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Braiding a knot

In this lesson we will braid some small knots step by step to show how the principles from the earlier lessons are applied to the braiding process.

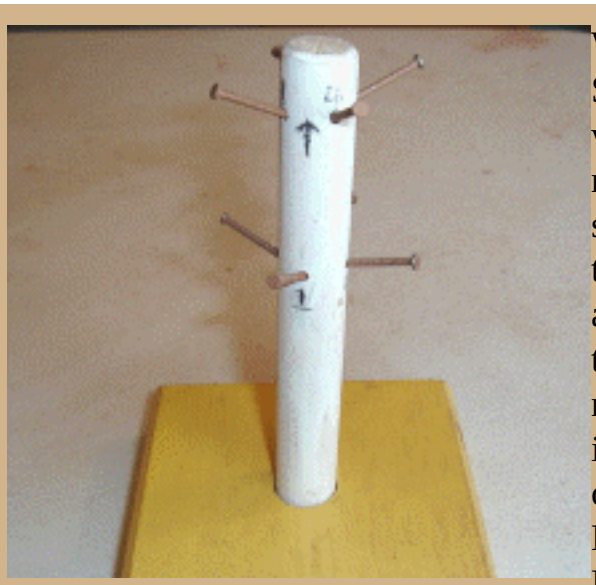
The Process

We will braid these knots on a pinned mandrel oriented vertically and place the wraps in a clockwise direction useing conventional coding. After using 1/2 the number of parts for the span of the first half wrap to center the bight increment, we will be concerned with crosing at braid exit and entry and previously crossed parts to determine each new crossing made by the running end of the thong as we place the rest of the wraps. Ofd course each new wrap will be placed parallel with the preceeding wrap.

The knot - A 5 X 4 simple turkshead.

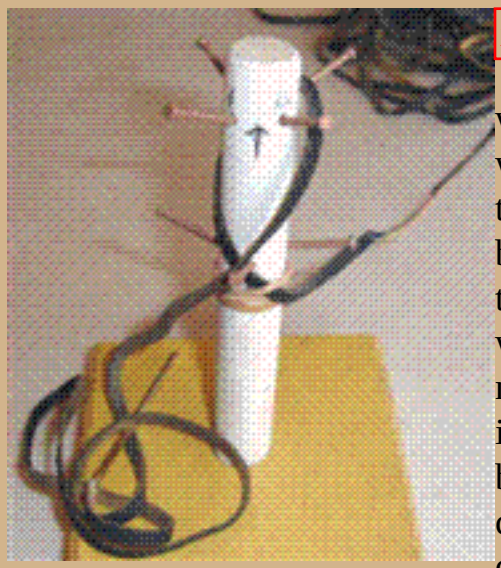
We will begin with a knot that everyone who has ever "tied" a turkshead already knows and examine it to see how it conforms to the basic structure of all turksheads as we braid it.

The mandrel.



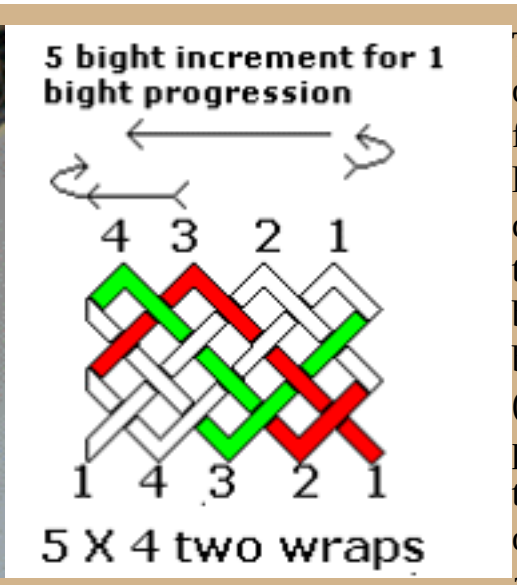
We will use a pinned mandrel with pins for a four bight knot. Since this is an even number of bights the bight alignment will have the 1/2 space offset across the knot This four bight mandrel is marked with the reference point at the middle of a space between bights that is our reference point for counting the initial 1/2 increment for the first wrap. This is directly above the bottom bight pin where we will start the knot and the half space to the next pin gives us the half space count we need when we divide the odd parts by two for the half increment. The pins are numbered clockwise from 1 to 4 to correspond to the numbers on the template for this knot. Before we lay on the first wrap two things need to be decided. Firsdt the number of parts (for the bight invcrement) and the coding (conventional or "sobre). We established the number of parts in our 5 X 4 definition and we will use conventional coding in this example.

The first wrap



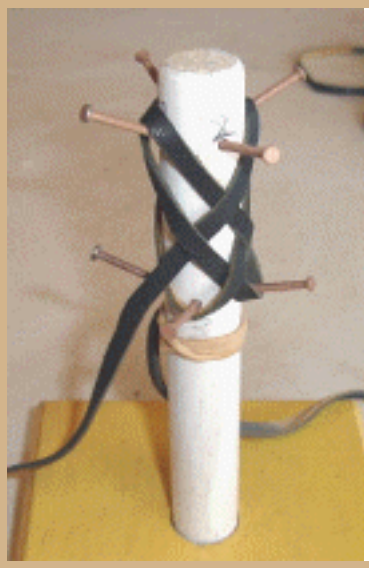
x This step lays the foundation for the complete knot. The first wrap begins adjacent to a bight pin on the side in the direction of the wrap around the mandrel. For our usual clockwise direction this would be to the left. Then it spirals upward for 1/2 bight increment to a pin at the top and back down to a full increment to a pin at the bottom. Since the full increment of 5 would make the target to end the wrap on pin 2 and we began the wrap at pin 1, the running end will cross the standing end in this first wrap. How this crossing is made determines the coding for the whole knot. Since this crossing is adjacent to a preceding bight (where we started at pin 1) it is a braid exit point. From lesson two you know that conventionally coded odd part knots exit the braid with an over crossing so we cross over and go around pin 2. This completes the first wrap and lays the foundation for the rest of the knot.

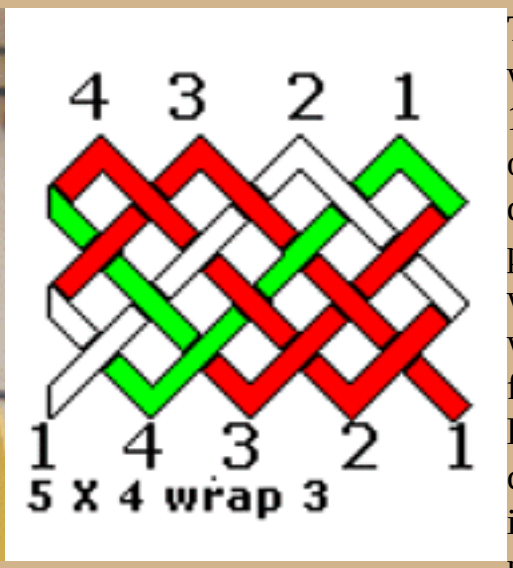
The second wrap



The second wrap (in green) goes on the mandrel parallel to the first (in red). As it goes from the lower pin 2 to the upper pin 4 it crosses the first wrap adjacent to the upper pin 3. As this is another braid exit we cross over it as before at the end of wrap one. (Note that this apparent bight progression of 1 space is actually the result of the bight increment of 5 spaces from the upper pin 3 around the bight count). This increment factor is achieved automatically by placing each wrap parallel to the previous wrap and need't concern us any more after the first wrap is properly in place. Now all we have to do is observe the crossing of previously crossed parts in a manner that "completes the braid" for the desired casa coding (over one -under one) and proper braid exit and entry at the edges of the knot. On the way back down from the upper pin 4 to the lower pin 3 we cross the first wrap that wes prevviously crossed by an over so we go under it and then take an over crossing for a braid exit to the lower pin 3. This completes the second wrap.

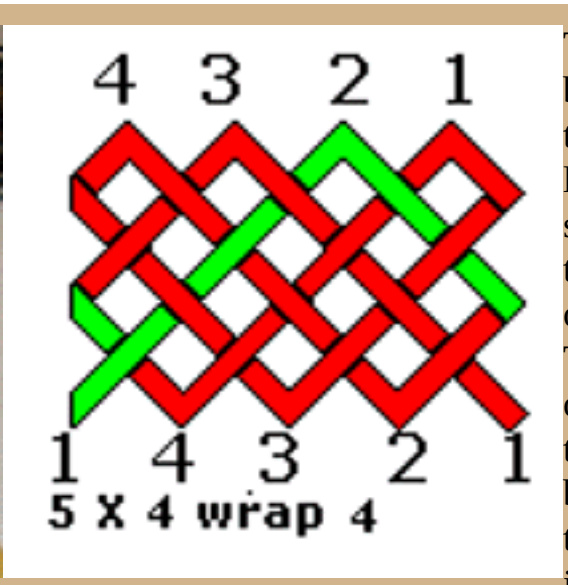
The third wrap





The path of this third wrap upward on it's way from the lower pin 3 to the upper pin 1is again under a part previously crossed over and over at a braid exit and then back down to the lower pin 4 crossing two previously crossed parts in the opposite way to another braid exit at the bottom. A word of caution here - the pattern of the first half of a wrap being identical to the last half of the previous wrap is NOT a common characteristic of all turksheads. It is unique to the even bight knots with one more part than bight and some longer knots with an adjacent bight progression.

The last wrap

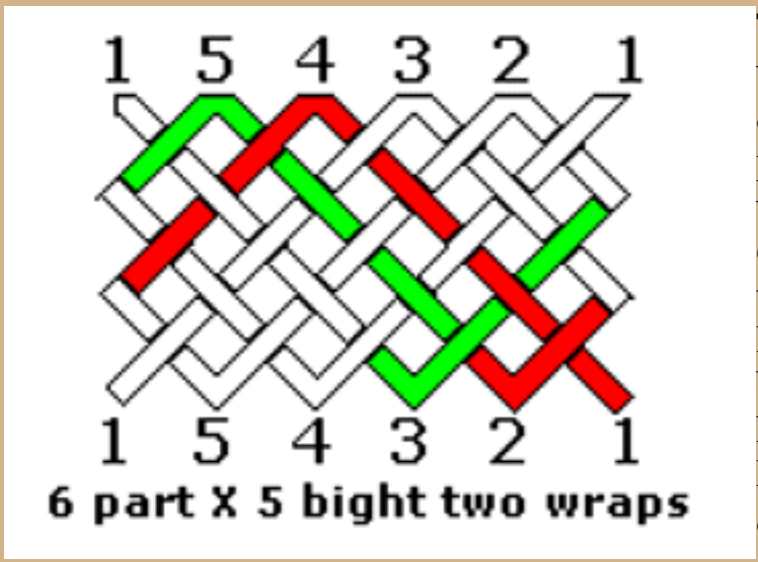


This last wrap takes the obvious path between the only pins left "completing the braid" as it goes to the final point at lower pin 1. Here a final "tuckup' by the standing end completes the knot. Notice that the completed knot on the left is open in its structure on the mandrel. This allows some "slack" for placing it on the job at hand where it can be tightened in place by pulling the slack back from the running end to the start of the knot. This also leaves room for an interweave of another knot to form a more complex form such as a "pineapple" knot.

The main point of this material

The focus of this elaborate explanation of a knot that most of you already know how to braid is NOT how to do it, but why you do it that way. With a good understanding of the braid structure of a knot you can braid any turkshead on a pinned mandrel from it's P X B definition by using the bight increment (the P of P X B) to place the wraps and observing the process of "completing the braid" at each crossing of a part by the running end.

A 6 part X 5 bight knot



This is a template of the 6 X 5 simple turkshead with the first two wraps in place. The first in red and the second in green. I will dispense with the photos here because once you get comfortable with the idea that if the template is rolled in a cylinder so that the edges touch it truly represents the knot it is a much better way to represent the knot. This knot is similar to the 5 X 4 in that the bight progression is adjacent and clockwise but having one more part the bight incrementis one pin larger. Being an even part knot, the bight alignment is also directly across the knot instead of offset 1/2 space as in the odd part knots. The only other difference is the braid exit and entry at the top of the knot.Because of the even number of parts the braid entry and exit are reversed at the top of the knot from the knots with an odd number of parts.

Wrap by wrap

Wrap one -- from the start at pin lower 1 - 1/2 increment to pin upper 4 - back down to pin lower 2 making a braid exit with an over crossing.

Wrap two -- from pin lower 2 - up to pin upper 5 making a braid exit crossing - back down to pin lower 3 - crossing an adjacent previously crosed part and making a braid exit crossing. Notice that for this even part knot the braid entry and exit are both unders going upward and overs coming back down.

Wrap three -- From pin lower 3 to pin upper 1 and back to pin lower 4, observing braid exit and entry and contrary crossing of previously crossed parts as we go.

Wraps four and five -- Two more parallel wraps in the same manner, ending at pin lower 1 to complete the knot.