

Chappell Pianino/Glasschord, c.1814

Simple mahogany-veneered oak case with ebony lining and satinwood-veneered keywell and nameboard. Pierced fretwork at either end of the nameboard, lacking any silk behind (there is no obvious evidence that silk was ever glued to the nameboard). The convex blue glass half-tubes are in two rows, above and below a triangular frame secured with screws at each corner at recesses cut into the frame. Three-octave keyboard of 37 notes from c^1 - c^4 (a^2 = approx. 420Hz). The action has cloth-covered wooden hammers that strike from above, the mechanism using paper hinges (possibly replacing leather?). The body sits on a turned pedestal with four splayed feet with castors. 59cm x 58cm; 81cm high on pedestal. There is a lid stick and a music stand that doubles as a rest for the lid. There is also a music rest on the front hinged part of the lid suggesting the instrument could be played with the lid closed (although the low volume produced by the glass half-tubes must have presented challenges). Cartouche reads: *Chappell's. Patent Harmonica. 135 New Bond Street. London.* Note, that unlike two of the other examples discussed below, 'Chappell's' is not rendered in upper case, and there is filigree ink work around the cartouche, encasing it within a black border, not dissimilar to square piano nameboards.

As bought, the instrument was in a largely untouched original state. The vendor was unknown (but the auctioneer said it came 'from the Staffordshire potteries'). The screws to the stand were hand turned, so from the period, and there was little evidence of interference. Two glass tubes were missing. The music stand (as found, missing its central support) may be a later replacement. Rosalind Harding, in her book on early pianos, notes that in the early 1800s substitutes for strings as 'vibrating substances' were introduced, typically glass or metal rods or plates. Henri Pape is reported to have used metal springs and tongues as early as 1825, and five steel springs per note were patented as 'a pianoforte in the form of a secrétaire' in 1837 by Karl Zsitkovsky of Zeban in Sarosev, Hungary (Harding 1978: 299). Metal appears in the reeds of the seraphine or its forerunners, and later it reappears in the bars of dulcitanes and related instruments. Earlier, there are parts for a keyed glockenspiel in Handel's oratorio *Saul* (1739) and Mozart's *The Magic Flute* (1791) where it plays as Papageno's magic bells (*glocken* means 'bell'); curiously, the preserved instrument supposedly used in Vienna in 1791 has glass tubes, but many other instruments surviving from the period use metal. Comparable crystallophones or glasschords, with a three-octave compass from a - a''' produced by glass bars in a single row and made by Beyer in France, are held by the Metropolitan Museum of Art, the Hans Adler Collection, and probably elsewhere (the date 1786 given to the Adler survivor seems improbable given the inlays and wood decoration, although the *New Grove Dictionary of Musical Instruments* dates its invention to around 1785); one features on YouTube (https://www.youtube.com/watch?v=c_p8O9ncPNE).

Rosalind Harding includes a photograph of what she describes as a 'pianoforte with glass rods' housed in the Victoria and Albert Museum's collection (Harding 1978: plate XVII). This is almost identical to my instrument, though with clear glass bars (– we might expect blue glass from early 1800s, indicating prestige and wealth). The same instrument is described as a 'keyboard crystallophone' by Richard Burnett, who tells us that it 'makes the puniest of noises, but at least it never has to be tuned' (2004: 35). The Finchcock's instrument that Burnett illustrates is mounted under a sofa table (auctioned to a new unknown owner by Drewetts, Donnington Priory, Newbury, on 11 May 2016, hammer price £2600), and is later, with the cartouche on paper. Both instruments have three-octave keyboards of 37 notes from c - c''' , with a simple mahogany-veneered oak case with black lining and satinwood veneered keywell and nameboard, though the Finchcock's example is housed within what at first glance appears to be a drawer beneath the table top. The convex glass half-tubes or

bars are in two rows, above and below a triangular frame secured with screws at each corner at recesses cut into the frame. Other examples have been sold at Bonhams (London, 9 March 2016; £4000 including commission) and Gardiner Houlgate (Bath, 12 March 2015, estimated £2000–£3000, but this reappeared on 10 March 2016, estimated £1200–£1800; a further example lacking glass tubes was sold for £440 on 13 March 2020). The Bonhams instrument is the most luxurious seen to date, in rosewood, calamander banded and brass inlaid, although many of its glass tubes were replacement. The first Gardiner Houlgate instrument had a hotch-potch of glass tubes.

The basic keyboard and body design of all four instruments is suggestive of pianos from the very early 1800s, while the pierced fretwork at either end of the nameboard signals a date from the 1810s. The paper cartouche itself on the V&A instrument suggests a slightly later date than that at Finchcocks. All these instruments are by Chappell, the piano manufacturers and publishers founded by Samuel Chappell (1782–1834) with partners Latour and Cramer in 1810 or 1811. The firm began at 124 New Bond Street, premises they retained in January 1813, when the Philharmonic Society was born there; so, the assumption made in respect to other surviving instruments, that they date to circa 1815, seems reasonable. What appears to be an earlier inscription on my own instrument gives the name ‘harmonica’, a probable reference to the glass harmonica (or ‘armonica’) associated with Benjamin Franklin in America (or, later and infamously, with Franz Mesmer in Vienna). In fact, a further instrument, again attributed to Chappell, is housed by the Yale Collection of Musical Instruments. This appears to have once had a paper label, now lost, sits on a version of the French stand, is given a date of c.1800 – too early for Chappell as a company – and described as a ‘glasschord’ (<http://collection-media.yale.edu/catalog/3903750#.VI6gg1bVtFw>). The V&A catalogue refers rather unhelpfully (given later use of the term for small pianos) to the instrument as a ‘pianino’, as does Burnett (Schott 1998: 108). Two Chappell instruments described as ‘pianino’ were auctioned in the 1990s: the hammer fell on one, at Sotheby’s, for £8,050 on 21 November 1996; this was the instrument subsequently at Finchcocks, and Jeremy Montagu reports that, as a ‘keyboard glockenspiel’ it ‘was a brute to play with heavy and unreliable action’ (*Early Music* 25/2 (May 1997): 341), while the second, an instrument with only 20 of the 37 glass tubes but the same turned pedestal stand, sold for £1,760 at Christie’s on 28 June 1993. About this, Montagu remarks the price was a surprise, given it was missing more than a third of its glass, but ‘[p]erhaps a glass maker is going to be called in’ (*Early Music* 21/4 (November 1993): 662). One instrument from a private collection, which does not mention ‘harmonica’, was restored by Music Room Workshop in May 2014 (<http://www.musicroomworkshop.co.uk/news.html>).

A number of sources describe the instrument as a ‘conductor’s piano’. Howard Scott, in his entry in the V&A catalogue and in *New Grove* (1984: vol.2, 51; repr. in *New Grove* 2000: vol.9, 936–7), writes: ‘The musical uses ... probably involved giving the pitch to choirs and perhaps assisting amateurs in tuning pianos in an age when they were less stable and professional tuners less available’. This can seem appropriate, given that the instrument never needs tuning, but there is a problem: the glass tubes or bars are free, held loosely by lumps of a rubbery animal glue above a leather strip, the lower ones beneath and the upper ones above the triangular frame. Any movement of the instrument will move some of the rods, possibly bringing them into contact with each other; fractures are surely inevitable. For it to be used in churches, on stages, or wherever, we might assume that all 37 rods would need to be carefully removed (even though they are not inscribed with any pitch designation), then the whole thing reassembled for any and each use. This would surely be impractical, and Harding’s illustration of a cut-down three-octave Broadwood piano (1978: plate XIV) with a bracing string plate and handles, which in the first decades of the nineteenth century belonged to the conductor Sir George Smart but has been missing since

it was stolen, suggests a much more sensible alternative. This latter piano, not unlike my glasschord, sits on a turned pedestal with four (claw) feet ending in castors.

Restoration proved a challenge because the bars sit on leather pads thickened with felt beneath; these needed to be remade in a way that they would be sufficiently robust to allow vibration. The bars also needed to be correctly and firmly cited; animal glue bulbs were the solution. The action is simple, but must not strike with force, in order to avoid unseating (or breaking) the bars. The mechanism was restored by Music Room Workshop in summer 2015. The workshop also repaired the music stand, adding a new central part. The glass bars proved more challenging, since the original bars (as on other instruments) were made from blue crystal glass. Jim Addlington of Bristol Blue Glass – who has resurrected the formerly lost tradition – agreed to experiment and make replacement bars. Currently, he uses 24% lead crystal, with cobalt oxide added to give colour. He experimented, using a mold – wood was tried, but tended to break due to heat, even when graphite was used to coat it and stop the glass from sticking as it cooled; then a metal mold (half tube) was tried. In both cases, a long metal stick was used to impress a channel/recess in each glass bar. Bars were ground down to shape (the sides of the tube, and the ends, as seen from behind), then tuned (either with cutting or grinding). Bristol Blue Glass was founded in 1988, after the industry had been lost, and back-engineered processes to discover how to make typical shapes and items. Cobalt oxide does not go well with contemporary gas-fired furnaces (and glory holes). The red colour of sand gives the green colour of basic glass (seen, in particular, in wine bottles, the design of which is said to have been created by Rickett in Bristol as a way to allow wine to be preserved). Even when the colour is removed, glass will retain a dull sheen of green (as can be seen through the edge of a plate of glass), hence to create high-class glassware, colours were added to the mix. Cobalt oxide was initially used in a failed experiment to imitate the blue glaze of Chinese vases and plates, but the story has it that it was taken up by a Jewish German glass maker, Lazarus Jacobs, who had set up the Flint Glass Works and produced fine crystal. Crystal, first associated with German states, essentially undermined the market for green glass. Jacobs is said to have travelled to London to give a table service of blue glass to the (Hanoverian) king – if it was good enough for the king, it was good enough for everybody. Allington had ancestors involved in the glass industry, but he worked with stained glass, until he won a a competition in Bridgewater, Somerset, that required him to use blue glass among other glass colours. He formed Bristol Blue Glass to create usable utensils (jugs, beakers, etc) more than luxury items. Needless to say, my glasschord now has a full set of properly tuned blue glass bars.

Restored by Music Room Workshop, with some replacement glass bars produced by Bristol Blue Glass, in 2015.



