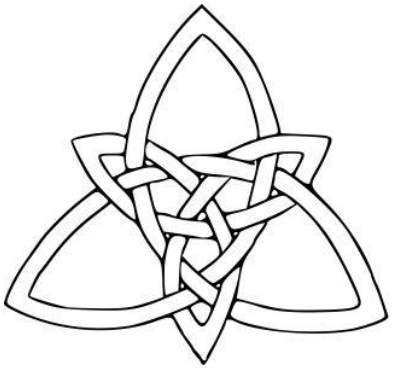

How to Make a Celtic Knot Wood Project

Gold Country Woodcrafters

Working Mtg
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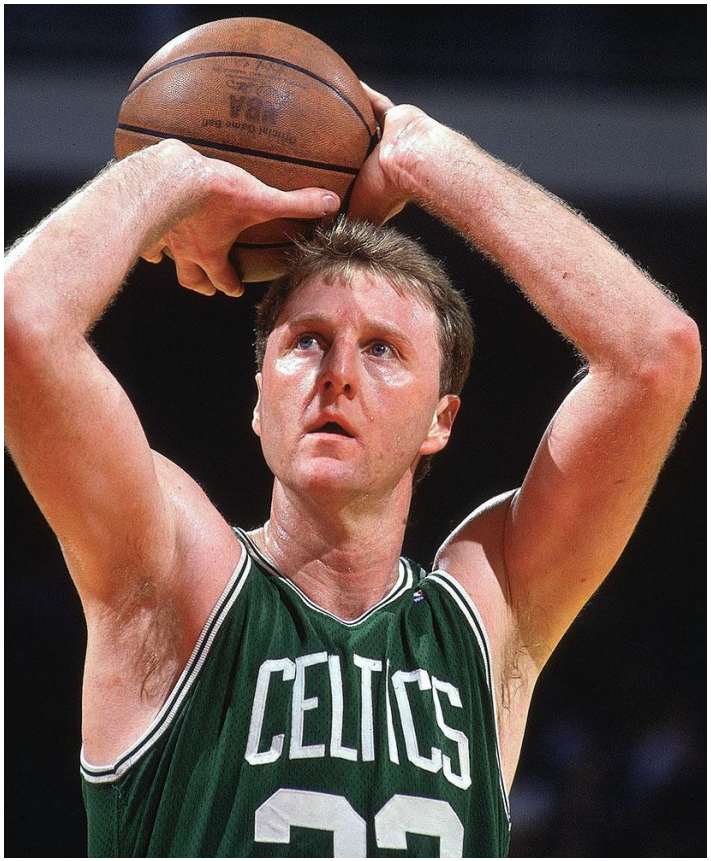
Agenda

- Intro
  - History
- Design Considerations
- Jigs Required
- Process for constructing
- Key learning
- Improvement Ideas
- Variations

Intro

- This is not what we are talking about



Is "keltic" or "seltic" correct ?

Until the mid-20th century, Celtic was usually pronounced with /s/ in English except by academics.

The pronunciation with /k/ has been gaining ground recently. /k/ is now almost invariably used with reference to Celtic culture.

However, the /s/ pronunciation remains the most recognized form when it occurs in the names of sports teams,

Intro

- Pre-Christian Celts drew these particular symbols because they were not allowed to create other images; ie living creatures .

- Dated after 450 A.D when Christian influence on the Celtic civilization began to take hold.

- As you might expect, original Celtic knotwork underwent <u>assimilation</u> and <u>adaption</u> with the cultures that adopted it

- The <u>interlaced</u> designs was a reflection of the Celtic belief in life's interconnectedness and continuity.
  - The best known Celtic knot and is also called the <u>Triquetra</u>.
  - These knots are complete loops that have no start or finish
  - Could represent eternity - loyalty, faith, friendship or love.
  - Represent the Holy Trinity of the Father, Son & Holy Spirit





Design Considerations

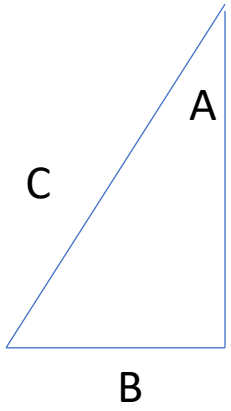
- What project
  - Rolling Pin
  - Bowl
  - Pen Blank
  - Vase
- What “knot” design
  - Angle(s)
  - Symmetrical / Non-symmetrical
- Inlays
  - Wood choices
  - Thickness / Contrast
- Handles Designs & Method of Attachment (if required)
- Tool Considerations
  - Table Saw cut depth, Band Saw, Lathe bed length etc

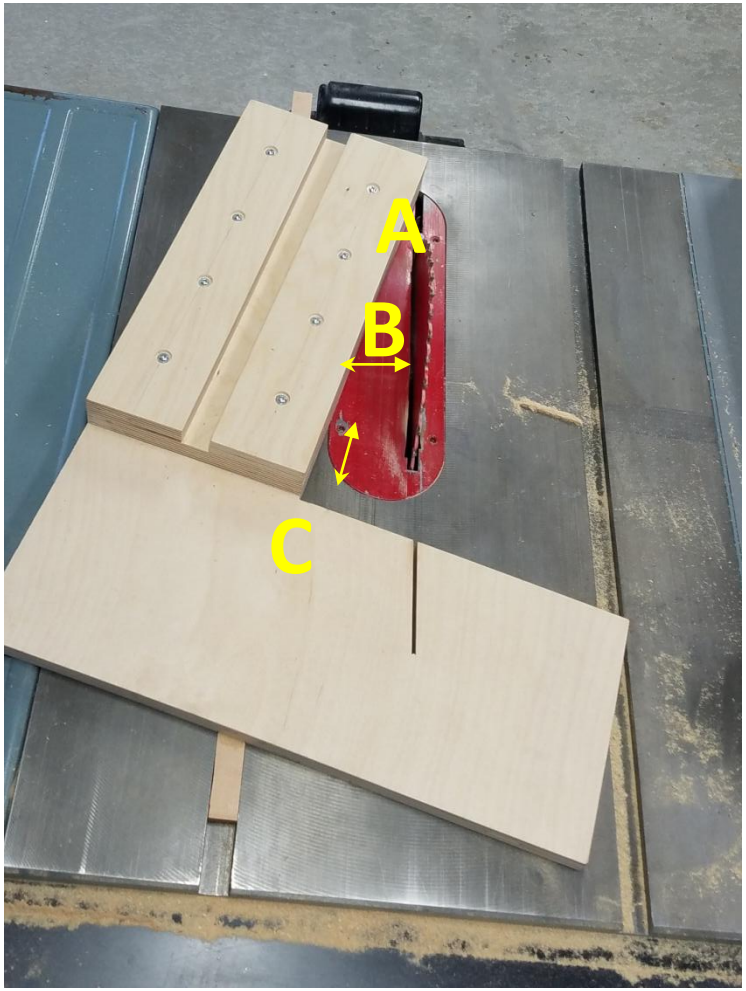
JIGs Recommended

- Table Saw / Band Saw Jig to cut angles
  - Sets angle
  - Most importantly “width of cut”
  - Could be one angle or variable
- Glue Up Clamp Table
  - To help insure precise alignment
- Method to drill perpendicular holes in pin & handle
- Jig to hold handles on lathe

JIGs Recommended

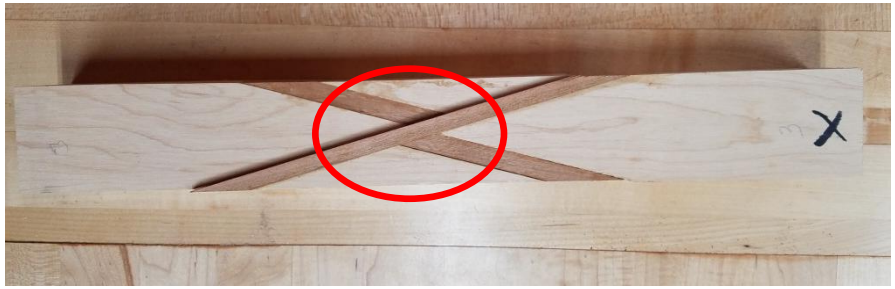
- Table Saw Jig to cut angles
  - Sets angle (A)
    - Visual appeal
    - Utilize the length of the pin
  - Cut Width B
    - Exact width of the inlays
  - B actually set by C
    - But C in different axis
  - Set C spacer by
    - Trial and error
    - Math
      - Measure A
      - Measure B
      - Sin A = B/C





JIGs Recommended

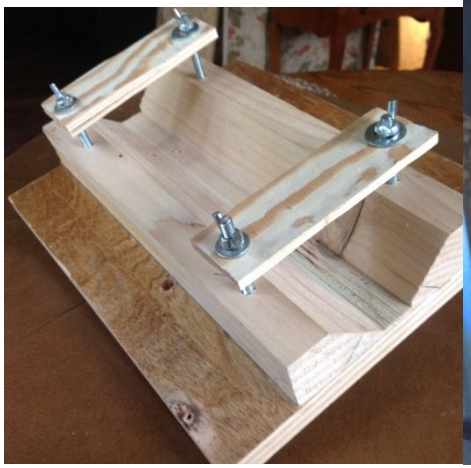
If you're not careful



- Glue Up Clamp Table
  - Optional ….
  - Not required if you don't cut entirely through pin blank
  - Critical if you do ….

JIGs Recommended

- Drill Jig
  - Method to drill perpendicular holes in pin & handle
  - Drill press recommended

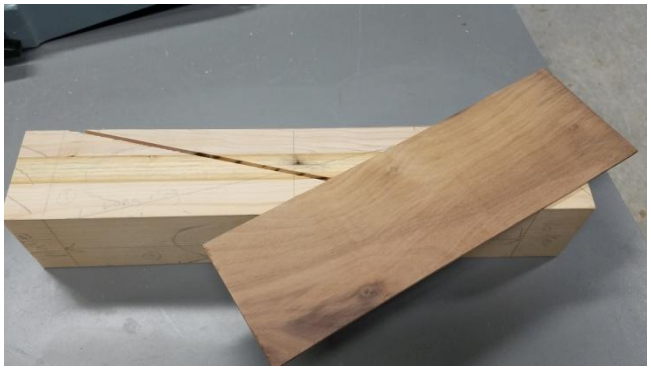


JIGs Recommended

- Jig to hold handles on lathe
  - Through hole challenge
  - Simple threaded rod but recessed to accept live center – *Thanks Tim !*

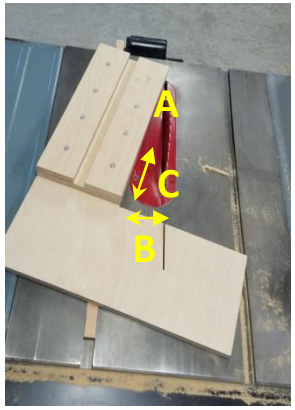
Process for constructing- Rolling Pin

- Select pin blank
  - Needs to be square (6 sides), fit lathe.
  - Thick enough to avoid cut through and give desired end diameter.



- Select pattern
  - Easiest is symmetric (more later)
    - Angles and length of inlays the same
- Select Inlays
  - Choose wood and thickness based on artistic goals
  - Must be the same net thickness (May need to plane etc)
  - Need 4 sets of inlays (typically on 90 degree project)

Process for constructing- Rolling Pin



- Cut pin blank for 1st inlay
  - Use spacer for dimension C
  - Mark end (furthest away from blade) and use consistently as reference
  - If thick enough, don't cut through, leave ~3/16.
    - **Careful**, Reduces overall diameter by 2x above

- Glue up
  - Must use jig if cut through
  - Apply glue to inlay & pin blank
  - Insure inlay is fully seated
  - Clamp , clamp, clamp

Process for constructing- Rolling Pin

- Let glue dry.

- Trim excess inlay, but **don't reduce** pin blank dimension.

- Repeat for next cut
  - If you are impatient , you can wait as little as 1 hour.
  - Rotate 90 degrees-good to mark sides ahead of time
  - Be carful to insure correct end to be cut. (consistent)
  - Check and recheck for correct angle/side

- Repeat for 3rd and 4th cuts
  - Let dry more thoroughly before these cuts
  - Preferably over night

Process for constructing- Rolling Pin

- Turn your pin blank
  - Interesting how the knot forms
  - Good lathe skills or sanding board helps make pin flat and level

- Drill pin to accept dowels
  - Insure alignment in both dimensions to drill bit
  - Drill press recommended.

- Drill handle blanks for through hole for dowels
  - Use jig as above.
  - A little less critical – can turn on lathe to straighten

- Turn handles – using handle jig

* Asymmetric rings shown

Process for constructing- Rolling Pin

- Check and adjust dowel as necessary (can sand on lathe)
  - Optimize diameter for tight fit in pin, but loose fit in handle
- Design & install end cap
  - Color, Shape (artistic choice)
  - Glue on end cap (but install handle on dowel first)
- Wax dowel where handle spins.
- Attach dowel/handle.
  - Being very careful not to get glue on handle
  - Stainless steel washer reduces friction and adds a glue barrier

Impress your significant other

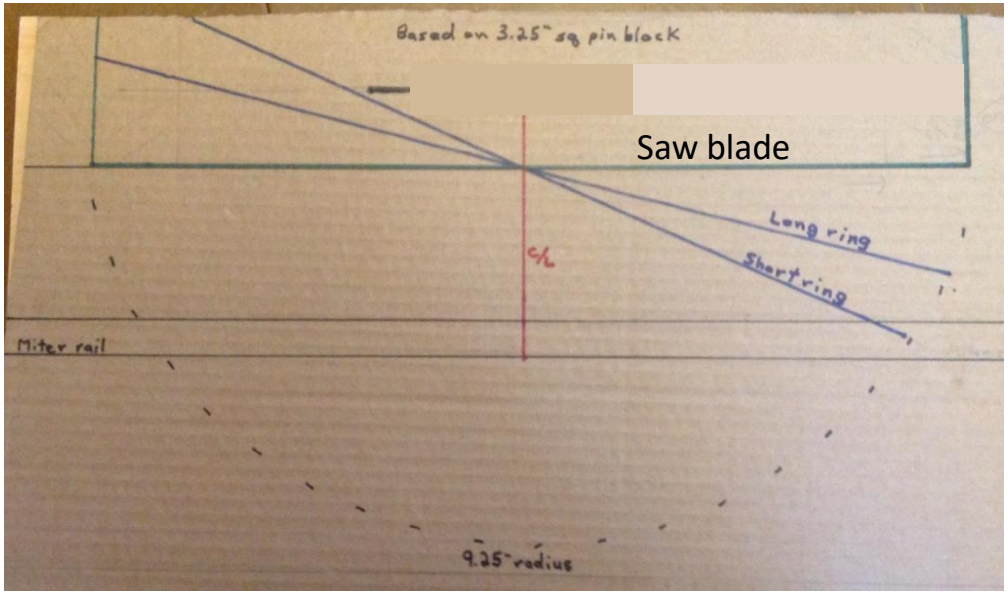
Key learning

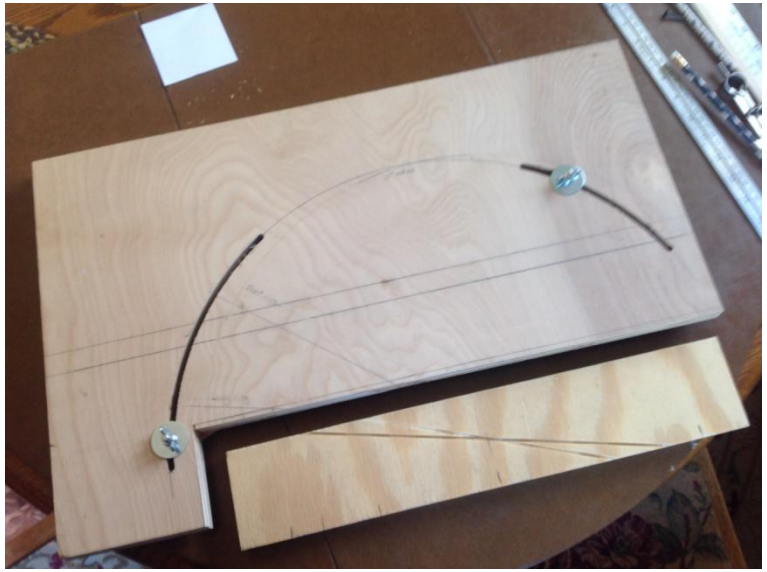
- ***Errors are everywhere…and additive***

- Initial Blank (6 sides) must be square
- Dimension B and C from Jig are critical
- Mark and don't swap front vs back of pin blank
- Not cutting through pin blank eliminates alignment issue
  - <u>Careful</u>, Reduces overall diameter by 2x above
- Don't reduce the pin blank between cuts when trimming inlays
- Not all 3/8" dowels are the same diameter
- Dowel must be tight in pin but loose to rotate in handle
- Try to avoid on the fly changes
- Some errors are mitigated after turning as the diameter decreases

Improvement Ideas

- Improved Table Saw Jig for variable angles
  - Even on one project for non symmetrical rings





Variations

Concept to add multiple rings

Bowl Blank


I ♥ My Shorkie
Thanks !
Mark Butzler