5]
- 13/12 • • Aldehydes; Ketones
- 13/123 • • • Polyaldehydes; Polyketones [5]
- 13/127 • • • Mono-aldehydes, e.g. formaldehyde; Monoketones [5]
- 13/13 • • • Unsaturated aldehydes, e.g. acrolein; Unsaturated ketones; Ketenes [5]
- 13/133 • • • Halogenated aldehydes; Halogenated ketones [5]
- 13/137 • • Acetals, e.g. formals, ketals [5]
- 13/144 • • Alcohols; Metal alcoholates (D06M 13/11 takes precedence) [5]
- 13/148 • • • Polyalcohols, e.g. glycerol [5]
- 13/152 • • having a hydroxy group bound to a carbon atom of a six-membered aromatic ring [5]
- 13/156 • • • containing halogen atoms [5]
- 13/165 • • Ethers (D06M 13/11 takes precedence) [5]
- 13/17 • • • Polyoxyalkyleneglycol ethers [5]
- 13/175 • • • Unsaturated ethers, e.g. vinyl ethers [5]
- 13/184 • • Carboxylic acids; Anhydrides, halides or salts thereof [5]
- 13/188 • • • Monocarboxylic acids; Anhydrides, halides or salts thereof [5]
- 13/192 • • • Polycarboxylic acids; Anhydrides, halides or salts thereof [5]
- 13/196 • • • Percarboxylic acids; Anhydrides, halides or salts thereof [5]
- 13/203 • • • Unsaturated carboxylic acids; Anhydrides, halides or salts thereof [5]
- 13/207 • • • Substituted carboxylic acids, e.g. by hydroxy or keto groups; Anhydrides, halides or salts thereof [5]
- 13/21 • • • Halogenated carboxylic acids; Anhydrides, halides or salts thereof [5]
- 13/213 • • • • Perfluoroalkyl carboxylic acids; Anhydrides, halides or salts thereof [5]
- 13/217 • • • • Polyoxyalkyleneglycol ethers with a terminal carboxyl group; Anhydrides, halides or salts thereof [5]
- 13/224 • • Esters of carboxylic acids; Esters of carbonic acid [5]
- 13/228 • • • Cyclic esters, e.g. lactones [5]
- 13/232 • • • Organic carbonates [5]
- 13/236 • • • containing halogen atoms [5]
- 13/238 • • • Tannins, e.g. gallotannic acids [5]
- 13/244 • with compounds containing sulfur or phosphorus [5]
- 13/248 • • with compounds containing sulfur [5]
- 13/252 • • • Mercaptans, thiophenols, sulfides or polysulfides, e.g. mercapto acetic acid; Sulfonium compounds [5]
- 13/256 • • • Sulfonated compounds [5]
- 13/262 • • • Sulfated compounds [5]
- 13/265 • • • containing halogen atoms [5]
- 13/268 • • • Sulfones [5]
- 13/272 • • • Unsaturated compounds containing sulfur atoms [5]
- 13/275 • • • Vinylthioethers [5]
- 13/278 • • • Vinylsulfonium compounds; Vinylsulfone or vinylsulfoxide compounds [5]
- 13/282 • • with compounds containing phosphorus [5]
- 13/285 • • • Phosphines; Phosphine oxides; Phosphine sulfides; Phosphinic or phosphinous acids or derivatives thereof [5]
- 13/288 • • • Phosphonic or phosphonous acids or derivatives thereof [5]
- 13/29 • • • containing halogen atoms [5]
- 13/292 • • • Mono-, di- or triesters of phosphoric or phosphorous acids; Salts thereof [5]
- 13/295 • • • containing polyglycol moieties; containing neopentyl moieties [5]
- 13/298 • • • containing halogen atoms [5]
- 13/313 • • • Unsaturated compounds containing phosphorus atoms, e.g. vinylphosphonium compounds [5]
- 13/322 • with compounds containing nitrogen [5]
- 13/325 • • Amines [5]
- 13/328 • • • the amino group being bound to an acyclic or cycloaliphatic carbon atom [5]
- 13/33 • • • containing halogen atoms [5]
- 13/332 • • • Di- or polyamines [5]
- 13/335 • • • having an amino group bound to a carbon atom of a six-membered aromatic ring [5]
- 13/338 • • • Organic hydrazines; Hydrazinium compounds [5]
- 13/342 • • • Amino-carboxylic acids; Betaines; Aminosulfonic acids; Sulfo-betaines [5]
- 13/345 • • Nitriles [5]
- 13/348 • • • unsaturated, e.g. acrylonitrile [5]
- 13/35 • • Heterocyclic compounds [5]
- 13/352 • • • having five-membered heterocyclic rings [5]
- 13/355 • • • having six-membered heterocyclic rings [5]
- 13/358 • • • Triazines [5]
- 13/364 • • • • Cyanuric acid; Isocyanuric acid; Derivatives thereof [5]

- 13/368 • • Hydroxyalkylamines; Derivatives thereof, e.g. Kritchevsky bases [5]
- 13/372 • • containing etherified or esterified hydroxy groups [5]
- 13/376 • • Oximes [5]
- 13/382 • • Aminoaldehydes [5]
- 13/385 • • containing epoxy groups [5]
- 13/388 • • Amine oxides [5]
- 13/392 • • Nitroso compounds; Nitro compounds [5]
- 13/395 • • Isocyanates [5]
- 13/398 • • • containing fluorine atoms [5]
- 13/402 • • Amides [5]
- 13/405 • • • Acylated polyalkylene polyamines [5]
- 13/408 • • • Acylated amines containing fluorine atoms; Amides of perfluoro carboxylic acids [5]
- 13/41 • • • Amides derived from unsaturated carboxylic acids, e.g. acrylamide [5]
- 13/412 • • • N-methylolacrylamides [5]
- 13/415 • • • Amides of aromatic carboxylic acids; Acylated aromatic amines [5]
- 13/418 • • • Cyclic amides, e.g. lactams; Amides of oxalic acid [5]
- 13/419 • • • Amides having nitrogen atoms of amide groups substituted by hydroxyalkyl or by etherified or esterified hydroxyalkyl groups [5]
- 13/422 • • • Hydrazides [5]
- 13/425 • • • Carbamic or thiocarbamic acids or derivatives thereof, e.g. urethanes (unsubstituted carbamic acid D06M 11/67) [5]
- 13/428 • • • containing fluorine atoms [5]
- 13/432 • • • Urea, thiourea or derivatives thereof, e.g. biurets; Urea-inclusion compounds; Dicyanamides; Guanidines, e.g. dicyandiamides [5]
- 13/435 • • • Semicarbazides [5]
- 13/438 • • • Sulfonamides [5]
- 13/44 • • containing nitrogen and phosphorus
- 13/447 • • • Phosphonates or phosphinates containing nitrogen atoms [5]
- 13/453 • • • Phosphates or phosphites containing nitrogen atoms [5]
- 13/46 • • Compounds containing quaternary nitrogen atoms (hydrazinium compounds D06M 13/338; betaines, sulfo-betaines D06M 13/342) [5]
- 13/463 • • • derived from monoamines [5]
- 13/467 • • • derived from polyamines [5]
- 13/47 • • • derived from heterocyclic compounds [5]
- 13/473 • • • • having five-membered heterocyclic rings [5]
- 13/477 • • • • having six-membered heterocyclic rings [5]
- 13/48 • • containing the ethylene imine ring
- 13/487 • • Aziridinylphosphines; Aziridinylphosphine-oxides or sulfides; Carbonylaziridinyl or carbonylbisaziridinyl compounds; Sulfonylaziridinyl or sulfonylbisaziridinyl compounds [5]
- 13/493 • • • perfluorinated [5]
- 13/50 • • with organometallic compounds; with organic compounds containing boron, silicon, selenium or tellurium atoms [5]
- 13/503 • • without bond between a carbon atom and a metal or a boron, silicon, selenium or tellurium atom [5]
- 13/507 • • • Organic silicon compounds without carbon-silicon bond [5]
- 13/51 • • Compounds with at least one carbon-metal or carbon-boron, carbon-silicon, carbon-selenium, or carbon-tellurium bond [5]
- 13/513 • • • with at least one carbon-silicon bond [5]
- 13/517 • • • • containing silicon-halogen bonds [5]
- 13/52 • • combined with mechanical treatment (decorating textiles D06Q)
- 13/525 • • Embossing; Calendering; Pressing (moulding D06M 23/14) [5]
- 13/53 • • Cooling; Steaming or heating, e.g. in fluidised beds; with molten metals [5]
- 13/535 • • Suction; Vacuum treatment; Degassing; Blowing [5]
- 14/00 Graft polymerisation of monomers containing carbon-to-carbon unsaturated bonds on to fibres, threads, yarns, fabrics, or fibrous goods made from such materials (on to unshaped polymers C08F 251/00-C08F 292/00) [4]**
- 14/02 • • on to materials of natural origin (D06M 14/18 takes precedence) [4]
- 14/04 • • of vegetal origin, e.g. cellulose or derivatives thereof [4]
- 14/06 • • of animal origin, e.g. wool, silk [4]
- 14/08 • • on to materials of synthetic origin (D06M 14/18 takes precedence) [4]
- 14/10 • • of macromolecular compounds obtained by reactions only involving carbon-to-carbon unsaturated bonds [4]
- 14/12 • • of macromolecular compounds obtained otherwise than by reactions only involving carbon-to-carbon unsaturated bonds [4]
- 14/14 • • • Polyesters [4]
- 14/16 • • • Polyamides [4]
- 14/18 • • using wave energy or particle radiation [4]
- 14/20 • • on to materials of natural origin [4]
- 14/22 • • • of vegetal origin, e.g. cellulose or derivatives thereof [4]
- 14/24 • • • of animal origin, e.g. wool, silk [4]
- 14/26 • • on to materials of synthetic origin [4]
- 14/28 • • • of macromolecular compounds obtained by reactions only involving carbon-to-carbon unsaturated bonds [4]
- 14/30 • • • of macromolecular compounds obtained otherwise than by reactions only involving carbon-to-carbon unsaturated bonds [4]
- 14/32 • • • • Polyesters [4]
- 14/34 • • • • Polyamides [4]
- 14/36 • • on to carbon fibres [5]
- 15/00 Treating fibres, threads, yarns, fabrics or fibrous goods made from such materials with macromolecular compounds; Such treatment combined with mechanical treatment (D06M 10/00, D06M 14/00 take precedence) [5]**
- Note(s)**
1. In this group, the following term is used with the meaning indicated:
- "treatment" means, in the absence of an indication to the contrary, the treatment which leads to the end product, e.g.:
    - a. treatment with polyvinylalcohol can mean treatment with polyvinylacetate and subsequent saponification in a separate step;
    - b. treatment with aminoplast can mean the delayed cure process or the treatment with precondensation products, or with e.g. urea and with formaldehyde in two separate steps.

2. In this group, it is desirable to add the indexing codes of group D06M 101/00.
- 15/01 • with natural macromolecular compounds or derivatives thereof (with natural rubber or derivatives thereof D06M 15/693) [4]
- 15/03 • • Polysaccharides or derivatives thereof [4]
- 15/05 • • • Cellulose or derivatives thereof [4]
- 15/055 • • • • with the residual liquors derived of the sulfatic process for the preparation of cellulose [5]
- 15/07 • • • • Cellulose esters [4]
- 15/09 • • • • Cellulose ethers [4]
- 15/11 • • • Starch or derivatives thereof [4]
- 15/13 • • • Alginic acid or derivatives thereof [4]
- 15/15 • • Proteins or derivatives thereof [4]
- 15/17 • • Natural resins, resinous alcohols, resinous acids, or derivatives thereof [4, 5]
- 15/19 • with synthetic macromolecular compounds (with synthetic rubber D06M 15/693) [4]
- 15/21 • • Macromolecular compounds obtained by reactions only involving carbon-to-carbon unsaturated bonds [4]
- 15/227 • • • of hydrocarbons, or reaction products thereof, e.g. afterhalogenated or sulfochlorinated [4]
- 15/233 • • • • aromatic, e.g. styrene [4]
- 15/244 • • • of halogenated hydrocarbons (afterhalogenated hydrocarbons D06M 15/227) [4]
- 15/248 • • • • containing chlorine [4]
- 15/252 • • • • containing bromine [4]
- 15/256 • • • • containing fluorine [4]
- 15/263 • • • of unsaturated carboxylic acids; Salts or esters thereof [4]
- 15/267 • • • • of unsaturated carboxylic esters having amino or quaternary ammonium groups [4]
- 15/27 • • • • of alkylpolyalkylene glycol esters of unsaturated carboxylic acids [4]
- 15/273 • • • • of unsaturated carboxylic esters having epoxy groups [4]
- 15/277 • • • • containing fluorine [4]
- 15/285 • • • of unsaturated carboxylic acid amides or imides [4]
- 15/29 • • • • containing a N-methylol group or an etherified N-methylol group; containing a N-aminomethylene group; containing a N-sulfido-methylene group [4, 5]
- 15/295 • • • • containing fluorine [4]
- 15/31 • • • of unsaturated nitriles [4]
- 15/327 • • • of unsaturated alcohols or esters thereof [4]
- 15/33 • • • • Esters containing fluorine [5]
- 15/333 • • • • of vinyl acetate; Polyvinylalcohol [4]
- 15/347 • • • of unsaturated ethers, acetals, hemiacetals, ketones or aldehydes [4, 5]
- 15/353 • • • • containing fluorine [4]
- 15/356 • • • of other unsaturated compounds containing nitrogen, sulfur, silicon or phosphorus atoms [5]
- 15/37 • • Macromolecular compounds obtained otherwise than by reactions only involving carbon-to-carbon unsaturated bonds [4]
- 15/39 • • • Aldehyde resins; Ketone resins; Polyacetals [4]
- 15/41 • • • • Phenol-aldehyde or phenol-ketone resins [4, 5]
- 15/415 • • • • • modified by compounds containing phosphorus [5]
- 15/423 • • • • Amino-aldehyde resins [4, 5]
- 15/427 • • • • • modified by alkoxyated compounds or alkylene oxides [4]
- 15/429 • • • • • modified by compounds containing sulfur [5]
- 15/43 • • • • • modified by phosphorus compounds [4]
- 15/431 • • • • • • by phosphines or phosphine oxides; by oxides or salts of the phosphonium radical [5]
- 15/432 • • • • • • by phosphonic acids or derivatives thereof [5]
- 15/433 • • • • • • by phosphoric acids [4]
- 15/437 • • • • • containing fluorine [4]
- 15/45 • • • • • Use of special catalysts [4]
- 15/507 • • • Polyesters [4]
- 15/51 • • • • Unsaturated polymerisable polyesters [5]
- 15/513 • • • • Polycarbonates [4]
- 15/53 • • • Polyethers (polyacetals D06M 15/39) [4]
- 15/55 • • • Epoxy resins [4]
- 15/555 • • • • modified by compounds containing phosphorus [5]
- 15/564 • • • Polyureas, polyurethanes or other polymers having ureide or urethane links; Precondensation products forming them [4]
- 15/568 • • • • Reaction products of isocyanates with polyethers [4]
- 15/572 • • • • Reaction products of isocyanates with polyesters or polyesteramides [4]
- 15/576 • • • • containing fluorine [4]
- 15/579 • • • • modified by compounds containing phosphorus [5]
- 15/59 • • • Polyamides; Polyimides [4, 5]
- 15/592 • • • • made of polymerised unsaturated fatty acids and polyamines [5]
- 15/595 • • • • Derivatives obtained by substitution of a hydrogen atom of the carboxamide radical [5]
- 15/598 • • • • modified by compounds containing phosphorus [5]
- 15/61 • • • Polyamines [4]
- 15/63 • • • containing sulfur in the main chain, e.g. polysulfones [4]
- 15/643 • • • containing silicon in the main chain [4]
- 15/647 • • • • containing polyether sequences [4]
- 15/65 • • • • containing epoxy groups [4]
- 15/653 • • • • modified by isocyanate compounds [4]
- 15/657 • • • • containing fluorine [4]
- 15/667 • • • containing phosphorus in the main chain [4]
- 15/673 • • • • containing phosphorus and nitrogen in the main chain [4]
- 15/687 • • • containing atoms other than phosphorus, silicon, sulfur, nitrogen, oxygen or carbon in the main chain [4]
- 15/693 • with natural or synthetic rubber, or derivatives thereof [4]
- 15/70 • combined with mechanical treatment (decorating textiles D06Q)
- 15/705 • • Embossing; Calendering; Pressing (moulding D06M 23/14) [5]
- 15/71 • • Cooling; Steaming or heating, e.g. in fluidised beds; with molten metals [5]
- 15/715 • • Suction; Vacuum treatment; Degassing; Blowing [5]
- 16/00 Biochemical treatment of fibres, threads, yarns, fabrics, or fibrous goods made from such materials, e.g. enzymatic [2]**

**Note(s)**

In this group, it is desirable to add the indexing codes of group D06M 101/00.

**17/00 Producing multi-layer textile fabrics**

- 17/02 • by applying cellulose derivatives as adhesives [5]
- 17/04 • by applying synthetic resins as adhesives [5]
- 17/06 • • Polymers of vinyl compounds [5]
- 17/08 • • Polyamides [5]
- 17/10 • • Polyurethanes [5]

**19/00 Treatment of feathers [2]****23/00 Treatment of fibres, threads, yarns, fabrics or fibrous goods made from such materials, characterised by the process [5]****Note(s)**

In this group, it is desirable to add the indexing codes of group D06M 101/00.

- 23/02 • Processes in which the treating agent is releasably affixed or incorporated into a dispensing means [5]
- 23/04 • Processes in which the treating agent is applied in the form of a foam [5]
- 23/06 • Processes in which the treating agent is dispersed in a gas, e.g. aerosols (aerosol compositions C09K 3/30) [5]
- 23/08 • Processes in which the treating agent is applied in powder or granular form (adhesives for multi-layer textile fabrics D06M 17/00; decorating textiles D06Q) [5]
- 23/10 • Processes in which the treating agent is dissolved or dispersed in organic solvents; Processes for the recovery of organic solvents thereof [5]
- 23/12 • Processes in which the treating agent is incorporated in microcapsules (making microcapsules B01J 13/02) [5]
- 23/14 • Processes for the fixation or treatment of textile materials in three-dimensional forms [5]
- 23/16 • Processes for the non-uniform application of treating agents, e.g. one-sided treatment; Differential treatment (decorating textiles D06Q) [5]
- 23/18 • • for the chemical treatment of borders of fabrics or knittings; for the thermal or chemical fixation of cuttings, seams or fibre ends [5]

**Indexing scheme, associated with groups D06M 11/00, D06M 13/00, D06M 15/00, D06M 16/00 and D06M 23/00, relating to the fibres to be treated. [5]**

**101/00 Chemical constitution of the fibres, threads, yarns, fabrics or fibrous goods made from such materials, to be treated [5]****Note(s)**

1. Examples:

**D06N WALL, FLOOR, OR LIKE COVERING MATERIALS, e.g. LINOLEUM, OILCLOTH, ARTIFICIAL LEATHER, ROOFING FELT, CONSISTING OF A FIBROUS WEB COATED WITH A LAYER OF MACROMOLECULAR MATERIAL; FLEXIBLE SHEET MATERIAL NOT OTHERWISE PROVIDED FOR** (laminates in general B32B; coated webs which retain the character of paper or cardboard D21)

**Note(s)**

Layered products classified in this subclass are also classified in subclass B32B.

- the swelling of cellulose with alkaline hydroxides is classified in group D06M 11/38 and indexed in group D06M 101/06;
- the treatment of cellulose with amines is classified in group D06M 13/325 and indexed in group D06M 101/06;
- the treatment of polyester fibres with polyesters is classified in group D06M 15/507 and indexed in group D06M 101/32;
- the treatment of wool with pepsin is classified in group D06M 16/00 and indexed in group D06M 101/12;
- the treatment of cellulose with silicon tetrachloride in the form of a foam is classified in groups D06M 11/78, D06M 23/04 and indexed in group D06M 101/06.

2. Blends of fibres are indexed according to each constituent fibre.

- 101/02 • Natural fibres, other than mineral fibres [5]

- 
- 101/04 • • Vegetal fibres [5]
  - 101/06 • • • cellulosic [5]
  - 101/08 • • • • Esters or ethers of cellulose [5]
  - 101/10 • • • Animal fibres [5]
  - 101/12 • • • Keratin fibres or silk [5]
  - 101/14 • • • Collagen fibres [5]
  - 101/16 • Synthetic fibres, other than mineral fibres [5]
  - 101/18 • • Synthetic fibres consisting of macromolecular compounds obtained by reactions only involving carbon-to-carbon unsaturated bonds [5]
  - 101/20 • • • Polyalkenes, polymers or copolymers of compounds with alkenyl groups bonded to aromatic groups [5]
  - 101/22 • • • Polymers or copolymers of halogenated mono-olefins [5]
  - 101/24 • • • Polymers or copolymers of alkenylalcohols or esters thereof; Polymers or copolymers of alkenylethers, acetals or ketones [5]
  - 101/26 • • • Polymers or copolymers of unsaturated carboxylic acids or derivatives thereof [5]
  - 101/28 • • • • Acrylonitrile; Methacrylonitrile [5]
  - 101/30 • • Synthetic polymers consisting of macromolecular compounds obtained otherwise than by reactions only involving carbon-to-carbon unsaturated bonds [5]
  - 101/32 • • • Polyesters [5]
  - 101/34 • • • Polyamides [5]
  - 101/36 • • • • Aromatic polyamides [5]
  - 101/38 • • • Polyurethanes [5]
  - 101/40 • Fibres of carbon [5]

## D06N

1/00	<b>Linoleum</b>	3/12	• with macromolecular compounds obtained otherwise than by reactions only involving carbon-to-carbon unsaturated bonds
3/00	<b>Artificial leather, oilcloth, or like material obtained by covering fibrous webs with macromolecular material, e.g. resins, rubber or derivatives thereof [4]</b>	3/14	• • with polyurethanes
3/02	• with cellulose derivatives	3/16	• with oil varnishes
3/04	• with macromolecular compounds obtained by reactions only involving carbon-to-carbon unsaturated bonds	3/18	• with two layers of different macromolecular materials (D06N 3/08 takes precedence)
3/06	• • with polyvinyl chloride or its copolymerisation products	5/00	<b>Roofing felt, i.e. fibrous webs coated with bitumen</b>
3/08	• • • with a finishing layer consisting of polyacrylates, polyamides, or polyurethanes	7/00	<b>Flexible sheet materials not otherwise provided for, e.g. textile threads, filaments, yarns or tow, glued on macromolecular material</b>
3/10	• • with styrene-butadiene copolymerisation products	7/02	• composed of mixtures of substances
		7/04	• characterised by their surface properties
		7/06	• impregnated

**D06P DYEING OR PRINTING TEXTILES; DYEING LEATHER, FURS, OR SOLID MACROMOLECULAR SUBSTANCES IN ANY FORM** (for mechanical matters, *see* B41F, B41J, D06B, D06C; printing on surfaces of materials other than textiles B41M; surface treatment of fibres or filaments from glass, minerals, or slags C03C 25/00; mordanting D06M; dyeing paper D21H)

### Note(s)

Processes using enzymes or micro-organisms in order to:

- liberate, separate or purify a pre-existing compound or composition, or to
- treat textiles or clean solid surfaces of materials

are further classified in subclass C12S.

### Subclass index

#### DYEING OR PRINTING PROCESSES

Classified according to dyes or auxiliary agents..... 1/00

Classified according to material treated..... 3/00

Combined with mechanical treatment..... 7/00

OTHER FEATURES, e.g. AFTER-TREATMENT, RESERVE DYEING OR PRINTING..... 5/00

1/00	<b>General processes of dyeing or printing textiles, or general processes of dyeing leather, furs, or solid macromolecular substances in any form, classified according to the dyes, pigments, or auxiliary substances employed</b>	1/38	• using reactive dyes
1/02	• using azo dyes (D06P 1/18, D06P 1/38, D06P 1/39, D06P 1/41 take precedence) [2]	1/382	• • with a reactive group directly attached to the heterocyclic group [2]
1/04	• • not containing metal	1/384	• • with a reactive group not directly attached to the heterocyclic group [2]
1/06	• • • containing acid groups	1/39	• using acid dyes [2]
1/08	• • • cationic azo dyes	1/40	• • using acid dyes without azo groups
1/10	• • containing metal	1/41	• using basic dyes [2]
1/12	• • prepared <i>in situ</i>	1/42	• • using basic dyes without azo groups
1/13	• using azomethine dyes [2]	1/44	• using insoluble pigments or auxiliary substances, e.g. binders [2]
1/14	• using phthalocyanine dyes without vatting (D06P 1/38, D06P 1/40 take precedence)	1/46	• • using compositions containing natural macromolecular substances or derivatives thereof
1/16	• using dispersed, e.g. acetate, dyestuffs	1/48	• • • Derivatives of carbohydrates
1/18	• • Azo dyes	1/50	• • • • Derivatives of cellulose
1/19	• • Nitro dyes [2]	1/52	• • using compositions containing synthetic macromolecular substances (D06P 1/60 takes precedence)
1/20	• • Anthraquinone dyes	1/54	• • • Substances with reactive groups together with crosslinking agents
1/22	• using vat dyestuffs	1/56	• • • Condensation products or precondensation products prepared with aldehydes
1/24	• • Anthraquinone dyes	1/58	• • • • together with other synthetic macromolecular substances
1/26	• • Phthalocyanine dyes	1/60	• • using compositions containing polyethers
1/28	• • Esters of vat dyestuffs	1/607	• • • Nitrogen-containing polyethers [2]
1/30	• using sulfur dyes	1/613	• • • Polyethers without nitrogen [2]
1/32	• using oxidation dyes		
1/34	• using natural dyestuffs		
1/36	• using mordant dyes		



- 1/62 • • • using compositions containing low-molecular-weight organic compounds with sulfate or sulfonate groups
- 1/64 • • • using compositions containing low-molecular-weight organic compounds without sulfate or sulfonate groups
- 1/642 • • • Compounds containing nitrogen [2]
- 1/645 • • • • Aliphatic, araliphatic or cycloaliphatic compounds containing amino groups [2]
- 1/647 • • • • Nitrogen-containing carboxylic acids or their salts [2]
- 1/649 • • • • Compounds containing carbonamide, thiocarbonamide or guanyl groups [2]
- 1/651 • • • Compounds without nitrogen [2]
- 1/653 • • Nitrogen-free carboxylic acids or their salts [2]
- 1/655 • • Compounds containing ammonium groups [2, 6]
- 1/66 • • • containing quaternary ammonium groups [6]
- 1/667 • • Organo-phosphorus compounds [2]
- 1/673 • • Inorganic compounds [2]
- 1/81 • using dyes dissolved in inorganic solvents [7]
- 1/90 • using dyes dissolved in organic solvents or aqueous emulsions thereof [2]
- 1/92 • • in organic solvents [7]
- 1/94 • using dyes dissolved in solvents which are in the supercritical state [7]
- 1/96 • Dyeing characterised by a short bath ratio [7]
- 3/00 Special processes of dyeing or printing textiles, or dyeing leather, furs, or solid macromolecular substances in any form, classified according to the material treated**
  - 3/02 • Material containing basic nitrogen
  - 3/04 • • containing amide groups
  - 3/06 • • • using acid dyes
  - 3/08 • • • using oxidation dyes
  - 3/10 • • • using reactive dyes
  - 3/12 • • • Preparing azo dyes on the material
  - 3/14 • • • Wool
  - 3/16 • • • • using acid dyes
  - 3/18 • • • • using basic dyes
  - 3/20 • • • • using mordant dyes
  - 3/22 • • • • Preparing azo dyes on the fibre
  - 3/24 • • • Polyamides; Polyurethanes
  - 3/26 • • • • using dispersed dyestuffs
  - 3/28 • • • • Preparing azo dyes on the material
  - 3/30 • • • Furs
  - 3/32 • • • Leather
  - 3/34 • Material containing ester groups (D06P 3/04 takes precedence)
  - 3/36 • • using dispersed dyestuffs
  - 3/38 • • Preparing azo dyes on the material
  - 3/40 • • Cellulose acetate
  - 3/42 • • • using dispersed dyestuffs
  - 3/44 • • • Preparing azo dyes on the material
  - 3/46 • • • Cellulose triacetate
  - 3/48 • • • • using dispersed dyestuffs
  - 3/50 • • • • Preparing azo dyes on the material
  - 3/52 • • Polyesters
  - 3/54 • • • using dispersed dyestuffs
  - 3/56 • • • Preparing azo dyes on the material
  - 3/58 • Material containing hydroxyl groups
  - 3/60 • • Natural or regenerated cellulose
  - 3/62 • • • using direct dyes
  - 3/64 • • • using mordant dyes
  - 3/66 • • • using reactive dyes
  - 3/68 • • • Preparing azo dyes on the material
  - 3/70 • Material containing nitrile groups
  - 3/72 • • using dispersed dyestuffs
  - 3/74 • • using acid dyes
  - 3/76 • • using basic dyes
  - 3/78 • • Preparing azo dyes on the material
  - 3/79 • Polyolefins [2]
  - 3/80 • Inorganic fibres (surface treatment of fibres or filaments from glass, minerals or slags C03C 25/00)
  - 3/82 • Textiles which contain different kinds of fibres
  - 3/84 • • in the same shade
  - 3/85 • • dyed with one dye [2]
  - 3/852 • • • containing half-wool or cellulose-polyamide mixture [2]
  - 3/854 • • • containing modified or unmodified fibres [2]
  - 3/86 • • in different shades
  - 3/87 • • dyed with two or more dyes [2]
  - 3/872 • • • dyed with dispersed and reactive dyes [2]
  - 3/874 • • • with non-reactive anionic and non-reactive dispersed or cationic dyes [2]
- 5/00 Other features in dyeing or printing textiles, or dyeing leather, furs, or solid macromolecular substances in any form**
  - 5/02 • After-treatment

**Note(s)**

In groups D06P 5/04-D06P 5/10, in the absence of an indication to the contrary, a compound is classified in the last appropriate place.

  - 5/04 • • with organic compounds
  - 5/06 • • • containing nitrogen
  - 5/08 • • • macromolecular
  - 5/10 • • with compounds containing metal
  - 5/12 • Reserving parts of the material before dyeing or printing
  - 5/13 • Fugitive dyeing or stripping dyes [2]
  - 5/15 • Locally discharging the dyes [2]
  - 5/17 • • Azo dyes [2]
  - 5/20 • Physical treatments affecting dyeing, e.g. ultrasonic, electric [2]
  - 5/22 • Effecting variation of dye affinity on textile material by chemical means that react with the fibre [2]
  - 5/24 • Transfer printing (transfer printing apparatus for textile material B41F 16/02) [7]
  - 5/26 • • Heat transfer printing [7]
  - 5/28 • • • using subliming dyes [7]
  - 5/30 • Ink jet printing (ink jet printing apparatus B41J 2/00) [7]
- 7/00 Dyeing or printing processes combined with mechanical treatment**

D06P

**D06Q DECORATING TEXTILES** (for treatment of textiles by mechanical means, see D06B-D06J; metallising the entire surface of textiles D06M 11/83; textile threads, filaments, yarns or tow, glued on macromolecular material D06N 7/00; dyeing or printing D06P) [5]

Note(s)

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

- "decorating" means "local treatment" or "local effects produced" as to change, e.g. optically, the appearance or the properties of textile materials.
- |      |  |      |   |
|------|--|------|---|
| 1/00 | <b>Decorating textiles</b> (partial dyeing D06B 11/00; reserving parts of the material before dyeing or printing textiles D06P 5/12) | 1/08 | • by fixation of mechanical effects, e.g. calendering, embossing or Chintz effects, using chemical means [5]  |
| 1/02 | • Producing patterns by locally destroying or modifying the fibres of a web by chemical actions, e.g. making translucent             | 1/10 | • by treatment with, or fixation of, a particulate material, e.g. mica, glass beads (by metallising D06Q 1/04; by transferring D06Q 1/12) [5]             |
| 1/04 | • by metallising (transfer of metal particles D06Q 1/12) [5]   | 1/12 | • by transferring a chemical agent or a metallic or non-metallic material in particulate or other form, from a solid temporary carrier to the textile [5] |
| 1/06 | • by local treatment of pile fabrics with chemical means [5]   | 1/14 | • • by transferring fibres, or adhesives for fibres, to the textile [5]   |

**D07 ROPES; CABLES OTHER THAN ELECTRIC**

**D07B ROPES OR CABLES IN GENERAL** (joining ropes or cables to one another or to other objects B65H 69/00, F16G 11/00; mechanical finishing or dressing of ropes D02J; decorative ropes or cords D04D; suspension cables for bridges E01D 19/16; specially adapted for driving, or for being driven by, pulleys or other gearing elements F16G 9/00; electric cables or joints insofar as electrical aspects are essential H01B, H01R)

Subclass index

STRUCTURAL FEATURES.....	1/00
MANUFACTURE	
Machines of general application.....	3/00
Details, auxiliary devices.....	7/00
Making from special material.....	5/00
Making ropes or cables of particular form.....	5/00
Binding or sealing ends.....	9/00

- |      |  |      |  |
|------|--|------|--|
| 1/00 | <b>Constructional features of ropes or cables</b>  | 1/20 | • Buoyant ropes, e.g. with air-filled cellular cores; Accessories therefor         |
| 1/02 | • Ropes built-up from fibrous or filamentary material, e.g. of vegetable origin, of animal origin, regenerated cellulose, plastics | 1/22 | • Flat or flat-sided ropes; Sets of ropes consisting of a series of parallel ropes |
| 1/04 | • • with a core of fibres or filaments arranged parallel to the centre line  |      |  |
| 1/06 | • Ropes or cables built-up from metal wires, e.g. of section wires around a hemp core  |      |  |
| 1/08 | • • the layers of which are formed of profiled interlocking wires, i.e. the strands forming concentric layers                      |      |  |
| 1/10 | • • with a core of wires arranged parallel to the centre line  |      |  |
| 1/12 | • Ropes or cables with a hollow core   |      |  |
| 1/14 | • Ropes or cables with incorporated auxiliary elements, e.g. for making, extending throughout the length of the rope or cable      |      |  |
| 1/16 | • Ropes or cables with an enveloping sheathing or inlays of rubber or plastics (D07B 1/04, D07B 1/10 take precedence)              |      |  |
| 1/18 | • Grommets   |      |  |
- Manufacture of ropes or cables**
- |      |   |
|------|---|
| 3/00 | <b>General-purpose machines or apparatus for producing twisted ropes or cables from component strands of the same or different material</b> |
| 3/02 | • in which the supply reels rotate about the axis of the rope or cable  |
| 3/04 | • • and are arranged in tandem along the axis of the machine  |
| 3/06 | • • and are spaced radially from the axis of the machine  |
| 3/08 | • in which the take-up reel rotates about the axis of the rope or cable and the supply reels are fixed in position                          |

- 3/10 • • with provision for imparting more than one complete twist to the ropes or cables for each revolution of the take-up reel
- 3/12 • operating with rotating loops of filaments
- 3/14 • hand-operated

**5/00 Making ropes or cables from special materials or of particular form**

- 5/02 • from straw or like vegetable material
- 5/04 • Rope bands
- 5/06 • from natural or artificial staple fibres
- 5/08 • • agglutinated by adhesives
- 5/10 • from strands of non-circular cross-section
- 5/12 • of low twist or low tension by processes comprising setting or straightening treatments

**7/00 Details of, or auxiliary devices incorporated in, rope- or cable-making machines; Auxiliary apparatus associated with such machines**

- 7/02 • Machine details; Auxiliary devices

- 7/04 • • Devices for imparting reverse rotation to bobbin- or reel cages
- 7/06 • • Bearing supports or brakes for supply bobbins or reels
- 7/08 • • Alarms or stop motions responsive to exhaustion or breakage of filamentary material fed from supply reels or bobbins
- 7/10 • • Devices for taking-up or winding the finished rope or cable
- 7/12 • • for softening, lubricating, or impregnating ropes, cables, or component strands thereof
- 7/14 • • for coating or wrapping ropes, cables, or component strands thereof (applying liquids or other fluent materials to surfaces in general B05; wrapping elongated cores in general B65H 81/06)
- 7/16 • Auxiliary apparatus
- 7/18 • • for spreading or untwisting ropes or cables into constituent parts for treatment or splicing purposes

**9/00 Binding or sealing ends, e.g. to prevent unravelling**

## PAPER

## D21 PAPER-MAKING; PRODUCTION OF CELLULOSE

## D21B FIBROUS RAW MATERIALS OR THEIR MECHANICAL TREATMENT

<b>1/00</b>	<b>Fibrous raw materials or their mechanical treatment</b> (beaters D21D 1/00)	1/16	• • • • in the presence of chemical agents
1/02	• Pretreatment of the raw materials by physical or chemical means (removal of bark B27L)	1/18	• • • • in magazine-type machines
1/04	• by dividing raw materials into small particles, e.g. fibres (breaking-up or cutting wood or the like by dry methods B27L; disintegrating peat C10F 7/02; obtaining fibres mechanically for spinning from rags, peat, or the like D01B)	1/20	• • • • with chain feed
1/06	• • by dry methods	1/22	• • • • with screw feed
1/08	• • • the raw material being waste paper (chemical part D21C 5/02); the raw material being rags	1/24	• • • • of the pocket type
1/10	• • • • by cutting actions	1/26	• • • • Driving or feeding arrangements
1/12	• • by wet methods, by the use of steam	1/28	• • • • Dressers for mill stones, combined with the mill
1/14	• • • Disintegrating in mills (in general B02C)	1/30	• • • Defibrating by other means
		1/32	• • • • of waste paper
		1/34	• • • • Kneading or mixing; Pulpers
		1/36	• • • • Explosive disintegration by sudden pressure reduction
		1/38	• Conserving the finely-divided cellulosic material

## D21C PRODUCTION OF CELLULOSE BY REMOVING NON-CELLULOSE SUBSTANCES FROM CELLULOSE-CONTAINING MATERIALS; REGENERATION OF PULPING LIQUORS; APPARATUS THEREFOR

Note(s)

Processes using enzymes or micro-organisms in order to:

- i. liberate, separate or purify a pre-existing compound or composition, or to
- ii. treat textiles or clean solid surfaces of materials

are further classified in subclass C12S.

Subclass index

## PRODUCTION OF CELLULOSE

Pretreatment of raw material.....	1/00
Pulping.....	3/00
Other processes.....	5/00
Digesters.....	7/00

AFTER-TREATMENT.....9/00

REGENERATION OF PULP LIQUORS.....11/00

<b>1/00</b>	<b>Pretreatment of the finely-divided materials before digesting</b> (of waste paper D21C 5/02)	3/10	• • • magnesium bisulfite
1/02	• with water or steam	3/12	• • • sodium bisulfite
1/04	• with acid reacting compounds	3/14	• • • ammonium bisulfite
1/06	• with alkaline reacting compounds	3/16	• • nitrogen oxides; nitric acid
1/08	• with oxygen-generating compounds	3/18	• with halogens or halogen-generating compounds (bleaching cellulose pulp D21C 9/12)
1/10	• Physical methods for facilitating impregnation	3/20	• with organic solvents
<b>3/00</b>	<b>Pulping cellulose-containing materials</b> (digesters D21C 7/00)	3/22	• Other features of pulping processes
3/02	• with inorganic bases or alkaline reacting compounds, e.g. sulfate processes	3/24	• • Continuous processes
3/04	• with acids, acid salts, or acid anhydrides	3/26	• • Multi-stage processes
3/06	• • sulfur dioxide; sulfurous acid; bisulfites	3/28	• • Prevention of foam
3/08	• • • calcium bisulfite	<b>5/00</b>	<b>Other processes for obtaining cellulose, e.g. cooking cotton linters</b> (obtaining fibres for spinning D01C)

- 5/02 • Working-up waste paper (mechanical part  
D21B 1/08, D21B 1/32)

**7/00 Digesters**

- 7/02 • Rotary digesters  
7/04 • Linings  
7/06 • Feeding devices  
7/08 • Discharge devices  
7/10 • Heating devices  
7/12 • Devices for regulating or controlling  
7/14 • Means for circulating the lye  
7/16 • Safety devices

**9/00 After-treatment of cellulose pulp, e.g. of wood pulp, or cotton linters**

- 9/02 • Washing  
9/04 • • in diffusers  
9/06 • • in filters  
9/08 • Removal of fats, resins, pitch, or waxes  
9/10 • Bleaching

- 9/12 • • with halogens or halogen-containing compounds  
(D21C 9/16 takes precedence) **[4]**  
9/14 • • • with ClO<sub>2</sub> or chlorites  
9/147 • • with oxygen or its allotropic modifications  
(D21C 9/16 takes precedence) **[4]**  
9/153 • • • with ozone **[4]**  
9/16 • • with per compounds  
9/18 • De-watering (de-watering in general F26B)

**11/00 Regeneration of pulp liquors**

- 11/02 • of sulfite lye  
11/04 • of alkali lye  
11/06 • Treatment of pulp gases; Recovery of the heat  
content of the gases  
11/08 • • Deodorisation  
11/10 • Concentrating spent liquor by evaporation  
(evaporators B01D)  
11/12 • Combustion of pulp liquors  
11/14 • • Wet combustion

**D21D TREATMENT OF THE MATERIALS BEFORE PASSING TO THE PAPER-MAKING MACHINE [5]**

**1/00 Methods of beating or refining; Beaters of the Hollander type** (knotted screens D21F)

- 1/02 • Methods of beating; Beaters of the Hollander type  
1/04 • • Beater rolls or bars  
1/06 • • Bed plates  
1/08 • • Beaters with means for driving the pulp quickly  
1/10 • • Beaters with means for regulating the pressure  
between the beater roll and the bed plate  
1/12 • • Beaters with means for continuous pulp discharge  
1/14 • • Beaters with one beater roll and with vertical stuff  
circulation canal  
1/16 • • Beaters with means for returning the pulp over the  
head of the beater roll  
1/18 • • Beaters with two or more beater rolls  
1/20 • Methods of refining  
1/22 • • Jordans  
1/24 • • • Jordan rolls  
1/26 • • • Jordan bed plates  
1/28 • • Ball or rod mills  
1/30 • • Disc mills  
1/32 • • Hammer mills  
1/34 • • Other mills or refiners  
1/36 • • • with vertical shaft

- 1/38 • • • with horizontal shaft  
1/40 • • Washing the fibres

**5/00 Purification of the pulp suspension by mechanical means; Apparatus therefor** (centrifuges, cyclones B04)

- 5/02 • Straining or screening the pulp  
5/04 • • Flat screens  
5/06 • • Rotary screen-drums  
5/08 • • • combined with a rocking movement  
5/10 • • • • of the tank  
5/12 • • • • of the screen  
5/14 • • • • of the tank and the screen  
5/16 • • Cylinders and plates for screens  
5/18 • with the aid of centrifugal force  
5/20 • • in apparatus with a horizontal axis  
5/22 • • in apparatus with a vertical axis  
5/24 • • in cyclones  
5/26 • De-aeration of paper stock  
5/28 • Tanks for storing or agitating pulp

**99/00 Subject matter not provided for in other groups of this subclass [2006.01]**

**D21F PAPER-MAKING MACHINES; METHODS OF PRODUCING PAPER THEREON**

**Subclass index**

**MAKING CONTINUOUS WEBS**

- Complete machines.....9/00  
Details  
wet end, transfer to press section, press section, dryer section.....1/00, 2/00, 3/00, 5/00  
other details.....7/00  
Processes.....11/00

**MAKING DISCONTINUOUS SHEETS.....13/00**

**1/00 Wet end of machines for making continuous webs of**

**paper**

## D21F

- 1/02 • Head boxes of Fourdrinier machines
- 1/04 • Head boxes of cylinder machines
- 1/06 • Regulating pulp flow
- 1/08 • Regulating consistency
- 1/10 • Wire-cloths
- 1/12 • • Seams thereof
- 1/14 • • • welded
- 1/16 • • • sewn
- 1/18 • Shaking-apparatus for wire-cloths and associated parts
- 1/20 • • in Fourdrinier machines
- 1/22 • • in cylinder machines
- 1/24 • Tilting, raising, or lowering mechanisms for wire-cloths
- 1/26 • • in Fourdrinier machines
- 1/28 • • in cylinder machines
- 1/30 • Protecting wire-cloths from mechanical damage
- 1/32 • Washing wire-cloths or felts
- 1/34 • Construction or arrangement of spraying pipes
- 1/36 • Guiding mechanisms
- 1/38 • • Pads
- 1/40 • • Rolls
- 1/42 • • Jets
- 1/44 • Watermarking devices
- 1/46 • • Dandy rolls
- 1/48 • Suction apparatus (suction rolls D21F 3/10)
- 1/50 • • Suction boxes with rolls
- 1/52 • • Suction boxes without rolls
- 1/54 • Skimming devices, e.g. froth ledges
- 1/56 • Deckle frame arrangements
- 1/58 • Deckle straps
- 1/60 • Cylinder moulds
- 1/62 • Sand traps
- 1/64 • Magnetic separators
- 1/66 • Pulp catching, de-watering, or recovering; Re-use of pulp-water
- 1/68 • • using hydrocyclones
- 1/70 • • by flotation
- 1/72 • • using funnels
- 1/74 • • using cylinders
- 1/76 • • • with suction
- 1/78 • • • with pressure
- 1/80 • • using endless screening belts
- 1/82 • • adding fibre agglomeration compositions

### 2/00 Transferring continuous webs from wet ends to press sections

### 3/00 Press section of machines for making continuous webs of paper

- 3/02 • Wet presses
- 3/04 • • Arrangements thereof
- 3/06 • • Means for regulating the pressure
- 3/08 • • Pressure rolls

- 3/10 • • Suction rolls, e.g. couch rolls

### 5/00 Dryer section of machines for making continuous webs of paper

- 5/02 • Drying on cylinders
- 5/04 • • on two or more drying cylinders
- 5/06 • • Regulating temperature
- 5/08 • • Arrangement of steam points in the cylinders
- 5/10 • • Removing condensate from the interior of the cylinders
- 5/12 • Festoon drying
- 5/14 • Drying webs by applying vacuum
- 5/16 • Drying webs by electrical heating
- 5/18 • Drying webs by hot air
- 5/20 • Waste heat recovery

### 7/00 Other details of machines for making continuous webs of paper

- 7/02 • Mechanical driving arrangements
- 7/04 • Paper-break control devices
- 7/06 • Indicating or regulating the thickness of the layer; Signal devices
- 7/08 • Felts
- 7/10 • • Seams thereof
- 7/12 • • Drying

### 9/00 Complete machines for making continuous webs of paper

- 9/02 • of the Fourdrinier type
- 9/04 • of the cylinder type

### 11/00 Processes for making continuous lengths of paper, or of cardboard, or of wet web for fibreboard production, on paper-making machines

- 11/02 • of the Fourdrinier type
- 11/04 • • paper or board consisting of two or more layers
- 11/06 • of the cylinder type
- 11/08 • • paper or board consisting of two or more layers
- 11/10 • Making imitation mould-made paper
- 11/12 • Making corrugated paper or board
- 11/14 • Making cellulose wadding, filter- or blotting paper
- 11/16 • Making paper strips for spinning or twisting

### 13/00 Methods or apparatus for making discontinuous sheets of paper, pulpboard, or cardboard, or of wet web, for fibreboard production (making discontinuous sheets of board in moulds D21J; drying paper, pulpboard, or cardboard, in discontinuous-sheet form F26B)

- 13/02 • Making hand-made paper
- 13/04 • on cylinder board machines
- 13/06 • • Format rolls
- 13/08 • • • Automatic cut-off rolls
- 13/10 • using board presses
- 13/12 • • Platen presses

## D21G CALENDERS; ACCESSORIES FOR PAPER-MAKING MACHINES (winders or rewinders for finished products, means for adjustment of wrinkles or lateral extensions B65H)

- 1/00 **Calenders** (if restricted to the treatment of particular materials, see the relevant place, e.g. B29C 43/24, D06); **Smoothing apparatus**
- 1/02 • Rolls; Their bearings (in general F16C 13/00)

- 3/00 **Doctors**
- 3/02 • for calenders
- 3/04 • for drying cylinders

### 5/00 Safety devices

## 7/00 Damping devices

## 9/00 Other accessories for paper-making machines

**D21H PULP COMPOSITIONS; PREPARATION THEREOF NOT COVERED BY SUBCLASSES D21C, D21D; IMPREGNATING OR COATING OF PAPER; TREATMENT OF FINISHED PAPER NOT COVERED BY CLASS B31 OR SUBCLASS D21G; PAPER NOT OTHERWISE PROVIDED FOR [5]**

**Note(s)**

1. This subclass covers also pulp compositions for the preparation of fibreboard or other fibrous articles by wet processes.
2. In this subclass, the following terms are used with the meaning indicated:
  - "pulp" means a dispersion comprising paper-making fibres and optional additives, which is to be processed, and covers the term "stock"; it also means dry paper-making fibres which are to be made into paper by either wet or dry processes;
  - "paper" means paper, cardboard or wet-laid non-woven fabrics.
3. If a pulp composition or a paper, or a constituent thereof, is characterised by more than one feature provided for in this subclass, for example, by both the fibrous material and a coating or by both a colorant and a water-repelling agent, classification is made in all places providing for these features.
4. Processes using enzymes or micro-organisms in order to:
  - i. liberate, separate or purify a pre-existing compound or composition, or to
  - ii. treat textiles or clean solid surfaces of materials
 are further classified in subclass C12S.

**Subclass index****PULP OR PAPER**

comprising cellulose, lignocellulose or non-cellulose fibres or web-forming material.....11/00, 13/00

comprising fibres or web-forming material not characterised by their chemical constitution.....15/00

Processes or apparatus for adding material.....23/00

**NON-FIBROUS MATERIAL ADDED TO THE PULP, PAPER-IMPREGNATING MATERIAL.....17/00, 21/00**

**COATED PAPER; COATING MATERIAL.....19/00**

**OTHER AFTER-TREATMENTS OF PAPER.....25/00**

**SPECIAL PAPER.....27/00**

**Note(s)**

In groups D21H 11/00-D21H 15/00, in the absence of an indication to the contrary, classification is made in the last appropriate place.

**11/00 Pulp or paper, comprising cellulose or lignocellulose fibres of natural origin only [5]**

- 11/02 • Chemical or chemomechanical pulp [5]
- 11/04 • • Kraft or sulfate pulp [5]
- 11/06 • • Sulfite or bisulfite pulp [5]
- 11/08 • Mechanical or thermomechanical pulp [5]
- 11/10 • Mixtures of chemical and mechanical pulp [5]
- 11/12 • Pulp from non-woody plants or crops, e.g. cotton, flax, straw, bagasse [5]
- 11/14 • Secondary fibres (working-up waste paper D21C 5/02) [5]
- 11/16 • modified by a particular after-treatment [5]
- 11/18 • • Highly hydrated, swollen or fibrillatable fibres [5]
- 11/20 • • Chemically or biochemically modified fibres [5]
- 11/22 • • • cationised [5]

**13/00 Pulp or paper, comprising synthetic cellulose or non-cellulose fibres or web-forming material (chemical features in the manufacture of artificial fibres D01F) [5]**

- 13/02 • Synthetic cellulose fibres [5]
- 13/04 • • Cellulose ethers [5]
- 13/06 • • Cellulose esters [5]
- 13/08 • • from regenerated cellulose [5]
- 13/10 • Organic non-cellulose fibres [5]
- 13/12 • • from macromolecular compounds obtained by reactions only involving carbon-to-carbon unsaturated bonds [5]

- 13/14 • • • Polyalkenes, e.g. polystyrene [5]
- 13/16 • • • Polyalkenylalcohols; Polyalkenylethers; Polyalkenylesters [5]
- 13/18 • • • Polymers of unsaturated acids or derivatives thereof, e.g. polyacrylonitriles [5]
- 13/20 • • from macromolecular compounds obtained otherwise than by reactions only involving carbon-to-carbon unsaturated bonds [5]
- 13/22 • • • Condensation polymers of aldehydes or ketones [5]
- 13/24 • • • Polyesters [5]
- 13/26 • • • Polyamides; Polyimides [5]
- 13/28 • • from natural polymers [5]
- 13/30 • • • Non-cellulose polysaccharides [5]
- 13/32 • • • • Alginate fibres [5]
- 13/34 • • • Protein fibres [5]
- 13/36 • Inorganic fibres or flakes [5]
- 13/38 • • siliceous [5]
- 13/40 • • • vitreous, e.g. mineral wool, glass fibres [5]
- 13/42 • • • Asbestos [5]
- 13/44 • • • Flakes, e.g. mica, vermiculite [5]
- 13/46 • • Non-siliceous fibres, e.g. from metal oxides [5]
- 13/48 • • • Metal or metallised fibres [5]
- 13/50 • • • Carbon fibres [5]

**15/00 Pulp or paper, comprising fibres or web-forming material characterised by features other than their chemical constitution [5]**

- 15/02 • characterised by configuration [5]
- 15/04 • • crimped, kinked, curled or twisted fibres [5]

## D21H

- 15/06 • • Long fibres, i.e. fibres exceeding the upper length limit of conventional paper-making fibres; Filaments [5]
- 15/08 • • Flakes (D21H 13/44 takes precedence) [5]
- 15/10 • • Composite fibres [5]
- 15/12 • • partly organic, partly inorganic [5]
- 17/00 Non-fibrous material added to the pulp, characterised by its constitution; Paper-impregnating material characterised by its constitution [5]**
- Note(s)**
- 1. In groups D21H 17/01-D21H 17/63, in the absence of an indication to the contrary, a material is classified in the last appropriate place.
- 2. A mixture of two or more materials is classified in the last appropriate place in groups D21H 17/01-D21H 17/63 that provides for at least one of these materials.
- 3. Any part of a mixture which is not identified by the classification according to note (2), and which itself is determined to be novel and non-obvious, must also be classified in the last appropriate place in groups D21H 17/01-D21H 17/63. The part can be either a single material or a mixture in itself.
- 4. A part of a mixture which is not identified by the classification according to note (2) or (3), and which is considered to represent information of interest for search, may also be classified in the last appropriate place in groups D21H 17/01-D21H 17/63. This can for example be the case when it is considered of interest to enable searching of mixtures using a combination of classification symbols. Such non-obligatory classification should be given as "additional information".
- 17/01 • Waste products, e.g. sludge [5]
- 17/02 • Material of vegetable origin (proteins D21H 17/22; lignins D21H 17/23; polysaccharides D21H 17/24; rosin D21H 17/62) [5]
- 17/03 • Non-macromolecular organic compounds [5]
- 17/04 • • Hydrocarbons [5]
- 17/05 • • containing elements other than carbon and hydrogen only [5]
- 17/06 • • • Alcohols; Phenols; Ethers; Aldehydes; Ketones; Acetals; Ketals [5]
- 17/07 • • • Nitrogen-containing compounds [5]
- 17/08 • • • • Isocyanates [5]
- 17/09 • • • Sulfur-containing compounds [5]
- 17/10 • • • Phosphorus-containing compounds [5]
- 17/11 • • • Halides [5]
- 17/12 • • • Organo-metallic compounds [5]
- 17/13 • • • Silicon-containing compounds [5]
- 17/14 • • • Carboxylic acids; Derivatives thereof [5]
- 17/15 • • • • Polycarboxylic acids, e.g. maleic acid [5]
- 17/16 • • • • Addition products thereof with hydrocarbons [5]
- 17/17 • • • Ketenes, e.g. ketene dimers [5]
- 17/18 • • • forming new compounds *in situ*, e.g. within the pulp or paper, by chemical reaction with itself, or other added substances [5]
- 17/19 • • • • by reactions only involving carbon-to-carbon unsaturated bonds [5]
- 17/20 • Macromolecular organic compounds [5]
- 17/21 • • of natural origin; Derivatives thereof [5]
- 17/22 • • Proteins [5]
- 17/23 • • • Lignins [5]
- 17/24 • • • Polysaccharides [5]
- 17/25 • • • • Cellulose [5]
- 17/26 • • • • Ethers thereof [5]
- 17/27 • • • • Esters thereof [5]
- 17/28 • • • • Starch [5]
- 17/29 • • • • cationic [5]
- 17/30 • • • • Alginic acid or alginates [5]
- 17/31 • • • • Gums [5]
- 17/32 • • • • Guar gum [5]
- 17/33 • • Synthetic macromolecular compounds [5]
- 17/34 • • • obtained by reactions only involving carbon-to-carbon unsaturated bonds [5]
- 17/35 • • • • Polyalkenes, e.g. polystyrene [5]
- 17/36 • • • • Polyalkenylalcohols; Polyalkenylethers; Polyalkenylesters [5]
- 17/37 • • • • Polymers of unsaturated acids or derivatives thereof, e.g. polyacrylates [5]
- 17/38 • • • • containing crosslinkable groups [5]
- 17/39 • • • • forming ether crosslinkages, e.g. alkylol groups [5]
- 17/40 • • • • • unsaturated [5]
- 17/41 • • • • • containing ionic groups [5]
- 17/42 • • • • • anionic [5]
- 17/43 • • • • • Carboxyl groups or derivatives thereof [5]
- 17/44 • • • • • cationic [5]
- 17/45 • • • • • Nitrogen-containing groups [5]
- 17/46 • • • obtained otherwise than by reactions only involving carbon-to-carbon unsaturated bonds [5]
- 17/47 • • • • Condensation polymers of aldehydes or ketones [5]
- 17/48 • • • • • with phenols [5]
- 17/49 • • • • • with compounds containing hydrogen bound to nitrogen [5]
- 17/50 • • • • • Acyclic compounds [5]
- 17/51 • • • • • Triazines, e.g. melamine [5]
- 17/52 • • • • Epoxy resins [5]
- 17/53 • • • • Polyethers; Polyesters [5]
- 17/54 • • • • obtained by reactions forming in the main chain of the macromolecule a linkage containing nitrogen [5]
- 17/55 • • • • • Polyamides; Polyaminoamides; Polyester-amides [5]
- 17/56 • • • • • Polyamines; Polyimines; Polyester-imides [5]
- 17/57 • • • • • Polyureas; Polyurethanes [5]
- 17/58 • • • • obtained by reactions forming in the main chain of the macromolecule a linkage containing sulfur [5]
- 17/59 • • • • obtained by reactions forming in the main chain of the macromolecule a linkage containing silicon [5]
- 17/60 • Waxes [5]
- 17/61 • Bitumen [5]
- 17/62 • Rosin; Derivatives thereof [5]
- 17/63 • Inorganic compounds [5]
- 17/64 • • Alkaline compounds [5]
- 17/65 • • Acid compounds [5]
- 17/66 • • Salts, e.g. alums [5]
- 17/67 • • Water-insoluble compounds, e.g. fillers, pigments [5]
- 17/68 • • • siliceous, e.g. clays [5]



- 17/69 • • • modified, e.g. by association with other compositions prior to incorporation in the pulp or paper [5]
- 17/70 • • forming new compounds *in situ*, e.g. within the pulp or paper, by chemical reaction with other substances added separately [5]
- 19/00 Coated paper** (coated fibreboard D21J 1/08); **Coating material** (recording sheets characterised by the coating used to improve ink, dye or pigment receptivity B41M 5/50) [5]
- 19/02 • Metal coatings (D21H 19/66 takes precedence) [5]
- 19/04 • • applied as foil [5]
- 19/06 • • applied as liquid or powder [5]
- 19/08 • • applied as vapour, e.g. in vacuum [5]
- 19/10 • Coatings without pigments (D21H 19/66 takes precedence) [5]
- 19/12 • • applied as a solution using water as the only solvent, e.g. in the presence of acid or alkaline compounds [5]
- 19/14 • • applied in a form other than the aqueous solution defined in group D21H 19/12 [5]
- 19/16 • • • comprising curable or polymerisable compounds (D21H 19/24 takes precedence) [5]
- 19/18 • • • comprising waxes [5]
- 19/20 • • • comprising macromolecular compounds obtained by reactions only involving carbon-to-carbon unsaturated bonds [5]
- 19/22 • • • • Polyalkenes, e.g. polystyrene [5]
- 19/24 • • • comprising macromolecular compounds obtained otherwise than by reactions only involving carbon-to-carbon unsaturated bonds [5]
- 19/26 • • • • Aminoplasts [5]
- 19/28 • • • • Polyesters [5]
- 19/30 • • • • Polyamides; Polyimides [5]
- 19/32 • • • • obtained by reactions forming a linkage containing silicon in the main chain of the macromolecule [5]
- 19/34 • • • comprising cellulose or derivatives thereof [5]
- 19/36 • Coatings with pigments (D21H 19/66 takes precedence; metal powder D21H 19/06) [5]
- 19/38 • • characterised by the pigments [5]
- 19/40 • • • siliceous, e.g. clays [5]
- 19/42 • • • at least partly organic [5]
- 19/44 • • characterised by the other ingredients, e.g. the binder or dispersing agent [5]
- 19/46 • • • Non-macromolecular organic compounds [5]
- 19/48 • • • • Diolefins, e.g. butadiene; Aromatic vinyl monomers, e.g. styrene; Polymerisable unsaturated acids or derivatives thereof, e.g. acrylic acid [5]
- 19/50 • • • Proteins [5]
- 19/52 • • • Cellulose; Derivatives thereof [5]
- 19/54 • • • Starch [5]
- 19/56 • • • Macromolecular organic compounds or oligomers thereof obtained by reactions only involving carbon-to-carbon unsaturated bonds [5]
- 19/58 • • • • Polymers or oligomers of diolefins, aromatic vinyl monomers or unsaturated acids or derivatives thereof [5]
- 19/60 • • • • Polyalkenylalcohols; Polyalkenylethers; Polyalkenylesters [5]
- 19/62 • • • Macromolecular organic compounds or oligomers thereof obtained otherwise than by reactions only involving carbon-to-carbon unsaturated bonds [5]
- 19/64 • • • Inorganic compounds [5]
- 19/66 • Coatings characterised by a special visual effect, e.g. patterned, textured (marbled paper D21H 27/04) [5]
- 19/68 • • uneven, broken, discontinuous [5]
- 19/70 • • with internal voids, e.g. bubble coatings [5]
- 19/72 • Coated paper characterised by the paper substrate [5]
- 19/74 • • the substrate having an uneven surface, e.g. crêped or corrugated paper [5]
- 19/76 • • the substrate having specific absorbent properties [5]
- 19/78 • • • being substantially impervious to the coating [5]
- 19/80 • Paper comprising more than one coating (D21H 19/02 takes precedence) [5]
- 19/82 • • superposed [5]
- 19/84 • • on both sides of the substrate [5]
- 21/00 Non-fibrous material added to the pulp, characterised by its function, form or properties; Paper impregnating or coating material, characterised by its function, form or properties** [5]
- 21/02 • Agents for preventing deposition on the paper mill equipment, e.g. pitch or slime control (removal of fats, resins, pitch, or waxes D21C 9/08) [5]
- 21/04 • • Slime-control agents [5]
- 21/06 • Paper forming aids [5]
- 21/08 • • Dispersing agents for fibres [5]
- 21/10 • • Retention agents or drainage improvers [5]
- 21/12 • • Defoamers [5]
- 21/14 • characterised by function or properties in or on the paper (D21H 19/66, D21H 27/02 take precedence) [5]
- 21/16 • • Sizing or water-repelling agents [5]
- 21/18 • • Reinforcing agents [5]
- 21/20 • • • Wet strength agents [5]
- 21/22 • • Agents rendering paper porous, absorbent or bulky [5]
- 21/24 • • • Surfactants [5]
- 21/26 • • Agents rendering paper transparent or translucent [5]
- 21/28 • • Colorants [5]
- 21/30 • • Luminescent or fluorescent substances, e.g. for optical bleaching (D21H 21/40 takes precedence) [5]
- 21/32 • • Bleaching agents (bleaching cellulose pulp D21C 9/10) [5]
- 21/34 • • Ignifugeants [5]
- 21/36 • • Biocidal agents, e.g. fungicidal, bactericidal, insecticidal agents [5]
- 21/38 • • Corrosion-inhibiting agents or anti-oxidants [5]
- 21/40 • • Agents facilitating proof of genuineness or preventing fraudulent alteration, e.g. for security paper (watermarking B41M 3/10, D21F 1/44; security printing B41M 3/14; securities or banknotes characterised by colour effects B44F 1/12; testing paper currency or valuable papers for genuineness G07D 7/00) [5]
- 21/42 • • • Ribbons or strips (filaments D21H 15/06) [5]
- 21/44 • • • Latent security elements, i.e. detectable or becoming apparent only by use of special verification or tampering devices or methods [5]

## D21H

- 21/46 • • • Elements suited for chemical verification or impeding chemical tampering, e.g. by use of eradicators [5]
- 21/48 • • • Elements suited for physical verification, e.g. by irradiation [5]
- 21/50 • characterised by form (D21H 19/66, D21H 21/42, D21H 27/02 take precedence) [5]
- 21/52 • • Additives of definite length or shape [5]
- 21/54 • • • being spherical, e.g. microcapsules, beads [5]
- 21/56 • • Foam [5]

- 23/00 Processes or apparatus for adding material to the pulp or to the paper** (applying liquids or other fluent material to surfaces, in general B05; processes for making continuous lengths of paper D21F 11/00) [5]
- 23/02 • characterised by the manner in which substances are added [5]
- 23/04 • • Addition to the pulp; After-treatment of added substances in the pulp [5]
- 23/06 • • • Controlling the addition [5]
- 23/08 • • • • by measuring pulp properties, e.g. zeta potential, pH [5]
- 23/10 • • • • • at least two kinds of compounds being added [5]
- 23/12 • • • • • by measuring properties of the formed web [5]
- 23/14 • • • • • by selecting point of addition or time of contact between components [5]
- 23/16 • • • • • Addition before or during pulp beating or refining (disintegrating fibrous raw materials in mills in the presence of chemical agents D21B 1/16; methods of beating D21D 1/02; methods of refining D21D 1/20) [5]
- 23/18 • • • • • Addition at a location where shear forces are avoided before sheet-forming, e.g. after pulp beating or refining [5]
- 23/20 • • • Apparatus therefor [5]
- 23/22 • • Addition to the formed paper [5]
- 23/24 • • • during paper manufacture [5]

### Note(s)

Processes or apparatus used for addition to the paper during its manufacture, i.e. on-machine, are classified in group D21H 23/24 if they are specially influenced by, or specially adapted to, the paper-making process.

- 23/26 • • • • • by selecting point of addition or moisture content of the paper [5]
- 23/28 • • • • • Addition before the dryer section, e.g. at the wet end or press section [5]
- 23/30 • • • Pretreatment of the paper (D21H 23/70, D21H 23/76 take precedence) [5]
- 23/32 • • • by contacting paper with an excess of material, e.g. from a reservoir or in a manner necessitating removal of applied excess material from the paper (D21H 23/66 takes precedence; removing excess material D21H 25/08) [5]
- 23/34 • • • • Knife or blade type coaters [5]
- 23/36 • • • • • Knife or blade forming part of the fluid reservoir, e.g. puddle-type trailing blade [5]
- 23/38 • • • • • the fluid material being applied with a special device, e.g. with a roll in a flooded-nip inverted blade coater [5]
- 23/40 • • • • • only one side of the paper being in contact with the material (D21H 23/34 takes precedence) [5]

- 23/42 • • • • Paper being at least partly surrounded by the material on both sides (D21H 23/34 takes precedence) [5]
- 23/44 • • • • • Treatment with a gas or vapour [5]
- 23/46 • • • Pouring or allowing the fluid to flow in a continuous stream on to the surface, the entire stream being carried away by the paper (D21H 23/66 takes precedence) [5]
- 23/48 • • • • Curtain coaters [5]
- 23/50 • • • Spraying or projecting (D21H 23/44, D21H 23/66 take precedence) [5]
- 23/52 • • • by contacting paper with a device carrying the material (D21H 23/32, D21H 23/46, D21H 23/66 take precedence) [5]
- 23/54 • • • • Rubbing devices, e.g. brush, pad, felt [5]
- 23/56 • • • • Rolls (D21H 23/38 takes precedence) [5]
- 23/58 • • • • • Details thereof, e.g. surface characteristics, peripheral speed [5]
- 23/60 • • • • • the material on the applicator roll being subjected to a particular treatment before applying to the paper (D21H 23/64 takes precedence) [5]
- 23/62 • • • • • Reverse roll coating, i.e. applicator roll surface moving in direction opposite to that of the paper [5]
- 23/64 • • • • the material being non-fluent at the moment of transfer, e.g. in form of preformed, at least partially hardened coating [5]
- 23/66 • • • Treating discontinuous paper, e.g. sheets, blanks, rolls [5]
- 23/68 • • • • whereby the paper moves continuously [5]
- 23/70 • • • Multistep processes; Apparatus for adding one or several substances in portions or in various ways to the paper, not covered by another single group of this main group [5]
- 23/72 • • • • Plural serial stages only [5]
- 23/74 • • • • Apparatus permitting switching from one technique to another [5]
- 23/76 • characterised by choice of auxiliary compounds which are added separately from at least one other compound, e.g. to improve the incorporation of the latter or to obtain an enhanced combined effect (D21H 17/18, D21H 17/70, D21H 23/10 take precedence) [5]
- 23/78 • Controlling or regulating not limited to any particular process or apparatus [5]

### 25/00 After-treatment of paper not provided for in groups D21H 17/00-D21H 23/00 [5]

- 25/02 • Chemical or biochemical treatment (D21H 25/18 takes precedence) [5]
- 25/04 • Physical treatment, e.g. heating, irradiating (D21H 25/18 takes precedence; dryer section of machines for making continuous webs of paper D21F 5/00) [5]
- 25/06 • • of impregnated or coated paper (D21H 25/08 takes precedence) [5]
- 25/08 • Rearranging applied substances, e.g. metering, smoothing; Removing excess material [5]
- 25/10 • • with blades [5]
- 25/12 • • with an essentially cylindrical body, e.g. roll or rod [5]
- 25/14 • • • the body being a casting drum [5]
- 25/16 • • with a blast of vapour or gas, e.g. air knife [5]
- 25/18 • of old paper as in books, documents, e.g. restoring [5]

### 27/00 Special paper not otherwise provided for, e.g. made by multi-step processes [5]

**Note(s)**

This group provides for the classification of paper with special properties or applications which are only partially or not at all provided for elsewhere in the classification. Whenever possible, however, these papers are classified according to the criteria used in the other groups of this subclass.

- 27/02 • Patterned paper (patterned coatings D21H 19/66; embossing B31F 1/07; prepared on the paper-making machines D21F 11/00) [5]
- 27/04 • • marbled [5]
- 27/06 • Vegetable or imitation parchment; Glassine paper [5]
- 27/08 • Filter paper (self-supporting filtering material B01D 39/14; making on paper-making machines D21F 11/14) [5]
- 27/10 • Packing paper (packaging materials of special type or form B65D 65/38) [5]
- 27/12 • Electrically-insulating paper [5]
- 27/14 • Paper having stable form or dimension; Curl-resistant paper (anticoil photographic support G03C 1/81) [5]
- 27/16 • Pure paper, i.e. paper lacking or having low content of contaminants (after-treatment of cellulose pulp D21C 9/00) [5]
- 27/18 • Paper- or board-based structures for surface covering [5]
- 27/20 • • Flexible structures being applied by the user, e.g. wallpaper (printed wallpapers B41M 3/18; paperhanging B44C 7/00; pregummed wallpaper C09J 7/04) [5]

- 27/22 • • Structures being applied on the surface by special manufacturing processes, e.g. in presses [5]
- 27/24 • • • characterised by the surface to be covered being phenolic-resin paper laminates, vulcan fibre or similar cellulosic fibreboards [5]
- 27/26 • • • characterised by the overlay sheet or the top layers of the structures (decorative panels B44C 5/04; wood grain effects B44F 9/02) [5]
- 27/28 • • • • treated to obtain specific resistance properties, e.g. against wear or weather (water-repelling agents D21H 21/16) [5]
- 27/30 • Multi-ply (for surface covering D21H 27/18; making on paper-making machines D21F 9/00, D21F 11/00) [5]

**Note(s)**

Layered products classified in this group are also classified in subclass B32B.

- 27/32 • • with materials applied between the sheets (attaching together paper or cardboard sheets B31F 5/00; adhesives C09J) [5]
- 27/34 • • • Continuous materials, e.g. filaments, sheets, nets [5]
- 27/36 • • • • Films made from synthetic macromolecular compounds [5]
- 27/38 • • at least one of the sheets having a fibrous composition differing from that of other sheets [5]
- 27/40 • • at least one of the sheets being non-planar, e.g. crêped (creping or corrugating paper B31F) [5]
- 27/42 • • comprising dry-laid paper [5]

## **D21J FIBREBOARD; MANUFACTURE OF ARTICLES FROM CELLULOSIC FIBROUS SUSPENSIONS OR FROM PAPIER-MÂCHÉ (manufacture of articles by dry processes B27N)**

**1/00 Fibreboard** (preparation of pulp compositions or addition of chemical agents D21B, D21C, D21H; formation of the wet web D21F)

- 1/02 • Cutting, e.g. using wet saws
- 1/04 • Pressing
- 1/06 • Drying
- 1/08 • Impregnated or coated fibreboard
- 1/10 • After-treatment
- 1/12 • • Hardening
- 1/14 • • Conditioning
- 1/16 • Special fibreboard
- 1/18 • • Hardboard
- 1/20 • • Insulating board

**3/00 Manufacture of articles by pressing wet fibre pulp, or papier-mâché, between moulds**

- 3/02 • of rings
- 3/04 • of tubes
- 3/06 • of stoppers
- 3/08 • of bobbins
- 3/10 • of hollow bodies
- 3/12 • of sheets; of diaphragms

**5/00 Manufacture of hollow articles by transferring sheets, produced from fibres suspensions or papier-mâché by suction on wire-net moulds, to couch moulds**

**7/00 Manufacture of hollow articles from fibre suspensions or papier-mâché by deposition of fibres in or on a wire-net mould**

## **D99 SUBJECT MATTER NOT OTHERWISE PROVIDED FOR IN THIS SECTION**

### **D99Z SUBJECT MATTER NOT OTHERWISE PROVIDED FOR IN THIS SECTION [2006.01]**

**Note(s) [2006.01]**

This subclass covers subject matter that:

- a. is not provided for, but is most closely related to, the subject matter covered by the subclasses of this section, and
- b. is not explicitly covered by any subclass of another section.

D99Z

**99/00 Subject matter not otherwise provided for in this**

**section [2006.01]**