Simon O'Shea

History of American Folk Music Final Project

December 9th, 2021

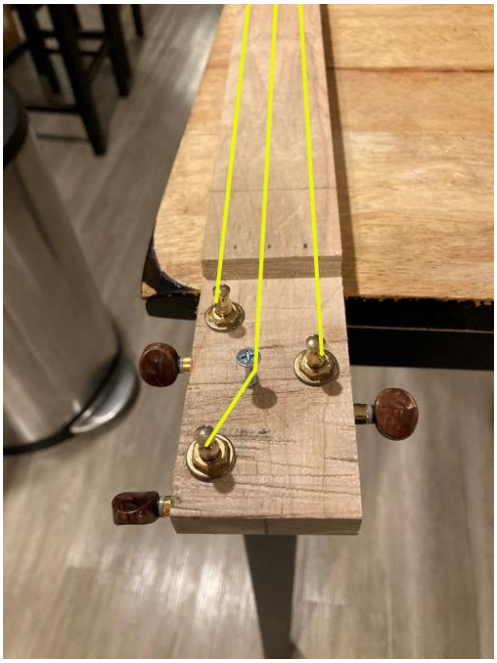
The cigar-box guitar has been a staple of vernacular American folk instruments for over two hundred years. They provide the average American with the opportunity to express themselves through music without having to spend a large amount of money on a professionally crafted guitar. Their popularity has resurged over the past two decades, and thousands of people online have come together on websites such as www.cigarboxnation.com and YouTube to share their own creations and spread the love of traditional instrument making. As someone who loves music and has recently begun teaching myself how to play the guitar, this seemed like an amazing opportunity to delve into the past and experience what it may have been like to build and play an instrument of my own a hundred years ago (with the assistance of some modern tools).

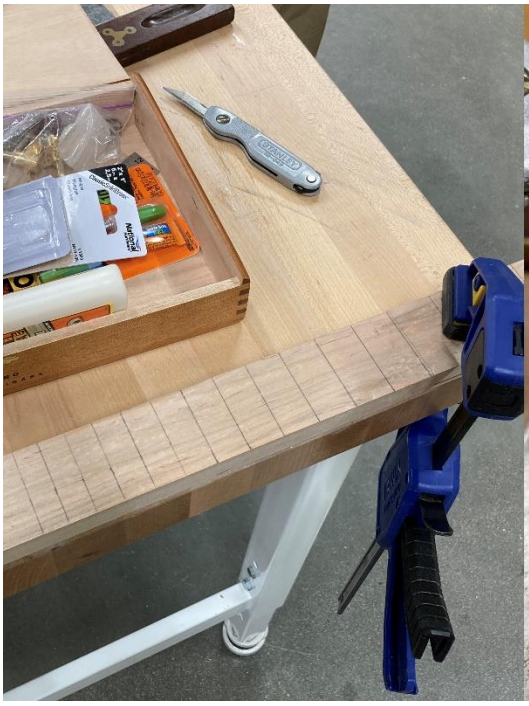
Materials Used:	**Tools Used:**
Wooden Cigar Box	Hand Drill
3' long 1x2 (white oak)	Dovetail Saw
Tuning Machinery	Handsaw
Guitar Strings	Hacksaw
Gorilla Wood Glue	Vice Grips
Gorilla Super Glue	Ruler
2 2" Long Threaded Bolts	Yardstick
5, 2" Long Wood Screws	Restringing Tool
1 Small Wood Screw	Pocketknife
Varying Gauges of Metal Wire	Assortment of Shaped Files
Brass Hinge	Drill Press
Scrap Wood	Carpenters Square
	Table Planer
	Table Saw

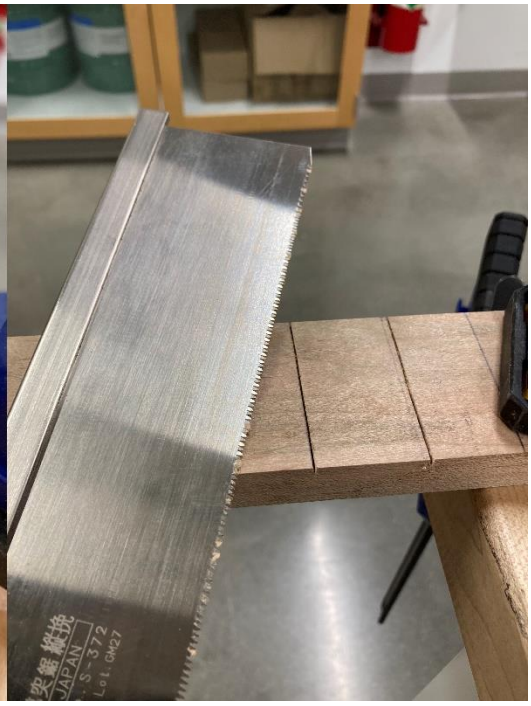

The process began on campus when Professor Gleason provided me with a cigar box and a set of old guitar tuners (see image above, far right). The box is made of wood and the tuners came with all the small screws and washers needed for installation. The next step occurred over Thanksgiving break at my grandfather's house, where we selected a board of strong white oak to use for the guitar neck. The board was cut with a table saw to 37" long, 2" wide, and ¾" deep, then planed. Typically these guitars are 3' long, however the additional inch of length was included just in case anything went wrong with the headstock or if any extra space was needed for any surprise reason. The result was a perfectly flat and adequately shaped guitar neck.

Back at my house, the process of forming the headstock began. The headstock was originally going to be cut out to be 5 ¼” long (the leftmost image above shows the original line drawn for the cut), but due to difficulties using the handsaws and a lack of a proper workshop, the headstock ended up being 3 3/4” long. This coincidentally ended up being the perfect length for only three tuners. A drill was then used to form the holes for the tuners to be installed.

The tuners fit snugly into the holes and were secured with washers and small brass screws to the back of the headstock. A small woodscrew was installed in the middle the headstock to help organize the strings once they are installed. The image below displays how the screw will line the middle string up with the nut properly.





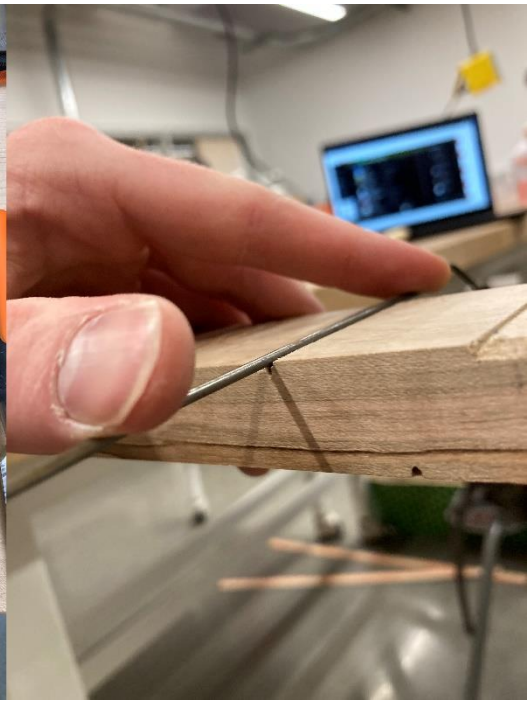


Fret #	Exact Position
1	1.431″
2	2.782″
3	4.057″
4	5.261″
5	6.397″
6	7.469″
7	8.481″
8	9.436″
9	10.338″
10	11.189″
11	11.992″
12	12.750″
13	13.466″
14	14.141″
15	14.779″
16	15.380″
17	15.948″

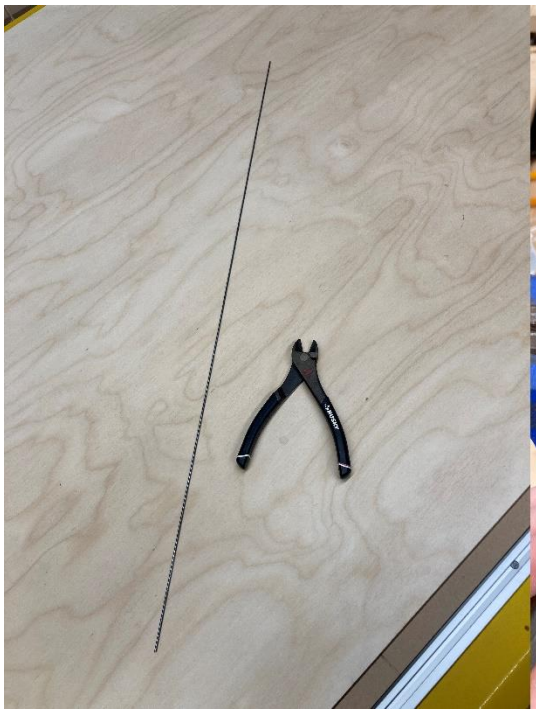
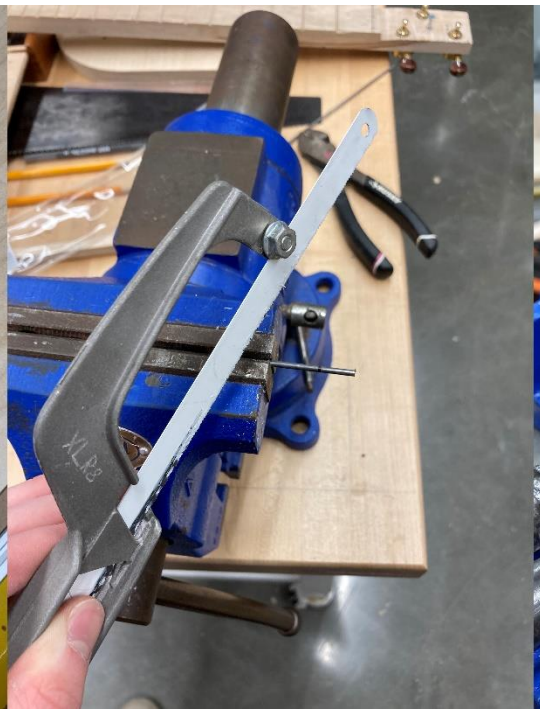
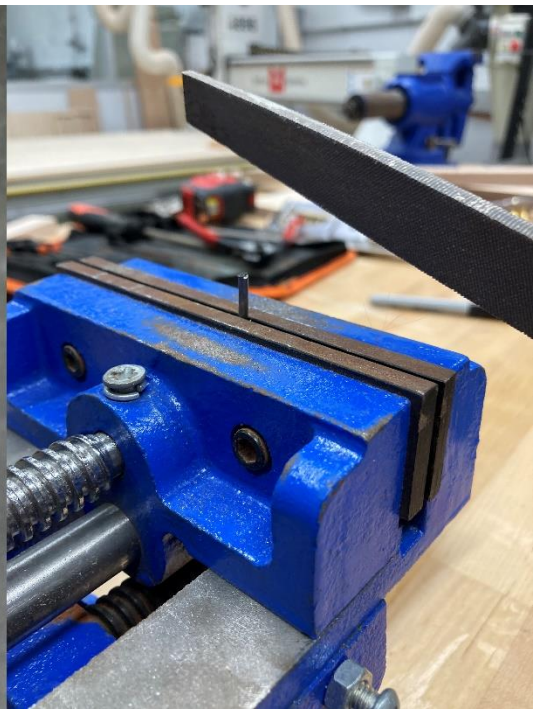
After Thanksgiving break concluded, the rest of the work on the guitar took place in the Accelerate woodshop. The next step was the measuring and cutting of the fretboard. The scale on this guitar is 25 ½” long (measured from the nut to the bridge). Ben Baker’s “How to Build a 3-String Cigar Box Guitar” article specifies the exact measurements for each fret on a 25 ½” long scale (shown to the left).

The frets were first penciled in, then scored with a pocketknife and a carpenter’s square. The square combined with the knife guaranteed a straight slice across the neck, making the job of the saws much easier. The dovetail saw (seen in the top-right picture) was perfectly sized to fit in the score created by the knife and was used to deepen and slightly widen the slot.

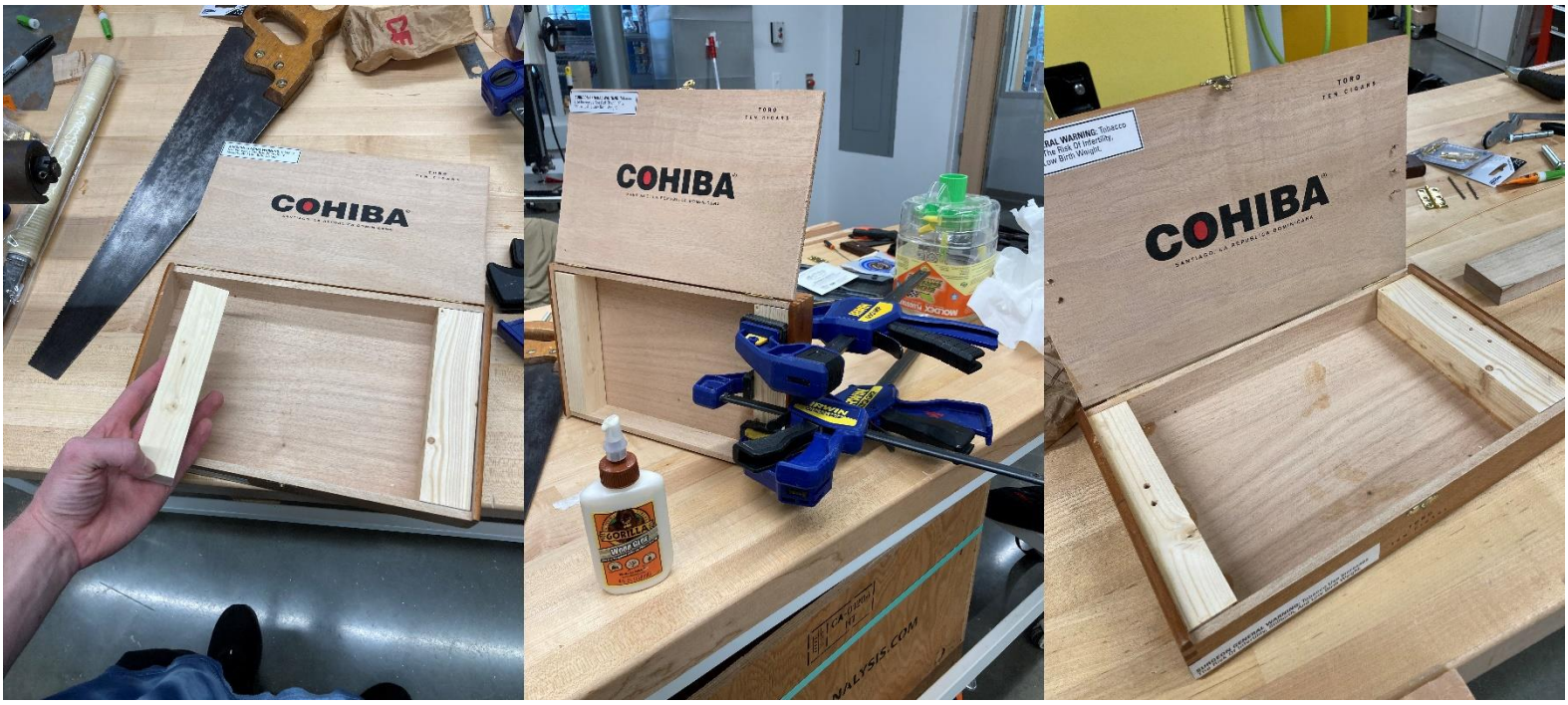




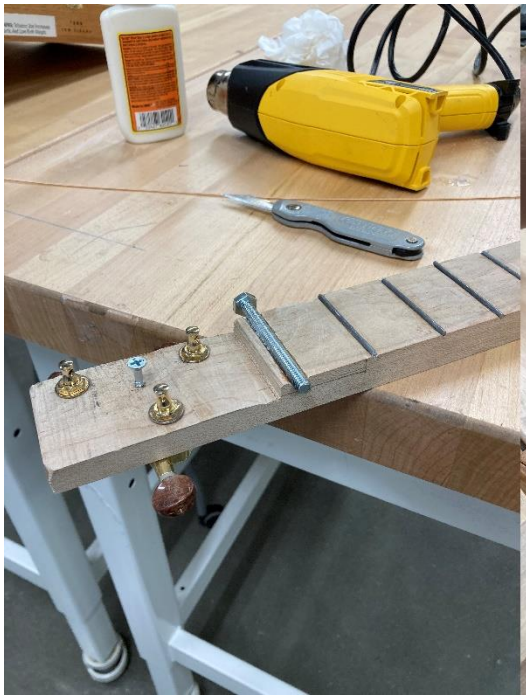
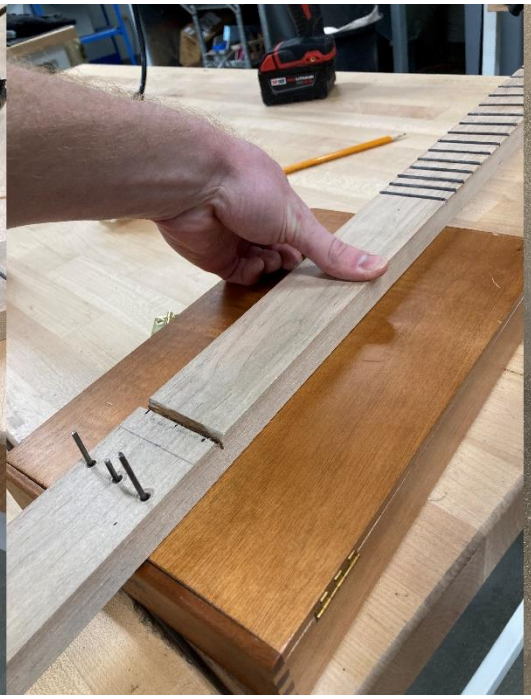
Once the slots were cut to the desired depth, the thicker handsaw (shown in the top-left image) was used to widen the slots. Sawing from both directions created a triangular slot for the fret wire to sit in. The gauge of the fret wire is unknown; however wire clothes hangers are nearly the exact same diameter, if not a little larger. The original plan was to use wire clothes hangers, however finding enough of them that had perfectly straight sections was difficult, so I opted for wire from the hardware store. Several small round files, a large flat rectangular file, a large triangular file, and a small half-circle file were used to fine-tune the shape and size of the fret slots to guarantee a snug fit.

With all the fret slots cut and ready to go, it was time to begin cutting the frets. The original plan was to use wire snippers; however the wire was too thick for this to be feasible. A hacksaw and vice were used instead, and the process was extremely efficient. The hacksaw left rough, sharp edges on the wire though, so a file was used to smooth the frets before they were placed in the neck. Once the frets were cut to size, the application was as simple as applying a thin line of superglue into the slot and applying pressure for a few seconds as the fret set into the glue. Below is an image of the frets after they had been secured to the neck.

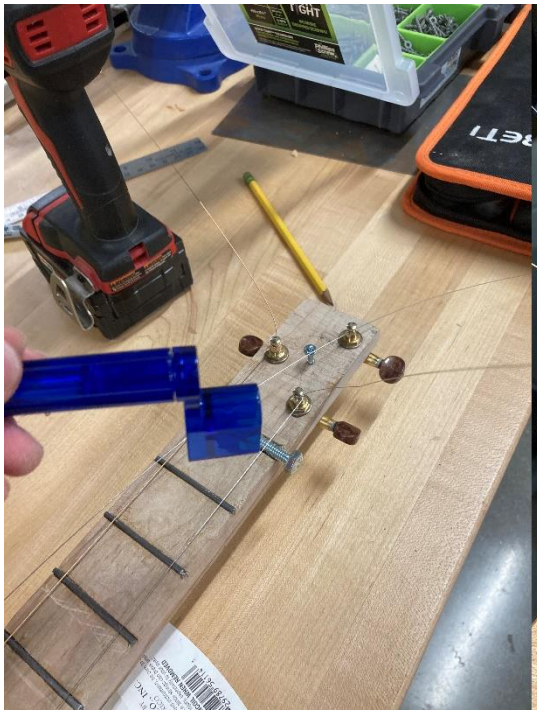
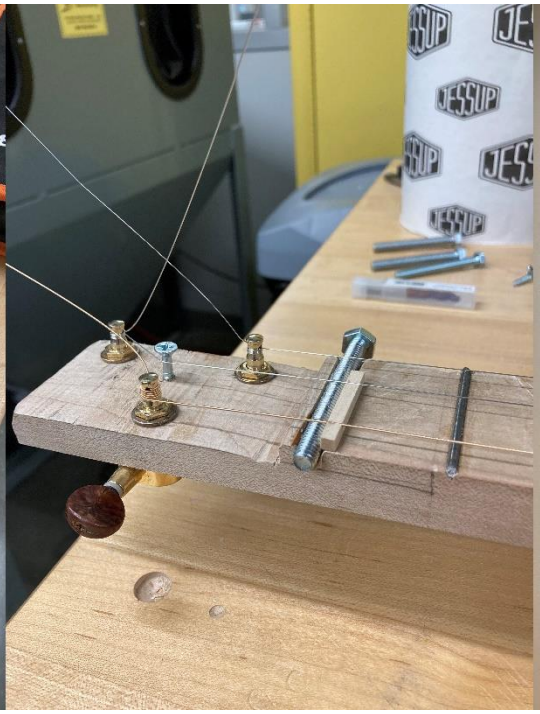


With the neck fully fretted and configured with tuners, the remaining steps were to set the nut into the neck, secure the neck to the cigar box, and then finally configure the bridge/strings. Before the neck could be secured to the box, the box needed to be seriously reinforced. The box in its original form had no solid place to drill any wood screws into, so pieces of scrap wood were cut to size and glued into the box to provide structural integrity.


The nut was then glued into the fretboard (in the same manner that the fret slots were created), and acoustic holes were cut into the box with a 1 ¾” drill press bit. It was time to secure the neck to the box.

Using a thin drillbit, three holes were cut 5/8” behind where the bridge had been marked. These holes provide guidance for the woodscrews that secure the neck to the cigar box body and secure the hinge that the strings loop through. The hinge-string mechanism is shown in greater detail below. The strings are fed through the hinge holes and kept from being pulled through by a small metal wire that goes through the eyelets on the ends of the strings. The string is then immediately laid over the bridge (which is not glued to the neck, it is only being held in a small measured slot by the pressure of the strings) and extends down the neck. There were also two other holes drilled further down the neck right before the frets (which can be seen in the upper-right image), and they just provide more structural support by connecting the neck to the box.

The last step of the process at this point was to string the guitar up! In the middle image above you can see a small piece of wood stuffed under the strings right in front of the nut. This is because the bolt used for the bridge was slightly too thick and the top two strings sat a bit too far above the nut, which caused a horrible buzzing noise and made them essentially unplayable. Like mentioned before, the bridge is not secured to the neck, which means that the next time the guitar is re-strung, the bridge could be replaced with a slightly smaller bolt to hopefully remove the need for the temporary wooden-bridge solution.

The final product plays well, the frets work properly, and I am thoroughly impressed with the quality of the build. It has received very little finishing work; however I plan on sanding it and putting some finishing touches on it later. I strung it up with medium gauge acoustic G-B-E strings, which are just the bottom three strings that you would usually put on a six-string guitar. If you would like to see the images embedded in this essay individually and in better quality, I encourage you to see the Google Photos album I created:
https://photos.app.goo.gl/D9hYmu3aJs7ZT52g9

I also created a little video demonstration of the guitar that can be watched here:

https://youtu.be/Csq_NOZFNkM

References

Baker, Ben. “How to Build a 3-String Cigar Box Guitar.” *The How-To Repository for the Cigar Box Guitar Movement!*, https://www.cigarboxguitar.com/knowledge-base/how-to-build-a-3-string-cigar-box-guitar-free-plans/.

Puckett Cigar Box Guitar. “Building a Cigar Box Guitar - From Start to Finish.” *Youtube*, 15 Dec. 2020, https://www.youtube.com/watch?v=jtO1WTrugj4&t=1211s.

Sucharski, Ivan. “How to Build a 3-String Cigar Box Guitar.” *Cigar Box Nation*, https://cigarboxnation.com/page/build-a-3-string-cigar-box-guitar.

“C. B. Gitty’s Cigar Box Guitar Fretting How-To.” www.youtube.com, youtu.be/XbrtfiH4OGU. Accessed 5 Dec. 2021.

Fender. “How to Change Your Acoustic Guitar Strings | Fender.” Www.youtube.com, 18 Apr. 2013, www.youtube.com/watch?v=0xxeRFEP1Y4&t=290s. Accessed 5 Dec. 2021.

Speal, Shane. “History of the Cigar Box Guitar.” Cigarboxguitars, 9 Sept. 2020, www.cigarboxguitars.com/post/history-of-the-cigar-box-guitar. Accessed 5 Dec. 2021.