

LABOR COSTS MOST IN REPAIRING CARS

Materials Generally About Half of Sum for Work.

LIGHT AUTO ECONOMICAL

Lightweight Parts Will Reduce Mechanics' Difficulty and Achieve Smaller Bills.

BY H. A. TARANTOUS.

Labor is the most expensive thing for which the owner must pay in connection with maintenance of the average motor car. In most repair jobs the cost of material is about half the labor charge. This is largely due to difficulty in reaching parts and in removing the various associated parts of a mechanism in order to get at the part desired.

Much has been said about the economy of lighter cars in tire wear, gasoline consumption, consumption of lubricants, etc., but there are other advantages of lightness and simplicity which are equally important from an economy standpoint.

To the uninitiated the amount of time spent by the mechanic in merely getting a part to pieces so that he can work on it and putting it back together is appalling. Lightweight parts will reduce the difficulty because they can be lifted more easily, and because the springs, bolts, studs and other fastenings are easier to loosen and remove and similarly easier to replace and tighten.

Parts Easier to Handle.

Large, heavy parts require large bolts with long threads. These are hard to turn, but because the large threaded surface causes more friction and because they are of necessity brought up tighter. Much of the dismaying assortment of tools required for motor car service could be reduced in the case of the light car because smaller screws, bolts, studs and other fastenings are easier to handle with ordinary tools. A considerable amount of the extra labor in repairing heavy cars is due to the necessity of helpers for the mechanics to lift out the heavy parts. Lifting an engine out of a chassis or the cylinder block off the crankcase, removing the clutch from the flywheel, taking out the transmission, etc., are operations that could easily be accomplished by one man on a light car, but require two or more men on most cars of today.

Not only to the shop repairs does this advantage of light weight extend, but to ordinary road repairs as well. On many of the heavier cars of today, with demountable wire or steel disc wheels, changing tires requires an arduous task which is beyond the powers of most women operators, who are becoming an increasing factor. Similarly, jacking up an axle on a heavy car is often difficult.

Easier to Get Out of Mud.

When mired in mud or snow, a heavy car is helpless indeed, since its resistance to towing is so great that great difficulty is often experienced, while a light car, being easily towed or even pushed out of a bog where traction has momentarily been lost. The light car, furthermore, is more liable to become stalled in soft ground or snow, because its weight does not cause it to sink so deeply.

One may make machinery heavier, using larger parts to stand the additional strain, but machinery steel does not correspondingly toughen or harden to take the additional strain, and it is for this reason that bolts and nuts are more prone to loosen upon heavy cars than on light ones. It is impossible to make a large machine as simple as a small one, and in heavy cars there are usually more parts to receive attention than on light ones.

The coming of lighter cars than we are accustomed to today will bring with it easier and less costly maintenance than heretofore. If these lightweight cars are built as well and as carefully as those of greater weight, which they undoubtedly will be for the most part, they will require less mechanical attention and repair.

SEVEN CARS ARE MISSING

POLICE ASK CO-OPERATION IN LOCATING THEM.

Any Person Identifying Any Car in the List Asked to Notify Auto Theft Bureau.

Seven automobiles, three of them stolen in April and the other four this month, are on the list of the new police automobile theft bureau as not yet recovered.

Lieutenant Harvey A. Thatcher, in charge of the bureau, has compiled a list of the license numbers and motor numbers of the stolen cars and requests that any person identifying one of them immediately notify his bureau.

Publication of a similar list in The Oregonian two weeks ago brought immediate results. Lieutenant Thatcher asks the public again to co-operate in recovering the cars. Following are the names of the cars, the license number and motor number of each:

Dodge	21978	Motor No. 21978
Chevrolet	25120	25120
Overland	18277	321024
Ford	52149	52149
Maxwell	27141	27141
Dodge	28269	28269

Two license tags also are missing. They are dealer's tag 250-B and dealer's tag 247-A.

TRUCK WINS LOAD PRESTIGE

Shipper Can Feel Sure Goods Will Not Be Damaged or Lost.

A sense of security that goods will be delivered without loss or damage is winning the truck more converts in the short haul freight carrying field than the casual observer might suppose, according to K. A. Price, manager of the Firestone ship by truck bureau at 65 North Park street.

"The speed and economy of motor transport are bringing a rapidly widening circle of friends," Mr. Price said; "but no more so perhaps than is the element of safety motor trucks afford their shippers."

"The truck driver is on the job from the time the freight is loaded on the truck until it is delivered to the consignee. He is guard as well as driver. Because of this fact the theft is difficult.

"Protection for the goods shipped is also afforded by the fact that the load is handled but twice between consignee and consignee. It need not be transferred several times from

HUP FACTORY CHIEF LOOKING FAR AHEAD

O. C. Hutchinson Figures Industry Sure to Grow.

General Sales Manager Thinks Replacement Alone Will Sell 1,750,000 Cars Yearly.

Not counting on foreign business, which is growing rapidly, and cars purchased by newly initiated motorists, the motor car factories of the United States will be called on to produce approximately 1,750,000 automobiles each year.

AUTOMOBILES LIKE THIS ARE QUITE THE RAGE IN JAPAN, BUT NOT HERE, EVEN WITH GAS AT 27 CENTS.



Over in Tokio, Nagasaki, et al. where they haul you about in flurkisks or push cars, this vehicle might get by in the best circles. Here the great showing it and its load of paving stones looks vastly bored. He'd rather drive a flaver.

land, would be taxed. The amount raised in this way will be \$34,000,000. Before the war the cost of paving roads cost \$8,000,000 per annum. It is expected that the cost now will be \$90,000,000.

For special work and the maintenance of new roads.

PACIFIC COUNTY PAVING SIX CONTRACTS LET FOR IMPROVING HIGHWAY.

Total Amount of Work Authorized This Month Will Reach an Aggregate of \$195,138.07.

RAYMOND, Wash., May 15.—(Special.)—The county commissioners of Pacific county during the May session let six contracts for paving the highways of the county between Chehalis and Raymond and between South Bend and the Nason river district. The total amount of contracts let is \$195,138.07. The work of paving Williams avenue in South Bend was awarded to the Willapa Construction company of Raymond at their bid of \$18,491.88. The engineer's estimate upon this work was \$22,230.

From Lebam toward Raymond one mile of 18-foot paving and one and one-half miles of nine-foot paving was let to Albers & Son of Chehalis, whose bid upon this work was \$87,648.27. The county engineer's estimate upon this work was \$63,325.35. Willapa Construction company bid \$77,748 upon this contract.

The paving of Cherry street in Raymond easterly to Gley's crossing, a distance of four miles, was let to Albers & Son, who bid \$88,472.64. The engineer's estimate upon this work was \$89,072.35. C. E. Philbrick of Raymond bid \$92,637.66 upon this work.

OLDFIELD TO PACE RACERS

Former Speed King Will Start Them on Way at Indianapolis.

At the request of many of the drivers entered in the international motor sweepstakes, Barney Oldfield, once best driver of them all, but now a prosperous tire manufacturer, has consented to come out of retirement—for just one more speed flight. His return will be as an official, not a competitor.

He will act as pacesetter of the start, leading the big field around the famous brick oval and bringing the fliers to the wire for their actual start at the fastest pace possible without breaking the assigned order.

Oldfield's return to speed will be made at the wheel of a Marmon car which he selected several weeks ago. The event will also celebrate his first public speed flight on tires developed from his many years of experience and used in all his racing and touring, now bear his own name as their distinguishing brand.

Rubber Mallets.

The car owner who does much work around his vehicle should certainly have one of the rubber mallets that are designed to permit hammering of polished surfaces without ruining the finish. For smoothing out dents in the fender or similar distressing, these mallets are invaluable. In an emergency the head of an ordinary hammer may be covered with several thicknesses of old rubber to serve this purpose.

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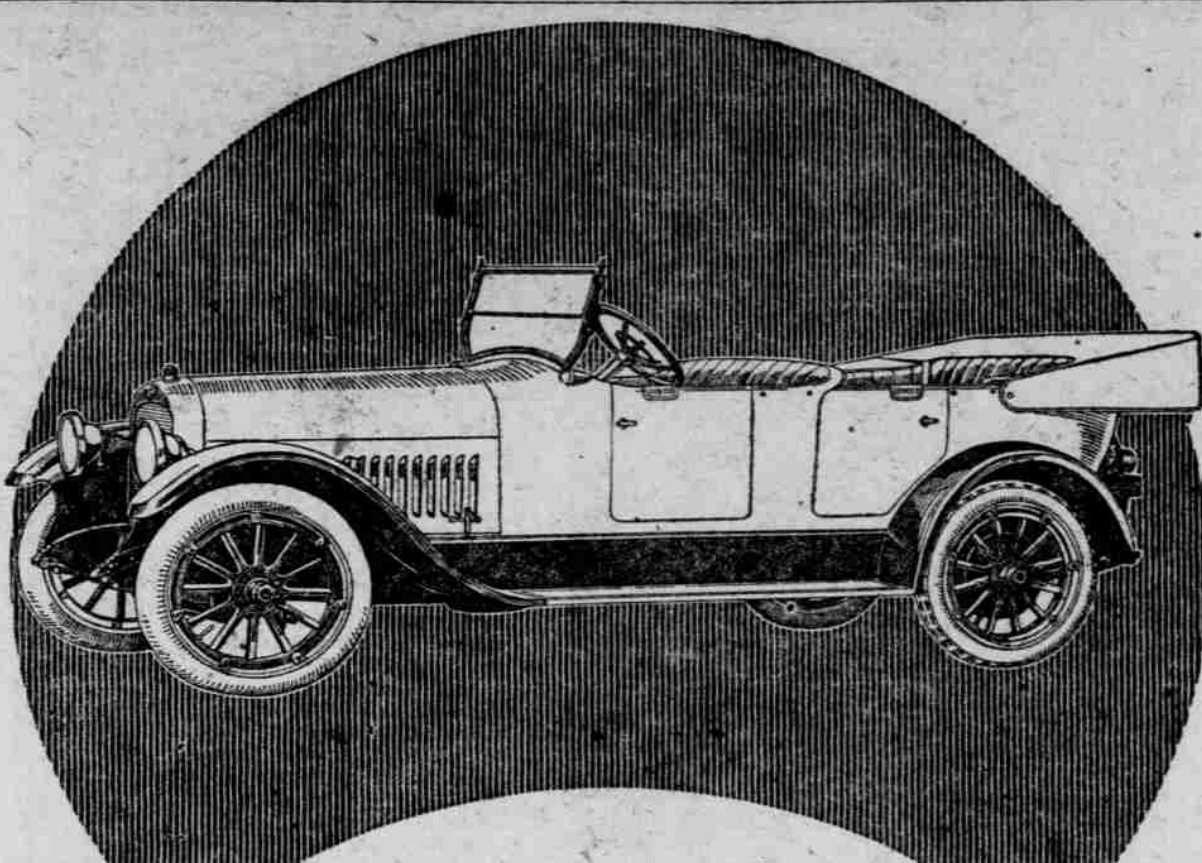
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Studebaker

SERIES 20 SPECIAL-SIX

You will better understand the enthusiasm of Studebaker owners after you have taken a demonstration ride in the SPECIAL-SIX—anywhere and under any condition you choose. Do this, and you will know the reason for its popularity.

50-H.P. detachable-head motor; intermediate transmission; 119-inch wheelbase, giving maximum comfort for five passengers.

All Studebaker Cars are equipped with Cord Tires—another Studebaker precedent.

"This is a Studebaker Year"

W. C. Garbe, Inc. FORMERLY OREGON MOTOR CAR CO. Broadway at Burnside Street Phone Broadway 616

ble factory is getting back into production very well, completing about 100 cars a day, which is approximately the schedule of production.

"The freight car situation has not been relieved very materially," he said, "but when water navigation on the Great Lakes is opened about the middle of this month, conditions will be improved considerably. We expect to ship Hupmobiles by boat to Duluth for rail shipment to the Pacific northwest and will also ship by boat toward the east, there being good roads for driveways from Buffalo.

"At present I would say that at least 50 per cent of the cars leaving our factory are driven overland to their retail destination. All points within several hundred miles are handled by driveways through the year, and quite often cars are driven overland to more remote points."

En route to the Pacific coast Mr. Hutchinson visited St. Louis, Kansas City, Omaha and Denver. At Salt Lake he was greeted by H. B. Roberts, who accompanied him to Seattle and Portland. Before returning to the factory, Mr. Hutchinson will visit San Francisco, Los Angeles and Dallas, Tex. He considers conditions in the western cities good.

High Speed Rattlers.

A great many cars vibrate and rattle at high speed, due to loose front fenders. These can often be reinforced and made rigid by placing a rod between the two just below the lamps. Make two angle washers and draw tight into place. Pull the fenders back first by hand to get the length of the rod and the angle at which to make the angle washers. Make of one-quarter-inch iron.

FEDERAL Double Cable Base Tires



Federal Black Non-Skid "Cord" Tire

FEDERAL Tires save to you the many miles of service which rim-wear robs you of in ordinary tires.

Federal Double-Cable-Base construction effects this saving at no additional cost per tire.

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WEAVER TIRE COMPANY Oregon Vulcanizing Co. 333-425 BURNSIDE AT BROADWAY Telephone Broadway 378.

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Identify it by The Silver Edge

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LAHER AUTO SPRING CO. 10,000 Springs Carried in Stock. Let Us Repair Your Springs Where You Get Service. 15TH AND COUCH STREETS

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