

# DISTILLATE FOUND EFFICIENT IN AUTO

### New Instrument Used in Reo to Adapt Cheaper Fuel for Use as Gasoline.

### TEST RESULTS ARE GIVEN

Not Only Greater Speed but Also More Power Are Rated as Results of Hill-Climbing and Endurance Contests.

In these exciting days of wars and soaring gasoline prices a modest little distillate adapter now being introduced in the Oregon field by F. W. Vogler, president of the Northwest Auto Company, distributors of Reo, Cole and Marmon automobiles, is quite likely to prove a Godsend to motorists of economical disposition.

Distillate, you know, sells locally at about 2 cents a gallon retail, while gasoline, the standard motor fuel, sells at local filling stations for 13 1/2 cents a gallon. Once a device is perfected that will permit the use of distillate as automobile fuel, those motorists who are privileged to use it will have no further terrors of the high cost of gasoline.

Tests conducted last week under the direction of Mr. Vogler not only indicate that a given amount of distillate will drive a motorcar farther than a like amount of gasoline, but that it will drive it faster on hills as well as on the level.

**Tests Made With Reo.**  
A Reo car nourished by a gallon of 13 1/2-cent gasoline traveled a distance of 11.1 miles before coming to a stop, while the same car using 2-cent distillate under the adapter arrangement traveled 20.1 miles before exhausting the gallon.

"We tried every conceivable test possible and always found that distillate gave better results than the gasoline," said Mr. Vogler in reporting the results of his tests last week. "When we approached Upper Washington street hill at a 25-mile-an-hour rate we found that our speed at the crest of the hill was 14 miles an hour when employing distillate and 17 miles an hour when employing gasoline."

"In pulling on up Barnes road we found that distillate worked better than gasoline under similar conditions. During a speed test the Reo made 45 miles an hour with gasoline and 47 miles an hour with distillate."

**Use Heretofore Inadvisable.**  
Heretofore it has been inadvisable to burn distillate as automobile fuel because it is not refined and because it always generates heavy carbon deposits, but by the use of the simple piping device of the adapter, the carbon burner these objections are done away with and distillate absolutely gives better results than gasoline."

Under the new process the steam vapors that gather at the top of the radiator are carried through piping to the dash, passed through a filter, condensed and then straight into the engine, where they serve to break up the supply of distillate coming from the carburetor directly below the engine. The steam vapors automatically close the cylinders and valves and prevent the accumulation of carbon, the great handicap which usually accompanies the use of distillate.

As a matter of fact the thin piping is just about all that is needed on the distillate adapter, except for a tiny auxiliary gasoline tank attached to the dash.

**Gasoline Used for Start.**  
This little tank contains about 500 "starts" for the motor and operates through a button stationed on the dash. Fuel from this gasoline tank is used merely to start the motor as a primer and then the work is placed on the distillate supply.

The happy thing about the distillate attachment is that it allows the use of gasoline in case of changing the carburetor in any particular," says Mr. Vogler. "Any car, and even trucks, can use the adapter, but it is particularly applicable to the Reo car because the

and a majority of the multi-cylindered motor.

The importance of the multi-cylindered piston to the Ford is understood when it is realized that at a speed of 1000 crank shaft revolutions per minute each piston is required to make 2000 trips. Only one movement in every four is a power stroke. The other three are intake, compression and explosion strokes.

Reducing the piston weight two-thirds means tremendous saving in the energy necessary to stopping and starting the pistons after each one of these strokes. The result is a great increase in the power that actually goes to turning over the crank shaft. Vibration has been one of the chief complaints and troubles of Ford owners. The lightening of the piston weight achieved by these Lynite pistons tre-

### VETERAN STUDEBAKER SALESMAN IS MADE SALES MANAGER OF BIG PORTLAND COMPANY.

F. M. Leeston-Smith, a veteran Studebaker salesman, has been appointed sales manager of the Oregon Motor Car Company, local Studebaker dealers, appointed M. Leeston-Smith sales manager, to succeed M. L. Gallagher, who has concluded an arrangement with W. C. Garbe, secretary-treasurer of the company, for handling the Multnomah County territory outside of Portland proper.

Mr. Leeston-Smith first began selling Studebaker cars in Los Angeles seven years ago and he has held to that line continuously with the motto that "A salesman's value to his house varies inversely as the square of his distance from prospects."

"When I went into the automobile business seven years ago I gave great thought to all the different lines, knowing that my success depended not alone upon my own efforts, but to a greater degree upon the solidity and integrity of the house with which I became connected," said the new sales manager yesterday.

In looking back now it is interesting to note that over 60 per cent of the cars that were being manufactured at that time have since gone out of business.

"I have never had occasion to regret my first choice, and it is but natural that I should wax enthusiastic when I mention the house of Studebaker. Sixty-five years of manufacturing experience and upright dealing has made the name, Studebaker, a synonym for quality and service."

Her glad, gala going springs from the terrific speed of an engine that was built, however, for much more than mere car speed.

Great force unites with obedience. There are sparkle and response in this 3400 r. p. m. Chalmers that you'll look for in vain in most cars with high-speed engines.

By checking the awful kick of her motor down to a point that corresponds to 60-mile-an-hour speed, her engineers were able to give you instantaneous pick-up and 18 miles of fervent flight for every gallon of gas.

You save \$150 to \$200 per year in gasoline bills and add many miles to the life of your tires by driving the 3400 r. p. m. Chalmers.

Her riding comfort matches her economy of performance—and both spring from the same causes. This is why: her heavy, hardened crankshaft is

mentiously reduces this vibration and greatly increases the riding comfort of the car as a result, it is said.

### Auto Club Notes

PEOPLE touring in Oregon the coming season need not depend upon hotels entirely for sleeping quarters as a number of enterprising cities have provided free camping grounds for the use of parties coming over the highways. Water is provided for drinking and car washing purposes. Electric lights are strung among the trees, paths built, sheds constructed for sheltering cars in sudden rains, booths and other conveniences arranged.

Ashland was the first to open a free camping ground for the motorist who desired to sleep out nights, and live the outdoor life as much as possible. Now there are a large number of other enterprising communities that have set aside a piece of wooded land for the use of the automobile traveler, among the best being Eugene.

It was through the efforts of the Lane County Automobile Club that the University City selected a camp site on the north slope of Skinner's Butte, facing the beautiful Willamette River, and also giving an excellent view of the snow-capped Three Sisters mountains, which stand out prominently in the Cascade range.

The grounds are within the city limits and easily reached. To facilitate the finding of the location, signs have been placed at prominent Eugene business corners pointing the direction.

A. B. Muir, chairman of the roads and highways committee of the Dallas Commercial Club, has written W. J. Clemens, of the Portland Automobile Club touring committee, that the new road from Dallas to Newport via Falls City and Siletz Basin, will be open for travel about July 1 this year. Much grading was done on this highway last year, and more is contemplated this season. Mr. Muir says Portland people going to Newport should try this route, if for no other reason than to see the route and see the mountains and the huge uncut timber that shows the wonders of this road are great, says the Dallas man.

Al Kirkland, president of the newly reorganized commercial body at Newport, writes the touring committee that a committee has been appointed to tour the route and set in motion showing all changes in the road the last year.

Annual reports will be given by the club officers and committee chairmen, and various questions of vital importance to every automobile owner, such as traffic regulations and touring information, will be discussed.

latter machine has a long super-heated manifold. "The attachment was invented some time ago by G. W. Vols, the agent of my company at Washington, Adams County, Washington. I have already submitted it to the engineers at the Reo factory and they have not only approved it, but will stand back of it absolutely. From the start I thought well enough of the invention to back it substantially and would have placed it actively on the market a long time ago if it hadn't been for the fact that there wasn't until a few months ago much difference between the price of gasoline and distillate.

"Mr. Vols has been using it on cars for nearly three years and has achieved wonderful results from the start. He has never been willing to install it on any but Reo cars, and the result has sold more cars in his territory than all of the other makes combined, including Fords."

### FORD ENGINE IS IMPROVED

Reduction of Weight of Piston Is of Vital Importance.

Improvements for the Ford car to make it look and ride better have been legion. Now comes an engineering improvement to make the Ford motor run better—Lynite aluminum pistons completely equipped with leak-proof piston rings. These Lynite pistons actually reduce the piston weight of the Ford car two-thirds, it is said.

Reduction of piston weight is the feature of 1916 automobile engineering. Practically all of the high-grade cars shown at the New York and Chicago shows this year were equipped with Lynite pistons. They play an important part in the success of most of the small-bore, high-speed motors for 1916

### PACKARDS CHASE VILLA

TRUCKS LOADED AND MANNED FOR MEXICAN SERVICE.

1000 Employees Offer to Accompany Transports for Service with Army, But 33 Go.

In less than 24 hours after receipt of an order last week for 27 war trucks, a special Packard train of 14 steel freight cars and one Pullman sped away from the factory bearing 33 recruits for the motor transport service on the Mexican front.

The train was scheduled to make the trip to the Mexican border in 54 hours, the fastest time that has ever been made from border to border. The Government ordered all tracks cleared for this train, but refused to state its exact destination.

A stirring scene was enacted in the Packard truck shops when officials of the company called an assembly of the workers and asked for volunteers to enter the army for immediate service in Mexico. One thousand declared their willingness to volunteer for service. The 33 men finally selected had

but six hours to get their effects, settle their business affairs and say goodbye. It may be the last farewell for some of them since the war in Europe has shown that the transport department of the army has dangers.

The truck master who accompanied the expedition carried with him the detailed instructions of the War Department relative to the operation and maintenance of motor transport. Copies of this information had been secured from Washington in anticipation of the call.

The "Americans First" policy originated by the Packard Company has awakened a deep sense of loyalty among native and foreign-born workmen as well. Men who had arrived in Detroit from various European countries competed with the American-born employees for the privilege of going to the front in Mexico.

"Chauffeur's Knee" Is Latest Affliction to Drivers.

Treatment Prescribed Is "Cessation From Driving, Rest for Short Time and Medical Applications."

THERE is a new luxury in the way of an ailment, to which only those who drive automobiles are eligible. It is known as "the chauffeur's knee."

The outward sign of the complaint is a slight limp; internally it is brought

to notice by pains in the knee, caused by operation of the pedals of the automobile. The first indication of a latent soreness in the knee most commonly comes when the automobilist is walking upstairs.

"The chauffeur's knee" has already advanced to the dignity of authoritative description in a medical journal. Dr. Gustav P. Biehme, neurologist of the West Side German dispensary, New York City, writes about this new complaint in the current issue of the New York Medical Journal. The treatment, he states, consists of "cessation from driving, rest for a short time, with local applications of aluminum, subacetate of lead and opium solution. Passive movements with massage and baking should be begun early in order to prevent stiffness of the knee."

A number of physicians have been consulted recently for a pain in knees. This gave rise to classification of the complaint and its designation as "chauffeur's knee."

United States Has 448 Factories.

There are 448 motor factories in the United States, and of these 86 are in Michigan, 69 in New York, 52 in Ohio and 47 in Illinois. The following are some of the statistics:

Passenger car manufacturers... 236  
Commercial car manufacturers... 212  
Dealers, repair shops and supply stores... 27,700  
States in which factories are located... 34

precedented early demand for automobiles, forecasting, as it did, a record year for the industry. The months of January and February, dull in former years, have found the factories working full force this season, and even putting in many hours of overtime. Production schedules have been increased to take care of the greater demand. The Studebaker Corporation, for instance, contemplates an output of 100,000 cars in 1916, as compared with about half that number last year.

The task of the sales department was an easy one alongside that of the manufacturing and traffic departments. It was not a question, as in former years, of how to sell the car, but rather of how to produce them fast enough and more especially how to provide facilities for shipping the cars that were built.

**MARMON CARS COST MORE**

Increase in Price of Materials Is Reason Given for Advance.

The advance in prices of material and labor has caused the Nordyke & Marmon Company, of Indianapolis, to advance the prices of the Marmon 24. The new prices, which became effective March 18, are as follows: Seven-passenger touring car, three and four-passenger hose cars, \$2250; five-passenger touring car, \$2500.

### CAR MAKERS MEET TEST

RESOURCEFULNESS AND INGENUITY OF MANUFACTURERS PROVED.

Supply of Cars Is Kept Moving Despite Congestion in Freight Along Railway Lines.

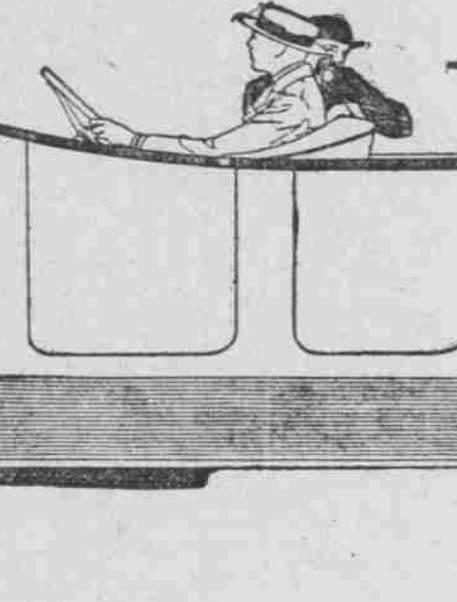
If ever the resourcefulness and ingenuity of motor car manufacturers and dealers were put to the test and proved, it has been during the past few months; in fact, ever since the famine in freight cars hit the country. It is safe to say that, as strategists, army generals had nothing on automobile traffic managers who successfully coped with the situation.

The story of how motor cars were moved, despite the freight congestion is an interesting one, tinged with romance and adventure, and involving the matching of wit against wit.

With dealers echoing the clamor of automobile buyers for immediate delivery of their cars, the big problem became one of how to get those cars to their destinations. And it was one of the stiffest problems ever faced by the builders of motor cars.

A big factor, of course, was the un-

### QUALITY FIRST



The Gala Going of the 3400 r. p. m. Chalmers Will Enchant You

The peppery pick-up of this energetic car has put color and tang into popular-priced motoring that was never there before.

There's delight in every revolution of her engine—and there are 3400 revolutions per minute every time the crankshaft attains its maximum speed, which is the highest ever developed in an American stock car.

Her glad, gala going springs from the terrific speed of an engine that was built, however, for much more than mere car speed.

Great force unites with obedience. There are sparkle and response in this 3400 r. p. m. Chalmers that you'll look for in vain in most cars with high-speed engines.

By checking the awful kick of her motor down to a point that corresponds to 60-mile-an-hour speed, her engineers were able to give you instantaneous pick-up and 18 miles of fervent flight for every gallon of gas.

You save \$150 to \$200 per year in gasoline bills and add many miles to the life of your tires by driving the 3400 r. p. m. Chalmers.

Her riding comfort matches her economy of performance—and both spring from the same causes. This is why: her heavy, hardened crankshaft is

balanced to the weight of a hair; a perfect balance of power is required and delivered by each of her six cylinders; and finally all useless weight, pressure, and friction have been removed from all reciprocating parts and bearing surfaces.

There is undreamed-of riding comfort in the even, pleasant stream of might that flows at any and every speed to her rear wheels.

One rejuvenating jaunt with your foot on the accelerator of this ruly, spirited creature, and you'll know why she has cast her spell over 740 American cities.

Until you know how it feels to release the delicious rush of power from a 3400 r. p. m. engine, you'll never know the delight of real motoring.

The performance of this engine gave me the surprise of my life—and I expected a lot from her.

She's off like a hare after every crossing stop with never a sign of effort or hint of fret. She slips from speed to speed like a dream-car. She hits the hardest grade with the lightest heart. I know, because I've put her to every conceivable test.

And what she'll do for me, she'll do for you.

Touring Car or Roadster, \$1050 Detroit.

Colors: Meteor blue, or Oriford maroon with gold stripes.

H. L. KEATS.

## H. L. Keats Auto Company

Broadway at Burnside Street, Portland