

## 32. Pianoforte action

Florence, 1726 - c. 1900

Composite with parts attributed to Bartolomeo Cristofori

(Padua, 1655-Florence, 1732)

Inv. Donazione Gatti Kraus 1



### Description

Except for one key, one damper and the heads of two hammers that were made by Bartolomeo Cristofori in 1726, the entire action presented here is an early twentieth-century reproduction of the action of the Bartolomeo Cristofori pianoforte (Florence, 1726) in the Museum für Musikinstrumente of the University of Leipzig, inv. no. 170.

The KEYBOARD FRAME is of Norway spruce (*Picea abies*), except for the back rail and the upper part of the balance rail that are walnut (*Juglans regia*). There is a moulded walnut frame on the front rail. The iron balance pins (some of the tops have been filed down) are driven into the pin rack, which consists of a Norway spruce bottom rail that is fastened to the side rails, with a walnut top rail glued on top. There are six notches on the outside of the back rail, which, in Cristofori's actions, fit the six wooden spacers between the wrestplank and the belly rail when the keyboard frame is inserted into the piano. To the sides of the keyboard frame are two black-stained walnut blocks on top of which are two

blackened walnut knobs. The two 7 mm recesses to the sides of the frame are typical of the keyboards of Cristofori's 1722 (Museo Nazionale degli Strumenti Musicali, Rome) and 1726 pianos; they can be slid sideways to engage the *una corda* stop. The three rectangular grooves on the front rail of the frame are also related to this feature. The cloths on the back rail, pin rack, and on the front rail, that serve to diminish friction with the key levers are all modern. The keyboard frame is fastened to the Norway spruce board that serves as a support, with ten screws. All four sides of the board are edged with cypress moulding.

The KEYBOARD COMPASS is C-c<sup>3</sup>; the first (C) of the 49 keys was actually made by Cristofori, while all the others are early twentieth-century reconstructions. The chestnut (*Castanea sativa*) key levers are all hand-numbered in ink. An inscription on the last key reads "B. C.". The first key lever is the only one with score marks, which served as guides during construction, on the top and bottom surfaces. The tail ends of the keys are stepped to support the dampers. The coverings

of the natural keys are boxwood (*Buxus sempervirens*): the first key has shallow, double score lines while all the others have a single line. The cracks on some key coverings (10, 20, 25, 27, 30) caused by coarse sawing were clumsily repaired with boxwood inserts. The fronts of the natural keys are also boxwood and have arcades. The lower semicircles of the arcades are open in the middle revealing a 1 mm intermediate layer glued to the front of the key; on the first key it is ebony (*Diospyros* sp.) and on all the others, it is black-stained pear wood (*Pyrus* sp.). The arcade of the first key is much more finely made than the others. The accidental keys are black-stained pear wood. The layer of sheepskin leather covering the back of the first key is older than the red leather covers on the other keys. These leather covers serve to soften the contact between the keys and the wooden rack pins, which consist of cylindrical conifer wood pegs fastened to the back rail of the key frame.

As in all of Cristofori's pianos, the ESCAPEMENT is inserted into the key. It consists of a jack that goes through the key lever.

The upper part of the jack is L-shaped. The escapement jack of the first key, the only one that can be attributed to Cristofori, is entirely of pear wood, as opposed to the others, which have a middle piece made of jujube wood (*Ziziphus jujuba*) and two lateral pieces of pear wood. Furthermore, the jack of the first key is the only one that has double scoring lines on the sides. The escapement jack moves within the mortise on the key lever. The block beneath the key lever and behind the escapement jack is chestnut wood on the first key and walnut on all the others. When the key is pressed, the top of the jack hits the triangular block glued to the bottom of the intermediate lever which should push the hammer against the strings. After having hit the intermediate lever, the escapement jack is pushed back to its rest position by a brass-wire spring. One end of the spring is secured in a small hole in the key lever (that only passes completely through the first key) while the other end is inserted into a circular opening in the bottom left of the escapement jack. In Cristofori's actions, it is possible to strengthen or lighten the jack's movement by shifting the spring. The jack-stop consists of a short brass rod with a double leather pad on top and is set into the key lever. The motion of the rod makes it possible to regulate the escapement. The rod of the jack-stop on the first key is slightly thicker (1.65 mm) than those of all the other keys (1.55 mm). The brass rods of the HAMMER CHECKS are set into backs of the key levers. Like the rod of jack-stop, the brass rod of the hammer check on the first key is slightly thicker than the rods of the other keys. There is an ungulate leather pad glued onto the leather covering on the top of the hammer check. The pad on the first

key is more finely made than the others. The ACTION FRAME, that rests on top of the keyboard frame, consists of a Norway spruce front rail and two Swiss pine (*Pinus cembra*) side blocks that are connected by a Norway spruce rail. The action frame fits onto two maple (*Acer* sp.) dowels that project from the Swiss pine blocks. The action frame does not sit squarely on the keyboard frame as it does on Cristofori's surviving pianos.

The intermediate levers of Scots pine (*Pinus sylvestris*) are hinged to the back rail of the action frame. When the levers are in the rest position, the triangular Scots pine block on the bottom of the levers sits on the L-shaped top of the jack. However, these blocks are not well aligned with respect to the jacks. This error means that the action was never functional. The contact point with the hammer butt on the front of the intermediate lever is covered with leather.

The HAMMERS, except for the heads of the first and last hammers discussed below, are all reproductions. The hammers are hinged to a rack, consisting of two walnut side blocks fastened to the cheeks of the action frame, and of cypress dividers; the rack is fastened to the front of the action frame. A brass rod, bent into an L at the end, passes through semicircular walnut hammer butts, and through the rack dividers to which they are hinged. The pencilled numbers on the hammer butts are written in a modern hand. The Scots pine shanks of the hammers are round. The walnut hammer heads are wrapped with paper rolls. The paper rolls on the first and last hammers seem original and consist of several layers. However, when the action was built, the two original rolls were glued incorrectly: the thicker roll (meant to strike the bass

strings) was attached to the head of the last treble hammer, and the smaller roll (for the treble) was glued to the head of the first bass hammer. The non-original rolls on the other hammers have more layers of paper. A small piece of leather is glued onto each roll.

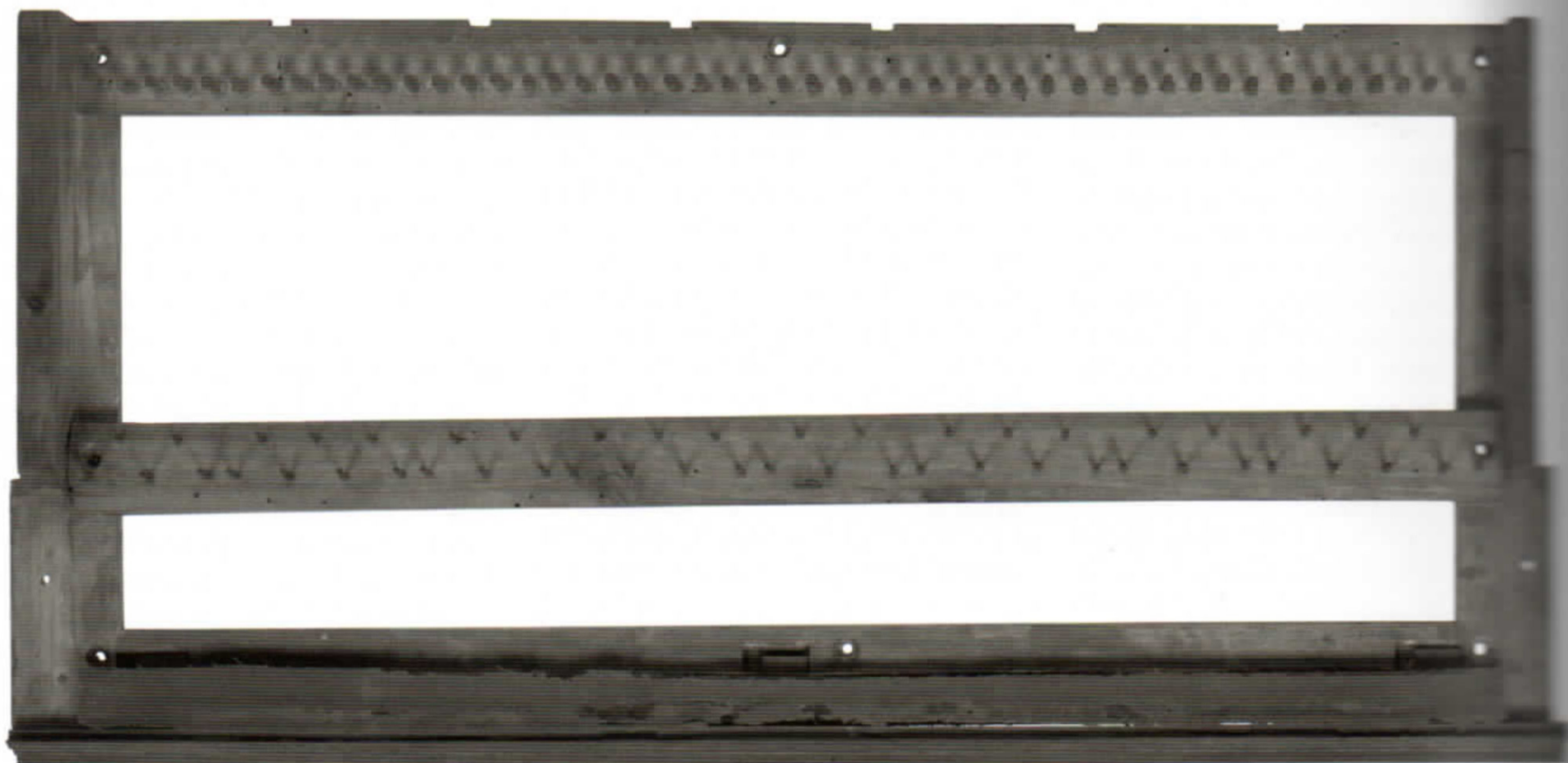
The DAMPERS are on a Norway spruce rack which is open to the front and fixed atop the action by two lateral supports that insert into the board onto which the keyboard frame is fastened with screws. Pieces of leather, meant to stop the vibrations, are glued to the sides of the damper heads that wedge between each choir of strings. The walnut dampers are hand-numbered in ink; they are all modern reconstructions except for number 48, which is the only one made of pear wood and numbered by Cristofori's hand.

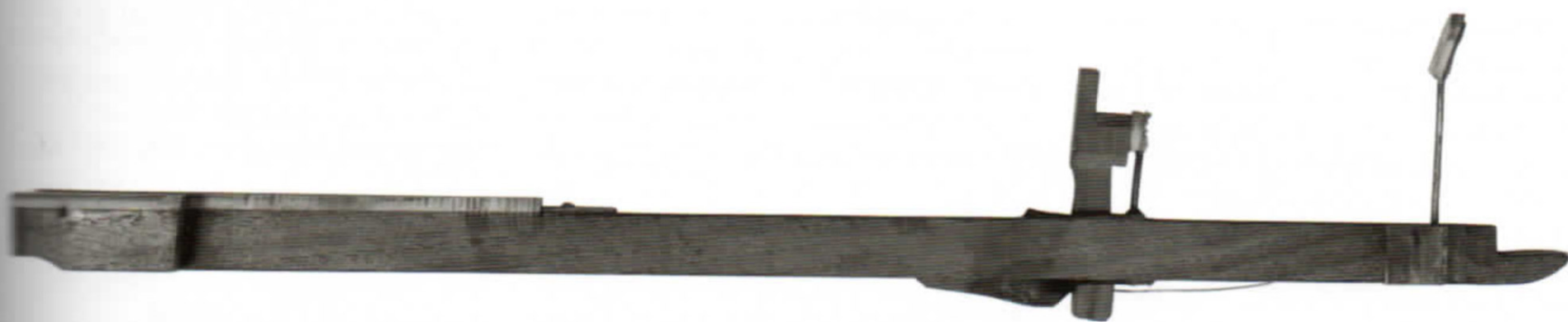
### State of conservation

The action is in generally good condition. There are holes caused by xylophagous insects on the pin rack, the back rail of the key frame, the hammer butts and the action frame. The metal parts are oxidized and many of the leather coverings are severely worn.

### Historical documentation

Since this pianoforte action is not listed in the 1901 catalogue of Baron Alessandro Kraus Jr.'s collection, he most probably acquired it after that year and certainly before 1910. A letter from Kraus to the German musicologist Georg Kinsky, dated 10 January 1910, tells us that he already owned the action: "Fra i miei strumenti ho anche una meccanica intera del Cristofori, fatta attualmente esistente in Italia, che trovai a Lucca da un rigattiere su uno strumento mezzo rovinato" [Among my instruments also have a complete action by Cristofori]





modern reconstruction made with only a few original parts (POLLENS 2002, p. 272).

#### Stylistic notes

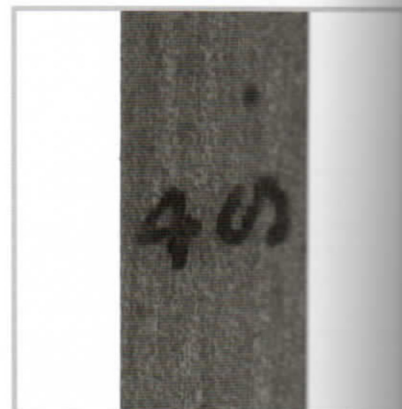
This action was built at the beginning of the twentieth century. It is a reproduction of the action of the 1726 Cristofori piano that was once part of the Kraus Collection in Florence and is now at the Museum für Musikinstrumente at the University of Leipzig. The lowest key, C, (including the hammer check, the escapement jack and the escapement jack-stop), damper no. 48, and the paper rolls glued to the heads of the first and last hammers unexpectedly all come from that instrument. It is plausible that Kraus had this reproduction made shortly before 1908 when he sold a considerable part of his collection, including the 1726 piano by Cristofori, to Wilhelm Heyer of Cologne. In all likelihood, before he sold the Cristofori piano – that was one of the most prestigious instruments in his collection – Kraus removed those parts and had them replaced with modern reproductions. Indeed, the first key lever and damper number 48 on the 1726 piano that Wilhelm Heyer later gave to the Leipzig museum (along with several other instruments from the Kraus collection) are not original, but recent copies. The cast of the C key front of the Florence action (made by Kerstin Schwarz) is a perfect match with the fronts of the natural keys on the Leipzig piano. Thus, the original parts removed from the Cristofori piano were used in a copy of the action of the 1726 instrument (conserved in Florence), which, however, the collector stated was the only surviving part by Cristofori on a wrecked piano he had found in Lucca. The action has the same structural features as Cristofori's 1726 piano. As Kerstin Schwarz (who has contributed to the research) has so kindly told us, we can note the perfect match between the following dimensions of the frame: width at the front from key-block to key-block; width of the back; length of the left and right sides; angle of the back rail (88°); and thickness of the back rail. Furthermore, the way the joints are constructed at the four corners of the frame; the diameter, type of wood and the positions

of the cylindrical pegs that guide the backs of the key levers; the position and diameter (3 mm) of the 49 iron balance pins; the shape and positions of the six notches on the back rail of the frame; two seats for the front rail in the two lateral supports of frame that are glued behind the lateral blocks of the keyboard; the shape and positions of the two dowels that fit into the holes on the left and right blocks of the action frame; the shape and the positions of the three rectangular grooves on the front rail of the frame (related to the *una corda* stop, shifting the action to the left to play only one of the two strings of each choir) are the same. The discrepancies with respect to the 1726 instrument include the type of wood used for the frame (here it is poplar, and on the other, Norway spruce) and, more generally, the crafting of parts such as the mouldings, the back guides of the key levers, the intermediate levers and hammers, which, even though they clearly imitate shape and style, lack the fine workmanship found on Cristofori's piano and the original parts taken from it. The only original damper (no. 48) has the number "8" written horizontally, a characteristic of Cristofori's handwriting that can be seen on his other instruments. Given the current state of knowledge, it is impossible to determine who built this copy of the action of Cristofori's 1726 piano. It is possible that it was made by one of the Florentine workshops which, between the end of the nineteenth century and the early years of the twentieth, specialized in making more or less accurate forgeries and reproductions of antique musical instruments. In any event, we can clearly suggest that this action was not made for teaching or demonstrational purposes but rather to create a fake. This hypothesis is supported by the use of old materials such as the worn leather for the hammer covers. The careful reproduction of minute structural details (such as the notches on the front rail that are hidden beneath the key levers and hence not visible unless the keys are removed, and that in Cristofori's pianos were used to slide the keyboard to engage the *una corda* stop) also points in this direction.

the only one in Italy, that I found mounted on a ruined instrument, with a second-hand dealer in Lucca], (Archivio di Stato di Firenze, Fondo Kraus, vol. 4, Filza Corrispondenza strumenti, 6 January 1910). In 1932, the action was displayed – probably for the first time – at an exhibition held at the Florence Conservatory commemorating the two-hundredth anniversary of Bartolomeo Cristofori's death. On that occasion, the musician Amerigo Parrini "illustrò ai convenuti una tastiera originale del celebre costruttore" [described an original keyboard by the famous maker] (PARRINI 1934, p. 44), which we can assume was the one presented here. Baroness Mirella Gatti Kraus inherited the action and in April 1997, and donated it, along with other instruments in the family's Vancouver home, to the Conservatory in Florence so that the city, "privata totalmente di ogni strumento del celebre cembalaro del Magnifico Principe Ferdinando di Cosimo III de' Medici ed inventore del pianoforte, almeno ne ricevesse un esemplare in ricordo" [that had not a single instrument by the famous [man who was] harpsichord maker to the Magnificent Prince Ferdinando di Cosimo III de' Medici and invented the pianoforte, receive at least one specimen in remembrance] (GUIDUCCI 1998, p. 426).

#### Critical history

This action was long believed to be the work of Bartolomeo Cristofori. In 1980, the Canadian harpsichord maker Edward R. Turner made a diagram of it. Doubts as to its originality were probably raised for the first time in 2002 by Stewart Pollens who noted that it is, to a large extent, a



#### Exhibitions

*Onoranze cristoforiane*, Florence, Regio Conservatorio di Musica, 1932  
*The Look of Music*, Vancouver, Vancouver Centennial Museum, 1980  
*La musica alla corte dei Granduchi*, Florence, Galleria dell'Accademia, 2001  
*Alessandro Kraus musicologo e antropologo*, Florence, Galleria dell'Accademia, 2004

#### References

*The Look of Music* 1980, p. 172  
 GUIDUCCI 1998, pp. 442-445  
*Il museo degli strumenti musicali* 1999, p. 15  
*La musica alla corte* 2001, pp. 68-69  
 POLLENS 2002, pp. 269-278  
*Alessandro Kraus* 2004, pp. 12, 14-15  
*Strumenti musicali* 2009, p. 70  
 G.P.D.S.

DIMENSIONS	LENGTH	WIDTH	HEIGHT	THICKNESS
FRAME	743 (front) 718 (back)	342 (left) 329 (right)	-	10
TRANSVERSE RAIL	682	43	-	16
KEY LEVER (C)	346	25-12	14-4 (without cover)	-
NATURAL KEY COVERS (C)	117	25-14	-	3
KEY FRONT (C)	-	25 18 (arcade)	-	2
SHARP KEY BLOCKS	25	10	10	-
KEYBOARD LENGTH	-	677	-	-
THREE OCTAVE SPAN	-	488	-	-
HAMMER HEADS	11-14	10-12	-	1-1.6
DAMPER	103 (total) 15 (head)	7 -	-	1 -