

Curator's Choice

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Mysterious Round Harmonica?

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Conservator

This mystery artifact (Figure 1) recently underwent conservation treatment that revealed some vital information! This artifact is part of the William Paca house collection from Annapolis. William Paca was a signatory of the Declaration of Independence and the third governor of Maryland. This artifact was lost far after Paca's time, however, as aluminum alloy did not become a popular material until the 20th century.

Originally listed as two disc fragments that mend, careful cleaning under the microscope revealed a curious feature. A copper alloy tongue is riveted to one of the fragments. When the two fragments are aligned along their narrow break edge, a rectangular slot in the aluminum appears just below the copper alloy tongue. The tongue is broken, but looks similar to copper alloy components found inside free reed aerophone instruments. This instrument family includes harmonicas, accordions, and hand organs.

Harmonicas and their preservation have been a topic of discussion in previous Curator's Choice issues (<https://jefpat.maryland.gov/Pages/mac-lab/curators-choice/2013-curators-choice/2013-07-fourth-of-july-for-the-harmonica.aspx> and <https://jefpat.maryland.gov/Pages/mac-lab/curators-choice/2024-curators-choice/Strange-Voices.aspx>), and have been found in several other excavations across the state, perhaps demonstrating their popularity. Another free-reed instrument plate was also found at the William Paca house and received conservation treatment alongside the mystery artifact (Figure 2).

Free reed aerophones make a sound when air is passed over a thin reed, causing it to vibrate over an opening. In harmonicas, for example, reeds of several lengths



Figure 2: Possible harmonica plate, 18AP01/107, rectangular with two slots and reed fragments

are mounted to a metal reed plate, and each reed/opening pairing creates a different musical note. Reed plates for harmonicas and hand-held organs tend to be arranged in a rectangular plate format, as shown in Figure 2.

So why is this mysterious object round?

One possibility is that this is part of a pitch pipe. Chromatic pitch pipes are harmonicas with one full scale of notes arranged radially. This allows for one note to be played at a time to tune instruments or provide a starting note for acapella music. The inside of this modern pitch pipe (Figures 3 and 4) shows 13 reeds for each half step note that covers 1 full scale. However our mystery object appears to only have one reed on the extant side, with a wide opening positioned opposite this reed. Perhaps there was another section of the disk with other reeds or another method to adjust the pitch is lost.

Another possibility is this is part of a noise-making toy, such as that presented in this 1889 patent (Brown 1889). The toy features a round disc with three reeds

arranged around a central pivot that whistles when the wheel is in motion (Figure 5). It's unclear how common these toys may have been in the early 20th century.

References

Anderson, Axel William. 1908. Harmonica. US Patent 904,914, filed August 13, 1907, and issued November 24, 1908.

Brown, William Henry. 1889. Musical Pneumatic Toy. US Patent 398,697, filed November 15, 1888 and issued February 26, 1889.



Figure 1: Mystery artifact, 18AP01/123



Figure 3: Exterior of a modern chromatic pitch pipe, with notes marked on the case aligning with reeds inside



Figure 4: Round reed plate of a modern chromatic pitch pipe.

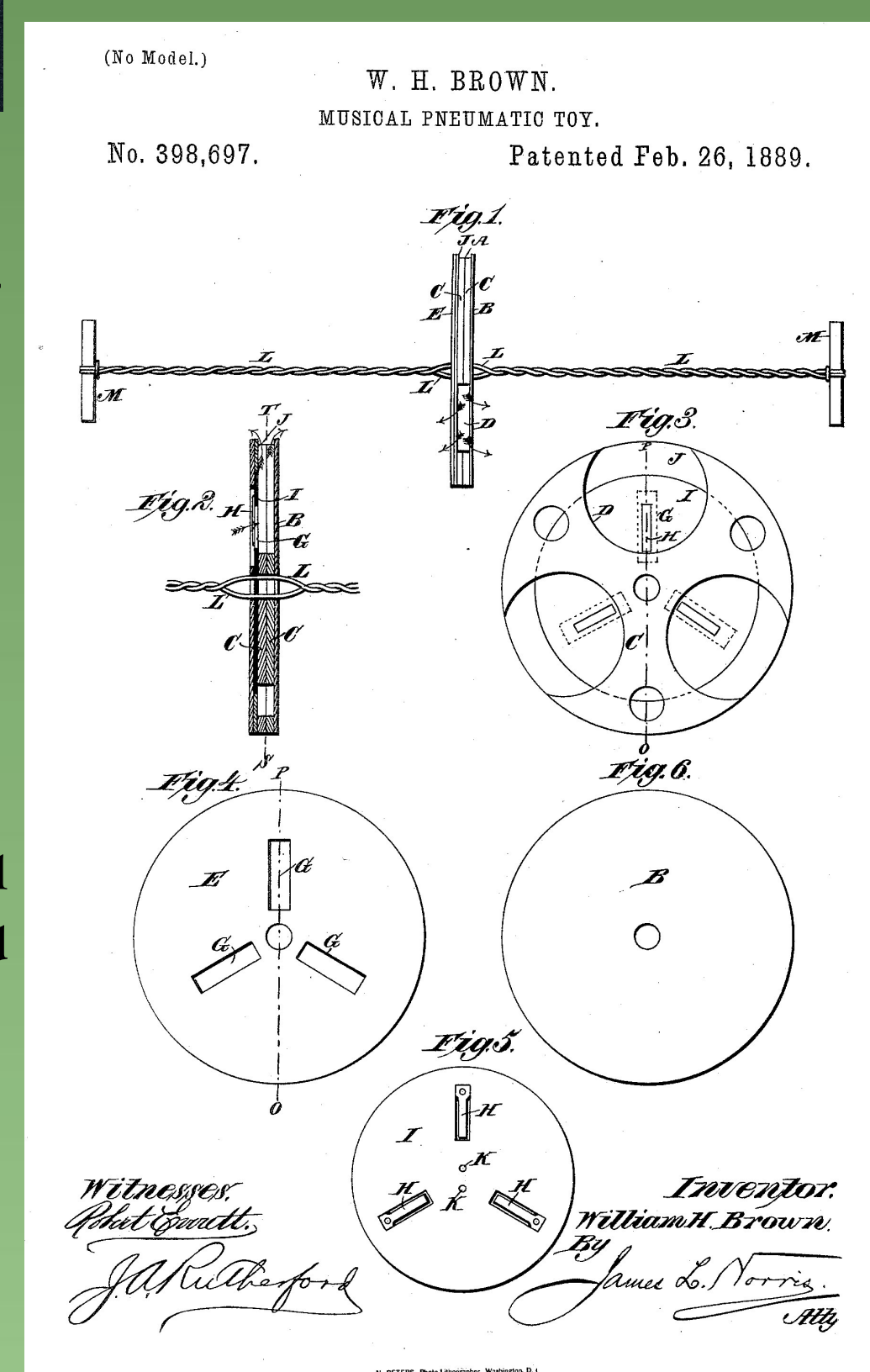


Figure 5: Patent diagram of a noise-making toy using harmonica reeds that reacted to air when spun (Brown 1889)

If you have any information on instruments or toys with round reed plates, please contact the Maryland Archaeological Conservation Lab!

arranged around a central pivot that whistles when the wheel is in motion (Figure 5). It's unclear how common these toys may have been in the early 20th century.

This delightful patent from 1908 reveals another (very unlikely) possibility. The patent suggests a teething ring combined with a harmonica (Figure 6) would "distract the attention of the child", "quiet it when it bites on the ring," and will "exercise the lungs of the child" (Anderson 1908). The patent diagram shows a round reed plate with a wide central hole with 3 to 4 reeds opposite a blow hole. Perhaps a parent "lost" a harmonica teething ring (i.e. threw it as far away from their child as possible) at the Paca house, but the mystery continues.

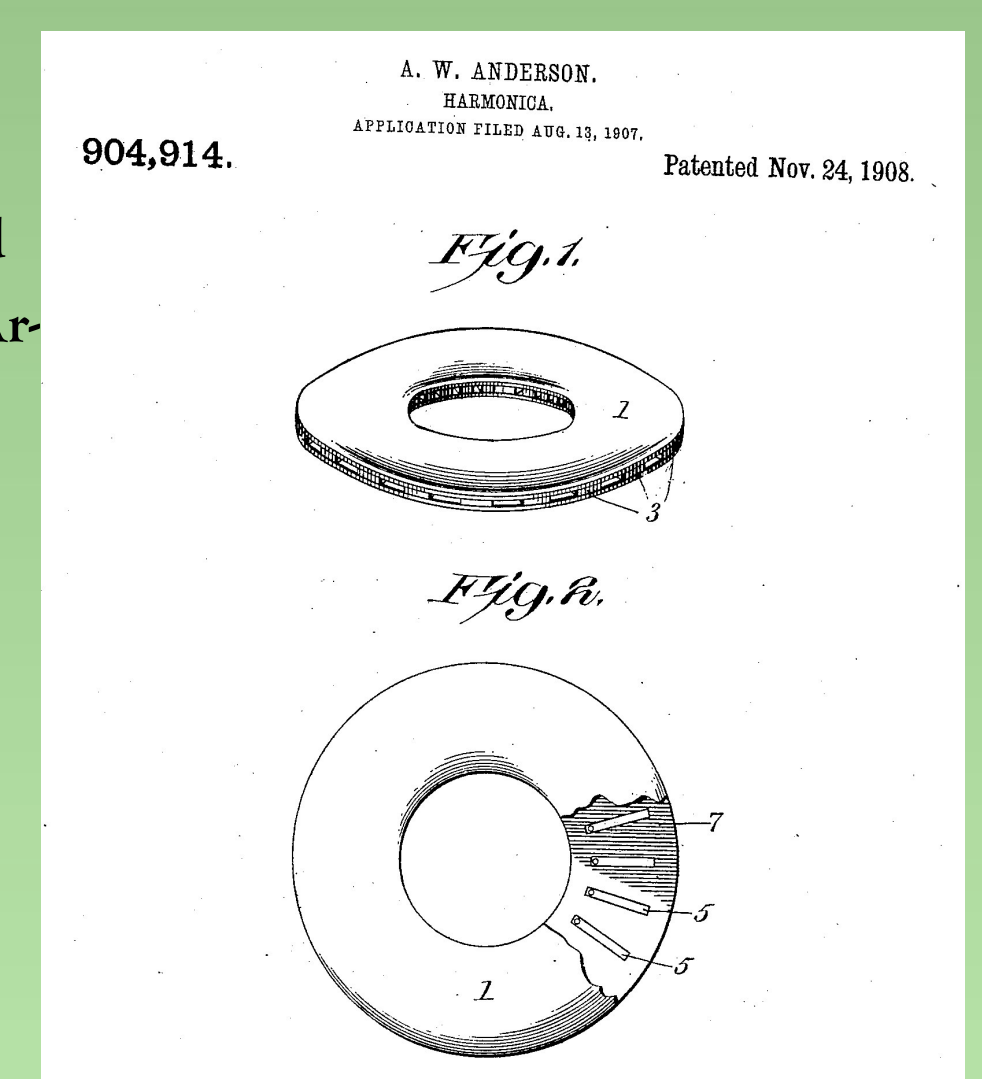


Figure 6: Patent diagram of rubber rings sandwiching a reed plate (Anderson 1908)



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