

About our Glass Harmonicas

Malchow Glass is carrying forward the tradition of glass harmonica building as patented by German-born Gerhard Finkenbeiner. In the 1980s, Gerhard revived interest in this Ben Franklin invention when he donated one to a WGBH Auction. Gerhard had put a few of his own touches on the instrument. As he explained, he made “a few changes based on modern glass manufacturing capabilities and technologies.” Two of the major changes were making the bowls out of pure quartz crystal, and using gold to mark the sharps/flats on the instrument.

Malchow Glass continues to build glass harmonicas using pure quartz crystal, in ranges from 25 to 42 notes (two octaves to nearly four octaves).

Gerhard Finkenbeiner

In 1960, Gerhard was apprenticing under a master glass blower in France. During this time, he saw one of the original Ben Franklin glass harmonicas in a Paris museum. Gerhard was a musician and a lover of classical music who was learning to work with glass, so he became entranced by the instrument and never forgot it.

In 1981, Gerhard opened his own scientific glassblowing shop in Waltham, Massachusetts. He soon carved out time to follow his dream of making glass harmonicas. Gerhard made cups out of different types of glass, to compare the quality of the sound they made. He experimented with soda-lime glass, borosilicate glass (pyrex), lead glass, and quartz crystal. Gerhard concluded that quartz had a superior resonance, by far, and he began to create glass harmonicas out of quartz.

Getting the first instrument together was a challenge because the cups are hand blown, and no two are identical. The tone a cup makes depends on a number of factors, including size and wall thickness. Gerhard set about building a large inventory of cups in all sizes, so that he would have enough cups from which to select. He completed his first prototype in 1981, and by 1986 was receiving about one order per month.

Fun Fact

The glass harmonica crafters from Malchow Glass grew up down the street from Gerhard and were friends with his three sons. Years later, they learned how to build glass harmonicas from Gerhard at his Waltham shop.

A Brief History of the Glass Harmonica

When Benjamin Franklin was an ambassador to Europe, the musical glasses were a popular musical instrument. A set of wine glasses were affixed to a board and filled with varying amounts of water to achieve different tones. The rims were played with wet fingers. Ben Franklin attended a musical glasses concert and realized that there was a more efficient way to arrange the glasses. With his invention, a person could more easily play multiple notes, including chords.

Ben Franklin hired glassblowers to make lead glass bowls of varying sizes, which were to be nested together in an arrangement similar to a piano keyboard. Holes were cut in the bottoms and corks with holes were used to hold the cups onto an iron rod. The rod was rotated using a foot pedal.

Franklin found that for every 100 cups made, only one would meet the requirements for size and tone. In 1761, the first instrument was completed. It was comprised of 48 cups, or 4 octaves. He named it the "Armonica", from the Italian word for harmony.

Ben Franklin also had an Armonica made for himself. Franklin used paint to mark the various notes. He used white paints on the sharps/flats and the colors of the rainbow for the other notes. It was housed in a beautiful mahogany case. Franklin performed on his Armonica and one of his nieces was considered a virtuoso player. Franklin's original instrument resides in the Philadelphia Museum.

References

Finkenbeiner, G., & Meyer, V. (1987). The glass harmonica: a return from obscurity, *Leonardo*, 20, 139—142.

Krasner, J. (1986, January 26). Glass shop brings back rare musical instrument. *The Boston Herald, Business & Finance*, p. 40.