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# **Restoration of 1890-1900 Missouri “Dulcimer”**



**Completed by Ron Cook**

**February 2012**

**For Richard Latker**

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## Background

Unusual for an instrument of this age and type is knowing its provenance. Jeff Cole, the seller of this dulcimer sent Richard Latker the following information via e-mail:

“I have some more information for you. I spoke with my aunt, who is the last surviving member of the family.

My grandfather was Joseph Beryl Downing, married to Anna L. Huff in 1922. My grandmother's parents were Beryl Joseph Downing, married to Erma Violette Downing. They were married in the late 1800's or so, as my grandfather was born in 1905. The dulcimer was made by a man with the name of Violette, who was one of her uncles. She still says the dulcimer was made in the late 1800's, but maybe around 1900.

Here are some interesting facts. The dulcimer was passed from Erma Violette Downing to a guy named J.D. Violette before it was passed to my grandmother. Dr. Violette of Worth, Missouri, had three children in school in Worth in 1897, as posted in the local newspaper in that year. They came from Kentucky, and earlier than that from Virginia.

My aunt was born in 1928. The last time it was played was by J.D. Violette, who played it in the front yard of the family home in Worth, Missouri in the early 1930's -- no later than 1936. My aunt remembers the family gathering around a large rock in the front yard, and J.D. Violette would play the dulcimer for the family, his name is carved on that rock. She said my mother was correct. She never heard it played, as my mother was born in 1936.

J.D. Violette owned a hotel in Worth, Missouri, around the turn of the century. My aunt says you are correct -- it was played long and hard. J.D. Violette traveled by wagon around Northern Missouri from the turn of the century on, and played this dulcimer during those trips. He often exchanged accommodations for his family in the farms and homes in exchange for long nights playing the dulcimer.

There were three dulcimers made by the guy named Violette, the uncle of my great grandmother. Erma Violette Downing raised a girl, who was not a member of the family. One dulcimer was given to this girl who took it "back east" when she was around 18 years old. You now own the second dulcimer, and no one knows what happened to the third one.

My aunt told me to look in the box, as she remembers a piece of leather, made from a horse rein, that was used by J.D. Violette when he played the instrument. I told my aunt that I did not see a piece of leather in the case.

I hope this helps. Now we know the last name of the man who built the dulcimer, as well as the name of the last man to play it.”

This “dulcimer” has an interesting history, and one that raises questions about the type of dulcimer or dulcimer ancestor it is, or even where does this dulcimer sit in the instrument’s evolution?

In the book *Appalachian Dulcimer Traditions*, by Ralph Lee Smith, it is assumed this instrument is part of a small sub-family of dulcimer-like instruments called “scheitholt on a soundbox.” To me, that would give this a German heritage. From Jeff Cole’s letter, above, Violette moved to Missouri from Kentucky, which is most likely where he made his three instruments.

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The idea that this is a scheitholt is strengthened by the number of strings, string spacing, and the straight sides of the top section of the instrument. There are five strings, connecting to piano-size tuning pins (not the smaller and more common zither pins) that are spaced so the strings are evenly spaced when wound clockwise on the pins. This puts only one string down the frets. In this configuration, the instrument seems it would be played more like a zither than dulcimer, each string off the frets tuned differently. In other words, thumb pick the melody string and finger pick single or double notes on the other strings.

But, I'm not convinced of the scheitholt idea. The maker's name was Violette, a French name, not German. I feel there's more of a connection to the French Epinette des Vosges than scheitholt. Epinettes date from the 1700s, and most were made with five strings. By "guiding" the second string that's next to the frets to run down the frets creating a doubled melody string (tuned cc), and tuning the next three strings in thirds (say c, e, g), you get an Epinette des Vosges. I tried this when I finished the restoration, and it was truly a hauntingly beautiful sound.

Another theory of mine is that Violette remembered similar looking instruments from France, but while in Kentucky, where dulcimers around 1880 to 1900 were becoming numerous around the hills and hollers, he built his as dulcimers, but in a shape he remembered.

However, without knowing Violette's reason for the shape and number of strings, it's better to tune and play this instrument as a dulcimer. At least until any other historical information on the instrument or its maker surfaces.

In Smith's book, there are two pictures of instruments identical to Richard's: a recent photo of one purchased at auction in Kentucky, and an early photo from 1929 of F.S. Waits, of Frankfurt, Kentucky, playing the instrument. These appear to be the same instrument in both photos, since this is all occurring in Kentucky, where Violette lived before moving to Missouri. Jeff Cole said Violette made three instruments, and Richard's is the second. Maybe the one found in auction is the missing third, but there's probably no way to tell. When restoring Richard's, no signature, date, or numbering was found inside. No marks whatsoever.

Whatever type of instrument this was intended to be, it's still part of the "board zither" family. Types of board zithers come from many cultures around the world. They can be fretted, like the Mountain dulcimer, or its ancestors: humle (hommel), langelik, langspil, epinette des Vosges, and the scheitholt. Non-fretted board zithers include the Japanese koto and the Persian Qanun.

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## Valuation

It is nearly impossible to put a value on an instrument such as this one. Such a unique design and configuration, and its age, to me, makes this a historically valuable instrument, especially with its provenance. With no other similar instruments to compare its value to, one can only figure its value at its last sale price. However, when purchased, it was in bad, nearly unplayable shape. Now it is in a restored, very playable state, and, as such, should be worth 50% to 75% more than it was purchased for.

For some, the monetary value is unimportant. What is important is that a piece of American history has been restored to be as close to authentic as possible and can once more make music.

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## 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. I knew beforehand there would be a goodly amount of work to do, but when I opened the shipping box and removed the instrument I saw I underestimated the amount of time it would take to restore this to playability again.



There were several cracks in the top and some glue joints were failing. What became obvious the more I looked was the fact that this had been repaired and painted at some point in its life. If, as mentioned in the introduction, that was last played around 1936, and if it was first made in the late 1800s, it was probably “repaired” in the 1920s or early 1930s. Unfortunately, it looked like a lot of glue was forced into the joints because there were blobs of glue on a quite a bit of the surfaces. It was thickly painted at this time (the paint was over the glue), and painted in a dusty environment. There was a lot of grit, like sawdust or dirt, embedded in the paint, and brush strokes were visible.

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One of the first things I noticed was how much this instrument had been played. With no typical dulcimer strum hollow, the fingerboard's grain was "scooped" out and actually worn through at one point.

Both "S" shaped sound holes had breaks, a very common occurrence where the wood grain runs lengthwise across the S cut outs.

Fortunately, the staple-like frets were all still there. I'm not sure if the brass nut and bridge are original, in fact I have my doubts, but they work. The bridge was set at an angle with a shim piece forced in front of it to keep it in place. It looked like there used to be a wider bridge at one time. They were probably hard wood and wore out from all the playing this instrument has obviously experienced.



The five tuning pins are large piano pins, which is unusual, since most instruments at this time used zither (smaller) tuning pins, which were available through the Sears and Montgomery Wards catalogs in the late 1800s. These large piano pins could have also been catalog order, but I have yet to see a catalog description of them.

On the tailpiece, the original hitch pins were long gone and replaced with a mish-mash of screws.

In Jeff Cole's letter in the introduction, he mentioned a missing leather pick made from some reins. It was in the case, along with a hand-forged tuning key for the piano pins. There was also a very rustic-looking whittled noter.

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## Day 2: Beginning to Dismantle



On the second day, I began to dismantle the instrument and started on one side with a partially failed glue joint. Fortunately, all the glue mess was hide glue. With a little warm water applied to a small section at a time, I was able to slowly work pieces apart. This day, after nearly three hours of careful work, I removed one side piece and was able to look inside.

It was pretty dirty with dust bunnies and old spider cases. I was hoping to find a name or date penciled or inked inside, but with it being so dirty, I couldn't make anything out. I'd have to wait until the top was off, clean everything, and take another look for some kind of identification.

The construction of this instrument was rather sophisticated for the time and place. The shape and design is more complicated than a standard dulcimer. Also, the interior bracing showed a little understanding of stress engineering. Once I cleaned the surface of this one piece I removed and the wood started to show through, I could see that it is a lovely piece of nicely surfaced black walnut.

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### Day 3: More Side Removal



On the next work day I removed the tuning pins before continuing with the dismantling. Once the pins were off, I repeated the warm water regimen. By the end of the day the remaining sides on the lower section were off.

It was interesting to note the difference in some of the glue joints. Some that obviously were part of a quick repair, had huge blobs all over everything. Other interior joints, that weren't "repaired", exhibited clean assembly.

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## Day 4: Removing the Fingerboard



With more warm water, a pallet knife, and careful prodding for about two hours, I got the top off. I had to be extra careful with removing the fingerboard because the worn strum area was so very thin in places and there was a crack by the lower sound hole running along one edge.

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## Day 5: Removing the Top



Three hours into Day 5 I finally got the two thin top pieces off. Glue had been forced in along the joints so much that it took a lot of very careful prodding to remove them. I had a lot of glue removal and cleanup ahead of me.

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## Day 6: Completed Disassembly



Finally, on Day 6 I removed the last two fingerboard side pieces and the two side end blocks.

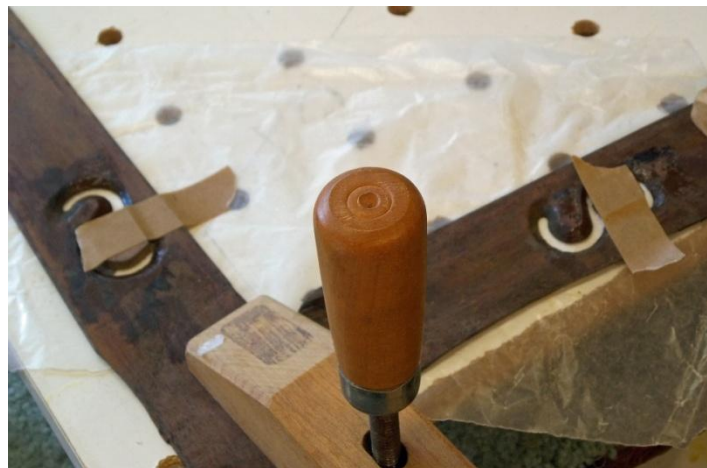
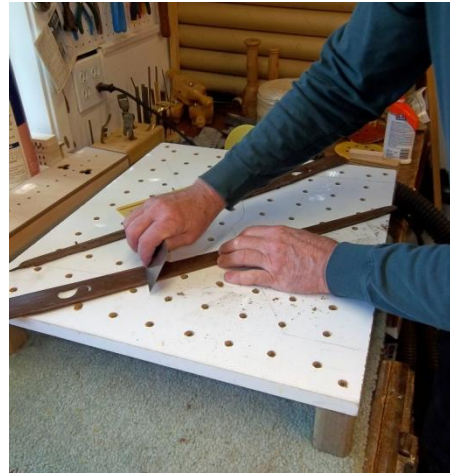
Now that the thick bottom was exposed, I was able to begin the removal of all the dirt, debris, and glue drips with a little warm water and a cabinet scraper. As I was doing this, I kept looking for any kind of identifying marks, but I was disappointed to find nothing on any of the pieces.

Before I finished working on this for the day, I wanted to fix the broken center brace. Titebond came out a few years ago with CA glues (super glues) especially formulated for working with wood. I've found them helpful for certain small repairs. Here I used a little bit of thick CA glue on both sides of the break, then sprayed a special activator on one side. This gives me around 10 seconds to place the pieces together and hold in place. Worked great.

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## Day 7: Repairing Cracks and Missing Pieces



This day I moved the two top pieces into my studio space to work on my custom gluing surface. I use this surface for gluing bookmatched sides for my instruments. Here I'm using it to glue and close up cracks in the tops.

It only takes a few hours in good weather for the glue to dry enough to unclamp. After I removed the clamps I continued using a cabinet scraper, 400 grit sandpaper, and 0000 steel wool to get the remaining hide glue mess off the outside and inside to the top pieces.

Once the top pieces were cleaned, I fabricated two small pieces out of black walnut and patched the broken sections on the "S" sound holes.

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## Day 8: Sound Hole Repairing



I found it interesting that the interior of the sound holes had a very even “whittled” bevel. On most dulcimers and dulcimer-type instruments I’ve worked on, the bevels (or rounded over edges) are on the top. On this instrument, the interior bevel gives the top of the sound holes a sharp edge. With the “peninsulas” of the “S” cross grain, this is a very weak spot and the reason they broke.

Because the “S’s” were weak spots, I strengthened them with small black walnut cleats.

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## Day 9: Repairing the Fingerboard



The fingerboard had quite a few cross-grain scratches on the surface, and, of course more of the same glue mess.

Once I got the glue off the fingerboard bottom, I began repairing the cracks and strengthening the underside of the worn strum area with black walnut cleats and patches. The bottom right photo shows the underside after clamp removal.

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## Day 10: Repairing the Base



On Day 10, I reglued the two side end blocks.

Before I glued them in, I had to do more cleaning of old hide glue clumps. Once cleaned, the pieces seemed to fit in quite nicely.

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## Day 11: Starting to Glue on Sides



Now that all the pieces were cleaned off and sanded, I could start reassembling the instrument. This would have to be done in several stages, due to the shape and style of this instrument.

I have around 50 spool clamps of various sizes that I use to glue tops and backs to the sides of instruments. These came in very handy for this one.



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## Day 12: Gluing More Side Pieces



On the front of the forward sides is a small, carved decorative piece (left photo). I found it easier to glue it directly to the side piece before gluing the side to the base. I used a cam clamp to squeeze the end of the side to the head piece.

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## Day 13: Glue in Repaired Brace



When the lower section's sides were in place I glued in the repaired center brace. It was a snug, perfect fit.

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## Day 14: Gluing Top Pieces



Gluing the lower section's top pieces was a real chore. Once the glue is applied, I have only around five minutes to set all the clamps. As you can see, there's around 30 spool clamps and a couple of cam clamps here.

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## Day 15: Gluing One Side of Top Section



Re-assembly was pretty straight forward up until now. The challenge at this point was to get the upper box sides perfectly straight.

Using a straight edge taped to the top of the lower box helped to line the first side up and glue it in place. Another challenge was to make sure the side was vertical and that the clamps didn't bend the thin side in or out or askew.

By using light clamping pressure, the gluing job turned out fine.

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## Day 16: Gluing Second Side of Top Section



On the next day I repeated the process for the second side of the top section. However, this one proved to be a little more problematic than the first side. The bottom of the side was straight where it was glued, but the top did bow out a little.

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## Day 17: Gluing Fingerboard



Because of the slight outward bow, the fingerboard didn't fit correctly. There was a small gap. If I clamped it to try to shut it, the clamp would also pull the other side in too far.

To compensate, I glued a small cross brace that straightened up the bowed side. Now the fingerboard fit perfectly.

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## Day 18: Repairing Ceramic “Strap” Button



This “dulcimer” came with a porcelain drawer pull screwed into the tail piece end. It gave the appearance of a large strap button.

I have the feeling that this instrument might have been dropped on its end once, breaking the knob. I looked all over for a similar new knob, but none were of this size.

The more I thought about it, I finally came up with an idea of using white epoxy putty to repair the original broken knob. After kneading the putty, I pressed it into place.

I put a machine screw through the hole and chucked it into my hand drill to use it like a lathe. I sanded down the rough putty to make the porcelain look unbroken.

In the meantime, one of my glue joints didn't adhere properly where the wood was very thin so I had to re-glue that one area.

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## Day 19: Miscellaneous Repairs



On Day 19, I started the day by applying a couple of layers of white enamel coating on the knob. A few places on the instrument's body still had chips and tiny pieces broken off. I made small replacement parts and glued them in place.

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## Day 20: Bridge and Tailpiece Repairs



When this instrument first arrived, I saw the bridge slot was fairly wide and a “wedge” had been forced in to hold the brass bridge in place. Checking the fret spacing for a 24 3/8” string length showed several of the frets were correctly spaced. A few were 1/8” to 1/4” off. Also, the 24 3/8” string length put the bridge right at the front of the large slot.

I took some scrap black walnut and filled in the slot and re-cut it to fit the brass bridge. In addition, where screws had been set in the tailpiece for the string ends, I removed the screws and filled the holes with black walnut plugs. When the glue dried, I redrilled for standard hitch pins.

Here’s a note about the bridge and nut. Because of the original width of the bridge slot, I’m sure this had a wooden bridge. Also, looking closely at the two similar instrument photos in Ralph Lee Smith’s *Appalachian Dulcimer Traditions* book, these both show wooden nuts and a wooden bridge on Josie Wiseman’s auction find.

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## Day 21: Continuing to Work on Fingerboard Scratches



I still wasn't satisfied with the look of the fingerboard's surface. Some cross-grain scratches were still showing, and I wanted to eliminate them.

I used a 1" flap sander attachment on my rotary carving tool, rotating at a slow speed, to work them out. I then went over the surface again with 0000 steel wool.

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## Days 22 to 24: Applying Walnut Gel Stain



Finishing, as usual, takes several days for each process.

To “antique” the sanded off wood so this wouldn’t look like a new instrument, I applied a black walnut gel stain. This thick stain gets applied with a foam brush or cloth pad, then after 10 minutes wiped off, leaving a nice coloring, but allowing the grain to show.

I applied two coats, waiting 24 hours between each coat.

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## Day 25: Checking Fret Spacing



When this instrument arrived, it had a string in place over the frets, so I was able to see and hear what the owner told me about the bad fret spacing and notes being off.

On this day I stuck a length of painter's tape alongside the frets and laid out the correct spacing for a  $24 \frac{3}{8}$ " string length.

In the photo you can see that several frets are right on or very close, but one of the higher frets was a full  $\frac{1}{4}$ " off. Out of the photo on the left side, a lower fret was a little over  $\frac{1}{8}$ " off. Both these frets, when played produced notes that played sharp.

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## Day 26: Move Fret and Clean Tuning Pins



Moving a fret was easier than I thought it would be. I pulled the fret “staple” straight out, then took a very small drill bit, smaller than the staple ends, and drilled holes where I inserted the staple ends in. I filled the old holes with walnut plugs.

This day I also cleaned the rust off of the piano tuning pins. After cleaning them, I applied a little wax on the top portions (not on the threads) to help prevent them from rusting again.

Getting back to Ralph Lee Smith’s photos of the similar instrument, I used a magnifying glass to get a closer look and noticed that the tuning “pegs” in both photos were large, flat-head wood screws. If the instrument I was working on had the same tuning configuration as that in the book at one time, then someone had replaced the screws with piano tuning pegs at some point. Also, the more I think about it, I feel the piano tuning pegs are not as old as the instrument.

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## Days 27 to 30: Applying Tung Oil Varnish



For most of the next week, I applied several coats of tung oil varnish. I use a low gloss varnish, since this type of instrument would usually not have a very shiny surface.

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## Day 31: Rub Out and Polish



Once the tung oil varnish dried, I applied some non-abrasive paste wax with 0000 steel wool. This was to remove any dust specks in the varnish. I then put on an additional coat of wax with a cotton pad.

This type of polish, Talk of the Town Lavender, must stay on for 5 to 10 minutes to haze over a little before buffing.

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## Day 32: A Little Work on the Case



I had noticed that the bottom of the case was well worn. The stain, like on the sides and top, was gone, and the bare wood was showing.

I thought it would be nice to stain the bottom to match the rest of the case, so after sanding it a little, applied some of the same gel stain I used on the instrument. It was a nice improvement.



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## Day 33: Installing Hardware



Today I only had a little time to work on the instrument, but I was able to install the tuning and hitch pins and the porcelain knob on the tail piece.

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## Day 34: Stringing



On the last day, I strung it up. I used a single 0.024 gauge bass string, and 0.012 gauge for the rest of the strings.

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## Day 34 (continued): Completion



When I first tuned this beautiful, unique instrument up, I tuned it to an Epinette des Vosges tuning: gg, g, e, C. It sounded wonderful. I then tuned it as a dulcimer: gg, g, c, C. It still sounded great.

This was one of the hardest restoration projects I've attempted in a long time. It took longer than I expected, but the result was worth it. This 100+ year old "dulcimer" should make music for another 100+ years.

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## **Addendum:**

After playing it a while, I found that another fret was causing a note to be slightly sharp. I decided it needed moving. I moved it and fixed the old holes, and now this instrument plays and sounds much better.

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