How to Make a Cigar Box Fiddle

Cigar Box Fiddles have been known since the Civil War.

Earliest known image of a Cigar Box Fiddle.

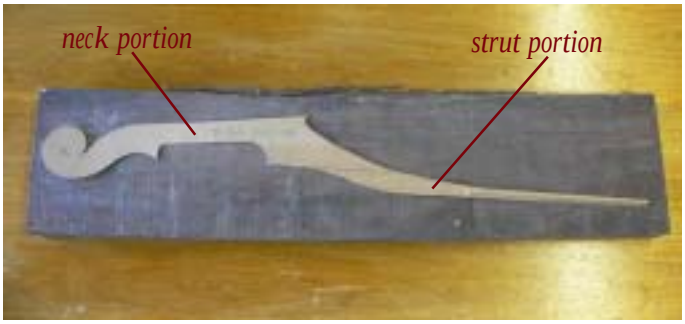
Wooden cigar boxes had entered commerce by the middle of the 19th century, and provided ready material for the musician who did not have access to a store bought instrument.

Most cigar box instruments have been a handy substitute for the real thing, made by musicians, not luthiers. Consequently, most examples are of poor, homespun quality. Usually, they have been discarded as soon as a "real" instrument was available.

My inspiration is to create modern cigar box fiddles as real musical instruments.
The essential dimensions of a full sized, classical violin are observed. Bass bar and sound post are installed in the body. Good quality boxes are selected. High quality materials made to modern design are incorporated. These instruments are gently humorous and unpretentious. They are also rock solid, well made and good players.

Here then, is how to make a modern cigar box fiddle.

The first challenge is to find a good quality cigar box of the right dimensions, well made and with interesting graphics. A standard full sized violin has a middle bout only about 4-1/2" wide. This allows room for the bow to approach the 1st string at an angle without contacting the body. Consequently, the selected box must be rather narrow. The box must also be within a specific range of length and thickness.



Laying out the basic shape.

I have found the best way to support the tremendous stress that the strings put on the instrument while allowing a modest cigar box to vibrate freely is to "float" the box on a hardwood strut that is of a piece with the neck.

The neck portion of my design is of conventional size and shape. The strut portion is modified for each instrument to properly position the box relative to the neck and the eventual position of the bridge. The shape is made as graceful as possible within these dimension limitations. It also tapers from the heel to withstand the static force applied by leverage from the string fixing point at the tail pin.

Bandsawing the rough blank.

After laying out the main neck/strut piece, it is bandsawn to rough shape. Shown here is a piece of Black Walnut that was bought from the mill in 8/4 x 6 dimension. The full 2 inch thickness of this board allows room for an eventual scroll and a wide base at the tail end of the strut. Later in the building process, the middle part near the neck and heel will be narrowed considerably.

Additional rough shaping is done with the drill press and bench sander to get the blank closer to its eventual form.

1/4" pilot holes are drilled for the tuning pegs.

The surface that will receive the fingerboard is sanded flat and smooth. It must be straight, square and in line. This is a critical surface, as all other parts of the fiddle will be assembled relative to the fingerboard.

The fingerboard position and centerline are marked off. The sides of the neck and peg box cheeks are sawn off.

After rough shaping, the fingerboard is glued to the neck blank.

Attaching the fingerboard.

A NOTE on neck shape and fingerboard thickness: My necks are thicker than most standard violins, and I leave the fingerboards thicker also. This part of the fiddle withstands a lot of stress caused by string tension. I am probably overcautious and will probably thin these parts more in the future.

Hollowing out the peg box.

After the fingerboard sets over night, the peg box is cut out. I have broken several necks doing this, so I prefer to do it early in the process. If I break it now, not too much is lost.

I use the drill press and a large bit to drill out most of the material in the opening, and square it up with hand chisels. The shape of the box and cheeks will be fine tuned later. It is a convention to paint the inside of the peg box black or umber. This improves the visual appeal of this part of the fiddle.

Shaping the neck

Next, I spend a lot of time shaping the neck. This is the part of the fiddle that the player most closely experiences.

When I was in art school in the 70's, one of the wacko trends was "handies". These works of art were not visual, but tactile. You could close your eyes, touch the art, and get the art experience. While that art movement never got rolling, the idea is very important. If this fiddle doesn't fit your hand, you won't play it.

I do use a flex shaft for some rough work. However, more time is spent hand filing and sanding this part of the instrument than I spend on any other process.

I continue to develop my ideas and designs for the neck, strut and scroll.

After shaping the neck, the strut portion of the blank must be shaped. Here is where the final fit of the body to the neck are determined. Working with the somewhat random dimensions of the box, I have to be sure that the neck angle to the box will result in a proper string setup. The body will eventually have a chin and shoulder rest which must fit a human body. The angle of the strings must deliver downward force within acceptable limits. The bow must be able to play the 1st string without striking the box.

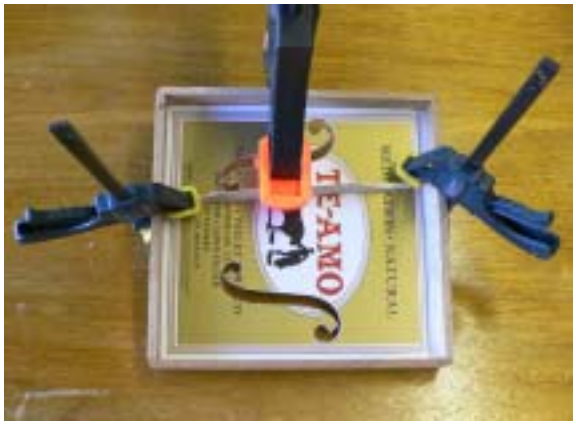
Attaching the box bottom.

After fine tuning the eventual fit of the box to the strut, the piece is sanded down to a fine grit for final finishing.

The box bottom is then affixed to the strut. I have experimented with several methods of attaching the box, and have settled on epoxy cement. This best allows me to transmit the string tension through the tail block to the strut, while leaving the sides and top of the box to vibrate freely. I usually use brass screws as indexing pins.

Cutting the ff holes.

While the box bottom cures, I spend time on the top. The ff holes are carefully positioned relative to the eventual position of the bridge. I also consider the graphic elements present on the box top. The ff holes are cut on a scroll saw. Final shaping is done with a knife and file. I usually use the graceful Stradivarious design.



Installing the bass bar.

The bass bar is glued to the underside of the top.

Volumes have been written on the correct size, shape, material, positioning, arch, etc. etc. of the bass bar in a classical violin. The purpose of the bass bar is to create an area of the top that will vibrate in relatively longer wavelengths, creating the lower tones and partials.

The bass bar is mounted on the bass side of the top, under the bass leg of the bridge in relatively the same position as prescribed for a standard violin. It is a thin triangle in cross-section and has scalloped ends. It extendss sound vibrations over a large section of the top.

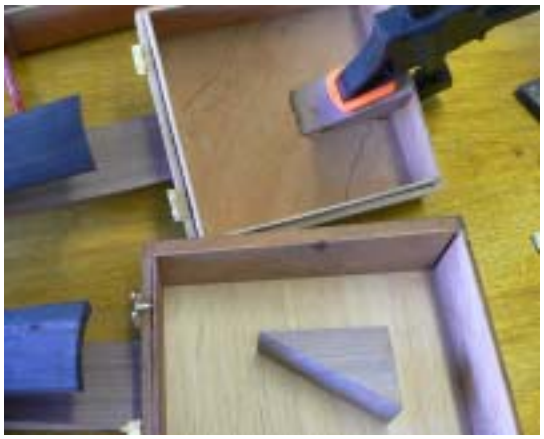
The sound post is positioned just behind the treble leg of the bridge. Its purpose is to promote a lateral rocking motion of the bridge which drives vibrations into the top, and through the bass leg of the bridge into the bass bar. Faster vibrations are promoted on the treble side of the body ahead of the sound post, and slower vibrations on the bass side.

Measuring for the sound post.

Just for fun, I leave the tops of these boxes functional. If you take the strings off, you can open the box and put cigars in it. To save the owner the problem of trying to reset the post after opening the body, I glue them in with hide glue.

By now the body bottom has cured, and it's time to install the tail block.

Here's what's going on: The strings will be attached to the tailpiece, which will attach to the tail pin, which is installed in a hole drilled through the lower edge of the body into the tail block. When the strings are tensioned, there will be tremendous pressure trying to lift up the tail pin towards the peg box. To resist this pressure, the tail block applies downward leverage on the strut through the bottom of the box. And that is where the strength lies. The strut takes the stress, and the box floats.



Installing the tail block.

The tail block must be of hard wood. I often use maple or walnut scraps left from roughing out the neck. The block is drilled then taper reamed to accept the tail pin.

Fitting the tuning pegs.

Now it's time to fit the tuning pegs.

High quality pegs and other fittings are readily available from luthier supply companies. In the early days, all of these would have been made by hand. Today, we can easily control the diameter and taper of the pegs and peg box to ensure accurate tuning. I leave ample material for future service as the pegs or peg box wear. I use Hindersine paste as a peg dressing.

It is important that the fingerboard be straight and have a consistent curve. At this point, I dress the fingerboard, using a sanding block and my reference gauges.

I have made a number of simple gauges for laying out and setting up fiddles. The simple stick shown is used during several stages of construction of each instrument. It is marked to fix the position of the nut (upper bridge), fingerboard, bridge, and the end of the body.

Also shown is a simple block of wood cut in the shape of the bridge. I use this to anticipate the position of the strings relative to the fingerboard and body.

At this stage I get a clear message whether this fiddle will "work" or not. I hope I haven't waited until now to figure that out!

Checking the string path and bridge position.

Next the nut (upper bridge) must be shaped and fitted. I usually leave this a little high, since I can easily remove material later, but cannot add any. The nut is held on with hide glue, so it can be easily popped off and replaced if necessary.

Fitting the nut.

Here is where I start noticing all the little sanding marks I haven't polished off. So begins a frantic effort to smooth the wood prior to finishing. I can't help it...I can hardly wait to see what this one will sound like.

I like to use tung oil as a finish, wiped on with a rag. This allows the natural beauty of the wood to show. It also doesn't leave any brush marks or dust spots. The final finish is a subdued satin texture which suits me fine.

This finish can be easily maintained with non-silicone furniture polish. If necessary, the owner can wipe on an additional coating of tung oil to renew the finish and hide scratches.

Truth or consequences! The bridge is measured and cut. The tailpiece is set up with fine tuners. The tail gut is installed in the tailpiece. The strings are put on.

I usually tension the strings only moderately and let the whole thing set over night. There are a lot of new parts that have to get used to each other.

In the morning, I tune that baby up and go at it. Those first double stops and poorly played tunes of which I am capable are very gratifying to me.

Bridge, strings and tailpiece are installed.

I am a very poor violin player. I have been playing since 5th grade, and clearly understand that others have more talent than me. However, I am in love with musical instruments. I know enough about playing to understand how these things are supposed to work. I will never thrill the crowd with my playing. If one of my instruments in the hands of a talented player does so, my task will have been worth while.

A NOTE on chin and shoulder rests: Although not shown in this booklet, each instrument is fitted with a chin rest. Shoulder rests are also available.

A NOTE on 5 string instruments: The 5th string is a "C" a fourth below the standard violin "G". I use fractional sized viola string sets with a standard violin "E" string. In addition to extending the instrument's range, this allows the player to play favorite "G" and "D" licks in the key of "C" in first position.

Here are some instruments I have made recently.

I have been collecting and repairing string band instruments since the mid 1970's. During the 80's and 90's I played in various folk blues and country groups on a variety of instruments. I have always been fascinated with the blend of art and science incorporated in a good hand made musical instrument.

I have been collecting pre-war Gibson instruments since the 70's, and also have a few early Martin, Washburn and similar period pieces. Necessity taught me maintenance and simple repairs on these fine old antiques. As time went on, I began assembling miscellaneous necks and bodies to make whimsical instruments. Out of this grew the idea to construct really good quality cigar box instruments. I have been building cigar box fiddles for several years now. The fiddle designs are my own ideas, based on traditional violin technology.

My shop is in Asheville, NC, USA. My instruments are available through a few select dealers and on the internet at www.CarolinaFiddle.com or www.StevenMiller.com\CarolinaFiddle\index.

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