40 Years of Excellence

Waltham’s American Watch Co. Grade
The American Watch Company

- On January 1, 1859 Appleton Tracy & Co. merged with the Waltham Improvement Co. to form the American Watch Co.
- Appleton Tracy & Co was the final name of the new watch company formed after the bankruptcy sale of the Boston Watch Co.
- Horatio Adams had been kept on as President from the Boston Watch Co. but R. E. Robbins was the Treasurer and C.E.O.
- The Waltham Improvement Co. had been formed in 1854 to develop the property in Waltham and to own the factory and real estate with William Keith as the President.
- When Adams retired in 1862 Keith took over as President of the American Watch Co. with R. E. Robbins continuing as the Treasurer and C.E.O.
The Watchmakers

- Aaron Dennison had remained as Superintendent of the factory when Robbins purchased the company.
- Nelson Pitkin Stratton was the Assistant Superintendent and the lead designer.
- Charles Moseley was the Chief Mechanic responsible for the tooling.
- Dennison had assembled a very strong team of talented watchmakers and toolmakers.
- The watchmakers were interested in designing new and better watches.
- Management was interested in making the existing designs cheaper.
In November 1859, Stratton produced 10 examples of a new ¾ plate thin model watch engraved American Watch Co.

The new watch was advertised with special escapements and helical hairsprings among other innovations.

Within weeks of its first production, Stratton, Moseley, Woerd and most of the top watchmakers had left Waltham for a new venture in Nashua, N.H.

The company completed production of the work in process for the new watch in 1860. Of these, 150 were finished in the American Watch Co. grade.
The patent that appears in these drawings is Dennison’s patent maintaining power that bears a striking resemblance to Stratton’s earlier patent.
This watch is from the final American Grade run produced in November 1860.

American Grade 1859
“Thin Model”

The patent refers to D.B. Fitts silver disk on the center wheel that lets the center arbor spin freely in event of mainspring breakage.
The Exodus and Repatriation

- With the formation of the Nashua Watch Co. most of the unrest at Waltham was gone and the American Grade would likely have disappeared.
- When Robbins purchased the Nashua Watch Co. and re-integrated the workers into the Nashua Department (3/4 plate department) the material and designs acquired became the new American Watch Co. Grade.
- Although the purchase was likely consummated in 1862, the new designs and material did not get back to Waltham until 1864. Much of the delay was due to the construction and outfitting of the new factory wing for the Nashua Department.
- The first Nashua design Waltham watches were produced between December 1863 and February 1864.
Nashua/American Grade

- This watch is from the first run of 19 jewel Nashua watches and was finished or refinished at Waltham as American Watch Co. Grade.
- The Waltham serial number is 50,028 and the Nashua assembly number is 102 corresponding to serial number 1002.
American Grade KW16

- This watch is from the first run of American watch Co. grade KW16s produced completely in Waltham. (50,301-50,400 12/63 to 2/64)
- It has 19 jewels with center jeweling and caps on the escape wheel.
- Stratton’s Patent Barrel prevents damage to the watch in the event of a mainspring break.
- References list the KW16 as the 1860 model and the 20 size as the 1862 model, but 16 size Nashua examples have not been seen.
A fortuitous circumstance of the exodus to Nashua was Waltham’s hiring of Charles T. Fogg. Fogg turned out to be a real star and contributed two important patents to the company.

Fogg’s Patent Center Pinion was probably the most important invention in the company’s history. It also led to the formation of the cartel with Elgin that was very important for the development of both companies.

Fogg also patented a very interesting isochronous hairspring stud that allowed for regulation of rate. This invention was less successful but still very ingenious.
• Fogg’s Vibrating Hairspring Stud patented February 2, 1864, Pat No. 41461.
• SN 125,466 produced between August 1864 and July 1866.
• American Grade Vibrators have the top pivot of the vibrating arbor jeweled for a total of 20 jewels.
• This watch with Stratton’s patent barrel does not have Fogg’s center pinion.
This watch was a gift from the President of the United States to Captain Albert DeBarande of the French ship Lafayette for the rescue of the American ship William Nelson in 1865.

The serial number is 150,007. Watches in this run were produced between April 1865 and March 1868.

These watches also have the vibrating hairspring stud jeweled for a total of 20 jewels.
American Grade KW16
Stratton’s Patent

• This example of the Nashua style watch produced at Waltham predates Fogg’s invention of the Patent Center Pinion.
• Stratton’s Patent Barrel prevents damage to the watch in the event of a mainspring break.
• This watch with serial number 190,333 was produced at Waltham between Nov. 1866 and Mar. 1868. It is a little later than the example with Fogg’s vibrator.
• This watch is essentially unchanged from the example from the first run 5 years earlier.
The late KW16 model has Fogg’s patent center pinion and often is found with a solid gold gear train.

This run of 80 watches was made between April 1870 and April 1871 long after the introduction of the 1868 stemwind model.

Presumably a customer wanted the style of the 1868 model with the reliable keywind mechanism.

In any case, this example was later fitted with Abbot’s stem winding attachment.
• The 1868 model was the first stem wind Waltham watch.
• A total of 150 examples were made in American grade and even that limited production took from December 1868 until November 1879 to produce.
• At the time it was made it was Waltham’s most expensive product.
Waltham’s 1872 Model

• Stem winding was the thing to have and the 1868 model was too expensive to produce.
• Under the leadership of Charles Vander Woerd, Waltham developed the new 1872 model that was to become one of the most important watches in the history of watchmaking.
• The 1872 model performed so well in international competitions that it drew the attention of the entire world. It finally demonstrated that a watch made “entirely by machine” could compete with the very finest hand made watches in independent trials.
1872 Model American Grade
• The first run of 1872 American Grade watches used a number of different setting mechanisms.
• This example has the nail setting mechanism with a locking piece invented by Ezra C. Fitch.
• The early 1872 models are listed as 18 jewel with no jewel on the center arbor in the pillar plate.
1872 American Grade, No. 670044
19J Centennial Exposition Watch

- This watch was the trial leader at the 1876 Centennial Exposition in Philadelphia.
- The first run of model 1872 in American Grade are listed as 18 jewel watches with center jewel only on the back plate but this watch actually has full center jewelling.
- The trials at the Centennial Expo were conducted by Theophilus Gribi and the watch report was written by James Watson of the Detroit Observatory, Ann Arbor MI.
Swiss makers exhibited watches with performance certificates from Geneva and Neuchatel.

Because the Waltham watches had no certificates a short testing cycle was set up by the judges in conjunction with the chronometer trials.

Waltham submitted 10 1872 model American Watch Co. grade watches.

Theophilus Gribi conducted the tests in Philadelphia.

The performance of all but two of those was on par with the better Swiss watches.
The Philadelphia trials were too short to measure the steadiness of rate so Watson conducted extended trials at the Detroit Observatory in Ann Arbor.

The top 3 watches were examined for Mean Daily Rate between July and November 1876.

670,044 was the top performer at 0.63 seconds over the entire period.
The first American "World’s Fair" drew a large group of horologists including Jacques David, Edward Favre-Perret and Theophilus Gribi. Gribi had immigrated to America in 1858 but had returned to Switzerland around 1870 and came to the Exposition as representative of Borel & Courvoisier. Gribi married an American woman he met at the exposition and settled in the United States. In the 1930’s Charles DeLong wrote a memorial biography of Gribi testifying to his influence. David and Favre-Perret campaigned to attract the attention of the Swiss watchmaking community to the threat from the “American System.” The major English houses continued to ignore the American System but several new companies arose to begin machine production of watches on the American System with mixed success.
• Charles Vander Woerd invented a special form of balance that was intended to reduce the middle temperature error.

• The device was not a commercial success and most of the planned production were either converted to a more standard balance or were reworked later.

• The run at 999,901 to 1,000,000 were all marked with Woerd’s Patent Compensating Balance as in this example.

• This watch has the alloy form of balance that was used by the factory in place of the sawtooth balance.
Universal Paris Exposition 1878

- In follow up to the Centennial Exposition the American Watch Co. sent a major display to Paris.
- The American Watch Co. took a gold medal in Paris. Many of the visitors refused to believe the watches were not hand made.
- Woerd’s new patent compensating balance was the talk of the town and he won an individual bronze medal.
Len Dionne was a very skilled craftsman whose “day job” was as Edwin Land’s idea builder in the design shop at Polaroid.

In order to better understand the properties of Woerd’s patent balance, he built one himself from scratch.
• In 1881 a group of 20 watches were made in the new “Open Face” style and American Grade with Woerd’s Patent Balance.
• The only two examples I have seen both have the alloy balance.
• This example seems to be in its original case.
• Although expensive it would have qualified as a railroad watch at any time in the following 100 years.
• The later 21 jewel 1872 American Grade have the most beautiful damaskeening patterns ever achieved on a watch.
• The patterns appear to be unique to each example. Two of these are from the same run.
• The finishers in the plate department gave full reign to their artistic imagination in the production of these watches.
• The “Herman S. Hewett” runic dial is also an incredible work of art by an unknown artist.
The New Regime

• In the early 1880’s Ezra C. Fitch was brought into the factory to put the business in the hands of business experts rather than engineers.
• Vander Woerd left and Duane H. Church became the new force behind machinery and watch designs.
• The 1888 model was the follow on to the 1872 model and introduced many mechanical improvements but never achieved the striking beauty of the 1872 model design and finish.
• The 19 jewel American Grade is the watch that best exemplifies the grade.
• One special feature is the design of the winding wheels which at first glance seem very simple but are very difficult to execute.
• The 21 jewel 1888 model was produced in much smaller numbers (270 examples) than the 19 jewel model (2,700).
• The use of diamond end stones first appears on these and the companion 1888 Riverside Maximus grade.
• The distinctive winding wheels are discarded on the 21 jewel examples in favor of more standard damaskeened winding wheels.
• This 17 jewel example is an anomaly in the 1888 American Grade.
• The serial number 6,028,475 is recorded as an Am’n Grade hunter. The watch is an American grade open face.
• The movement does not have a gold train and would be Am’n Grade save for the marking.
The Lady American Grade

- Waltham did produce a true ladies watch in American Watch Co. Grade in the early 1890’s.
- The watch is 00 size and is referred to as the OM model in the Waltham literature.
- The records show two runs: 1,000 in 1891 and 800 in 1892.
- With 1800 total examples, they should not be too hard to find, but intact surviving examples are quite scarce.
- The cases are unique as is the dial. These are both much scarcer than the movements.

The Waltham records show the production of 10 watches in 10 size American Grade (45301 to 45310) in August 1863. These watches are also shown in the advertising from the period. No actual examples have been reported.

Scan courtesy of Roy Ehrhardt and the Heart of America Press.
These two examples of the 00 American Grade show one with a correct, but not original case and dial and a second movement that has been cased as a wristwatch by Roland Fisher.
The American Bridges

• In the late 1890’s Waltham hired a couple of Swiss designers to modernize their watch designs as recalled by my friend Pat Caruso.

• The existing 1894 model 12 size and the new 1899 model 16 size were used as the basis for the new plate designs.

• The 12 size was introduced first in early 1898 and the 16 size followed 6 months to a year later.

• Since there are no detailed records from this period, the dates are speculative. The drawing dated 1897 is from an article on automation.*

• The note below shows that the decision was soon regretted due to the impact on the Riverside Maximus.*

01/18/1904 – from Conover Fitch to Robbins & Appleton

“Gentlemen, On further discussion we have decided not to list the 12 size and 16 size Bridge in the next Senior List. Mr. Fitch is of the opinion that if we should list Bridge it would necessarily give the impression that it is better than Maximus, and he thinks that a large portion of the Maximus business would be thrown over into Bridge. If this should occur we would not be able in any way to meet the demand, therefore we have decided not to list them.”

*Thanks to Jerry Treiman, Google Books and the Baker Library for these references.
• This is a difficult watch to find and this example was assembled from a damaged movement, a fortuitous dial purchase and a case from a lower grade 1894 model.
• The result is a correct, but not original, example of the scarce 1894 Bridge Model.
• Movement is from the 1st Open Face Run.
This 16 size 1899 model 21J example has 3 visible diamond endstones.

The 23J examples only have 2 visible diamonds.

In fact “all” examples that have been examined have 4 diamond endstones.

- Two on balance and one each on pallet and escape wheel (3 visible)
- Two on balance and two on escape wheel (2 visible)
This export example of the 23J Bridge Model is a distinctly English watch.

The case is the English style called a “Crystal” case.

The dial is a good example of a single sunk English dial marked for Waltham.

The case is from the Dennison Watch Case Company made by the descendents of Aaron Dennison.
• This example of the 23 Jewel Bridge Model shows all the classic characteristics of the model.
• The dial is especially difficult to find with the inverted diamond hour markers and the “Breguet” style numerals.
• This model of watch marks the final use of the American Watch Co. grade name
The End of an Era

- The 1899 Bridge Model was the basis of the Premier Maximus that was Waltham’s ultimate prestige watch.
- It was also the basis for the bridge models of the E. Howard Watch Co.
- Four generations of watchmakers contributed to the continuing saga of the American Watch Co. Grade.
- The leaders of the generations were:
  - Nelson P. Stratton – the Thin and Nashua Models
  - Charles Vander Woerd – the 1868 and 1872 Models
  - Duane H. Church – The 1888 and OM Models
  - Anonymous Swiss – 1894 and 1899 Bridges
- Many more famous names made outstanding contributions along the way.
American Watch Co. Grade Exhibit
Available data on production requires interpretation.

There are transcription errors in the data.

Cap jewels are not included in early jewel counts.

Numbers above 7, 550,000 have no date information and have been consolidated between similar grades.

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- It is very unlikely that all the Bridge Models were produced.
- Sales were restricted and the model was not listed after 1904.
- Some 1894 and a significant number of 1899 were sold as E. Howard Watch Co. watches.