THE GLASS HARMONICA

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You are playing a name game, the category instruments. A piano, a violin, a guitar, or drums are usually some of the examples that come to mind when someone asks you to name an instrument. This game is fun, so as you sip on your glass of wine and continue to think of other possible instruments you can name, you put your glass down. As you place it down you spill a little. That splash gets on your finger and your hand just so happens to strike the rim of the glass in just the right way. Suddenly you hear a beautiful, almost harp like sound. You realize that you were holding an instrument in your hand the entire time! Since the mid-1700’s wine glasses have been used as musical instruments¹. Just imagine the steady vibrations of wine glasses so loud and beautiful they could be compared to large church bells². That is the sound that captivated Benjamin Franklin inspiring him to build the glass harmonica. The glass harmonica took glass acoustics to another level. Benjamin Franklin created an instrument that was so unique it not only grew in popularity all over Europe, it captured the attention of great composers however ultimately the instrument resulted in psychological effects so intense society grew to fear it.


In May of the year 1761, Benjamin Franklin completed the glass harmonica\(^3\). That was not the original name he had chosen for the instrument. It was changed almost immediately after he invented it\(^4\). The name he had originally given his new instrument was the glass “armonica,” however the name was later changed to the glass harmonica, now adding an association to the word “harmony”\(^5\). That would make sense given the fact that the instrument had such a beautiful and harmonious sound. It is also said that the name change was due the letter “h” being added in as a compliment to the Italian language\(^6\). Regardless of the reason for the name change, it had no significant impact on the instrument.

The structure of the glass harmonica is a unique one. When Benjamin Franklin saw the glasses filled with water being played in Europe by E. H. Daval in Cambridge, he knew he wanted to create something that would have the sounds that Daval was producing, however would not be as complicated to operate\(^7\). He loved the idea of the musical glasses and he was determined to replicate and enhance what he had heard and so he set out a plan. It is no secret that an instrument that is out of tune does not sound very pleasant. It is difficult to get the sound that you are looking for. Benjamin Franklin was no stranger to that concept. So, he knew that he would need perfectly tuned glasses in order to achieve that\(^8\). He had to reconstruct a completely new instrument that looked nothing like the layout of the musical glasses. He began by removing

\(^4\) Ibid.
\(^5\) Ibid.
\(^7\) Rossing, “Acoustics of the Glass Harmonica”, 1106
\(^8\) Finkenbeiner and Meyer, "The Glass Harmonica: A Return from Obscurity," 139.
the stems of the glasses and placing a hole a in the center, so that it would allow them to be placed on a spindle between one another. They had corks placed in between them to ensure they did not touch and then the axle was placed in a wooden horizontal case that had a foot treadle attached.

How I could describe the glass armonica by looking at photos, in terms of instruments we are familiar with today, the build looks very similar to a piano. The way the glasses are placed they almost look like keys, and the treadle reminds me of the petal of a piano. However, they have very significant differences. Just to name a few examples the piano has a row of keys, is not made of glass and consist of more parts than the glass harmonica. On the glass harmonica “the rims of different glasses were painted to indicate different notes, and later damp sponges were added to keep the rims of the glasses moist.” Benjamin Franklin used sponges because the cups were no longer upright holding water so it is logical that some moisture would still be needed. However the sponges were not necessary because according to Gerhard Finkenbeiner and Vera Meyer, “one would only need to touch the glass rims as they passed under one’s wet fingers, and the instrument could be played much more like a piano.”

The glass harmonica became extremely popular in Europe and that lasted for about forty years. It made its debut in England through Marianne Davies, who was fortunate enough to receive one from Benjamin Franklin himself. She learned to play it and along with the singing

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9 Ibid
11 Ibid
13 Ibid
of her sister and she began to perform it in public January 1762.\textsuperscript{15} It can only be imagined the impact she must have made during her performances in public. She was brining a sound to England that no one had really heard before. “The glass harmonica is perhaps the only instrument of any importance to have been introduced to the continent of Europe by a native of England.”\textsuperscript{16} The wine glasses had produced a similar still beautiful sound but the glass harmonica was much more impactful. Marianne Davies became a success with the glass harmonica and traveled all over Europe to places such Paris, Florence, Milan, Turin and Vienna, so it comes as no surprise that she was one of the courts favorites.\textsuperscript{17} According to the journal written by King, the first time there may have been a link a between Marianne and the Mozart family was in Milan 1771, where in a letter from Leopold Mozart to his wife he states, “you will surely remember Miss Davies with her harmonica.”\textsuperscript{18} That letter may be evidence that the Mozart family had in fact enjoyed one of Marianne shows in past, therefore only reinforcing how talented she was with the glass harmonica. Marianne Davies truly was a big name that helped make the popularity of the glass harmonica and many more would jump on the trend.

Many well-known composers wrote works for the glass harmonica. It was not until Wolfgang Mozart heard Marianne Kirchgassner, who was a blind glass harmonica player, that he was inspired to compose a piece specifically for the instrument.\textsuperscript{19} He wrote, "Adagio and Rondo for Glass Harmonica, Flute, Oboe, Viola and Cello" and "Adagio Solo for the Glass Harmonica".

\textsuperscript{15} Ibid
\textsuperscript{17} Ibid, 109
\textsuperscript{18} Ibid
\textsuperscript{19} Gallo and Finger. “The Power of a Musical Instrument.” 333
Harmonica” specifically for her.\textsuperscript{20} Other famous composers were found to have written music for the glass harmonica, in fact they have found over 300 original compositions not limited Ludwig van Beethoven.\textsuperscript{21} It was magnetic and great musicians were falling in love with the sounds of this instrument. It was not until one particular individual took a special interest in the glass harmonica, that would change the fate of this instrument when it came to how society viewed this instrument. That individual was Franz Anton Mesmer.

Franz Anton Mesmer was French psychologist who had a love for the glass harmonica.\textsuperscript{22} He played the glass harmonica and according to Gallo and Finger, “Mesmer loved to play his armonica after dinner and became so attached to it he even requested its music on his deathbed.”\textsuperscript{23} Mesmer conducted a study called animal magnetism through the body where he used the sounds of the glass harmonica to propagating mystical fluid to promote healing through the body.\textsuperscript{24} In reality he was putting people under hypnosis and in daze. He was later found as a fraud. The issue with all of this is people were legitimately having health problems with the instrument, so Mesmer only enforced the problems the instrument was causing. People were associating fainting spells, convulsions and even death to the glass harmonica.\textsuperscript{25} “The instrument's link with mesmerism unquestionably facilitated these associations, especially after animal magnetism had been stigmatized by the authority of Franklin and the Royal Commission.”\textsuperscript{26} It is sad to say that Benjamin Franklin was part of the downfall of his own
creation.\textsuperscript{27} However it was part of his responsibility being in Royal Commission to stop Mesmer from continuing to fraud people.

The glass harmonica was believed to cause insanity and the sad truth is that those who once loved the instrument so much now feared to touch it, let alone listen to it. You must question however if it the psychological effects people were having were in fact related to Mesmer and the glass harmonica? Or, perhaps was it the theory that the lead in the type of glass used that caused lead poisoning was making people go insane?\textsuperscript{28} Regardless of the reason, it is unfortunate that the instrument Benjamin Franklin created, that was once so praised would have a fallout the way that it did. Although a few glass harmonica players still exist today, the glass harmonica is mostly admired now through the displays inside museums.

\begin{footnotesize}
\begin{enumerate}
\item Ibid
\item Finkenbeiner and Meyer, “The Glass, Harmonica: A Return from Obscurity,” 140
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Works Cited

Finkenbeiner, Gerhard and Vera Meyer. "The Glass Harmonica: A Return from Obscurity."

