Distinctly Different: Three American Square Pianos from the Early 1830s

Thomas Strange, HKSNA presentation, May 31, 2013

The many species of American square piano were never more diverse than in the period of 1825 to 1835, when at least three completely distinct approaches to piano design were in vogue. With centers of piano building in New York, Philadelphia, and Boston, as well as more provincial builders in Cincinnati and Baltimore, the many competing piano designs gave rise to a rich legacy of building tradition.

The English style, based on the John Geib escapement and William Southwell damper patents, was in nearly exclusive use in the UK during the period under study, and was represented in America by such firms as William Geib, youngest son of John Geib Sr. While reliable in function, it had limitations as the piano grew in size, and was nearing its extinction point in 1832 when the example before us was built.

Also working in New York, Robert and William Nunns, together with John Clark introduced into America innovations coming out of France, including a new damping system for the heavier wire and the unichord piano design, geared specifically for use in remote and/or Southern regions. The example under study is an 1834 unichord piano incorporating these latest improvements, including the Petzold-Pape action and weighted lever dampers that would come to dominate square piano design going forward.

The brief experimentation in America with a grand Viennese action, including bassoon and Janissary stops, is represented by the Andrew Reuss square of Cincinnati OH, and built in late 1834 or early 1835. This piano, one of a handful of survivors of the type, is nearly identical to the Austrian style pianos then being built in Baltimore by Joseph Hisky and Joseph Neuman, one of which is featured in the Changing Keys exhibit. It has recently been restored including the pedal stops.

This presentation contrasts detailed technical descriptions from each of these major types. While all three are certainly pianos, their distinctly different characteristic sound evokes a period in history when the concept of the piano as an instrument was highly varied.

The early designs for pianos in America, square or grand style, were of London origin. While Germans were working in America from an early date, their pianos most commonly followed the English plans, or were isolated to a small builder. Englishmen born in America also followed this custom. Benjamin Crehore for instance, was living and working in the Milton Mass. area all of his life, but built his pianos on a fairly conservative plan similar to those found from the best London shops.

Name device for Crehore piano

Layout of typical Crehore

In the first years after their arrival in the States in 1802, Thomas Gibson and Morgan Davis introduced the Southwell improvements as used by Clementi, along with an under-lever system for the dampers similar to what Broadwood adopted at least by 1803.

Action for Gibson and Davis piano

In 1806 John Geib & Son was producing a piano with a wide radius round front corner contemporary with London builders or possibly slightly preceding them in this design. While the choice of brightly contrasting woods (the 'New York Style') and the wide radius corners were distinctive, the only real

difference internally was the use of a ‘C’ shaped key lever tail end to clasp the damper lever and give a firmer damping to the string by using the weight of the key lever in conjunction with that of the damper lever. Otherwise the action is the English double as invented by John Geib in 1786 and refined by 1789.

By 1828 however, this situation had changed somewhat. The confluence of action, damping, and soundboard choices as invented in London and Paris, along with case design developments, had begun to produce a wide variety of piano styles (or plans), each with a characteristic sound and feel. This was reflected in the winners of the American Fair in New York in 1829:

DEPARTMENT OF PIANOS.

1st Premium—To Rob't & Wm. Nunns, of New-York, for the best upright cabinet Piano.

2d Premium—To Wm. Geib, for the best horizontal two string Piano.

3d Premium—To Robt. & Wm. Nunns, for the best Unicord Piano, a new article.

A discretionary premium to Mr. Sackmeister for the second best Unicord Piano.

Here we find cabinet pianos, traditional square pianos, and unicords, newly introduced in 1828.

Nunns Cabinet

Geib Bicord

Nunns Unicord

With the high tariffs (~35%) imposed on imported pianos in 1828 in America, Viennese tradition builders from Austria and Germany arrived to make Viennese style pianos similar to those enjoyed at home, in places with a high German population concentration such as Cincinnati and Baltimore.

Joseph Newman Trichord

Reuss Trichord

A. REUSS,

(FORMERLY FROM VIENNA, GERMANY,)

PIANO FORTE MANUFACTURER,

East side of Walnut, between 4th and 5th Streets,

CINCINNATI.

SUPERIOR PIANOS

MADE WITH A

GRAND VIENNA ACTION,

Splendid Finish and Rich Tone. Horizontal and Upright Pianos, in different forms and shape, always for sale. Pianos of every description and action repaired and tuned on the shortest notice. All orders will be strictly filled; and the articles made by the best workmen, of materials imported from Germany.

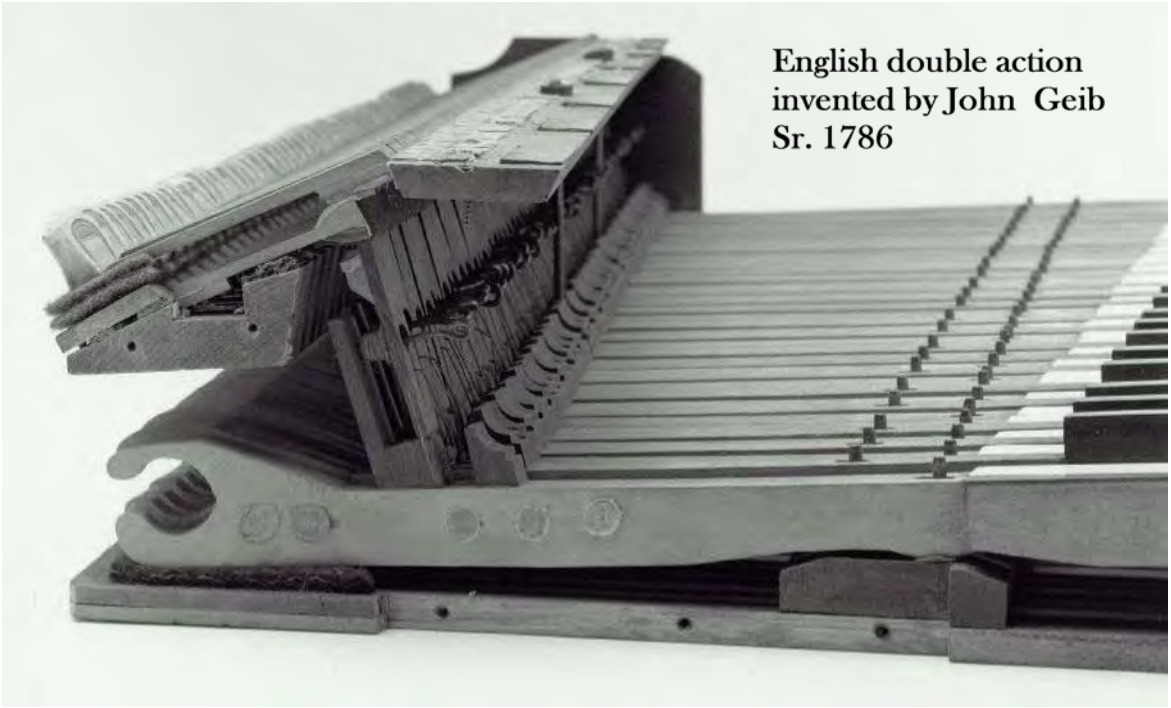
Given this diversity, it seems appropriate to examine these various piano types and explore their different approaches to what was ultimately an interpretation of the term 'piano forte'. We will examine in particular a William Geib of New York, bicord, an Andrew Reuss of Cincinnati Viennese style tricord, and a Robert Nunns, Clark & Co. unicord.

The William Geib bicord square piano forte of circa 1832 is slightly dated in style, retaining the six legs and drawers from two decades earlier, but this was considered a valid style by many in New York and firms existed at that time to add legs and drawers to 4 legged pianos, at a time when six legged pianos in England were being converted to four legs!

There is no moderator incorporated and the pedal is present but not shown in the picture, which was taken during restoration. It cost ~$275 new, and incorporates a metal string plate, a $50 upgrade available at the time, but not in universal use by Geib, unlike some of the competition who used it exclusively at this time. Metallic string plates were introduced by Broadwood in 1823, and became common in pianos by 1830.

The piano was owned by Warner Brothers for much of the 20th C and was discarded when it had no further use, arriving in a deplorable state of water damage and kluged repair work. The sound board is the traditional right hand sound box style, slightly larger than pianos from several decades earlier. The compass is the common FF-f4. The over spun strings are close wound copper on steel, and the scaling is light, starting at 0.4mm (English gage 8) at f4.

As mentioned earlier, the action is that of John Geib Sr. as it was refined by 1789, with the addition of the clasper style key lever to weight the dampers for more efficient damping.

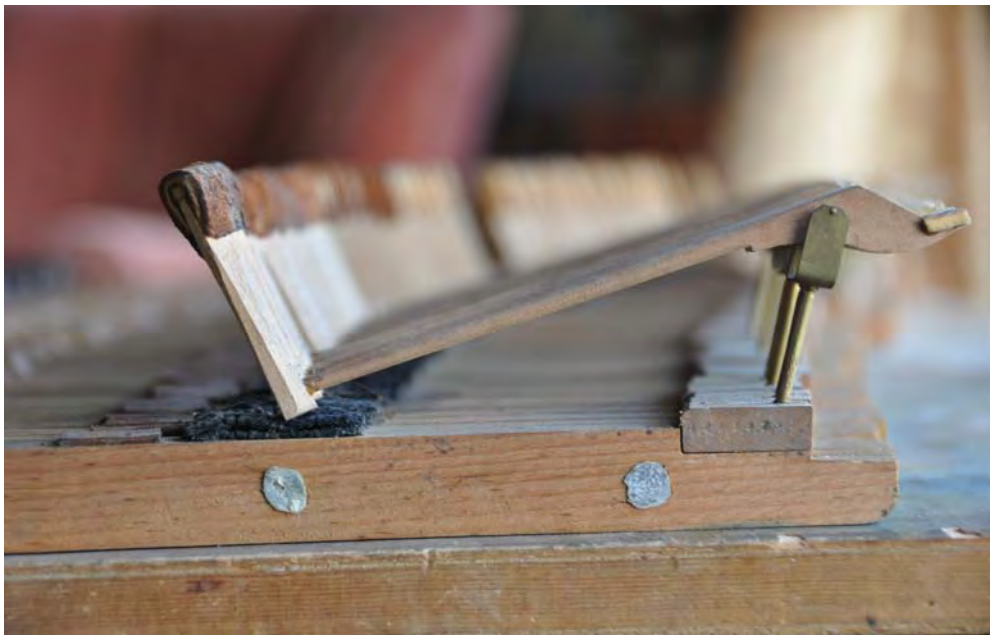


In comparison, the Andrew Reuss piano of 1834/1835 is built on a completely different plan.

Designed along the lines of the Viennese square, the Reuss takes the bass strings to the back of the instrument, and reverses the diagonal stringing as shown. It is triple strung in the treble and upper tenor, the bicord in the lower tenor and bass. No over spun strings are used, and solid brass is used in the lowest octave.

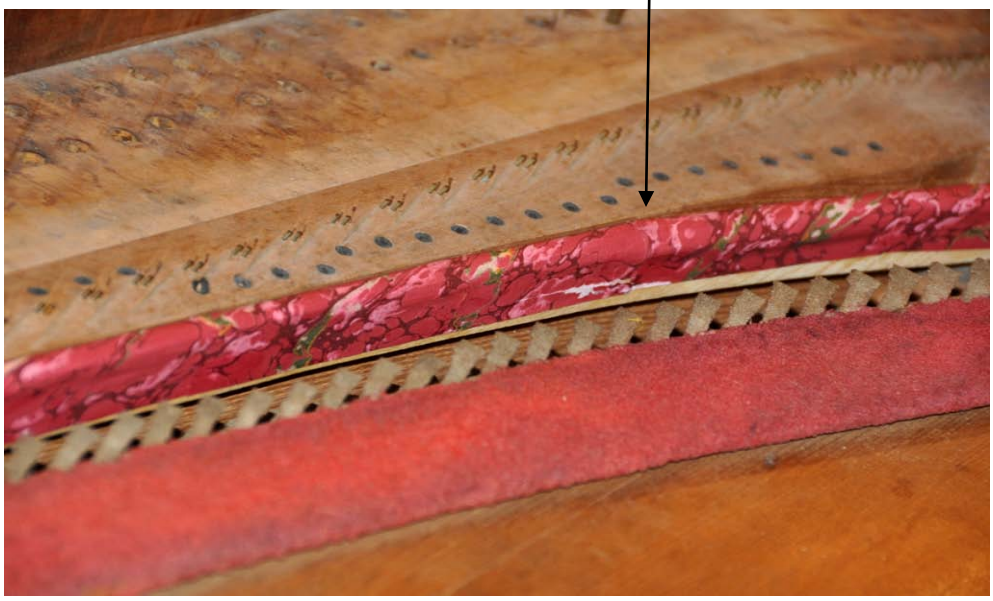
This piano was made in Cincinnati in late 1834 or early 35, and the shop where Reuss worked had produced four pianos in 1831, the first full year of production. It is unlikely that his output ever exceeded perhaps ten pianos in a year through the 1830s, when he was most active. Prices ranged up to $500 for examples like that shown. The pianos are fitted with a bassoon stop, sustain, moderator composed of coarse twill impregnated in hide glue, and Janissary. This example has a compass of FF-f4.

The action is the Viennese 'prellmechanik' and is very similar to the actions found in contemporary Viennese grand pianos.



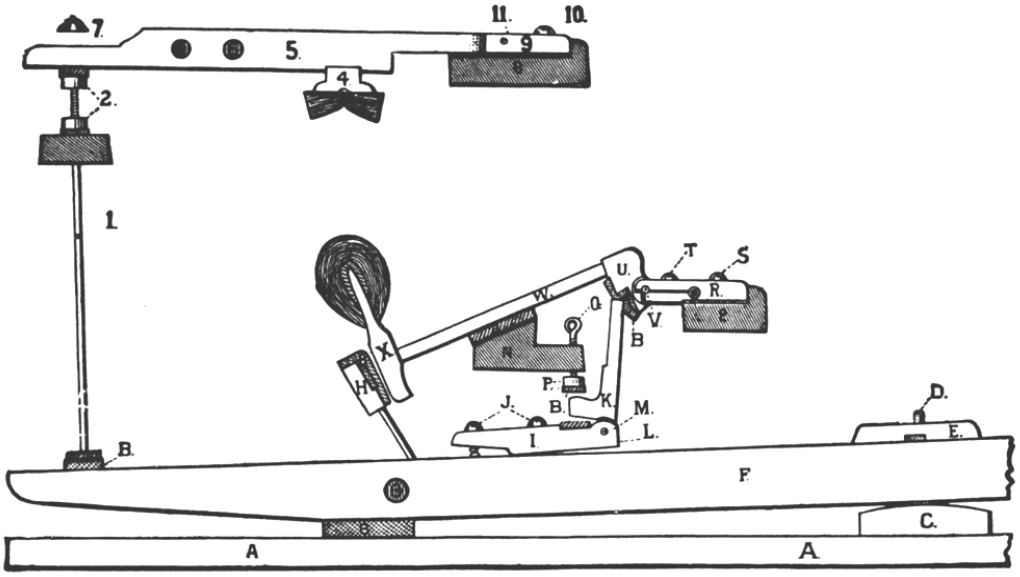
The Janissary pedal beats a horsehair padded beater against the bottom of the sound board, and on falling, rings a bell, giving a distinct percussion effect that can be quite alarming when first employed.

The bassoon stop is a loop of paper, made stiff with paint (marbleized in the example below) that is attached to a wood batten and pressed up to the bass and tenor strings, creating a buzzing sound with the Janissary.



The final piano in by Robert Nunns, Clark & Co., featuring a single string per note, and moderator. It was made in 1834 and sold to Eliza Peay Lyles as her wedding present and 18th birthday present from her father, Austin Peay, at a price of $300. It was made for Southern climates and specifically chosen by Deming and Bulkley for sale into South Carolina, and perhaps to the Peay family in particular.

As with the Reuss, the sound board covers the width of the piano, an innovation introduced in 1827 by Clementi and Co. as their ‘Grand Piano Forte’ model. It features the metallic plate, now in use in all Nunns, Clark & Co. pianos, marbleized for attractiveness, with a compass again of Ff-f4. The dampers are a modified version by Pleyel, the action a developed version of the Petzold-Pape grand action. It is extremely well made throughout, and tolerances are very close.



Action of the Square Piano

Interior action parts are veneered and finished in contrasting woods for a visual effect that the owner can never see.

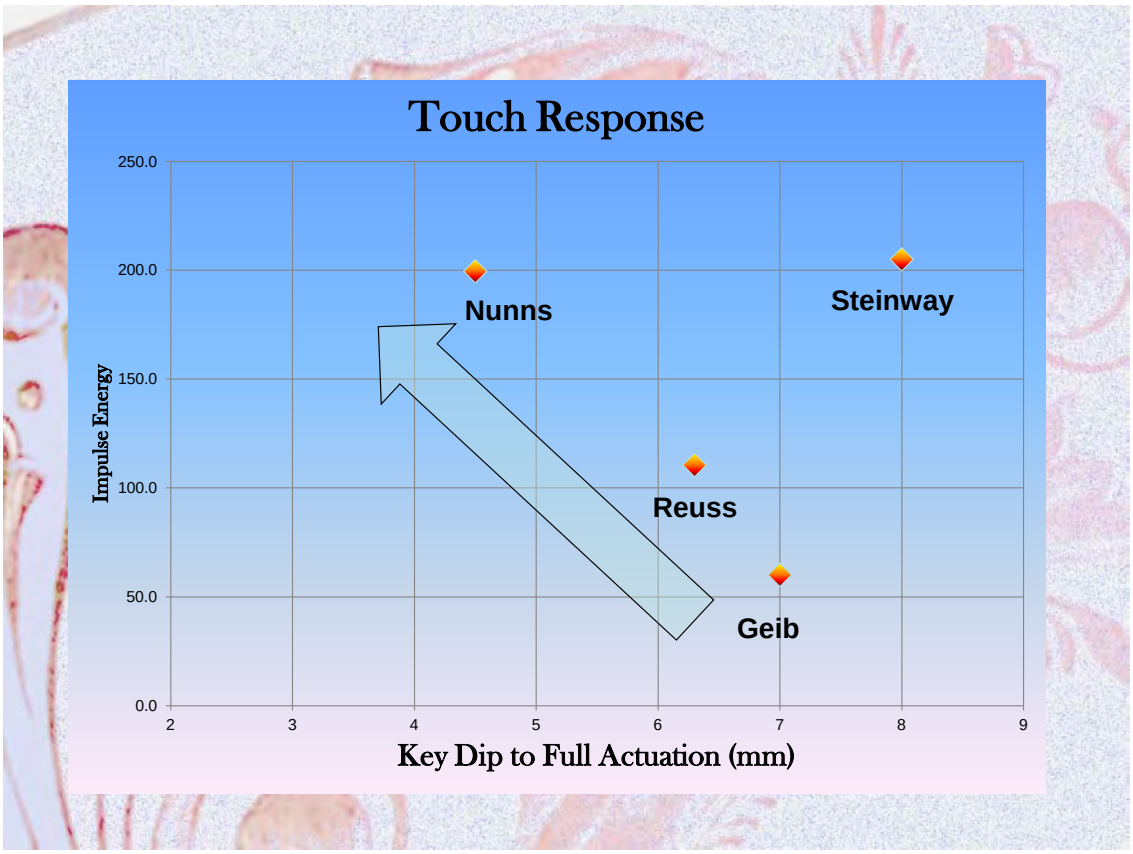
The moderators are thick buff leather, about 3/16“ thick, and produce a sharp volume contrast when engaged. The f4 treble string is 0.95 mm diameter, more than twice that of one of the Geib strings.

We can further analyze the differences by measuring the parameters of the action and plotting the results. The mass of the hammers, the amount of key depression to give maximum hammer movement, and the resulting mechanical ratios can be used to compare piano response.

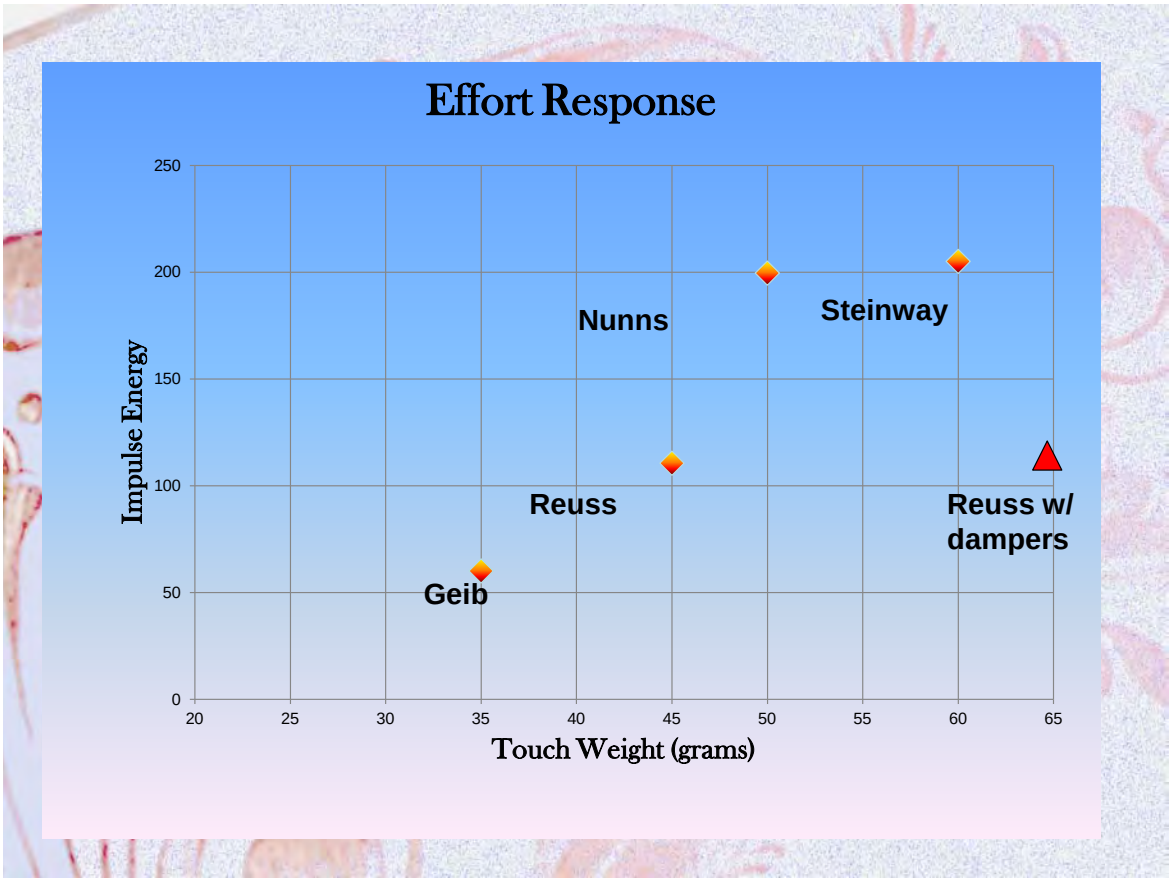
Fundamentals for FF Hammer

	Hammer Mass, grams	Hamr Stroke mm	Action Key dip mm	Velocity Ratio	Velocity Ratio^2	Impulse Energy	Touch Weight, grams
Nunns	3.5	48.4	4.5	10.8	115.7	199.6	50/50
Reuss	3.3	51.8	6.3	8.2	67.6	110.5	45/65
Geib	2.7	46.7	7	6.7	44.5	60.1	35/35
Steinway	9.0	54	8	6.8	45.6	205.0	60/60

$$\text{Energy} = \tfrac{1}{2} M V^2$$



The Touch Response is the effective response achieved as you depress a key. It is independent of how fast you press the key, as it depends in this case on the square of the Velocity Ratio, the ratio of key depression/hammer throw. Energy is dimensionless in this example, but could be given dimension by measuring the key depression velocity. Here we see that the Geib, Reuss, and Nunns follow a trend for response, while a modern Steinway is off the sequence, largely due to the extra key travel inherent in modern pianos. In terms of energy imparted for a given velocity, the Nunns and a modern Steinway are very similar.



Effort response refers to the amount of energy you produce by hitting the string as a function of key lever resistance (touch weight) to depress the key fully. Here, the Geib has the lowest touch weight, while the Nunns is similar to a modern piano. The Reuss has spring loaded dampers, which increase the touch weight by 1.5 X when engaged. This is because unlike the Nunns and Geib, once the damper pedal is depressed the dampers are fully disconnected from the action.

A newspaper article from New Orleans of 1831 gives us an idea of how exotic an offering was possible in one store. Here we find for sale a Giraffe piano, Viennese by Stein, and William Geib.

In fact, diversity in piano offering during the span of 1825 to 1835 was very broad, with many other examples in addition to those discussed above.