THE AUTOMOTIVE RESEARCH LIBRARY HORSELESS CARRIAGE FOUNDATION, INC.

HCF NEWSLETTER

Winter 2005 "The Information Place" Volume 7 #4

"Daffodil" 1913 Ford Speedster to be Sold

The HCFI Board of Directors have voted to sell the 1913 Ford Model T Speedster known as "*Daffodil"* on E-bay.

'The Ford Model T Speedster, originally won at the 1986 HCCA convention raffle by Life Charter Member and past president Ed Johnson, was donated to the HCFI and is being sold to help fund the new Archival Scanning Project.

If any member is interested in purchasing the vehicle, it will be available on E-bay after the 1st of December. It will be advertised on the HCFI, Ford Model T Club, and the HCCA websites with the actual date of sale.
Daffodil has not been used too much in the last few years, and has been kept in storage. The main change has been the addition of a full width windscreen.
Some might prefer deleting the windscreen altogether, or replacing it with a monocle, usually depending on the navigator's preference…However Daffodil is still in excellent condition, a great testament to the HCC members who assembled her twenty years ago.

These pictures were taken when the car was awarded to Ed Johnson in 1986.

Enclosed Trailer for Sale

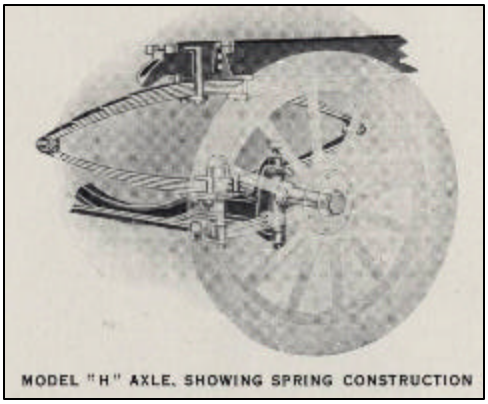
When Ed Johnson donated Daffodil to the Foundation, he also donated a Wells Cargo enclosed trailer with the car. It has a 16 foot box, drop down rear door and a side door. It is in excellent condition and will be available for sale shortly.

The asking price is $4,000 or best offer. Please contact Roberta at research@hcfi.org or (619) 464-0301, if you are interested .

The trailer pictured **is not the actual trailer** but one that closely resembles our trailer.

Development in Springs

1924 Automobile Trade Journal Silver Anniversary Issue


MODEL "H" AXLE, SHOWING SPRING CONSTRUCTION

The automobile inherited its springs from the carriage spring makers, and considering what was then known about metals and methods, they were not half bad springs. True, they were very much inclined to break when you crossed a railroad, but that was a part of the experience.

Christian Girl, who did much to improve spring making, says that the first he remembers of alloy steels in springs was in 1907 when chrome vanadium was employed. This was ordered from the Krupp works and then American steel makers began to compete for the business on quality of product. The William & Harvey Rowland Co., Detroit Steel Products Co., Tuthill Spring Co. and perhaps others, were early users of the branded or known steels.

Along with this demand for better metal came the laboratory and then the metal tests and S P. Hess, of the Detroit Steel Products, gives this description of spring making today:

Today chassis springs are designed accurately by the application of formulae arrived at by years of study and experience; guess work is a thing of the past. Each model car or truck is treated individually. In designing springs, the steel is distributed so that every ounce is put to use, stresses are equalized, resulting in a member of uniform strength and life.

Advancement in manufacturing methods include accurate checking of steel before it is put into the process; this consists of testing each heat of steel for analysis and a 'telltale' microscopic check to determine if dirt, slag or other impurities are present. The steel which is accepted for manufacture, after preparatory operations are made on each leaf, is put through a course of heat treatment in gas fired furnaces, automatically controlled, thus eliminating the human element. Not content with this, the leaves are subjected to Brinnell hardness test. After assembling the leaves into a complete spring it is subject to a bulldozer test. The deflections of which are equal to or greater than it is subject to on the vehicle. Under such a test hard springs will break, soft springs will settle".

Those who responded to requests for information are Tuthill Spring Co., C. G. Spring and Bumper Co., Harvey Spring and Forging Co., Eaton Axle & Spring Co.

PEDAL CAR RAFFLE

There are still tickets available to win the replica pedal car donated by George and Frances Sherman. Tickets run $1.00 each or six for $5.00.

The drawing will be held at the Annual Horseless Carriage Foundation's Reception in February, 2006. The lucky recipient, if not present, can pick up their prize at the Library in La Mesa, CA.

Mystery Car Identified

Mystery car was identified by Doug Durein as a 1911 Atlas, Model O touring car.

We wish to thank Mr. Durein, all the members and consultants for their help.

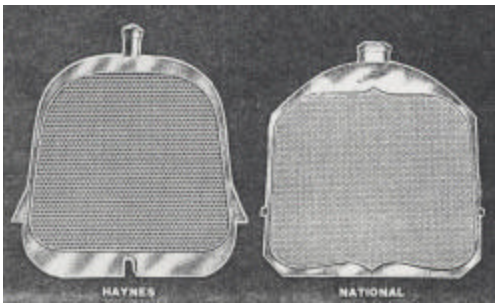
HCFI Wish List

Funds to purchase items needed at the Library.

Television for showing Tapes/DVD	$300	Adobe Acrobats Software	$300
Adobe Photoshop Software	$600	Fire Proof Files	$800
Funds for Scanning Books		New Location Buy/Share/Donated	

Newsletter Editor Roberta Watkins, HCFI Manager,

Radiator Progress 1924 Automobile Trade Journal Silver Anniversary Issue



Radiator making has from the first been an important and considerable part of the industries and a few of the automobile factories have cared to undertake this branch of the work, because it has a craftsmanship of its own, and the keeping of the equipment up to date is a considerable expense for the number of radiators required. Two factories now make their own radiators cores.

The original radiators were plain copper tubes through which the water circulated and which were exposed to the rush of air created by the speed of the car. The next step was to put crimped fins on the tubes. As engines developed more cooling space was needed and as use of the car developed a more sturdy form was required.

Then came the Mercedes type in 1901, thousands of copper tubes, four inches or less long, were nested horizontally with wires between and the block so formed was dipped in solder front and back and the water circulated around the tubes. This was costly fragile and easily clogged.

Next was the Renault type, placed in front of the dash. Good for cooling but difficult to incorporate into the car lines.

Following the tubular radiator, which was varied in many minor details, came the square copper tubes made of copper sheets with seams along the side and the ends expanded to do away with the wires. The honeycomb is an ingenious variation, as instead of the square seamless tubes, crimped metal strips to make the air opening were employed. There are many variations of this style of radiator core.

Aside from making the core, there have been other problems, one of which was the placing of the core in the shell. Originally the core was made solid to the shell, but this caused much trouble, and the plan of supporting it on a band to permit weaving has been developed. Also there was much difficulty in the fastening to the tanks before the present methods were developed. The easing of strain and weight from the fragile core structure has made for longer life.

The shell, now forgotten in the main except it adds beauty to the car, was not able to be forgotten. The first shells, made of brass chiefly, were made from pieces cut either by dies or by hand and the two or more pieces were soldered or otherwise joined and these seams were likely to come apart and make trouble. The great step in advance was drawn shells and it became possible to make the beautiful modern designs by dies and to make them in a single piece. Today only one car is using the pieced shell, which is somewhat cheaper because of the saving of material.

Factory methods of making cores have developed as much as the shell making. Where formerly the core was made in strips and there was much handwork in grouping the material for soldering, now the radiator materials are grouped in easily handled jigs, and instead of hand dipping in the flux and solder, they are automatically dipped and put into the assembly line. In some factories the cores and tanks are assembled before dipping and they are dipped together to avert possible leaks. Automatic machines have even taken the place of the one joint that formerly was soldered by hand on the completely assembled radiator.

Much of this improved soldering method is made possible by the pyrometer control of the gas fires to keep the solder at the proper temperature. As long as this work was done by hand, the human elements was a common factor, but with the automatic control of the heat and the automatic dippers, the product is standardized.

These steps are noted as follow: Automatic dip, 1917; tanks and cores dipped together in 1923. automatic core strip soldering machine, 1924. The folded header machine came in 1914, the rotary crimping machine in 1915, the drawn shell in 1911, bolted on shell in 1915, removable anchorage in 1916. In the engineering development, these steps are noted: Intermediate spacing strip 1913: shutters to control flow of air, 1916; high turbulence, 1923.

Some factories still hold to the hand soldering system and do dipping tubes of the tubular type, holding that this process makes a better radiator.

This acknowledges information receive from Racine Radiator Co., Harrison Radiator Corp., Long Mfg. Co., Corcoran Mfg. Co., McCord Radiator Co., Rome-Turney Radiator Co., Motor Products Corp. and National Radiator & Mfg. Corp.

The Start of the Starter

1924 Automobile Trade Journal
Silver Anniversary Issue

The starter, as now known to automobile drivers, did not of course come out of a laboratory as a complete working attachment for cars. Many men knew that it was coming. In the Times-Herald race an award was made to Max Hertle for having a starter on his car. The description of this is not preserved. Before 1910 there had been patents almost without number. Some were springs, some for compressed air and there were other kinds.

Henry M. Leland was manager of Cadillac in the early winter of 1910, and he had established a reputation of leadership in accepting improvements. During one month five employees of Cadillac had suffered broken arms from what Mr. Leland calls the "unruly, turbulent, vicious starting crank" and a very close business friend of Mr. Leland's had suffered a broken jaw while helping a woman start her car.

The Result

This series of accidents brought about Mr. Leland's determination to put starters on Cadillac cars. He knew of many devices, some of which were apparently right electrically and some were apparently right mechanically but none right both electrically and mechanically. He says: "We had previously discovered a young and generally unknown electrical genius living in Dayton, Ohio, named Charles F. Kettering and to Mr. Kettering is largely due the credit for success of the electrical application of the device."

Mr. Kettering was called to the Cadillac factory and with the factory engineers they worked out a device of which Mr. Leland says "worked as smoothly and as positively as the falling of water in a perpendicularly arranged penstock would start a water wheel." He adds that after the tests, they knew this device was right electrically and mechanically. The first Cadillac was so equipped February 17, 1911.

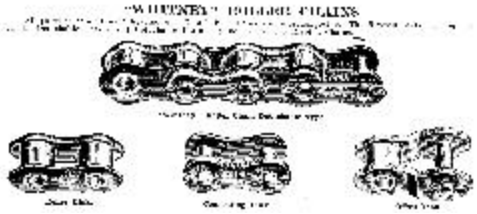
Then came the big rub. The General Motors Co. directors heard that this device was to be installed on Cadillac cars. The chairman of the board and the president of the company came to see Mr. Leland and to protest. They brought with them opinions that installing of such a device would ruin the company, which was then bank controlled and heavily in debt. Mr. Leland listened and set a day when the bankers could present their evidence against the starter.

That day came and it was one of the dramatic points of the industry. The anti-starter evidence was in the form of three electrical experts: one from the General Electric Co., one from the Westinghouse Co. and one recently from Siemans & Haltske Co., of Germany. The starter was simply impossible, they said. Finally, the expert testimony was reduced from generalities to eight or ten specific objections.

Then Mr. Leland stepped over to the car equipped with a starter and took up the first objection, answered the arguments advanced and illustrated how it had been overcome. Then the experts realized that they had not pictured this sort of a device at all and they soon admitted their mistake in objecting.

Next came the effort to "sell" the starter to the dealers. Some of them had doubts but in the main they responded well and set out to meet the reports circulated by rival dealers, chiefly reports that people had been electrocuted in cars and cars being struck by lightning. However, the advantages of the starter were sufficient to attract buyers and the convenience did the rest.

Chains 1924 Automobile Trade Journal Silver Anniversary Issue



Picture from the Chas E. Miller catalog. 1912

The chain industry was a heritage from bicycle days and the activities within the early automotive industry were very limited. One of the chain makers who early sought to make a sale to a pioneer automotive builder reports that this man said that he could not afford to buy a regular chain for the drive he was making, so in his shop he made one. He made others for vehicles that he built for other people.

However, the chain makers had sold to bicycle makers and they were firm in the belief that their products would find a place on this new power vehicle and they stayed on the job, helping builders where their experience was of use. Morse, Baldwin, Diamond, Whitney and Link-Belt were all in business when this industry started.

Morse helped Olds, Haynes, Holsman and others with their problems. Baldwin worked with the early Packards. Whitney has records of automobile use in 1900. Link-Belt had farm implement specialties and did not come into automobile work until 1907. Diamond was supplying automotive wants as early as 1900. American High Speed made entry by selling the Apple Electric Co. fifteen years, then making a generator for Fords.

The development of this business from the sprocket chain of the bicycle to the silent, and dependable power conveyors of today is an engineering and mechanical story that tells of men who never know defeat and defied the automobile designers to give them a powered transmission problem they could not solve. This determination built and immense industry and gave to the chain engineers and builders a basis for extending their activities into other industries where they have been able to increase efficiency.

MEMBER NEWS

In Memory Roy E. Watkins Jr. **From** Tom & Margaret Patris

Gifts in Kind Merl & Joy Ledford Rod Ripple Marjorie Colangelo Richard Black

New HCF Members

Tony Teravainen David Main John Malone Gerald Reid
Farrow J. Smith Thomas Ace John Wohlfeil Evelyn Akin
Jeffrey Brown Farrow Smith