

# A Mystery Broadwood



## Introduction

For those of us who love early classical piano music (count me in) and especially those of us fortunate enough to be able to play (count me out...) a 'First Generation' Broadwood square deserves special consideration as the ideal instrument. Perhaps restrained by his harpsichord-maker father-in-law Burkat Shudi, John Broadwood was a little slow to experiment with the new instrument that was launched by Johannes Zumpe and Johann Christian Bach in the 1760s. So, although Shudi died in 1773, we have to wait until 1780 for John Broadwood's first pianos to appear. And even then, his important patent was not granted until 1783, and the first year of real commercial production was 1784.

A slow start, perhaps, but John Broadwood's plan was well thought out, and after this measured beginning, there was no stopping him. By 1790 the firm had made over a thousand pianos, and five thousand by the end of the century. John Broadwood and Son (James Shudi Broadwood was made a partner in 1793) could claim to be the most successful piano makers in the world.

But did the 1783 patent actually matter? So many of these early patents were just bits of paper and marketing gimmicks. True enough, one section of Broadwood's patent at least was a cul-de-sac: the double soundboard. I know of no working example of this, but it does survive in No. 200 (1784) in the Colt Collection.



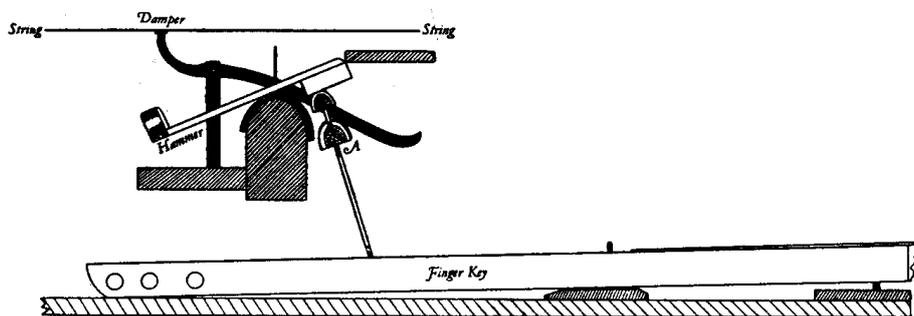
Here we see a view through the 'mousehole', showing the dowel-like sound-post. The secondary soundboard is mounted about ½" above the base-board. We have to suggest that, if it was really that good, it would have been universally adopted...

Another main claim in the patent was for the positioning of the wrestpins to the back-left of the instrument, rather than in a sloping line at the right. This was later to prove necessary anyway as the compass of the piano increased - pianos got longer, but tuners' arms did not. However, with the five-octave instrument, this was not a problem. What is clear, though, is that by avoiding the long 'overlength' of string between the wrestpin and the bridge, the tuning stability is improved. Because of friction between the string and the bridge or nut-pins, not all the tension put on by turning the wrestpin is transferred to the 'speaking' part of the string. Thus, with playing, there will be equalisation of the tension in the parts, and the instrument will go out of tune. Having just a short length between the wrestpin and the nut minimises this problem. There was a practical demonstration of this effect at the memorable concert at the Square Piano Weekend at Finchcocks in May 2012: We were entertained by duets on a squares by Broadwood and Longman & Broderip. For the first item of the concert, the two pianos were perfectly in tune, but by the time of the spirited finale, the L&B was just a little bit ragged...

But the best-known element of the 1783 patent covers the famous 'peacock' brass dampers.



The tail of the peacock is heavy enough to give good contact between the red damper-cloth and the strings, and is lifted by a leather-covered knob as the key is depressed.



The system is quiet, efficient and reliable: gravity never fails or needs adjusting. The damping is somewhat more positive than the usual English overdampers, and the touch is quite different: it is usually possible to set up the action with minimal lost-motion, and there is not the gradually-increasing resistance which characterises the baleen springs. An important detail might be the little cloth pad which comes between the leather cover of the 'old man's head' and the head itself. This must affect the resilience, and could help to reduce bounce. All of this leads to an action which, if properly adjusted, has a delightful feel, and much better control of quiet dynamics. For me at least, this means a piano which is easier and more enjoyable to play. The one possible drawback (which became critical) is that it is difficult to devise an acceptable damper-lift pedal or handstop. Some early Broadwoods have a pedal, but I have never been able to adjust one satisfactorily to give an even effect on the touch, and it is rare to find an original example in working order. However, in these early days, perhaps the absence of a damper-lift did not matter too much to players used to the harpsichord and clavichord.

## The Mystery Piano



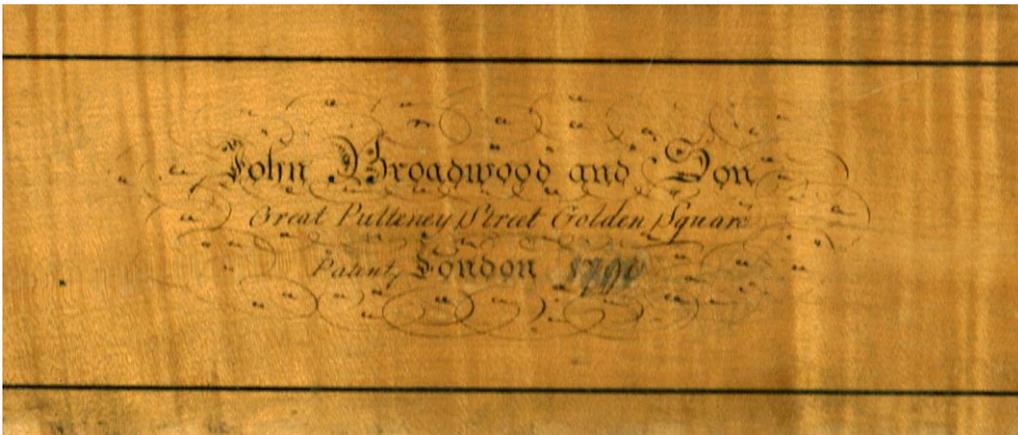
The instrument that is the subject of this article was part of the contents of an 'Aladdin's Cave' that was discovered when a dealer in Scotland retired, and his store was cleared. There were at least eight pianos, including four or five squares. This one attracted my attention as an example (albeit a distressed one) of these favourite little early Broadwoods (Seen above in the extreme foreground).



We could see that the lid was missing, and there was damage to the spine, but the stand (even if held together with string) looked original and most of the inside seemed to be there. This was perhaps not an economic proposition for restoration, but it looked like fun, and we like a challenge!

So it was that my modest offer for this piano was accepted, on the basis that I would promise at least to attempt a full restoration, and not just sell the valuable parts (all those brass dampers...) for a quick profit. In due course, the piano made its way south.

## The Mysteries Revealed



The immediately obvious puzzle was presented by the nameboard inscription. Like the very first Broadwoods, and all the squares made until 1792, this one had dampers which were straight (in plan-view) operating between the hammers. In 1793, we find that the peacocks acquire seriously twisted necks .



At first, the bend near the pivot was sharp, but this soon gave way to a gentler S-curve as in the example above. This change enabled larger hammers to be used.

Then, in 1794, John Broadwood's eldest son, James Shudi Broadwood, was made a partner in the firm, and the inscription changed from the original Latin form "*Johannes Broadwood Londini Fecit...*" to an English presentation. The order of the wording is also different, and one cannot be converted to the other. Unless the calligrapher were clairvoyant, this inscription cannot have been done before 1794!

We also see from the above picture that although the calligraphy has every appearance of being genuine (done by Broadwoods in-house) the date has been partially obscured by scratching. Attempt such as this to disguise the date are very common – although we are now interested and charmed by them, nearer the time it was undoubtedly a social humiliation to be seen to have an ‘old’ piano.

However, we have done our best with lights of various wavelength, cleaning, and peering through lenses to work out what it might (or might not) have been originally. Here we note that the usual style of numerals at the time was what we now call ‘non-ranging’ – with a mixture of standard heights, ascenders, and descenders – just like this lower-case script. 0, 1, and 2 were standard. 3, 4, and 5 were descenders. 6 up, 7 down, 8 up, 9 down. So it looked a bit like o i z g j y b p d q. 1792 would look a bit like ipqz, 1786 ipdb. So the *absence* of a tail or stem (with corresponding clear space) is significant, and also the sharp corners of 7s and 4s are characteristic. From all this, we were able to be pretty sure that the date had originally been 1790. But why the ‘wrong’ wording?

Of course, the serial number of the piano would have settled the matter, but sadly this had been cleaned off completely.

Meanwhile, There was, as we know, a touch of woodworm in the spine.



Curiously, this was not the original, spine, but already a replacement made of some (obviously very tasty) soft wood. Amazingly, although this had been almost completely devoured, the little creatures had left the rest entirely alone. Apart from dust and pulp, practically all that remained of the spine was a thin layer of a sort of red plaster on the outside surface.

With the remains of the spine removed, it was obvious that the end structure was falling to bits, and needed rebuilding. During the dismantling of the various parts, the number '271' (upside-down!) was discovered in old-fashioned writing on the corner brace underneath the soundboard.



This is obviously a piece that needs to be fitted exactly, and I feel sure that this is part of the piano's number. Obviously it's not 271, which would correspond to be 1784/5 but 1271 would be - 1790. Bearing in mind that this is compatible with the design of the piano, and that I'm as sure as I can be that the rubbed digit was indeed a '0', I'm going for this.

So, although the inscription is the post-1793 'John Broadwood & Son', my suggestion is that the piano was returned to the factory (either as part-exchange or ex-hire) and was given the once-over, including a re-lettered nameboard to show the firm's new identity. However, the date was left at '1790', because that was the date when the piano was made.

Sadly, I don't think the records exist to enable any of this to be checked, but we will look out for any similar examples.

One implication of this proposal is that it seems that the serial number was assigned to a unit at an early stage of production.

Also underneath the soundboard, on the sloping brace between the bottom and the hitchrail, there was a soot-stain, seen here from behind the piano, looking towards the front. Note a smaller soot-stain on the inside of the front liner, to the right of the knot.



Soot-stains similar to these have been seen before – e.g. under the soundboard of an early Longman, Lukey & Co., but how they got there is not clear. As a further puzzle, it would seem that these particular deposits occurred when the piano was resting in its back.

## Rebuilding



With the interior cleaned up, the first job was to make and fit a new spine. The correct form is a composite of oak with a mahogany top – the part that is visible from inside. The Oak is new, but a piece of mahogany was salvaged from the spine of a Clementi write-off. The Clementi spine was longer and thicker, so there was no difficulty in finishing a piece to the correct dimensions. The spines of these early Broadwoods are surprisingly thin – not much more than  $\frac{3}{4}$ ".



The tricky part was cutting the dovetails. Normally, the tails on the back would be cut first, and the pins on the ends marked to fit. This was obviously not possible: new dovetails had to be cut to fit the original pins. Transfer-templates were the only way, even though the errors in copying were doubled. Also, the new spine was heavy and unwieldy when doing the final fitting... But we coped. Here is the job glued and clamped up.

Heavy screws through the spine into the internal structure were not authentic for this Broadwood, but were used by other makers, principally as a way of pulling the big glued joint together, but also as extra security. Because this is a rebuild to create a robust instrument with playing capability very much in mind, it was felt that the use of such screws was justified. It is also a fair point that it is sometimes not as easy to get a good joint with old pieces, where some movement has occurred, as it is with all-new work where all surfaces can be flat and true. But at least the screws were old – salvaged from 19<sup>th</sup>-century uprights!



Here's the new spine in place, tidied up, and oxidised with sodium dichromate solution. This is a traditional technique to develop the colour of mahogany, and is also effective at darkening the oak.

With the new spine secured, it really did feel that work from now on was 'rebuilding' – moving towards the day when this piano would sing again.

Rebuilding of the structure of the hitchrail gave further confirmation to what we knew already – this piano had been the subject of a previous major restoration. The spine was clearly not the original, and we now had detail evidence that the diagonal brace had been refitted before.



The picture above shows the underside of the part, the end that is fitted into the hitchrail top-piece, and whose upper surface supports the soundboard. We see clearly that the piece was originally doweled into the hitchrail (lower, larger holes) but these have been filled, and a second

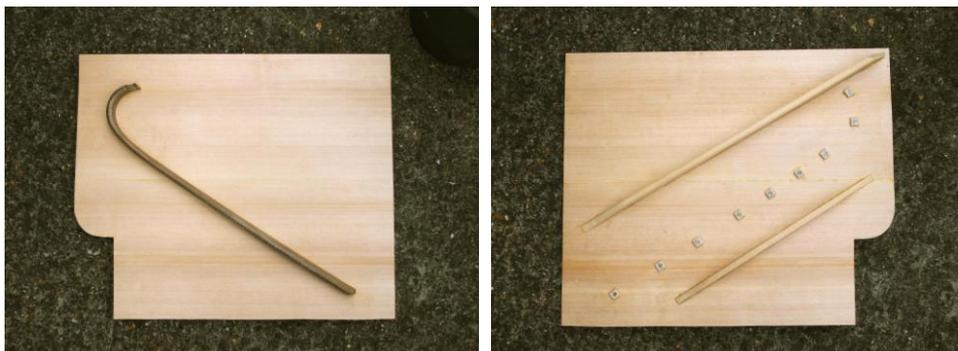
set of dowels inserted. This was certainly not recent work, but at present I have no idea even in which century (18, 19, or 20) it was done. There are now three pairs of holes! The new ones are towards the middle.

As this piano has had such a turbulent life already, the emphasis of the current restoration is towards turning it back into a reliable instrument for making beautiful music. The important parts (soundboard, strings, hammers ) will be completely 'authentic', but there will be a few extra dowels to reinforce the joints. Also, any joints that have proved to be 'gappy' on reassembly (e.g. hitchrail to liners) have been closed up with short-grain wedges. This should make a significant improvement to tuning stability, and in any case is just compensating for the inevitable shrinkages of the past 222 years.



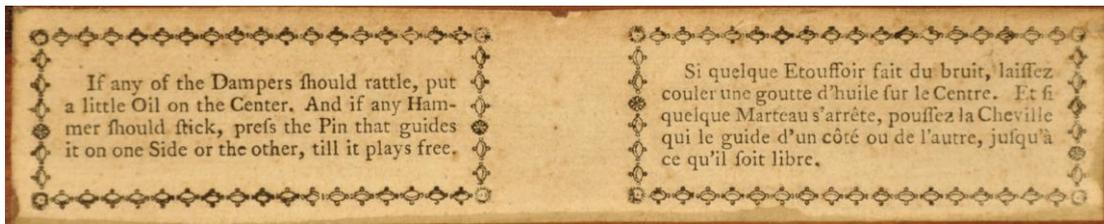
With the new spine in place, the rest of the structure was secured. The hitchrail top-piece (underneath the red cloth) was loose and had moved: together with the two braces, it was re-glued (with hot hide glue, of course, like all the rest of the work) and the gaps closed up with wedges. These include the pale pieces along the back in the above picture: the wedges are made of maple, but 'short-grained' to give the maximum possible resistance to compression. The sloping brace to the bottom was lengthened.

Because of multiple holes in the liners below the board we had established that the soundboard as found was not original, although it was old. As it was not a particularly good piece of wood, and somewhat distorted around a knot (!) the decision was taken to make a new one. This is made of well-seasoned straight-grain spruce, quarter-sawn for maximum stability. The bridge did, however, appear to be original, and after careful straightening it was replaced. The whole structure, including the detail of the barring, is based on data from a closely-related piano.





Now we see that it is starting to look like a piano again! The soundboard is in, the hitchrail covered with new scarlet cloth, and the nut has been carefully straightened and re-glued. This last bit was something of a challenge, as it had evidently started to come loose a long time ago, and had been very crudely screwed back down. This had not been sufficient to prevent a severe twist, though, and some careful work with a heat-gun was needed to straighten it again. The screw-holes were re-used to hold the nut down temporarily, but the holes then made good and plugged with specially-made cross-grain beech dowels. The cover for the useful box at front-left is new, made from old mahogany, and colour and grain-matched as closely as possible. The keyboard is here re-fitted temporarily, to check the position of the key-frame, but the keys will be removed for subsequent work on the action. A facsimile of the instructions to owners and tuners, concerning the dampers, was kindly provided by a Friend, copied from a similar piano. The original was lost, of course, when the first replacement spine was fitted!



This piano is one of those where the notes of the string gauges survive.



From surviving fragments from other pianos, these notes enable the correct gauge of wire to be used for the re-stringing operation



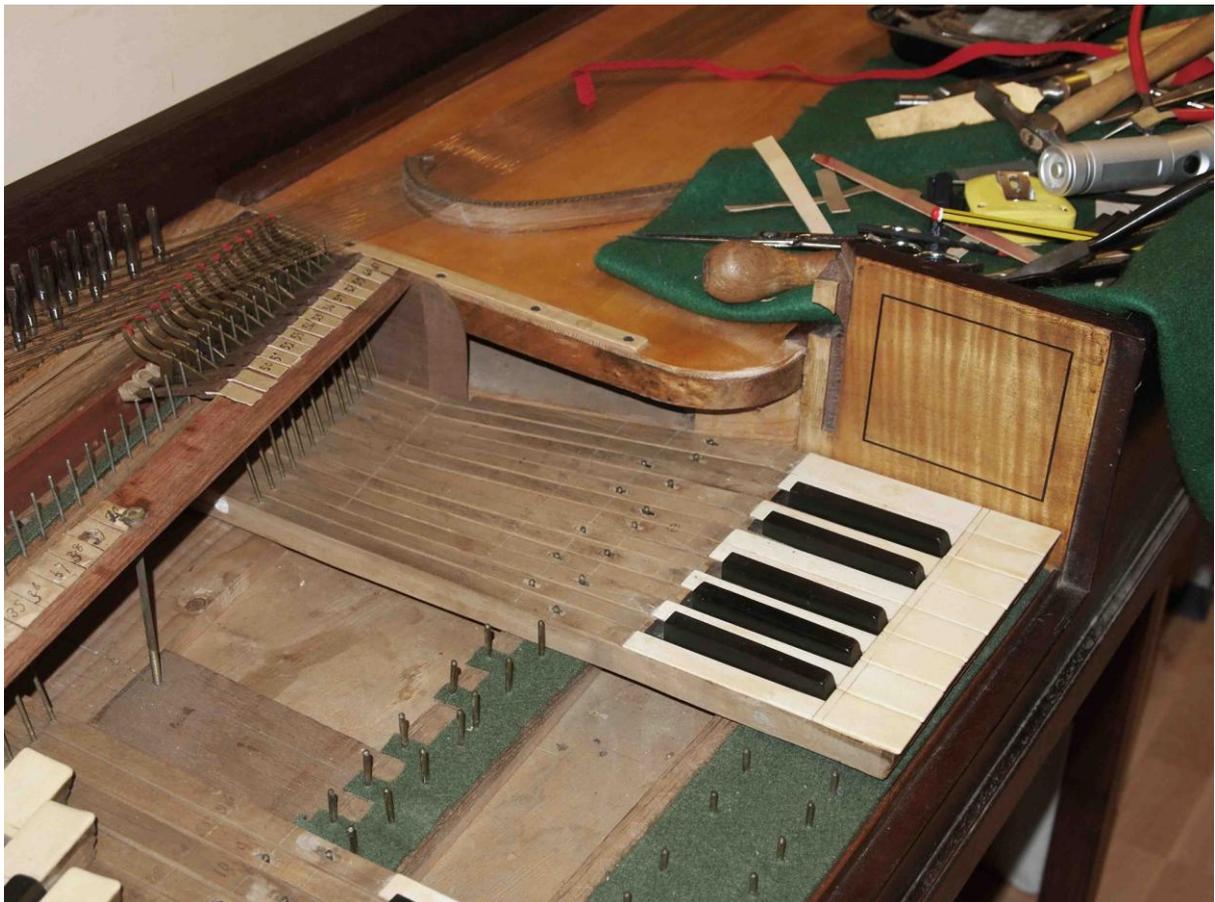
Here we see the first hammer re-fitted, and celebrate the moment when the first note is heard, after very many years!



An encouraging shot of 'Work in Progress'



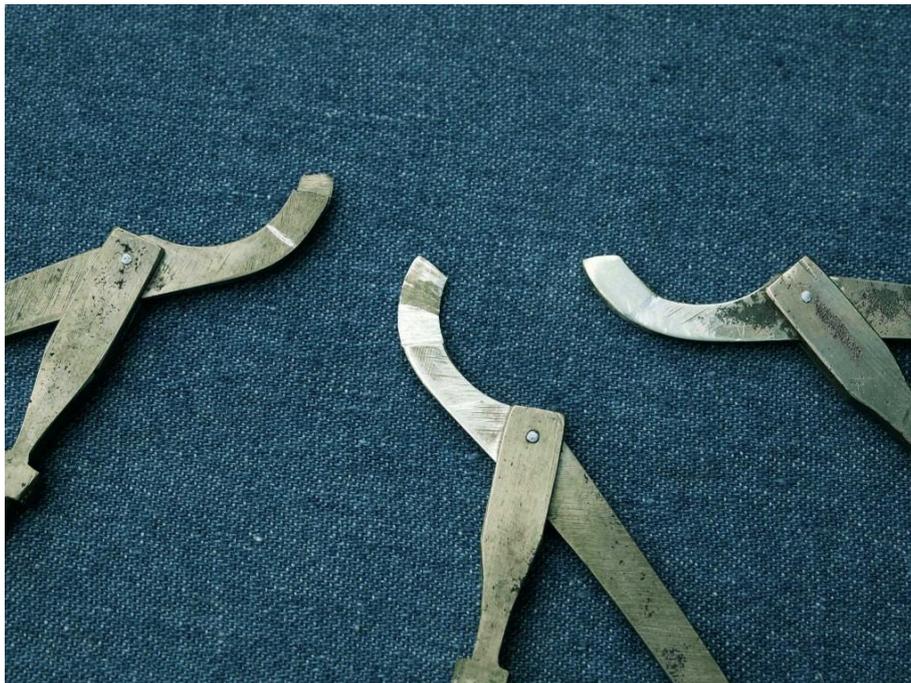
It is often a good idea to make a rack or older of some sort to keep hammers and dampers in order. The situation was complicated in this case, because the dampers (which were made in several sizes) had unfortunately been scrambled in a former 'restoration'. They have now been sorted into size order.



Progress continues. Working downwards from the top note like this has the advantage that the strings do not obstruct the hammers. Note the way the balance-cloth is cut away – the sharps are temporarily re-fitted as a guide. Sometimes on old instruments (including this one) we know that this was the original style, because witness-marks from the chisel can be seen.



Two of the sharps were missing: new tops were made to match. Some time ago, I had assumed that all sharps were the same width, but this is not quite true...



A rather common problem with these old brass dampers is that the little jaws that hold the actual damper-cloth are quite fragile, and can easily fail if the cloth needs to be replaced. Fortunately, it is not too difficult to effect a good repair:

- damper at left – broken jaw, and scribe-line to indicate removal of material.
- centre damper – metal filed away to about twice the depth of the slot, to allow good joint area.
- damper at right – new metal soldered on, finished to shape, and cleaned up.

There were about six of these to do. Note that although soft-soldering is adequate for this job, more highly-stressed brass repairs require brazing or silver-soldering.

(To be continued)