

## SECTION D — TEXTILES; PAPER

## 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
Selvage 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
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<b>1/00 Dobbies</b>	3/10 • Centre-shed jacquards
1/02 • Single-lift dobbies, i.e. dobbies in which the same draw-knife or equivalent operates for every pick (D03C 1/10 takes precedence)	3/12 • Multiple-shed jacquards, i.e. jacquards which move warp threads to several different heights, e.g. for weaving pile fabrics
1/04 • • Open-shed single-lift dobbies	3/14 • Jacquards not employing lifting-hooks, e.g. employing knotted cords in conjunction with keyhole slots
1/06 • Double-lift dobbies, i.e. dobbies in which separate draw-knives or equivalent operate on alternate picks	3/16 • Verdol or other jacquards having intermediate power-operated needles between reading needles and lifting-hooks
1/08 • • reversible, i.e. correct sheds open automatically when the loom is driven backwards	3/18 • Selvage jacquards
1/10 • Centre-shed dobbies, i.e. shed formed by lifting some threads and lowering the others from central shed-closed position	3/20 • Electrically-operated jacquards
1/12 • Dobbies employing toothed gearing instead of draw-knives	3/22 • Fluid-operated jacquards
1/14 • Features common to dobbies of different types (stop motions acting on defective operation of shedding mechanisms D03D 51/46)	3/24 • Features common to jacquards of different types
1/16 • • Arrangements of dobbie in relation to loom	3/26 • • General arrangements of jacquards, or disposition in relation to loom
1/18 • • Knives; Knife frames	3/28 • • Pick-finding arrangements; Arrangements for preventing next shed from being opened during stopping of loom
1/20 • • Hooks; Lifters	3/30 • • Arrangements wherein hooks are positively operated to close shed
1/22 • • Needles; Needle boxes; Needle boards	3/32 • • Jacquard driving mechanisms
1/24 • • Cylinders; Cylinder battens	3/34 • • • Cylinder operating mechanisms
1/26 • • Facilitating engagement of lifting-hooks with draw-knives	3/36 • • • Griffe operating mechanisms
1/28 • • • by creating and then eliminating back-lash between hooks and knives	3/38 • • Comber boards
1/30 • • • wherein all the hooks are disengaged from the knives, and selected hooks then re-engaged	3/40 • • Constructions of lifting-cords
1/32 • • • wherein all the hooks are engaged with the knives, and unselected hooks then disengaged	3/42 • • Arrangements of lifting-cords
1/34 • • Arrangements wherein warp threads pass one another at different heights to avoid congestion	3/44 • • Lingoës
1/36 • • Card- or chain-saving arrangements, e.g. cross-border dobbies	<b>5/00 Cam or other direct-acting shedding mechanisms, i.e. operating heald frames without intervening power-supplying devices</b>
<b>3/00 Jacquards</b> (controlling jacquard by scanning design D03C 17/06; for gripper Axminster looms D03D 39/08)	5/02 • operated by rotating cams
3/02 • Single-lift jacquards	5/04 • • Construction or shape of cams (cams in general F16H 53/00)
3/04 • • of open-shed type	5/06 • operated by cam devices other than rotating cams
3/06 • Double-lift jacquards	<b>7/00 Leno or similar shedding mechanisms</b>
3/08 • • of open-shed type	7/02 • Gauze healds
	7/04 • Mechanisms having discs oscillating about a weftwise axis and having apertures for warp threads

## D03C

- 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

- 1/00 Woven fabrics designed to make specified articles**
  - 1/02 • Inflatable articles
  - 1/04 • Sack- or bag-like articles
  - 1/06 • Curtain heading tapes
  - 1/08 • Ladder tapes (ladder tapes for venetian blinds E06B 9/382)

### **3/00 Woven fabrics characterised by their shape**

- 3/02 • Tubular fabrics
- 3/04 • Endless fabrics
- 3/06 • Fabrics of varying width
- 3/08 • Arched, corrugated, or like fabrics

### **5/00 Selvages**

### **7/00 Woven fabrics designed to be resilient, i.e. to recover from compressive stress**



## D03D

- 45/38 • • Shuttle box with an extra cell which is used only during replenishment
- 45/40 • • • the spent shuttle being received in the normal cell and the fresh shuttle being picked from the extra cell
- 45/42 • • • the spent shuttle being received in the extra cell and the fresh shuttle being picked from the normal cell
- 45/44 • • Magazines
- 45/46 • • • for one type of thread, e.g. single colour
- 45/48 • • • for several types of threads, e.g. multicolour
- 45/50 • Cutting, holding, manipulating, or disposing of, weft ends
- 45/52 • • Cutting weft of depleted shuttle near shuttle and holding the piece attached to the fabric
- 45/54 • • Cutting fresh weft and holding the piece attached to the fabric
- 45/56 • • Cutting depleted and fresh wefts at selvedge
- 45/58 • • Removing tip bunch or fresh weft end from fresh bobbin
- 45/60 • • • substantially by air stream or suction
- 45/62 • • Disposing of waste pieces of cut weft end (D03D 45/58 takes precedence)
- 47/00 Looms in which bulk supply of weft does not pass through shed, e.g. shuttleless looms, gripper shuttle looms, dummy shuttle looms (circular looms D03D 37/00)**
- 47/02 • wherein loops of continuous weft thread are inserted, i.e. double picks (D03D 47/27 takes precedence) [3]
- 47/04 • • by a reciprocating needle having a permanently-threaded eye
- 47/06 • • by a pivoted having a permanently-threaded eye
- 47/08 • • • the path of the needle being modified by cams, linkages, or other means
- 47/10 • • by a forked needle pushing loop of weft through shed
- 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 selvages
- 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

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