

Emanuel Moór was doubtless aware that many other attempts had been made, in the past, to modify the traditional keyboard. I feel this book would be incomplete, if a brief account of the more important of these inventions were not given:

In 1876 Mangeot of Paris, made a reversible grand piano for the Polish pianist, Joseph Wieniawski. (1837-1912).<sup>\*</sup> Two grand pianos were built one on top of the other. The lower instrument was a mirror reversal of the upper; when one played to the right, the sounds became lower instead of higher. The final contraption was ugly and clumsy, but some attempt was made to make it possible to play on the two keyboards simultaneously. The instrument can be seen today, in the musical instruments museum of the Brussels Conservatory.

In 1895 Pleyel of Paris, made a double piano, or 'Duoclave', for the purpose of playing duets for two pianos. The instrument was rectangular in shape, consisting of two grand pianos built into a single case. There was a standard keyboard at each end. When only one keyboard was used, the pianist could pull a stop which enabled his right foot to control the dampers of both instruments, thus increasing the tone by sympathetic vibration. As early as 1850, a similar instrument had been made by Pirsson of New York.

In 1910, Clutsam brought out his curved and concave keyboard. This was an attempt to bring all the keys within approximately the same reach of the player's arms, since the arms usually move in arcs on two separate planes. The device was used for a short while in Germany. (For an illustration see Plate 90, page 494, *The Oxford Companion to Music*, Percy Scholes. O.U.P.).

By far the most important predecessor of Emanuel Moór, however, was his countryman Paul Von Janko. Janko was born in Tobis, Hungary in 1856 and died in Constantinople 1919. He was a mathematician, as well as a musician. As a musician, he studied under Josef Krenns and Anton Bruckner in Vienna. He invented his new keyboard in 1882. (For an illustration see Plate 90, Oxford Companion, reference above). The Janko keyboard has something of a typewriter look about it. There appear to be six different rows of keys all identical in size and shape. These six rows rise like terraces, the lowest being in the front of the instrument, just a little higher than the front rail, or keyslip. Each wooden keylever of the action supports three finger keys with ivory surfaces. These register with those on either side, to form a continuous series of ivory rectangles. For adjacent keys, however, the C Major scale is abandoned. Each row sounds a whole tone scale, the lowest row for example being C D E F sharp G sharp A sharp and the row behind being C sharp D sharp F G A B. As a result of this arrangement, all 12 diatonic scales can be played with only two sets of fingering. Octave stretches are reduced to the distance equivalent to a major sixth on the normal keyboard; any piece of music can be played in any key without altering the fingering or increasing the technical difficulty. Chromatic glissando passages are possible and certain trills and ornaments can also be played with sliding movements. Arpeggio playing is greatly simplified. Some upright instruments were constructed with reversible keyboards, in such a way that they could be used in the traditional manner, or in the new manner.

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<sup>\*</sup> Six of these instruments were built as grands, in addition to several up-rights. (See *History of the Piano*, Ernest Closson, page 124-125. Paul Elek, H.S.)

The Janko keyboard, being narrower than normal, needed excessively cranked keys. These were not very successful, as Emanuel Moór discovered on his first prototypes. Wobble occurred at the balance pins, giving a feeling of insecurity to the fingers. In addition, mechanical problems arose in connection with the touch which was sluggish, because each wooden lever had to support three finger surfaces. A German pianoforte maker came to the rescue; Paul Perzina of Schwerin, Germany, brought out an improved model.

In 1891. The Paul Von Janko Conservatory of Music opened in the U.S.A; the musical director, Emil Winkler, wrote a series of articles in the Musical Courier on the technique of the new instrument.

Examples of pianofortes fitted with the Janko keyboard can be seen in the Folk Museum, Oslo, Norway and in the National Museum in Washington D.C.