

SAYS "FATIGUE OF STEEL" IS FELT IN OVERLOADED TRUCKS

Continued Overstrain Tells on Machine Just the Same As It Does on a Team of Horses; Overstressing Leads to Breakage; Once Fractured, Frame Will Never Give the Same Old Service.

THERE is a similarity between a motor truck and a team of horses not apparent in their great outward dissimilarity; both are subject to fatigue from overwork; steel gets tired as well as muscle—this point of likeness is brought out in an address against the overloading of trucks by Joseph Husson, a technical expert on the motor truck, delivered before the Motor Truck club of New Jersey.

"Because the frame of a motor truck is made out of steel instead of flesh, it does not mean that it is not subject to a fatigue similar to that of the man or beast of burden. We all know that a team of horses overloaded day after day becomes so fatigued that it must be given several days to recuperate before it can do other work, or else becomes sick and ailing. This period of recuperation is necessary in order that the hoarse rebuild the tissues on which their hauling efficiency depends. Each time they are overloaded it becomes harder and harder to rebuild these tissues to their original strength. If the overloading practice is continued day after day without sufficient recuperative periods the horses finally wear themselves out long before their days of usefulness are ended."

"Fatigue of Steel." "Exactly the same change as that which takes place in the tissues of the horse takes place in the steel of the motor truck frame. True, the fatigue of steel is much slower than that of flesh tissues, but it is there, just the same. The frame of a motor truck is designed as a beam to carry a certain specified load, just as a girder of a railroad bridge is designed to carry a certain number of locomotives and trains of coaches. The molecules of the steel forming the beam in each case move in relation to one another when loads are applied. Of course you cannot see the movements of these molecules with the naked eye, but science has proved that they do move. When the loads applied are not greater than those for which the beams were designed, the molecules tend to move back to their original positions after the loads have been removed. But if the loads are greater than those for which the beams were designed, these molecules can not re-

turn to their original positions, and the beam assumes a set or bend and does not return to its original position after the load has been removed. The steel in this case is said to have reached its elastic limit, or that load at which the beam will not return to its original position after the load has been removed.

"When a truck is overloaded, this is exactly what happens when the frame of a motor truck is overloaded. It assumes a permanent set. Just as it is harder and harder for the flesh tissues of a horse to recuperate after each overload period, so the steel of the truck frame is less able to withstand overloads after it has once assumed a permanent set. Subsequent continued overloading tends to pull the steel molecules apart. This results in a fracture of the frame, and a truck with a cracked frame is a makeshift at the best, even if repaired at considerable cost, the use of the life of the steel is gone. The frame does not respond to the loads carried and is liable to crack in other places. The cheapest way out of the difficulty is to buy a new frame or frame member and this can not be had for a song, so that overloading is decidedly expensive on the frame.

"The same molecular action which is set up in the motor truck frame also occurs in the springs, but to a somewhat more marked degree, because of the vibration which they have to absorb. Overloading of the frame means overloading of the springs. Although these are made of a higher grade of steel than the frame, to absorb the greater shocks and vibrations to which they are subjected, the steel molecules move in relation to one another under each load applied and do not return to their original positions under continued overloads. In the words of the engineer, the steel becomes overstressed and generally breaks when the next overload is applied.

"Limit of the Springs. "When the steel of the springs has nearly reached its elastic limit the latter are not as capable of absorbing the shocks as when in their original condition, so that springs which have been continually overloaded can not cushion the driving mechanism to the same degree as was intended by the designer. The shocks which are not absorbed by the springs are taken up by other structural members of the chassis which are subject to the same fatigue as is the frame. The front axle and the rear axles of either the shaft or chain-driven types are called upon to absorb some of the shocks originally intended to be taken up by the springs. This results

DORTS IN DECORATED CAR PARADE



In connection with the recent carnival at San Antonio, there were four decorated automobile parades. The three Dorts shown above won much praise for their unique decoration. The center car was originally decorated in honor of the Moo-Too, with the black cars. It carried a representation of the Alamo in the tonneau. The photo was taken at Fort Sam Houston, the three cars being manned by company F of the 19th Infantry.

GOODYEAR WINS PATENT CONTEST

U. S. District Court Restrains Rival Concern From Using Machines.

A decision of general interest to motorists was given by the U. S. district court recently in the case of E. A. Seiberling against tire manufacturers alleged to be infringing on the patents of Mr. Seiberling for a tire making machine, which is now used extensively by the Goodyear people.

AUSTRALIAN RECORD IS SET BY OVERLAND

News has just been received by the Willys-Overland company of another record broken by one of its cars, a 1916 model Overland getting a new mark in Australia a short time ago by making the run from Albany to Armadale a distance of 225 miles in six hours and 32 minutes, one-third of the running time made by the express trains between the two points. The former record was seven hours, 25 minutes and 54 seconds. The average actual speed was 28.6 miles per hour.

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The Goodyear company contended that the Seiberling-Stevens machine of 1902-3 was a pioneer invention and paved the way for the present day semi-automatic tire making machine; that the Seiberling-Stevens machine was the first produced to make automobile tires and that the Goodyear company devioused the first practical machine for making tires automatically that is now in use. This Goodyear contention is now confirmed by the district court decision.

GOOD ROADS ARE AID TO BOTH BUSINESS AND PLEASURE LOVERS

California's Great Road System Impresses Vice President of the Studebaker Corporation; the City, Town and Farm Dwellers Are All Benefitted; Extension of City Delivery Systems Made Possible.

TO some people good roads mean simply an advantage for the motorist; a convenience that was created and is maintained exclusively for the motorist's benefit, enabling him to get from place to place comfortably, safely and on time.

I am forced to admit that good roads do add much to the pleasures of touring, and that the better the roads the more fun people get out of driving their cars. I recently returned from California, where anyone can readily note just the condition I mention. For in California people surely do enjoy life; there are more automobiles per capita than in any other state; and the people who own cars use them more than the people in any other state.

And what of the roads in California? Only one opinion can be expressed. These roads are excellent. They seem to lead everywhere. They enable one to visit all of the most beautiful spots in the state. And they are kept up well.

Good Roads Mean Prosperity. Yet good roads mean more than an opportunity to get out on tours from the health giving and pleasure standpoint. Good roads are closely bound up with progress and prosperity. They promote the more widespread use of automobiles, and statistics prove that automobiles and prosperity always go together.

It is fair to say that good roads benefit everybody; the city people, those who live in towns and those who live on farms. Of course, the fast growing use of motor cars—the fact that automobiles are now considered practically a necessity for everybody—has been the biggest single influence in awakening this country to the fact that money expended in good roads extends and improvements is money well spent.

Banished Isolation of Farms. Good roads and the automobile have taken people out into the country. They have banished forever the isolation of farm life. They have increased health and prolonged life. They have enabled people to dig in and put better efforts into their work as a result of the relaxation and broadening of experience of the week-end trip into the country.

is bound to a life of pounding pavements and clinging to street car straps. For traveling only around town he may feel that he cannot afford an automobile; that he doesn't get his money's worth in use. There is where good roads come in, enabling such a man to enjoy country driving and broaden out.

Stimulate Business. Good roads have been a stimulator of business. By means of good roads an outlet to the congestion in cities has been afforded. New towns have sprung up. Automobiles have followed or preceded good roads, as the case may be, with the result that dreary expanses have been transformed into thriving communities. Farm values have been increased. The monotony of farm life has disappeared.

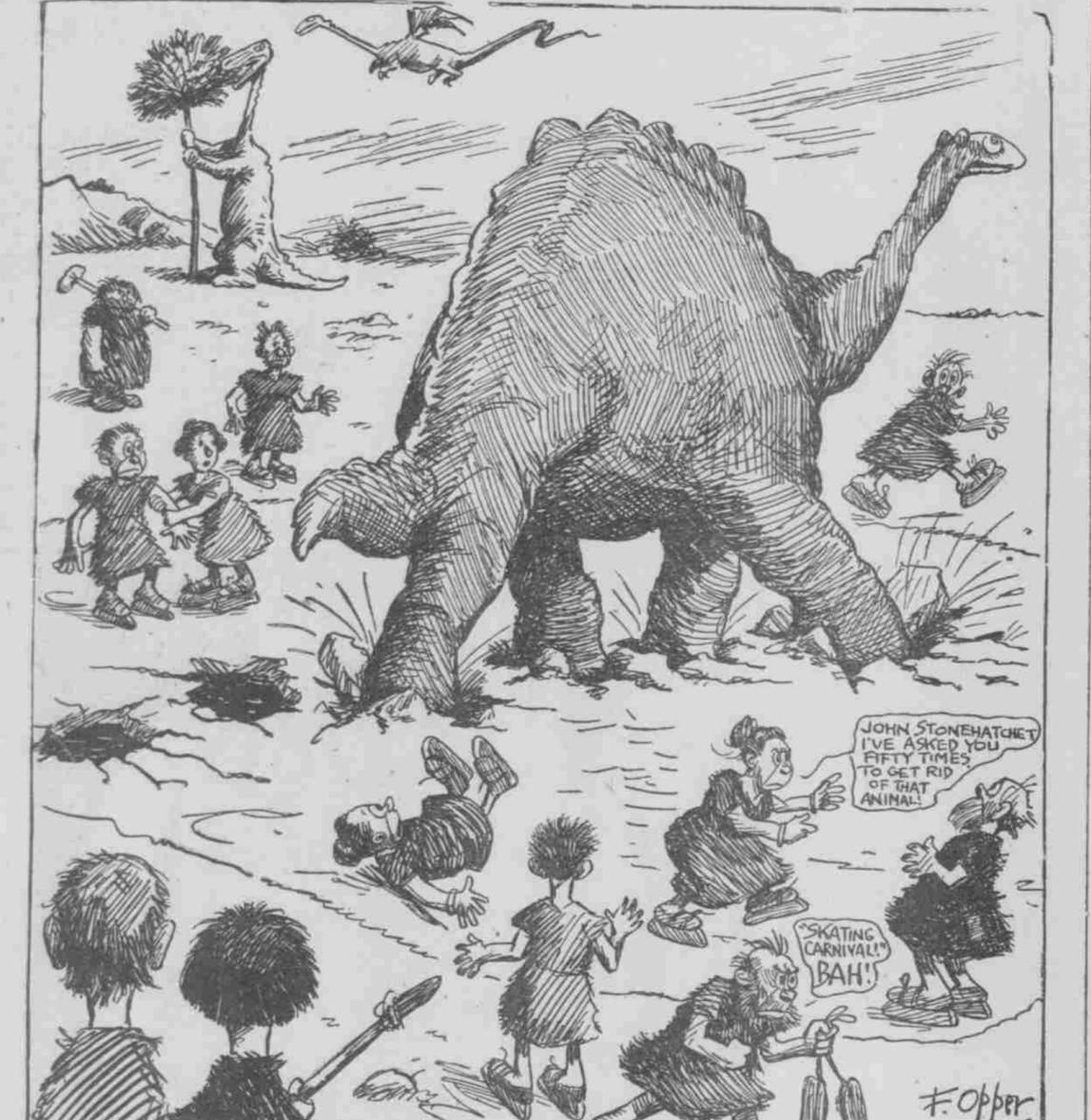
Business concerns, because of good roads, now deliver goods by motor trucks out into the country to points where in the past they would not have dreamed of handling in any way except by railroads. The result is that they now make deliveries the same day whereas it formerly required all the way from three days to a week by freight.

Roads to Be Extended. With the further development of this country, good roads are bound to be extended. Improvements are bound to be made. It is no idle dream to say that within ten years there will be few if any unimproved roads left. In city and country alike it is appreciated that business follows the route of the best roads. Actual experience, often unfortunate ones, will more and more stimulate sections of the country which may have lagged behind to spend the necessary money, and by building better roads, bring back the thriving activity that went elsewhere.

The people of this country are literally up on their toes—states, counties, commerce boards, automobile clubs, civic organizations, and even individuals—in the interest of good roads. There are practical reasons for such activity. In a word, it is considered good business.

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"Ha, ha! Mr. and Mrs. Stonehatchet are having awfully hard luck!" "How so?" "Every time they try to give a society skating carnival their pet dinosaurs comes along and walks across the pond! There he goes now!"

MANUFACTURERS SHOW THEIR RESOURCEFULNESS

Manufacturing conditions in the United States in every line of industry have been radically changed because of the many new conditions injected into the situation by the world war. Probably no one industry has been so widely affected as the motor car business. Automobile owners and the public generally, have little or no conception of the difficulties which have confronted the automobile manufacturers during the past year. It has been only through the resourcefulness of the best men in the industry that cars could be produced fast enough to come anywhere near supplying the demand and even now everyone of the more prominent concerns is far behind in its orders.

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