

## SECTION D — TEXTILES; PAPER

### 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

#### **1/00 Mechanical separation of fibres from plant material, e.g. seeds, leaves, stalks**

1/02 • Separating vegetable fibres from seeds, e.g. cotton

1/04 • • Ginning

1/06 • • • Roller gins, e.g. Macarthy type

1/08 • • • Saw gins

1/10 • Separating vegetable fibres from stalks or leaves

1/12 • • Rippling

1/14 • • Breaking or scutching, e.g. of flax; Decorticating

1/16 • • • with devices dependent on a bending action to break or loosen fibre-bearing materials (crushing rollers D01B 1/22)

1/18 • • • with stamping devices

1/20 • • • with scraping devices

1/22 • • • with crushing or breaking rollers or plates

1/24 • • • with toothed or other pointed devices

1/26 • • • with beaters rotating about an axis parallel to the fibre bundle

1/28 • • • with beaters rotating about an axis perpendicular to the fibre bundle

1/30 • • • Details of machines

1/32 • • • • Feeding arrangements

1/34 • • • • Devices holding fibres or fibre-bearing materials during treatment

1/36 • • • • • Conveying devices, e.g. moving bands or ropes

1/38 • • • • • Delivery or discharge arrangements

1/40 • • • • Arrangements for disposing of non-fibrous materials

1/42 • • • • • employing liquids

1/44 • • • • Framework; Casings; Coverings; Grids

1/46 • • • • Driving arrangements

1/48 • • Drying retted fibres

1/50 • Obtaining fibres from other specified vegetable matter, e.g. peat, Spanish moss

#### **3/00 Mechanical removal of impurities from animal fibres (carbonising rags to recover animal fibres D01C 5/00) [2]**

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)

3/04 • Machines or apparatus for washing or scouring loose wool fibres

3/06 • • with circular movement of either wool or liquid

3/08 • • with longitudinal movement of either wool or liquid

3/10 • • Details of machines or apparatus

#### **5/00 Hackling or heckling machines (hand heckling tools D01G 33/00)**

5/02 • Details

5/04 • • Apparatus for feeding, holding, or conveying materials to or in machines

## D01B

- 5/06 • • Construction, mounting, or operating features of heckling devices
- 5/08 • • Arrangements for removing, or disposing of, tow or waste
- 5/10 • • Touch pins or other ending devices
- 5/12 • • Framework; Casings; Coverings
- 5/14 • • Driving arrangements
- 5/16 • • Arrangements for confining or removing dust or the like

## 7/00 Obtaining silk fibres or filaments

- 7/02 • Cleaning or classifying silk cocoons
- 7/04 • Reeling silk
- 7/06 • Obtaining silk from cocoons or portions thereof not suitable for reeling (de-gumming silk D01C 3/02)

## 9/00 Other mechanical treatment of natural fibrous or filamentary material to obtain fibres or filaments

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

### Note(s)

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

### 1/00 Treatment of vegetable material

- 1/02 • by chemical methods to obtain bast fibres
- 1/04 • Bacteriological retting

- 3/02 • De-gumming silk

### 5/00 Carbonising rags to recover animal fibres (chemical removal of vegetable impurities from threads or fabrics of animal fibres D06M)

### 3/00 Treatment of animal material, e.g. chemical scouring of wool (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

### 1/00 Treatment of filament-forming or like material

- (working of plastics or substances in a plastic state, in general B29)
- 1/02 • Preparation of spinning solutions
- 1/04 • Melting filament-forming substances
- 1/06 • Feeding liquid to the spinning head (constructions of pumps F04)
- 1/09 • • Pressure, temperature or feeding rate regulation [3]
- 1/10 • Filtering or de-aerating the spinning solution or melt
- 4/00 Spinnerette packs; Cleaning thereof (D01D 5/24, D01D 5/253, D01D 5/28 take precedence) [3]
- 4/02 • Spinnerettes (alloys therefor C22C) [3]
- 4/04 • Cleaning spinnerettes or other parts of the spinnerette packs (cleaning in general B08B) [3]
- 4/06 • Distributing spinning solution or melt to spinning nozzles [3]

- 4/08 • Supporting spinnerettes or other parts of spinnerette packs [3]

### 5/00 Formation of filaments, threads, or the like

- 5/02 • Starting the formation
- 5/04 • Dry spinning methods
- 5/06 • Wet spinning methods
- 5/08 • Melt-spinning methods
- 5/084 • • Heating filaments, threads or the like, leaving the spinnerettes [3]
- 5/088 • • Cooling filaments, threads or the like, leaving the spinnerettes [3]
- 5/092 • • • in shafts or chimneys [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

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- 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