

## FAHP News, April 21, 2014

**Clarence Marshall's Gas Saver, Late 1930s:** Among my father's several patents were at least two that had to do with a gasoline-saving device he invented for large engines of the late 1930s. I don't know the details of its construction, but it was a good looking accessory that was placed between the intake manifold and the carburetor and under certain conditions caused more air for a leaner mixture to enter the cylinders for combustion. Since my dad had a 1935 Standard Eight Packard Club Sedan as his everyday car in 1936 and '37, this was the car on which the device was first installed.

First I remember the sketches prior to his making of the patterns for the several bronze castings that formed the housing and integral parts of the gas-saver. Some of these lightweight wooden patterns surfaced in our shop in recent years. When the castings were received, I'm not sure how much machine work was required to put the completed device together for installation. In any event, the gas-saver was installed on the Packard, and frequent adjustments followed to get it right. A patent attorney was engaged to apply to the U.S. Patent Office, and something like 22 claims were requested. Eventually, I think something like 15 of these claims were approved, and two or more patents were granted.

To monitor gasoline consumption, my father bought a device that hung on the glass of the front door on the passenger side of the car. This unit had a glass bottle with graduations that held one quart, and when tubing was tapped into the fuel line between the fuel pump and the carburetor, suitable shut-off valves enabled the observer to check carefully just how far the car could go on one quart of gasoline. We often made evening trips to visit the Mancills (Anna Mancill was Clarence's sister) on Kennett Pike at Mendenhall, and it was my job to open one valve to fill the quart bottle, then close it and open another to allow the car to run on the fuel from the bottle. My father (the driver) would check his odometer closely, and I would report on the amount of fuel consumed. At age 12, I liked that job.

Operating on back roads, fuel consumption on these 8-cylinder Packards with 3-3/16 x 5 (bore-and-stroke) engines was usually about 11 miles per gallon. Under ideal conditions, and with my father's device installed, it was increased to 14 to 15 m.p.g. My dad's good friend and trapshooting buddy, Clarence Walker, had a 1936 Packard One-Twenty with a somewhat smaller straight eight engine. The device was installed on Walker's car. Unfortunately, the improvement was less evident, and it seemed to require constant adjusting to keep the motor running as it should. While the device seemed to have great promise, my father was discouraged by the poor performance on the Walker car and soon turned his attention to other things.

The next project was the invention of an improved clay target trap that was demonstrated to Paul J. Buxton of the Western Cartridge Company on January 20, 1938. As described in the Weekly News of 10/7/06 and 12/30/13, this was the first project in the new shop that had been built on the end of the Carriage House in 1937. Instead of applying for another patent, my father gave the idea to Western in exchange for 10 new traps for the Yorklyn Gun Club.

**Work Report:** On Tuesday, April 15, seven volunteers were on hand, as follows: Jerry Novak (in charge), Bill Schwoebel, Brent McDougall, Steve Bryce, Mark Russell, Ted Kamen and Tom Marshall. On Locomotive 401, with the running board moved away from the smoke box and the steam pipe disconnected on the right side of the engine, the slide valve was adjusted, and everything was reassembled. The locomotive was cleaned from its 4/12 runs and in preparation for its use again on 4/19.

The new glass for the Model 76 windshield having been installed and returned to us, the windshield was reassembled and installed on the car. On the Model 740, the new exhaust steam line was completed and installed. More nozzles are being made of the new design suitable for our Model K, and a box was completed for shipping two vaporizers to California. The Sears vise in the shop was cleaned and reassembled.

On Thursday, April 17, 10 volunteers were present, viz: Bill Schwoebel (in charge), Steve Bryce, Kelly Williams, Bob Stransky, Ted Kamen, Dave Leon, Bill Rule, Eugene Maute, Gerhard Maute, and Tom Marshall. The track was examined and repaired behind the museum where derailments had occurred on 4/12. The completion of the electrical switch box on the Model 607 is becoming ever closer.

On the Model 740, the fender shroud was installed, a union on the exhaust line tightened, and the fuel-pressure system was recharged. The car is ready for road testing before being returned to the museum. The original horns were put back on our "Diesel" locomotive, and work continued on new Model K burner nozzles. The railroad flange-ways were cleaned, and the museum made ready for our second Easter Egg Hunt on April 19. The burner for the popcorn machine, having been repaired since 4/12 by Rich Gregg, was tested and worked 100%.

Saturday, April 19, turned out to be another glorious spring day, and about 500 happy visitors enjoyed the hunts, the Easter bunny, the train rides, steam-made popcorn, and the several activities in the museum. Congratulations to Susan, Jesse, and the wonderful volunteers who make events like this possible.