

ON THE HISTORY OF THE FORTEPIANO



Fortepiano, Johann Heinrich Silbermann, Straßburg, 1776, cat. no. 12, oak with walnut veneer, expertly finished and polished, multi-layered paper rosette © MIM, photo: Jürgen Liepe

The history of the pianoforte begins in the year 1700. These were the times when Florenz Bartolomeo Cristofori had successfully concluded developments to a hammer mechanism, with which he was able to produce a scale of dynamic sounds »pian e forte« (quiet and loud) on a string piano. He met the endeavours of others, who in musical practice had been trying since 1600 to convey the principle of bringing to life a single sound from singing onto a melodic instrument.

This awoke great interest among middle German instrument builders. Here in Germany, the great hammer dulcimer virtuoso Pantaleon Hebenstreit (1667–1750), highly esteemed by Ludwig XIV., had paved the way to developing the mechanical principle of hitting strings with little hammers. Christoph Gottlieb Schröter from Dresden and Jean Marius from Paris, who were probably inspired by his concerts, found possible solutions, which however were not as all-encompassing and elegant as the Cristofori's mechanics. So it is understandable that the most renowned instrument builder

of Saxony, Johann Gottfried Silbermann (1683–1753) emulated the Cristofori mechanism model and built it into his fortepianos. A short time later, during the beginning of the 30's of the 18th century, Silbermann began to have his first fortepianos endorsed by Johann Sebastian Bach. Bach found the weak high notes and the difficulty in the hammer pressure unsatisfactory. In the year 1747 on his visit to Frederick the Great, Bach was happy to play on Silbermann's hammer piano, who in the meanwhile had done a lot of work to improve the mechanics. Bach was taken in by his instruments. Despite this recognition, until the middle of the century the hammer piano was not nearly as significant a musical instrument as the harpsichord and clavichord.

As one of the first, in his 1752 *Versuch einer Anweisung die Flöte traversière zu spielen* (Attempt to obey an order to play the flute) Johann Joachim Quantz acknowledged the worth of the pianoforte at least in view of its use as a general bass instrument. The speed in which the fortepiano gained popularity and began to be valued as a solo instrument, is shown in Carl Philipp Emanuel Bach's contemporary disclosure *Versuch über die wahre Art das Clavier zu spielen* (Attempt to play the piano in the true way), part II, which appeared in 1762. Just nine years before, his verdict on this newcomer was very conservative, as he had only acknowledged it as a recognised instrument alongside the clavichord (Chap. 41, §5). Quantz and Bach, the musicians who were active at the court of Friederich the Great's, probably had the opportunity to practice on the new instrument every day.

The last four decades of the 18th century were criss-crossed by severe debates about the pros and cons of weighing up the concurrent instruments harpsichord, clavichord and fortepiano against one another. Only in 1780 did public opinion shine a more favourable light based on better versions of the instrument builders' handicrafts. Heinrich Christoph Koch confirms the following in his *Musikalisches Lexikon* (p. 590): He purported the fortepiano to be »the well-known favourite instrument of the latter day piano playing world.« A walk round our museum provides a good overview of the development of the fortepiano from 1770 onwards. Until 1760 Germany was the leading maker and user of fortepianos. There were two events which ended this provisional honeymoon period. In 1753 Gottfried Silbermann died; 1756 was the start of the Seven Year War, which nearly destroyed all of the known saxon piano trade. Many of the workers from the Silbermann's workshop emigrated to England, which was enjoying a



blossoming industry and these helped strengthen the trade of building instruments bringing their own ideas and giving it a considerable lift. This tendency received further strengthening when Johann Christian Bach, who had a penchant for this instrument, transferred himself to London in 1762. On the occasion of a concert in 1768 he was the first to perform with a fortepiano as a solo instrument. It had been built by the Silbermann scholar Johann Zumpe. First Burkat Shudi employed him, and later John Broadwood. The renowned English piano-making company Broadwood & Sons was created. In this way the Cristofori-Silbermann tradition could be continued in England. Under the term *Englische Mechanik* the Silbermann model made its way to France in a roundabout way. Here it was improved considerably and then returned to Germany. In the middle of the 19th century the basic structure, still valid today as the foundation mechanism of our modern grand piano, was given full recognition.

Gottfried Silbermann's nephew, Johann Heinrich, belonged to one of the few people who, at the turn of the 18th century, felt it was their duty to keep this tradition. The signed fortepiano from the year 1776 (see image) is one of his. Apart from a few formal differences, the mechanical interiors of Gottfried and Heinrich Silbermann are virtually identical. By looking at the drawing of the Silbermann mechanism of our grand piano it is easier to see the process of obtaining a sound, which is still the same today. These are known from the clavichord and harpsichord: the sound post (a), back string length (b), bridge (c), hitchpin (d), string (e) and key lever (f). The hammer head (i) is turnable in one of the pivoted strings running through the whole piano and its head hangs down onto the key. On the back end, there is a moveable jack (g), which recoils after the strike of the hammer and lets it fall back into the starting position. The hammer is ready to strike again without the key needing to be released. This process is called simple solution. A balance rail (h) lifts the swing of the hammer, the wedge damper (j) and the damper handle (k) are different than those of our new grand pianos and do not have pedals yet, they operate with the hand lever (stop lever) known from the harpsichord and the organ. Due to the aforementioned economic reasons, the jack mechanism with simple release was reduced to budgeted simplified drive models. Piano builders often resorted to using the flat square box-shaped format which seemed more rational for accommodating the simple English action mechanism. Such instruments named square piano received the same treatment with a »smaller« version of the mechanism.

The by far most original pianos in our museum (cat. no. 8 and 336) are presumed to originate from Johann Matthäus Schmahl (1734–1793). He ran a workshop as relative of a known southern German organ and piano builder family in Ulm. His instruments enjoyed great popularity in Germany and Switzerland. The shape of his square piano is reminiscent of that of a lying down

harp. Despite their dainty exterior, they house all of the refined mechanisms customary of that time. Schmahl – like his colleagues – had the idea to transfer the harpsichord index onto the fortepiano. Five frontal hand-stops enable piano changes and sound effects, with a wide-range between a delicate piano sound with harpsichord reminiscences and a sound like a harp. A »drum« takes care of any rhythmic punctuation required, when pushing down on the keyboard, two additional transpositions of half a note are possible. Schmahl also had thought of a chamber music get-together. Further proofs of the rationally motivated, sound-rich keenness to experiment in the second half of the 18th century are the tangent piano by Franz Jakob Späth and Christoph Friedrich Schmahl (cat. no. 3400) and the organ piano by Samuel Kühlewind (cat. no. 14). Both are short-lived stand-ins of a typical transitional period, which however enjoyed full validation in their time. English action mechanisms like those in our square pianos by Schmahl and our organ piano by Kühlewind were not destined for lasting success. Another mechanism derived from the acquired taste for the clavichord sound of musicians and listeners of that time: trip. The most important difference from the English action mechanism is that the hammer is connected to the key. Here the hammer, in order to keep it moveable, is pivoted and encased in a wooden, and later a metal capsule on the key. The hammer handle grabs with its rear part (the beak) under a knee-shaped escapement bar, later known as the escarpment tongue. If you push the key down, then the back end lifts up and pushes the beak down against the key. The hammer bangs against the string and remains under it for a short time. There are the same constraints as with the English action mechanism without the release, the hammer not being immediately ready to re-strike. Here the spirit of innovation and the good craftsmanship of the Augsburg organ and piano builder Johann Andreas Stein (1728–1792) kicked in. He furnished the simple trip with a release, he would place a springy piece of wood into the rigid escapement bar for each hammer, namely the escapement tongue. Directly after the strike, it bounces back and the hammer does not stay on the string, but falls back into its rest.

Mozart expressed his enthusiasm for the Stein piano in a letter dated October 1777. He praised the master's careful craftsmanship, specifically favouring the release mechanism. The escapement tongue mechanism was for a long time the most comprehensive solution and helped the piano in Germany receive recognition alongside the harpsichord and the clavichord. This later drive form, known as *Wiener Mechanik* or *Deutsche Mechanik* embodied an ideal lighter, more delicate tone suited to the sound requirements of the Viennese classics.

Around 1800 there was a completely new development in piano making. With the rise of civil concert events the wish for ever more clear and strong-sounding in-



Pyramid grand piano with pedal clavichords, Germany, around 1770, cat. no. 4878 © MIM, photo: Jürgen Liepe

cross-string connection, which made better use of the resonance chamber and the felting of the now bulky hammer heads, there was now an instrument for virtuosos since the 60s of the 19th century, which enabled the resonance of the romantic orchestra as part of its sound spectrum. The grand piano of the Koblenz company Carl Mand (cat. no. 5203), who worked together with the famous Jugendstil architect Joseph Maria Olbrich in around the 1900's to develop the compactness (weight: about 550 kg), reaching an end to just about 200 years of developments on the grand piano.

In the following period the flourishing piano building industry worked with its mass products on further improvements. In the 30s of the 20th century it conducted experiments with electro-acoustic pianos (see the Neo-Bechstein grand piano, cat. no. 5239), but the technical development of the two most important, still used types of piano – fortepiano and upright piano – was completed already in the middle of 19th century.



Giraffe grand piano, Johann Ludwig Müller, Berlin, around 1840, cat. no. 4612 © MIM, photo: Jürgen Liepe

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