

# More Miles Per Car in WINTER by Ray McNamara

## IMPORTANCE OF PROPER LUBRICATION FOR CHASSIS

### The Spring Bolts and Shackles

You cannot give your spring bolts and shackles too much attention during the winter months, by this I do not mean that it is necessary to make an inspection and lubrication operation on these parts every time you want to go any place in your car, but on the other hand, give them at least the attention necessary to insure easy riding, absence of squeaks and excessive rattles that are bound to develop if lubrication is neglected.

The average car owner cannot appreciate the numerous difficulties and expense that may follow if these parts do not receive sufficient lubrication and proper care in adjusting.

Like the steering knuckle pins and tie rod connections, all spring shackles and bolts are fully exposed to road splash and splash from road is a good deal like a sand blast. The grit, dust and sand in the water strikes these parts with great force and only requires a few hours of touring over wet roads to remove all traces of lubricant. Now, if the bolts have a lot of clearance in their bearings, they are not liable to seize, but my how they wear!

A few years ago, I had an opportunity to observe a test on shackle wear. Two experimental cars were routed from Detroit via Chicago, Omaha, Kansas City, St. Louis, Cairo, Chattanooga and back to Detroit in the spring of the year. If you live in these sections, or have ever traveled a few hundred miles over thawing dirt roads, you will appreciate what these cars went through. One driver was instructed to lubricate his shackles daily, the other once a week. Observations after the test showed slight wear on the car receiving daily lubrication. On the other car, the 1/2 inch bolts were worn half through, and one bolt had stuck in its bearing which resulted in the spring breaking at the eye end, also the flange of frame where this bracket was attached had broken out. So much for the difficulties that follow insufficient lubrication.

Another example showing what happens when shackles are adjusted too tightly, came to my attention at Ligonier, Pa., while doing some experimental work on the mountain. Two brothers operating a garage there showed me a dozen springs that had broken at the eye taken from groups of new cars that passed through on a drive way and it happened that all of these came from the same make of car, showing that some middle west manufacturer was too eager to eliminate any chance of shackle rattle by sending his new cars out with shackle plates set up too tight. These brothers being rather expert, had diagnosed the trouble properly and were conscientious enough to pass the word along to the manufacturer. But I wonder how many service mechanics and owners know that in 99 cases

out of 100 when the spring breaks at the eye, it is either due to shackles being adjusted too tight or to shackle bolt seizing in its bearing for want of lubrication.

When the above condition exists the springs cannot function properly. The shackles cannot move as intended, therefore, the main spring leaf carries all the strain and must bend and break, and this is liable to occur in the first 50 miles after shackles become tight.

A simple method for freeing up shackle and spring bolts that have become sufficiently rusted to prevent lubrication entering under high pressure, is to soak a bunch of waste in kerosene, bind this around the parts affected, allow same to stand over night, or if emergency demands keeping your car in service, you can take car out on the road providing the oil soaked waste is no where near an exhaust pipe or electrical connection that might start a fire. After 12 or 24 hours bolt will free up. Then apply high pressure lubrication freely to part.

Tight shackle bolts can be detected by observing action of shackles when springs are depressed. If bolts do not turn in eye of springs and end of spring tends to bend instead of entire spring flexing, the cause is apparent. In some cases when the shackle plates are adjusted too tight the spring will stay down after the load is taken off, giving the impression of a sagged spring. Watch these points closely.

Another point to watch in caring for springs is, see that spring clips are tight over the axles. This is very important as loose clips not only cause breakage at center of spring, but permit shifting of axle, throwing front wheels out of line with rear which condition will seriously affect ease of steering.

Always lubricate spring shackles after washing car and daily when touring over wet roads. During dry weather, follow rules given in an instruction book.

**The Care of Car Springs**  
The question of spring leaf lubrication in my opinion is a very serious problem. Some authorities advocate lubricating freely between the leaves while spring designers claim that this is very important to spring performance, unless the springs are designed originally for lubrication.

Looking back over my experience, I can attribute some very serious developments following excessive spring leaf lubrication. However, I am aware of the fact that it is practically impossible to eliminate spring squeaks entirely without resorting to oil. Therefore, recommend a very moderate application of oil or sufficient to remove the squeaks with the following reservations.

First: If car rides very hard and springs do not bump the axle under load, spring leaf lubrication will improve riding qualities and remedy squeaks.

Second: If springs are very long and flexible and frame bumps axle excessively under load, would recommend free application of oil

first to shackle bolts and on the little spring leaf clips that prevent the leaves from shifting to see if the squeaks can be eliminated in this manner. If this does not remedy the trouble and you cannot adjust your nerves to spring squeaks, would suggest adding additional leaves to springs to stiffen them up before going into excessive lubrication, because excessive lubrication, because excessive bumping of frame to axle sets up stresses that axle housings, shafts and steering knuckles were not designed to take.

Did you ever feel the shock transmitted through the frame when over-running a deep rut at high speed with a heavily laden car. As a rule the rear springs bump more easily than the front. Damage to rear axle is less dangerous than the front because it is not tied up with the steering gear, but in either case a lot of damage, expense and perhaps loss of life may result through excessive spring bumping.

Continual pounding of frame on front axle, may develop a leaky radiator, a broken front motor support, failure of front wheel bearing, a bent or broken axle or steering knuckle.

In regard to the rear axle, continuous pounding of frame to housing very often springs the housing sufficient to bind the axle shafts between their bearings at the outer end and the differential. A few cases of axle shafts breaking repeatedly after a few hundred miles of service came to my attention due to housing being sprung through the foregoing cause. The bend was too slight to be seen by the eye, nevertheless, accounted for axle shaft failures, for after straightening up the axle housing, shaft breakage ceased.

Rear axle housings are usually designed to take a liberal overload, but remember the continuous pounding of frame on axle through springs being too flexible runs in to tons of shock therefore, breakage binding or some other evil is bound to develop.

If your car is susceptible to squeaks always keep these points in mind, before taking Tom, Dick and Harry's word that lubrication is what you need between your spring leaves. Consult your instruction book carefully and if you decide to lubricate your spring leaves and it caused excessive bumping, it is far better to add a spring leaf to compensate for the excessive flexibility which usually follows, than to take the risk of axle or steering knuckle failures.

The principal of the leaf spring design is to provide a certain amount of snubbing or checking of rebound by the friction between the leaves. Lubrication destroys this in the case of the flexible spring and may work to advantage in the case of a spring that is too stiff. In the former case, shock absorbers, snubbers or additional leaves should be added as a matter of safety.

**For Owners Scrapbook**  
Last week—Importance of Proper Lubrication for Chassis.  
Next Week—The Spring Bolts and Shackles.

### MOTOR TRUCK MAN HERE

George A. Keep, of the Portland branch of the Moreland Motor Truck company, spent Friday in Salem in conference with Vick Brothers, local representatives.

## NORTHWEST SHOW OPENS IN PORTLAND

First 1924 Regional Automobile Exhibition Will Open February 9

The first 1924 regional Automobile Show west of Chicago opens in Portland, February 9th, and continues for eight days. Never before has a West Coast show, or at least a Northwest show been given the standing that Portland's 1924 show has received, through co-operation and participation by the big makers of America's standard cars.

Portland's claim to being the automotive headquarters for the Northwest is further signified by the announcement that carloads of dealers and automotive men from as far east as Butte will be in attendance not counting of course the hundreds of eastern factory men who are arriving on every train.

Local automotive men have already sent in their cards of acceptance to the Portland headquarters stating that they will be at the show and that they will also attend the annual meeting and election of the Oregon Automotive Trade association, which meets at the Chamber of Commerce in that city, on Wednesday February 13.

Portland's particular claim to importance for this show lies in the number of special exhibits being rushed west from the factories for display here, directly after showing at New York and Chicago. Among them are the express carload shipment of Rickenbackers, Stars, Chryslers, the new Grays and a host of others, which will have stop-over tickets on their way to San Francisco, where they will again draw the multitudes during the week of February 16 to 22.

For the trade of the state as a body, the event will indeed be a gala one. Aside from the interest of the many exhibits, will be the week of trade conventions of practically each of the important lines now manufactured. There will be conventions of the Ford dealers, Willys-Overland organization of the Northwest, meetings and banquets of the tire men, battery men and the garage trades generally.

Of further interest will be the election of a new board of directors for the Oregon Automotive Trade Association, on the district plan, with a prominent automotive tradesman as the head for each district. This new director will be the direct representative of the association in each district and in that way the work of the huge industry will be expedited and the different districts given a better voice in the active management of the association affairs and policies. M. P. Cady, president of the association is sponsor for the plan which has already been approved by those members who have been approached on the new method of placing responsibility.

While each year the trade has streamed to Portland for the week the laymen too have been coming in ever increasing numbers. This year he will have the pleasure of seeing the product of the most progressive year in the history of automobile making displayed in the most pretentious and costly setting ever attempted for such a regional show.

Produced by the John L. Stark studios, the huge interior of the auditorium has been practically rebuilt. Not an inch of its present moulded interior has been permitted to spoil the harmony of color and detail that makes up the huge Japanese garden, with its myriad of panels painted by Matt Lerner from notes sketches made on his recent tour of the Orient. These sketches will adorn the walls while framing them are huge temple gates, holding hidden lights that fairly enliven the deep toned sketches of the far East.

Art students who have examined the work, declare it the most striking example of mural art yet conceived in the Northwest, as well as the most daring use of color and light. In this however, Lerner has proven himself master.

Railroads have again signalled the convention and show with a special rate on the certificate plan. Certificates are issued at the originating station to be turned in at the show, and special fares cannot be obtained unless such certificates are applied for when leaving for Portland.

### WHAT DO THEY TEACH YOUR CHILDREN?

(Continued from page 1)

tance into the side of the child's eye in such a way that he is almost unconscious of it. From his eyes it is reflected into a moving-picture camera while he is reading. Each time that his eye moves the line of light on the moving-picture film shifts to the left or to the right. When the result is thrown on to a screen the investigator can count exactly how many times the child's eye has moved in a second, how far it has moved, and whether it has made a succession of forward movements for each line, or has had to go back repeatedly to look at words a second time.

An elaborate investigation has consisted in putting a bell in a sound-proof box attached to a

dictophone connected with a moving-picture apparatus. The child reads aloud into the dictophone at regular intervals without the child's hearing it, and at the same time cuts off the beam of light reflected from the child's eye for a fraction of a second. In this way it becomes possible to decide just what a child was saying for each position of his eye.

These investigations have shown that a child reading material too advanced for him rests his eye on each word and frequently jerks it back to the words he has already read. The eye of a good reader sweeps rhythmically along each line, stopping only three or four times.

Another finding is that a child's voice lags far behind his eye if he is a good reader as they look at it, while good readers keep their eyes sometimes two or three lines ahead of their voice.

Among the direct applications to teaching of this investigation are these: If a child reads material that is too difficult for him, he forms bad eye habits. If a child reads aloud too much, especially after he reaches fourth or fifth grade, he is in danger of slowing down his reading rate and of becoming a "lip reader."

In other words, such emphasis as has been placed on oral reading in the upper grades of many public schools, while eye habits were still being formed, has actually impaired the children's reading ability for life.

A new science, the science of education, is taking the place of

the old dogmatic pedagogy. What has been done so far is pitifully small compared to our needs; but little by little the light is beginning to dawn. Before long we shall be able to decide pretty intelligently, instead of by guess-work, what we would teach, and how we should teach it.

### Smyrna Still Crowded With Hosts of Refugees

(By Mail)  
MALTA, Jan. 12.—Travelers passing through Malta on their way out of Smyrna, the Turkish city devastated by fire in September of 1922, declare the situation there to be far from satisfactory, or promising for the future.

In the fire zone are quartered some 80,000 Turkish refugees from Macedonia. For a European to go into this area even in broad daylight is to risk robbery and assault, and it is certain death to wander after dark near the docks which skirt this quarter. The Turkish authorities would like to move these refugees out into the country, but the refugees refuse to go, and the Turks must continue feeding them.

Another problem before the Turkish government is the lack of skilled labor, as a result of the exodus of the Greek and Armenian populations from which all skilled labor was formerly recruited. This deficiency has made it impossible to look after the fruit crops, such as raisins and figs, a circumstance which largely helps to decrease the revenue of the government, apart

from the value of the crops. Foreigners are barely tolerated, these travelers report, and unless bribery is resorted to, it is impossible to do any business.

### Modern Footwear Ousts Old Style Shoes of Satin

(By Mail)

PEKING, Dec. 17.—The encroachment of western civilization has revolutionized the shoe-making industry in Peking, according to the Chinese Economic Bulletin. When official shoes made of satin were in vogue among the well-to-do, and the poorer classes wore shoes made out of cotton cloth, the business was prosperous; but now the old-style shoes have been discarded for foreign-style leather shoes which are imported, or made by another class of artisans from Shanghai or other treaty ports. For this reason Peking shoemakers are engaged almost entirely in making cheap footwear for the poorer classes.

Another industry affected is baking. Owing to a liking for foreign-style pastry, the business of Chinese bakeries is falling off. Bread is being used more and more. A few years ago, it is said, there were in Peking more than 400 bakeries turning out Chinese food, whereas today there are only 127.

Medicine shops, although showing a decreased turnover, are less seriously affected because of the enormous profit to which the business lends itself.

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## Harry W. Scott

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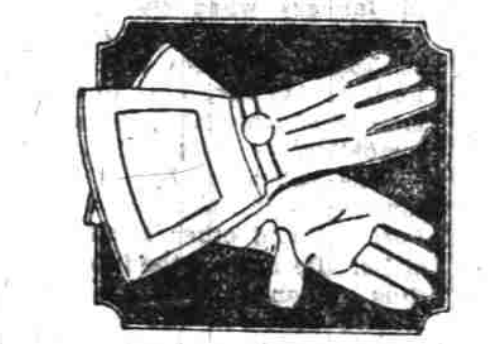
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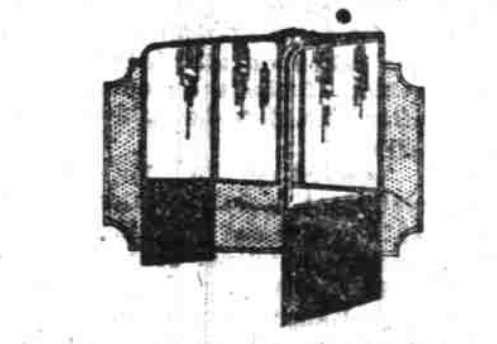
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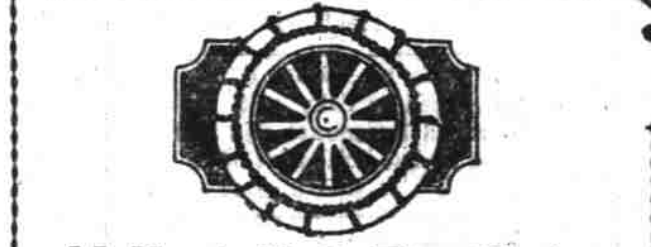


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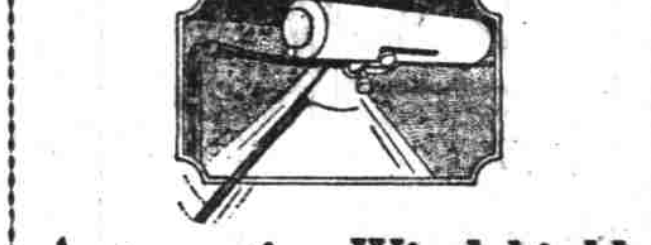
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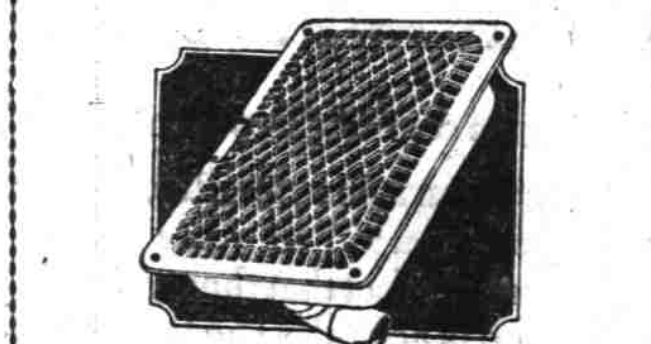


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