

around with my original notation and found that i had to rearrange the figure after forming it. The wrap formed in the center of the figure must be pulled to the right in order for the knot to form. i should learn to trust my notation system more (and probably to add special instructions when needed).

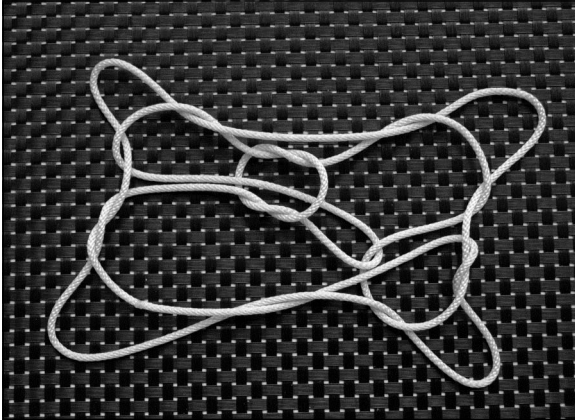


Fig. 33 - *2 ldna, slant op (right index, left near little finger string ccw), left index -1/2, right index +2/2, ch right*

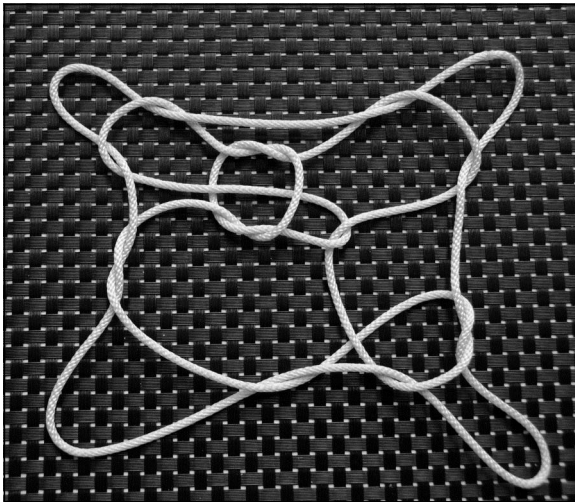


Fig. 34 - *2 rdna, slant op, (right index, left near little finger string ccw), left index -1/2, right index +2/2, ch right*

The above two figures (fig. 33, fig. 34) are exactly the same except for the crossing strings which originate from the two lower frame line wraps and pass into the interior of the figure. In the rdna figure the string coming from the left

passes under the string from the right and the *ldna* figure is the opposite. Note that some figures look different depending on how they are “arranged”.

Then i conjectured that the peculiar rotating of the index fingers should lead to more figures and made the following series:

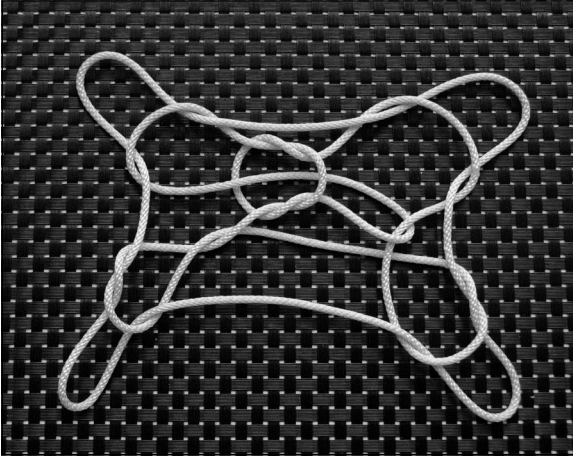


Fig. 35 - *2 ldna, slant op, (left index, right far thumb string ccw), left index -1/2, right index +2/2, ch right*

And then i found the following (fig. 36):

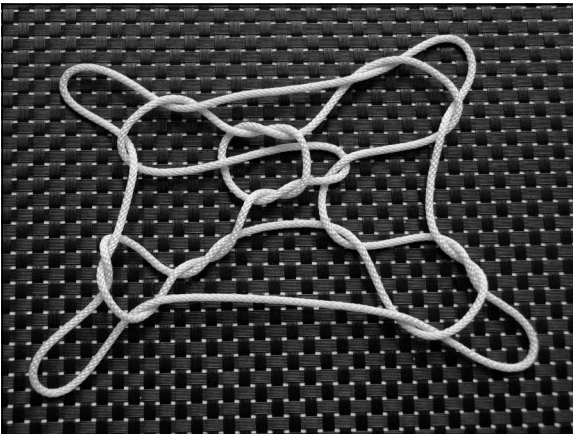


Fig. 36 - *2 ldna, slant op (left index, right near little finger string pulled under right far thumb string, then ccw), left index -1/2, right index +2/2, ch right*

During the formation of fig. 37 and fig. 38 a far thumb string is scooped up. Be aware that the index passes behind (to the far side of) this string before scooping it up. During the formation of fig. 39 the left near little finger string is passed down through the left thumb loop before being scooped up by the right index.

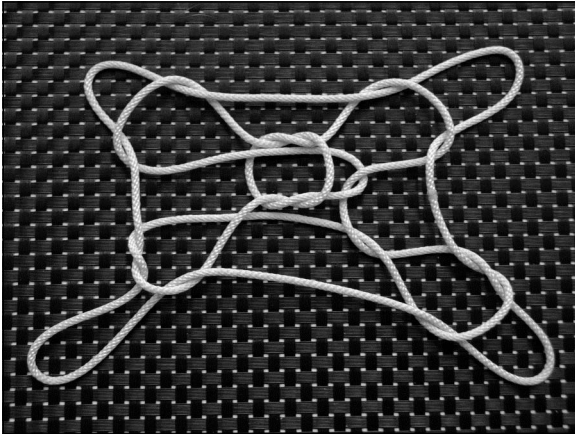


Fig. 37 - 2 rdna, slant op (right index, left far left thumb string ccw), left index -1/2, right index +2/2, ch right

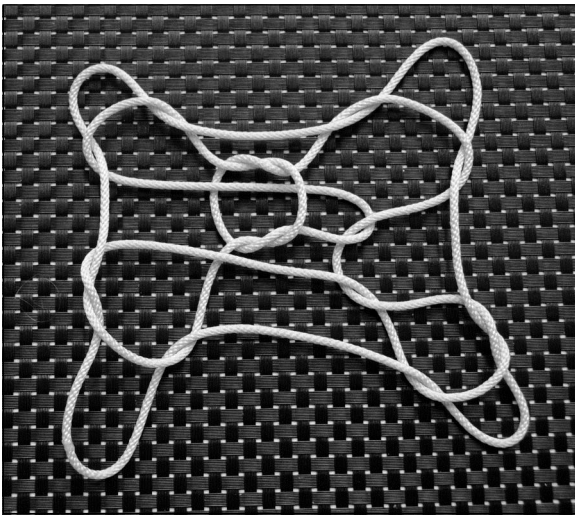


Fig. 38 - 2 ldna, slant op, (right index, left far thumb string pulled under left near little finger string, then ccw), left index -1/2, right index +2/2, ch right

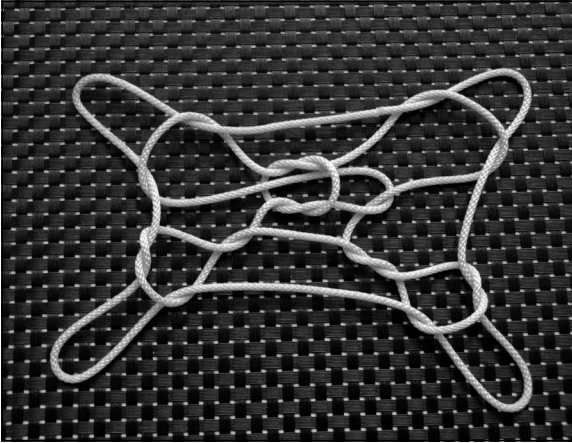


Fig. 39 - 2 ldn, slant op (right index, left near little finger string is pulled over then under left far thumb string, then ccw), left index -1/2, right index +2/2, ch right

As you can see the basic square knot with a pull through loop held on the right is characteristic of all these latter figures. The differences in the figures are over-under crossing patterns as well as different wraps on either side of the figure.

And in conclusion i will add my favorite heart figure (fig. 40).

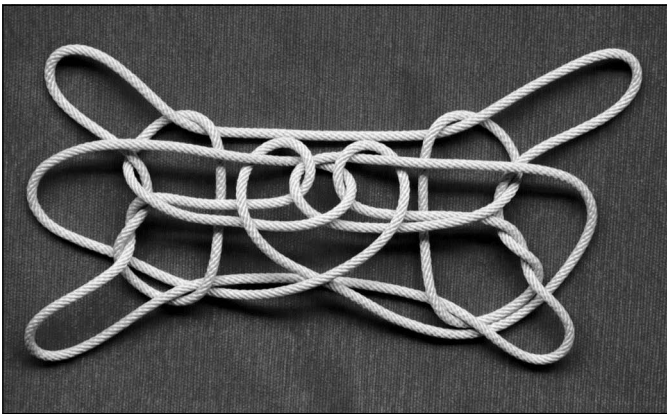


Fig. 40 - my favorite heart figure

And as i am a teacher who loves to set hard tasks for my students i will only briefly indicate the complex manufacture of this figure. A somewhat stiff string is required for the curvilinear nature of the figure to blossom and the length of the string which forms the loop is $1\frac{1}{4}$ of my span.

- 4 ldn (Murphy 2000:219-220).
- Index loops left dominant switch (Murphy 2000:274-275, Without inverting the left index loop transfer it to right index over the right index loop to become a lower loop; then without inverting the former right index loop transfer it to the left index finger).
- Thumbs pick up index loops from below.
- Middle finger loops -1/2 to top of thumbs.
- Little finger loops -1/2 to top of indices.
- Little fingers up through all three thumb loops to hook down near index strings.
- Index and middle finger pinch near lower thumb string through index loops and away while thumbs shed all but (now) two Katilluik strings.
- R Katilluik both pairs of thumb loops, disentangling them one pair at a time, beginning with the thumb loops whose near string is seen to span the index and little finger transversals.
- While completing the Katilluik, make sure all four near thumb strings Navajo over thumbs, and drop index loop. Extend loosely.
- Turn back of hands toward you and look down at the figure. Two pairs of horizontal strings cross at the center of the figure, one pair going left to run under the left little finger loop and one pair going right to run under the right little finger loop. Two of the four horizontal strings cross to form the bottom of the heart seen in fig. 41. Index and middle fingers pass between their respective horizontal strings and catch the ones that cross to form the bottom of the heart, then they pinch and remove the thumb transversal, and return while rotating away and up between the horizontal strings. Thumbs remove index loops from below.
- Turn back of hands toward you and look down at the figure. Four strings go from the little finger transversal to the thumb transversal, two passing under the figure and two passing on the upper side of the figure. Along the little finger transversal arrange the two strings that pass under the figure so they are closest to their respective hand. Index finger picks up the portion of the little finger transversal between the two closest strings hanging from that transversal. Release little finger loops. Arrange (fig. 40).

Another of my favorite figures is Mickey Mouse (fig. 41). It is also a part of my heart series.

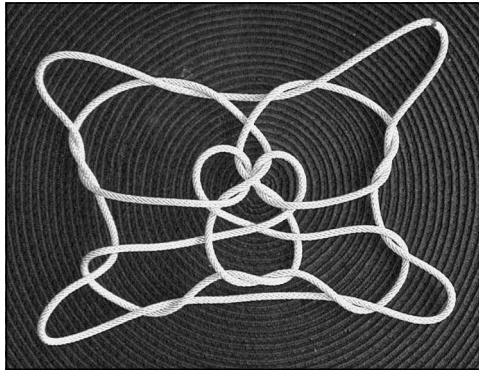


Fig. 41 - *mickey mouse*

- ldna
- index loops left dominant switch
- roll figure
- fix bottom
- both index $-2/2$
- last part of chopstick heart right (Exchange index loops, Clean the Top)
- roll on hands again
- spread and arrange (fig. 41)

This paper was fun to write, but barely scratches the surface of figures formed using similar methods of manufacture. i am sure i will be back with other figures.

* * *

ACKNOWLEDGMENTS

i want to thank Mark Sherman and Joe D'Antoni for going over my manuscript with a fine tooth comb. i get so wrapped up in playing with my string that i forget to be completely accurate in my notation of how to form each figure.

LITERATURE CITED

- D'Antoni, J. (2002) "Is This String Figure Possible?" *Bulletin of the International String Figure Association* 9:285-293.
- Murphy, J.R. (2000) "Using String Figures to Teach Math Skills — Part 4: Vertical Nets and Tennis Nets." *Bulletin of the International String Figure Association* 7:215-287.
- Murphy, J.R. (2001) "Using String Figures to Teach Math Skills — Part 5: Opening Theory." *Bulletin of the International String Figure Association* 8:211-234.
- Ornstein, J. (1992) "Intension vs. Extension — an Inquiry into the Aesthetics of String Figures." *Bulletin of String Figures Association* 18:26-33.