

CONTEMPORARY WOODWIND KEY MECHANISMS

by Lars Kirmser

Much can be learned by examining the various designs and variations of Woodwind key mechanisms. I find it entertaining to try to determine the thoughts and motivations that inspired these designs (antique as well as contemporary!).

The sophistication of the early musical wind instruments was, in my opinion, directed to a large degree by three primary factors. They were: 1. the available technology 2. the demands of the performing musicians 3. and, the demands made by the early composers upon these musicians to perform difficult or awkward passages on their rather crude instruments.

When one considers these motivations which resulted in today's superb musical instruments, one can only speculate which factor was most responsible, that is, the BUILDERS (who were often amateur musicians themselves), the PERFORMERS (who often composed music for their instruments) or the COMPOSERS of the early works. Certainly, all three elements were important to the development of the musical instruments of today.

The development of WIND instruments was, by comparison, much slower in the making than their stringed instrument counterparts. This, of course, was due in part to the fact that most stringed instruments have a relatively easy time avoiding the acoustical problems experienced by the early wind instrument builders. After all, a string can be adjusted slightly higher or lower by a mere movement of the stopping finger or fret placement, whereas, a wind instrument was forced to contend with inherent acoustical problems such as the delicate relationship between length and diameter of the internal vibrating column of air; tone hole size and placement; the shape of its internal dimensions as well as the procurement of materials that were not so easily come by or worked; namely, refined metals and imported exotic hardwoods. Where the violin was already a refined musical instrument by the late 1500's, most wind instruments didn't really reach

a tolerable level of refinement until the early to middle 1800's.

Each instrument of the Woodwind category seems to illicit the name of at least one outstanding individual who seemed, above all others, to be most responsible for bringing that instrument to its present level of refinement. The name that is most often associated with a number of the woodwind instruments is that of Theobald Boehm (1794-1881) of Munich, Germany. It was due to his considerable efforts in designing the contemporary flute that most of the existing woodwind instruments of Western culture owe their fingering systems. The name that is most often associated with the development of the present-day Clarinet family is that of Hyacinth Klose in association with the Paris musical instrument maker Auguste Buffet-Crampon. The date of their first completed instrument is generally said to be 1843, and patented-in 1844.

The innovation of the family of Saxophones is credited to the fertile and imaginative efforts of Adolphe Sax of Brussels. During the years 1840-1841 Adolphe Sax, then working with his father, produced the first saxophones. These early instruments were made only in the larger sizes; the whole family was not completed until sometime after Sax had relocated his instrument factory to Paris in 1842. The French Saxophone patent is dated 1846. The name of Johann Adam Heckel of Biebrich, Germany is most often associated with the modern German system Bassoon.

To me, it isn't enough to just know the names and dates of the people associated with all the major developments of the Woodwind instruments. Instead, I want to know what was going through the mind of the innovators, and what might have inspired their thoughts. After all, it is nothing short of miraculous that some of the modern-day woodwinds have remained virtually unchanged in basic design for well over 100 years!