

**The Jankó Keyboard: The Story Behind an Unusual Piano
in the National Music Museum**

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The piano keyboard is one of the most immediately recognizable icons of Western music. It has survived in the same general layout and function for nearly three hundred years. Through that time, there have been numerous attempts to redefine the keyboard for ergonomic, harmonic, and sometimes aesthetic reasons, but none were ever wholly successful at replacing the long-standing norm. Out of these attempts, one of the most notable efforts was that of the Hungarian Paul von Jankó. Although it was soon displaced from production and turned into an historical anomaly, his design was influential enough to warrant a dedicated conservatory, and the Jankó keyboard was adopted by independent manufacturers and transplanted into popular instruments by the likes of Steinway & Sons. Contemporary success aside, the Jankó keyboard—like all other unusual keyboard designs—faded away from the limelight. No level of mechanical ingenuity could override centuries of tradition. There are numerous surviving pianos with Jankó keyboards, one of which is currently on display at the National Music Museum (NMM). Built in 1895 by Decker Brothers of New York, NMM No. 4168 is a typical example of the design that Jankó believed would supplant all other existing systems.

Paul von Jankó was born in Hungary on June 2, 1856.¹ Little is known about his early life or education, but Jankó was formally educated at the Vienna Polytechnicum and Vienna Conservatory, receiving highest honors from both institutions.² Jankó pursued a degree in mathematics at Berlin University from 1881-1882. In Berlin, he studied with the renowned early acoustician Hermann Helmholtz.³ Jankó showed promising interest in piano performance

¹ Kristine Naragon, “The Jankó Keyboard” (master’s thesis, West Virginia University, 1977), 1.

² Merle Mason, “The Janko Keyboard,” *Piano Quarterly* (Fall 1973): 8.

³ Helmholtz was a scientist working in many disciplines, contributing to fields including psychology, philosophy, thermodynamics, and the science of aesthetics. His book *On the Sensations of Tone* (1863) remained standard reference material for acousticians and musicologists through the twentieth century.

through his time in both Vienna and Berlin, but it is likely that his mechanical innovations were stimulated more by his work with Helmholtz than with trained musicians.⁴ Sometime during his second year of study in Berlin, Jankó developed a new keyboard system which he thought to be ergonomically superior to that found on most pianos (and harpsichords, organs, etc.) from the sixteenth century onwards.

The fundamental concept behind the system that Jankó developed was the division of the 12-tone equal tempered scale into two, six-note whole-tone scales. The two scales were staggered by one semitone, resulting in two tone-rows with the compass of: 1) C, D, E, F#, G#, A#, and 2) C#, D#, F, G, A, B.⁵ This ‘six-six’ pitch system was not an invention of Jankó’s. In fact, it was not even the first time such a system had been applied to a keyboard instrument. Six-six pitch systems can be found as far back as the music theory of ancient China, when a tuning system was derived from the six notes sang by the mythical male and female phoenix.⁶ Craftsmen were creating six-six keyboards as early as the beginning of the eighteenth century.⁷ Something about Jankó’s design, however, lit a fire that previous experimental endeavors had failed to kindle. Unlike previous experimental keyboards, which aimed to address singular issues such as key placement or scale arrangement, Jankó took a seemingly universal approach to fixing the ergonomic difficulties of playing the piano. In his treatise, *Eine Neue Claviatur*, he outlined six fundamental shortcomings in the traditional design, all of which he sought to eliminate with his new approach. These six shortcomings, as paraphrased by Naragon, were:

⁴ Kristine Naragon, 3.

⁵ Edwin Good, *Giraffes, Black Dragons, and Other Pianos* (Stanford: Stanford University Press, 1982), 220.

⁶ Jonathan Service, “Chinese Music Theory,” *Sounding China in Enlightenment Europe*, Harvard College of Sciences, October 1, 2013, accessed March 11, 2016, <http://www.hcs.harvard.edu/soundingchina/Service.html>

⁷ Kristine Naragon, 23.

1. The keyboard does not conform to the anatomical structure of the hand.
2. The fingers must be forceably contracted and expanded in order to successfully execute scale passages and chords; although the fingers are of unequal length, they are often forced to play on keys that form a straight line.
3. The thumb often makes it necessary to play between black keys.
4. It is not always possible to use the strongest digit, the thumb, in appropriate places in a composition.
5. The lateral extension of the keyboard makes the interlocking of hands awkward.
6. The span of an octave, or more crucially of greater than an octave, is difficult to execute with small hands; simple reduction of the octave width is not helpful because it is then impossible to play between black keys and the keys are too narrow to allow consistent accuracy.⁸

The end result, which we now know as the ‘Jankó Keyboard’, was a system which involves two interlocking manuals, with each manual having three vertically coupled sets of touchpieces. Each manual corresponds to one of the whole-tone rows. Together, the two manuals present a total of six vertical rows of keys, with three different touchpiece options for any given note to be played. The traditional arrangement of using white key-covers for natural notes, and black key-covers for accidentals is retained, yielding one tone-row (that which starts on C) with a repeating pattern of three white keys followed by three black keys, and the alternate tone-row (starting on C#) with two black keys followed by four white keys.

⁸ Emil Winkler, “The Jankó Keyboard,” *The Musical Courier* (1891). Volume and page numbers unknown.

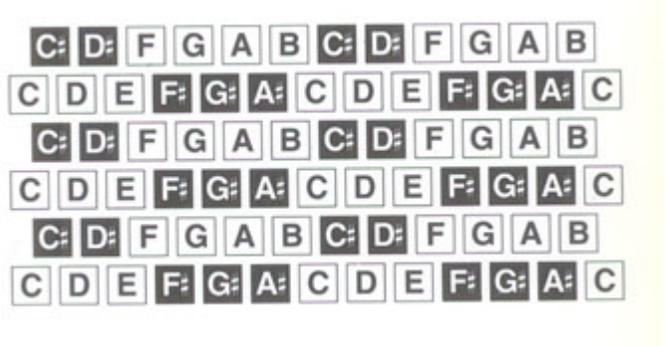


Figure 1. The key-row arrangement of the Jankó keyboard. *Source:* Piano World, “Janko Keyboard Piano,” accessed March 13, 2016. <http://www.pianoworld.com/fun/janko.htm>

The triplicate nature of the two manuals makes it so that moving diagonally from any key in either an ascending or descending direction yields the same change in pitch, regardless of which row of keys you move to or from. Additionally, the staggered naturals and accidentals allow that every scale, chord, and arpeggio has the same fingering pattern no matter which key it is played in.⁹ Every key is of the same size, shape, and distance from its neighboring keys. Jankó’s primary stimulus in designing his keyboard was retaining the most natural hand positions possible while still permitting the full compass expected of a piano. One benefit of having all keys of the same size, and at a significantly smaller footprint than those found on a traditional keyboard, is that the span of an octave was compressed into the same linear space that would only allow six traditional keys.¹⁰ This reduced key-span allows previously difficult intervals, such as the twelfth and fourteenth, to be easily accessible to players with even small hands or short fingers. The total width of the keyboard was also reduced by roughly 30%.¹¹ The benefits of his design are stipulated again in his *Eine Neue Claviatur*:¹²

⁹ Edwin Good, 222-223.

¹⁰ Kristine Naragon, 30.

¹¹ *Ibid.*

¹² Emil Winkler, “The Jankó Keyboard”

1. The natural position of the hand can always be maintained; all chords and scales are comfortable to execute because the thumb, and usually the fifth finger, can play on lower levels than the remaining longer fingers.
2. The widths of all stretches are reduced and distortion of the natural hand position is not necessary.
3. The performer has more endurance due to the lack of stress on the hand, arm, and torso.
4. The uniformity of scales requires only two fingerings; transpositions are convenient due to such fingerings, and chords are also basically uniform in their fingering patterns.
5. The possibility of striking the wrong key is reduced due to the key shape and lack of stress upon the hand.
6. Freedom exists in fingering as it can be adapted to the rhythmic and dynamic conditions as well as the tempo of a given composition; the thumb can play on any key and can pass freely under the other fingers; fingering is no longer “fettered to the inconsistent irregularities of the old keyboard.”
7. The new keyboard facilitates special effects such as chromatic runs which can be played with one finger, legato playing which can be accomplished without aid of the pedal, and chromatic glissandi which can be played in octaves.

Clearly, the ergonomic advantages of such a keyboard are numerous and easy to visualize. Who wouldn't want to make the piano easier to play? Jankó even devised a pedagogical method for learning the fingerings associated with his keyboard, which was adopted and distributed by two advocates of his system, Emil Winkler and Walter Keeler.¹³ Despite its promise and ingenuity, Jankó faced widespread opposition within the piano world. The most

¹³ Kristine Naragon, 34-35.

powerful force working against him was none other than tradition—the universal objection to change based solely on the premise of the way things have always been done—few people who played, taught, composed or published for the piano were particularly interested in re-learning everything they had known throughout their lives. Publishers did not want their music with fingering markings to become obsolete, and distributors did not want to be burdened with selling off ‘old style’ instruments.¹⁴ Fighting against all of these obstacles, the Jankó keyboard managed to find measurable acceptance at the turn of the twentieth century.

Jankó invented his new keyboard in 1882 but it did not reach into the public eye until 1886, when he completed a concert tour performing standard repertoire on a piano fitted with his keyboard design.¹⁵ These performances and his ongoing refinements generated some awareness among other manufacturers and performers, and Jankó subsequently sought to patent his invention in 1887 (U.D Patent Number 360,255). Other manufacturers soon sought to work with Jankó on improving certain aspects of his mechanism. One unfortunate side-effect of the large keys necessitated by his triple touchpiece design (all three touchpieces were mounted to a single key) was that the action was abnormally stiff and sluggish. Jankó collaborated with renowned piano designer F. Julius Blüthner, together receiving a patent in 1888 for a Jankó keyboard with lightened touch.¹⁶ The final patent filed by Jankó was granted in May, 1892. From that point onward, and slightly earlier to some extent, the future and design of the Jankó keyboard was in

¹⁴ Alfred Dolge, *Pianos and Their Makers* (New York: Dover Publications, 1972), 79-80.

¹⁵ Kristine Naragon, 51-52.

¹⁶ Oscar Bie, *A History of the Pianoforte and Pianoforte Players* (London: J.A. Dent & Sons, 1899), 308-309.

the hands of independent manufacturers. Jankó himself had left the country, living out the remainder of his days in Constantinople as the manager of a state tobacco farm.¹⁷

The first known Jankó piano built by a manufacturing firm was constructed in 1885 by the Rudolph Kurka Company of Vienna.¹⁸ In 1890, the Jankó keyboard made its way to the United States, culminating in the founding of the Paul von Jankó Conservatory in New York City. Decker Brothers became the sole U.S. manufacturer of the keyboard, operating next door to the conservatory until 1895 when they went out of business.¹⁹ Although their operations only included Jankó for a short time, the widespread advertisement and praise for the new design stands as a testament to its brief but prolific acceptance in the New York area. The Jankó piano in the NMM collections was built by Decker Brothers in the last years of the operations, showcasing the pinnacle of the Jankó piano industry in the U.S.

NMM no. 4168 is unassuming at first sight, and other than the inclusion of the Jankó keyboard, differs little from the typical upright pianos of late nineteenth-century America. The black-finished wood case has ornamented carvings on the legs, trim, and music stand. The compass is a full 88 notes from AAA-c^{'''}, resulting in 264 total touchpieces on the Jankó keyboard. There are two standard pedals—damper and *una corda*—and a patented “swinging music desk” that retracts flush into the case. This was apparently the standard format for Decker Brothers pianos with Jankó keyboards, as available advertising images show the same instrument and a nearly identical model exist in the collections of the Smithsonian (catalog no. 299,840).

¹⁷ It remains unknown why Jankó left the country, or why he spent the next 27 years in meager employment unrelated to his passions and training. He died March 17, 1919.

Friedrich Wiesshappel, “Paul Jankó zum Gedenken,” *Osterreichische Musikzeitschrift* (n.d.): 80.

¹⁸ Alfred Dolge, 83.

¹⁹ Arthur Loesser, *Men, Women, and Pianos* (New York: Simon and Schuster, 1954), 567.



Figure 2. The Jankó piano by Decker Brothers, New York, in the NMM collections. *Source:* National Music Museum, “Upright piano with Jankó keyboard,” *Images from the Lewison Gallery*, accessed March 12, 2016, <http://orgs.usd.edu/nmm/Keyboards/JankoPiano/JankoPiano.html>.

By 1900, there were 59 companies known to have produced pianos or other keyboard instruments with Jankó keyboards, altogether resulting in thousands of the instruments being built and sold in the U.S. and abroad.²⁰ Some manufactures continued to produce Jankó instruments into the twentieth century, possibly as late as 1935.²¹ Had Jankó’s design not gained any interest from the musicians of the time, it is highly unlikely that dozens of manufacturers would have produced thousands of instruments in the style for a period of over three decades.

Not only did manufacturing interest in the Jankó piano grow in the late nineteenth century, but pedagogical interest grew as well. According to Franz Liszt, the Jankó keyboard

²⁰ Kristine Naragon, 69-72.

²¹ *Ibid.*, 73-74.

would have “replaced the present piano keyboard in fifty years.”²² Looking back it is obvious that Liszt was speculating beyond the inevitable reality, but an endorsement from such a prominent figure in the piano world was an unquestionable testament to the relative acceptance the Jankó piano had created. Even before the establishment of the Jankó Conservatory, select schools were focusing their efforts on teaching the Jankó system. Around 1890, a California school for girls purchased five Jankó keyboards and maintained a studio of around twenty pupils on the instrument.²³ The establishment of the Jankó Conservatory by Richard Hansmann in 1891 further established the Jankó keyboard as a viable alternative. Emil Winkler and Walter Keeler, who worked with Jankó in distributing materials regarding his fingering system, took over control of the conservatory shortly after and operated it from then on out. The Jankó Conservatory closed sometime during the 1890s, attesting to both the volatility of the experimental piano industry and its close ties to the manufacturing efforts of Decker Brothers, who ceased to operate in 1895.²⁴ No other institutions established programs which taught only the Jankó system, but various schools and individuals throughout Europe continued to offer it alongside the traditional piano into the 1930s. Prominent conservatories in Berlin, Stuttgart, Vienna, London, and Leipzig instructed on the Jankó system and kept Jankó pianos in their possession.²⁵

For whatever reason, interest in the Jankó keyboard disappeared in America long before it faded away from European prominence. Contemporary writings from the early twentieth century relegate the Jankó system to experimental status, or refuse to acknowledge it altogether,

²² Stuart Isacoff, *A Natural History of the Piano* (New York: Alfred A. Knopf, 2011), 288.

²³ Wiesshappel, 80.

²⁴ Kristine Naragon, 78-79.

²⁵ Walter Rehberg, *Janko's Chromatische Terrassenklaviatur* (publisher unknown, 1933). Kristine Naragon, 81.

by the 1920s.²⁶ European writers tended to acknowledge the potential of the instrument more readily than Americans, but they too began to reference it as a fad of the past by the 1940s.²⁷ It is difficult to say what exactly led to the downfall of the now decades-old interest in the Jankó system, but with manufacturers no longer producing instruments, music no longer being written, and historians readily deriding the otherwise ingenious solution to the problems of the piano keyboard, the Jankó piano faded into popular obsolescence in the mid-twentieth century.

The Jankó keyboard was a delicately intellectual solution to an ever-present problem; the ergonomics of the traditional piano keyboard. Jankó's design, unlike every other attempt to address the issues, gained international acclaim and acceptance from a variety of manufacturers, publishers, and educational institutions. For nearly half a century, the Jankó piano was seen by many as a viable alternative to the standard piano. Thousands of individuals learned, from scratch, the new techniques and approach required to call the Jankó piano their primary instrument. Unfortunately this was not enough. Facing the Goliath that stood as the modern piano industry, Jankó's innovation was a David that could not rally a victory. Surviving examples like the Decker Brothers Jankó piano at the NMM permit curious individuals to look into the brief window of history and see what could have been. Arthur Loesser eloquently dictates the fate of the Jankó system in his book *Men, Women, and Pianos*:

The fact was that the Jankó keyboard, however practical and efficient in principle, could not overcome the pressure of accumulated habit and tradition of centuries, in which the practice of the keyboard players and that of the keyboard builders supported each other.²⁸

²⁶ Kristine Naragon, 88-91.

²⁷ Ibid., 112-115.

²⁸ Arthur Loesser, 568.

However, Loesser also acknowledges that like all radical ideas, if they are of sound disposition and achieve their desired end, there might still be room for them in the future:

The Jankó keyboard is indeed an ingenious invention and is based on sound principles.

Many scholars know of it, it is quite possible that it may again come into general notice.²⁹

For now, the Jankó keyboard remains a fascinating historical curiosity, one that can be seen, heard, and sometimes played at the National Music Museum.

²⁹ Kristine Naragon, 116.

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