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
Selvedge mechanisms not forming part of shedding mechanisms	11/00
Other shedding mechanisms	
PATTERN CARDS OR CHAINS; CARD-PUNCHING; METHODS OR DEVICES FOR PREPARING	
PATTERNS	15/00, 17/00, 19/00

1/00 Dobbies

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)
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- knifes
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

10 ·	Centre-shed	jacquards
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- 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 slots3/16 Verdol or other jacquards having intermediate power-
- operated needles between reading needles and liftinghooks
- 3/18 Selvedge jacquards
- 3/20 Electrically-operated jacquards
- 3/22 Fluid-operated jacquards
- 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 powersupplying 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

D03C

7/06	Mechanisms having eyed needles for moving warp	15
7/08	threads from side to side of other warp threadsDevices for twisting warp threads repeatedly in the	15
,,,,,,,	same direction	15
9/00	Healds; Heald frames (for leno shedding D03C 7/00)	
9/02	• Healds	17
9/04	Metal healds	
9/06	Heald frames	17
11/00	Selvedge shedding mechanisms not forming part of main shedding mechanism (selvedge jacquards D03C 3/18; leno selvedge mechanism D03C 7/00)	17 17
13/00	Shedding mechanisms not otherwise provided for	
15/00 15/02	 Pattern cards or chains Chains of metal, wood, or similar material with projecting pattern-indicating elements 	19

D03D WOVEN FABRICS; METHODS OF WEAVING; LOOMS

- 5/04 Cards or paper perforated to indicate pattern
- Apparatus for setting pegs in, or removing pegs from, pattern cards
- 5/08 Apparatus for interconnecting, e.g. by lacing, or disconnecting pattern cards
- **Card-punching apparatus** (marking record carriers in digital fashion G06K)
- 7/02 manually-controlled, i.e. holes to be punched determined by the operator
- 7/04 • power-operated
- 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

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 Kinds of woven fabrics for specified articles......1/00 LOOMS OR CORRESPONDING METHODS OF WEAVING Characterised by the article to be woven: lappet or swivel type for embroidery-like decoration; for Characterised by their construction: circular; with change-boxes; with automatic weft replenishment; of

<u>Woven fabrics; Methods of weaving other than those</u> <u>characterised by the operation of a particular loom</u>

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

9/00	Open-work fabrics (ladder-tape fabrics D03D 1/08)		
11/00	Double or multi-ply fabrics not otherwise provided for		
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)		
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		
15/00	Woven fabrics characterised by the material or construction of the yarn or other warp or weft elements used		
15/02	 the warp or weft elements being of stiff material, e.g. wire, cane, slat 		
15/04	 woven to produce shapes or effects upon differential shrinkage 		
15/06	 using scaffolding threads, i.e. threads removed after weaving 		
15/08	 using stretchable or elastic threads (woven fabrics whose elastic or stretch properties are due to the manner of weaving D03D 17/00) 		
15/10	 using threads having high or low coefficients of friction 		
15/12	using heat-resistant or fireproof threads		
17/00	Woven fabrics having elastic or stretch properties due to manner of weaving (fabrics using stretchable or elastic threads D03D 15/08)		
19/00	Gauze or leno-woven fabrics		
21/00	Lappet- or swivel-woven fabrics		
23/00	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		
25/00	Woven fabrics not otherwise provided for		
27/00	Woven pile fabrics		
27/02	 wherein the pile is formed by warp or weft 		
27/04	Weft pile fabrics		
27/06	Warp pile fabrics		
27/08	• • • Terry fabrics		
27/10	• • Fabrics woven face-to-face, e.g. double velvet		
27/12	 wherein pile tufts are inserted during weaving 		
27/14	with tufts around warps		
27/16	with tufts around wefts		
27/18	Chenille fabrics		
<u>Looms; M</u> particular	lethods of weaving characterised by the operation of looms		
29/00	Hand looms		
31/00	Lappet, swivel or other looms for forming embroidery-like decoration on fabrics		
33/00	Multiple looms, i.e. two or more looms assembled		

29/00	Hand looms
31/00	Lappet, swivel or other looms for forming embroidery-like decoration on fabrics
33/00	Multiple looms, i.e. two or more looms assembled together, whether or not they have mechanisms in common (D03D 35/00 takes precedence)

35/00	Smallware looms, i.e. looms for weaving ribbons or other narrow fabrics (D03D 47/00 takes precedence)			
37/00	Circular looms (looms for weaving separate fabrics disposed in a circle or polygon D03D 33/00)			
39/00	Pile-fabric looms			
39/02	 Axminster looms, i.e. wherein pile tufts are inserted during weaving 			
39/04	Spool Axminster looms			
39/06	• • • Tuft yarn tube or spool frames			
39/08	Gripper Axminster looms			
39/10	• Wire-tapestry looms, e.g. for weaving velvet or Brussels or Wilton carpets, the pile being formed over weftwise wires			
39/12	 Mechanisms for operating the pile wires 			
39/14	Construction of the pile wires, e.g. pile wires which cut			
39/16	• Double-plush looms, i.e. for weaving two pile fabrics face-to-face			
39/18	• • Separating the two plush layers, e.g. by cutting			
39/20	 Looms forming pile over warpwise wires 			
39/22	Terry looms			
39/24	 Devices for cutting the pile on the loom (pile wires which cut D03D 39/14; separating two plush layers D03D 39/18) 			
41/00	Looms not otherwise provided for, e.g. for weaving chenille yarn; Details peculiar to these looms			
43/00	Looms with change-boxes			
43/02	• with drop boxes			
43/04	Operating mechanisms			
43/06	• with rotary boxes			
43/08	Operating mechanisms			
43/10	• Weft catchers, i.e. means for preventing entanglement of wefts			
45/00	Looms with automatic weft replenishment (automatic replenishment in smallware looms D03D 35/00, in circular looms D03D 37/00; bobbins rewound on loom D03J 1/12)			
45/02	Controlling replenishment			
45/04	• Pirn feelers or other detectors for initiating replenishment (weft stop motions D03D 51/34)			
45/06	• • • mechanical			
45/08	• • • of the side-slip type			
45/10	• • • electrical			
45/12	• • • optical			
45/14	• Storing the need for replenishment or the colour required until the spent shuttle returns to the replenishing end of the loom			
45/16	• • • selecting thereby weft of correct colour			
45/18	• • Shuttle feelers or other devices for preventing replenishment if shuttle is incorrectly positioned in shuttle box (shuttle stop motions D03D 51/40)			
45/20	Changing bobbins, cops, or other shuttle stock			
45/22	• • effected with shuttle in normal shuttle box			
45/24	effected otherwise than in normal box			
45/26	• • Magazines			
45/28	• • • for one type of thread, e.g. same colour			
45/30	• • • • rotary			
45/32	• • • for several types of thread, e.g. multicolour			
45/34	Shuttle changing			
45/36	• • fresh shuttle being substituted for spent shuttle in the same cell of shuttle box			

D03D

45/38	• • Shuttle box with an extra cell which is used only
45/40	during replenishmentthe 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
45/44	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 proceedings) [2]
47/14	precedence) [3]by a gripper needle taking the end of the weft
47/16	through the shedby a gripper needle entering the shed empty and
47/10	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 <u>per se</u> 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
47740	tucking, by blowing
47/50	• • by adhesion
49/00	Details or constructional features not peculiar to
49/02	looms of a particular type (temples D03J 1/22)Construction of loom framework
49/02	 Control of the tension in warp or cloth
49/04	 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
43/14	shedding
49/16	• • Warp supplied by creel
49/18	Devices for indicating warp tension (measuring
10 / 20	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 <u>per</u>
	<u>se</u> 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
45/40	(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 worf is being inserted.
49/66	weft is being insertedShuttle races
	Shutte fuces

49/68 49/70	 Reeds or beat-up combs not mounted on the slay (loose reed stop motion D03D 51/42) Devices for cutting weft threads (cutting weft in looms with automatic weft replenishment D03D 45/50; apparatus for slitting fabric D03J 1/08) 	 51/20 • Warp stop motions 51/22 • • mechanical 51/24 • • wherein droppers are suspended on individual warp threads or small groups of threads
51/00 51/02 51/04	 Driving, starting, or stopping arrangements; Automatic stop motions General arrangements of driving mechanism Manual controls 	 51/26 • • • • Detector healds 51/28 • • • electrical 51/30 • • • wherein droppers are suspended on individual warp threads or small groups of threads
51/06 51/08 51/10 51/12 51/14 51/16 51/18	 using particular methods of stopping stopping at definite point in weaving cycle, or moving to such point after stopping stopping suddenly for adjusting speed for reducing speed temporarily for varying speed cyclically Automatic stop motions 	51/32•••Detector healds51/34••Weft stop motions51/36••Centre weft forks51/38••Side weft forks51/40•Shuttle stop motions51/42••Loose reed mechanisms51/44••acting on defective operation of loom mechanisms51/46••of shedding mechanisms

D03J AUXILIARY WEAVING APPARATUS; WEAVERS' TOOLS; SHUTTLES

1/00	Auxiliary apparatus combined with or associated	3/02	Reed and heald hooks
	with looms	3/04	Shuttle-threading tools (threading devices in shuttles
1/02	 for treating warp, e.g. cleaning, moistening 		D03J 5/20)
1/04	 for treating weft 		
1/06	 for treating fabric (cutting pile on the loom D03D 39/24) 	5/00	Shuttles (swivel shuttles D03D 31/00; shuttles for smallware looms D03D 35/00; circular loom shuttles D02D 27/00, calvadra shuttles D02D 47/46)
1/08	for slitting fabric	F (00	D03D 37/00; selvedge shuttles D03D 47/46)
1/10	 for indicating pattern to weaver 	5/02	Construction of shuttle body
1/12	 transferring bobbins between loom and winding 	5/04	Shuttle tips
1/12	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
		5/10	 Pegs or spindles
1/14	 Apparatus for threading warp stop-motion droppers, healds, or reeds 	5/12	• • • removable
1/10	·	5/14	• • • pivoted
1/16	Apparatus for joining warp ends (knot-tying tools	5/14	*
	D03J 3/00)	5/10	Bobbin clamps, e.g. for automatic bobbin- changing loom shuttles
1/18	• • for joining, e.g. tying, a complete series of fresh	= (4.0	
	warp threads to the used warp threads	5/18	• • for coreless cops, i.e. shuttles having no peg or
1/20	 Measuring length of fabric or number of picks woven 		bobbin clamp
1/22	Temples	5/20	 Devices in shuttles for threading (separate tools for
1/24	Mirrors or other arrangements for inspecting loom		threading shuttles D03J 3/04)
_,	parts	5/22	 for self-threading, i.e. threading automatically when shuttle is picked
3/00	Weavers' tools, e.g. knot-tying tools	5/24	Tension devices