

# SERVICING SPEEDOMETER CHAIN DRIVES

*In the 'teens and the early-to-mid-'twenties, a number of speedometers utilized a chain drive rather than the more traditional cable which we know so well today. Two major manufacturers at least, Corbin and Stewart-Warner, used a chain drive. The chain was not subject to kinking as was the cable.*

*Another advantage of the chain was that when the chain drive broke, it could be repaired, unlike the cable which had to be entirely replaced.*



## Stewart-Warner Speedometer Chain Drive - Repair and Service

by Ray Brown

The speedometer/odometer in the 1923 Buick uses a chain drive vs a cable drive as is common with modern speedometers. The chain drive provides a flexible coupling between the speedometer output shaft at the end of the transmission and the dash mounted speedometer.

The chain is composed of case-hardened links that have special ends at the transmission and speedometer and are housed inside a flexible metal housing.

The chain needs to be kept well lubricated and protected from moisture so rust does not build up. A properly maintained chain can be quiet, smooth running, and reliable but problems can occur, the most common being a broken link.

The first indication of a broken link is that the speedometer stops working. Determining if the problem is with the speedometer or the chain is easily done by removing the housing connector at the back of the speedometer. Spin-

ning the input to the speedometer should make the dial move up to 10 mph or so, and repeated spins should also show a small advance of the tenths of miles on the trip odometer.

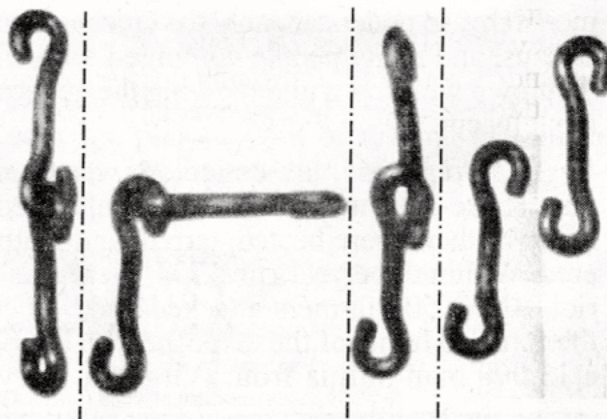
If the speedometer is working OK, the problem then is most probably a broken drive chain. Broken chains can occur due to poor lubrication or jamming in the housing during disconnection of the chain drive at the speedometer.



Whenever the drive is disconnected from the speedometer it must be pretensioned by driving the car 20 to 30 feet with the drive disconnected from the speedometer before making the connection.

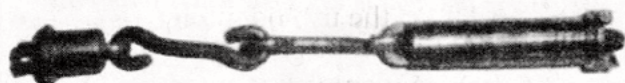
A broken chain is not hard to fix with a replacement link. The links can all be separated easily by positioning the links as shown below. I have used just two links to illustrate how it is done.

- On the left are two links as connected in the drive chain.
- The next shows the top link rotated downward 90 degrees.
- The third position is accomplished by rotating the top link backward 90 degrees then twisting 90 degrees
- Once in the third position the links will slide apart as seen on the right.





The two ends likewise can be removed and replaced using a similar technique. These ends are shown below attached to two links.

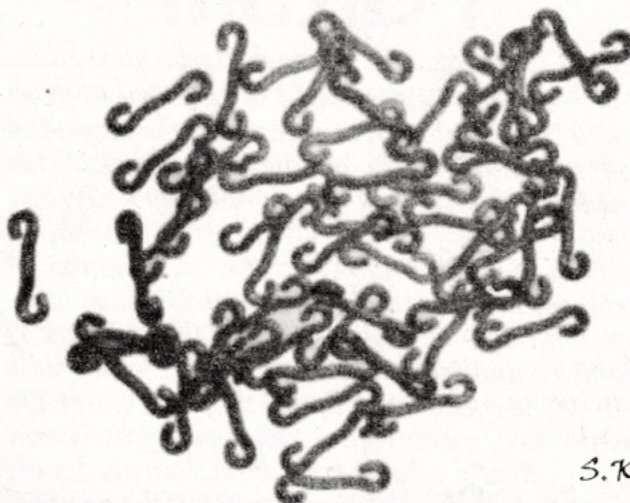


Replacement links can be made using  $\frac{1}{8}$ " drill rod which is first annealed so it can be bent then hardened and tempered. Links can also be obtained from Russ Furstnow Antique Speedometer in Flagstaff, AZ 86004, telephone 928-526-1343, 1stnow@msn.com.

My 23-6-44 Buick uses a chain 65" long which consists of 55 links shown to the right. Each link is about 1.15" long.

It is a good idea to clean the chain and housing with mineral spirits and lube the housing

and chain with a good low viscosity grease before reinstalling. And don't forget to preload the chain as described above or you could break it like I did when I removed my speedometer for service!



S.K.

## FREE should not cost \$\$

**Earlier in this issue**, in my From My Perspective column, I warned you to 'Be Careful.' Here I am back with another one.

I buy the batteries for my everyday drivers from Costco; they are probably no better or worse than any other, and they do come with a very liberal Costco warranty. The label right on the battery reads "100 month limited warranty." Then there is a schedule: 0-36 months FREE, followed by a scale starting with 37-45 months at a 60% pro-rate down to 96-100 months at 5%. Other retailers, I am sure, have something similar.

Okay, here's the catch: when you carry the old battery into the store, they are very good about giving you a refund based on the price that you paid and the number of months that you owned the battery. Then you scurry over to automotive

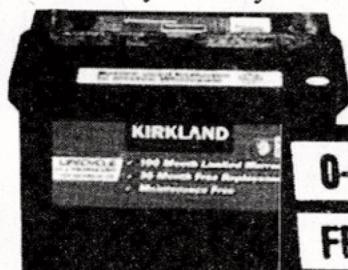
where you purchase a brand new, fresh-in-stock replacement.

I walked in with a battery which I purchased 31 months ago. It wouldn't hold a charge. There was no argument; Costco refunded my entire original purchase price. Then over to automotive I went, selected an identical replacement and took it to the cashier. The battery price had gone up about ten dollars in the past 2½ years. With tax they told me I owed \$12.20. When I questioned the \$12+ I was told first that is the pro-rata adjustment, and when I showed them that there was a free replacement within 36 months, they told me that I had to purchase the replacement battery at the current, 15% higher price.

I explained (perhaps not so patiently) that 'Free' meant 'No Charge' or 'Zero Charge.' It took a supervisor to finally understand that a free replacement meant a replacement at 'NO CHARGE.' They made whatever adjustments they had to at the register, and I left with a FREE replacement battery.

Don't pay the higher price just because a clerk tells you that you have to. Go up the chain of command, if necessary. 'Free' still means Free!

S.K.



0-36	37-45	46-55	56-65	66-75	76-85	86-95	96-100
FREE	60%	50%	40%	30%	20%	10%	5%