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Restoration of C 1926-1930 International Musical Corporation Ukelin



Completed by Ron Cook

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For Klint McKay

Background

The history of the Ukelin is hard to trace, since there were several instruments resembling the Ukelin that were produced in the 1920s. Paul F. Richter filed the first known Ukelin patent in December 1924. It was granted in April 1926. The Phonoharp Company, which merged with Oscar Schmidt, Inc. the same year, began producing Ukelins in 1926. However, an instrument greatly resembling the Ukelin had had its patent filed by John Large in 1923, a year before Richter filed his; yet that patent was not granted until after Richter's patent had already been given. Another similar instrument had a patent filed by Walter Schmidt in 1925. Because of these patents filed one after the other it is unclear who really invented the first Ukelin.

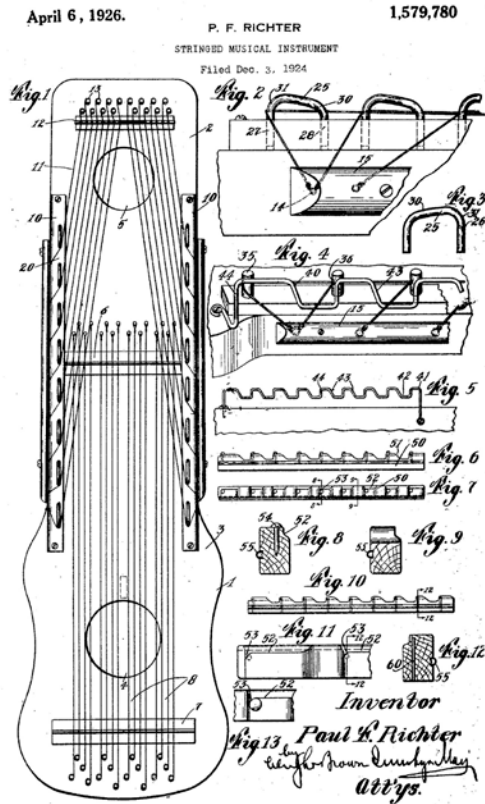
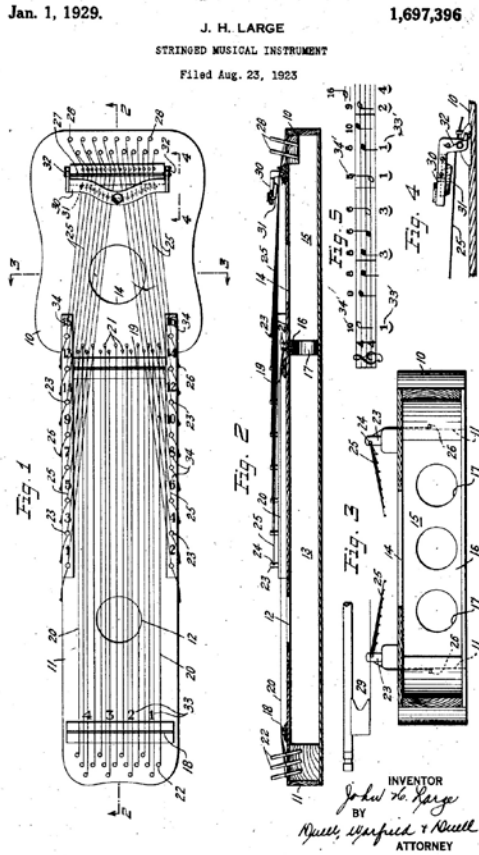
Violinist Henry Charles Marx was one of the first to sell what he called a violin-uke, among many other instruments he created to be manufactured by his company Marxochime Colony. He is thought to be the first to manufacture the instrument but soon had his design copied by International Music Company, who sold it under the name Ukelin. The Phonoharp Company sold Richter's design before merging with Oscar Schmidt in 1926. Marxochime and Oscar Schmidt International, Inc. sold their instruments door-to-door through traveling salesmen, often to poor rural families. The salesmen would purchase the instruments from the company, then sell them at an inflated price, often on a payment plan. These prices increased as the economy grew stronger after the Depression. The customers were sometimes told that they were buying the instrument at a reduced price compared to a music store, but there is no evidence that they were ever sold in music stores. The instruments were usually sold for \$35-\$40.

The Ukelin has sixteen melody strings and sixteen bass strings, divided into groups of four for playing accompanying chords. There is one large bass string in each group and three smaller chord strings. The Ukelin is placed on the table in front of the player. The melody strings are played with a bow in the right hand, and the bass strings are plucked or strummed with the fingernails of the left hand or with a pick. The Ukelin is tuned to a C major scale, and unless tuned to include them, is unable to play chromatic notes; therefore, it is limited in what it can play. For ease of playing for amateurs, the strings are given numbers, and the booklets that were sold with the Ukelin would give these numbers, a tablature notation, instead of notes on a staff, for playing simple songs.

Ukelins were sold to people under the impression that the instrument was easy to play, but this was not the case. They were also quite limited as to what they were capable of playing, because they were designed as diatonic instruments. As a result, many instruments were returned to the manufacturers, who ended up with piles of instruments that they couldn't sell. Salesmen misrepresented the instruments to customers, who felt as if they had been tricked into buying a worthless instrument. Oscar Schmidt, Inc. stopped producing the Ukelin in 1964 after the new owner, Glen Peterson, discovered the shady business practices of some of his salesmen. Between instrument returns and a declining interest in musical instruments due to the advent of television as a form of family entertainment, Marxochime was no longer able to produce the violin-uke and halted production in 1972.

The above information is from Wikipedia.

Below are the John Large (J. H. Large) and P. F. Richter patent drawings. The Richter design is the one that became the Ukelin copied and made by the International Music Company. Notice the difference in the direction of the chord and bowed strings on each drawing. The J. H. Large design was never produced in this configuration.



Original label from restored Ukelin, circa 1926-1930.

Valuation

Many Ukelins are still in existence. However, most are from later productions that had different labels and cheaper construction methods. Very few of the earliest have survived. Fortunately, the one I recently restored is from the late 1920s.

As for valuation, I've seen auction sites where Ukelins have gone for as low as \$20, in very bad shape, to as high as \$200+, in much better shape.

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



This lovely old Ukelin appears to have been played often. However, it also appears to have been stored away in an inhospitable environment for many years. It's possible it was kept in a damp location, like a basement or garage and then dried out at other times. This causes the hide glue that this instrument was constructed with to lose its effectiveness and for pieces to come apart, as you can see in the bottom two photos.

Note that most stringed instruments were made with hide glue. Joint failures are usually caused by dampness, which makes 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.

Also note the two small holes with metal grommets next to the smaller upper sound hole. This was for a music holder. Nearly all zithers and zither-style instruments had these holes for music holders. Out of all the zithers I've restored, none of these holders have survived.

Day 1: Assessment (Continued)



Hot and cold environments can also make wood expand or shrink, which causes cracks to appear in the top and back surfaces.

This type of instrument was usually played on a table. Newer Ukelins, made in the 1940s and 1950s, have feet on them to protect the back from scratches. This older Ukelin, obviously one of the early designs, did not have feet and the entire bottom rested on a playing surface. The bottom of this one is well worn with a few deep scratches and chipped edges. Some scratches may be from playing, others may be from improper storage.

Day 2: Remove Strings and Hardware



On the second day, I removed the metal side pin covers so I could 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 very corroded and needed cleaning.

It should be noted that later Ukelin models had large wooden side pin covers. My own Ukelin is from the period after World War II (1946-1956). Mine is not constructed as well as the early Ukelins.

Days 3 & 4: Removing the Back



Because of the cracks and loose glue joints, I had to remove the back to repair them.

I use a combination of a water spritzer and hot knife to “cut” through the joint all the way around the instrument. Several places were already open, but it still took most of two days to gently remove the back without causing it to crack more.

Once the back was off, I noticed the upper pin block (for the bowed strings) was completely loose and lifted right off the frame. What little glue that remained on the wood was highly crystallized.

Days 5 & 6: Gluing Warped Ends



Because of the string tension, both top ends of the Ukulele had warped. The next two days I used hide glue and clamped the areas, letting them dry overnight.

Hide glue has a long set time, usually over 30 minutes before hardening. Hide glue attaches through evaporation. The moisture content in hide glue dries and the glue adheres. Where I work on my instruments in Santa Cruz, the Summer fog makes hide glue take longer to set.

Day 7: Closing Up the Top Crack



Shrinkage cracks are often the hardest to close up, and sometimes can't be totally closed. This one top crack, from the lower sound hole to the middle hitch pin block was one such crack.

I was able to nearly close it fully by first injecting white glue into the crack and then using a bar clamp on the sides to "pinch" it shut.

Day 8: Stabilize Top Crack



One of my restoring/repairing techniques is to glue thin hardwood “cleats” along the crack with the wood grain running perpendicular to the top’s wood grain.

Again, I used white glue to attach the cleats to the top’s underside.

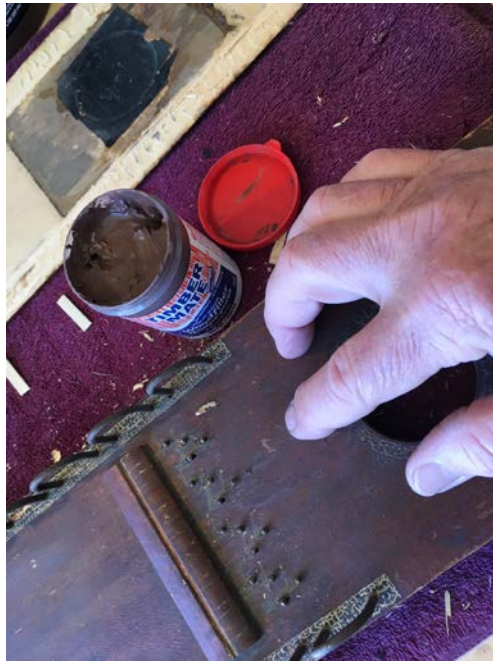
Day 9: Repairing Back Cracks



With the back removed I was able to glue the back crack completely closed.

The orange clamps are specially made to tighten as they are turned. I often use these when gluing two pieces of thin wood together for the instruments I make.

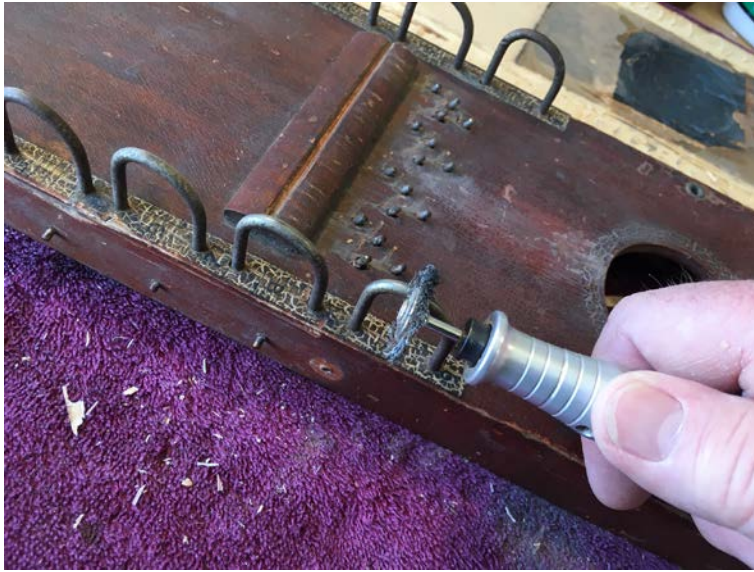
Day 10: Patching



Because the top shrinkage crack couldn't be fully closed, I used a special dark-wood-colored filler, which will make the crack disappear when the finish is applied.

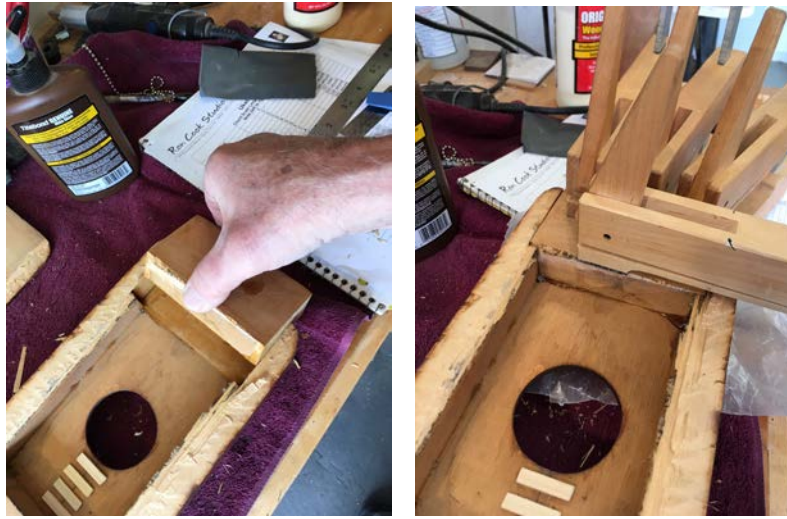
Most wood fillers you purchase at hardware stores don't harden when dry and don't sand well. The filler I use hardens like the wood itself and sands easily.

Day 11: Cleaning Stationary Hardware



All the hard metal “loops” that the bowed strings go over were very corroded. I used a small wire brush on a rotary carving tool to clean and polish the metal surfaces. I had to be extremely careful not to let the wire brush slip and hit the decal under the metal loops.

Day 12: Regluing Pin Block



Today it was time to reglue the loose tuning pin block. Being part of the main Ukulele frame, I had to use hide glue. Also, I had to make sure the tuning pin holes through the top matched those on the pin block.

Day 13: Clean and Paint Pin Covers



The metal pin covers were also rusty and corroded. Again using the rotary carving tool with the wire brush, I cleaned the surfaces.

Once clean, I recoated them with several coats of a black semi-gloss enamel.

Day 14: Gluing the Back



With all the cracks repaired and the frame once again stable, it was time to glue the back onto the frame. This process took several hours to complete.

Again, I used hide glue to reattach the back. As you can see in the right photo, it takes many clamps.

Day 15: Scraping Off Glue



A few days later, after taking all the clamps off, I had to scrape off glue that had squeezed out during the clamping process. This is done with a standard cabinet scraper.

Scraping the sides also removes quite a bit of the old finish. Later, after sanding the surfaces, I'll be putting on a new finish.

Days 16 & 17: Sanding and Prep for Finish



It took a couple of days to sand all the surfaces. I especially wanted to sand the back a little more to remove the deep scratches as much as possible.

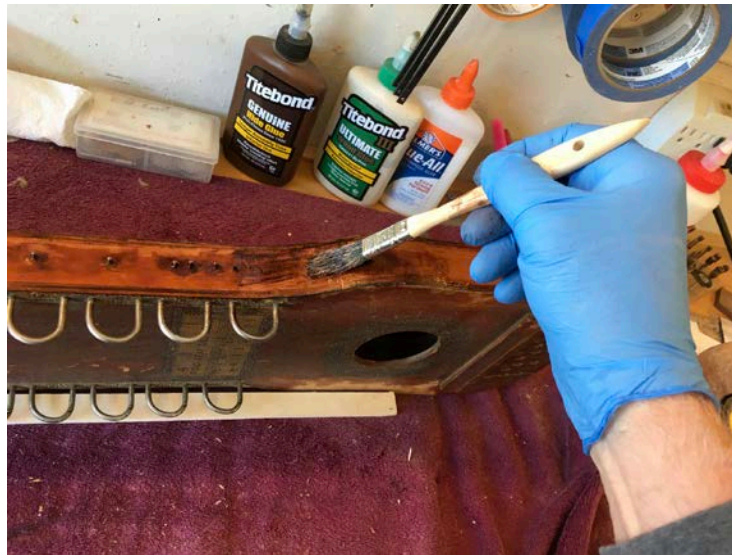
Days 18 to 20: First Coats of Stain



Originally, this Ukulele had a dark cherry stain that had faded. I would have to put several coats of stain on it to match the original.

I started with the back, then when dry, turned it over and did the front.

Days 21 & 22: Staining Sides



It took two more days to do the sides, one side at a time.

Days 23 to 27: Applying Three Coats of Stain



Over the next several days, I applied three more coats of stain. When doing the top, I had to constantly be careful not to get any stain on the decals.

Day 28: Cleaning Hardware



This was the day I had to clean the rest of the hardware. I actually had to go through three wire brushes on my rotary carving tool. They wear down quickly when removing so much corrosion on small round tuning pins.

Day 29: Polishing



With the finish completely dry, I polished the instrument with a clear paste wax. This adds a little more protection to the finish.

Day 30: Swelling the Wood



Before reinstalling the tuning pegs, I often drip a special wood swelling liquid into the tuning pin holes. This liquid makes the wood expand a little, making for a tighter fit for the tuning pins.

Day 31: Reinstalling Tuning Pins



After the swelling liquid dried, it was time to reinstall the tuning pins.

Days 32 to 34: Stringing



Restringing took a few days to complete. All the installing and tuning takes a lot out of my wrist, so I had to take breaks often. Also, I needed to order more strings of certain gauges to complete the stringing.

For shipping back to the owner, I have to loosen the strings. Strings, being metal, expand and contract with heat and cold. Shipping with tight strings could damage the instrument before it arrives.

Day 35: Installing Pin Covers



Finally, with all the strings in place, and the bowed strings set in the notches in the metal loops, it was time to reinstall the side pin covers.

Day 36: Completion



As I mentioned earlier, Ukelins from the late 1920s and 1930s, are very rare. I'm happy to have brought this early example of the instrument back to life and totally playable. All that is needed now is a violin bow.

This instrument is around 90 years old, and should now last another 90 years.

Ukelin Tuning and String Gauges

Chord	Note (left to right)	Size/Type
C 1	E	.020 plain
	C	.030 wound
	G	.038 wound
	C	.071 wound
G 2	D	.020 plain
	B	.034 wound
	G	.039 wound
	G	.085 wound
F 3	F	.021 plain
	C	.030 wound
	A	.036 wound
	F	.052 wound
D 4	F#	.022 plain
	D	.024 wound
	A	.036 wound
	D	.064 wound

Bowed Melody Strings-Left Side

String Number & Note	Size/Type
1-C	.028
3-E	.026
5-G	.024
7-B	.022
9-D	.020
11-F	.018
13-A	.016
15-C	.014

Bowed Melody Strings-Right Side

String Number & Note	Size/Type
2-D	.028
4-F	.026
6-A	.024
8-C	.022
10-E	.020
12-G	.018
14-B	.016
16-D	.014

Music, Directions, and Guaranty



I found this photo of original Ukelin music and papers. The Directions and Guaranty would have come with the instrument. As I understand from some of my research, the music was often sold separately. These are sometimes available through auction sites.