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# A Tale of Two Hubcaps

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*Figure 1: VEVA's Detroit - Where are the Hubcaps?*

Your author has only ever known VEVA's Detroit to have two hubcaps – one of each front wheel. However, pictures from further back in history show our car sporting all four hub caps. Thanks to the Covid-19 shutdown VEVA finally had the opportunity to correct this deficiency and restore our Detroit to its former, four hubcap glory.

It is not clear what changed between then and now to have resulted in the missing two caps. It is clear, however, that our Detroit no longer has its original wheels. According to Galen Handy, the original wheels were Motz solid rubber tyres most likely on artillery style wooden wheels.



*Figure 2: VEVA's Detroit as She Most Likely Looked When New*

It is unlikely that the original tyres would have lasted 108 years, and in fact they probably only lasted 10 or 20 years – so our car has likely had a selection of wheels over the years. During the war years (Second World War), the original tires were not available due to shortages so 16” wheels were installed. These wheels remained on the car until the early ‘80s. Figure 3 shows how it looked in 1963 – and coincidentally it looks like there were only two hubcaps at that time as well!



*Figure 3: VEVA's Detroit in 1963*

A cursory inspection of the car showed that the hubs on the front wheels have the normal threads for the hubcaps ( $2\frac{3}{4}$ ” - 16), but the rears did not. A closer inspection of the rear hubs showed that the threads looked to have been crudely ground off at some point in the past. One can also tell that the hubs are not original since the original holes to affix the brake drums do not line up with those of the hubs.



*Figure 4: Rear Hubs Without Threads*

Many thanks to Jack for the idea of making a ring to put on the hubs as an adapter. Many hours, piles of shavings, a few orders for turning tools, and a chunk of steel later along with an inexpensive Craigslist lathe and the rings were finished. These were welded to the hubs and the finished product looks authentic enough.



*Figure 5: An Adapter Ring Welded to the Hub Restores the Threads*

The next problem to overcome was a missing hubcap. VEVA only had three. Again, it was time to pull out the Craigslist lathe and start turning.



*Figure 6: A Real Detroit Hubcap*



*Figure 7: An Imitation Detroit Hubcap Taking Shape*

Once the turning was done, the nameplate was next. A later version of the nameplate is shown nicely in drawing 35761 (many thanks to [electricvehiclemuseum.org](http://electricvehiclemuseum.org) and Galen Handy), though the ones on VEVA's car still have the Anderson Car Co. text. The nameplate was drawn in CAD and sent for manufacture. The original nameplate was likely stamped, but the replacement is made with CNC.



Figure 8: Original Hubcap Name Plate

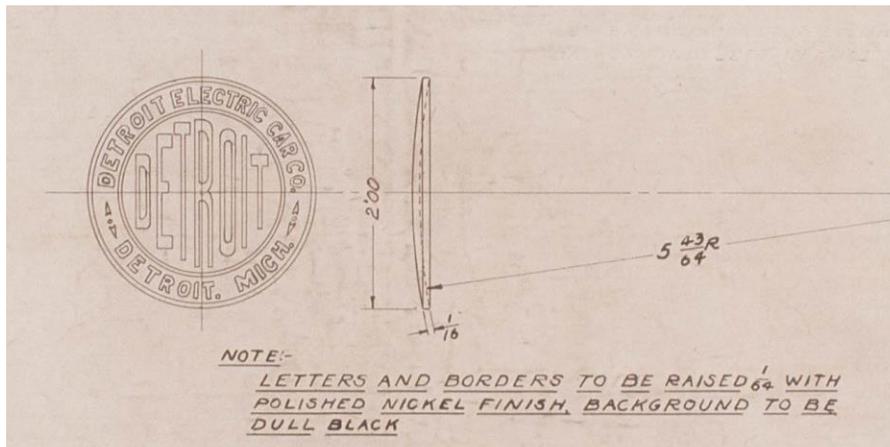


Figure 9: Drawing 35761, Detroit Hubcap Name Plate



Figure 10: CAD Model of Hubcap Nameplate



*Figure 11: Replacement Nameplate in Shown in Brass and with Nickel Plate*

Once cleaned, the new nameplate is nickel plated and then the valleys filled with black paint, as specified in drawing 35761.



*Figure 12: Replacement Hubcap Nameplate*

According to drawing 22351 the nameplate is installed by spinning the edge of the aluminum over the nameplate. Instead, the edge was hammered over and then the finished surface re-machined to make a smooth finish.

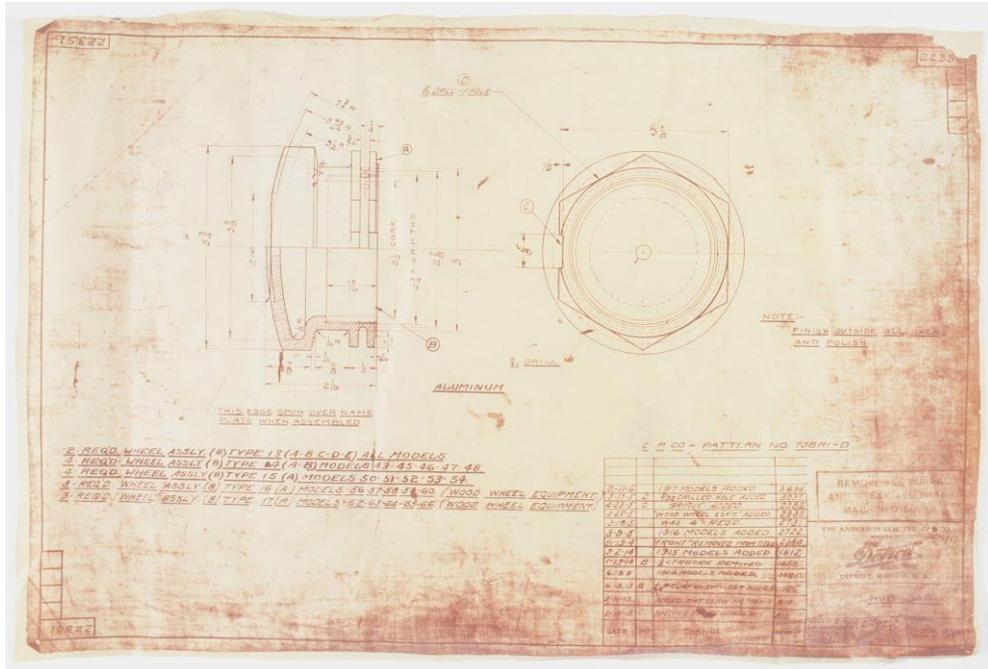


Figure 13: Drawing 22351: Detroit Hub Cap



Figure 14: Installing Nameplate in Hubcap

After the nameplate was installed, there was no more lathe work required, so the six sides of the hex nut could be cut. The sides of the hex nut were first cut using a bandsaw and finished with a sander. Some time on the buffing wheel gave the final product.



*Figure 15: Finished Hubcap*

As a final touch to the project, VEVA also made a wheel puller. Up to this time, removing the wheels has always been a puzzle – though your author found that a tap with a 2 lb sledge against the inside edge of the brake drums did the job best. We are also careful not to tighten the wheels too tightly. Now that the threads on the hubs are restored, a proper wheel puller would again work. The same refrain on the lathe and a puller came to life. Because it is so much easier to machine, the puller was from aluminum rather than the customary steel. It works well, but it will be interesting to see how long it lasts.



*Figure 16: A New Wheel Puller*