

The Piano

Collard & Collard #92246 is a 52-inch-tall vertical piano with traditional English styling. The veneer is English walnut burl of a type seldom seen in pianos after World War I. The trees from which this burl would have been harvested would have to be enormous, and modern forestry practices would not allow a tree to get that large before being harvested. It is my opinion that it was manufactured in 1872 and sold in 1873. The veneer is finished with shellac in a French polish fashion typical of the nineteenth century. The pedals are solid walnut with brass caps on the toes. This was the only part of the furniture that I refinished.



In my 35 years in the piano business, this piano is unique. I consulted a number of books, the British Patent Office, the British Library, and two experts, one in England and one in Tennessee, regarding the restoration of this piano. Each of the experts remembered that they had seen only one piano of this type in their extensive careers restoring pre-modern, eighteenth and nineteenth century pianos.

The Piano's Age

The serial number of this piano is located at the left end of the pinblock and is hand-painted with a brush. The number 92246 places it somewhere between 1871 and 1875, according to *Pierce Piano Atlas*, 10th edition. In the nineteenth century, piano serial numbers were not necessarily assigned sequentially as pianos were produced. Custom orders were commonplace and interrupted early attempts at mass production. Fortunately, we have evidence that an unknown piano tuner (possibly named Ahern) tuned the piano every year from 1873 to 1880. We also have evidence that the piano was made to order for a retailer, Kupdorn (?) & French, and delivered in 1873.

Remarkably, the piano was in very near to original condition when I received it in 2008.

Historical Information Written in the Piano

Nineteenth-century craftsmen signed their work. Craftsmen who worked in factories often had metal dies with which they could imprint their name on crucial parts of their work. Here is a partial list of the names and the location of those names that I found in the piano.

J. Hartley	Key #85 Bass & treble cheekblocks Action frame (top of treble end)
A. S. Buist	Key #1
Cavendish	Pedal assembly
J. Smith	Back post



The serial number is in the upper-left corner of the pinblock at the bass end. There are also three other marks on the pinblock: the numbers 2558 and 326, and the initials GG. It is common in the construction of pianos to assign a working number for a given piano as it travels through the factory. It is my guess that the number 326 represents that number for this piano, as I have found it in multiple places on the inside of the piano. The number 2558 is most likely a part number or a model number, as Collard & Collard assigned fewer than 2,400 serial numbers each year during the 1870s. (Piano manufacturers are notorious for building far fewer pianos each year than the elapsed serial numbers would indicate. They don't want their competitors to know how many pianos they are making every year.) It is also possible that 326 represents a model number, but because the number is written in so many places, I think it is the manufacturing identifier.

There is a sticker attached in the middle of the hammer rest rail, which states:

“Patent 1141, 1869 — Metallic Regulating Hopper

By this principle the creaking of the Hopper upon the Lever, and the blocking of the Hammer, is entirely avoided. Regulate so that the Hammer shall be within touching distance of the string and be relieved by a light blow.”



As a result of finding this sticker, I contacted the UK Intellectual Property Office (the patent office) and the British Library and obtained a copy of a pertinent patent that was granted to Collard & Collard in 1883, Patent #3609. It is likely that the patent that was applied for in 1869 was not granted, was then revised, and granted in 1883. Slow are the workings of nineteenth-century bureaucracy!

There is also a piano tuner's signature in very faded pencil on the hammer rest rail. It reads:

Ahern
1873
-4
-5
-6
-7
-8
-9
1880

To the right of the patent sticker on the hammer rest rail is written in pencil: "Kupdorn [?] & French by order 1873."

The Maker

Collard & Collard had retail offices at 50 New Bond Street in London. This is still an upscale shopping area, near Saville Row and Regent Street. Today, the building houses a real estate business. The factory was likely located at 30 Oval Road, Camden Town, just north of Regent Park in London and south of Hampstead Heath. Today, the factory building has been converted into condominiums.

Collard & Collard has an august history. In 1767, Clementi, the composer and pianist, and his publishers, Longmann & Broderip, established a small piano factory. Clementi was considered

such a great pianist that he actually played a piano duel with Mozart. Clementi had lived in England for many years and had become very wealthy. He was very concerned about establishing himself as a businessman as well as a musician, and he became his publisher's silent partner. F. W. Collard and W. P. Collard merged with Clementi, forming Clementi & Company. By 1802, Clementi was able to return to the Continent and to continue to build his reputation as a composer and artist. On March 20, 1807, their store on Tottenham Court Road burned to the ground. F. W. Collard began applying for patents in 1811. English patent #4542 was granted to them in 1821 for aliquot design. Around the end of Clementi's life in 1832, the company's name became Collard & Collard. There are Clementi & Company pianos in the Whaling Museum at New Bedford, Massachusetts; the New England Conservatory of Music in Boston; and Barnard Hall in New York City.

By the 1850s, Collard & Collard was the second largest maker of pianos in the United Kingdom. In 1851 and in 1862, Collard & Collard won medals for their pianos at World Fairs held in London. In 1859, Charles Collard became the sole owner of the company. It continued to grow. *Pierce Piano Atlas* says that Collard & Collard continued to make pianos until the 1960s.¹

¹ Information in this section came from the following sources:

Alfred Dolge, *Pianos and Their Makers* (Covina, CA: Covina Publishing, 1911).

Franz Josef Hirt, *Meisterwerke des Klavierbaus: Geschichte der Saitenklaviere von 1440 bis 1880* (Olten, Switzerland: Im Urs Graf-Verlag, 1955).

Arthur Loesser, *Men, Women, and Pianos: A Social History* (New York: Simon & Schuster, 1954).

[Bob Pierce], *Pierce Piano Atlas*, 10th edition (Albuquerque, NM: Ashley, 1997).

Jeremy Siepmann, *The Piano* (London: Carlton Books, 1996).

Restoration Challenges

Collard & Collard #92246 is a pre-modern nineteenth-century English vertical piano, which at the time of this writing is almost 140 years old. The beautiful walnut case is in remarkably good condition and probably by itself justifies the restoration effort.

Hammers

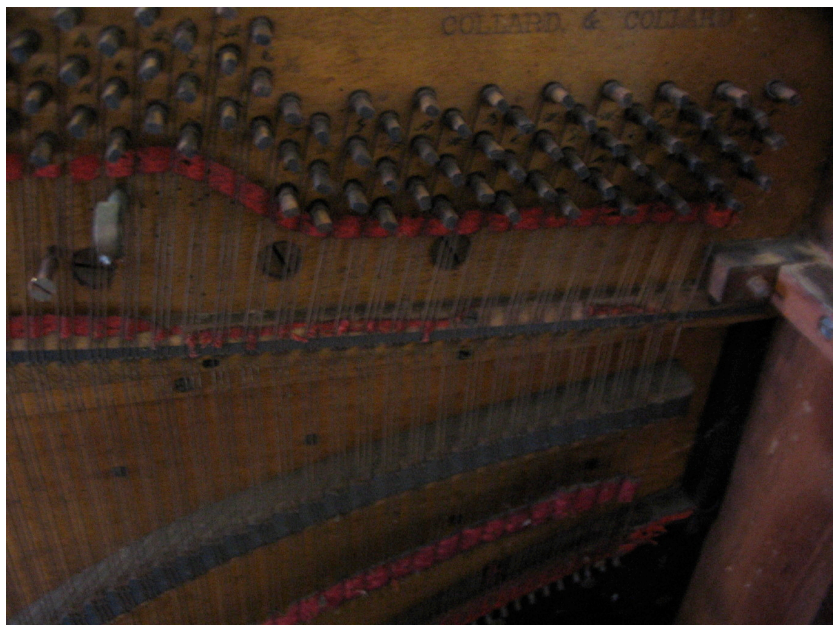
The original hammers are much smaller and lighter than hammers used in modern pianos. I have saved some of the original hammers for display. One can see that they have degraded quite a bit over the years and that there is some insect damage, as well as the usual wear and tear. It took me several months to find a company that would make replacement hammers appropriate to the instrument. I have included one of the extra new hammers for display also.



The hammers were made by the Ronsen Piano Company in Boiceville, New York. They are expert at making hammers for nineteenth-century musical instruments. Still, they required more than one attempt in order to get a proper set of hammers to come out of the presses.

Tuning pins

The original tuning pins were much shorter and smaller than modern tuning pins. I was fortunate to find a supplier in Los Angeles that had ONE box of pins in inventory that would work in this piano. To my knowledge, they were the only set in the United States at the time. The original pins and strings were thoroughly rusted and could not withstand even a tuning to A#=440Hz, one half-step flat of standard pitch.



Keys

There was substantial woodboring beetle damage to most of the piano keys. Two of the original basswood keys were replaced in the past, I assume in New Zealand, based on the zebrawood used in the replacements. The keys were so damaged by insects that I seriously considered having them replaced. Several of the keys literally came apart in my hands while I was inspecting them. Replacing the keys alone would have doubled the cost of the restoration. The original keys have rounded rather than square spaces between the naturals and the sharps. This went out of style in the 1880s, I believe.

Ivories

In order to save the original ivory, I decided to restore the keys with epoxy and CA glue. The fronts of the ivories were heavily chipped, as would be appropriate in a piano of this age. Fortunately, piano technicians have access to an acrylic monomer that is used by dentists for repairing chipped teeth in human beings. Fortunately, we were able to utilize this technology in the repair of the ivories on this piano. There is some damage by woodboring beetles to the ivories. This appears as discolored spots on the keys.

Dampers

Damper design is always one of the great failings in pre-modern vertical pianos. I decided after several experiments to use modern damper felts in this restoration in order to give the piano the greatest reliability. The design of the dampers in this piano is not readily analogous to any modern instrument. It took me several weeks of trial and error to formulate a regulation scheme for the dampers. The original damper design is problematic because the dampers are above the hammers. In modern vertical pianos, the dampers are below the hammers and are much more effective.



Action parts

Most of the action parts are made of a very high-grade mahogany, which twenty-first-century cabinet makers would give their eyeteeth for.

Mahogany is very strong and very light, but it is not an ideal material for action parts. After many years, it becomes brittle. The original action was assembled with hide glue, which is still used today by

restorers and hobbyists. It, too, becomes weak and brittle over time. None of the action parts in this piano is available from contemporary piano supply houses. Those few parts that we had to replace we fabricated from maple.



Regulation of the action

It took me quite some time to abandon all attempts at regulating this piano like a modern piano. While many of the principles are the same, the underlying design prohibits using modern methods. There is a reason why this action was obsolete by 1885. The key dip is inadequate for a modern player. The repetition is slow and unreliable. The tone is uneven. The touchweight varies significantly from key to key instead of becoming progressively lighter from note 1 to note 85. Simply put, it is not a modern piano.



Strings and scale design

This is a seven-octave instrument (85 notes), which is the norm for its era. Based on my research and conversations with expert rebuilders, I believe that it was designed to be tuned to the modern standard of $A_4=440\text{Hz}$. The bass strings are parallel to the plain wire strings. In modern pianos, they overlap. I did a computer analysis of the original stringing scale and decided to use it for the sake of authenticity. The original scale design does not deliver evenness of tone from one note to the next for a number of reasons.

Pinblock and cast-iron plate

Typical of its era, the piano has a three-quarter plate and a thin pinblock. Modern pianos have a full plate and a multi-laminate thick pinblock, which aids in tuning stability. There was some woodboring beetle damage to the pinblock area, which I repaired. I treated the rust on the plate and repainted it in the original flat black varnish.



Notes to Technicians

This piano was built in the 1870s. Most of the action parts are original. They are also very brittle. Proceed with caution.

Based on my research, this piano was designed to be tuned to $A_4=440\text{Hz}$. The pinblock is shallow. I used two-inch-long pins with a very small diameter. It may not be possible to drive pins deeper to get more torque. Pin setting during tuning requires a light touch.

The action pivots not on center pins, but originally on parchment. Where I had to replace parchment, I used 10-mil Mylar.

The action is pre-modern. One must take a pragmatic view towards regulation. Key dip, for example, is typically less than 0.375" and must be sacrificed even more on some keys to provide adequate repetition.



The jacks are located on a hopper at the back of the key. There is a jack stop rail near the bottom of the action frame. Its sole purpose is to prevent jacks from traveling past the end of the action lever and sticking. If it is mounted too close, the levers will rub against it, causing the action to fail.



When I got the piano in 2008, there was substantial damage to the keys by woodboring beetles. Two of the keys had already been replaced, I assume in New Zealand. There is extensive epoxy and CA glue repair to the keys. They are fragile.

Letoff is designed to occur at the string. I have set it as close to the string as possible, but I have not been able to achieve uniformity.

The dampers leak. They leaked when they were new. Some of this is a result of the scale design in which there are very great distances from the bridge to the hitchpin. One can see upon inspection that the location of the dampers between the hammers and the forward termination rail resulted in a number of compromises on the part of the piano designer. If you remove the damper mechanism, you will note that the line of the dampers is not straight. I placed the dampers for maximum effectiveness. The original dampers consisted of various fabrics, which I replaced with modern damper felt. Because of the cam-like nature of the damper mechanism, there is very little lost motion between key and damper.