



MLS MasterClass Mini - 2005

"THE SINGLES"

Build a Classic American 4-2-4T Locomotive

By David Fletcher
Melbourne, Australia
All Colour Photography by David Fletcher



MasterClass Mini 2005
Proudly supported by our friends at Hartland Locomotive Works
<http://www.h-l-w.com/>

Chapter 3 - A Danforth Cooke Photo Album

Background

This chapter is entirely a visual aid to builders of the "*C.P. Huntington*" models, either for this Mini-class, or for models in general.

B&W images of Danforth Cooke Single, for other roads as well as for the Central Pacific were provided by class members, and some I thought were so interesting and valuable to model builders, I decided to create this photo chapter. A special thanks to Chris Walas and Chas Ronolder for finding some of these great shots. Also I need to make mention of some of the photos owned by Gerald Best, and used in his article about the "*C.P. Huntington*" - "*The Single Drivered Steam Locomotive in the West*" 1966 American Railroad Journal.



m

I was also fortunate to travel to San Francisco on business in December 2005, and organised to visit the California State Railroad Museum on two separate days. I was able to crawl over most of the Huntington at the Museum, including being able to wander to the lighted *'Engineers'* side. She is a most stunning locomotive to witness, and we have but scratched the surface in this class as far as her decoration and details are concerned.

The CPH today is one of the finest exhibits at the museum, dating the Civil War period, but it's display of prominence, visible to the outside of the museum at night is also a big problem to visitors inside the museum by day. She is almost exclusively back-lit, making photography extremely difficult, and impossible at some times in the day, and even viewing with one's eyes against that extreme glare makes it a very poor museum display. I would recommend a mechanical blind be lowered during the daylight hours to balance the lighting better on the inside. Be that as it may, an organised visit to the *'lighted'* side of the loco makes her one well lit exhibit! Maybe a passage for visitors to the far side should also be considered.

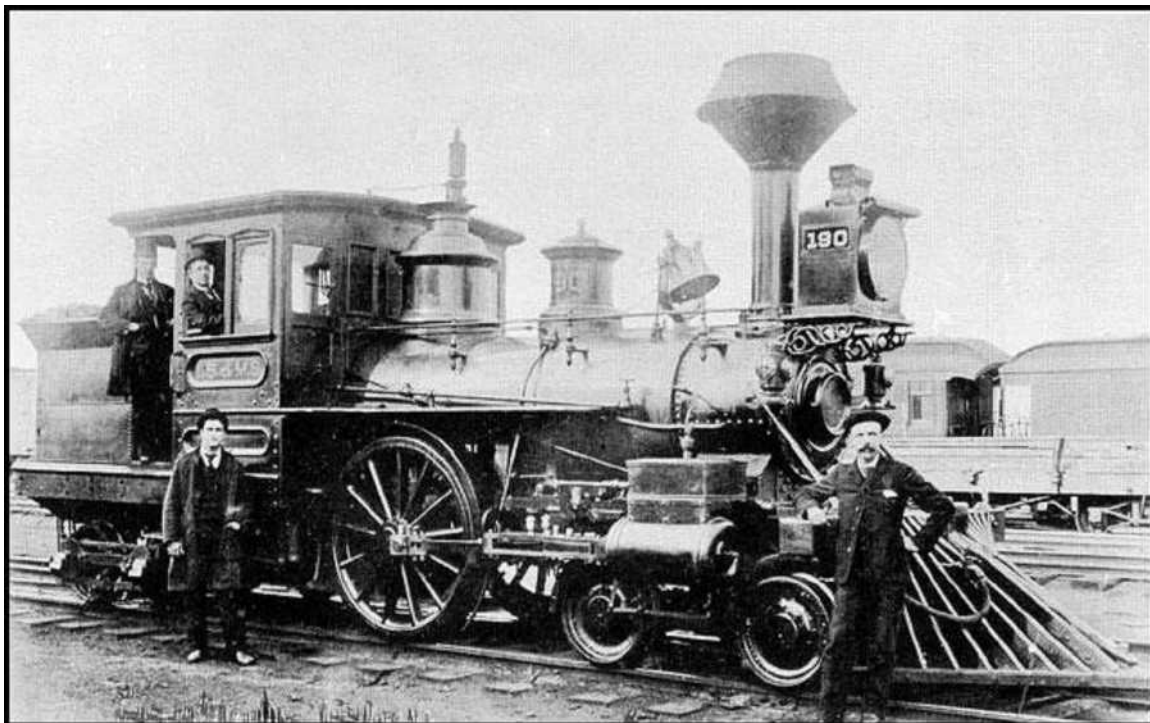
There were some surprises in seeing her in person, the bar frame construction is very light and spindly, as to look very fragile. The water tank has either been extended in her lifetime, or maybe was built this way in 1863 - There is a large water tank that extends under the tender deck, filling up most of the under-deck space from rear of firebox across the tender truck to the rear draw beam. Pipes feeding the injectors run from this lower tank, as well as running up to the tender legs above the deck. I had detailed the backhead firebox doors on our models based on a Cooke design, however in seeing her today (assuming the new boiler from the 1880s retained the original fire door castings), the firebox door is a folding square door. There also only two Tri-cocks instead of three, and the Tri-cock drain is almost horizontal. The cab today also still has steam valves for the long removed air compressor, as well as small oil burning valves for when she was an oil burner... the rest of the oil firing equipment also long removed.

The steam dome appears to have two safety valves, one is a self contained sprung unit per post 1880s design, the other a spring balance type, with spring inside a brass tube inside the cab, which enabled crew to adjust the safety valve pressures - something that dates to pre 1880s design.

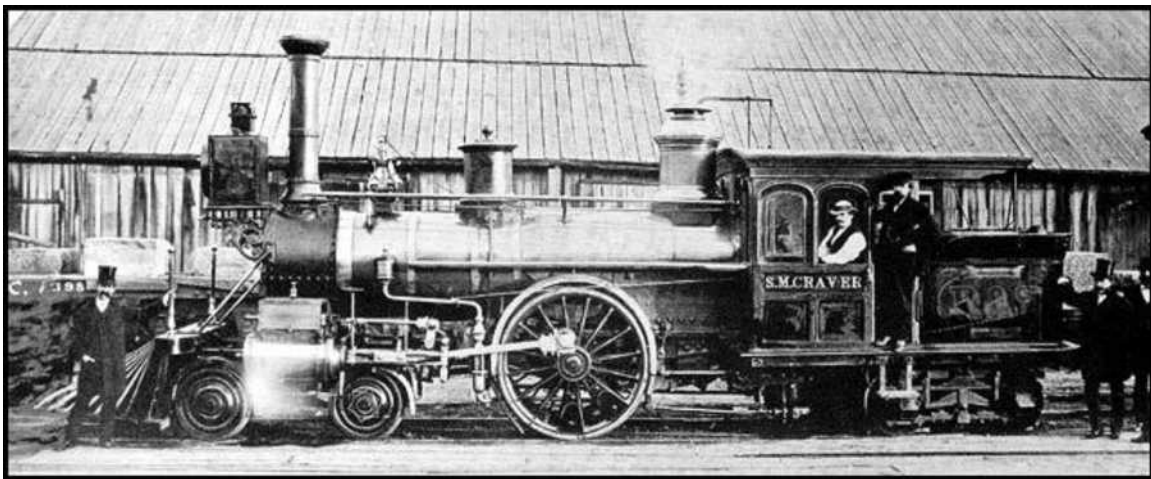
Original Danforth Cooke '*Singles*', 1859 Onward

If you re-read the background chapter 2, covering the history of the Danforth Singles, you will learn that 4 of these locos were sent to the west coast of the US for construction services in California and along the Columbia River in Oregon. They were catalogue locos, available from the showroom floor at a time when Civil War shortages mean few heavy road locos were available for purchase, so the west bought what they could - tiny and seemingly inappropriate singles!

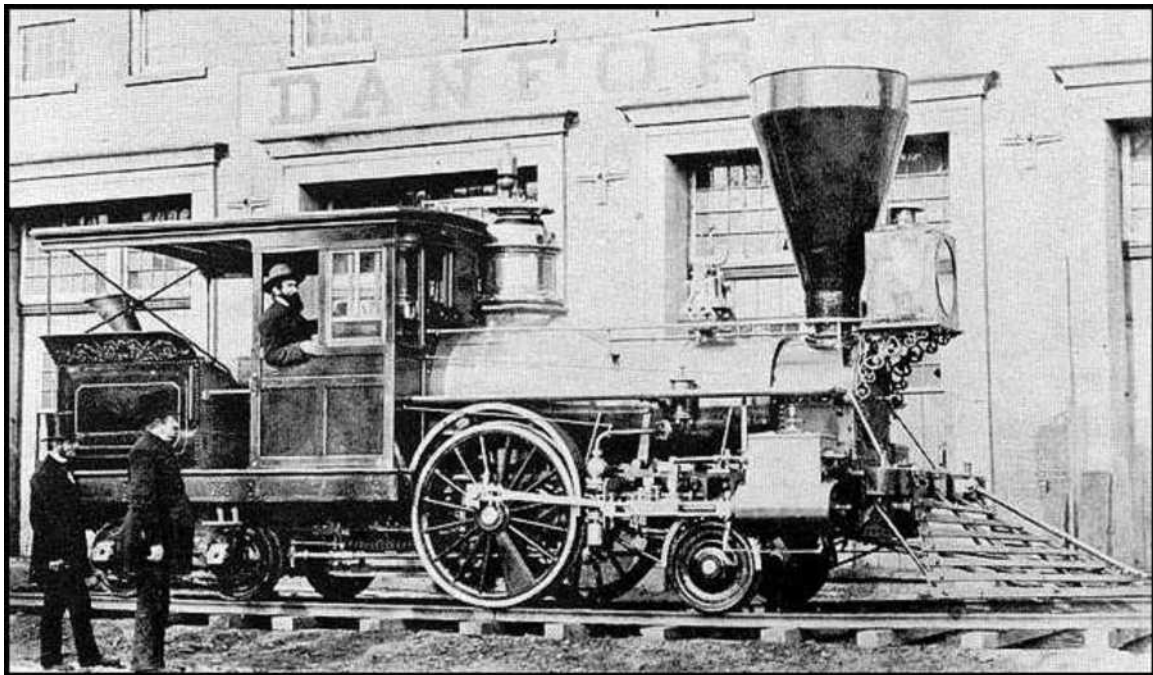
The very first Danforth Cooke 4-2-4T tank single appears to date to 1859, a straight boilered tank loco, smaller than the later CP Huntington and her sisters. Built for the Lake Shore & Michigan Southern, according to Gerald Best in his article about the Danforth singles, she was the loco used to haul the RR's pay car.



This is the original Danforth Cooke 4-2-4T said to be the prototype for the later 4-2-4Ts.

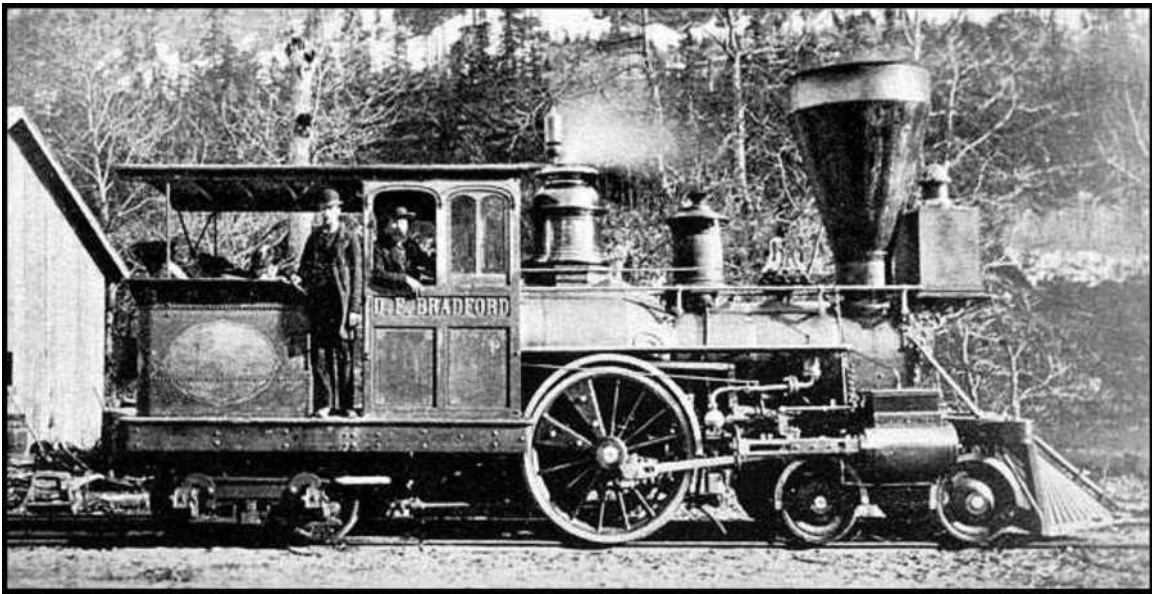


Rensselaer & Saratoga "*S.M. Craver*", was built in 1863 at the same time as the Huntington, but is said to have been extended to incorporate a longer firebox.

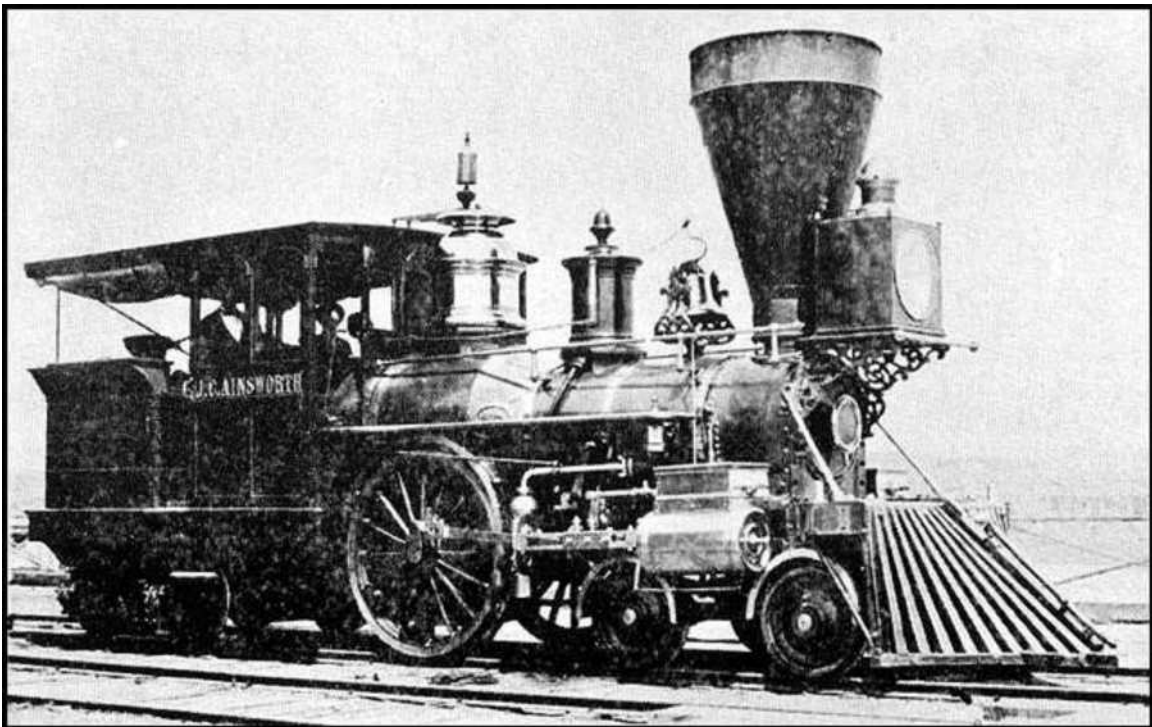


A small Danforth Cooke Single, built as a 2-2-4T was pressed into service for the Central Railroad of New Jersey. Note the funnel like water filler on the tender rear, facing rearward to enable water filling rear of the large cab roof overhang...this filler was typical on all the Danforth Singles as built.

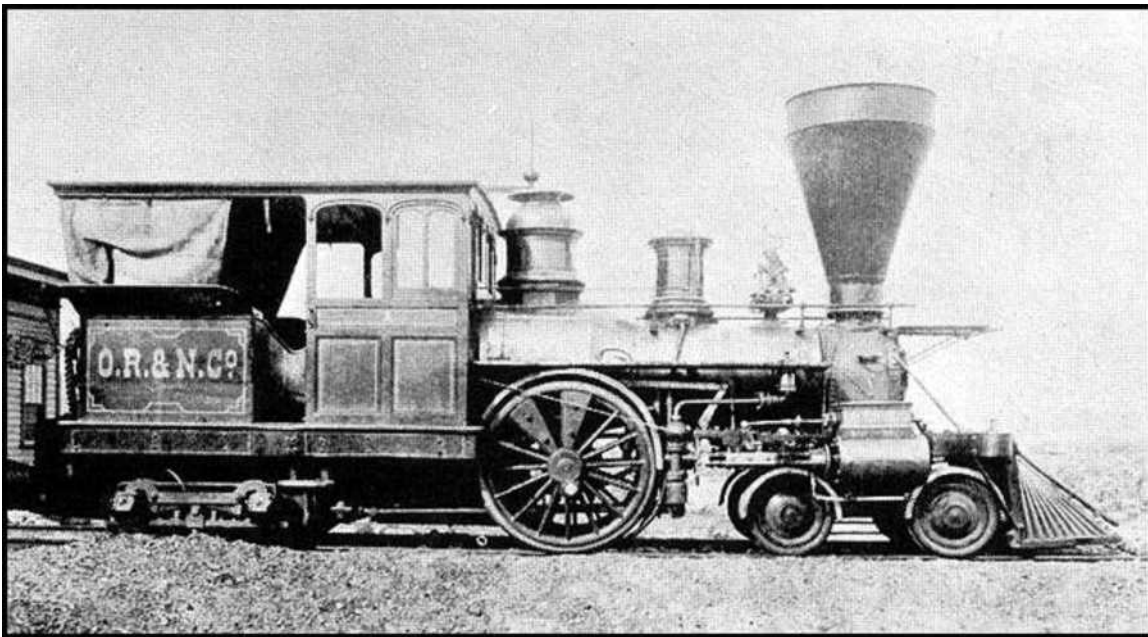
Views of the two gorgeous Danforth Singles sent to Oregon at the same time two were sent to the Central Pacific RR, for more about these Singles, re-read the Chapter 2 background.



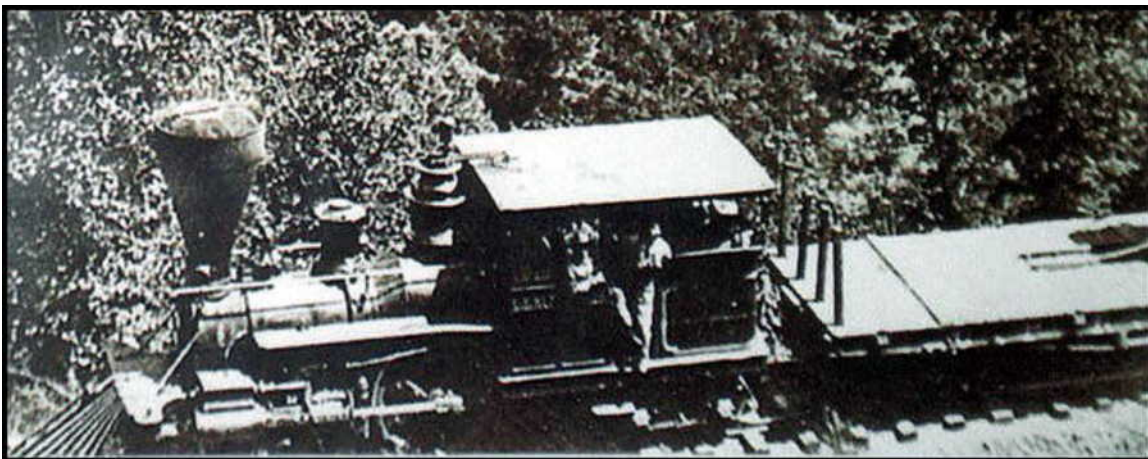
Oregon Steam Navigation Co 'D.F. Bradford'. This is also how CP Huntington would have looked when new. Note the artwork on the tender tank!



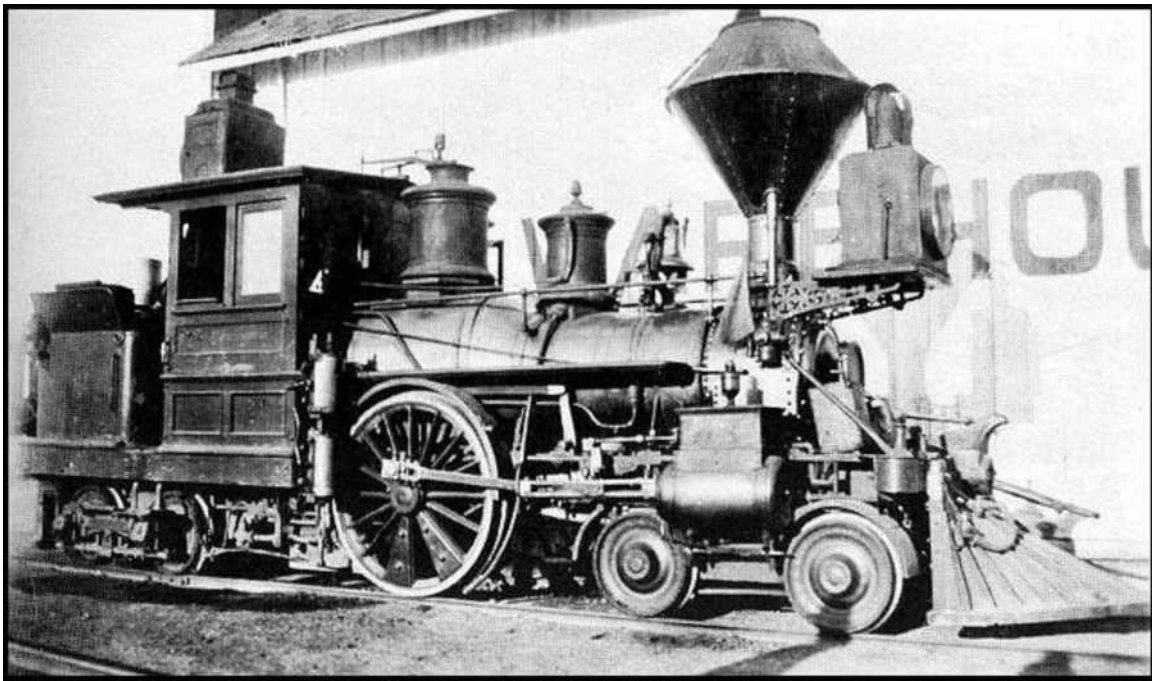
A photo reproduced from Chapter 2, the other Single from Oregon, the "*J.C. Ainsworth*."



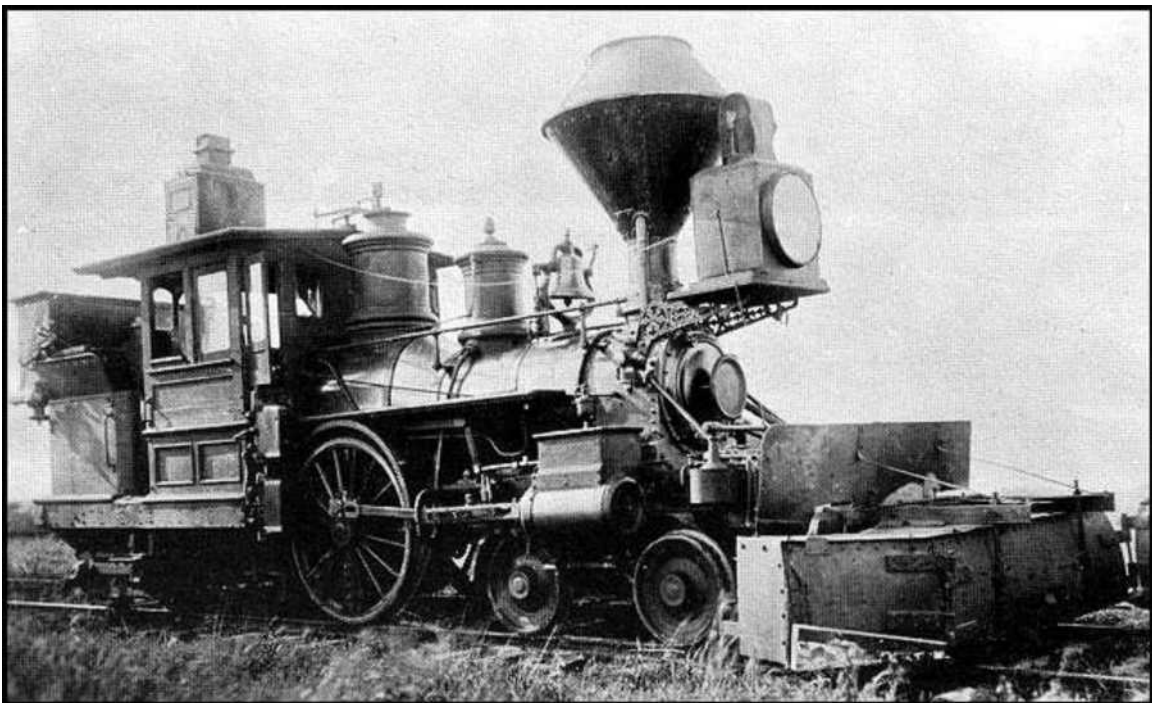
The Ainsworth again, seen in her last days in Oregon. She is being prepared for removal, with her main rods removed for transport. Note in all of the above Danforth Cooke Single photos, these locos fitted with Crosshead water pumps, and no injectors, as was typical of the 1860s.



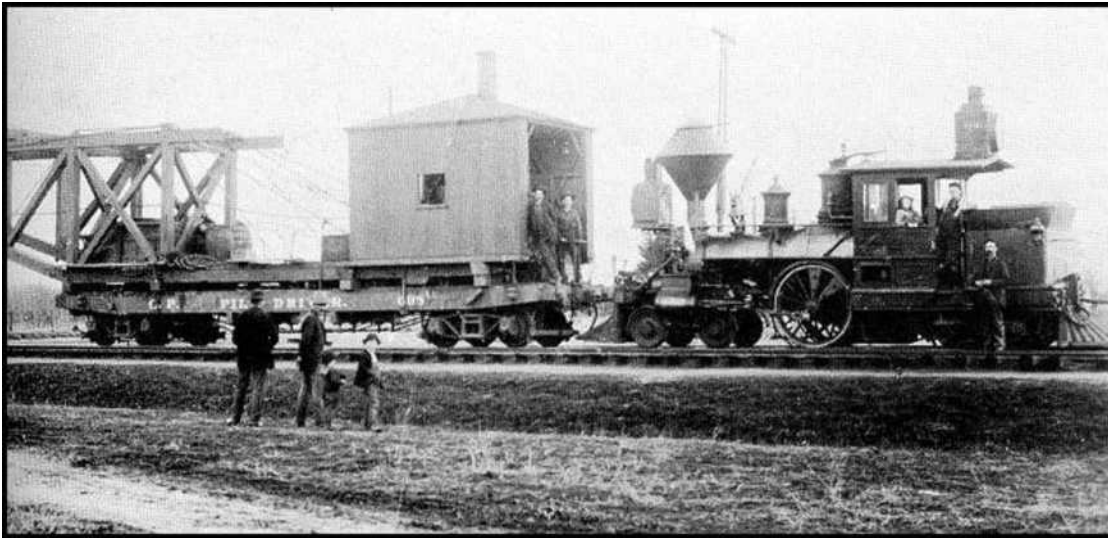
The CP Huntington seen in construction service in the early 1860s on the Central Pacific. Here seen at Cape Horn, overlooking the American River Canyon.



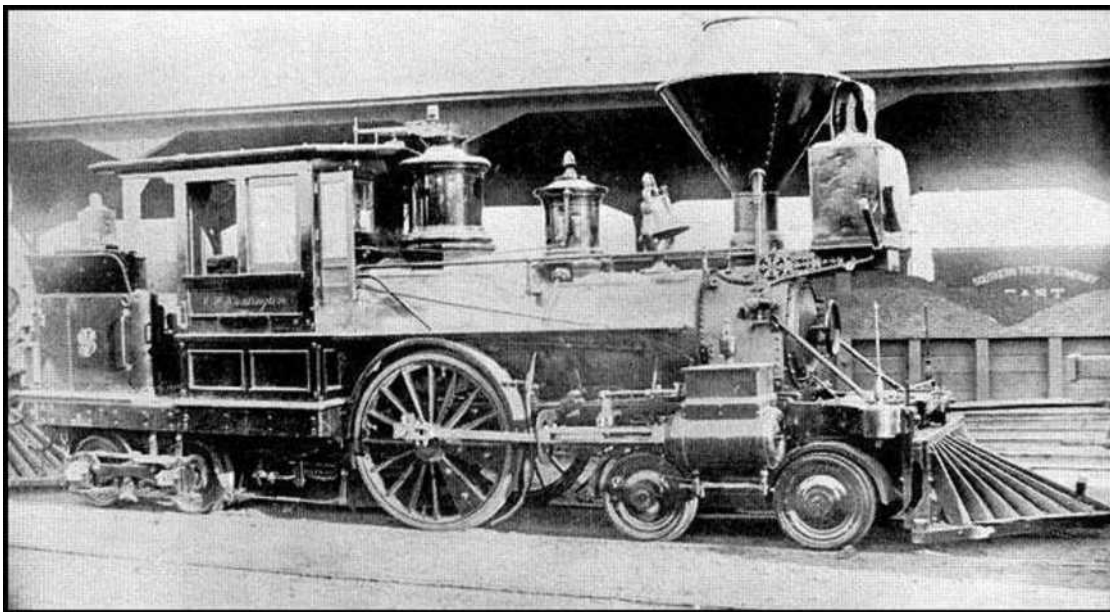
C.P. Huntington running in the late 1880s in San Jose. Note the air compressor for the Westinghouse Air brake system fitted in front of the cab wall, note marker lights on the smokebox, and rear facing headlight for commuter service. The steam exhaust pipe from the air compressor can be seen along side the stem of the smokestack, before entering the lower cone of the stack.



In 1898, C.P. Huntington is used to burn weeds along the trackside.



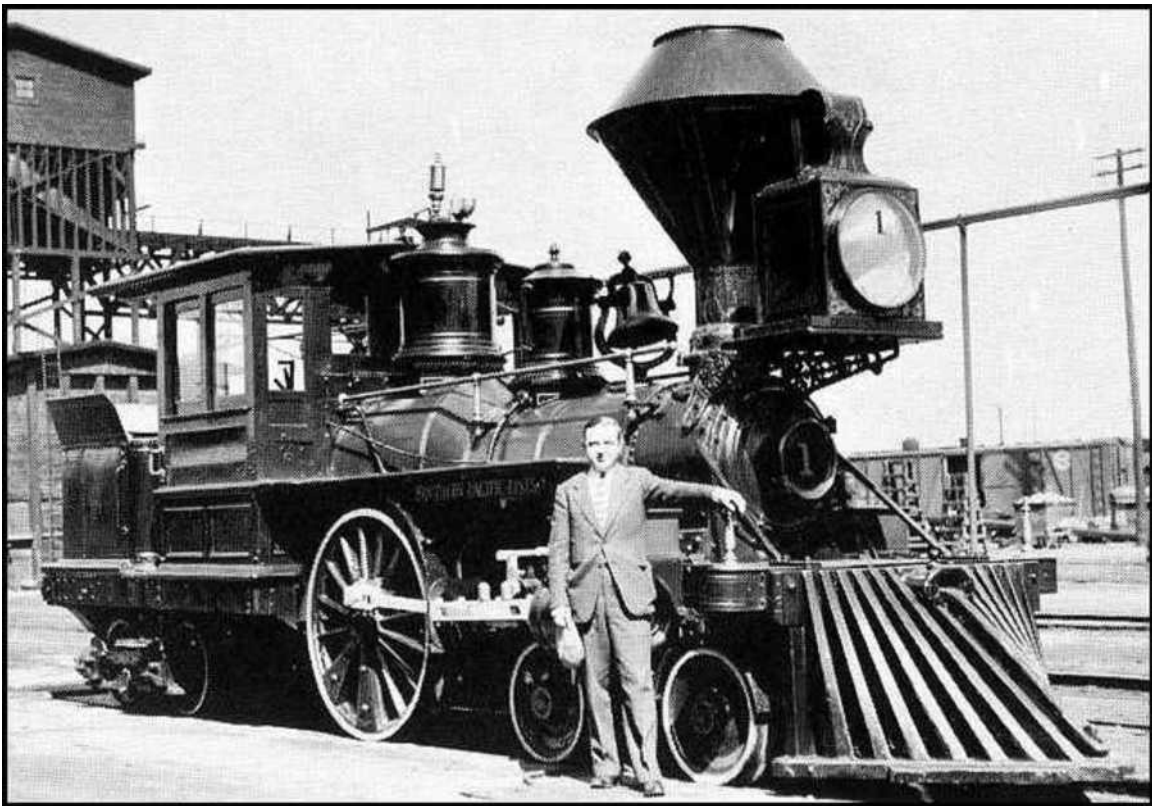
C.P. Huntington in work train service in the 1890s - She's seen here pushing a pile driver for bridge repair after a washout near Lodi (Gerald Best).



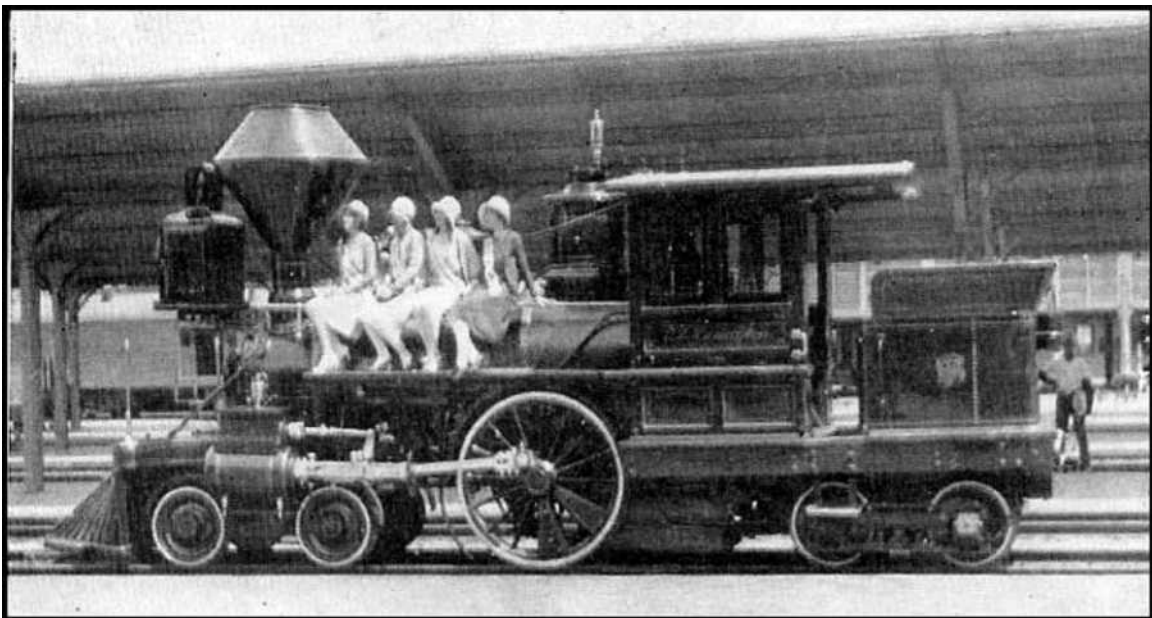
Newly restored, the CP Huntington rests in the Sacramento shop grounds. (Gerald Best).



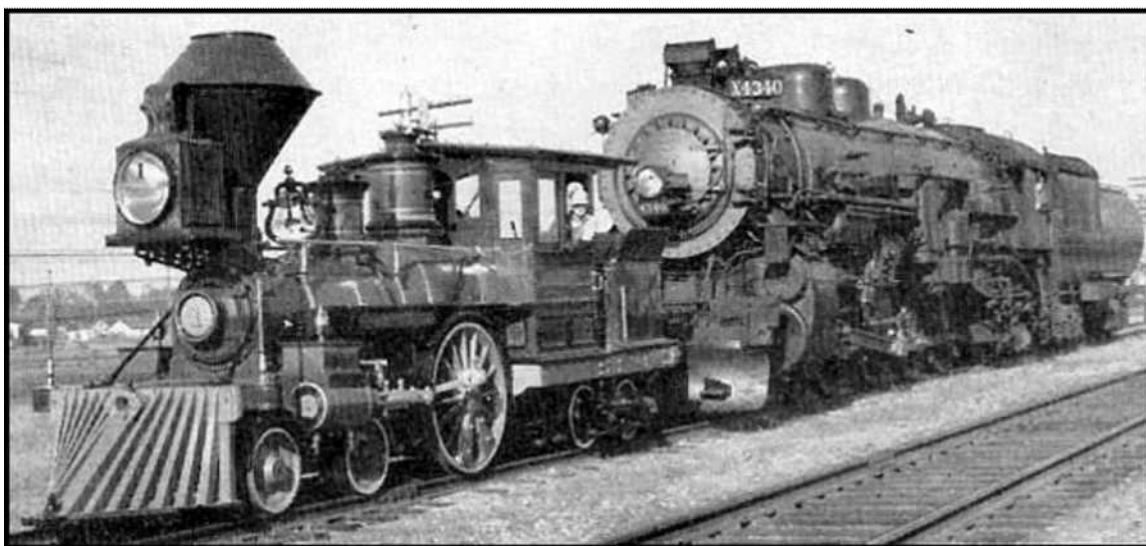
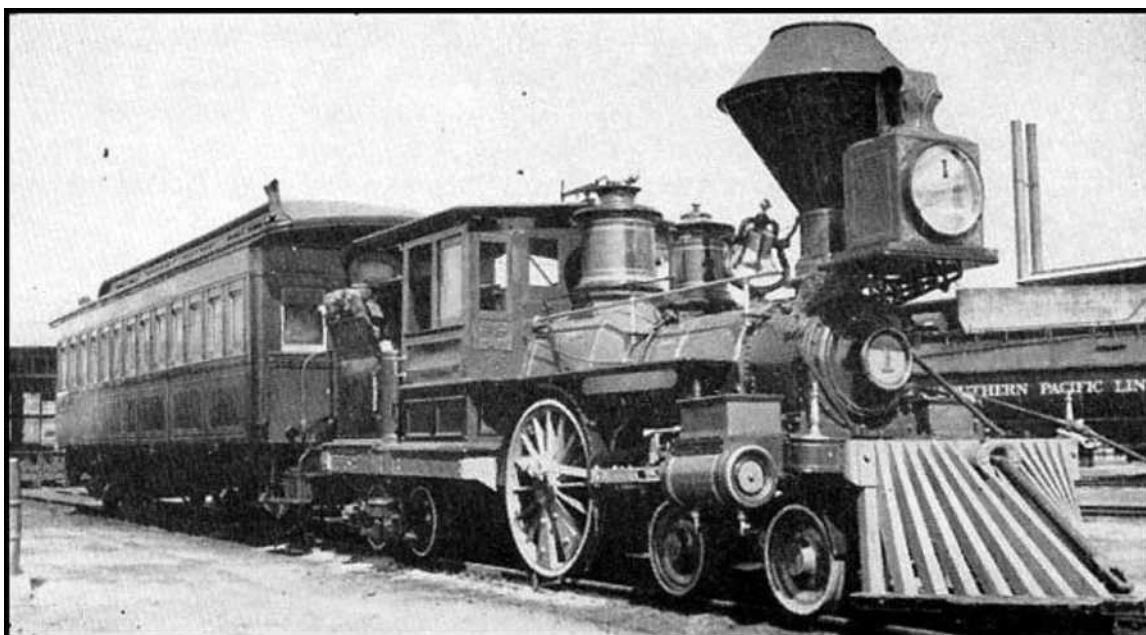
Rolled out to greet every new form of power, the CP Huntington as the Southern Pacific's Mascot poses next to their largest power, the AC-12 Cab forward. Today the CPH sits next to an identical monster in the museum!

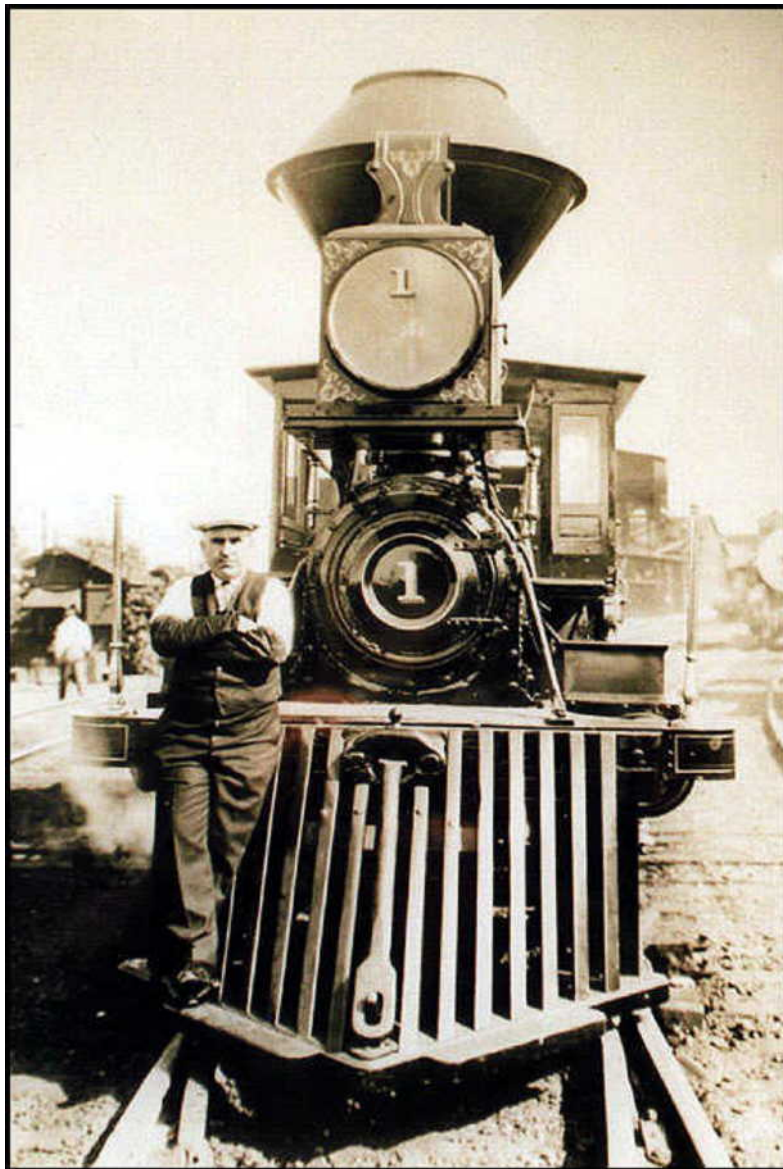


Gerald Best poses next to the CPH in LA in 1939. The famed author cherishes memories of actually having the opportunity to drive the loco on one occasion.

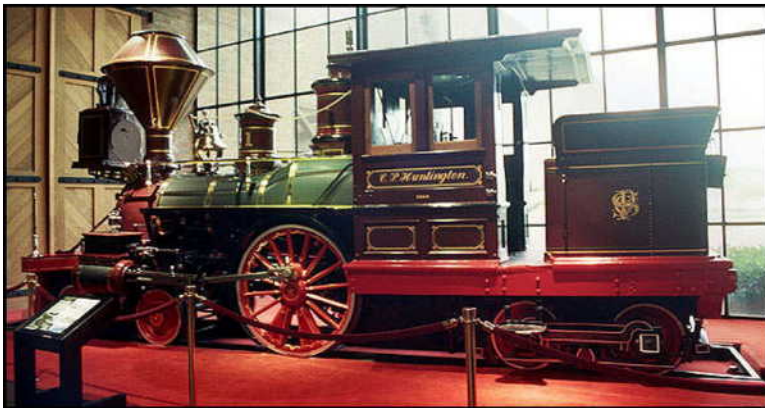
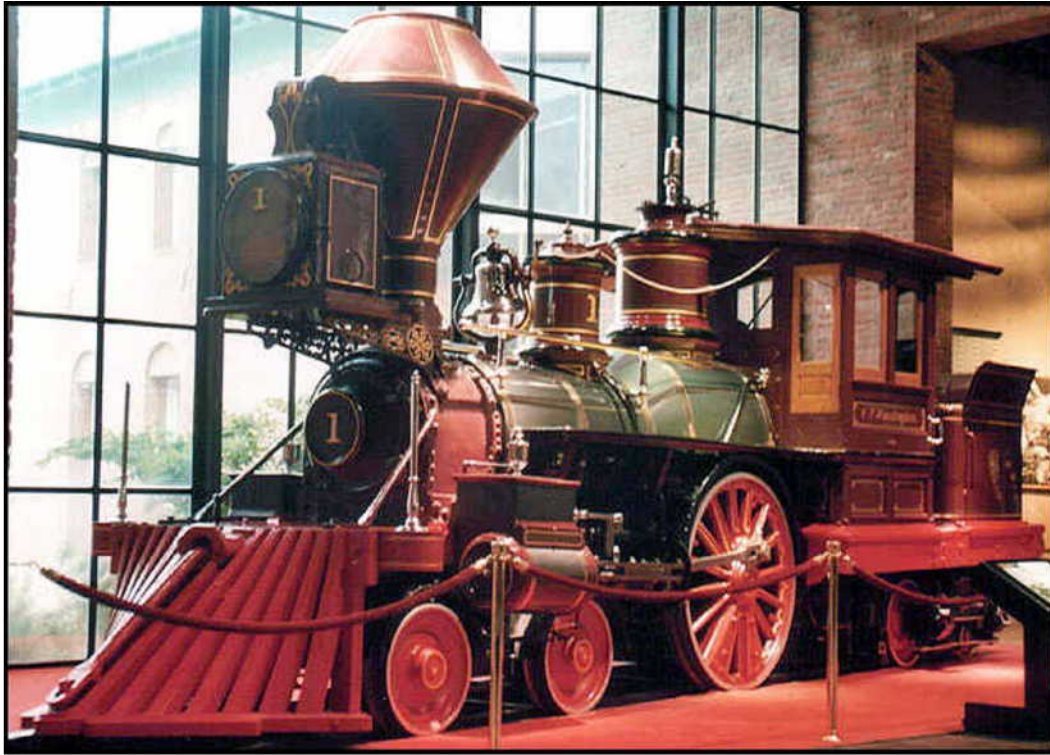


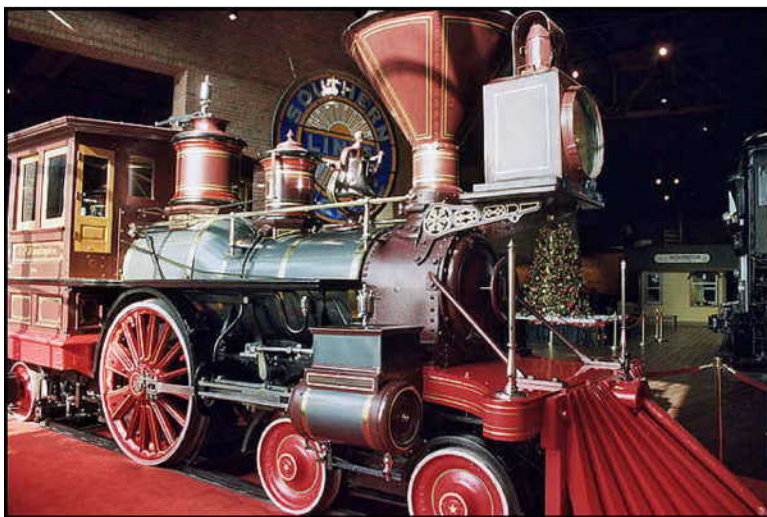
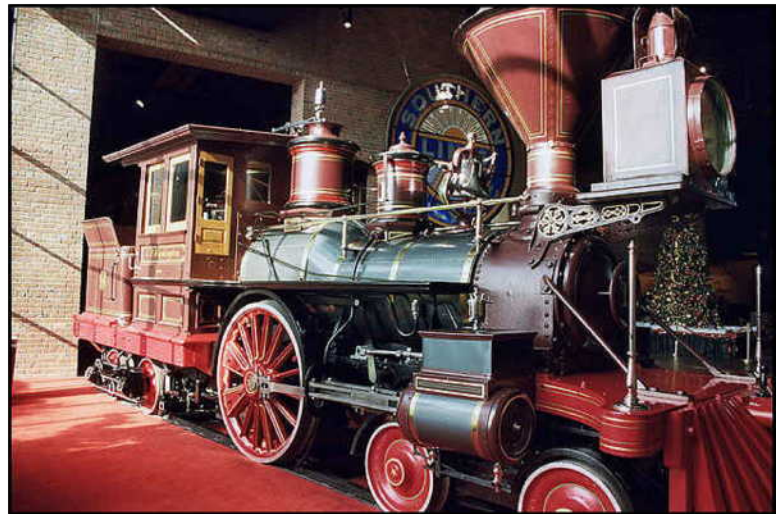
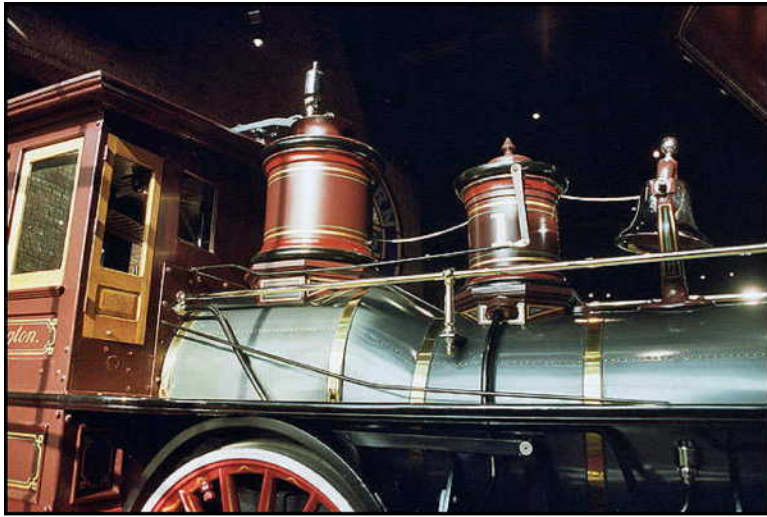
Ladies posing on the recently restored CPH in 1914.

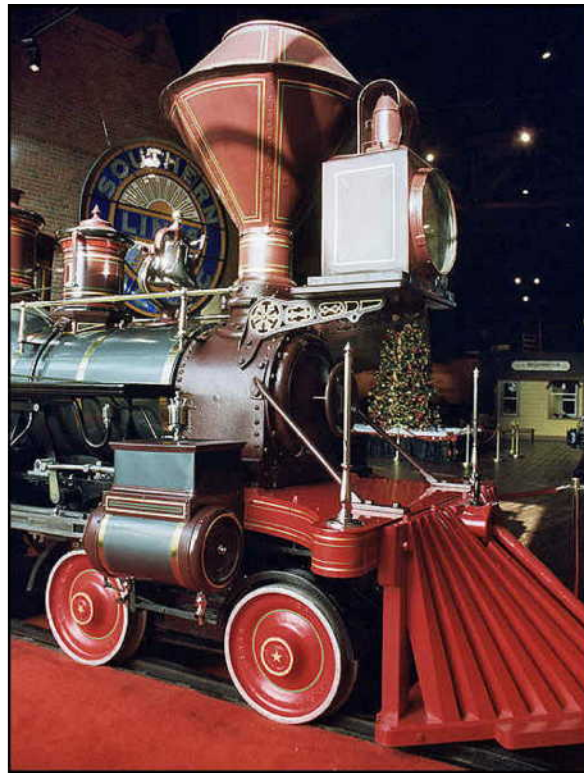


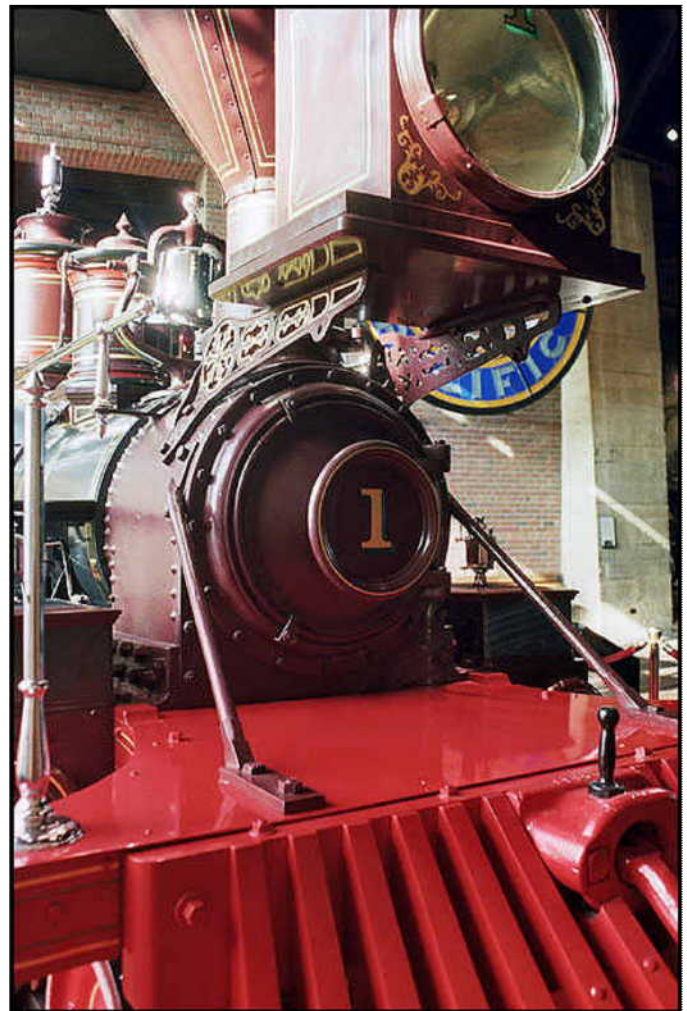
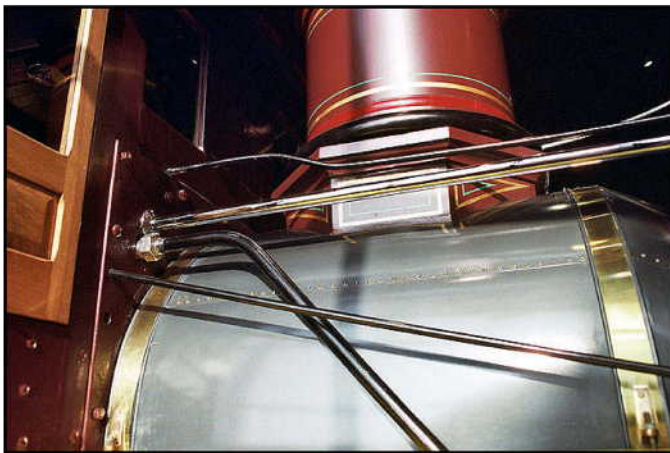
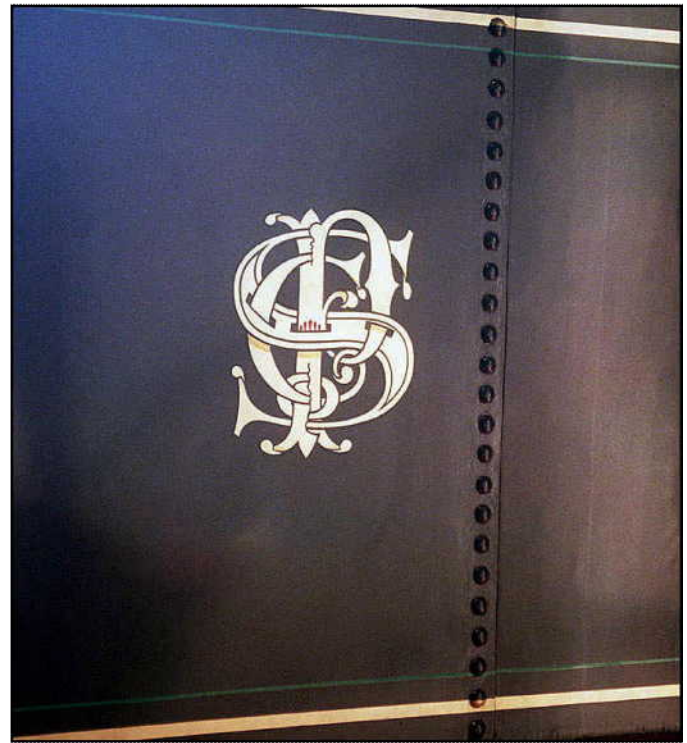
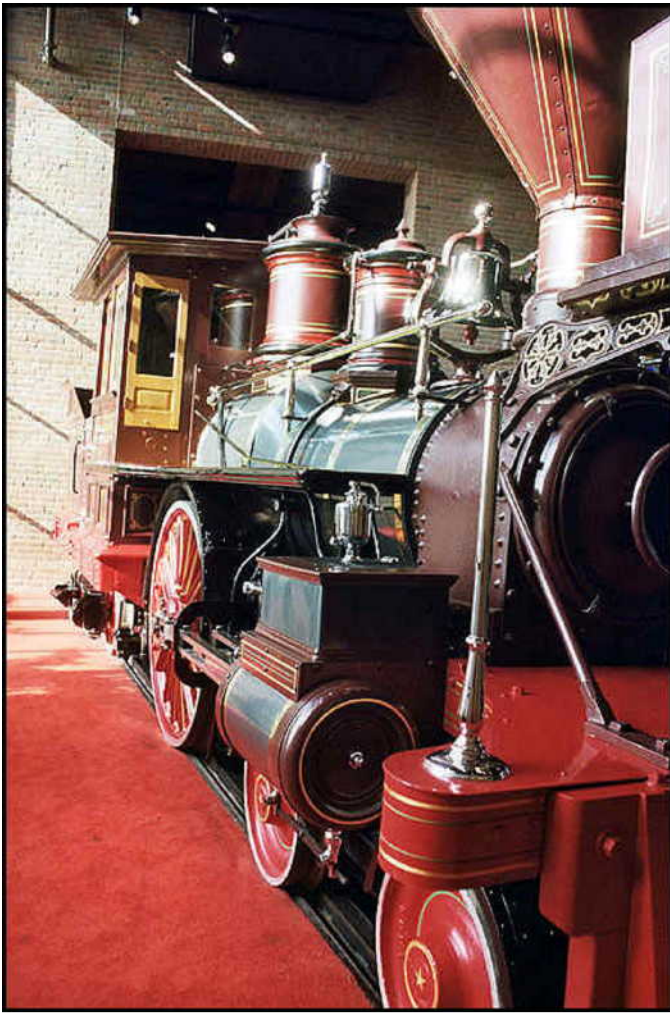


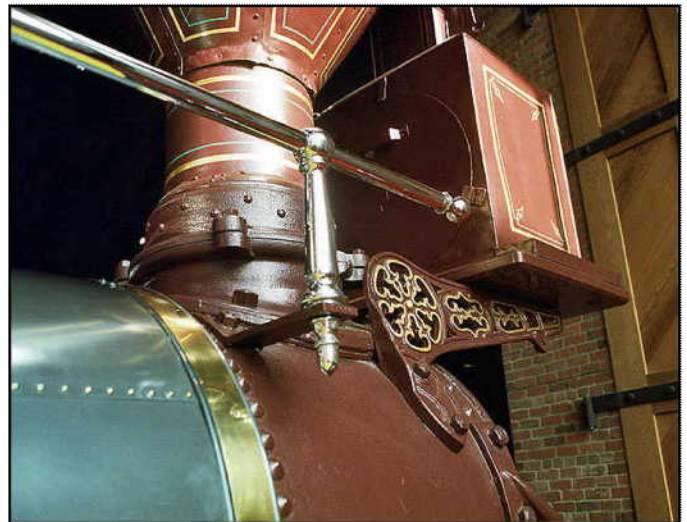
The C.P. Huntington Today - A Photo Album

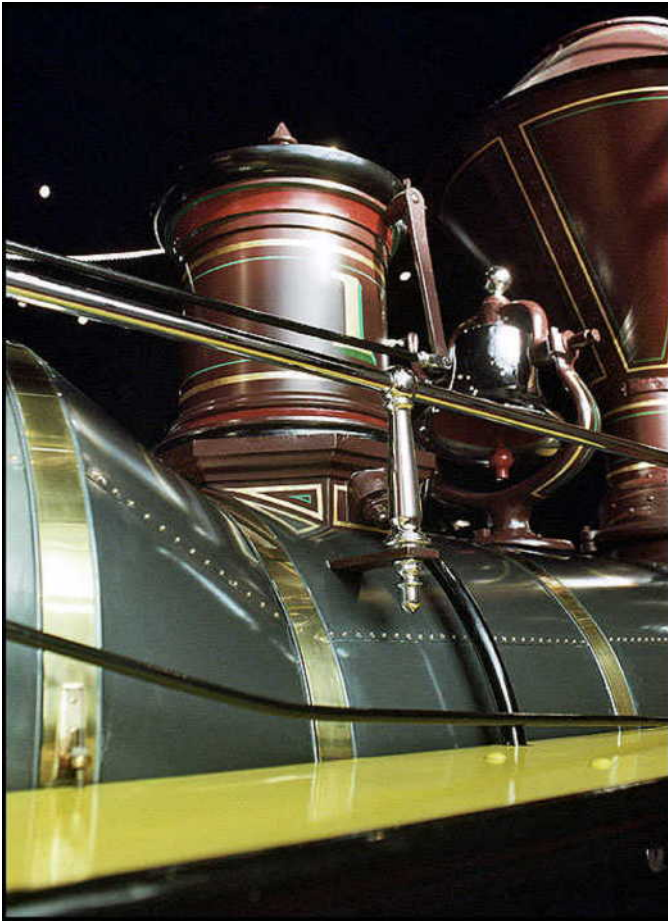




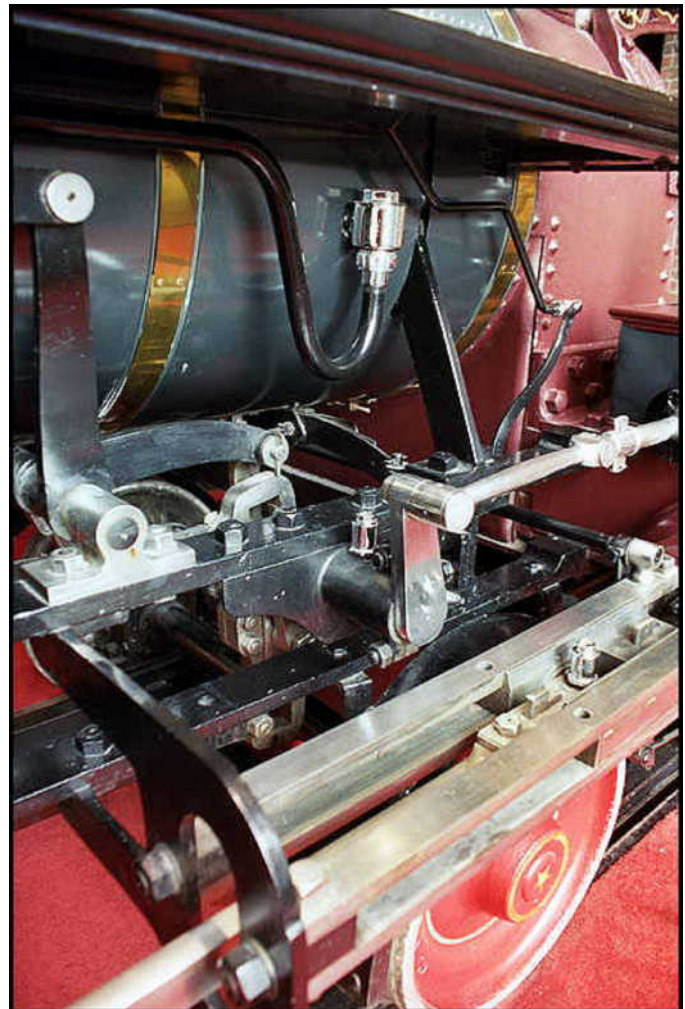
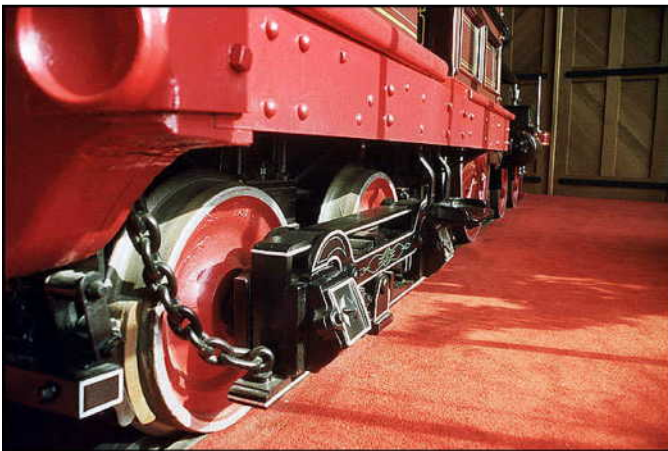
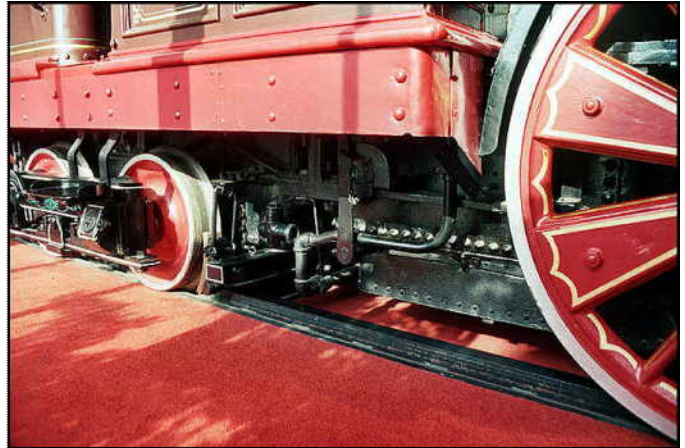




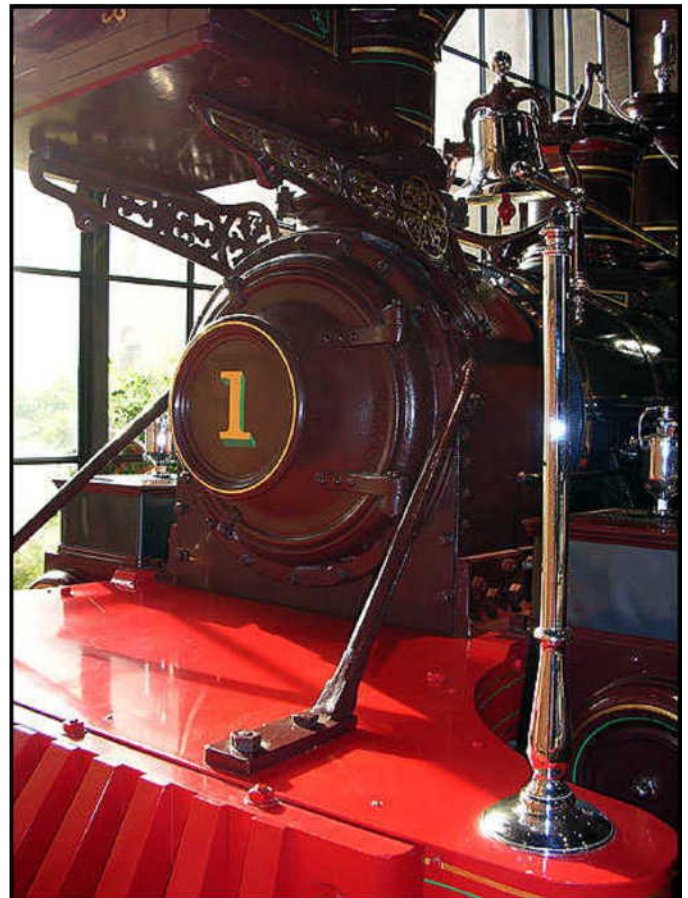


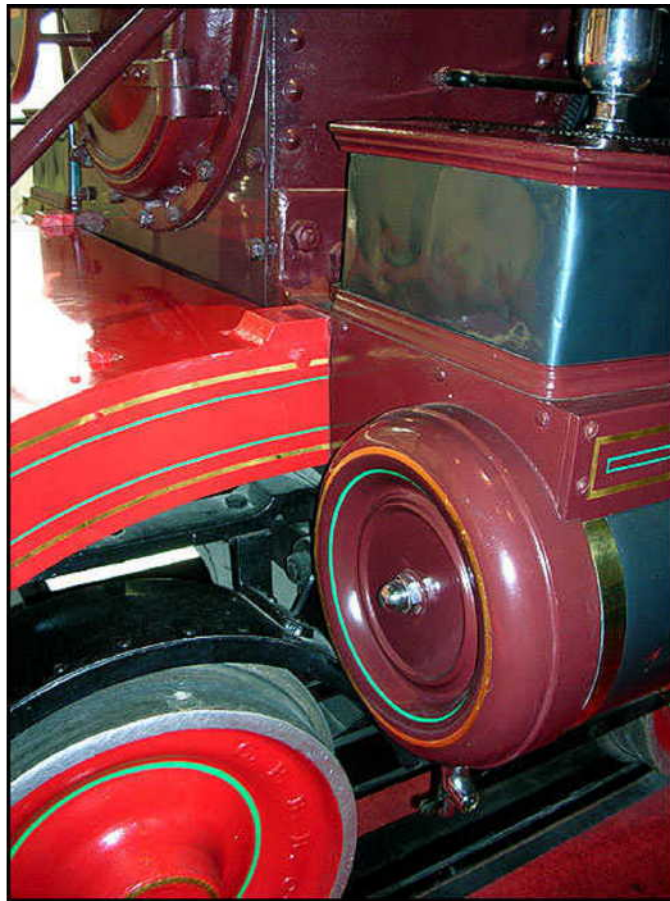


Note the yellow paint to the running board tops (also used on the tender top), as applied during the 1914 restoration.



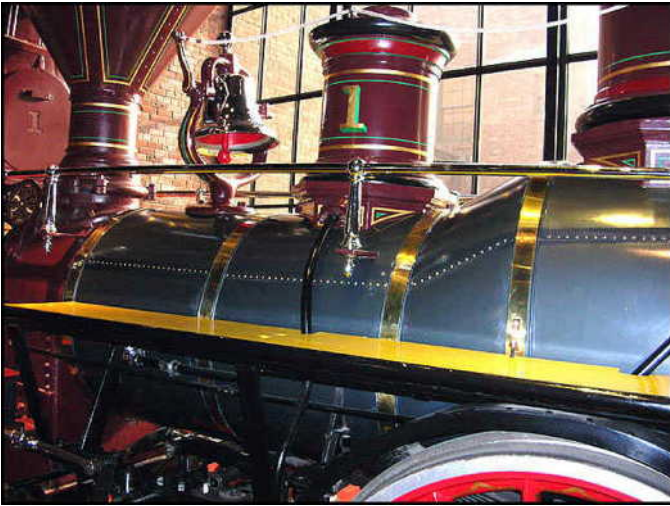
The crosshead guides and very fine bar frame.



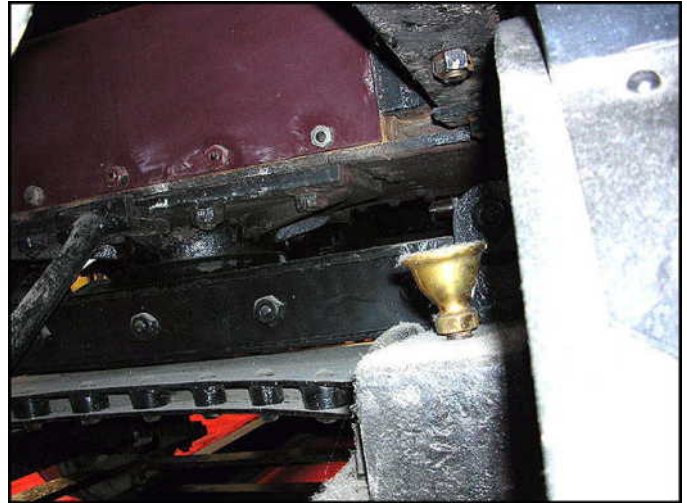


Drain cocks under the cylinders.

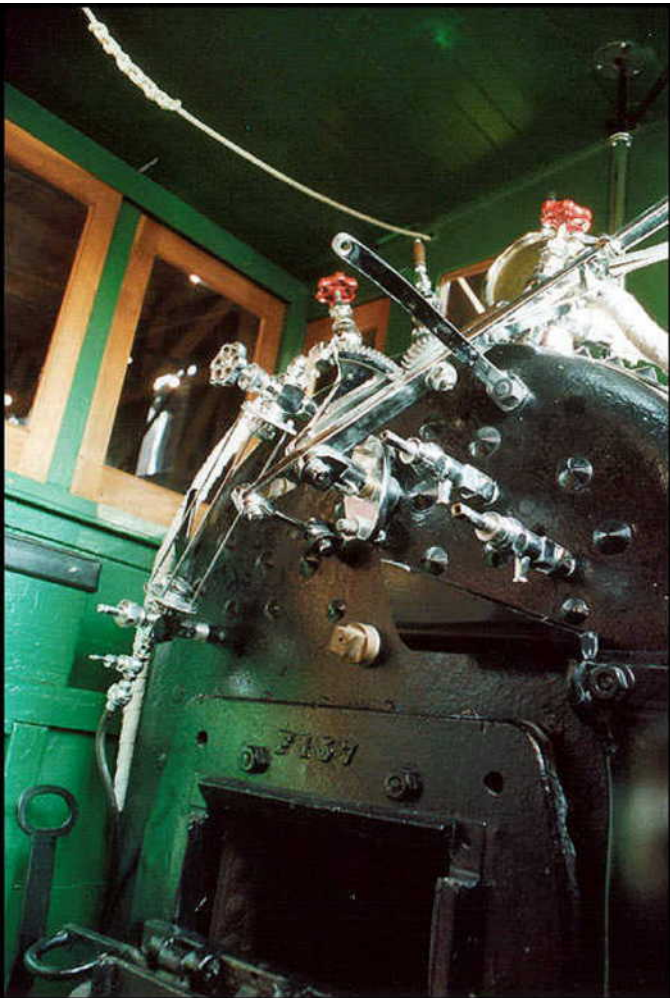




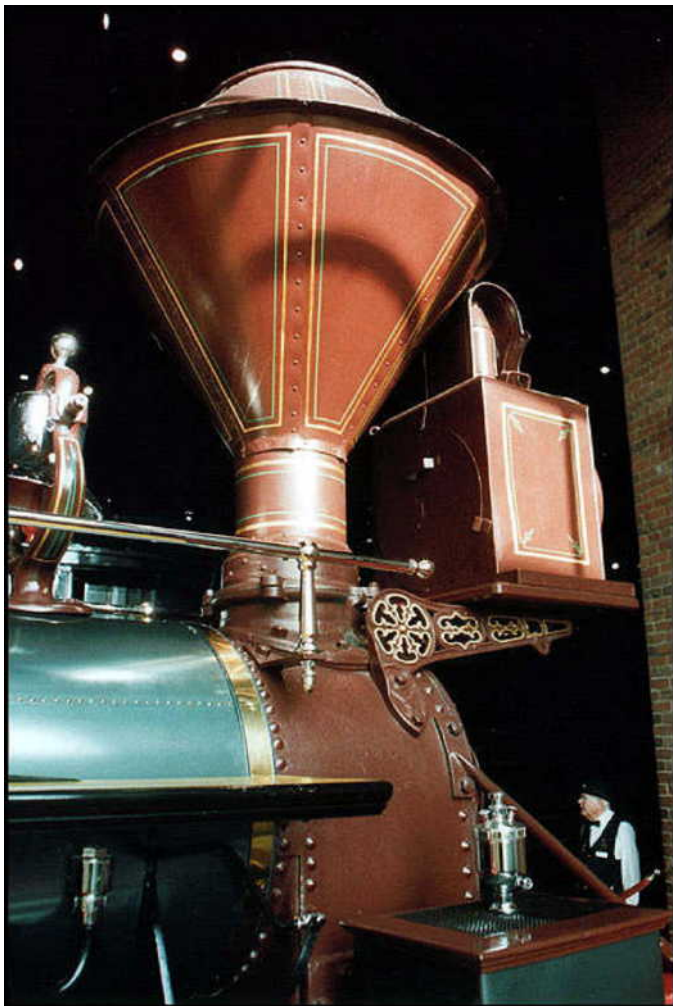
Yellow tops to the running boards.



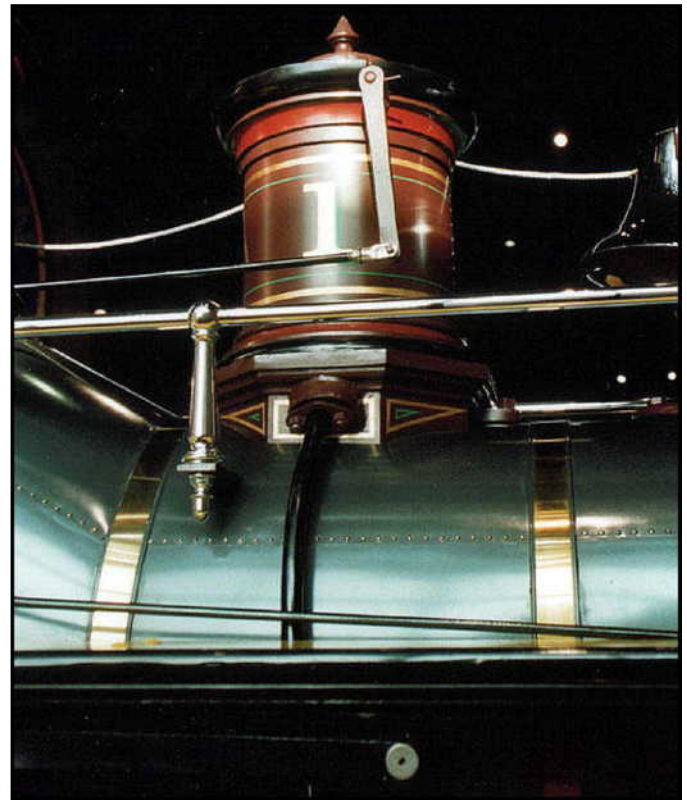
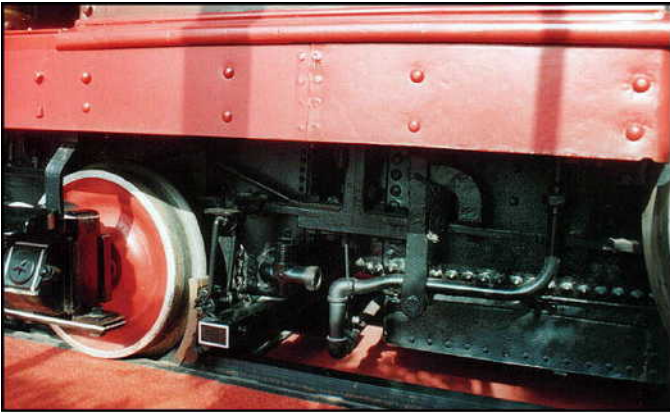
This is an unusual view looking at the pilot truck pivot. The pivot is seen just below that brown bulkhead (which is the lower smokebox sheeting), Note the brass oil cup above the front wheel journal. There is no lateral play in this truck, like our model, the pilot truck only pivots.



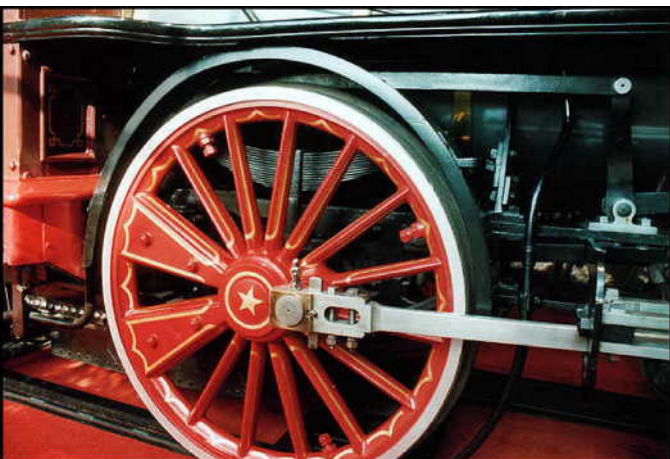
A view of the upper backhead.



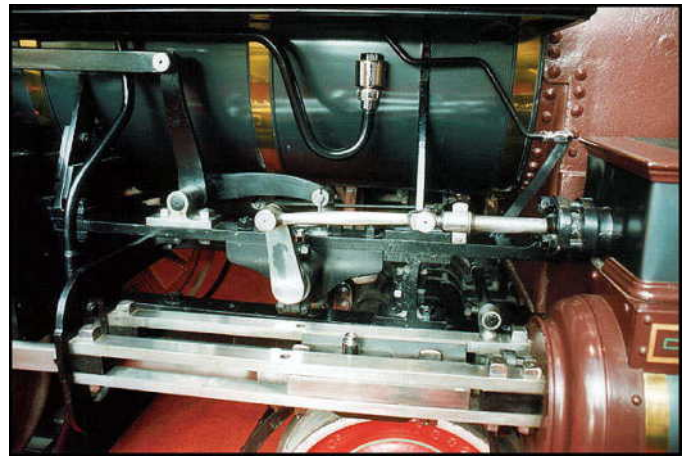
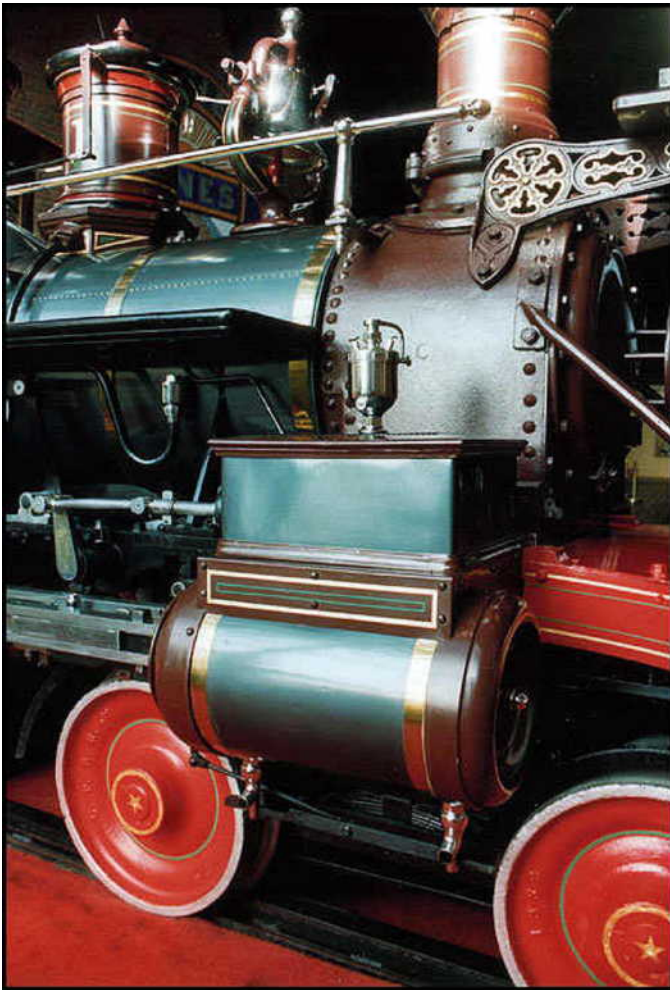
View of the square fire door, with the upper half folding down over the lower swinging half. The vertical pull rod seen beyond the fire door is the damper lever to the ash pan.



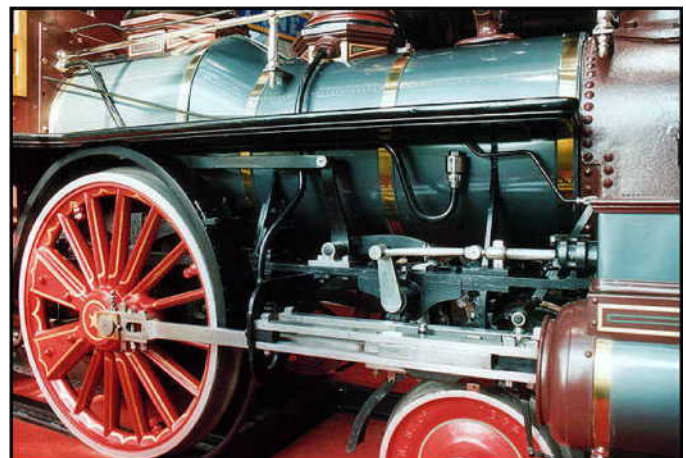
Note the sanding lever, pivots off the upper dome ring. Why not add this detail to your model.

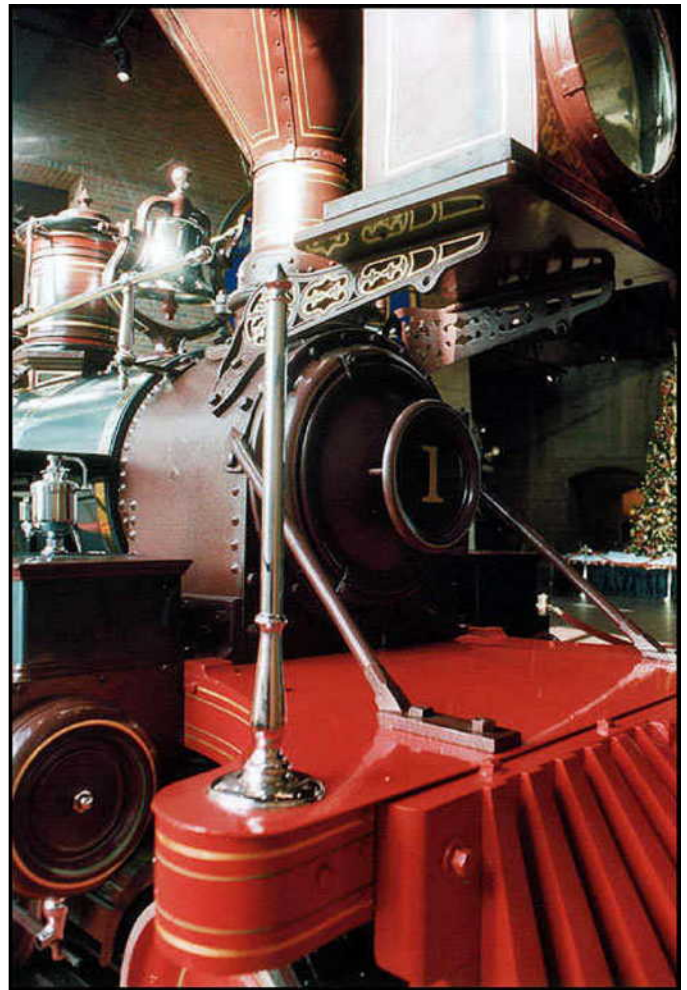


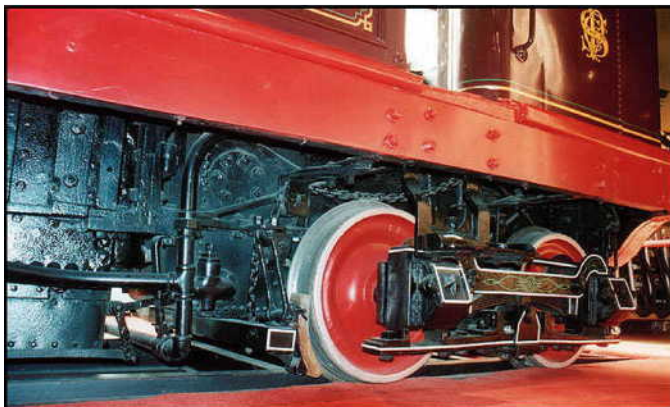
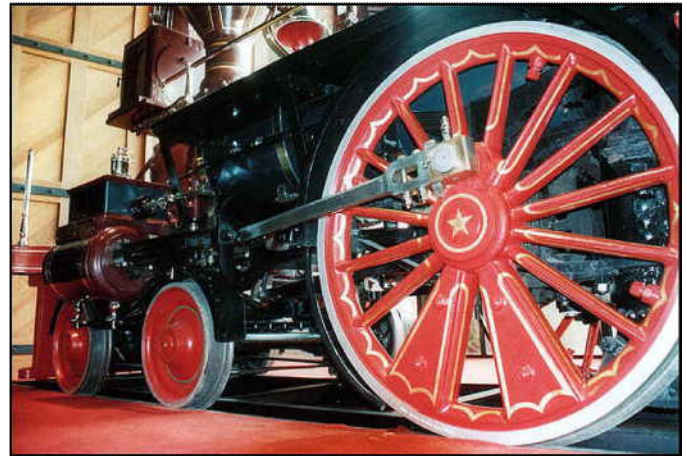
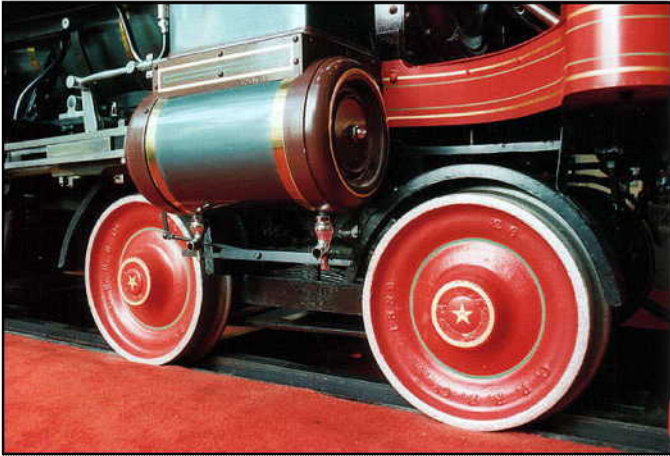
The forward reverse lever off the Johnson bar seen running behind this drive wheel.



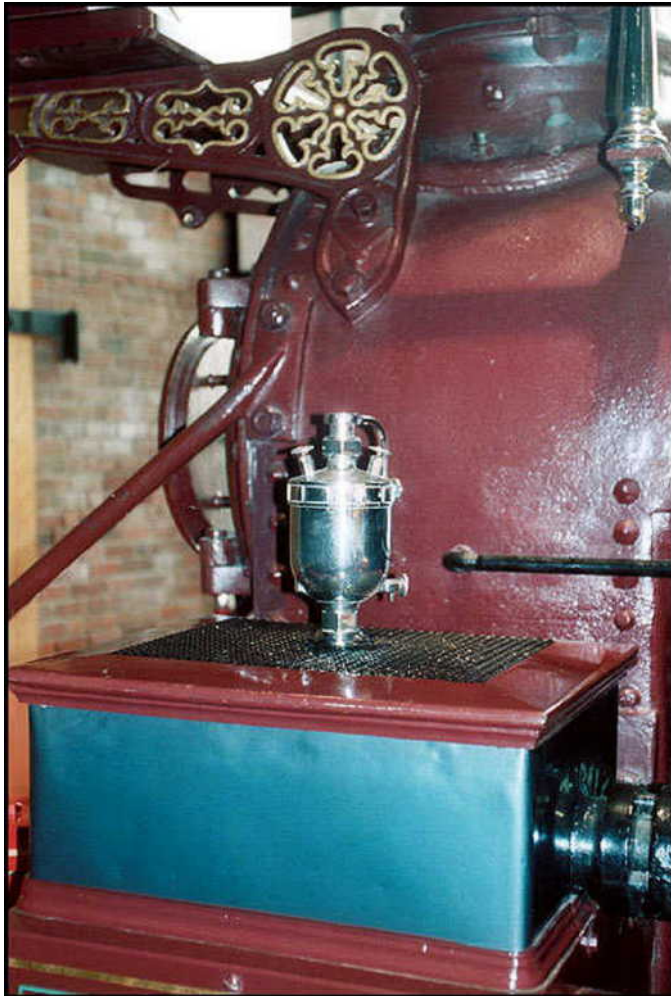
The end of the reverse lever connecting to a pivot, which then connects to a lifting lever above the Stephenson valve gear.



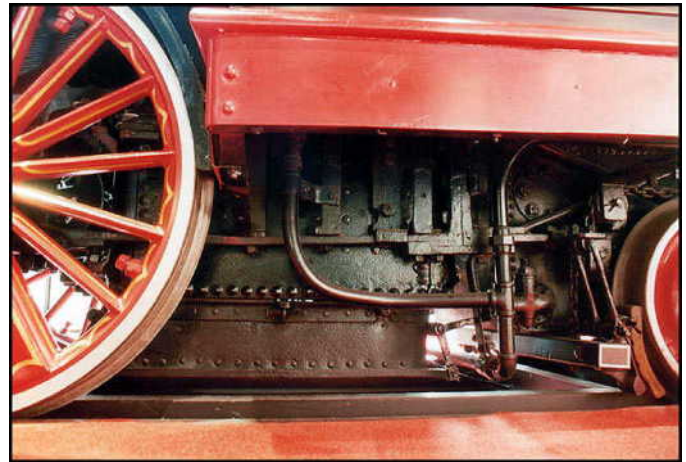




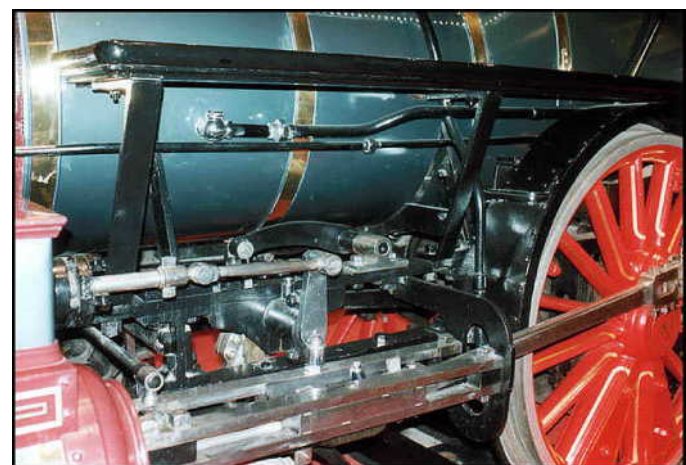
Note the water tank between the rear truck wheels. The rear truck's lateral play would have only been inches.



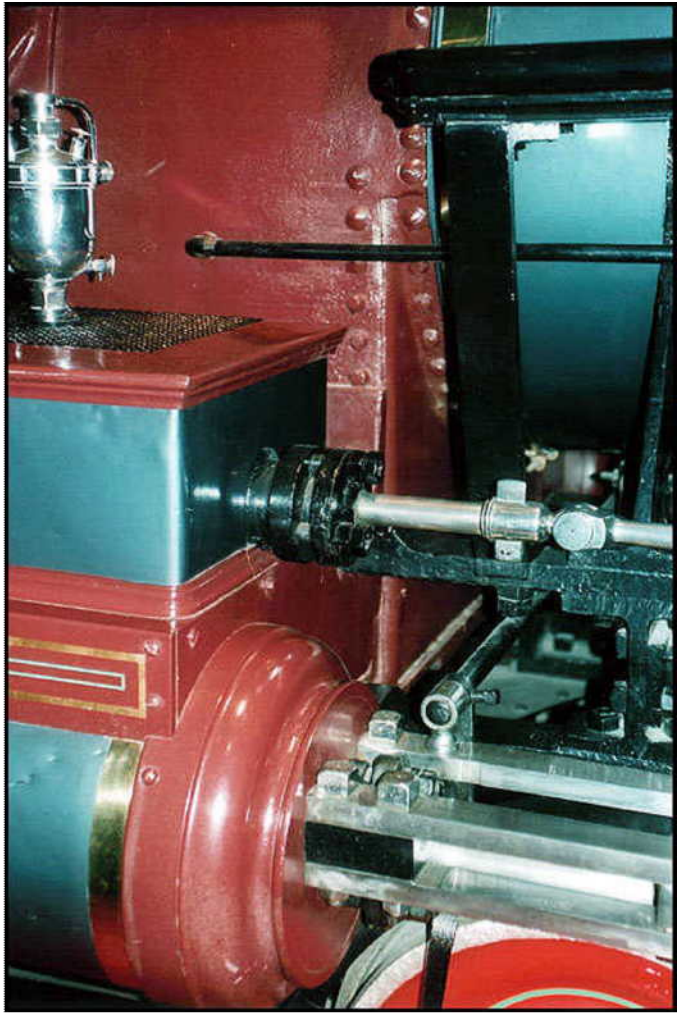
The oil cup atop the steam chest.



Note the feed water pipe running vertical up into the cab, where it connects to the injector - this pipe connects to the front end of the sub deck water tank. The same pipe continues up to the upper water tank.

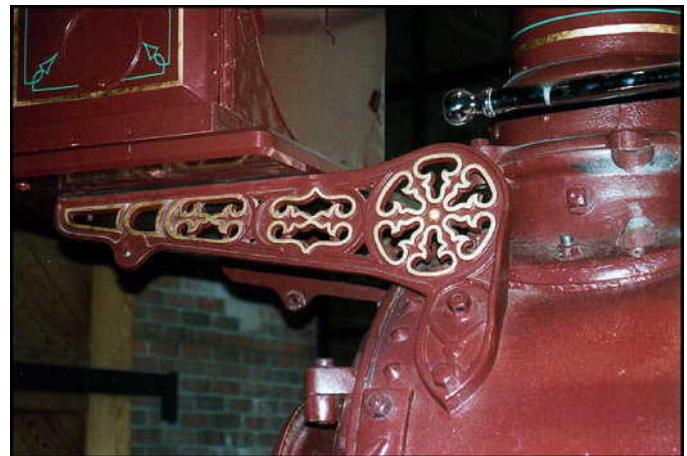


Note the thick running board supports that come up diagonally from the bar frame. This support detail does not exist on the engineer's side. It could be later in her career, the running boards on this side supported something heavy?





Lower cab panels.



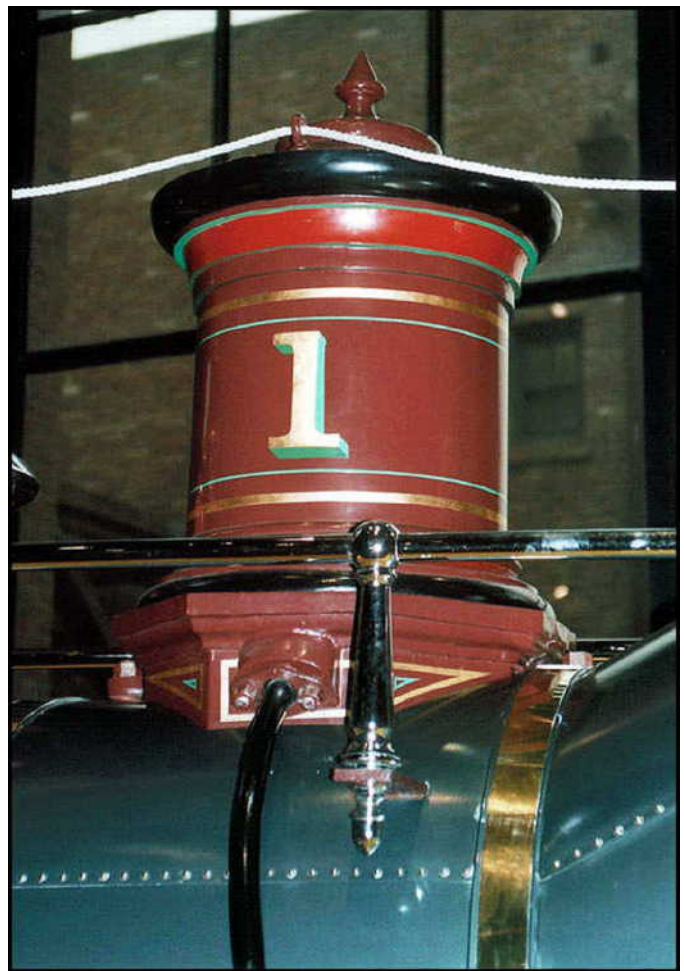
Headlight bracket.



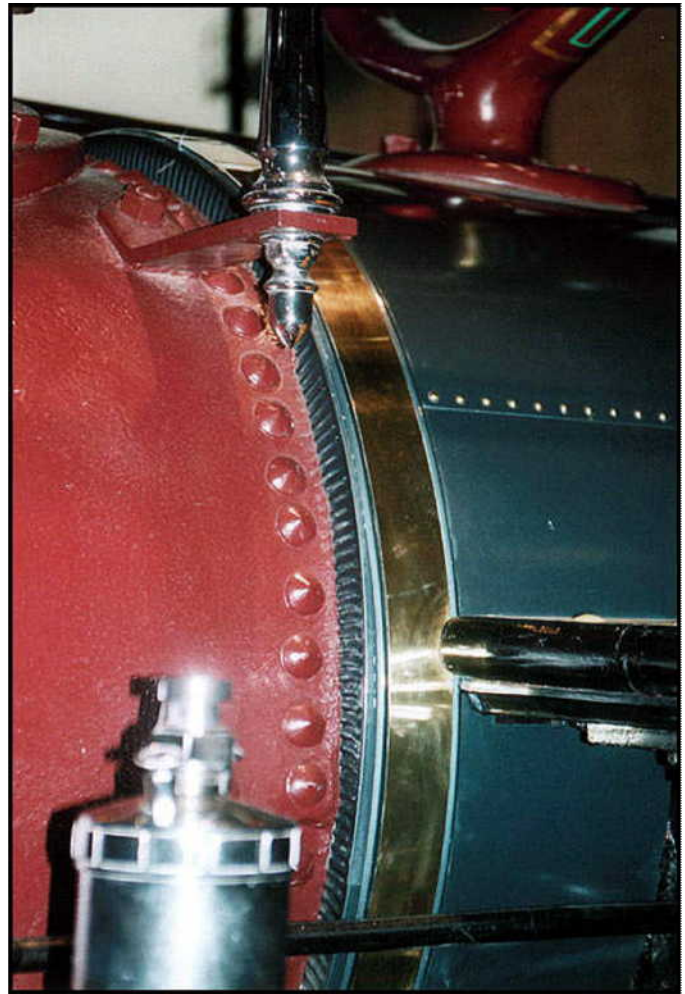
Step to the cab deck.



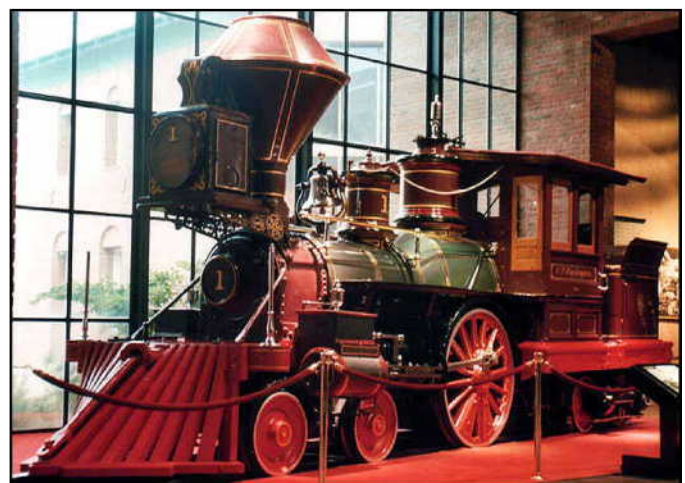
Steam dome with steam outlet, probably added later in life for external steam appliances.



Sand dome.



The step between boiler and smokebox. Note how the Russia Iron is wrapped around the exposed edge, and crimped. Brass boiler band holds it all to the boiler side.





Note the yellow topped running boards, tender tank top, and the cone topped bolts to the cab roof.



... and there it is. A wonderful old lady.
Ok enough - get back to building your models!

David Fletcher
December 2005.

