

## AN ANONYMOUS FRETTED CLAVICHORD FROM PERU



*Photo: Brussels MIM*

Brussels, Musée des Instruments de Musique/Muziekinstrumentenmuseum (MIM) No. 3385. This instrument was examined by me at the museum on 2 August 2004, with the assistance of M. Luc Lanoo, Mlle Véronique De Wilde and Mrs Judith Wardman.

### DESCRIPTION

(For measurements and materials, see pp. 5–6 below)

#### *Case*

The case is rectangular, with dovetail joints at the corners, the dovetails on the case ends, the pins on the case front and back (photo 11). About 100 mm behind the case front there is a 'middle rail' running the full length of the instrument, equal in height to the case front and back and parallel to them, and joined into the ends with tenons (photo 11). Case front and middle rail are cut away to make room for the keyboard; the cut-away part of the middle rail serves as the balance rail. Cheeks at either side of the keyboard join the case front to the middle rail: butt-jointed to the front, joined to the middle rail with a lap-dovetail extending half the width of the middle rail. The bottom board is attached underneath the case sides.

Soundboards, wrestplank and hitch-pin rail are all contained behind the middle rail, leaving empty spaces to right and left of the keyboard, beyond the cheeks. These compartments may have served as tool boxes: there are supports for lids to both of them (photos 3, 5, 9) with leather stuck to the top surfaces (presumably to prevent rattle when the instrument was played). The lids themselves are now missing.

In the left-hand compartment was found a piece of wood which in my opinion is nothing more or less than a tuning wedge (photo 10). It is extremely rare for one of these to survive; indeed, I know of no other example.

There is no front board behind the keys, and no signs of there having been one.

### *Wrestplank and hitch-pin block*

The wrestplank and hitch-pin block are attached to the right- and left-hand ends respectively, apparently held in place by glue alone without tenons or pins.<sup>1</sup> The top surface of the wrestplank is exposed (i.e. not covered by the main soundboard). There are 48 wrestpins of traditional type, similar to European wrestpins of the 16th–18th centuries, arranged in rows of four (photo 3); setting-out lines (ink or pencil) are faintly visible on the top surface of the wrestplank. There are also traces of paper or leather in patches stuck to the top surface of the wrestplank.

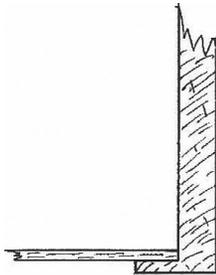
The hitch-pin block has 48 hitch-pins arranged in a zigzag pattern (photo 9).

### *Soundboards and belly rail*

The main soundboard, rectangular in shape, is fixed at its right-hand end into a rebate in the wrestplank, and at its right-hand end to the top of the belly rail, which is in line with the right-hand cheek. There is a secondary soundboard extending under the keylevers, at its right-hand end fixed to the bottom edge of the belly rail, either by means of a thin fillet of wood or a lip in the lower edge of the belly rail (see the figure below).<sup>2</sup> There is thus a continuous soundbox below both soundboards.

The method of fixing the left-hand end of the secondary soundboard is unclear: iron nail-heads can be observed just where it abuts the hitch-pin block, but these look non-original. Nails are not found elsewhere on the instrument.

Both soundboards have circular sound holes without rose or other ornament, roughly midway between the middle rail and the case back.



*Attachment of secondary soundboard to belly rail (not to scale).*

---

<sup>1</sup> Traces of a white, possibly casein-based, glue were found in the front left-hand corner of the right-hand compartment.

<sup>2</sup> This feature was observed, with difficulty, through the sound hole of the secondary soundboard, using a mirror, and checked by feeling through the hole in the main soundboard with a finger.

It is possible that both the present soundboards are replacements, or that the originals have at some stage been taken out of the instrument and put back, perhaps by a hand less skilful than that of the original maker. The rather rough sawn left edge (photos 7, 13), the rather crudely cut sound holes (photos 2, 8) and traces of glue left on the rear surface of the middle rail (photo 5) may be indications of this.

Three bridges are placed on the main soundboard (photos 2, 5) and although they are not glued in place their positions are indicated by cleaner areas on the surface of the board (photo 12). There are no bridge-pins: the strings pass over blades of brass fixed vertically in the bridges. In order to hold the strings firmly against the bridges, two hold-downs are attached to the soundboard by means of loops of wire (probably ferrous) at each end. These loops pass round soundbars fixed directly below the hold-downs and are secured underneath the soundboard by twisting. There are 24 holes in each hold-down, arranged in a zigzag pattern, through which the strings pass (photo 2). The grooves in the top surfaces of these hold-downs are the only decorative feature anywhere on the instrument.

The two soundbars mentioned above pass right across the instrument from middle rail to back: they are rounded on the lower surface, and slightly tapered at each end. There are no other bars on the main soundboard. On the secondary soundboard there are at least two bars to the right of the sound hole and at least one to the left of it, similar in section to those on the main soundboard.

#### *Rack*

The keys are guided by metal slips working in saw-cut slots in a rack. This is made of the same wood as the case sides, and is attached to the case back above the secondary soundboard. A scribed line is visible on the top surface of the rack, indicating the depth of the sawn slots (just visible in photo 15). Curiously, there is an extra slot at the treble end of the rack (photo 7).

#### *Lid and fall-board*

The lid is in one piece, reinforced with cleats at each end and with a cross-piece fixed on the underside half way along. It is attached to the case back with wire loop hinges, perhaps renewed (photos 2, 4). There is a fall-board in front of the keys, attached to the case front with similar hinges (photo 14), fitted with a hook (photo 16) intended to hold the lid closed when the instrument is not in use.

#### *Keyboard*

Apparent compass  $E-f^3$ , presumably  $C/E-f^3$  with short-octave bass (50 notes). The natural keys have a thin covering of yellow hardwood, showing signs of wear (photo 15). There are no arcades or keyfronts. Note names have been written on some natural keys in an untidy hand, presumably not that of the maker (photo 13). The accidental key-blocks are stained black. The key pivots are in a single straight line, the pivot-pins being fixed directly into the cut-away portion of the middle rail. There are traces of a strip of leather under the pivot points (photo 13): apparently identical leather is used on the compartment lid supports (see above). The key-levers are uncarved, merely having the top edges slightly rounded. Cranked keys do not have sharp angles but gentle curves (photos 6, 8). The keys are numbered in ink just behind the pivot-points, the numbering running from left to right (photo 13).

Tangents are driven directly into the keylevers: there are signs (visible in photo 7) that many of them have been moved from their original positions. Some are positioned very close indeed to the edge of their levers (photo 6).

The keys fall back directly on to the secondary soundboard: a scrap of coarse, hand-woven black cloth survives at the right-hand edge of the keyboard (photo 7), and it is clear from the lighter colour of the board that a strip of this cloth originally extended all along under the back ends of the keys.

There are anomalies in the shape of the keys and keylevers: for example, the  $d^2$  key is shaped like an F (photo 6).

### *Fretting*

The lowest 12 notes  $C/E$  to  $e^b$  are unfretted. Thereafter the fretting is by threes and fours, as follows:

Course	Notes
13	$e/f/f\#$
14	$g/g\#/a$
15	$b^b/b/c^1/c\#^1$
16	$d^1/e^b^1/e^1$
17	$f^1/f\#^1/g^1/g\#^1$
18	$a^1/b^b^1/b^1$
19	$c^2/c\#^2/d^2$
20	$e^b^2/e^2/f^2$
21	$f\#^2/g^2/g\#^2$
22	$a^2/b^b^2/b^2$
23	$c^3/c\#^3/d^3$
24	$e^b^3/e^3/f^3$

### *Stringing*

There are no strings on the instrument, but fragments of two hitch-pin loops remain (visible in photo 9).

### *Construction marks*

There are ink marks on the inside surfaces of the case back and middle rail, marking (a) the position of the wrestplank edge and (b) approximately the position of the main soundboard bar (photos 4 and 5).

## MEASUREMENTS

All dimensions are given in mm and are accurate to  $\pm 0.5$  mm unless marked 'approx.'. Wherever practical, lengths were taken in several places, e.g. at top and bottom edges, back and front, left hand and right hand etc. Because the instrument is not perfectly regular, this sometimes resulted in slightly different values for the same dimension, in which case a range is given, e.g. 478–479.

### *Case:*

Overall length	1078–1080
Width	315–318
Height	110
Thickness of case sides and middle rail	9.5–11
Thickness of bottom board	approx. 8
Left-hand end to keyboard opening	90
Width of keyboard opening	681
Keyboard opening to right-hand end	308
Depth of keyboard opening	58
Length of cheeks:	left 102.5, right 105
Case top to hitch-pin rail	19
Case top to rack:	at left end 16 at right end 18
Case top to soundboard:	at belly rail 24.5 at wrestplank 27
Width of rack	10
Width of wrestplank	42
Width of hitch-pin rail	41

### *Keyboard:*

Total width of keyboard	680
3-octave span	478–479
Length of natural key-covers	approx. 81
Length of natural heads (front of cover to cut-out for sharps)	approx. 32
Thickness of keylevers	11.5
Height of tangents	19–26

### *Soundboard, etc.:*

Length of main soundboard	242
Width of main soundboard	199
Thickness of main soundboard at rose hole	less than 2
Height of bridges, including brass blades ...all three bridges	14
(Width of bridges unfortunately not recorded)	

*Measurements, continued:*

Height of both hold-downs	approx. 12
Width of hold-downs	approx. 9
Diameter of sound hole (main soundboard)	approx. 54

## MATERIALS

Case sides and middle rail, bottom, lid and rack:

unknown wood, probably non-European, possibly coniferous, light in colour.

Bridges and hold-downs:

a dense hardwood, darker in colour than the previous, possibly 'Peruvian cedar' (*Cedrela* spp.). The bridges are fitted with blades of brass.

Wrestplank and hitch-pin rail: unknown hardwood.

Keylevers: a light-coloured ?hardwood with a grain like mahogany.

Natural keyplates:

a yellow hardwood, apparently not European box (*Buxus* spp.).

Sharp blocks:

hardwood, similar to that used for the bridges and hold-downs, stained black.

Soundboards:

apparently European spruce (*Picea* spp.) or fir (*Abies* spp.), close to quarter-sawn except for a strip at the rear of the main soundboard about 20 wide which is slab-sawn and may be a different species (see photos 2, 3).

Wrestpins, pivot-pins, hitch-pins, guide blades, tangents: ferrous metal.

## PROVENANCE

The hand-written inventory list of the MIM collection contains the following entries:

- 3.379 à 3.382 Quatre zampollas (Perou) (Flute de Pan) don de M. Sas
- 3.383 Charango (Perou) (Mandoline) don de M. A. Sas
- 3.384 Arpa (Perou) don de M. A. Sas
- 3.385 Clavicordio (Perou) don de M. A. Sas

I suggest that the donor is almost certainly the composer, conductor and musicologist Andres Orchassal Sas (1900–1967): for a brief biography, see the Appendix (p. 10). One may surmise that he brought these seven instruments back to Brussels after his first stay in Peru in 1924–28.

Apart from dating the clavichord earlier than 1928, this leaves open the interesting questions of when and by whom it was made, and for what purpose.

## OTHER SOUTH-AMERICAN CLAVICHORDS

Several other clavichords made in South America are documented. Two, in particular, are close to Brussels 3385 in design:

1. A clavichord in the Museo Nacional de la Cultura Peruana, Lima, Peru.<sup>3</sup>
2. Clavichord no. 4137 in the Traversari Collection, Quito, Ecuador.<sup>4</sup>

Like Brussels 3385, both these instruments are unsigned and undated.

The table below summarises some main features of all three instruments. All have the same basic plan, apparently derived from a type of clavichord known in Europe in the fifteenth century, with strings running the whole length of the instrument from left to right, several straight bridges arranged at right angles to the long sides of the case, and keys projecting from the case front. The main difference is that in the South-

*Three South-American clavichords compared (all dimensions are in mm).*

	Brussels, MIM no. 3385	Lima, Museo Nacional	Quito, Traversari Coll. no. 4137
Compass	<i>C/E-f</i> <sup>3</sup>	<i>C/E-c</i> <sup>3</sup>	<i>C/E-a</i> <sup>2</sup>
Approx. dimensions	1080 × 315 × 110	1080 × 330 × 111	907 × 335 × 93
Number of bridges	3	3	3
Number of hold-downs	2	2	2
Number of rose holes	2	2	3
Type of fretting	threes and fours	threes and fours	threes and fours
First fretted note	<i>e</i>	<i>e</i>	<i>e</i>
Length of natural keys	81	86	96
3-octave span	478	487	450

<sup>3</sup> Very fully described in Alfons Huber and Ana Savarain de Graf, 'A Clavichord from Peru in the Period of the Imperial Vice-royalty' in *De Clavicordio IV*, proceedings of the fourth International Clavichord Symposium, Magnano 1999, published by Musica Antica a Magnano, ISBN 88-9002691X. Incidentally, despite the title of this article, it is not certain that the Lima clavichord does indeed date from the Vice-royalty period (early 16th century–1821).

<sup>4</sup> Briefly described with small photo in Richard Rephann, *Catalog of the Pedro Traversari Collection of Musical Instruments*, published by the Organization of American States and Yale University Collection of Musical Instruments, 1978.

American clavichords the case sides have been extended forwards and an additional board has been added just in front of the keys, protecting them but leaving two empty compartments to right and left of them.

The European clavichords may have been stored in rectangular boxes when not in use, and in the South-American instruments it is as if the box has become 'fused' with the instrument, leaving the clavichord otherwise unchanged. As far as I am aware, no surviving European clavichord has this arrangement, but there is a trace of it in the depiction of a clavichord in the early sixteenth-century oil painting on the altar of the monastery church of São Joao de Tarouca, Portugal.<sup>5</sup>

Other features of these three clavichords which seem to be derived from early European models are the use of a short-octave bass, and the antique system of fretting in groups of three and four. However, some other elements seem specifically South American: in particular, the open sound holes without decorative fretwork roses, and the use of 'hold-downs' attached to the soundboard to keep the wires in close contact with the straight bridges. One attractive feature that all three clavichords have is the arrangement of the hitch-pins in a zigzag pattern (see photo 9)

The Lima clavichord and Brussels 3385 are particularly close in style and might even have come from the same hand. Both are fairly roughly made, with an almost complete absence of decorative elements: one might describe them as 'folk clavichords'. Apart from the difference in size and compass, there are some minor differences in construction: for example, in the Lima instrument the hitch-pin rail and the wrestplank are attached to the case back and middle rail by tenons whereas in Brussels 3385 they are apparently held in place by glue alone; and in the Lima instrument the belly rail continues down to the bottom board, whereas in Brussels 3385 it stops at about the level of the secondary soundboard.

The Quito instrument shows more sophistication than the other two. The keyboard is decorated in a quasi-European style, with rounded edges to the natural keys and two scribed lines running right across them, emphasised with notches at each edge; similar notches are found towards the rear of the sharp blocks. The keylevers are more regularly cut, though as in the Lima and Brussels instruments they lack the roof-carving typical of European clavichords. The Quito clavichord has manufactured hinges rather than wire loops for the main lid, and (judging from the small photo in Richard Rephann's catalogue) there seem to be decorative mouldings round the compartment lids.

One might surmise that the Quito clavichord was made by someone trained in the European tradition, whereas the Brussels and Lima examples are indigenous derivatives.

Not all South-American clavichords are so close in style and layout as these three. An instrument in Rafael Puyana's collection, for example,<sup>6</sup> has straight, uncranked keylevers and a system of 'dual' fretting with six courses per octave in the treble only. The strings do not run right across the instrument: about half of them are attached to a diagonal bar fitted across the rear left-hand corner of the case. These features are found

---

<sup>5</sup> See Bernard Brauchli: *The Clavichord*, Cambridge University Press, 1998, ISBN 0 521 630673, p. 257.

<sup>6</sup> See Beryl Kenyon de Pascual: 'Clavicordios and Clavichords in Sixteenth-Century Spain', *Early Music*, vol. XX No. 4 (November 1992), pp. 624-5.

on certain eighteenth-century Spanish clavichords;<sup>7</sup> however, in other respects it differs from them and is closer to the Brussels, Lima and Quito instruments. It has the same basic layout with compartments on either sides of the keys, the same open sound holes, and the same archaic features such as the secondary soundboard under the keys, and the straight perpendicular bridges, apparently retained in the New World long after they had been abandoned in the Old.

## CONCLUDING COMMENTS

This clavichord was made in Peru some time before 1928. It has actually been used as a musical instrument, as is shown by the wear on the key-plates and the note names written on some keys. It is not an isolated design, but seems to be a representative of a characteristically South-American type of clavichord, the design of which is ultimately derived from fifteenth- or sixteenth-century European models, presumably brought over by the *conquistadores*.

Further organological investigation of the instrument would be worthwhile: in particular, it would be useful to measure the sounding lengths of the strings and to take a rubbing of the rack. These could then be compared with the Lima clavichord, and it might then be possible to come to some conclusion whether or not they were made by the same maker.

As Beryl Kenyon de Pascual remarked in 1992,<sup>8</sup> ‘Latin American clavichords have yet to be studied systematically’. This is still true, and such a study would be well worthwhile, not only, as she suggested, for the sake of the ‘fossilised information’ which these clavichords preserve, but also because of the intrinsic interest of the subject. It is, after all, surprising and intriguing to find that the clavichord played any role at all in Latin-American musical culture: a systematic study could help us understand precisely what that role was (or is).

An essential first step would be a catalogue or check-list of all known Latin-American clavichords. I venture to hope this will not be too long in coming.<sup>9</sup>

## ACKNOWLEDGMENTS

I thank Jean Tournay for bringing this clavichord to my attention and for sharing his notes with me; Luc Lanoo, Veronique De Wilde, and Judith Wardman for their help with examining the instrument at the Museum; and Derek Adlam and Beryl Kenyon de Pascual for suggestions and information.

Peter Bavington, London, November 2004.

---

<sup>7</sup> See Beryl Kenyon de Pascual: ‘18th–19th century Spanish clavichords with fretting variants’ in *Fundament aller Clavirten Instrumenten – Das Clavichord, Symposium im Rahmen der 26. Tage Alter Musik in Herne 2001*, Munich, Musikverlag Katzbichler, 2003. ISBN 3 87397 582 3.

<sup>8</sup> In the *Early Music* article referred to in note 6.

<sup>9</sup> The catalogue envisaged here is now available on-line at [www.latinamericanclavichords.info](http://www.latinamericanclavichords.info). [Note added 2022]

## APPENDIX

### *Brief biography of Andres Sas*

(Based on the entries in *The New Grove Dictionary of Music*, second edition, London, 2001, and *Die Musik in Geschichte und Gegenwart*, second edition 1994–2008)

Andres Orchassal Sas was born in Paris in 1900. When he was five, the family moved to Brussels, where he studied to be a chemical engineer. In 1920 he completed a course in harmony at the Anderlecht Academy, Brussels, going on to study violin and music theory at the Brussels Conservatory. After a year of teaching at the Forest Music School, Brussels, he was appointed in 1924 as teacher of violin and chamber music at the Lima Academy in Peru. He returned to Belgium in 1928 to direct the municipal music school in Ninove; then, in 1930, he settled permanently in Peru, where he actively pursued his career as a composer, instrumentalist and teacher at both the Academia Sas-Rosay (which he founded with his wife, the pianist Lily Rosay) and the Conservatorio Nacional de Música. Sas edited a number of musical journals and published studies into the indigenous music of Peru; and he was the first Peruvian to make a scientific study of the clay syrinxes of the Nazca, a pre-Inca tribe, establishing the microtonal nature of their music. As a composer, he treated Peruvian materials in an Impressionist manner, producing salon pieces based on pentatonic highland melodies.

## PHOTOS

Photos 1 to 16 by the author



Photo 1: Soundboard, bridges and hold-downs

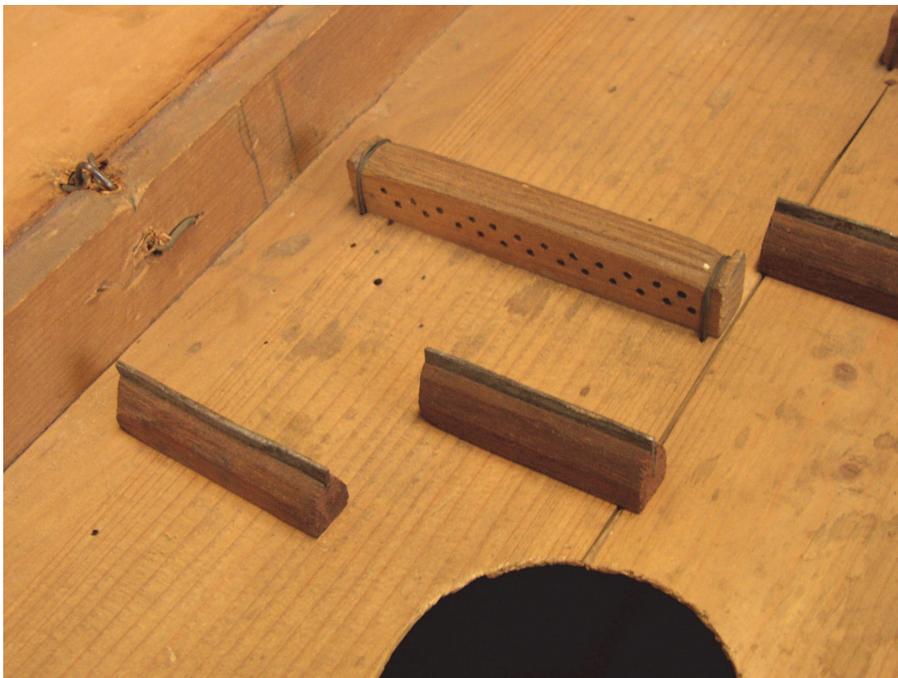


Photo 2: Treble hold-down and bridges; also showing lid hinge made of wire loop

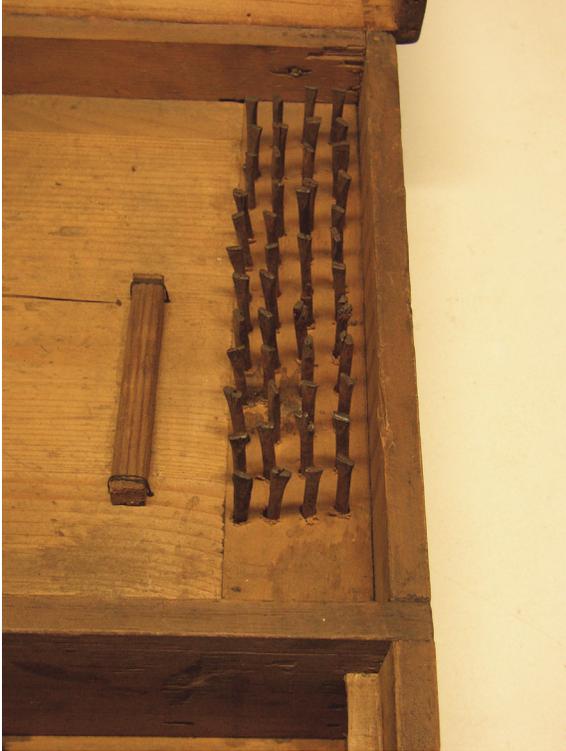


Photo 3: Wrestplank and  
bass hold-down



Photo 4: Treble hold-down



Photo 5: Hold-downs and bridges (view from spine side).  
Note glue traces on middle rail



Photo 6: Treble keylevers



Photo 7: Treble keylevers and rack: note extra slot



Photo 8: Keylevers, showing sound hole in secondary soundboard



Photo 9: Hitch-pin rail:  
note zigzag arrangement



Photo 10: Tuning wedge?



Photo 11: Front left corner, showing dovetail joint;  
also through-tenon joint to middle board.

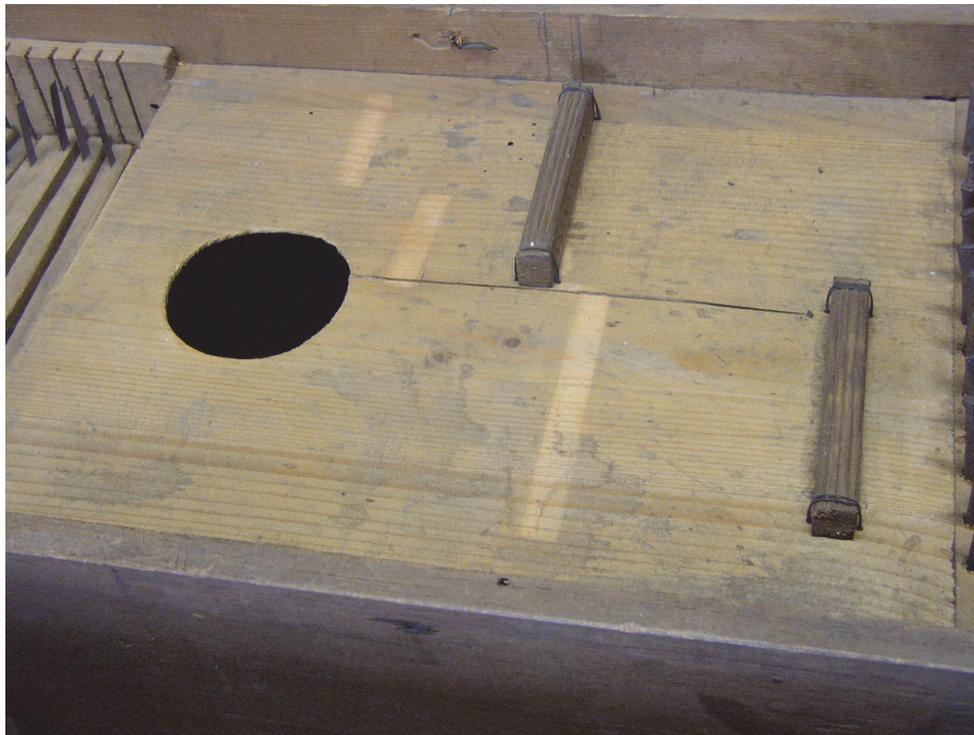


Photo 12: Light-coloured patches on soundboard show position of bridges



Photo 13: Balance pins driven into middle rail



Photo 14: Fall-board and wire hinge



Photo 15: Rack and keylevers. Note wear on key-coverings



Photo 16: Fall-board hook