

CLASS 112, SEWING**SECTION I - CLASS DEFINITION**

This is the generic locus for patents for (1) sewing machines, (2) methods of sewing, and (3) stock material products of a sewing operation. This class is also residual for patents for sewn articles which are not specifically provided for in any other class.

SCOPE OF THE CLASS

Sewing is the operation of uniting or ornamenting material by means of a strand which is inserted (stitched) in the material at spaced locations by a needle having an eye, or equivalent structure, and enchainé or otherwise locked in position.

With the addition of product subclasses, no change has been made in the relationship of this class with other classes in regard to patents for machines and processes. See Lines With Other Classes and Within This Class, below, for the reference to product subclasses.

SECTION II - LINES WITH OTHER CLASSES AND WITHIN THIS CLASS**PRODUCT SUBCLASSES**

With the addition of product subclasses 400-441, inclusive, no change has been made in the relationship of this class with other classes in regard to patents for machines and processes.

Regarding patents for products, it is intended that only such patents in which layers have been secured together, or a strand has been affixed to a base, solely by a stitching operation shall be placed in this class. However, patents for such products which include structure which is the result of an operation which may be considered ancillary to the stitching operation (e.g., manipulating, folding, cutting) or which include merely a description of the sewn material (e.g., woven, knitted, braided, carded, twisted) will not be excluded from this class.

A patent for a stock material product resulting from a combined operation (e.g., sewn and coated or bonded) will be placed in an appropriate subclass in Class 428, Stock Material or Miscellaneous Articles, and see the main definition of that class, (428), section V1 A 1.

It is recognized that patents for sewn stock material may be found in other classes. No attempt has been made at

this time to collect such patents in this class. It is expected that when such other classes are reclassified, sewn stock material patents will be transferred to this class (112).

Search notes to related classes will be found under the definition of subclass 400 for products, subclass 2 for apparatus, and subclass 262.1 for methods.

SECTION III - REFERENCES TO OTHER CLASSES**SEE OR SEARCH CLASS:**

606, Surgery, subclasses 144+, for mechanical sewing devices for sewing parts of the animal body.

SECTION IV - GLOSSARY**BLIND STITCH**

A stitch in which the sewing thread penetrates only one nonthickness surface of a layer or component. See Figure 1.

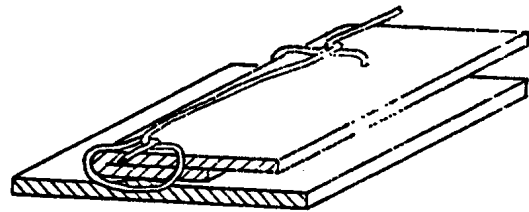
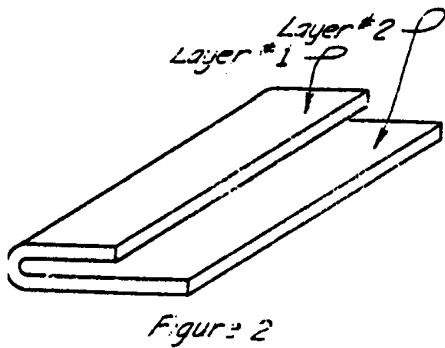


Figure 1

COMPONENT

A distinct unitary element of a composite web or sheet which is longitudinally coextensive therewith and which, if separated from said multi-part web or sheet, would be recognized as a web or sheet by itself.

A component may consist of plural layers as in the folded component shown in Figure 2.



COMPOSITE SHEET

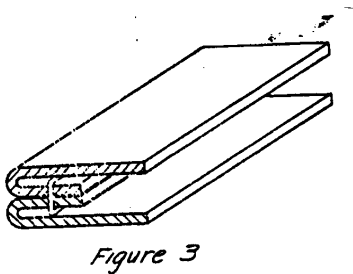
A sheet comprising a plurality of components.

COMPOSITE WEB

A web comprising a plurality of components.

CONCEALED STITCH

A stitch in which the sewing thread completely penetrates one or more layers of material and is hidden from view on at least one side of the assembly by a fold of material overlying the stitch. See Figure 3.



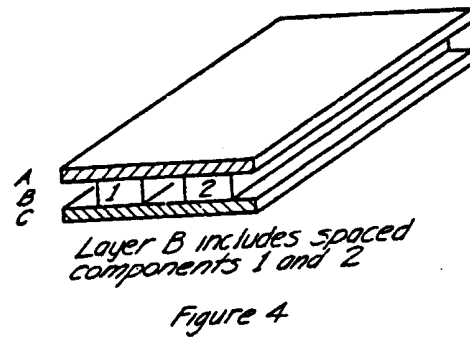
FIBER

A relatively short, slender, flexible element of macroscopic size and finite length and having a width and thickness of the same order magnitude. A fiber is generally of staple length to facilitate being spun, twisted, or otherwise secured together into a composite strand but may be of shorter length requiring bonding, felting, or matting to form a strand or layer. It may be of animal (e.g., wool, rabbit hair); vegetable (e.g., cotton, jute, hemp); or mineral (e.g., asbestos, glass, metal) origin; and may be either natural, modified, or synthetic.

LAYER

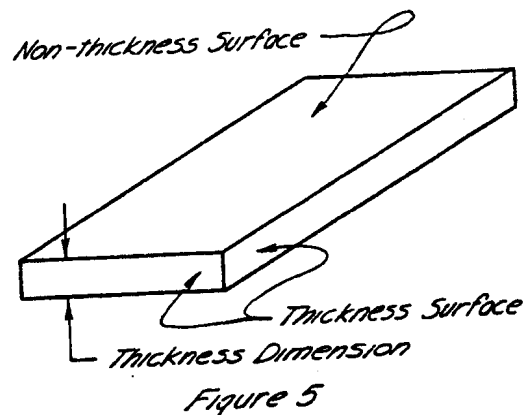
A single thickness of material or materials in the form of a panel, web, or sheet, or a plurality of any of these in side-by-side coplanar relation, or particulate material arranged in continuity to constitute a distinct stratum.

A layer may include a plurality of components as in Figure 4.



NONTHICKNESS SURFACE

The surface of a web, sheet, layer, or component on which both its length and width may be measured. See Figure 5.



OVEREDGE STITCH

A stitch wherein the sewing thread extends thickness-wise across a marginal extremity of one or more layers of material without penetrating side extremity. See Figure 6.

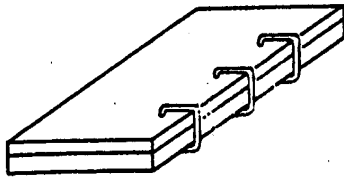


Figure 6

PANEL

A portion of material of finite perimeter having length and width greater than thickness and (a) having a modification or embellishment of or on the entire periphery thereof or at least two nonadjacent corners, (b) being completely enclosed in an envelope which substantially conforms thereto, or (c) having a boundary shape which is other than rectangle.

SHEET

A rectangular portion of material of finite length and width which are each greater than its thickness. A piece of material having a peripheral shape other than rectangular will be considered a panel.

STRAND

A relatively slender and flexible element having a width and thickness of the same order of magnitude and a length which is either (a) indeterminate or (b) coextensive with the length or width of a sheet or layer. A strand may be a monofilament or it may include either a plurality of filaments or fibers disposed in parallelism (e.g., tow) or constituent fibers and/or filaments knitted, plaited, braided, twisted, interlaced, interlocked, or otherwise secured together to form a unit such as roving, thread yarn, cord, rope or cable.

STRAND PORTION

A strand of finite length; or an unsevered but determinate part of a strand.

STRIP

A web or sheet of relatively narrow ribbon-like material. A strip which is interwoven or intertangled with other strips or strands in the same manner as a strand will be termed a "strand-like strip".

WEB

A portion of material having length and width each greater than its thickness and with at least its longitudinal dimension undetermined.

A web may comprise (a) a single thickness of material, (b) a plurality of portions of a single piece of material folded onto each other longitudinally or transversely, or (c) a plurality of individual web components joined together in longitudinally coextensive face or edge contact to form a composite web.

SUBCLASSES

- 1 MISCELLANEOUS:**
This subclass is indented under the class definition. Not otherwise classified.
- 2 SPECIAL MACHINES:**
This subclass is indented under the class definition. Adapted for special work.

SEE OR SEARCH CLASS:

- 12, Boot and Shoe Making, appropriate subclasses for a shoe making machine including stitching means, and particularly subclass 58.5 for a machine for inserting lacings in the eyelets of shoe uppers.
- 29, Metal Working, subclass 241 for apparatus for assembling and disassembling by a stringing action.
- 53, Package Making, subclass 138.5 for packaging apparatus which includes means for joining portions of the cover material by sewing, and subclass 545 for an apparatus for forming packages by confining the contents within a progressively seamed cover formed from a continuous web or webs.
- 66, Textiles: Knitting, appropriate subclasses for a knitting apparatus.
- 139, Textiles: Weaving, appropriate subclasses for a weaving apparatus.
- 219, Electric Heating, subclass 768 for an apparatus for "electronic sewing".
- 223, Apparel Apparatus, appropriate subclasses for a machine not including stitching means for making, repairing or treating articles of apparel and

- analogous articles, and see notes thereunder.
- 289, Knots and Knot Tying, subclasses 2+ for an apparatus for tying a knot in a strand.
- 300, Brush, Broom, and Mop Making, appropriate subclasses for a machine particularly adapted to the manufacture of the articles set out in the title of that class.
- 312, Supports: Cabinet Structure, subclasses 21+ for a sewing machine cabinet structure.
- 416, Fluid Reaction Surfaces (i.e., Impellers), subclasses 54+ for a fan actuated by the operation of a sewing machine.
- 451, Abrading, subclasses 432+ for an abrading device designed to be attached to and driven by a sewing machine. A nominal recitation of a sewing machine in combination with such an attachment will not exclude a patent from Class 451.
- 606, Surgery, subclasses 144+ for mechanical machines for sewing portions of an animal body, subclasses 222+ for suturing needles.
- 2.1 Mattress sewing:**
This subclass is indented under subclass 2. Device wherein means are provided to fasten together, with needle and thread, material which covers a pad or tick filled with soft material.
- (1) Note. The pad or tick is generally used, as, or on a bed.
- (2) Note. The needle is used to fasten material together but is not a part of the fastening means remaining at the end of the sewing process.
- SEE OR SEARCH CLASS:
5, Beds, subclass 737 for a mattress or cushion with a cover wherein means are provided to physically connect the cover to the mattress or cushion.
- 29, Metal Working, subclasses 91.2+ for an apparatus or process for compressing portions of a furniture cushion or padded furniture component in accord with a desired pattern.
- 2.2 Tufting:**
This subclass is indented under subclass 2.1. Device wherein material on upper and lower sides of the pad or tick is fastened together with needle and thread which needle and thread passes through the material and the pad or tick at spaced points over the upper and lower sides of the pad or tick.
- SEE OR SEARCH CLASS:
5, Beds, subclass 272 for a mattress or cushion with a cover which is secured to the mattress or cushion by tufting.
- 4 Jacquard card sewing:**
This subclass is indented under subclass 2. For uniting jacquard pattern-cards by sewing.
- 6 Broom sewing:**
This subclass is indented under subclass 2. For making brooms.
- SEE OR SEARCH CLASS:
300, Brush, Broom, and Mop Making, appropriate subclasses for a machine or method particularly related to one or more of the operations necessary to the manufacture of the articles set out in the title of that class.
- 7 Carpet sewing:**
This subclass is indented under subclass 2. For sewing carpets and similar heavy fabrics.
- 8 Clamps:**
This subclass is indented under subclass 7. Adapted for use on carpet-sewing machines.
- 9 Rug sewing:**
This subclass is indented under subclass 2. For sewing together strips, loops, etc., to form rugs.
- (1) Note. For making rugs by turfing, see this class, subclasses 80.01+.
- 10 Bag sewing:**
This subclass is indented under subclass 2. Automatic machines for making bags.
- SEE OR SEARCH CLASS:
53, Package Making, subclass 138.5 for devices which make a bag fill and

- thereafter close the bag by a sewing operation.
- 11 Sewing filled sacks:**
This subclass is indented under subclass 2. Holding, feeding, and sewing filled sacks.
- SEE OR SEARCH CLASS:
53, Package Making, subclass 138.5 for apparatus to fill and then close a package by sewing a seam or seams thereof.
- 12 Sewing hats:**
This subclass is indented under subclass 2. For sewing operations on hats.
- (1) Note. For straw-hat making, see this class, subclass 23.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
475.11, for methods of making headwear.
- 13 Work supports:**
This subclass is indented under subclass 12. Work-supports of a hat-sewing machine.
- 14 Rotary:**
This subclass is indented under subclass 13. The work-supports have a rotary movement.
- 15 Guides and pages:**
This subclass is indented under subclass 12. Guides for hat-sewing machines.
- (1) Note. For straw-boardguides, see this class, subclass 23.
- 16 Glove and fur sewing:**
This subclass is indented under subclass 2. For sewing furs and making leather gloves.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
149, for guides for fur-sewing.
- 17 Dyeing feature:**
This subclass is indented under subclass 16. Includes means to color seams.
- 18 Work holding and feeding:**
This subclass is indented under subclass 16. Includes special means to manipulate the work.
- 19 Clamp:**
This subclass is indented under subclass 18. A clamp-frame manipulates the work.
- 20 Guiding:**
This subclass is indented under subclass 16. Includes a guide.
- 21 Book sewing:**
This subclass is indented under subclass 2. For sewing books.
- SEE OR SEARCH CLASS:
227, Elongated-Member-Driving Apparatus, appropriate subclasses for apparatus for applying a member to work, e.g., signature.
412, Bookbinding: Process and Apparatus, appropriate subclasses for processes and apparatuses for manufacturing books which may involve sewing operations.
- 22 Knotting:**
This subclass is indented under subclass 21. Includes a tying mechanism.
- SEE OR SEARCH CLASS:
289, Knots and Knot Typing, subclass 1.5 for a method and subclasses 2+ for an apparatus for tying a knot in a strand.
493, Manufacturing Container or Tube From Paper; or Other Manufacturing From a Sheet or Web, subclasses 375+.
- 23 Straw braid:**
This subclass is indented under subclass 2. For sewing straw braid, as in making hats.
- (1) Note. For machines for twisting straw into strands, combined with sewing, see Class 57, Textiles: Spinning, Twisting, and Twining, subclasses 4 and 6.
- 24 Straw sewing:**
This subclass is indented under subclass 2. For making mats on straw or similar materials such as those used for bottle-covers.
- 25 Looped fabrics:**
This subclass is indented under subclass 2. For stitching looped or knitted fabrics.

- 26 Preparing:**
This subclass is indented under subclass 25. Trimming and other operations relating to the sewing process.
- 27 Work holding and feeding:**
This subclass is indented under subclass 25. Includes special means to manipulate the work.
- 28 Leather sewing:**
This subclass is indented under subclass 2. Machines specially organized to sew leather.
- 29 Separating and indenting:**
This subclass is indented under subclass 28. Includes means to form indentations in the leather between the stitches to separate them.
- SEE OR SEARCH CLASS:
12, Boot and Shoe Making, subclasses 32+ for machines which indent the edge of the sole, particularly subclass 32.1, for those machines provided with means to cause the indentations to occur at the stitch points.
- 30 Tack pulling:**
This subclass is indented under subclass 28. Includes means to pull out lasting-tacks from a lasted shoe.
- SEE OR SEARCH CLASS:
12, Boot and Shoe Making, subclass 16.
227, Elongated-Member-Driving Apparatus, subclass 63 for apparatus for driving a member, e.g., tack, combined with (or convertible to) apparatus for withdrawing the same.
254, Implements or Apparatus for Applying Pushing or Pulling Force, subclasses 18+ for devices of the nail-extractor type.
- 31 Fair stitch:**
This subclass is indented under subclass 28. Stitches are held in place by friction, either of the threads themselves, or of a plug inserted in the leather or other material.
- 32 Loop lock:**
This subclass is indented under subclass 28. The sewing-thread is locked by a loop of another thread, the latter not being locked or enchainé.
- 33 Tongue lock:**
This subclass is indented under subclass 28. The loop is locked by a tongue cut in the leather or other material.
- 34 Chain stitch:**
This subclass is indented under subclass 28. Chain-stitch machines.
- (1) Note. This subclass includes those machines having straight needles.
- (2) Note. For further definition of chain-stitch see this class, subclass 154.
- 35 Curved needle:**
This subclass is indented under subclass 34. Chain-stitch machines having a curved needle.
- 36 Lock stitch:**
This subclass is indented under subclass 28. Lock-stitch machines.
- (1) Note. This subclass includes those machines having straight needles.
- (2) Note. For a further definition of lock-stitch, see this class, subclass 154.
- 37 Curved needle:**
This subclass is indented under subclass 36. This machine has a curved needle.
- 38 Oscillating and rotating shuttle:**
This subclass is indented under subclass 37. The shuttle oscillates or rotates.
- (1) Note. Revolving-hook machines are also included.
- 39 Back gauges and rests:**
This subclass is indented under subclass 28. Means to form a support or rest against which the upper or a lasted shoe may be held to guide the shoe as it is presented to the sole-sewing mechanism.

- 40 Guards:**
This subclass is indented under subclass 28. Includes devices to protect the work from injury by the awl or needle.
- 41 Heating:**
This subclass is indented under subclass 28. Includes means for heating the machine to soften wax on the thread.
- 42 Waxing:**
This subclass is indented under subclass 28. Includes means to wax the thread.
- SEE OR SEARCH CLASS:
118, Coating Apparatus, appropriate subclasses for coating, per se, and especially subclasses 405 and 425 for immersion coating of strand form work.
- 43 Lubricating and moistening:**
This subclass is indented under subclass 28. Includes means to moisten or lubricate the needle, thread, or work to facilitate the sewing.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
42, and 256.
- 44 Welt slitting and beveling:**
This subclass is indented under subclass 28. Includes means to bevel the edge of a welt or to slit it transversely.
- 45 Channeling:**
This subclass is indented under subclass 28. Includes means to cut a channel in the leather in advance of the needle.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
131,
- 46 Welt handling:**
This subclass is indented under subclass 28. Includes means to guide and control the supply of a welt-strip.
- 47 Feeding:**
This subclass is indented under subclass 28. Includes means to feed the work.
- SEE OR SEARCH CLASS:
226, Advancing Material of Indeterminate Length, appropriate subclasses for methods of, and apparatus for, feeding material without utilizing the leading or trailing ends to effect movement of the material.
- 48 Awl:**
This subclass is indented under subclass 47. Includes an awl which is shifted to feed the work.
- 49 Needle:**
This subclass is indented under subclass 47. Includes a sewing-needle which is shifted to feed the work.
- (1) Note. For needle-feeds of general application, see this class, subclass 310.
- 50 Channel guides:**
This subclass is indented under subclass 28. Includes devices to enter a channel in the work to guide or position the same.
- 51 Edge and crease guides:**
This subclass is indented under subclass 28. Includes means to guide the work by contact with an edge of, or crease, or groove in the work.
- 52 Welt guides:**
This subclass is indented under subclass 28. Includes means to guide a welt-strip to be stitched.
- 53 Chain stitch:**
This subclass is indented under subclass 28. Chain-stitch machines.
- (1) Note. For further definition of chain-stitch see this class, subclass 154.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
34,
- 54 Lock stitch:**
This subclass is indented under subclass 28. Lock-stitch machines.

- (1) Note. For a further definition of lock-stitch, see this class, subclass 154.
- 55 Orbital-movement loopers:**
This subclass is indented under subclass 54. The thread-looper moves in an orbit completely around the needle to lay the thread in the needle-hook.
- 56 Cast-offs:**
This subclass is indented under subclass 54. Includes means to cast the previously-formed loop from the needle as it pulls a new loop through the work.
- 57 Take-ups:**
This subclass is indented under subclass 54. Includes take-up mechanisms.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
241, through 250, for take-ups of general application.
- 58 Pull-offs:**
This subclass is indented under subclass 54. Includes pull-offs or thread-measuring devices.
- (1) Note. For pull-offs of general application, see this class, subclasses 242 and 243.
- 59 Tensions:**
This subclass is indented under subclass 54. Includes tension devices.
- (1) Note. For tensions of general application, see this class, subclass 254.
- 60 Presser devices:**
This subclass is indented under subclass 28. Includes presser-feet and operating mechanism therefor.
- (1) Note. For presser-feet of general application, see this class, subclass 235, and indented subclasses.
- 61 Locking:**
This subclass is indented under subclass 60. Includes means to intermittently lock the presser-foot on the work during sewing.
- 62 Work supports:**
This subclass is indented under subclass 28. Includes means to support the work.
- (1) Note. For work-supports of general application, see this class, subclass 260.
- SEE OR SEARCH CLASS:
12, Boot and Shoe Making, subclass 123.
- 63 Tube forming:**
This subclass is indented under subclass 2. For making tubular articles.
- 64 Fringe forming:**
This subclass is indented under subclass 2. For attaching fringes or loops to the edge of a fabric.
- (1) Note. For analogous machines, see this class, subclasses 80.01+, 98 and 100.
- 65 Buttonhole:**
This subclass is indented under subclass 2. For stitching around the edges of an opening, such as a buttonhole.
- (1) Note. For making the buttonhole-stitch, see this class, subclass 157.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
264.1, for methods of making buttonholes and eyelets.
446+, for zigzag stitch forming mechanism wherein the needle is shifted back and forth across the line of material feed, which mechanism includes particular structure for sewing a pattern which encloses a portion of the material within boundaries formed by the pattern (e.g., buttonholes).
- 66 Eyelet making:**
This subclass is indented under subclass 65. For stitching around the edges of a round opening, such as an eyelet.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
89,

- 67 Start and stop mechanism:**
This subclass is indented under subclass 65. Includes mechanism for starting and stopping.
- (1) Note. For starting and stopping mechanism of general application to sewing-machines, see this class, subclasses 271+.
- 68 Cutting:**
This subclass is indented under subclass 65. Includes cutting mechanism.
- SEE OR SEARCH CLASS:
83, Cutting, appropriate subclasses for apparatus for cutting or pinking sheet or web material, or cutting a strand or yarn.
- 69 Thrum mechanism:**
This subclass is indented under subclass 65. Includes means for stitching the thrums or loose ends of thread after the buttonhole proper is made.
- 70 Clamp feeding:**
This subclass is indented under subclass 65. The fabric is held in a frame or clamp which is moved.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
19, for similar devices adapted for glove-sewing.
102, and indented subclass.
112, and 117, and indented subclasses.
- 71 With rotatable needle bar:**
This subclass is indented under subclass 70. The stitch-forming mechanism is bodily rotated to form an end of the buttonhole.
- 72 Right line and rotary:**
This subclass is indented under subclass 70. The clamp is bodily rotated to form an end of the buttonhole.
- 73 Vibrating needle:**
This subclass is indented under subclass 70. The needle is shifted laterally in forming the buttonhole-stitch.
- (1) Note. For vibrating-needle machines, per se, see this class, subclasses 446+.
- 74 Spreading:**
This subclass is indented under subclass 70. Buttonhole-clamps and operating mechanism adapted to spread the buttonhole before stitching.
- 75 Gauging:**
This subclass is indented under subclass 70. Includes gaging mechanisms.
- 76 Clamps:**
This subclass is indented under subclass 70. Work-holding devices.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
114,
- 77 Attachments:**
This subclass is indented under subclass 70. Attachable and detachable without disorganization of the sewing mechanism.
- 78 Embroidering:**
This subclass is indented under subclass 2. For ornamentation by stitching operations.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
170+, for nonturfing sewing machines employing short lengths of thread and noneyed needles.
475.18, for methods of ornamental stitching.
- 80.01 Tufting:**
This subclass is indented under subclass 78. Device including means for inserting a strand or strands through a base material to form a material surface of raised strands or strand loops.
- (1) Note. Strands or strand loops are "raised" if they extend above the base material by design and do not merely lie thereon.
- (2) Note. The strand loops may be cut or left uncut after being formed on the base material.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

222+, for thread inserting device elements (needles).

410+, for a web or sheet having a plurality of fibers, strand portions, narrow strand-like strips, or groups of strands which are attached to the web or sheet by stitching and extend outwardly from a surface thereof.

475.23, for tufting methods which do not recite particular structure of a tufting device.

80.02 **Rooting hair in doll or wig:**

This subclass is indented under subclass 80.01. Device wherein the strand or strands are inserted into (1) part of a doll to simulate hair or (2) an element to be worn as artificial or real hair.

(1) Note. "Hair" are the filaments forming the coat of an animal or covering a portion of the skin of a human.

(2) Note. With regard to (1), the strand or strands are usually inserted into a doll's head.

SEE OR SEARCH CLASS:

132, Toilet, subclass 5 for processes, under that class definition, for making wigs, switches, rolls, or other artificial hair structures, subclass 56 for devices, under the class definition, specially designed for making wigs, switches, rolls, or other hair structures.

80.03 **Hand implement:**

This subclass is indented under subclass 80.01. Device wherein the device is supported by and manipulated by the hands of a human attendant.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

169, for hand sewing implements of general application.

80.04 **With power drive:**

This subclass is indented under subclass 80.03. Device including a motivating means, other than the human attendant, for generating and imparting motion to the device.

80.05 **Having hollow or chance needle:**

This subclass is indented under subclass 80.03. Device wherein the strand inserting means has an elongated portion which penetrates the material to pass the strand or strands there-through, the elongated portion having (1) a cavity substantially parallel to the direction of elongation or (2) a passage or groove substantially parallel to the direction of elongation.

(1) Note. The cavity of (1) and the passage or groove of (2) are usually for guiding the strand or strands.

80.06 **Having noneyed needle:**

This subclass is indented under subclass 80.03. Device wherein the strand inserting means has an elongated portion which penetrates the material to pass the strand or strands there-through substantially transverse to the direction of elongation.

(1) Note. The elongated portion usually has a reentrant or planar surface which engages the strand or strands.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

80.03+, for an eyed needle having an eye opening latch or gate.

80.07 **Yarn manipulation by fluid flow:**

This subclass is indented under subclass 80.01. Device wherein a stream or air or other fluid acts directly on the strand or strands to guide, tension, advance, or otherwise handle the strand or strands.

(1) Note. The fluid medium is usually air which acts directly on the strand or strands, for example to propel the strand or strands through a guiding tube.

80.08 **Having hollow needle:**

This subclass is indented under subclass 80.07. Device wherein the strand inserting means has an elongated portion which penetrates the

material to pass the strand or strands there-through, the elongated portion having a cavity substantially parallel to the direction of elongation for guiding the strand.

80.15 Dual sided:

This subclass is indented under subclass 80.01. Device wherein surfaces of raised strands or strand loops are formed on both upper and lower (opposite) sides of the base material.

80.16 Including hollow or channelled needle:

This subclass is indented under subclass 80.01. Device wherein the strand inserting means has an elongated portion which penetrates the material to pass the strand or strands there-through, the elongated portion having (1) a cavity substantially parallel to the direction of elongation or (2) a passage or groove substantially parallel to the direction of elongation.

- (1) Note. The cavity of (1) and the passage or groove of (2) are usually for guiding the strand or strands.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

80.02, for tufting devices which root hair in a doll or wig and which have a hollow or channelled needle.

80.05, for hand tufting implements having a hollow or channelled needle.

80.08, for tufting devices which have fluid means for manipulating a strand and which also have a hollow needle.

80.17 Including noneyed needle:

This subclass is indented under subclass 80.01. Device wherein the strand inserting means has an elongated portion which penetrates the material to pass the strand or strands there-through, the elongated portion having strand engaging structure other than a hole there-through substantially transverse to the direction of elongation.

- (1) Note. The elongated portion usually has a reentrant or planar surface which engages the strand or strands.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

80.02, for tufting devices which root hair in a doll or wig and which include a noneyed needle.

80.06, for hand tufting implements which have a noneyed needle.

80.18 With condition responsive stop motion means:

This subclass is indented under subclass 80.01. Device including means for halting the operation of the device upon the detection of a random, noncyclic condition or change of condition, without the intervention of an operator or human attendant.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

271+, for elements used in sewing operations which facilitate stopping or starting of the sewing drive mechanism.

80.23 With optical, electronic, or magnetic pattern program means:

This subclass is indented under subclass 80.01. Device wherein instructions having light sensitive, electrical, or magnetic properties are read and acted upon by the device to form a designed (i.e., patterned) surface of strands or strand loops.

- (1) Note. Devices wherein a human attendant must intervene to read or act upon the instructions to form the designed surface of strands or strand loops are not included in this subclass.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

470.01, for sewing devices wherein the operation of the device is controlled by a prearranged pattern or program.

80.24 Having pattern drum:

This subclass is indented under subclass 8.23. Device including a cylinder which has the instructions stored upon its circumferential surface or upon an element (e.g., sheet) placed upon the circumferential surface.

- (1) Note. The cylinder usually rotates relative to a device which reads the instructions.

80.3 With specific fabric supporting, manipulating, cutting, or treating means:

This subclass is indented under subclass 80.01. Device wherein significance is attributed to (1) means for holding, guiding, tensioning, advancing, severing, or otherwise handling the base material or (2) means for subjecting the base material to a physical or chemical process in order to change a characteristic of the material.

SEE OR SEARCH THIS CLASS, SUBCLASS:

303+, for stitch forming mechanisms having means for feeding work material.

80.31 Means to shift fabric laterally of feed:

This subclass is indented under subclass 80.3. Device for moving the base material transverse to a direction of material advance past the strand inserting means.

80.32 Means to feed fabric:

This subclass is indented under subclass 80.3. Device for advancing the base material past the strand inserting means.

80.33 Fabric vertically moveable at tufting position:

This subclass is indented under subclass 80.3. Device for holding the base material wherein the device and the material held thereby are adjustable or otherwise transportable, at the location or strand insertion, in a direction transverse to a face of the held material.

- (1) Note. The material is usually moveable in a direction toward or away from the strand inserting means for varying the depth of penetration of the inserting means into the material.

80.4 Including specific needle supporting or manipulating means:

This subclass is indented under subclass 80.01. Device wherein significance is attributed to means for holding, moving, or guiding a strand inserting means having an elongated portion

which portion penetrates the base material to pass the strand or strands therethrough.

SEE OR SEARCH THIS CLASS, SUBCLASS:

80.04, for power driven hand tufting implements which include needle supporting or manipulating means.

221, for sewing devices which include a driving mechanism for driving a needle.

222+, for needle element structure, per se.

80.41 Means to shift needle laterally of fabric feed:

This subclass is indented under subclass 80.4. Device for moving the strand inserting means transverse to a direction of material advance past the inserting means.

SEE OR SEARCH THIS CLASS, SUBCLASS:

80.31, for tufting devices which include means to move the base material transverse to a direction of material advance past the strand inserting means.

80.42 Means to vertically adjust stroke:

This subclass is indented under subclass 80.4. Device for reciprocating the strand inserting means in a direction parallel to its direction of elongation which includes (1) means for adjusting the amplitude of reciprocation or (2) means for adjusting the position of reciprocation in a direction parallel to the direction of reciprocation.

80.43 Means to selectively drive one of plural needles:

This subclass is indented under subclass 80.4. Device wherein there are at least two strand inserting means, having an elongated portion which portion penetrates the base material to pass a strand or strands therethrough, the device further including means to reciprocate, in the direction of elongation, one of the inserting means to penetrate the base material while not reciprocating, in the direction of elongation, one other of the inserting means.

80.44 Means to disconnect needle and drive:

This subclass is indented under subclass 80.4. Device for making and braking a motive coupling between (1) the strand inserting means

and (2) an element which imparts reciprocation to the strand inserting means to cause the strand inserting means to penetrate the material.

(1) Note. This subclass includes devices (1) means to disconnect a needle bar and a needle to prevent the needle from reciprocating or (2) means to disconnect a needle bar and the bar's drive means.

(2) Note. A device having merely a switch which turns on a tufting machine's drive motor is not included in this subclass.

SEE OR SEARCH THIS CLASS, SUBCLASS:

80.41, for tufting devices which include means to shift the needle laterally of fabric feed.

80.43, for tufting devices which include means to selectively drive one of plural needles.

221, for needle driving mechanisms which may include disconnect means for skip stitching.

450, for zigzag stitch forming devices which have a vibrating needle and skip stitch mechanism.

SEE OR SEARCH CLASS:

192, Clutches and Power-Stop Control, appropriate subclasses.

80.45 Supporting structure:

This subclass is indented under subclass 80.4. Device for mounting, holding, or carrying the strand inserting means.

SEE OR SEARCH THIS CLASS, SUBCLASS:

80.03+, for hand tufting devices which include means to hold a strand inserting means (e.g., handle).

226, for elements used in sewing operations which clamp a needle to a needle bar.

80.5 Including specific loop catcher:

This subclass is indented under subclass 80.01. Device wherein significance is attributed to means for engaging, holding, or guiding a strand portion which portion has been formed on the base material and which portion is in the

configuration of a roughly oval, closed or nearly closed turn or figure (i.e., a strand loop).

(1) Note. "Loopers", "hooks", and loop guiding guards are included in this and indented subclasses.

SEE OR SEARCH THIS CLASS, SUBCLASS:

80.03+, for hand tufting implements which include loop catcher means.

80.15, for tufting devices which produce tufts on both sides of the base material and include loop catcher structure.

80.51 Bill with clip or gate:

This subclass is indented under subclass 80.5. Device wherein the strand loop engaging, holding, or guiding means includes an elongated portion with a free end adapted to extend through a strand loop and further includes means acting in cooperation with the elongated portion to surround the periphery of or otherwise hold or contain the strand loop.

(1) Note. The means cooperating with the elongated portion is usually mounted on the strand loop engaging, guiding, or hold means.

80.52 Plural loop catchers having different shapes or orientations:

This subclass is indented under subclass 80.5. Device wherein at least two means are provided which each engage, hold, or guide a strand loop wherein each of the means (1) has a different appearance or (2) operates with a different positional relationship with regard to the strand loop being engaged, held or guided.

(1) Note. Each of the loop engaging, holding, or guiding means may act on the same strand loop or set of loops or may act on a different loop or set of loops.

(2) Note. In loop catching devices with plural loop catching bills, each bill and associated support is considered to be a separate strand loop engaging, hold, or guiding means.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

80.15, for dual sided tufting devices having plural loop catchers with different shapes or orientations.

80.53 Stationary relative to one another:

This subclass is indented under subclass 80.52. Device wherein the strand loop engaging, holding, or guiding means do not move relative to one another during operation of the device.

80.54 Variable height loops:

This subclass is indented under subclass 80.5. Device wherein the strand loop engaging, holding, or guiding means engages, holds, or guides strand loops of differing lengths which have been formed on the base material.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

80.52+, for plural loop catchers having different shapes or orientations which may engage, hold, or guide strand loops of differing lengths which have been formed on the base material.

80.55+, for tufting devices including loop catcher structure with loop cutting means which cuts a strand loop thereby forming two strands of unequal length.

80.7+, for tufting devices including yard manipulating means for producing variable height strands or strand loops on the base material by varying the rate of feed of the strands to the strand inserting means (e.g., backdrawing).

80.55 With loop cutting means:

This subclass is indented under subclass 80.5. Device including means for severing the strand loop.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

80.51, for tufting devices including loop catching structure with loop cutting means, which structure has a loop catching bill with a clip or gate.

80.71, for tufting devices including means to sever a strand.

SEE OR SEARCH CLASS:

26, Textile: Cloth Finishing, subclass 8 for devices under that class definition for cutting pile loops, and particularly subclasses 9+ for devices which simultaneously cut pile loops while feeding material.

80.56 Selective cutting means:

This subclass is indented under subclass 80.55. Device including means for severing one strand loop and for never severing another strand loop.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

80.51, for tufting devices having a bill with a clip or gate which devices include means for severing one strand loop and for never severing another strand loop.

80.57 Rotary cutter:

This subclass is indented under subclass 80.55. Device wherein the severing means rotates about a central axis.

(1) Note. Devices having a severing means which merely oscillates along an arcuate path are classified by other features.

80.58 Knife pivots on loop catcher:

This subclass is indented under subclass 80.55. Device wherein the strand loop severing means is supported by and rotates about the means which engages, holds, or guides the strand loop.

(1) Note. Devices with severing means which are supported on and rotate about a support of the loop engaging, holding, or guiding means are included in this subclass if the support is integral with and does not move relative to the loop engaging, holding, or guiding means.

80.59 Cutting means stationary relative to loop catcher:

This subclass is indented under subclass 80.55. Device wherein the severing means does not move with respect to the means which engages, holds, or guides the strand loop.

80.6 Including supporting structure (e.g., knife block):

This subclass is indented under subclass 80.55. Device having means for mounting, holding, or carrying the severing means.

80.7 Including specific yarn manipulating, cutting, or treating means:

This subclass is indented under subclass 80.01. Device wherein significance is attributed to (1) means for guiding, tensioning, advancing, severing, or otherwise handling the strand or (2) means for subjecting the strand to a physical or chemical process in order to change a characteristic of the strand.

SEE OR SEARCH THIS CLASS, SUBCLASS:

80.07+, for tufting devices including fluid actuating means for guiding, tensioning, advancing, or otherwise manipulating a strand.

80.18, for tufting devices including a stop motion device such as for detecting a broken strand.

222+, for elements used in sewing operations which insert thread.

273, for elements used in sewing operations which sense a condition of a sewing thread and facilitate the starting or stopping of a sewing drive mechanism.

285+, for devices having a thread cutting, severing, or breaking element.

80.71 Cutting or treating means:

This subclass is indented under subclass 80.7. Device for (1) severing the strand or (2) subjecting the strand to a physical or chemical process in order to change a characteristic of the strand.

(1) Note. Strand dyeing devices are included in this subclass.

SEE OR SEARCH THIS CLASS, SUBCLASS:

80.55+, for tufting devices including a loop catcher with a loop cutter.

80.72 Feed via intermeshing slats:

This subclass is indented under subclass 80.7. Device for advancing the strand including two sets of bars, one set of which overlaps and opposes a second set in an intermeshing area, each bar having a projected edge which contacts the strand when in the intermeshing area. The two sets of bars are driven to advance the strand by alternately passing the strand from a projected edge of one bar of the one set to a projected edge of an opposing bar of the second set.

(1) Note. The bars are often provided with indentations in the strand contacting projected edges which indentations vary in depth are are configured so as to cause a variation in the rate of strand advance.

80.73 Feed roller:

This subclass is indented under subclass 80.7. Device for advancing a strand wherein the strand advancing means has a drive, rotating, cylindrical element over which the strand is guided.

81 Hemstitch:

This subclass is indented under subclass 78. For hemstitching.

82 Universal feed:

This subclass is indented under subclass 81. The machine has a feed mechanism controllable to move work in all directions.

(1) Note. For universal feeding mechanism, per se, see this class, subclass 309.

83 Horizontal needle:

This subclass is indented under subclass 78. The needle operates in a horizontal plane.

84 Pattern controlled:

This subclass is indented under subclass 83. The machine is controlled by a pattern mechanism, such as a jacquard.

85 Boring:

This subclass is indented under subclass 84. The boring-tool is pattern-controlled.

- 86 Fabric shifting:**
This subclass is indented under subclass 84. The fabric-shifting mechanism is pattern controlled.
- 87 Stopping:**
This subclass is indented under subclass 83. Includes mechanism for starting and stopping.
- (1) Note. For mechanism for starting and stopping of general application to sewing machines, see this class, subclass 271.
- 88 Article attaching:**
This subclass is indented under subclass 83. Attaching separate articles for ornamentation.
- (1) Note. For general article-attaching, see this class, subclass 104, and indented subclasses.
- 89 Boring:**
This subclass is indented under subclass 83. Includes mechanism to bore or pierce the fabric to be sewed.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
85,
- 90 Fabric shifting:**
This subclass is indented under subclass 83. Includes special fabric-shifting mechanisms.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
86,
- 91 Balancing:**
This subclass is indented under subclass 90. Counterbalancing the weight of the fabric-shifting frame.
- 92 Spring:**
This subclass is indented under subclass 90. Counterbalancing by a spring.
- 93 Stitch forming:**
This subclass is indented under subclass 83. Includes special stitch-forming mechanism.
- (1) Note. For general stitch-forming mechanism see this class, subclass 154, and indented subclasses.
- 94 Short thread:**
This subclass is indented under subclass 93. The needle passes bodily through the fabric inserting a thread of definite length.
- (1) Note. For general short-thread machines, see this class, subclass 170, and indented subclasses.
- 95 Shuttle type:**
This subclass is indented under subclass 93. Includes a shuttle to insert a locking-thread.
- (1) Note. For shuttle-machines, generally, see this class, subclass 185, and indented subclasses.
- 96 Thread take-up:**
This subclass is indented under subclass 93. Includes mechanisms to take up the slack in the needle-thread.
- (1) Note. For take-ups, generally, see this class, subclass 241, and indented subclasses.
- 97 Thread tension:**
This subclass is indented under subclass 93. Includes tension mechanisms for the needle-thread.
- (1) Note. For tensions, generally, see this class, subclass 254, and indented subclass.
- 98 Vertical needle:**
This subclass is indented under subclass 78. The needle operates in a vertical plane.
- 99 Attaching ornaments:**
This subclass is indented under subclass 98. Attaching separate articles, including cords and braids, for ornamentation.
- (1) Note. For general article-attaching, see this class, subclass 104 and indented subclasses, and 139.

- 100 Thread:**
This subclass is indented under subclass 99. Threads are entwined with stitch without penetrating the fabric.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
161,
- 101 Attachments:**
This subclass is indented under subclass 100. Attachable and detachable without disorganization of sewing mechanism.
- 102 Fabric shifting:**
This subclass is indented under subclass 98. Includes special fabric-shifting mechanisms.
- 102.5 Electronic pattern controlled or programmed:**
This subclass is indented under subclass 102. Device including a control system having an electronic program storing means to produce either (a) a series of stitches along a predetermined path, or (b) to control an ancillary operation of the machine.
- (1) Note. An example of an ancillary operation includes a machine generated audio voice command, a pattern learning system, etc.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
80.23+, for an embroidery-type tufting device responsive to an optical, electronic or magnetic pattern program means.
445+, for a vibrating needle-type zigzag stitch forming mechanism having an electronic memory and an indicator.
447, for a vibrating needle-type zigzag stitch forming mechanism for sewing a closed pattern (e.g. buttonhole, etc.) having electronic memory.
453+, for a vibrating needle-type zigzag stitch forming mechanism having electronic memory, especially subclass 458 wherein the device includes pattern selection means through which an operator can select one pattern from a plurality of patterns.
470.01+, for a pattern controlled or programmed sewing machine.
- SEE OR SEARCH CLASS:
33, Geometrical Instruments, subclasses 700+ for an instrument for the measurement of a distance, especially subclass 735 where the measurement device is for flexible material and is achieved by rolling contact and the resultant data is processed through a computer.
38, Textiles: Ironing and Smoothing, subclass 102.2 for an embroidery hoop.
73, Measuring and Testing, subclasses 159+ for an inspecting, measuring, or testing device for a sheet, woven fabric, fiber, or filament.
74, Machine Element or Mechanism, subclasses 25 through 62 for a mechanism which converts rotary motion to reciprocating motion or reciprocating motion to rotary motion; subclasses 111 through 125.5 for an intermittent grip-type device, especially subclasses 112 through 125.5 for an intermittent grip-type device which converts rotary motion to intermittent unidirectional motion; and subclasses 113 and 114 for an intermittent grip-type device which converts rotary motion to intermittent unidirectional motion which includes an automatic control system.
250, Radiant Energy, subclass 202 for a photocell system responsive to a pattern, subclass 548 for a photocell system which controls a web, strand, strip, or sheet; subclasses 559+ for a photocell which is responsive to light from a web, strand, strip, or sheet and which produces an electrical signal which is indicative of some characteristic of the material; and subclasses 571+ for a prephotocell system which detects the presence, absence, or some characteristic of a web, strand, strip, or sheet.
318, Electricity: Motive Power Systems, appropriate subclasses for a motor control system in general, and especially subclasses 567+ for an electrical motor control system which uses a program or pattern control system.

- 103 Frames:**
This subclass is indented under subclass 102. The fabric is clamped in a frame.
- 104 Article attaching:**
This subclass is indented under subclass 2. Attaching separate articles, such as labels, buttons, etc.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
88, 99, 100, 101, and 265.1+.
- 105 Hook and eye:**
This subclass is indented under subclass 104. Attaching hooks and eyes.
- 106 Feeding:**
This subclass is indented under subclass 105. Includes means to feed hooks and eyes to be sewed.
- SEE OR SEARCH CLASS:
221, Article Dispensing, appropriate subclasses for article dispensers (feeders) not otherwise provided for and not combined with a sewing machine, and see the class definition of Class 221 for the disposition of related disclosures of article and strip feeding processes and apparatus.
- 107 Carriers:**
This subclass is indented under subclass 105. Holders for hooks and eyes to be sewed on.
- 108 Eye-shank button:**
This subclass is indented under subclass 104. Sewing eye-shank buttons.
- SEE OR SEARCH CLASS:
29, Metal Working, subclass 243.56 for an apparatus not elsewhere classifiable for joining a first part to a second part by applying a clip.
227, Elongated-Member-Driving Apparatus, subclasses 31+ for combined apparatus for assembling a button with a workpiece and applying a member, e.g., nail, thereto.
- 109 Vibrating needle:**
This subclass is indented under subclass 108. The needle is shifted laterally.
- 110 Flat button:**
This subclass is indented under subclass 104. Sewing on flat buttons.
- 111 Vibrated needle:**
This subclass is indented under subclass 110. The needle is shifted laterally.
- (1) Note. Includes those where the button-holder is also shifted.
- 112 Vibrated clamp:**
This subclass is indented under subclass 110. The button-holding clamp is shifted laterally.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
111,
- 113 Feeding:**
This subclass is indented under subclass 104. Article-feeders specially adapted for sewing machines.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
106, and 144.
- SEE OR SEARCH CLASS:
221, Article Dispensing, appropriate subclasses for article dispensers (feeders) not otherwise provided for and not combined with a sewing machine, and see the class definition of Class 221 for the disposition of related disclosures of article and strip feeding processes and apparatus.
- 114 Clamps:**
This subclass is indented under subclass 104. Holders for articles to be attached.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
107, 112, and 115.

- 115 Attachments:**
This subclass is indented under subclass 104. Attachable and detachable without disorganization of the sewing mechanism.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
101,
- 116 Crocheting:**
This subclass is indented under subclass 2. For applying to the edge of a fabric a succession of stitches joined by one or more crochet stitches.
- 117 Quilting:**
This subclass is indented under subclass 2. For sewing quilts.
- 118 Fabric shifting:**
This subclass is indented under subclass 117. Includes mechanisms to shift the work with respect to the stitching mechanisms.
- 119 Frames:**
This subclass is indented under subclass 118. The work is stretched in a frame.
- 120 Infolding:**
This subclass is indented under subclass 2. For stitching two plies of fabric folded inward toward each other.
- 121 Darning:**
This subclass is indented under subclass 2. For darning fabrics.
- SEE OR SEARCH CLASS:
66, Textiles: Knitting, subclass 2.
- 122 Trimmers:**
This subclass is indented under subclass 2. Includes mechanisms for trimming the work adjacent the seam.
- SEE OR SEARCH CLASS:
83, Cutting, appropriate subclasses for cutting or pinking of sheet material.
- 122.1 Having specified stitching mechanism:**
This subclass is indented under subclass 122. Device wherein significance is attributed to the means for uniting or ornamenting material by means of a thread.
- 122.2 Pinker:**
This subclass is indented under subclass 122.1. Device wherein work is trimmed leaving a pattern, usually sawtoothed work edge.
- SEE OR SEARCH CLASS:
83, Cutting, subclass 918 for cross-referenced art collection pinking devices.
- 122.3 Rotary cutter:**
This subclass is indented under subclass 122. Device including a knife which rotates about a central axis in performing the cutting operation.
- 122.4 Pinker:**
This subclass is indented under subclass 122.3. Device wherein work is trimmed leaving a pattern, usually sawtoothed work edge.
- SEE OR SEARCH CLASS:
83, Cutting, subclass 918 for cross-referenced art collection pinking devices.
- 125 Manual control:**
This subclass is indented under subclass 122. Includes means for throwing in and out of operation.
- 126 Laterally adjustable:**
This subclass is indented under subclass 122. Adjustable to and from the line of feed.
- 127 Ply separating:**
This subclass is indented under subclass 122. For trimming different plies separately.
- 128 Needle-bar operated:**
This subclass is indented under subclass 122. Includes operative connection with needle-bar.
- 129 Cutters:**
This subclass is indented under subclass 122. Includes special cutting elements.
- SEE OR SEARCH CLASS:
30, Cutlery, for knives.

- 83, Cutting, appropriate subclasses for cutting and pinking apparatus. may be combined with more than nominal winding structure.
- 130 Severing:**
This subclass is indented under subclass 2. Sever parts of work, as strips or tapes, after seam is completed.
- 131 Creasers and markers:**
This subclass is indented under subclass 2. Devices which mark either by creasing or otherwise, adapted for use on a sewing machine.
- 132 Rufflers and gatherers:**
This subclass is indented under subclass 2. For making ruffles and gathers in the work.
- 133 Smocking:**
This subclass is indented under subclass 132. For gathering and stitching in the manner known as "smocking".
- 134 Attachments:**
This subclass is indented under subclass 132. Attachable and detachable without disorganization of the sewing mechanism.
- 135 Vibrating blade:**
This subclass is indented under subclass 134. Includes a vibrating blade which engages the work.
- 136 Guides:**
This subclass is indented under subclass 2. Means to guide the work.
- SEE OR SEARCH CLASS:
- 226, Advancing Material of Indeterminate Length, may include a nominal recitation of a supply or take-up coil (e.g., less than a support for such a coil or a cooperative relationship between a tension or exhaust detector and reel driving or reel stopping means, etc.), subclass 196.1 for a passive guide combined with a material feeder.
- 242, Winding, Tensioning, or Guiding, subclasses 157+ for a residual guide that directs a strand*, subclass 566 for an unwinding apparatus having a particular guide or guard, or subclasses 615+ for a residual guide or guard that directs elongated flexible material that
- 137 Binders:**
This subclass is indented under subclass 136. To fold a strip over an edge of the work to be attached as a binding.
- 138 Strip reversing:**
This subclass is indented under subclass 137. The binding-strip is supplied from one side.
- 139 Braiders and corders:**
This subclass is indented under subclass 136. To facilitate applying braids and cords to a fabric.
- 140 Blind stitch:**
This subclass is indented under subclass 136. Guides adapted for blindstitching.
- 141 Hemmers:**
This subclass is indented under subclass 136. Includes means to fold the work to form a hem.
- 142 Lap seam:**
This subclass is indented under subclass 141. To form a lap-seam.
- 143 Adjustable:**
This subclass is indented under subclass 141. Includes means to adjust.
- 144 Tucking:**
This subclass is indented under subclass 136. For making tucks.
- 145 Box plait:**
This subclass is indented under subclass 144. For making tucks in the form of a box-plait.
- 146 Spacing:**
This subclass is indented under subclass 144. Includes mechanism to facilitate spacing.
- 147 Folding:**
This subclass is indented under subclass 136. Includes means to fold the work.
- 148 Fabric holding:**
This subclass is indented under subclass 136. Fabric-holders and means for guiding the holder.

- SEE OR SEARCH CLASS:
101, Printing, subclass 415.1.
- 149 Fringe turning:**
This subclass is indented under subclass 136. Guides which turn back projecting threads of ragged edges, pile-threads of carpets, the hair of fur, etc.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
20,
- 150 Pressure:**
This subclass is indented under subclass 136. Guides which press upon the material guided.
- 151 Presser bar attached:**
This subclass is indented under subclass 136. Guides attached to presser fork or bar.
- 152 Strip:**
This subclass is indented under subclass 136. Engaging two edges of fabric or material to be sewed.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
139,
- 153 Edge:**
This subclass is indented under subclass 136. Device which guides the work according to a profile of one edge thereof.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
140,
- 154 STITCH FORMING:**
This subclass is indented under the class definition. Devices having mechanisms which cooperate to form stitches in work material.
- (1) Note. Lock-stitch machines, including the revolving-hook type and the shuttle type, are those in which a mass of threads is passed bodily through a loop of needle-thread. In chain stitch machines, one loop is inserted through another loop without passing the mass of thread supply therethrough.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
93,
- 155 Multiple machines:**
This subclass is indented under subclass 154. Includes a plurality of complete stitch-forming mechanisms.
- 156 Knot tying:**
This subclass is indented under subclass 154. Sewing machines including means to tie the stitching-threads.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
22,
- 157 Zigzag:**
This subclass is indented under subclass 154. The line of stitches is zigzag.
- 159 Shifting looper:**
This subclass is indented under subclass 443. The looper (either chain or lock stitch) is shifted with the needle.
- 160 Surging:**
This subclass is indented under subclass 157. The fabric is moved back and forth across the line of feed.
- 161 Purling:**
This subclass is indented under subclass 157. An additional thread is entwined with the stitches.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
100,
- 162 Overseaming:**
This subclass is indented under subclass 154. The thread of the stitch is carried over an edge of fabric by some mechanism other than the needle.
- (1) Note. For those machines where the thread is carried over by the needle, see this class, subclass 65.

- SEE OR SEARCH THIS CLASS, SUB-CLASS:
16, for overedge seaming machines adapted for making gloves.
475.26, for methods of forming an overedge seam.
- 163 Multiple needle:**
This subclass is indented under subclass 154. Characterized by a plurality of needles.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
452, for a zigzag stitch forming mechanism wherein the needle is shifted back and forth across the line of material feed which mechanism further includes a second needle.
- 164 Shuttle type:**
This subclass is indented under subclass 163. The locking-thread is inserted by a shuttle.
- (1) Note. For shuttle-type machines, generally, see this class, subclass 185.
- 165 Chain and double chain:**
This subclass is indented under subclass 163. Forming a chain-stitch seam.
- (1) Note. For chain-stitch machines, generally, see this class, subclass 197, and indented subclasses.
- 166 Multiple looper:**
This subclass is indented under subclass 165. Includes a looper for each needle.
- 167 Adjustable:**
This subclass is indented under subclass 163. Includes means to change the spacing between the multiple stitch-forming mechanisms.
- 168 Convertible:**
This subclass is indented under subclass 154. Adapted for conversion from one type to another, as from chain-stitch to lock-stitch.
- 169 Hand implements:**
This subclass is indented under subclass 154. Machines without bases adapted to be held in the hands while operating.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
80.03+,
- SEE OR SEARCH CLASS:
223, Apparel Apparatus, subclass 104 for awl type thread inserters.
606, Surgery, subclasses 144+, for hand manipulated sewing devices for inserting sutures into an animal body.
- 170 Short thread:**
This subclass is indented under subclass 154. The needle passes bodily through the fabric, inserting a thread of definite length, as in hand-sewing.
- 171 Double-pointed needle:**
This subclass is indented under subclass 170. The needle is passed through the work each end alternately.
- 172 Overedge:**
This subclass is indented under subclass 170. Forming an overedge-seam.
- 173 Running stitch:**
This subclass is indented under subclass 154. The thread passes through the work from one side to the other alternately.
- 174 Crimping:**
This subclass is indented under subclass 173. Includes means to crimp the work.
- 175 Stationary needle:**
This subclass is indented under subclass 173. The work is fed upon a stationary needle.
- 176 Blind stitch:**
This subclass is indented under subclass 154. The thread does not pass all the way through the work so that no seam appears on one side.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
267.1, for methods of blind stitching.
- 177 Overseaming:**
This subclass is indented under subclass 176. Forming an overedge-seam.

- SEE OR SEARCH THIS CLASS, SUB-CLASS:
268.1, and 269.1, for methods of forming an overedge seam.
- 178 Work handling:**
This subclass is indented under subclass 176. Work-handling (supporting, feeding, manipulating, etc.) for blindstitch machines.
- 179 False hemstitch:**
This subclass is indented under subclass 154. The stitch is formed loosely, so that two fabrics united thereby may be separated to simulate hemstitching.
- 180 Bobbin ejector:**
This subclass is indented under subclass 154. Includes means to facilitate removal of the bobbin.
- 181 Revolving-hook type:**
This subclass is indented under subclass 154. A hook member draws out the needle-loop without passing bodily therethrough, the under-thread carrier or bobbin being passed bodily through the loop either by the movement of the loop or the carrier.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
467, for a zigzag stitch forming mechanism wherein the needle is shifted back and forth across the line of material feed which mechanism includes specified means for working the thread on the side of the material opposite the side from which the needle penetrates the material.
- 182 Timing:**
This subclass is indented under subclass 181. The hook is operated at a variable speed or through a plurality of revolutions to one reciprocation of the needle.
- 183 Reciprocating bobbin:**
This subclass is indented under subclass 181. The thread-carrier is reciprocated bodily through the loop.
- 184 Vertical axis:**
This subclass is indented under subclass 181. The hook moves about a vertical axis.
- 185 Shuttle type:**
This subclass is indented under subclass 154. A movable thread-carrier draws out the needle-loop and passes bodily through it.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
95, and 164.
467, for a zigzag stitch forming mechanism wherein the needle is shifted back and forth across the line of material feed which mechanism includes specified means for working the thread on the side of the material opposite the side from which the needle penetrates the material.
- 186 Shuttle replenishing:**
This subclass is indented under subclass 185. Includes means to replenish the under thread.
- 187 Loop spreaders:**
This subclass is indented under subclass 185. Includes means to aid in spreading the loop.
- 188 Bobbin latch:**
This subclass is indented under subclass 185. Includes devices to fasten the bobbin in place.
- 189 Rotary:**
This subclass is indented under subclass 185. The shuttle revolves about a given axis.
- 190 Timing:**
This subclass is indented under subclass 189. The shuttle rotates with a variable speed.
- 191 Vertical axis:**
This subclass is indented under subclass 189. The shuttle moves about a vertical axis.
- 192 Oscillatory:**
This subclass is indented under subclass 185. The shuttle moves back and forth about an axis.
- 193 Vertical axis:**
This subclass is indented under subclass 192. The axis is vertical.

- 194 Reciprocatory:**
This subclass is indented under subclass 185. The shuttle moves back and forth in a straight line.
- 195 Longitudinal:**
This subclass is indented under subclass 194. The shuttle moves lengthwise of the bed or arm of the machine.
- 196 Holders and raceways:**
This subclass is indented under subclass 185. Includes specific shuttle-holders or raceways.
- 197 Chain or double chain:**
This subclass is indented under subclass 154. One loop of thread is inserted through another without passing the thread-supply mass there-through.
- 198 Hooked needle:**
This subclass is indented under subclass 197. Includes a hooked needle.
- 199 Oscillating or reciprocating looper:**
This subclass is indented under subclass 197. The looper oscillates back and forth about a central axis or in a given path.
- 200 Four-motion looper:**
This subclass is indented under subclass 197. The looper is moved in four directions.

SEE OR SEARCH THIS CLASS, SUBCLASS:
159,
- 201 Rotating looper:**
This subclass is indented under subclass 197. The looper rotates continuously.
- 202 Vertical-axis looper:**
This subclass is indented under subclass 197. The looper moves about a vertical axis.
- 217 Seam finishing:**
This subclass is indented under subclass 154. Includes means for beating out or finishing the seam.
- 217.1 WITH TABLES OR STANDS:**
This subclass is indented under the class definition. Supports for devices including a generally flat horizontal top or working surface member, supporting frame or base structure therewith and either (a) mechanism for driving or controlling a sewing device on the said surface or (b) work or product supporting or handling features claimed in relation to the sewing device.
- 217.2 For plural sewing units:**
This subclass is indented under subclass 217.1. Sewing machine stands for supporting multiple sewing devices.
- 217.3 With power control or clutch:**
This subclass is indented under subclass 217.1. Sewing machine stands including mechanisms to aid in the drive or control of an electric or mechanical motor connected with the sewing machine.
- 217.4 Conversion of foot-treadle driven machine:**
This subclass is indented under subclass 217.3. Subject matter wherein the stand includes a foot-treadle disclosed for driving the sewing device wherein the motor displaces the foot-treadle drive and the motor control is usually connected with the foot-treadle.

(1) Note. In some instances the foot-treadle drive and the motor drive are both operative and may be used selectively. However, usually, the conversion is from foot-treadle to motor driven.
- 220 Driving mechanisms:**
This subclass is indented under subclass 270. Construction of driving mechanisms.
- 221 Needle:**
This subclass is indented under subclass 220. For driving the needle.

SEE OR SEARCH THIS CLASS, SUBCLASS:
80.4+, for an embroidering, tufting device having needle supporting or manipulating means.

- 222 Needles:**
This subclass is indented under subclass 270. Thread-inserting devices fore wing-machines.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
80.05, and 80.16, for an embroidering, tufting device having a hollow or channelled needle.
80.06, and 80.17, for an embroidering, tufting device having a noneyed needle.
80.08, for an embroidering, tufting device having yarn manipulation by fluid flow and also having a hollow needle.
- SEE OR SEARCH CLASS:
223, Apparel Apparatus, subclass 102 as the general subclass for pointed instruments having an eye, hook, or equivalent to attach to a thread, tape, or the like for sewing, threading, or attaching the thread to a fabric.
606, Surgery, subclass 222 for surgical needles adapted to carry a suture through the skin or flesh of a living animal body.
- 223 Thread releasing:**
This subclass is indented under subclass 222. Adapted to thread and unthread at each operation.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
198,
- 224 Threading structure:**
This subclass is indented under subclass 222. To facilitate threading, the thread being retained during sewing operation.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
223, for needles adapted to be threaded and unthreaded at each operation of the needle.
- 225 Setting and threading attachments:**
This subclass is indented under subclass 222. Attachments to facilitate setting and threading.
- SEE OR SEARCH CLASS:
7, Compound Tools, subclass 170 for compound tools including needle setting and threading implements.
33, Geometrical Instruments, subclass 626 for needle-setting gages.
223, Apparel Apparatus, subclass 99 for needle-threading implements.
- 226 Clamping:**
This subclass is indented under subclass 222. Includes means to clamp needle to needle-bar.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
80.45, for an embroidering, tufting device having particular needle supporting means.
- 227 Guiding:**
This subclass is indented under subclass 222. Guiding and guarding needles during their operation.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
261, for devices to prevent operator's fingers being drawn beneath the needle.
- 228 Revolving hooks:**
This subclass is indented under subclass 270. Hook mechanisms or mechanism contained therein.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
467, for a zigzag stitch forming mechanism wherein the needle is shifted back and forth across the line of material feed, which mechanism includes specified means for working the thread on the side of the material opposite the side from which the needle penetrates the material.
- 229 Bobbin tensioning:**
This subclass is indented under subclass 228. Includes tension means for the bobbin.
- 230 Sectional:**
This subclass is indented under subclass 228. A plurality of members connected together to form the hook.

- 231 Bobbin holders and casings:**
This subclass is indented under subclass 228. Casings are provided for bobbins with means to hold the casings in position.
- 232 Shuttles:**
This subclass is indented under subclass 270. Devices carrying a package of thread adapted to pass through a loop of needle-thread.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
185, and indented subclasses.
467, for a zigzag stitch forming mechanism wherein the needle is shifted back and forth across the line of material feed, which mechanism includes specified means for working the thread on the side of the material opposite the side from which the needle penetrates the material.
- 233 Tensioning:**
This subclass is indented under subclass 232. Controlling the delivery of thread.
- 234 Longitudinally reciprocating:**
This subclass is indented under subclass 232. Adapted to be reciprocated back and forth through the needle-loops.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
195,
- 235 Presser devices:**
This subclass is indented under subclass 270. Pressing the work against the work-support.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
60, and 61.
- 236 Embroidering and darning:**
This subclass is indented under subclass 235. For embroidering and darning machines.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
78, and indented subclasses and 121.
- 237 Lifting:**
This subclass is indented under subclass 235. Operable to release work.
- 238 With tension release:**
This subclass is indented under subclass 237. Releasing thread-tension when presser-bar is lifted.
- 239 Automatic:**
This subclass is indented under subclass 237. Operable connection with other moving parts.
- 240 Detachable connections:**
This subclass is indented under subclass 235. Securing presser-feet or other attachments to presser-bars.
- 241 Take-ups:**
This subclass is indented under subclass 270. Take up slack in thread during thread formation.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
57, and 96.
- 242 Pull-offs:**
This subclass is indented under subclass 241. Drawing thread from the supply mass.
- 243 Automatic control:**
This subclass is indented under subclass 242. Variable sewing-stitch formation independent of adjustments.
- 244 Presser-bar controlled:**
This subclass is indented under subclass 241. Controlled through connection with presser-bar.
- 245 Needle-bar actuated:**
This subclass is indented under subclass 241. Operated by the needle-bar.
- 246 Adjustable:**
This subclass is indented under subclass 241. Includes means for adjustment of throw.
- 247 Resilient:**
This subclass is indented under subclass 241. Includes a spring.

- 248 Rotary:**
This subclass is indented under subclass 241. Continuously rotating takeups.
- 249 Stationary cam:**
This subclass is indented under subclass 241. A stationary cam over which the thread is moved.

SEE OR SEARCH THIS CLASS, SUB-CLASS:
248, for rotary cam.
- 250 Clamp carrying:**
This subclass is indented under subclass 241. Clamp and release thread periodically.
- 253 Thread end clamps:**
This subclass is indented under subclass 270. Hold the free end of a thread for stitching.
- 254 Tensioning:**
This subclass is indented under subclass 270. Regulate the feeding of thread.

SEE OR SEARCH THIS CLASS, SUB-CLASS:
59, and 97.

SEE OR SEARCH CLASS:
226, Advancing Material of Indeterminate Length, subclasses 195+ for devices adapted to place tension on material of indeterminate length.
242, Winding, Tensioning, or Guiding, subclasses 416+ and 147+ for a tensioning device with winding, unwinding, or in general use.
- 255 Intermittent:**
This subclass is indented under subclass 254. Variable during stitch formation.
- 256 Lubricating:**
This subclass is indented under subclass 270. Lubricating systems for sewing machines.

SEE OR SEARCH THIS CLASS, SUB-CLASS:
43,

SEE OR SEARCH CLASS:
184, Lubrication, appropriate subclasses.
- 257 Attachment holders:**
This subclass is indented under subclass 270. Hold attachments by connections to work-support other parts of machine.

SEE OR SEARCH THIS CLASS, SUB-CLASS:
240,
- 258 Frames:**
This subclass is indented under subclass 270. Supports including stationary parts cooperating with operating mechanisms.
- 259 Heads:**
This subclass is indented under subclass 258. Stationary parts cooperating with needle-actuating mechanisms and associated devices.
- 260 Work supports:**
This subclass is indented under subclass 258. Support work for stitching operations.

SEE OR SEARCH THIS CLASS, SUB-CLASS:
13,

SEE OR SEARCH CLASS:
269, Work Holders, appropriate subclasses. Class 269 is the residual locus for patents to a device for clamping, supporting and/or holding an article (or articles) in position to be operated on or treated. See notes thereunder for other related loci.
- 261 Guards:**
This subclass is indented under subclass 270. Covers and guards for moving parts.
- 270 ELEMENTS:**
This subclass is indented under the class definition. Elements wherein special significance is attributed to the elements structural adaptability for use in sewing operations.

SEE OR SEARCH CLASS:
242, Winding, Tensioning, or Guiding, subclasses 570+ and 118+ for a spool of general use.

- 271 Starting or stopping:**
This subclass is indented under subclass 270. Devices to facilitate the starting or stopping of the sewing drive mechanism.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
67, and 87, for devices of this type used on specialized machines.
80.18, for an embroidering, tufting device with condition responsive stop motion means.
- SEE OR SEARCH CLASS:
188, Brakes, subclasses 68 through 85 for “wheel” brakes, properly classified in that class.
192, Clutches and Power-Stop Control, appropriate subclasses.
- 272 Work sensing:**
This subclass is indented under subclass 271. Devices which sense the presence or absence of work and cause the sewing drive mechanism to start or stop in response to the condition sensed.
- 273 Thread sensing:**
This subclass is indented under subclass 271. Devices which sense a condition of the sewing thread, such as its slackness, a break or run out, and cause the sewing drive mechanism to start or stop in response to the condition sensed.
- 274 With element positioning:**
This subclass is indented under subclass 271. Devices including means to position an additional machine element such as a needle.
- 275 Electrically operated:**
This subclass is indented under subclass 274. Devices which are electrically controlled or operated.
- 276 Fluid operated or controlled:**
This subclass is indented under subclass 271. Devices which are operated or controlled by a fluid mechanism.
- 277 Electrically operated or controlled:**
This subclass is indented under subclass 271. Devices which are operated or controlled by electrical means.
- 278 Thread sensing:**
This subclass is indented under subclass 270. Devices which sense a condition of the sewing thread, such as slackness, breakage or run out, and activate a signal generator in response to the condition sensed.
- 279 Bobbin winding:**
This subclass is indented under subclass 270. Devices for winding the sewing thread onto bobbins.
- 280 Cooling:**
This subclass is indented under subclass 270. Devices for reducing the temperature of selected parts of the sewing machine.
- 281 Needle:**
This subclass is indented under subclass 280. Devices wherein the selected machine part is the needle.
- 282 Waste extraction:**
This subclass is indented under subclass 270. Devices for removing waste material, such as thread pieces, from any general or selected area of the sewing operation.
- 283 Fly wheels:**
This subclass is indented under subclass 270. Devices which are generally known in the machine arts as “fly wheels”, including means to fasten or secure them on the supporting shaft.
- 284 Linkage systems:**
This subclass is indented under subclass 270. Devices made of one or more elements and specifically designed to cause a given mechanical motion or movement at a given point.
- 285 Thread cutting, severing or breaking:**
This subclass is indented under subclass 270. Devices designed to cut, sever, break, or otherwise part the stitch forming thread or threads at the end of a seam or between articles which are attached by a seam forming chain.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
80.7+, for an embroidering, tufting device including specific yarn manipulating, cutting or treating means.

- SEE OR SEARCH CLASS:
- 7, Compound Tools, appropriate subclasses for compound tools including thread cutters.
- 30, Cutlery, for thread, string, or twine cutters, per se.
- 286 With thread wiping:**
This subclass is indented under subclass 285. Devices including additional structure which holds or positions the end of the thread which emanates from the needle, usually for the purpose of keeping the thread end out of the way of the next piece of work or work function.
- 287 With thread disposal by air flow:**
This subclass is indented under subclass 285. Devices having means to provide an air flow, positive and/or negative (suction), the function of such means being to remove or dispose of a piece of cut or waste thread.
- 288 Thread chain:**
This subclass is indented under subclass 285. Devices for parting the chain of thread which links adjacent articles or an article and the needle of the sewing machine.
- 289 Rotary type:**
This subclass is indented under subclass 285. Devices wherein the thread cutting blade rotates in its cutting action.
- 290 Hot wire type:**
This subclass is indented under subclass 285. Devices wherein a heated wire or rod is used to sever or part the thread.
- (1) Note. The wire or rod is usually heated electrically.
- 291 Upper and lower threads:**
This subclass is indented under subclass 285. Devices designed to cut a thread emanating from the upper surface or plane of the work and a thread emanating from the lower surface or plane of the work.
- 292 Single cutter:**
This subclass is indented under subclass 291. Devices wherein both the upper and the lower threads are cut by a single blade or sharpened surface.
- 293 Upper thread:**
This subclass is indented under subclass 285. Devices designed to cut a thread emanating from the upper surface or plane of the work.
- 294 Scissors type:**
This subclass is indented under subclass 293. Devices wherein the cutter comprises at least two blades which are movable relative to each other.
- 295 Single blade cutter:**
This subclass is indented under subclass 293. Devices wherein the cutter comprises a single blade or sharpened surface.
- 296 Lower thread:**
This subclass is indented under subclass 285. Devices designed to cut a thread emanating from the lower surface or plane of the work.
- 297 Scissors type:**
This subclass is indented under subclass 296. Devices wherein the cutter comprises at least two blades which are movable relative to each other.
- 298 Single blade cutter:**
This subclass is indented under subclass 296. Devices wherein the cutter comprises a single blade or sharpened edge.
- 299 Manual control:**
This subclass is indented under subclass 285. Devices wherein the thread parting operation is performed by manually positioning the thread against the parting means or by manually moving the parting means into and out of its operating position and/or movement.
- 300 Electrically actuated:**
This subclass is indented under subclass 285. Devices wherein the thread parting means is actuated by electricity or by an electrically actuated mechanism.
- 301 Fluid actuated:**
This subclass is indented under subclass 285. Devices wherein the thread parting means is actuated by fluid or a fluid operated mechanism.

302 Thread guiding or handling:

This subclass is indented under subclass 270. Devices designed to guide, position or otherwise handle the thread before or after the seam or chain has been made but prior to cutting the seam or chain.

SEE OR SEARCH CLASS:

- 226, Advancing Material of Indeterminate Length, may include a nominal recitation of a supply or take-up coil (e.g., less than a support for such a coil or a cooperative relationship between a tension or exhaust detector and reel driving or reel stopping means, etc.), subclass 196.1 for a passive guide combined with a material feeder.
- 242, Winding, Tensioning, or Guiding, subclasses 157+ for a residual guide that directs a strand* or subclass 566 for an unwinding apparatus having a particular guide or guard.

303 Feeding work material:

This subclass is indented under subclass 154. Device having means to advance the work material into or away from the stitch forming mechanism.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 80.3+, for an embroidering, tufting device with specific fabric supporting, manipulating, cutting, or treating means.
- 461+, for a zigzag stitch forming mechanism wherein the needle is shifted back and forth across the line of material feed, which mechanism includes cam means for actuating the needle or material feed and further includes specified structure for transporting the material.

304 By endless conveyor:

This subclass is indented under subclass 303. Device wherein the means to advance the work material comprises an endless conveyor.

305 Under tension:

This subclass is indented under subclass 303. Device wherein the work material being advanced is stretched or otherwise placed under a tensile stress.

306 Having means to align work:

This subclass is indented under subclass 303. Device including means to align the work with respect to the machine or with respect to another piece of work.

307 Work of indeterminate length:

This subclass is indented under subclass 303. Device wherein the longitudinal dimension of the material being advanced is effectively infinite insofar as can be determined from the disclosed structure for advancing such material.

308 Having curate feature:

This subclass is indented under subclass 303. Device wherein the work is advanced along a path that has curate or nonstraight-line portions.

- (1) Note. Included in this subclass are feed mechanisms which sense that the work has moved laterally of the stitch line, and make correction by feeding the work back to its proper position.

309 Capable of feeding through 360°:

This subclass is indented under subclass 308. Device wherein the feed mechanism is cable of advancing the work material in all directions.

- (1) Note. Included in this subclass are mechanisms to advance the work material according to a predetermined pattern or design and are capable of reset or reprogram to different patterns or designs.

310 Needle and helper:

This subclass is indented under subclass 303. Device wherein the stitch forming needle acts as one of two or more work material feed means.

311 Clamp type:

This subclass is indented under subclass 303. Device wherein the work material is advanced by feed means in the form of two opposed sur-

- faces which grip the upper and lower surfaces of the work material therebetween.
- 312 Plural differential feed means:**
This subclass is indented under subclass 303. Device wherein the feed means comprises at least two distinct work engaging mechanisms, each mechanism advancing at a different rate of speed.
- (1) Note. The feed mechanisms of this subclass either move apart to stretch the work or move toward each other to bunch or ruffle the work.
- 313 Having adjustment feature:**
This subclass is indented under subclass 312. Device having means to adjust the relative speed of movement between the two work engaging mechanisms.
- 314 Having adjustment feature:**
This subclass is indented under subclass 303. Device having means to adjust or otherwise change the movement, rate of advancement, or position of the work advancing means relative to the stitch forming means.
- 315 Stitch length:**
This subclass is indented under subclass 314. Device wherein the adjustment changes the length of the stitch.
- 316 Reversible feed direction:**
This subclass is indented under subclass 315. Device including means to reverse the direction of the work material feed.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
446+, for a zigzag stitch forming mechanism wherein the needle is shifted back and forth across the line of material feed, which mechanism includes particular structure for sewing a pattern which encloses a portion of the material within boundaries formed by the pattern (e.g., buttonholes).
- 317 Reversible feed direction:**
This subclass is indented under subclass 314. Device including means to reverse the direction of the work material feed.
- 318 Rotary feed:**
This subclass is indented under subclass 314. Device wherein the work advancing means rotates.
- 319 Intermittent feed:**
This subclass is indented under subclass 314. Device wherein the adjustment means provides for operation of the work advancing means at periodic intervals.
- 320 Engaging upper side of work material:**
This subclass is indented under subclass 303. Device wherein the work advancing means engages the upper or needle side of the work.
- 321 Needle acts as feed means:**
This subclass is indented under subclass 320. Device wherein the stitch forming needle acts as the sole work advancing means.
- 322 Rotary feed:**
This subclass is indented under subclass 303. Device wherein the work advancing means rotates.
- 323 Four motion feed:**
This subclass is indented under subclass 303. Device wherein the work advancing means moves in an up, forward, down, backward, generally rectangular path.
- 324 Feed dog structure:**
This subclass is indented under subclass 303. Device drawn to the structure of the feed dog or work engaging element.
- 400 PRODUCTS:**
This subclass is indented under the class definition. Product.
- (1) Note. A patent for a strand or strandlike body including a longitudinal line of stitching in said strand or body will be placed in this subclass.
- SEE OR SEARCH CLASS:
2, Apparel, appropriate subclasses, for a sewn garment, a subcombination thereof, and for a supporter or retainer therefor, and particularly subclass 274 for garment structure including a sewn binding, and subclass 275 for

- garment structure including a sewn seam.
- 5, Beds, appropriate subclasses, for sewn bedding such as pillows, mattresses or cushions.
- 15, Brushing, Scrubbing, and General Cleaning, subclasses 208+ for a sewn wiper or applicator.
- 16, Miscellaneous Hardware (e.g., Bushing, Carpet Fastener, Caster, Door Closer, Panel Hanger, Attachable or Adjunct Handle, Hinge, Window Sash Balance, etc.), subclass 17.1 for a patent to a sewn rug combined with an anti-slip or stiffener attachment where no more rug structure is claimed than is necessary to support the attachment.
- 36, Boots, Shoes, and Leggings, appropriate subclasses, for a sewn article of the type provided for in that class, or a subcombination thereof.
- 38, Textiles: Ironing or Smoothing, subclass 140 for a sewn cover for an ironing board.
- 43, Fishing, Trapping, and Vermin Destroying, subclasses 7+ for a sewn fishnet.
- 54, Harness for Working Animal, appropriate subclasses for a sewn article of the type provided for in that class, particularly subclasses 65+ for a pad and subclasses 80.4+ for a fly-net.
- 66, Textiles: Knitting, subclass 2 for a product of a darning operation which includes knitting.
- 102, Ammunition and Explosives, subclass 532 for a sewn gun or cartridge wad, and subclass 282 for a sewn bag adapted to contain explosive powder.
- 135, Tent, Canopy, Umbrella, or Cane, subclass 115 for covers for shelters.
- 139, Textiles: Weaving, subclasses 383+ for woven stock material.
- 160, Flexible or Portable Closure, Partition, or Panel, appropriate subclasses for a sewn product of the type provided for in that class, and particularly subclasses 385+ for a curtain or drape panel including sewn means (e.g., hem, loops) for mounting the panel on a support.
- 181, Acoustics, subclasses 284+ for sewn stock material or article having particular structure which gives it an acoustical property.
- 190, Trunks and Hand-Carried Luggage, subclasses 100+ for a sewn traveling bag.
- 193, Conveyors, Chutes, Skids, Guides, and Ways, subclass 25 for a chute of sewn flexible material.
- 198, Conveyors: Power-Driven, subclasses 846+ for structure of apron type endless belt conveyors.
- 206, Special Receptacle or Package, appropriate subclasses, for a sewn receptacle particularly constructed to contain a specific article.
- 211, Supports: Racks, appropriate subclasses for a rack having portions joined by sewing.
- 224, Package and Article Carriers, appropriate subclasses for a sewn article carrier adapted to be supported on a person or object.
- 281, Books, Strips, and Leaves, subclass 16 for a sewn book.
- 283, Printed Matter, appropriate subclasses for a sewn book in combination with printed matter.
- 289, Knots and Knot Tying, subclass 1.2 for the product of a knot tying operation.
- 312, Supports: Cabinet Structure, subclasses 3+ for a cabinet comprising sewn fabric wall structure.
- 362, Illumination, subclass 357 for a sewn lamp shade.
- 383, Flexible Bags, subclass 92 for a sewn paper bag.
- 428, Stock Material or Miscellaneous Articles, appropriate subclasses and particularly, subclasses 4+ for a sewn bow, pom-pom or rosette; subclasses 24+ for a sewn artificial flower; subclass 37 for a spirally flatwound strand or strip (e.g., braided rug) where the convolutions are held in place by stitching, and subclasses 102+ for a product which includes stitching combined with a discrete fastener, coating, or adhesive bond.
- 473, Games Using Tangible Projectile, subclasses 598+ for a baseball having a sewn cover.

474, Endless Belt Power Transmission Systems or Components, particularly subclasses 237+ for a friction drive belt which may be sewn.

401 Uniplanar sectional web, sheet, or layer:

This subclass is indented under subclass 400. Product wherein panels* or longitudinally non-coextensive sheets* are joined by stitching in edge-abutting or edge-overlapping relation to form a web*, sheet* or layer*.

(1) Note. A patent for a plurality of fur sections joined in edge-to-edge relation by sewing will be placed in this subclass.

SEE OR SEARCH THIS CLASS, SUBCLASS:

423+, for longitudinally coextensive webs or sheets joined by stitching and including a marginal reverse fold of at least one component.

440+, for longitudinally coextensive webs or sheets joined by stitching in edge-abutting or edge-overlapping relation, and see search notes thereunder.

SEE OR SEARCH CLASS:

2, Apparel, appropriate subclasses, for garment parts joined by a stitched seam.

36, Boots, Shoes, and Leggings, subclass 57 for a stitched seam connecting dissimilar shoe parts or located in a particular zone of a shoe.

69, Leather Manufactures, subclass 22 for a method of cutting and assembling fur sections in general.

428, Stock Material or Miscellaneous Articles, subclasses 54+ and 57+ for similar structure in which sections are united other than by, or in addition to, stitching.

402 Sewn web or sheet:

This subclass is indented under subclass 400. Product comprising a web* or sheet* which is embellished by - or in which layers* or components* thereof, or added elements thereon, are joined, reinforced or held in position by - a stitched strand* so disposed that it may have been introduced into the product by an eyed needle (with or without the cooperation of other sewing instrumentalities).

(1) Note. A patent for a single layer of material with stitching not specifically provided for in any of the indented subclasses will be placed in this subclass.

SEE OR SEARCH THIS CLASS, SUBCLASS:

412, for a web or sheet formed by sewing a layer of strands or strand portions together.

SEE OR SEARCH CLASS:

8, Bleaching and Dyeing; Fluid Treatment and Chemical Modification of Textiles and Fibers, appropriate subclasses for a combined process of sewing and fluid treatment.

428, Stock Material or Miscellaneous Articles, appropriate subclasses for a single or plural layer sheet material product which is the result of a sewing operation followed by some other operation and which is not provided for in this class (112) or any other class, and particularly subclasses 102+ for a product which includes stitching combined with a discrete fastener, coating, or adhesive bond.

403 Including decomposable thread or component:

This subclass is indented under subclass 402. Product including a strand* or component* which, as disclosed, may be removed from the web or sheet by dissolution or disintegration.

SEE OR SEARCH THIS CLASS, SUBCLASS:

266.1+, for a process of embroidering which includes the incorporation of a decomposable element.

SEE OR SEARCH CLASS:

28, Textiles: Manufacturing, subclasses 164 and 168 a textile process which includes the step of dissolving a thread or component of a web.

216, Etching a Substrate: Processes, appropriate subclasses for the use of etching in the dissolution or disintegration of a strand or component from a web.

404 Including feathers, beads, or reflective material:

This subclass is indented under subclass 402. Product wherein a plurality of horny epidermal outgrowths which make up the outer covering or plumage of birds; aperture pellets; or shiny platelets, strips or strands; are attached to the web or sheet, directly or indirectly, by stitching.

SEE OR SEARCH THIS CLASS, SUBCLASS:

475.01+, for a method of sewing feathers together and a method of attaching articles to a base by sewing.

SEE OR SEARCH CLASS:

223, Apparel Apparatus, subclasses 44+ the generic locus for machines and machine methods of making and/or attaching trimmings to apparel, linens, and analogous articles, and see notes thereunder.

405 With longitudinally non-coextensive superimposed panel or sheet:

This subclass is indented under subclass 402. Product wherein a panel* or sheet* overlies and is attached by stitching to a nonthickness surface of a base web or sheet of greater length than the attached panel or sheet.

(1) Note. The panel or sheet may be inserted in an aperture in the base and stitched to the edge of the aperture.

SEE OR SEARCH CLASS:

428, Stock Material or Miscellaneous Articles, subclasses 77+ for a similar product where the attaching means is other than or supplementary to stitching.

406 Including external fastener sewn thereto:

This subclass is indented under subclass 402. Product wherein the web or sheet has means secured thereto by a stitched thread for selectively attaching it to, and detaching it from, a cooperating means on another web or sheet.

(1) Note. A stitched buttonhole is not considered an external fastening means within the definition of this subclass.

SEE OR SEARCH THIS CLASS, SUBCLASS:

265.1+, for a method of attaching a fastener to a base by stitching.

SEE OR SEARCH CLASS:

2, Apparel, subclass 265 for a method of attaching a separable fastener to a garment element and for the resultant product.

24, Buckles, Buttons, Clasps, etc., subclass 695 for separable-fasteners attached by stitching.

206, Special Receptacle or Package, subclass 348 for a haberdashery type fastener stitched to a card to provided a mercantile unit.

428, Stock Material or Miscellaneous Articles, subclasses 99+ for a product including an external type fastener attached to a base sheet or web by means other than stitching.

407 Hook and/or eye:

This subclass is indented under subclass 406. Product wherein the fastener is either an element curved or bent to catch or hold to another element, or an element adapted to be engaged by a curved or bent fastener element.

(1) Note. A fastener of the type having a hook portion which resiliently interlocks with a cooperating fastener will be considered to be a snap fastener and will be placed in subclass 406.

408 Button:

This subclass is indented under subclass 406. Product wherein the fastener is an article of any shape (e.g., disc, knob) joined to the base web or sheet by stitching and adapted to pass through a cooperating slit or loop.

SEE OR SEARCH CLASS:

24, Buckles, Buttons, Clasps etc., subclasses 90.1+ for button structure, per se, or combined with attaching means.

409 Fringed:

This subclass is indented under subclass 402. Product provided with a plurality of individual strand portions*, groups of strand portions (such as tassels) or strand-like loops integral

with or sewn to a web or sheet edge and freely dependent or extending outwardly therefrom, the so formed fringe being coextensive with said edge.

SEE OR SEARCH CLASS:

- 16, Miscellaneous Hardware (e.g., Bushing, Carpet Fastener, Caster, Door Closer, Panel Hanger, Attachable or Adjunct Handle, Hinge, Window Sash Balance, etc.), subclass 442 for a tassel attached to flexible suspending means and adapted to function as a handle therefor.
- 139, Textiles: Weaving, subclass 385 for a woven fabric wherein loose unwoven ends of the constituent strands form a fringe.
- 428, Stock Material or Miscellaneous Articles, subclass 28 for a tassel, per se, and subclass 115 for a fringed stock material not including stitching.

410 Tufted or looped surface:

This subclass is indented under subclass 402. Product wherein a plurality of fibers*, strand portions*, narrow strand-like strips* or groups of strands are attached to the web or sheet by a stitching operation and extend outwardly from a surface thereof; or wherein a component having outwardly extending fibers, strand portions, or strand-like strips, no matter how provided, is embellished, reinforced, or joined to a base web or sheet by a stitched strand.

- (1) Note. The projecting portions of strand-like material may be cut to form discontinuous or independent tufts, or they may remain uncut to form pile loops.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 80.01+, for an embroidering, tufting apparatus.
- 401, for a uniplanar sectional web, sheet or panel including a tufted or looped surface.
- 405, for a similar product including a longitudinal noncoextensive superposed panel or sheet.
- 409, for a pile fabric having a fringe sewn thereon.

SEE OR SEARCH CLASS:

- 15, Brushing, Scrubbing, and General Cleaning, subclasses 208+ for a cleaning implement or applicator having a pile working surface.
- 139, Textiles: Weaving, subclasses 391+ for a fabric having tufts woven thereinto.
- 428, Stock Material or Miscellaneous Articles, subclasses 85+ for a strand-type fabric which has been subjected to a napping operation or wherein a pile surface is secured to a base by means other than, or in addition to, stitching (e.g., by adhesion).

411 With tufts or loops formed by floating strandlike portions:

This subclass is indented under subclass 410. Product wherein the strand-like portions forming the tufts or loops do not pass through the base web or sheet and are attached thereto by a sewing thread.

412 Of strands or strand portions joined by sewing:

This subclass is indented under subclass 402. Product wherein the web or sheet consists of a layer of strands* or strand portions* arranged side-by-side and held together by stitching.

- (1) Note. The strand portions may be portions of a single strand folded back and forth to lie side by side.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 429+, for a product wherein strands or strand portions are sewn to a surface of a base web.

SEE OR SEARCH CLASS:

- 428, Stock Material or Miscellaneous Articles, subclass 37 for a spirally flatwound strand product in which the convolutions are held in place by stitches; subclasses 105+ and 114 wherein strands in adjacent layers are in angular or parallel relation, respectively, and are held in place by means other than or in addition to stitching; and subclass 298.1 for a web of paral-

- lel strands or strand-portions held together by an adhesive substance.
- 442, Fabric (Woven, Knitted, or Nonwoven Textile or Cloth, etc.), subclasses 402+ for a needled nonwoven fabric.

413 Elastic strand or component:

This subclass is indented under subclass 402. Product in which at least a portion of a web or sheet, or in which a constituent strand* or sewing thread incorporated in a web or sheet, possesses a relatively high degree of extensibility or deformability longitudinally and/or transversely of the web or sheet and the ability to resile from such extension or deformation with substantially no permanent deformation.

- (1) Note. Patents including a layer which is elastically compressible in the direction of web thickness only are excluded from this subclass, as indicated by the term "longitudinally and/or transversely" in the definition.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 415+, for a product wherein elasticity is due merely to the relation of the strands or strand portions to each other.
- 420, for a web which includes a compressible fiber-containing layer between other layers.

SEE OR SEARCH CLASS:

- 66, Textiles: Knitting, subclasses 169+ for a knitted elastic fabric.
- 87, Textiles: Braiding, Netting, and Lace Making, subclass 2 for elastic braid, netting or lace.
- 139, Textiles: Weaving, subclasses 421+ for a woven elastic material.
- 442, Fabric (Woven, Knitted, or Nonwoven Textile or Cloth, etc.), subclasses 182+ for a woven fabric which has an elastic quality and subclasses 328+ for a nonwoven fabric which has an elastic quality.

414 Including non-planar component:

This subclass is indented under subclass 413. Product in which a portion or element of the structure is folded or pleated, or has a wavy, creped, crinkled, or embossed surface.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 418+, for sewn stock material including an inelastic nonplanar welt, stay or edge binding.
- 421, for sewn inelastic stock material including a component of varying thickness.
- 422+, for sewn inelastic stock material including a component of nonplanar uniform-thickness material.

415 Specific strand arrangement or relationship:

This subclass is indented under subclass 402. Product in which the web or sheet, or a component thereof, either (1) comprises significant claimed structure peculiar to one of the textile making arts other than sewing or felting (e.g., weaving, braiding, knitting), or (2) manifests a particular relation of the stitching strand to the strands of a sewn fabric.

- (1) Note. A mere descriptive term (e.g., woven) will not be sufficient for placement of a patent in this subclass. However, a limitation as to a particular structure or composition of individual strands of the fabric (e.g., straw, twisted paper), a particular arrangement or relationship of fabric strands or strand portions (e.g., mesh, lace, selvage, woven multi-ply, thick and thin strands), two dissimilar fabrics (e.g., woven and crocheted), or a particular weave of knit (e.g., twill, leno, rib, warp knit, tubular knit) will justify placement in this subclass.

- (2) Note. A patent for sewn bias cut textile material will be placed in this subclass.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 410+, for a tufted or looped surface produced by stitching on a specific strand-type fabric.
- 413+, for a sewn fabric including elastic and inelastic strands.
- 430, for stitching including a nonpenetrating strand supported on the surface of a sewn web and having portions of the

strand or of several such strands inter-looped.

SEE OR SEARCH CLASS:

- 66, Textiles: Knitting, subclasses 169+ for a knitted product, per se, and subclasses 190+ for a knitted product including nonknitted textile material.
- 87, Textiles: Braiding, Netting, and Lace Making, subclasses 8+ for a braided product, per se.
- 139, Textiles: Weaving, subclasses 383+ for a woven product, per se.

416 Knitted, netted, or knotted:

This subclass is indented under subclass 415. Product in which the significant nonsewn textile structure of the web or sheet, or at least one component thereof, comprises either a plurality of courses of interlocked loops of strand material or crossed strands which are tied at their junctions.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 430, for knitted strand material disposed upon and sewn to a base web.

SEE OR SEARCH CLASS:

- 66, Textiles: Knitting, subclasses 169+ for a knitted product, per se.
- 87, Textiles: Braiding, Netting, and Lace Making, subclass 12 for knotted mesh.
- 289, Knots and Knot Tying, subclass 1.2 for a knotted strand, and subclass 1.5 for a method of tying a knot.

417 With strip, strand, or strand portion between layers or components:

This subclass is indented under subclass 402. Product wherein a narrow component, a strand*, or a strand portion* lies either intermediate and in contact with two parallel web components or within a fold of a web or component and is held in place, in either instance, by stitching extending through the components or layers.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 413+, for a similar product including an elastic strip or strand.

418, for a strip sewn in a seam joining a plurality of components.

429+, for a web or sheet which includes a strand which does not penetrate it but is attached to an outer surface thereof by a stitched strand.

SEE OR SEARCH CLASS:

- 2, Apparel, subclasses 181+ for sweatband stock material for head coverings and subclass 275 for garment structure including a reinforced seam.
- 5, Beds, subclass 739 for an edge roll for a mattress.
- 428, Stock Material or Miscellaneous Articles, subclass 123 for a nonsewn stock material including a strand or strand-portion between folded layers; subclasses 189+ for such material including a strip between components.
- 442, Fabric (Woven, Knitted, or Nonwoven Textile or Cloth, etc.), subclasses 388 and 402+ for a needled nonwoven fabric.

418 With strip sewn in or over seam or over edge (e.g., welt or stay):

This subclass is indented under subclass 402. Product wherein a relatively narrow width of material is inserted in or overlies the sewn joint between adjacent components, or is folded over an edge of the web sheet, or a component thereof, and is secured thereto by stitching.

- (1) Note. The strip may be in a single thickness or infolded at one or both longitudinal edges, as in bias tape, and may be held in place by the stitches effecting the seam.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 414, for sewn elastic stock material including a nonplanar component.
- 423+, for a reversely folded sewn web in general.

SEE OR SEARCH CLASS:

- 2, Apparel, subclass 275 for garment structure including a reinforced seam.

- 36, Boots, Shoes, and Leggings, subclass 57 for a reinforced seam in a particular zone of a shoe or uniting two dissimilar parts of a shoe.
- 428, Stock Material or Miscellaneous Articles, subclasses 121+ for a nonsewn stock material including a folded piping.
- 419 Channel-shaped edge binding:**
This subclass is indented under subclass 418. Product wherein the strip is folded longitudinally back upon itself to form substantially parallel legs joined integrally at the bend and extending over the edge of at least one web component.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
410+, for a U-shaped edge binding sewn on a pile fabric.
- SEE OR SEARCH CLASS:
428, Stock Material or Miscellaneous Articles, subclass 122 for a U-shaped or channel shaped edge binding secured to a web or sheet by means other than or supplementary to a stitched strand.
- 420 Fibrous or particulate layer between other layers:**
This subclass is indented under subclass 402. Product wherein a body of fibers (including paper or felt) or particles is disposed in a layer intermediate two surface layers of material differing in structure or composition from the intermediate layer, with the fiber or particulate layer stitched to at least one of the surface layers.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
417, for a product including a relatively narrow strip or strand enclosed between layers or components.
- SEE OR SEARCH CLASS:
428, Stock Material or Miscellaneous Articles, subclasses 161+ for a nonsewn composite stock material including a component of varying thickness and at least one other component conforming to the nonplanar surfaces of the first named component; subclasses 195+ for plural web components differentially or discontinuously adhered.
- 442, Fabric (Woven, Knitted, or Nonwoven Textile or Cloth, etc.), subclasses 295+ for a woven fabric containing a paper or wood pulp layer, subclasses 320+ for a felt fabric, and subclasses 412 and 413 for a nonwoven fabric containing paper or wood.
- 421 Including component of varying thickness:**
This subclass is indented under subclass 402. Product wherein the nonthickness surfaces of a component deviate substantially from parallelism.
- (1) Note. Mere compression of the sewn material incidental to a normal stitching operation will not be considered a substantial deviation from parallelism. However, a patent claiming a groove or depression produced by the stitching thread will be placed in this subclass.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
420, for a product wherein the component of varying thickness is of fibrous material and is retained between other layers.
- SEE OR SEARCH CLASS:
428, Stock Material or Miscellaneous Articles, subclasses 156+ for similar nonsewn stock material.
- 422 Non-planar uniform-thickness material:**
This subclass is indented under subclass 402. Product wherein a web sheet or component of uniform-thickness material has its nonthickness surfaces* defined by other than two parallel planes.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
414, for a similar product including an elastic strand or component.
417, for a similar product including a strip, strand or strand portion enclosed between layers or components.

- 418, for a product including a nonplanar strip sewn in or over a seam or over an edge of a web, sheet or component.
- 420, for a product wherein the nonplanar component is a cover for a fibrous or particulate layer.

SEE OR SEARCH CLASS:

- 428, Stock Material or Miscellaneous Articles, subclasses 174+ for similar non-sewn stock material.

423 Bent flange or reverse fold at edge:

This subclass is indented under subclass 422. Product wherein the nonplanarity is in the form of a marginal portion of the web, sheet, or component folded to extend out of the plane thereof or turned back on itself substantially 180° and maintained in such condition, directly or indirectly, by stitching.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 410+, for a tufted or looped product including a folded edge binding.
- 417, for a product including a strip, strand or strand portion enclosed within a reverse fold of a web, sheet or component.
- 418+, for a reversely folded narrow strip or tape included in a stitched seam.

SEE OR SEARCH CLASS:

- 2, Apparel, subclasses 181+ for sweatband stock material for head coverings.
- 428, Stock Material or Miscellaneous Articles, subclasses 121+ for similar non-sewn stock material.

424 Including concealed or blind stitching:

This subclass is indented under subclass 423. Product wherein stitches which join layers or components in the zone of the fold are covered by a fold or layer of material on at least one face of the web or sheet, with or without penetration by the stitches of the inner surface of said covering fold or layer.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 419, for a reversely folded and blind-stitched component in the form of a U-shaped binding.

- 441, for nonfolded components united by concealed stitching running along an edge of at least one of the components.

475.24, for a method of blind stitching.

425 Overedge or along offset fold:

This subclass is indented under subclass 424. Product wherein the concealed or blind stitching has portions extending thickness-wise and outside the marginal extremity of one or more layers of a web or sheet; or wherein a reversely folded component is sewn to an adjacent face-contacting component (or reversely folded layers of a web, sheet, or component are sewn to each other) by concealed or blind stitching running along or adjacent the fold margin of the folded component (or the web or sheet), which margin is displaced inwardly from the edge of the composite web or sheet.

- (1) Note. The marginal extremity referred to above may be the fold junction of two layers of a web or sheet.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 475.24, for a method of blind overedge stitching.

426 Included in seam joining contiguous components:

This subclass is indented under subclass 423. Product in which the reversely folded portion of a component is located in the zone of stitching uniting such component to one or more other components.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 418, for a similar product including a welt or stay sewn in or over the seam.
- 419, for a product wherein the folded component is a U-shaped edge binding.
- 424+, for a similar product including concealed or blind stitching.
- 440+, for united planar components.

427 Pleated, tucked, or Shirred:

This subclass is indented under subclass 422. Product wherein at least a portion of the web, sheet or component has been folded back upon itself substantially 180°+ two or more times in series, each succeeding fold of such portion

being made in a rotary directional sense opposite to that of the next preceding fold so as to provide a series of offset portions in substantially parallel relation; or wherein a longitudinally extending portion of the web, sheet, or component has been gathered in regular or irregular folds or crimps and is held in this condition by stitching.

SEE OR SEARCH THIS CLASS, SUBCLASS:

414, for a similar product including an elastic strand or component.

SEE OR SEARCH CLASS:

428, Stock Material or Miscellaneous Articles, subclass 181 for similar non-sewn stock material.

428 **Plural components:**

This subclass is indented under subclass 422. Product comprising two or more longitudinally coextensive components* held together in a composite web or sheet by stitching with at least one of the components being nonplanar.

SEE OR SEARCH THIS CLASS, SUBCLASS:

417, for plural components or layers sewn together with a strand or narrow strip therebetween.

420, for plural components sewn together in which an intermediate component is a fiber layer.

423+, for plural components at least one of which has a marginal reverse fold.

427, for plural components at least one of which is pleated or tucked.

429 **Filamentary material or strandlike tape sewn to surface:**

This subclass is indented under subclass 402. Product wherein a strand*, a narrow component which functions in the assembly like a strand, part of a strand, or a group of fibers, is disposed upon a base web or sheet which it does not penetrate and is attached thereto by a sewn thread.

(1) Note. A floating strand or strand-like member may be, for instance, a locking thread or one that serves only as an ornament.

(2) Note. A tape which has been bent about its longitudinal axis and sewn to a base in that condition as an edge binding is not considered to be a strand-like tape for this subclass. See subclass 419.

SEE OR SEARCH THIS CLASS, SUBCLASS:

404, for a floating strand of reflective material secured to a surface by stitching.

411, for floating strands, fibers, or strand-like tapes which form tufts upon the base.

412, for a fabric consisting of a layer of strands or strand portions in side-by-side contact and held together by stitching.

417, for a strand lying between two layers and secured in position by sewing.

419, for a narrow-edge binding tape sewn to a base.

430 **Interlooped floating strands or strand portions:**

This subclass is indented under subclass 429. Product wherein a loop of a floating strand or strand-like member passes through a loop of the same or another such strand or member.

SEE OR SEARCH THIS CLASS, SUBCLASS:

416, for sewn stock material including a knitted component.

435, for a product including a plurality of intersecting floating strands which are not interlooped.

431 **Around aperture (e.g., buttonhole):**

This subclass is indented under subclass 429. Product wherein the floating strand, strand portion, or strand-like member is included in a seam which extends along or immediately adjacent the perimeter of a slit, or of a space from which the substance of the base web or sheet has been removed or omitted in its manufacture.

SEE OR SEARCH THIS CLASS, SUBCLASS:

433, and 436, for a float thread incorporated in or held by overedge stitching.

- 437, for a sewn apertured stock material of a more general nature and especially for an overedge seam along an opening such as a buttonhole.
- 441, for stitching extending across or through a gap between two components and serving to unite such components.
- 475.25, for a method of stitching a buttonhole.

SEE OR SEARCH CLASS:

- 2, Apparel, subclass 266 for a buttonhole strip.
- 24, Buckles, Buttons, Clasps, etc., subclasses 659+ for a buttonhole structure which does not include stitching.
- 36, Boots, Shoes, and Leggings, subclass 52 for a buttonhole piece for shoes.

432 Connecting parallel straight lines of stitching:

This subclass is indented under subclass 429. Product wherein the sewing thread(s) fastening the floating strand or strand-like member to the base penetrate(s) the base at intervals along two or more substantially straight equidistant lines to provide two or more series of loops, and in which the floating strand on strand-like member is interlooped with the loops of at least two such series in continuing sequence.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 431, and 436, for a strand floating back and forth between curved lines of stitching.

433 Included in overedge stitching:

This subclass is indented under subclass 432. Product wherein the lines of sewing thread with which the floating strand or strand-like member is interlooped include a line of stitch-loops extending over the edge of the base from one face thereof toward the other, or in which the floating strand or strand-like member itself extends over the edge of the base from one face thereof toward the other, the combined floating and needle-thread elements forming an arrangement of stitches which extends around the edge of the base.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 475.26, for a method of over edge stitching.

434 Uniting contiguous components:

This subclass is indented under subclass 432. Product wherein the lines of sewing thread, with which the floating strand or strand-like member is interlooped, penetrate, respectively, different ones of a pair of edge-contacting, overlapped or adjacent substantially coplanar components and in which the said floating strand or member extends back and forth across the interweb line of abutment, area of overlap or intervening gap.

- (1) Note. A patent for a product in which the adjacent edges of the components are bent out of the plane of the web or sheet into face contact will be placed in subclass 423.
- (2) Note. A patent for a similar product including overedge stitching will be placed in subclass 433.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 405, for a seam serving to unite a panel to a web.
- 418, for a seam uniting contiguous components and provided with a strip or tape over the seam.
- 423+, for a product wherein the adjacent edges of the components are bent out of the plane of the web or sheet into face contact.
- 440+, for a seam of more general nature uniting a plurality of components.

435 Plural intersecting float threads:

This subclass is indented under subclass 434. Product wherein a plurality of floating strands or strand-like members run back and forth between the parallel lines of stitching and cross each other at spaced points in their travel.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 430, for a seam comprising interlooped floating strands.

436 Incorporated with or held by overedge stitching:

This subclass is indented under subclass 429. Product wherein the floating strand, strand portion or strand-like member is bound to the base

by, or is an integral part of, an arrangement of stitches which extends from a line of through-stitches on one face of the base around an edge of the base to a line of through-stitches on the other face.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 431, for similar seam structure along the periphery of an opening in a web or sheet.
- 433, for a strand or strandlike member floating back and forth between parallel lines of stitching to constitute an overedge seam.
- 437, for an overedge seam of a more general nature running along a perforation in a web or sheet.
- 441, for an overedge seam in general.
- 475.26, for a method of overedge stitching.

437 Apertured or open-work (e.g., buttonhole):

This subclass is indented under subclass 402. Product wherein the sewn web or sheet, or a component thereof, includes one or more holes, slits, gaps, or other openings formed independently of the introduction of the sewing thread therein.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 405, for a product including an apertured base and a longitudinally noncoextensive panel or sheet located in or over the aperture and secured by stitching.
- 431, for a floating strand, strand portion or strandlike member disposed upon and sewn to a base web or sheet along the perimeter of an opening therein
- 441, for stitching extending across or through a gap between two components and serving to unite such components.
- 446+, for a zigzag stitch forming mechanism wherein the needle is shifted back and forth across the line of material feed, which mechanism includes particular structure for sewing a pattern which encloses a portion of the material within boundaries formed by the pattern (e.g., buttonholes).
- 475.25, for a method of sewing a buttonhole.

SEE OR SEARCH CLASS:

- 2, Apparel, subclass 266 for a buttonhole strip.
- 24, Buckles, Buttons, Clasps, etc., subclasses 659+ for a buttonhole structure which does not include stitching.
- 36, Boots, Shoes, and Leggings, subclass 52 for a buttonhole piece for shoes.

438 Chain stitch:

This subclass is indented under subclass 402. Product wherein the sewing thread is arranged in a series of stitch loops each of which is drawn through the bight of a preceding loop.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 430, for a product including interlooped floating strands or strand portions.
- 475.17+, for a method of making chain stitches.

SEE OR SEARCH CLASS:

- 66, Textiles: Knitting, subclasses 169+ and appropriate subclasses for a fabric formed of a strand or strands formed in loops which extend through the bights of preceding loops in series.

439 Ornamental stitching (e.g., embroidery):

This subclass is indented under subclass 402. Product wherein the stitches are arranged on the surface of the web or sheet to form a decorative pattern.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 78+, for an embroidery machine, and subclass 266 for an embroidery method.
- 403, for an embroidered fabric including a decomposable thread or component.
- 404, for a fabric embellished by feathers, beads or reflective material attached thereto by stitching.
- 409, for an embroidered product including strand portions or strand loops extending outwardly from an edge thereof.
- 410+, for a tufted or looped web or sheet surface wherein the tufts or loops are arranged in an ornamental pattern.
- 429+, for ornamental stitching including a floating strand.

SEE OR SEARCH CLASS:

- 2, Apparel, subclass 244 for an embroidery form, and subclass 246 for an embroidered insignia.

440 United components:

This subclass is indented under subclass 402. Product not provided for in any of the preceding subclasses wherein the sewing strand joins a plurality of web or sheet components to each other.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 409, for a product wherein one of the components has an edge fringe.
 410+, for a product wherein one of the components has a tufted or looped pile surface.
 418+, for a product including a welt or stay.
 420, for a product wherein a fibrous or particulate layer or component is enclosed between other layers.
 421, for a product including a component of varying thickness.
 422+, for a product wherein one of the components is of nonplanar uniform-thickness material.
 429+, for components joined by stitching which includes a floating strand.
 438, for components joined by a chain stitch.
 439, for components joined by ornamental stitching.

441 By stitching along edge:

This subclass is indented under subclass 440. Product wherein the uniting stitches of the sewing strand occur in the region of one of the marginal boundaries of at least one of the components.

SEE OR SEARCH THIS CLASS, SUBCLASS:

440,

443 Vibrating needle:

This subclass is indented under subclass 157. Device wherein the needle is shifted back and forth laterally across a line of material feed in forming stitches in one or more layers of material.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 81+, for machines adapted for ornamentation by hemstitching.
 98+, for machines adapted for ornamentation by stitching operations and in which the needle operates in a vertical plane.
 111, for machines adapted to sew on flat buttons and in which the needle is shifted laterally.
 321, for stitch forming mechanisms engaging the upper side of the work material and in which the needle acts as a feed means.

444 Having indicator:

This subclass is indented under subclass 443. Device including means to provide a human attendant with information regarding the operation or condition of the device or the material.

SEE OR SEARCH CLASS:

- 116, Signals and Indicators, subclasses
 200+ for general indicators, subclasses
 309+ for general rotary indicators.

445 And specified electronic memory:

This subclass is indented under subclass 444. Device wherein significance is attributed to means to store information for later retrieval and wherein the information stored has electrical or magnetic properties.

446 Closed pattern sewing (e.g., buttonholes):

This subclass is indented under subclass 443. Device particularly adapted to sewing a discrete set of stitches (i.e., a pattern) on material, which pattern encloses a portion of the material within boundaries formed by the stitches.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 65+, for machines adapted for stitching around the edges of an opening, such as a buttonhole. Note subclass 73, particularly, in which the needle is shifted laterally in forming the buttonhole stitch.
 264.1, for methods of buttonhole or eyelet forming.

- 316, for stitch forming mechanisms having means to advance the work material wherein the stitch length is adjustable and the material feed direction is reversible.
- 447 Including electronic memory:**
This subclass is indented under subclass 446. Device including means to store information for later retrieval wherein the information stored has electrical or magnetic properties.
- 448 Having cam actuation of needle or material feed:**
This subclass is indented under subclass 446. Device including a first element and a slave element which move relative to one another, wherein the first element has an irregular or eccentric surface over which a portion of the slave element is caused to slide, and wherein needle or material movement is controlled by the resultant movement of the slave element.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
459+, for zigzag stitch forming mechanisms having cam actuation of either needle or material feed which are not restricted to closed pattern sewing.
- 449 And means to change, without operator intervention, stitch width or material feed:**
This subclass is indented under subclass 448. Device wherein a human attendant can preset elements of the device to cause the amplitude of lateral needle movement or the amount of material transported past the needle per needle reciprocation to vary as the device operates without further input from the human attendant.
- (1) Note. This subclass is intended to include a device which can be preset by a human attendant to produce rectangular buttonholes wherein the device sews at least parts of two sides of the buttonhole without further input by the attendant.
- 450 Basting stitch or skipping stitch:**
Device under 443 wherein means are provided (1) to produce stitches which temporarily hold material elements together or (2) to omit (skip) stitches from a chosen discrete set of stitches to be sewed.
- (1) Note. With respect to (2), devices with unlatching means for unlatching the needle bar from the associated needle bar reciprocatory drive mechanism in order to omit a stitch are included in this subclass.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
80.44, for an embroidering, tufting device having means to disconnect a needle and drive means.
221, for needle driving mechanism elements.
- 451 Backstitch:**
This subclass is indented under subclass 443. Device wherein means are provided to produce a stitch at the beginning or at the end of a discrete set of stitches (e.g., a pattern), the stitch specifically functioning to prevent unravelling of the pattern; the stitch is selectable separately from the pattern.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
317, for stitch forming mechanisms having means for feeding the work material in a reverse direction so as to produce backstitching.
- 452 Having multiple needles:**
This subclass is indented under subclass 443. Device wherein at least two needles are shifted back and forth transverse to the line of feed.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
163, for zigzag stitch forming mechanisms which contain a plurality of needles.
- 453 Having electronic memory:**
This subclass is indented under subclass 443. Device including means to store information for later retrieval wherein the information stored has electrical or magnetic properties.

- SEE OR SEARCH THIS CLASS, SUB-CLASS:
- 445, for zigzag stitch forming mechanisms including indicator means and an electronic memory.
- 447, for zigzag stitch forming mechanisms adapted for sewing closed patterns (e.g., buttonholes) which include an electronic memory.
- 470.01+, for machines adapted for special work which are controlled by a prearranged pattern or program.
- 454 Plural diverse patterns in series:**
This subclass is indented under subclass 453. Device including means whereby a human attendant can preset the device to sew two different and discrete sets of stitches (i.e., patterns) in succession without further input from the attendant; each discrete set of stitches is selectable alone for sewing by the attendant.
- 455 Having computer control of linkage intermediate motor and needle or material feed:**
This subclass is indented under subclass 453. Device including a unit which receives and logically processes electrical signals and then outputs an electrical signal to adjust, select, or actuate an element located in a drive train between a drive motor and a needle movement or material transporting mechanism.
- 456 Including means to calculate needle or material feed parameters:**
This subclass is indented under subclass 453. Device including means to algebraically manipulate selected variables or constants and to produce an output command which effects alteration of needle movement or material transport.
- 457 Including programmable or detachable memory:**
This subclass is indented under subclass 453. Device wherein (1) the information storage means contains stored information which is alterable by a human attendant or (2) the information storage means is specified as being physically exchangeable, by a human attendant, for another information storage means.
- 458 Including pattern selection means:**
This subclass is indented under subclass 453. Device having means whereby a human attendant can choose a discrete set of stitches (i.e., a pattern) to be sewn from a plurality of patterns.
- (1) Note. The plurality of patterns, from which the pattern to be sewn is chosen, are usually stored in the electronic memory.
- (2) Note. Devices including means for a human attendant to vary the amplitude of needle oscillation or to vary the material feed characteristics are included in this subclass.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
- 457, for zigzag stitch forming mechanisms including a programmable or detachable electronic memory.
- 459 Having cam actuation of needle or material feed:**
This subclass is indented under subclass 443. Device including a first element and a slave element which move relative to one another wherein the first element has an irregular or eccentric surface over which a portion of the slave element is caused to slide, and wherein needle movement or material transport is controlled by the resultant movement of the slave element.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
- 448+, for zigzag stitch forming mechanisms having cam actuation of the needle or material feed which are applied to closed pattern sewing (e.g., buttonholes).
- SEE OR SEARCH CLASS:
- 74, Machine Element or Mechanism, subclasses 567+ for cam elements.
- 460 Including detachable cam:**
This subclass is indented under subclass 459. Device including structure to facilitate the physical removal of the first element (cam) from the device by a human attendant.

- (1) Note. Cam detaching devices are included in this subclass.

461 And specified material feed:

This subclass is indented under subclass 459. Device wherein significance is attributed to particular structure for transporting the material.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 303+, for stitch forming mechanisms having means to advance the material.
448+, for zigzag stitch forming mechanisms particularly adapted to sewing closed patterns (e.g., buttonholes).

462 And fine adjustment of stitch width or material feed:

This subclass is indented under subclass 461. Device further including means by which the amplitude of needle oscillation or the rate of material transport can be varied independently of the first element cam surface.

- (1) Note. Means for adjusting the stitch width are usually similar in structure to means for adjusting the material feed; therefore, both means are included in this subclass.
(2) Note. Devices wherein the only available adjustment of stitch width or material feed results in the elimination of needle shifting or material transport are not included in this subclass.

463 And plural, selectively used cams:

This subclass is indented under subclass 461. Devices including at least two first element cams, one of which can be chosen for active engagement by a slave element.

- (1) Note. A first element cam is in "active" engagement with a slave element if cam movement causes movement of the slave element which in turn causes another functional element such as a needle movement or material transporting mechanism to move.
(2) Note. Devices having coaxial cams with cam portions which portions are adjust-

able relative to one another so as to define a single cam surface, which surface rotates to move a slave element and connected mechanism, are included in this subclass.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 460, for zigzag stitch forming mechanisms having cam actuation of the needle or material feed and including a detachable cam.

464 Including fine adjustment of stitch width:

This subclass is indented under subclass 459. Device further including means by which the amplitude of needle shifting can be varied independently of the first element cam surface.

- (1) Note. Devices wherein the only adjustment of stitch width results in the elimination of needle shifting are not included in this subclass.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 462, for zigzag stitch forming mechanisms having cam actuation of the needle or material feed and including specified material feed means and means for the fine adjustment of stitch width or material feed.

465 Including plural, selectively used cams:

This subclass is indented under subclass 459. Devices including at least two first element cams, one of which can be chosen for active engagement by a slave element.

- (1) Note. A first element cam is in "active" engagement with a slave element if cam movement causes movement of the slave element which in turn causes another functional element such as a needle movement or material transporting mechanism to move.
(2) Note. Devices having coaxial cams with cam portions which portions are adjustable relative to one another so as to define a single cam surface, which surface rotates to move a slave element and connected mechanism, are included in this subclass.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 460, for zigzag stitch forming mechanisms having cam actuation of the needle or material feed and including a detachable cam.
- 463, for zigzag stitch forming mechanisms having cam actuation of the needle or material feed and including plural selectively used cams and specified material feed means.

466 And plural followers:

This subclass is indented under subclass 465. Device including at least two slave elements which slave elements actively engage the same or different first element cams.

467 Having specified looptaker structure:

This subclass is indented under subclass 443. Device wherein significance is attributed to means for working the stitching thread on the side of the material opposite the side from which the needle penetrates the material.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 159, for zigzag stitch forming mechanisms having a looper which is shifted with the needle.

470.01 Pattern controlled or programmed:

This subclass is indented under subclass 2. Device including a control system having program storing means either (a) to produce a series of stitches along a predetermined path, or (b) to control an ancillary operation of the machine.

- (1) Note. An example of an ancillary operation includes a machine generated audio voice command, a pattern learning system, etc.
- (2) Note. The program storing means can be either a mechanical device or an electrical device.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 80.23+, for an embroidery-type tufting device responsive to an optical, electronic or magnetic pattern program means.

- 102.5, for a vertically reciprocating needle-type fabric shifting embroidery machine have an electronic pattern or program control system.

- 445+, for a vibrating needle-type zigzag stitch forming mechanism having an electronic memory and an indicator.

- 447, for a vibrating needle-type zigzag stitch forming mechanism for sewing a closed pattern (e.g. buttonhole, etc.) having electronic memory.

- 453+, for a vibrating needle-type zigzag stitch forming mechanism having electronic memory, especially subclass 458 wherein the device includes pattern selection means through which an operator can select one pattern from a plurality of patterns.

SEE OR SEARCH CLASS:

- 33, Geometrical Instruments, subclasses 700+ for an instrument for the measurement of a distance, especially subclass 735 where the measurement device is for flexible material and is achieved by rolling contact and the resultant data is processed through a computer.

- 38, Textiles: Ironing and Smoothing, subclass 102.2 for an embroidery hoop.

- 73, Measuring and Testing, subclasses 159+ for an inspecting, measuring, or testing device for a sheet, woven fabric, fiber, or filament.

- 74, Machine Element or Mechanism, subclasses 25 through 62 for a mechanism which converts rotary motion to reciprocating motion or reciprocating motion to rotary motion; subclasses 111 through 125.5 for an intermittent grip-type device, especially subclasses 112 through 125.5 for an intermittent grip-type device which converts rotary motion to intermittent unidirectional motion; and subclasses 113 and 114 for an intermittent grip-type device which converts rotary motion to intermittent unidirectional motion which includes an automatic control system.

- 250, Radiant Energy, subclass 202 for a photocell system responsive to a pattern, subclass 548 for a photocell system which controls a web, strand,

strip, or sheet; subclasses 559+ for a photocell which is responsive to light from a web, strand, strip, or sheet and which produces an electrical signal which is indicative of some characteristic of the material; and subclasses 571+ for a prephotocell system which detects the presence, absence, or some characteristic of a web, strand, strip, or sheet.

- 318, Electricity: Motive Power Systems, appropriate subclasses for a motor control system in general, and especially subclasses 567+ for an electrical motor control system which uses a program or pattern control system.

470.02 With stitch counter:

This subclass is indented under subclass 470.01. Device wherein the control system is combined with means to record the number of stitches produced.

SEE OR SEARCH CLASS:

- 235, Registers, appropriate subclasses for a mechanical counter.
377, Electrical Pulse Counters, Pulse Dividers, or Shift Registers: Circuits and Systems, appropriate subclasses for an electrical counter.

470.03 Material sensing and subsequent feed adjustment:

This subclass is indented under subclass 470.01. Device including a workpiece sensor, means for conveying the workpiece through the stitch forming region, and means for adjusting the speed of the workpiece conveyer; and wherein the control system adjusts the speed of the workpiece conveyer based on the output of the workpiece sensor.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 272, for a work sensor which inputs data into a stopping or starting control system.
273, for a thread sensor which inputs data into a stopping or starting control system.
303+, for a stitch forming mechanism having a workpiece conveyer; and especially subclasses 314+ for a stitch forming mechanism having means to

adjust or otherwise change the movement, the rate of advancement, or the position of the workpiece conveying means relative to the stitch forming mechanism.

470.04 Operator controlled data entry means:

This subclass is indented under subclass 470.01. Device including means to enable the operator of the sewing machine to readily alter the program data of the control system.

- (1) Note. Examples of program data are fabric type, fabric weight, stitch length, stitch count, sewing speed, stitch pattern, etc.

470.05 With means for performing a diverse operation:

This subclass is indented under subclass 470.01. Device combined with means to perform a non-stitching procedure on the work either prior to or after the sewing operation.

- (1) Note. Examples of non-stitching procedure include cutting, stacking, etc.

SEE OR SEARCH CLASS:

- 83, Cutting, appropriate subclasses for a cutting device, per se., especially subclass 100 wherein the product is handled by suction, subclasses 202+ for a cutting device which operates during the dwell time of an intermittent feed system, subclasses 209+ for the aforementioned combined with a work sensor, subclasses 255+ for a multiple station system, subclass 276 for a workfeed element which moves with the work, subclass 360 for a cutting system having a work sensor, subclass 910 for an embroidery trimming or cutting device, and subclasses 936+ for a cutting device for cloth or leather.

470.06 Positionable work carrier under electronic pattern or program control:

This subclass is indented under subclass 470.01. Device wherein the program storing means is an electronic device which stores a stitch pattern and wherein the sewing machine further includes means for gripping, support-

ing, and conveying the work with respect to the sewing needle to form the stitch pattern.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

86, for a horizontally reciprocating embroidery-type sewing machine having a fabric shifting mechanism which is pattern controlled (e.g., jacquard type).

90+, for a horizontally reciprocating embroidery-type sewing machine having a fabric shifting mechanism.

102+, for a vertically reciprocating embroidery-type sewing machine having a fabric shifting mechanism, subclass 102.5 for a vertically reciprocating embroidery-type sewing machine having a pattern or program control system and subclass 103 for a vertically reciprocating embroidery-type sewing machine having a work holder frame.

118+, for a sewing machine especially adapted to sew a quilt having a mechanism to shift the work relative to the sewing machine, and especially subclass 119 for the aforementioned combined with a work holder.

136+, for a workguide.

303+, for a stitch-forming mechanism having a workfeeder, especially subclasses 308+ wherein the workfeeder is capable of moving along a curved path, and subclass 311 for a workfeeder having a work clamp.

470.14+, for a sewing machine having a work holder.

SEE OR SEARCH CLASS:

38, Textiles: Ironing and Smoothing, subclass 102.2 for an embroidery hoop.

470.07 For workpiece edge sewing.

This subclass is indented under subclass 470.06. Device wherein the work carrier is movable along a path which is parallel and adjacent to the perimeter of the workpiece.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

153, for a workguide responsive to the edge of the material.

470.08 For stocking:

This subclass is indented under subclass 470.06. Device wherein the work carrier is movable along a path which is specialized for sewing a nether garment which is a close-fitting covering for the foot and at least a part of the leg.

470.09 Positionable work carrier under mechanical pattern or program control:

This subclass is indented under subclass 470.01. Device wherein the program storing means is a mechanical device which stores a stitch pattern, and wherein the sewing machine further includes means for gripping, supporting, and conveying the work with respect to the needle to form the stitch pattern.

470.11 Spiral pattern:

This subclass is indented under subclass 470.09. Device wherein the work carrier moves the article along a path which produces a helical stitch pattern.

470.12 Traveling sewing machine:

This subclass is indented under subclass 2. Device including means for moving the sewing machine during the sewing process.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

2.1+, for a machine for sewing a mattress.

117+, for a machine for sewing a quilt.

470.13 Multidirectional or rotational:

This subclass is indented under subclass 470.12. Device having means for moving the sewing machine along either (a) two axis or (b) rotationally about a single axis.

470.14 Positionable work carrier:

This subclass is indented under subclass 2. Device having means to grip, support, and carry the workpiece relative to the sewing needle.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

12+, for a hat sewing machine, and especially subclasses 13+ for a hat sewing machine having a work carrier.

65+, for a buttonhole sewing machine, especially subclasses 70+ wherein the

sewing machine includes a work clamp.

- 103, for a work carrier associated with an embroidery machine.
- 114, for a sewing machine having a holder for an article to be attached.
- 148, for a work holder, per se.
- 470.06+, for a sewing machine having a moveable work carrier responsive to an electronic pattern or program.
- 470.09+, for a sewing machine having a moveable work carrier responsive to a mechanical pattern or program.

SEE OR SEARCH CLASS:

- 223, Apparel Apparatus, subclasses 37+ for a folding device, subclass 43 and subclasses 66+ for a form, especially subclass 75 for a form for a stocking.
- 269, Work Holders, subclass 53 for a pin-type work holder and subclasses 55+ for a work holder mounted for movement.

470.15 For stocking:

This subclass is indented under subclass 470.14. Device wherein the work carrier is specialized for gripping, supporting, and carrying a nether garment which is a close-fitting covering for the foot and at least part of the leg.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 470.08, for a work carrier of this type which is moved under control of an electronic program.

SEE OR SEARCH CLASS:

- 223, Apparel Apparatus, subclasses 43 and subclasses 66+ for a form, especially subclass 75 for a form for a stocking.

470.16 For folding the work:

This subclass is indented under subclass 470.14. Device further including means for doubling the work over upon itself.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 147, for a work folding mechanism, per se, used in a sewing machine.

SEE OR SEARCH CLASS:

- 223, Apparel Apparatus, subclass 38 for a folding mechanism including a templet over which the edge of the material is folded by a moveable folder blade.

470.17 For stitching in a circle:

Device under 470.14 wherein the work holder is rotatable about an axis to produce a circular line of stitching.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 12+, for a hat sewing machine, especially subclass 14 for a rotary work support for a hat.

470.18 Driving mechanism for work carrier:

This subclass is indented under subclass 470.14. Device having means for moving the work carrier.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 220, for driving means for a sewing needle.

470.19 Feather sewing machine:

This subclass is indented under subclass 2. Device wherein the sewing machine is specially adapted to sew feathers together or to a backing.

- (1) Note. This subclass includes both natural or man-made feathers.

SEE OR SEARCH CLASS:

- 19, Textiles: Fiber Preparation, subclass 4 for a device for reducing feathers to upholstery or cloth making material.
- 223, Apparel Apparatus, subclass 47 for a device for preparing feathers not otherwise provided for.

470.21 Stringer:

This subclass is indented under subclass 2. Device wherein the sewing machine includes means to attach an elongated threadlike member of fixed, predetermined length to a work-piece.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

156, for a stitch forming mechanism having means to tie the stitching thread.

SEE OR SEARCH CLASS:

29, Metal Working, subclass 241 for an apparatus for assembling either by stringing parts on an attenuated or elongated means or by passing such means through a part or parts, where no stitching is involved; and subclass 433 for a process of mechanical assemble or joining which includes passing a narrow attenuating member through a series of pieces or passing pieces serially over the member to arrange the pieces upon the member.

223, Apparel Apparatus, subclass 50 for a device for inserting a tape thread or cord into a garment lace or the like where no sewing needle is involved.

412, Bookbinding: Process and Apparatus, subclass 35 for book edge binding device which has a sewing needle.

470.22 With knotter:

This subclass is indented under subclass 470.21. Device wherein the stringer-type sewing machine is combined with means for tying one end of the thread.

SEE OR SEARCH CLASS:

289, Knots and Knot Tying, subclasses 2+ for a device for forming a knot.

470.23 For sewing same length stranded material together:

This subclass is indented under subclass 2. Device wherein the sewing machine is particularly configured to stitch together equal length stands of material.

470.24 Fabric tuft:

This subclass is indented under subclass 470.23. Device wherein the strands of material are sewn to a fabric backing without inserting them through the backing.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

80.01+, for a tufting machine of the type which inserts the yarn through the work.

SEE OR SEARCH CLASS:

289, Knots and Knot Tying, subclass 2 for a device for forming a knot in a cord, strand, or strip.

470.25 For making shoe sole of plant stalk material (e.g. hemp, jute, straw, etc.):

This subclass is indented under subclass 2. Device specialized to stitch together plant stalk material to form a shoe sole.

470.26 Necktie:

This subclass is indented under subclass 2. Device specialized to stitch material to form an elongated, decorative, neck-encircling garment.

470.27 Upholstery:

This subclass is indented under subclass 2. Device wherein the sewing machine is specialized to sew a large padded or stuffed impact absorbing article.

(1) Note. An example of an impact absorbing article includes a cushion in a chair, the cushion in a couch, a car seat, a padded dashboard, etc.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

2.1+, for a mattress sewing machine.

470.28 Having drag clamp:

This subclass is indented under subclass 2. Device including means to grip and maintain tension on the fabric being advanced through the sewing machine, and wherein the tension is applied to the means by the force of gravity acting on a weight.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

153, for a sewing machine edge guide.

470.29 Having tube end tensioner:

This subclass is indented under subclass 2. Device wherein the sewing machine includes means for tensioning a loop of fabric during a sewing operation.

470.31 For sewing plural workpieces under tension:

This subclass is indented under subclass 2. Device wherein the sewing machine is especially configured to sew together multiple workpieces and includes a device to apply tension to at least one of the workpieces being sewn.

470.32 Differential feed of plural workpieces:

This subclass is indented under subclass 470.31. Device wherein the sewing machine includes at least two workpiece feed mechanisms and wherein said feed mechanisms deliver the workpieces to the stitch forming region of the sewing machine at different rates.

470.33 Elongated article:

This subclass is indented under subclass 2. Device wherein the sewing machine is especially adapted to sew an object which has a length which is much greater than its width.

SEE OR SEARCH THIS CLASS, SUBCLASS:

470.26, for a sewing machine especially adapted to sew a necktie.

470.34 For attaching a belt loop:

This subclass is indented under subclass 470.33. Device wherein the elongated article is a belt loop.

- (1) Note. This subclass includes a device which makes a belt loop and a device which sews a belt loop to a waistband.

470.35 Spherical object:

This subclass is indented under subclass 2. Device wherein the sewing machine is especially adapted to sew a globe shaped object.

470.36 With diverse downstream operation:

This subclass is indented under subclass 2. Device combined with means to perform a non-sewing operation downstream of the sewing machine.

475.01 METHOD OF SEWING:

This subclass is indented under the class definition. A method which includes stitch-forming or a stitching operation on a workpiece.

SEE OR SEARCH THIS CLASS, SUBCLASS:

154+, for a device under the class definition having a mechanism which cooperates to form stitches in the work material.

SEE OR SEARCH CLASS:

- 2, Apparel, appropriate subclasses for a process of making an entire garment which may involve sewing.
- 12, Boot and Shoe Making, subclasses 142+ for a process of making a boot or shoe which may involve sewing.
- 24, Buckles, Buttons, Clasps, etc., subclass 90 for a button having an aperture for thread, subclasses 395 through 397 for a zipper attached by stitching, and subclass 695 for a separable fastener having a specific structure for cooperating with stitching.
- 28, Textiles: Manufacturing, for a method of making a fabric which involves both sewing and a Class 28 process and, in particular, subclass 164 for a process of making an ornamental or textured fabric by sewing combined with a Class 28 process.
- 29, Metal Working, subclasses 408 through 410 for a method of making a zipper which involves a sewing step.
- 40, Card, Picture, or Sign Exhibiting, subclass 664 for a check, label, or tag attached to an item by stitching.
- 53, Package Making, subclasses 138.5 and 418 for a packaging process which includes joining portions of the package material by sewing.
- 57, Textiles: Spinning, Twisting, and Twining, subclass 903 for sewing thread.
- 66, Textiles: Knitting, subclasses 180+ for a process of knitting a nether garment which includes ornamental stitching.
- 83, Cutting, subclasses 13 through 56 for a process of cutting; subclasses 78+ for a cutting device having means to

- move, guide, or otherwise effect the motion of the product or work, especially subclasses 98+ where the movement is effected by a fluid current; subclass 202 for a cutting device which has intermittent workfeed, especially subclasses 209+ which includes work sensing means; subclass 255 for work feeding to plural tools; subclasses 276+ for workfeed element which contacts and moves with the work; subclass 360 for a cutting device controlled by detection means responsive to work, especially subclass 365 where the sensor is photoelectric; subclass 409 for a work carrier; subclasses 410+ for a work carrier which guides the material in a non-rectilinear path; subclass 910 for a cutting or trimming device for embroidery; subclass 915 for a fur cutting device, and subclasses 936+ for a cutting device for cloth or leather.
- 39, Textiles: Weaving, appropriate subclasses for a method of weaving.
- 156, Adhesive Bonding and Miscellaneous Chemical Manufacture, appropriate subclasses for seaming by laminating, especially subclass 93 for a process of laminating and sewing.
- 200, Electricity: Circuit Makers and Breakers, subclasses 611.3+ for an electric circuit maker or breaker which is responsive to a running length, web or strand.
- 219, Electric Heating, subclass 105.3 for a method of seam welding (e.g., electronic sewing).
- 223, Apparel Apparatus, appropriate subclasses for a non-stitching method of making, repairing, or treating articles of apparel and analogous articles.
- 242, Winding, Tensioning, or Guiding, subclasses 484.7+ for a winding device for use with sewing thread upon or in connection with a sewing machine, subclasses 472.9+, 479.9+, 484.8, and 484.9+ for a thread break detector; and subclasses 534 and 563+ for a web break detector.
- 250, Radiant Energy, subclasses 559+ and 571+ for a photoelectric sensor for a web, strand, strip, or sheet.
- 270, Sheet-Material Associating, subclasses 37+ for a method or apparatus for associating a plurality of sheets or webs of flexible material by stitching or stapling in accordance with a recognizable indicia thereon, and subclasses 53+ for a method or apparatus for associating a plurality of sheets or webs of flexible material by stitching or stapling in accordance with a recognizable indicia thereon combined with folding.
- 271, Sheet Feeding or Delivering, appropriate subclasses for a device for feeding or delivering a sheet to or away from a mechanism where the particulars of the mechanism is not specifically set forth
- 289, Knots and Knot Tying, subclass 1.5 for a method of tying a knot in a strand.
- 383, Flexible Bags, subclasses 79 and 92 for a flexible bag having a closure which includes a securing element designed to extend through aligned openings in the bag material (e.g., stitching).
- 428, Stock Material or Miscellaneous Articles, subclasses 102 through 104 for sewn stock material which includes stitching and either a discrete mechanical fastener, a coating, or an adhesive bond.
- 450, Foundation Garments, subclass 92 for a method of making or assembling a breast or chest protector (e.g., brassiere).
- 493, Manufacturing Container or Tube From Paper; or Other Manufacturing From a Sheet or Web, appropriate subclasses for a method of making a bag or a method of attaching a bag adjunct (e.g., a handle) to a bag, each of which may include the step of stitching, especially subclasses 405+ which includes the step of folding.
- 475.02 Material sensing:**
This subclass is indented under subclass 475.01. Method including the step of sensing the position of the workpiece relative to the sewing needle

SEE OR SEARCH THIS CLASS, SUB-CLASS:

130, for an apparatus which severs part of the work upon completion of a sewing operation.

470.03, for a programmed sewing apparatus in which the feed pitch of the work advancing means is adjusted in response to detection of an edge of the work.

475.03 Workpiece edge guiding:

This subclass is indented under subclass 475.02. Method including the step of guiding one of the edges of the workpiece according to the data sensed.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

470.07, for a device in which a work carrier is moved to sew along the workpiece perimeter.

475.04 Workpiece manipulation other than straight line feeding:

This subclass is indented under subclass 475.01. Method including the step of manipulating, handling, or guiding the workpiece, other than by mere straightline feeding of the workpiece.

(1) Note. The manipulation may occur before, during, or after the sewing operation.

475.05 Workpiece manipulation according to calculated data or operator produced recording:

This subclass is indented under subclass 475.04. Method including the step of moving the workpiece along a path determined by (a) data which has been calculated immediately prior to sewing, or (b) data which has been produced by a person during a controlled data collecting procedure.

(1) Note. An example of item "a" is the step of calculating the number of stitches and their length required to sew a given length of material, and an example of item "b" includes the step of recording in electronic memory the stitching pattern (e.g., number of stitches, stitch lengths, stitch type, and path taken) produced by

the operator for use later on another article.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

470.06, for a device which moves the workpiece along a path determined by data which is introduced prior to sewing.

475.06 Folding workpiece:

This subclass is indented under subclass 475.04. Method further including the step of doubling the workpiece over on itself.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

141, for a device adapted to form a hem.

147, for a device adapted to fold the work.

SEE OR SEARCH CLASS:

270, Sheet-Material Associating, subclass 32 for a method or apparatus for associating two flexible webs by the correlation of two indicia thereon through a folding step or device; subclass 37 for the aforementioned combined with sewing or stapling.

475.07 Delivering or removing workpiece to or from a sewing machine:

This subclass is indented under subclass 475.04. Method including the step of moving the workpiece to the sewing machine or moving the workpiece away from the sewing machine

SEE OR SEARCH THIS CLASS, SUB-CLASS:

470.36, for a device which stacks workpieces after stitching.

475.08 On specified product:

This subclass is indented under subclass 475.01. Method wherein the stitching operation is performed on an object substantially in its ultimate use form as distinguished from stock material.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

475.01+, and 475.14, for a stitching process performed on stock material.

SEE OR SEARCH CLASS:

493, Manufacturing Container or Tube From Paper; or Other Manufacturing From a Sheet or Web, appropriate subclasses for a method of making a bag or a method of attaching a bag adjunct (e.g., a handle) to a bag, each of which may include the step of stitching, especially subclasses 405+ which includes the step of folding.

475.09 Garment:

This subclass is indented under subclass 475.08. Method wherein the sewing operation is performed on a portion of an article of clothing (e.g.; pocket, cuff, etc.).

SEE OR SEARCH CLASS:

2, Apparel, appropriate subclasses for a process of making an entire garment which may involve sewing.

12, Boot and Shoe Making, subclasses 142+ for a process of making an entire shoe or boot which may involve sewing.

223, Apparel Apparatus, appropriate subclasses for a non-stitching method of making, repairing, or treating an article of apparel or analogous article.

450, Foundation Garments, subclass 92 for a method of making or assembling a breast or chest protector (e.g., brassiere).

475.11 Headwear:

This subclass is indented under subclass 475.09. Method wherein the stitching operation is performed on a head covering.

SEE OR SEARCH CLASS:

223, Apparel Apparatus, appropriate subclasses for a non-stitching method of making, repairing, or treating an article of apparel or analogous article.

475.12 Stocking (e.g.; sock, hose, pantyhose, etc.):

This subclass is indented under subclass 475.09. Method wherein the sewing operation is performed on a nether garment which is a close-fitting covering for the foot and at least a part of the leg.

475.13 Trousers:

This subclass is indented under subclass 475.09. Method wherein the sewing operation is performed on an exterior bifurcated outer garment worn about the hips and legs.

475.14 Attaching fastener:

This subclass is indented under subclass 475.01. Method wherein the sewing operation is used to attach a fastener to a workpiece.

SEE OR SEARCH CLASS:

24, Buckles, Buttons, Clasps, etc., subclass 90 for a button having an aperture for thread, subclasses 395 through 397 for a zipper attached by stitching, and subclass 695 for a separable fastener having a specific structure for cooperating with stitching.

475.15 Button:

This subclass is indented under subclass 475.14. Method wherein the stitching operation is used to attach a fastener which is generally disk-shaped and is intended to be fitted through a hole or loop.

SEE OR SEARCH CLASS:

24, Buckles, Buttons, Clasps, etc., subclass 90 for a button having an aperture for thread, subclasses 395 through 397 for a zipper attached by stitching and subclass 695 for a separable fastener having a specific structure for cooperating with stitching.

475.16 Zipper:

This subclass is indented under subclass 475.14. Method wherein the stitching operation is used to attach a fastener of the type having parallel rows of teeth on adjacent edges of an opening that interlock by a sliding tab.

SEE OR SEARCH CLASS:

29, Metal Working, subclasses 408 through 410 for a method of making a zipper which involves a sewing step.

475.17 Stitch forming:

This subclass is indented under subclass 475.01. Method including the step of moving a sewing thread with respect to the workpiece

along a specified pathway to produce a specific type of stitch.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

154+, for a device under the class definition having mechanisms which cooperate to form stitches in the work material.

SEE OR SEARCH CLASS:

156, Adhesive Bonding and Miscellaneous Chemical Manufacture, appropriate subclasses for seaming by laminating, especially subclass 93 for processes of laminating and sewing.

219, Electric Heating, subclass 10.53 for a method of seam welding (e.g.; electronic sewing).

475.18 Embroidery:

This subclass is indented under subclass 475.17. Method wherein stitches are formed along a path having a geometric configuration which is perceived as a decorative design.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

78+, for a stitch-forming mechanism specialized to perform embroidering.

SEE OR SEARCH CLASS:

66, Textiles: Knitting, subclasses 180+ for processes of knitting a nether garment which includes ornamental stitching.

475.19 Electronically stored pattern:

This subclass is indented under subclass 475.18. Method which includes the step of accessing an electronic storage device which includes stitch forming information.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

453+, for a stitch-forming mechanism in which data is electronically processed to control the lateral position of the sewing needle and/or the position of the feeddog thereby forming a stitch pattern on a base fabric.

470.06+, for a stitch-forming mechanism in which data is electronically processed to control the motion of a work carrier

thereby forming a stitch pattern on a base fabric.

475.21 Edging:

This subclass is indented under subclass 475.18. Method wherein the decorative design extends along the perimeter of the workpiece.

475.22 Relief:

This subclass is indented under subclass 475.18. Method wherein the stitching operation produces a puffed region in the workpiece or a cockled region in the workpiece.

475.23 Pile type:

This subclass is indented under subclass 475.18. Method including the step of attaching a fabric tuft to a substrate.

SEE OR SEARCH CLASS:

28, Textiles: Manufacturing, for a method of making a fabric which involves both sewing and a Class 28 process and, in particular, subclass 164 for a process of making an ornamental or textured fabric by sewing combined with a Class 28 process.

475.24 Blind stitch forming:

This subclass is indented under subclass 475.17. Method wherein the stitching operation includes guiding the thread through one surface of a workpiece to a depth which is less than the thickness of the workpiece resulting in a stitch which is visible from only one side of the workpiece.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

176, for an apparatus which forms a blind stitch.

475.25 Buttonhole finishing or forming:

This subclass is indented under subclass 475.17. Method including either (a) the step of guiding a thread along a path which encircles an aperture in the workpiece, (b) the steps of (1) guiding the thread along a path which encircles a location of the intended buttonhole, then (2) making a buttonhole aperture in the workpiece within the region defined by encircling threaded region, or (c) the step of simultaneously forming an aperture in the workpiece

while guiding the thread along a path which encircles the aperture.

475.26 Overedge stitch forming:

This subclass is indented under subclass 475.17. Method wherein the stitching operation includes guiding a thread around the edge of the workpiece.

SEE OR SEARCH THIS CLASS, SUBCLASS:

162, for an apparatus which forms an overseam stitch.

177, for an apparatus to form overedge-type blind stitch.

END