This article is an adaption of parts of chapter 2 (Biographical data) and 11 (Chalumeaux and clarinets) of my dissertation: Jan Bouterse, *Dutch woodwind instruments and their makers, 1660-1760*. (Utrecht, 2005). The translation was done by Ruth Koenig, who sadly died just a few years after completing this very difficult job.

Unlike double-reed instruments such as oboes, shawms and bassoons, there does not appear to have been an important tradition in the 18th century of single-reed instrument production in Holland. But clarinets were produced as early as 1718, when Jan Boekhout published an advertisement in which he announced that he ‘has also just invented another instrument called the Clarinet, which can be played in a large concert.’

**About Boekhout**

In the *Nieuw Nederland Biografisch Woordenboek* of 1912 J.W. Enschedé records two woodwind makers by the name of Boekhout: T. Boekhout and J. Boekhout. The sources of Enschedé’s information are unclear, and we do not know whether he was aware of the fact there were indeed two makers, father (Thomas) and son (Joannes or Jan). There is more information about the father than the son. Thomas Boekhout, who was born in 1666 as Thomas Coenraetsz Boekhout in Kampen, evidently moved to Amsterdam later, for it is there that he was apprenticed to the fluytenmaker Jan de Jager whose niece, Barbara de Jager, he married in 1690. BMB records show that Thomas Boekhout lived on Keizersgracht, but from 1713 onward he is located in Kerkstraat, the address named in two advertisements placed by Boekhout, the first on 9 May, 1713 (repeated on May 12), in the French *Gazette d'Amsterdam*:

'Music-lovers are informed that Thomas Boekhout moved house this month [May], that he is currently living in Kerkstraat, between Leidsegracht and Leidsestraat: 'He has recorders, oboes and bass recorders in stock, also the Dessus; also recently invented bassoons and several other instruments. And because some people are making and selling instruments under his name, music-lovers are advised to contact him directly.'

(On avertit les amateurs de la Musique, que Thomas Boekhoudt a changé de Logis ce mois de May, qu'il demeure présentement dans le Kerkstraat, entre le Leydse-Gragt & Leydse Straat: On trouve chez lui des Flûtes, Hautbois, Basses-Flûtes aussi complètes que les Dessus; comme aussi des Bassons d'une nouvelle invention, & plusieurs autres Instruments. Et comme quelques gens font & vendent des Instruments sous son nom, il en avertit les Amateurs, afin qu'ils s'adressent chez lui.)

Thomas Boekhout died in 1715. Jan Boekhout who was baptised Joannes on December 23 1696 in Amsterdam is known to have built woodwind instruments from an advertisement published in the *Gazette d'Amsterdam* on June 14 1718 (repeated on June 24 and July 1 of that year): 'Jean Boekhoud, son of the late Thomas Boekhoud, residing in Amsterdam in the Kerkstraat between Leidsegracht and Leidsestraat, hereby informs music-lovers that he continues to make all kinds of recorders, oboes, bass recorders, as well as a recently invented bassoon: he has also just invented another instrument called the Clarinet, which can be played in a large concert.'

(Jean Boekhoud, Fils de feu Thomas Boekhoud, demeurant à Amsterdam dans le Kerkstraat, entre le Leidsegragt & le Leidsestraat, donne avis au Amateurs de la Musique, qu'il continuë à faire toutes sortes de Flûtes, Hautbois, Basses de Flûtes, comme aussi des Bassons d'une nouvelle invention: il vient encore d'inventer un autre instrument, nommé Clarinet, dont on peut se servir dans un grand Concert.)
The stamps on the instruments of Boekhout. The numbers of the instruments (such as Boekhout no. 16) correspond to the new list of instruments, published on my website (www.mcjbouterse.nl), on which the photos are in colour.

Reports of clarinets in the 18th century in Holland

Only two complete Dutch baroque clarinets are extant and historical reports of clarinets are relatively seldom; the same applies to chalumeaux. In terms of construction there is not much difference between these two types: both have cylindrical bores which in the case of the chalumeau continues cylindrically as a footpiece (which external profile is turned like the footpiece of a recorder), whereas the clarinet's bore flares into a bell.

Because the cylindrically bored single-reed instruments overblow into an upper register at the 12th (an octave plus a fifth), six or seven finger-holes are not enough to play all the tones in the lowest register. This is why clarinets and chalumeaux have two keys at the top which can be operated by the thumb and index finger of the upper hand to fill up the range of the lower register to the lowest overblown tone. Halfway through the 18th century there still appears to have been a good awareness of the differences between the two types. In the 1759 inventory of Nicolas Selhof's estate, for example, some clarinettes and chalumeaux are listed separately. Among the instruments were two by Philip Borkens, the maker of
one of the two extant clarinets. The two types are also listed separately in the 1764 inventory of the estate of Van Bolhuis of Groningen, in which there were one or two chalumeaux by Jan Steenbergen.

Defining the clarinet's tuning is somewhat problematic. In the first fingering tables (for example Eisel 1738, p. 76-79) the fundamental of the lowest sounding register is stated, F. Later, clarinet tunings were indicated by the pitch of the overblown fundamental, an octave plus a fifth higher; in accordance with this newer custom the Eisel instrument would be called a clarinet in c".


The fingering table of Eisel is beautifully engraved and easy to understand. The two dots at the left of each tone are the keys at the front and at the back (the register key) of the instrument, than follow the other holes:

<table>
<thead>
<tr>
<th>Top key</th>
<th>hole 1</th>
<th>hole 2</th>
<th>hole 3</th>
<th>hole 4</th>
<th>hole 5</th>
<th>hole 6</th>
<th>hole 7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Register key</td>
<td>thumb hole</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

b = b-flat; h = b; dis = d-sharp (et cetera), a black dot means that the hole is closed.

What I don't understand are the same fingerings for a and b in the middle column. J.F.B.C. Majer, German organist and writer (1689-1768) gives in his *Museum Musicum Theoreto Practicum* (1732) some other fingerings, but he also calls the lowest note f.

In the 1801 inventory of the estate of the Amsterdam organist Bartholomeus Rulofs there is a clarinet with C, B, A and D *verzetstukken* (= corps de rechange), made by Beukers. With the C corps this clarinet's lowest tone was probably an F. It is not known when corps de rechange for the clarinet were introduced in the Netherlands. The father-and-son collaboration of Willem Beukers' production lasted for a lengthy period, and the names Beuker and Beukers may have been confused in Rulofs' inventory.
Nor is it known exactly who made the clarinet listed in the 1794 inventory of Mr. Bouwens' estate. The maker's name is given as 'Wijne', without initials that could tell us whether the father (Robbert) or the son (Willem) was meant. Going by its description, this was a luxury clarinet, made of ebony with silver keys. As far as we know, this was an unusual choice of materials for 18th-century clarinets. Although it is not known for certain whether Robbert Wijne made clarinets, Willem Wijne certainly did. The name W. Wijne occurs in connection with two clarinetten in a sale of six estates in Arnhem.

Boekhout's clarinet
Boekhout's clarinet (in the MIM, the Museum of Musical Instruments in Brussels, inventory number 2561) is possibly one of the oldest surviving clarinets not to have been made in the Denner family's workshop in Nuremberg. The question is: who made this instrument: father Thomas or son Jan? The stamp is fairly distinct: T.BOEKHOUT but this does not rule out the possibility that Jan Boekhout - using his father's old stamps - was its maker. The instrument is made of dark-stained wood European boxwood, according to clarinet player and maker Eric Hoeprich. According to Gilles Thomé, who measured the instrument and made drawings of it, and whose opinion I share, the wood is plum. The clarinet is marked with the small T.BOEKHOUT stamp. Unfortunately, the mouth-piece (probably in one section, including the barrel) is missing.

This clarinet's centre joint also consists of two sections, with two brass keys (register key and short key) on the upper section of the centre joint. The bell flares on its way down; the bell bore, unlike those in most baroque oboes, connects snugly with the centre-joint bores, without a gap. The clarinet has three convex ivory mounts. The finger-holes on the centre joint, as is often the case with early clarinets, are all approximately the same size, with pronounced undercuttings. The hole below the register key is small, however; it is lined with a brass tube reaching halfway into the bore. The finger-hole on the bell is drilled at a downward slant. The keys and wood are neatly finished and in excellent condition. It is therefore even more of a pity that the mouthpiece is missing. Compared with Borkens' elegant, slimmer clarinet, the bore of Boekhout's instrument is longer and also thicker and wider (14.8
mm in the cylindrical section). This is really a clarinet in F/c (the fundamental is F; the instrument overblows to c"). The turned wood and ivory elements are an attractive combination of robust design and finely detailed workmanship.

The central question in an article about Boekhout's clarinet by the clarinet player and maker Eric Hoeprich is what type of clarinet is best suited to the Vivaldi's three concertos for this instrument. The compass for the clarinets in these concertos stretches from F to c''' and Hoeprich came to the conclusion that of about 30 baroque clarinets in European and American collections, only two instruments were possibly suitable for these concertos, one by Jacob Denner and the other by Boekhout. Hoeprich finds it remarkable that Boekhout or his son could have made such a fine clarinet so soon after the introduction of this type of instrument. On the other hand, Hoeprich points out that Estienne Roger of Amsterdam published the earliest known works (1716) in which the clarinet is named as an instrument on which these pieces could be played. Boekhout could therefore have been aware of the instrument at an early stage.

In Hoeprich's opinion the Boekhout clarinet bears a fairly strong resemblance to Denner's instruments, also with regard to the keys. Indeed, the keys are even more like those on Denner's clarinets than on Boekhout's own oboes. In the author's opinion, however, there is hardly any difference between the short key and the e-flat keys on one of Boekhout's oboes, a model frequently found on various Dutch makers' oboes. The register key may well be regarded as deviant, but this is due to the lack of material for comparison. The key wing is more simply shaped than usual and has slanting sides (especially the cover).

Using a copy of a Denner mouthpiece, Hoeprich played Boekhout's clarinet in a tuning of ca. a'=425 Hz. Thomé measured a slightly lower tuning, a'=418 Hz. Hoeprich also states that b' (the highest note of the lowest chalumeau register) could not be played, or not well, on this instrument, rendering it unsuited to Vivaldi concertos in which a b' occurs. This was not to be blamed on the mouthpiece (which was not original) used by Hoeprich, because no other problems arose that might have been caused by the mouthpiece. Unfortunately Hoeprich's article does not supply any more information, for instance what fingerings he used.

**Borkens' clarinet**

Borkens' clarinet in the Gemeentemuseum at The Hague (no. Ea 206-1933.) is made of European boxwood varnished dark brown; the inside of the bell is also varnished, but not the tenons, nor the insides of the sockets, nor the wood around the slot of the mouthpiece, which remained uncoloured. The instrument consists of the following elements, which are, from top to bottom: the original one-part mouthpiece, which ends in a beak in which the slot is cut. Unfortunately, two oblique cracks in the mouthpiece render the clarinet practically unplayable. Next comes a centre joint with 1 + 6 finger-holes and two key holes with brass keys. Finally we have the bell with one finger-hole. Apart from the cracks in the mouth-piece the instrument is intact. A remarkable feature of the Borkens clarinet is the length of the centre joint's lower tenon, which is slightly longer than the bell socket. It is highly unlikely that Borkens could have been so careless; a possible explanation is that the clarinet was originally one of a pair (with slightly different dimensions) whose joints got mixed up.

As is customary for these instruments, the centre joint has a cylindrical bore with a diameter of ca. 14.1 mm and a fraction narrower at the tenons (14.0 mm), probably due to tenon contraction. In the bell the bore widens on its way down from 15.7 mm at its narrowest to 50.2 mm at the bottom. The barrel bore is fairly wide directly after the socket (15.5 mm) before gradually tapering towards the slot. Finger-holes 0 to 6 are strikingly constant in size, with pronounced undercuttings. The hole belonging to the long or octave key is very narrow (2.2 mm), just as in Boekhout's clarinet; a tube is inserted halfway into the bore to prevent water from trickling inside. Hole no. 7 on the bell is drilled at a downward slant.

No results from playing Borkens' clarinet are known. All of its sections are shorter and also a little narrower than the Boekhout clarinet in Brussels. The tuning may possibly be slightly
higher, with G for a fundamental instead of F. The woodwind instrument maker Peter van der Poel of Bunnik (Netherlands) made a copy of this instrument, arriving at a fairly low tuning (a ~415 Hz based on a G as fundamental with all fingerholes closed). In his opinion Borkens' clarinet has a different, more 'late baroque' timbre than, for instance, Denner's early 18th-century clarinets.
Van de Knikker's clarinet

Johannes van de Knikker (1731-1815) was a horlogier (clockmaker) and woodwind maker who lived and worked in Tilburg, in the province of Noord-Brabant. Two interesting oboes, a bell of an oboe d'amore, a bassoon and two sections of a clarinet with the stamp of Van de Knikker survived. These sections provide interesting information about the instrument's development. In the first place it has a one-part mouthpiece (i.e. without a separate barrel) with a unusually small slot. Secondly, unlike Boekhout's and Borkens' instruments, the bell has a few keys. At the top of the bell is the 7th finger-hole for the little finger of the lower hand. Based on the assumption that an F sounds when this hole is closed, opening the key by operating the key just below that 7th hole with the same little finger produces a g-sharp (incidentally, this key, one of the closed type, is missing). Operating two other keys with the little finger of the upper hand enables E-flat and E to be played. Similar clarinets with several keys on the bell became popular all over Europe after 1750.

It is obvious that Van de Knikker made his clarinet in a much more modern style than Borkens and Boekhout did. However, his bassoon and especially his oboes are rather old fashioned instruments, very well made in a personal style.

For more information about clarinets in the 18th century, see the books by Albert Rice: The Baroque Clarinet (1992) and (another book) The Clarinet in the Classical Period (2003). These books or parts of it are available on Google books.
The clarinet on this page is by Johannes Christiani, and is in the Gemeentemuseum in The Hague (no. Ea 8-1989). Christiani was born in 1745 in Warnstein (Westphalia, Germany). From 1786 he lived in Amsterdam, where he died in 1816. Christiani had also no connections with the Dutch tradition of woodwind making in the first half of the 18th century (Haka, Steenbergen, Terton, Richters, Beukers etc.).

The arrangement of the keys on the bell is the same as on the clarinet by Van de Knikker. The lowest note has a frequency of 160 Hz, which is an e, 50 Cents below the pitch of the a1=440 Hz. The longest key gives an e; with the middle key sounds f; the smallest key g#.

See the catalogue 'Dutch traversos and clarinets of the 18th century' by Rob van Acht, Jan Bouterse and Vincent van den Ende (2004, Ed. Bochinsky) for more details. From the description:

A late baroque or even classical clarinet made of brown-stained boxwood with 5 ivory rings and 4 brass keys. This sturdy instrument has sustained little damage over the years; its slightly dilapidated appearance is due to the dirty, somewhat greasy surface of the wood. ... The 7th fingerhole is drilled downward at an angle, merging in the same cavity as the hole of the g#-key.