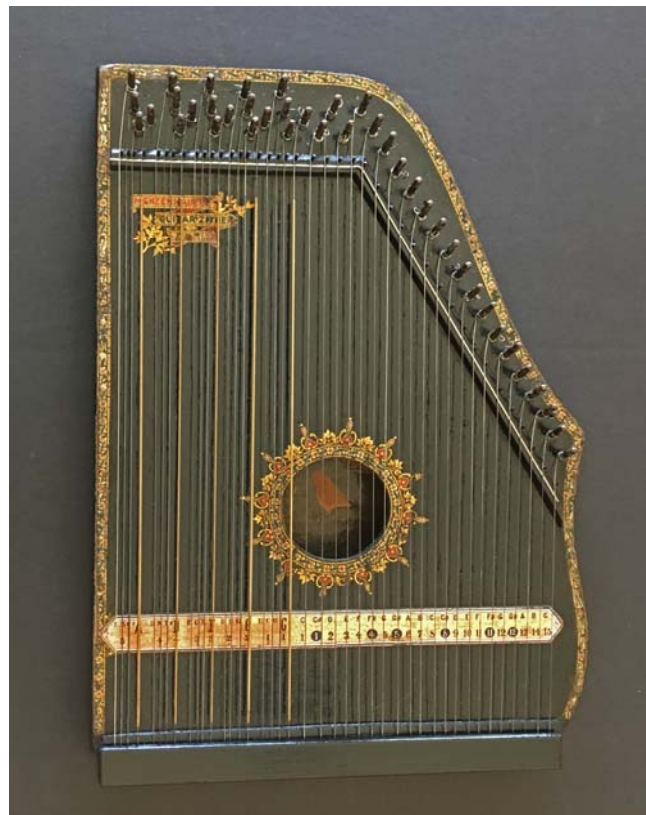

Ron Cook Studios

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Restoration of 1897-1904 Menzenhauer Guitar Zither Model 2 ½



Completed by Ron Cook

April 2018

For Melani Roewe

Background

Chord zithers, often called Guitar Zithers, were very popular from the late 1800s to the mid-1900s, and hundreds of thousands were made by several companies. Friederich Menzenhauer and Oscar Schmidt were major manufacturers from 1897 to 1900 and called their company the U.S. Guitar-Zither Co. In 1900, Menzenhauer sold his share to Oscar Schmidt, who continued making chord zithers, but his name later became synonymous with autoharps, which are still being made by the Oscar Schmidt Company today.

Chord zithers of various types were already being made in Europe when Friederich Menzenhauer was granted his first guitar zither patent on May 29, 1894. (See below.) Menzenhauer has been called the “father” of the guitar zither in the U.S. and produced, first on his own and then with Oscar Schmidt, thousands of instruments, some using his own label and many others for private labels like Sears and Montgomery Ward.

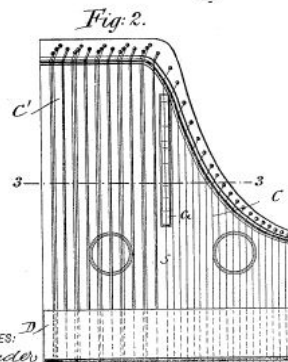
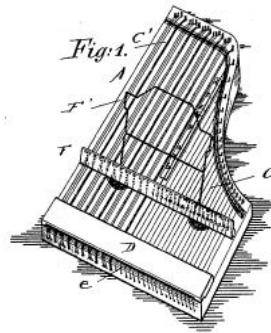
(No Model.)

2 Sheets—Sheet 1.

F. MENZENHAUER.
GUITAR ZITHER.

No. 520,651.

Patented May 29, 1894.



WITNESSES:
Charles Schroeder
Joseph Schaefer

INVENTOR
F. Menzenhauer
BY Joseph W. Ruggen
ATTORNEYS.

THE NATIONAL AUTOMATIC COPIER, WASHINGTON, D. C.

Even though Oscar Schmidt bought out Menzenhauer in 1900, both names still appeared on the instrument labels through 1904. The instrument I restored is called the Model 2 ½. It was a very popular model from around 1887 through the early 1900s. It has five chords, C, G, F, D, and A, and 21 melody strings.



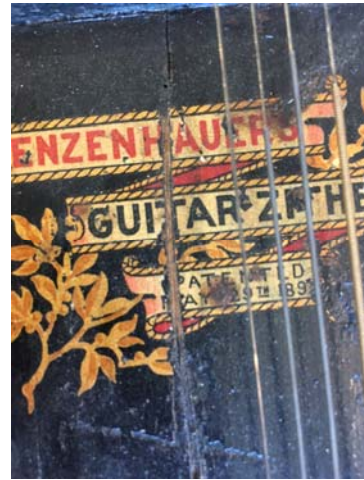
The label on the left is what remains in Melani's zither. The right label is on another Model 2 ½ I restored in 2017 showing the wording.

Valuation

Since so many chord zithers from several U.S. companies were sold not only door-to-door but also by mail order catalogs for almost 100 years, many have survived. Prices for these are relatively low compared to other stringed instruments. Occasionally, very well made and ornately decorated zithers from Germany, Austria, and other Eastern European countries come up for sale and fetch slightly higher prices. It's the more recent popularity of online auctions that has kept prices low for most of these instruments. I've seen prices range from as low as \$10 to over \$300, depending on condition and rarity of a model.

But, for many people, the value of an instrument is not monetary, but sentimental. To be able to have a restored piece of family history on display, to know its use, its background, and who played it, and to be able to pass it down to future generations, is priceless.

Day 1: Assessment



On the first day, I always look over an instrument to see how much work is needed to repair or restore it.

The only glue joint failure was on the top by the tuning pins. A shrinkage crack ran along the top by the sound hole to the tuning pins.

Note: Because old zithers were made with hide glue, joint failures are usually caused by dampness, making the hide glue become viscous again. With the strings still tight, the tension pulls parts of the top and frame right out of the softened glue, and when it dries again, there's no connection.

The pin guard covering the area where the strings attach to the hitch pins was not original. This one is made of two pieces of Douglas fir. The top part was loosely tacked to a section chiseled out over the hitch pins. One side had broken off.

Several previously large shrinkage cracks from decades ago had been filled with wood strips and partially touched up. The top was pitted and worn from over a century of playing.

Day 1: Assessment (continued)



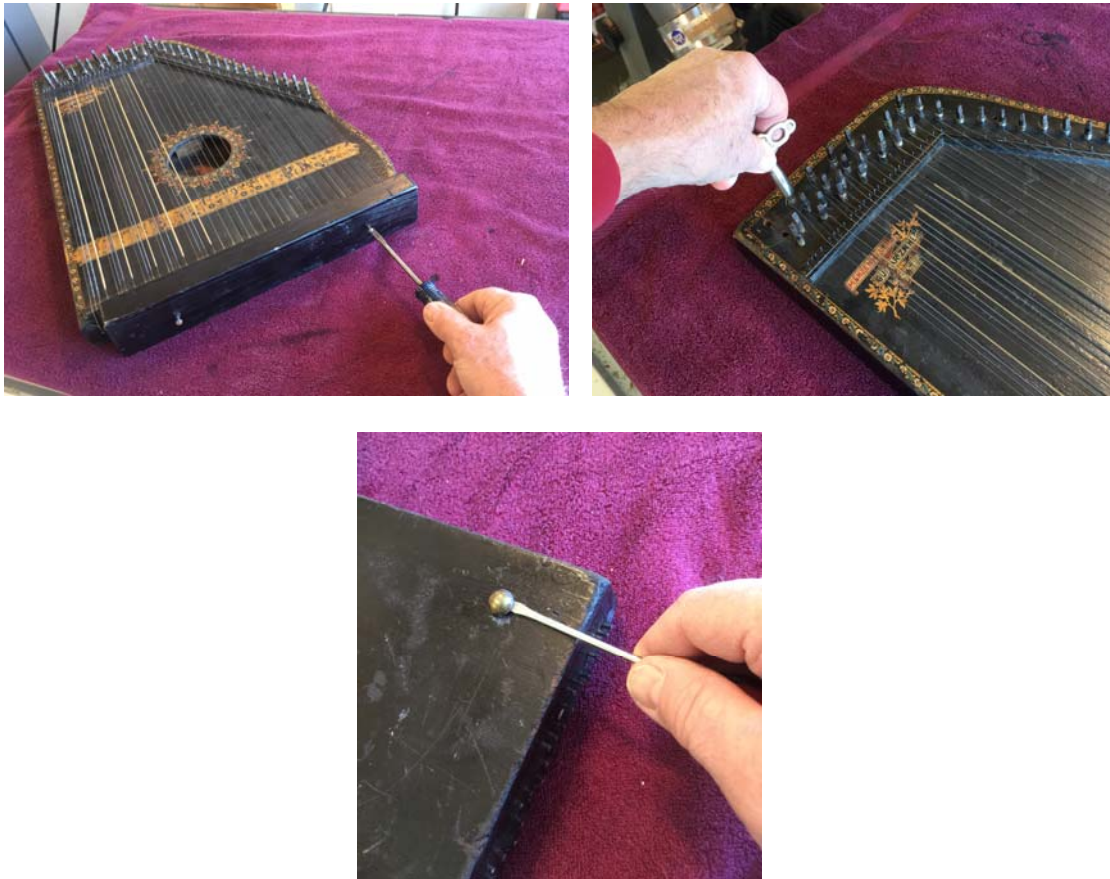
The entire back was very scratched and pitted, and you could see the joints of the three pieces of wood that made up the back. Fortunately, the joints had not shrunk so the wood had not split apart.

The note label along the lower part of the top was very scratched up, probably from years of playing with finger picks. Many notes and numbers were missing.

The sides, like the back, had several scratches and gouges. The tuning pins were corroded, but not too badly.

The strings were in good shape and looked as if they had been replaced. They were slightly corroded, but not brittle. I was able to salvage all but one as I removed them.

Days 2 & 3: Remove Strings and Hardware

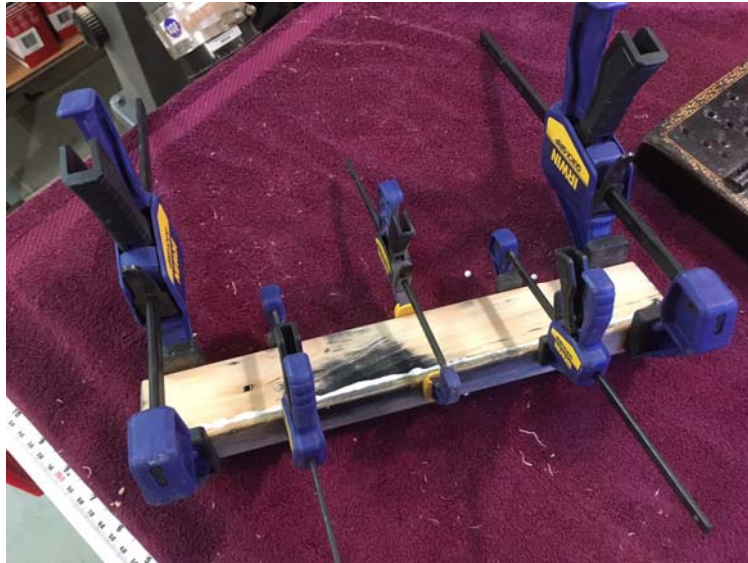


It took me two days to remove the strings, tuning pins, and bridge wires. The bridges have several small steel rods that sit in little grooves that the strings go over. Without these rods, the strings would cut through the wood bridges. (This is often the case on cheaper “children’s” zithers.) The rods, like the tuning pins, were corroded and needed cleaning.

I first removed the pin guard then started removing the strings. I labeled each of the five sets of chord strings, then every one of the single “harp” strings, so I’d know exactly where they go once the restoration was completed.

Finally, I removed the three feet on the back. I did that so I could later patch and paint the back.

Day 4: Pin Guard Repair



On this day I worked on the pin guard. As I mentioned before, this is not the original pin guard but a replacement someone made. The Douglas fir had not been sanded well and showed saw marks. The grain was also exposed. The wood was stained and not painted as the zither was.

I started by pulling the top off the guard and taking out the five wire nails that held it in place. I then sanded all the pieces, first on the belt sander to smooth the surface, then by hand with 100 grit sandpaper before gluing the pieces back together.

Once the glue dried, I finished sanding the guard with 120 down to 320 grit sandpaper to give it a smooth surface for painting.

Day 5: Repairing Failed Glue Joint



Because the frame was intact, I had no need to remove the top or back.

To repair the section of failed glue joint, I inserted a thin blade to clean out the space, then squeezed hide glue into it and clamped it overnight.

Day 6: Patching



With so many scratches and gouges, I needed to patch them up with a special ebony wood filler. This type of filler hardens in a few hours and sands like real wood. I patched the back first, and when it dried, patched the top and sides.

Day 7: Sanding the Patches



I let the filler harden overnight, then sanded the patches flat with 100 grit sandpaper.

Before painting, I continued sanding from 100 to 320 grit sandpaper.

Days 8 to 12: Painting Back, Sides, Pin Cover



In the next five days I applied several coats of gloss black enamel, sanding with 320 grit sandpaper between coats to keep each coat smooth.

Days 13 to 16: Painting the Top



The day after the back and sides were dry, I began the several day long process of touching up the top with the same glossy black enamel.

I had to use a much finer brush for the top, so I wouldn't accidentally paint over any of the decals. The logo decal next to the tuning pins and the decal around the sound hole were in pretty good condition. It was the long note decal that was in very bad shape.

I painted several coats of paint right up to the decals, then used an even finer brush to touch up black areas inside the decals.

Days 17 & 18: Creating New Note Label



I took some high-resolution photographs of the existing note label and uploaded them to my computer.

I used photo editing software to copy good notes and numbers to the parts of the label that were unreadable. I then worked with the color filters to match up the label as much as possible to the original.

When done, I printed it out on glossy photo paper, cut it out and prepared to glue it on to the zither.

Day 19: Gluing New Note Label



It turned out I had to print out a couple of versions of the note label to size it properly to fit over the old, damaged note label.

Where my gluing earlier was done with hide glue, which is what all these instruments were made with, I used a thin, white glue to fasten the new note label down, since this needed to be permanent.

Hide glue is reversible. When repairing stringed instrument and I need to remove a top or back, some heat and moisture makes hide glue viscous again, which allows the removal.

Days 20 & 21: Edge Touch-up



With most work finished on the body, except for final varnishing and polishing, I needed to touch up some of the decal binding that went around the top of the zither.

A couple of places had missing sections of the binding. With special permanent markers of different colors, I was able to first trace the “rope” binding part with a gold gilding pen. When that dried I used a super-fine-point black pen to mark the “ropes”

I used green, red, gold, and black to fill in the floral pattern. All these pens have very fine points.

Days 22 to 26: Varnishing



To protect the zither permanently, I used several coats of tung oil varnish. Each coat needed 24 hours to dry between each coat.

Tung oil is a natural oil from the tung tree that originated in China over a thousand years ago. It was originally used as waterproofing on boats and later as a coating on Oriental paper umbrellas. Pure tung oil is applied like linseed oil and can take several days to cure. Tung oil varnish has an alcohol drying agent so additional coats can be applied daily.

Before I applied the next coat, I rubbed it out with 0000 steel wool. This size of steel wool is super fine and only removes dust specks that often settles in wet finishes.

Day 27: Waxing



A few days after applying the varnish, I used a non-abrasive paste wax to not only protect the surfaces even more, but also to give the instrument a nice shine.

Day 28: Applying Wood Swelling Liquid



Removing tuning pins often leaves the holes a little oversized, so that when reinstalling the pins they will slip in too easily and not hold when the strings are tightened. Then, the pins would slip and not hold the correct note.

To remedy this, I use a special liquid that actually swells the wood, so the pins would be tight when reinstalled.

I fill each hole to the top and let the liquid soak in for 24 hours.

Days 29 & 30: Installing Feet and Tuning Pins



On these two days I reinstalled the brass feet and then the tuning pins.

Because of the number of tuning pins to reinstall, it took me two days. My wrists do give out after turning a half of the 41 tuning pins. I was able to finish up the next day, so I could start stringing.

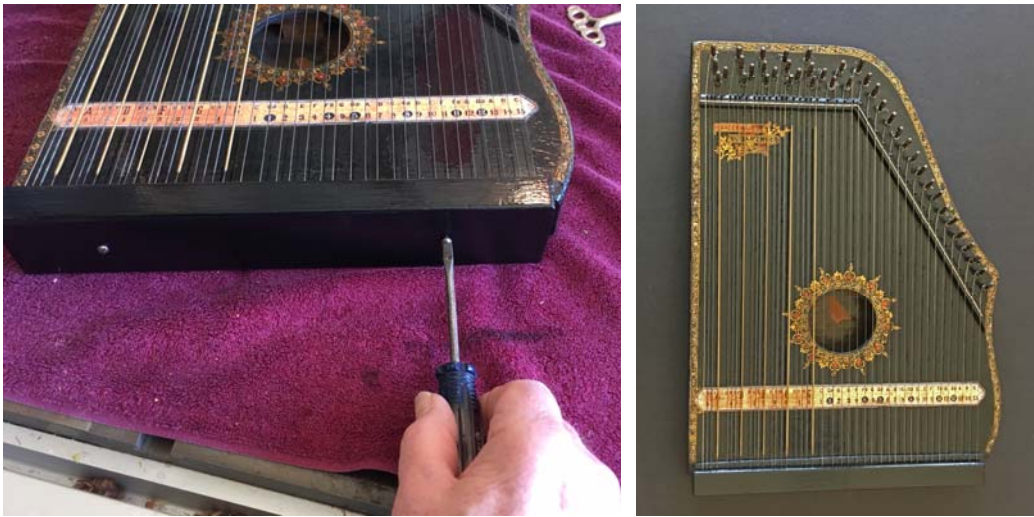
Days 31 & 32: Stringing



Stringing up the zither took another two days. Before putting each string on, I used 0000 steel wool to clean off the corrosion.

The first day I put the 20 chord strings back on. Only one string was broken and had to be replaced. I was able to salvage and use all 40 remaining strings.

Day 33: Completion



The last day was time to fasten up the hitch pin cover and tune up the zither. I have a digital tuner that attaches to a part of the instrument with a clip, usually clipped to one of the tuning pins. When a string is plucked, the vibration is picked up through the clip, which has a contact microphone on it, and displays on the tuner's screen. With 41 strings, this took a little time.

Like many zithers from this era, the tone is unique and very beautiful. I'm happy I was able to restore an instrument that is over 100 years old to be playable again. I'm sure that with continuous playing and good care, this Menzenhauer/Schmidt Guitar Zither should last another 100 years.