

CLASS 289, KNOTS AND KNOT TYING

SECTION I - CLASS DEFINITION

This class includes a method or an apparatus for inter-twining one or more portions of a cord, strand or strip, while simultaneously maintaining the lay of the constituents, to form a knot, and the product of such method or apparatus.

SECTION II - LINES WITH OTHER CLASSES AND WITHIN THIS CLASS

Tools of the nature of pliers, tweezers, crochet-hooks, etc., capable of other uses, but which may be employed to form knots if desired, are otherwise classified. Pliers are found in Class 81, Tools, subclasses 300+; tweezers in Class 294, Handling: Hand and Hoist-Line Implements, subclass 99.2; crochet-hooks in Class 66, Textiles: Knitting, subclass 118.

SECTION III - REFERENCES TO OTHER CLASSES

SEE OR SEARCH CLASS:

- 28, Textiles: Manufacturing, subclass 211 for knotters in combination with warp preparing apparatus.
- 56, Harvesters, subclasses 67+, 131+ and 433+.
- 57, Textiles: Spinning, Twisting, and Twining, subclasses 22+ for means for uniting portions of rope or cable where the unlaying of the strands is involved.
- 66, Textiles: Knitting, subclass 118 for crocket-hooks, and see (1) Note, supra.
- 81, Tools, subclasses 300+ for pliers, and see (1) Note, supra.
- 87, Textiles: Braiding, Netting, and Lace Making, subclass 12 for processes of and subclass 53 for apparatus for making knotted mesh fabrics.
- 100, Presses, subclasses 33+ for binder applying apparatus, not otherwise provided for, which include means for joining spaced portions of a material encircling tensioned binder, some of said means involving twisting of the spaced portions and subclasses 2+ for corresponding methods.
- 112, Sewing, subclasses 22 and 156.
- 140, Wireworking, subclasses 3+ and 111+ for means peculiarly adapted for uniting portions of wire or the like wherein the portions are held

together only by reason of the rigidity of the material.

- 242, Winding, Tensioning, or Guiding, subclasses 475.1+ for means for uniting a reserve thread with the last end of the bobbin thread of a winding machine.
- 294, Handling: Hand and Hoist-Line Implements, subclass 99.2 for tweezers, and see (1) Note, supra.
- 493, Manufacturing Container or Tube From Paper; or Other Manufacturing From a Sheet or Web, subclasses 379+.

SUBCLASSES

- 1.2 KNOTS:**
This subclass is indented under the class definition. An interlacement of portions of one or more elongated flexible elements (e.g., strand, rope) forming a tie or fastening and including any bend or hitch.
- 1.5 METHODS:**
This subclass is indented under the class definition. Methods.
- 2 KNOTTERS:**
This subclass is indented under the class definition. Devices for forming a loop through which a portion of the cord is passed and the loop tightened thereon.

SEE OR SEARCH THIS CLASS, SUB-CLASS:
17, for a device adapted to assist the hand or operated by hand to form a knot.
- 3 Weaver's knot:**
This subclass is indented under subclass 2. Whereby a knot is tied comprising two loops, the terminals of one extending through the bight of the other on the same side and one terminal of the second loop extending through the bight of the first loop, the other terminal of the second loop extending between the first terminal of the second loop and the terminals of the first loop.

- 4 Square knot:**
This subclass is indented under subclass 2. Whereby a knot is tied comprising two loops, with the terminals of each extending through the same side of the bight portion of the other.
- 5 Rotary lateral bill:**
This subclass is indented under subclass 2. Having a bill comprising two members adapted to receive and hold a cord between them, said members extending laterally from a rotating shank.
- 6 Swinging knotter frame:**
This subclass is indented under subclass 5. The bill is mounted on a frame, which is moved to and fro while the knot is being tied.
- 7 Sliding jaw:**
This subclass is indented under subclass 5. One member of the bill moving rectilinearly toward or away from the other to grasp or release the cord.
- 8 Pivoted inner jaw:**
This subclass is indented under subclass 5. The bill member nearer the driving means being pivoted to swing toward the same.
- 9 Angular drive:**
This subclass is indented under subclass 8. The knotter shank driven directly from a rotating shaft disposed at an angle thereto.
- 10 Notched-disk cord holder:**
This subclass is indented under subclass 9. Having a flat disk with notches in its periphery for holding the cord ends.
- 11 Bills:**
This subclass is indented under subclass 5. Limited to the structure of a pair of cooperating members projecting from a shank for forming the loop and pulling a portion of cord there-through. Does not include gearing for operating the members. May include cam or spring for opening or closing the jaw.
- 12 Sleeve and spindle:**
This subclass is indented under subclass 2. Having a sleeve, within which is a spindle, the spindle and sleeve being relatively movable to form a loop, and a twine-engaging member on the end of the spindle to pull a portion of the cord through the loop. Sometimes called "cylinder-knotter."
- 13 Cord holders:**
This subclass is indented under subclass 2. Improvement limited to means for holding the ends of the cord while the knot is being tied. Includes cord-cutter when the same is carried on the cord-holder, the rest of the knotter being old.
- 14 Notched disk:**
This subclass is indented under subclass 13. Comprising a flat disk with peripheral notches to hold the cord ends.
- 15 Cord guides:**
This subclass is indented under subclass 2. Limited to means for guiding the cord in proper relation to the knot-tying member.
- 16 Needles:**
This subclass is indented under subclass 2. Limited to means for presenting the cord to the cord-holder and attachments therefor. Includes knife, guard, or compressor-arm if the same is carried by the needle.
- 16.5 MACRAME:**
This subclass is indented under the class definition. Method or apparatus for effecting or facilitating the knotting of cords or similar strand materials into a coarse lace or a decorative fringe.
- 17 HAND IMPLEMENTS:**
This subclass is indented under the class definition. Means peculiarly adapted to assist the hand or operated by hand to form a knot.
- SEE OR SEARCH CLASS:
57, Textiles: Spinning, Twisting, and Twining, subclass 23 for implement such as marlin spikes employed in splicing operations.
- 18.1 MISCELLANEOUS:**
Tying devices which do not fall within the definition of any of the more specific subclasses in this class (289).
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