

BUILDERS STILL DIFFER ON TYPE OF SPRING DESIGN

Any of Them May Give
Trouble and All
Need Care.

A few years ago there was the greatest diversity of opinion as to the correct type of spring suspension and motorists, even those of experience, were comparing easy riding by comparing spring design.

It has been proved by many engineers that any of the ten to fifteen different spring suspensions in use will give the desired results if the layout is correct for the particular car on which it is employed. In other words, it doesn't matter so much whether the springs are semi-elliptic or three-quarters elliptic, so long as the spring length is correct, the number of leaves accurately

proportioned to the work to be done, and so on.

There will shortly be announced a new model of car of very popular make with a brand new spring suspension which is claimed to give easy riding in a light car such as cannot be duplicated in any car of whatever weight with conventional springs. The maker, attributes the easy riding to the spring suspension, though most of those who have seen the car believe it is just as much a matter apart from the mere springs.

To name a few of the many spring suspensions now in use, there are cantilever as on the King (properly semi-elliptic cantilever); quarter elliptic cantilever; as on the small Chevrolet; semi-elliptic transverse, as on the Ford; double semi-elliptic transverse, as on the Marmon; the semi-elliptic design is used for front springs on every car but the Ford and Chevrolet, and on the majority for rear also; platform, as used on the Cadillac; three-quarters elliptic, as used on the Franklin; double cantilever, as used on the Austin; and the new suspension mentioned previously.

That there is such a diversity of opinion among engineers is but natural. All of the designs were produced in order that the best results might be had for all-around conditions, but to say that because a platform spring, for example, gives good results on one design of car it will do the same on a totally different car is not true. For this reason many

engineers make the error of supplying springs of a certain design with the result that the owner of the car soon finds out he needs shock absorbers.

It is quite possible to get along without shock absorbers on many cars, but so many have at least one bad feature that shock absorbers are a welcome addition. There are certain cars that show fine results over ordinary macadam roads, but as soon as a really rough road is encountered the passengers cannot keep their seats.

Springs, no matter of what type, may give the owner trouble. I have received reports lately of certain makes of cars that are chronic spring breakers. One owner told me he replaced four right rear springs and doesn't know what is causing the trouble.

In many cars with Hotchkiss drive, where the proper provision is not made to take the additional stresses, spring breakage may be common. If your car gives persistent spring trouble buy the best main leaf possible, keep the spring clips always tight and the shackles free and with a minimum of side play.

Springs require lubrication just as any other parts. While the car is in motion the spring leaves rub over each other, and therefore they should be lubricated. Whenever a spring is removed, and the leaves separated, spread graphite over the surfaces.

There are on the market some spe-

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cial constant lubricators for springs and the majority of these are good. Some are in the form of wicks properly supported and fed from an oil well. There are spring covers also which enable lubricant already spread between the leaves to be retained and above all prevent water from getting in.

Shackles are a common source of trouble. Spring shackles are necessary in order that there be room for detaching of the spring when the frame goes down. The shackle amounts to a free joint between the spring and the frame. The shackles are supported by bolts, and if these latter are not well oiled or greased freedom of movement is restricted.

While grease is not the best lubricant for shackle bolts, it is better than none at all. Grease is bad because it hardens and does not work its way to the rubbing surfaces. Where possible oil cups should be substituted for grease cups.

Shackles often are noisy due to side play. This may be caused in some designs by looseness of the bolt and in others by wear. Where shims are supplied it is easy to take up the play.

In cars fitted up with cantilever springs, with the free end forward and the permanent end on an oscillating member around the axle tube, the latter member should receive its share of lubricant.

Considering the strenuous nature of

their service, the springs do not ordinarily receive the care and attention they deserve. A very brief periodic greasing over and above all systematic lubrication will keep the springs functioning properly, adding greatly to the comfort of the car owner and his passengers.

to tests which would parallel the rough and ready use motor cars in the war zone, will be received.

For this tests unusual "breaking machines" have been rigged up and used in the factory, and the cars have then been sent into rough, untraveled country for most grueling road performances.

In the preliminary tests, the new Overland car showed stamina and riding qualities so remarkable that the car was selected as the official scout car in the first transcontinental test trip of the United States motor transport corps, which started at Washington, D. C., on July 1, and is expected to arrive about Sept. 5, at San Francisco. The route being followed by the motor transport corps is that of the Lincoln highway.

This transcontinental trip has been undertaken to establish and demonstrate the possibilities of the motor vehicles as a factor in coast-to-coast transportation. It is to serve as a supreme test of the utility and dependability of the modern motor vehicle.

The book warns the reader that the whole company may be begged to those conduct toward visitors and drivers them to take their lesson from the great American doughboy, who is "on the road" all the time. In a chapter about mistakes, the book on joins the pose to be mindful in admitting visitors and quotes Abraham Lincoln's remarkable "Show me a man who never made a mistake and right there I will show you a fool."

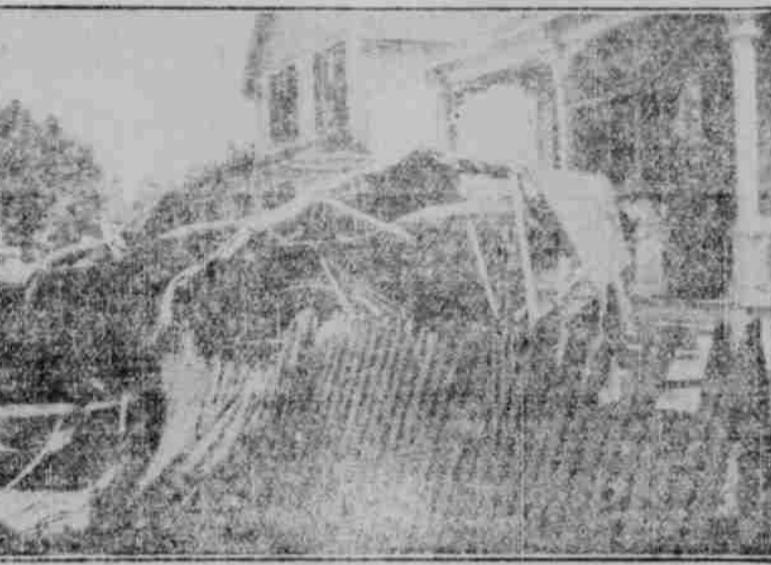
announcement of the new car, except to say the car will be moderate in price and will soon be delivered to dealers.

PRAISES ITS MESSENGER BOYS

The B. F. Goodrich Rubber Company looks upon its messenger boys as future executives. In a recently published volume called "Playing the Game of Messenger Boy," the company tells us in the same spirit as a typical American teacher would do. Although expressed in less lightfully practical plain language, drawing its similes from the business field, the "test in the Long Run" company tells its junior employees that the human quality of its organization must be developed as perfectly and carefully as the purely mechanical science of the rubber industry.

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