

TRUCK PNEUMATICS PROVE THEIR WORTH

Experimental Stage Is Past,
Says Expert.

SAVING GREAT TO OWNER

United States Tire Company Special-
ist Explains Great Develop-
ment of Truck Cords.

BY W. V. LOGAN,
Manager Pneumatic Truck Tire Department
United States Tire Company.

The development of large pneumatic truck tires for motor trucks means a great deal to truck users throughout the country in effecting large savings in the cost of truck operation and in greatly increasing the radius over which a truck may operate in its day's work. It has set the motor world to thinking on the problem of getting the full benefits it makes possible.

The United States Tire company is the pioneer pneumatic truck tire manufacturer. In 1909 the development department of this company started an investigation to find out whether pneumatic tires could be used on heavy-duty trucks. This investigation resulted in experiments with this type of tire in 1914. These experiments proved very satisfactory and late in the same year the first pneumatic truck tire was built in the Morgan & Wright factory of the United States Tire company.

Early in 1911 three Bellanca trucks were equipped with 35x8 nobby tread tires of fabric construction. It is a remarkable fact that these three trucks have been in service continually up to the present day, carrying approximately 20 tons of freight every day. No clearer illustration could be desired of the fact that trucks which run on pneumatic tires live a long time.

Vibration Greatly Reduced.
These large fabric tires demonstrated their value at once in the remarkable effect they had upon the truck chassis. The elimination of trouble with the truck was immediately noted. Vibration was materially reduced, and we learned after a few months that the truck was doing twice as much work as it had done previously.

Experiments were continued at our Detroit factory until the nobby cord tire was perfected and placed on the market.

One of the very tangible results of the advantage of these tires is that there is not a truck manufacturer of any consequence who is not at work on the development of a truck especially constructed for pneumatic truck tires. The engineers of these manufacturers realize fully that trucks traveling upon air are able to travel much greater distances and cannot help but reduce maintenance and repair expense and save the chassis from the shocks and strains brought about by the use of solid tires.

At the recent summer session of the Society of Automobile Engineers at Ottawa, Mich., the prediction was made by a truck expert that the time was not far distant when truck manufacturers would turn out two distinct types of motor trucks, one for solid tires and the other for pneumatic tires. In line with this prediction I believe it will be but a short time before truck manufacturers will be building 85 per cent of their output of two and one-half ton trucks to take nothing but pneumatic cord truck tires.

Maintenance Costs Reduced.

There are a number of advantages to be derived from the use of pneumatic truck tires which cannot be overlooked by the truck purchaser. Chief of among these advantages is that of increased speed. When a truck user learns that one of his trucks can do twice as much work on pneumatic tires as it could on solid, he will not hesitate because of the initial additional cost. When he learns that his truck equipped with pneumatic tires is not in the repair shop one-third of the time that the truck with solid tires is, he will find an added reason for using pneumatic tires. In addition to this, the truck owner will find that he can haul all kinds of materials without the breakage incurred on truck equipped with solid tires. Large fleet owners of trucks who figure the cost per mile on every tire they purchase are finding the availability of pneumatic truck tire equipment and are changing over their trucks from solid to pneumatic daily.

It is a matter of record that pneumatic truck tires in number of instances have decreased maintenance expense as much as 60 per cent on trucks which have been operated on solid tires. Aside from this, there is a saving in gasoline and oil consumption of approximately 35 to 40 per cent, and there is saving in the claims for breakage of cargo.

It is not unusual for a truck equipped with pneumatic tires to travel as fast as 40 miles an hour. I know, for instance, of a bus line in Washington, D. C., which has a bus that makes a round trip each day averaging 285 miles an hour for the entire trip.

Bus Goes 44 Miles per Hour.

In this trip 17 stops are made, necessitating that the bus attain a speed of as high as 44 miles an hour between stops. Along with this performance, it might interest the user to know that this bus has received as high as 17,000 miles on Nobby tires. This shows clearly the additional work trucks are able to do when they can be driven at high speed, and at the same time with safety.

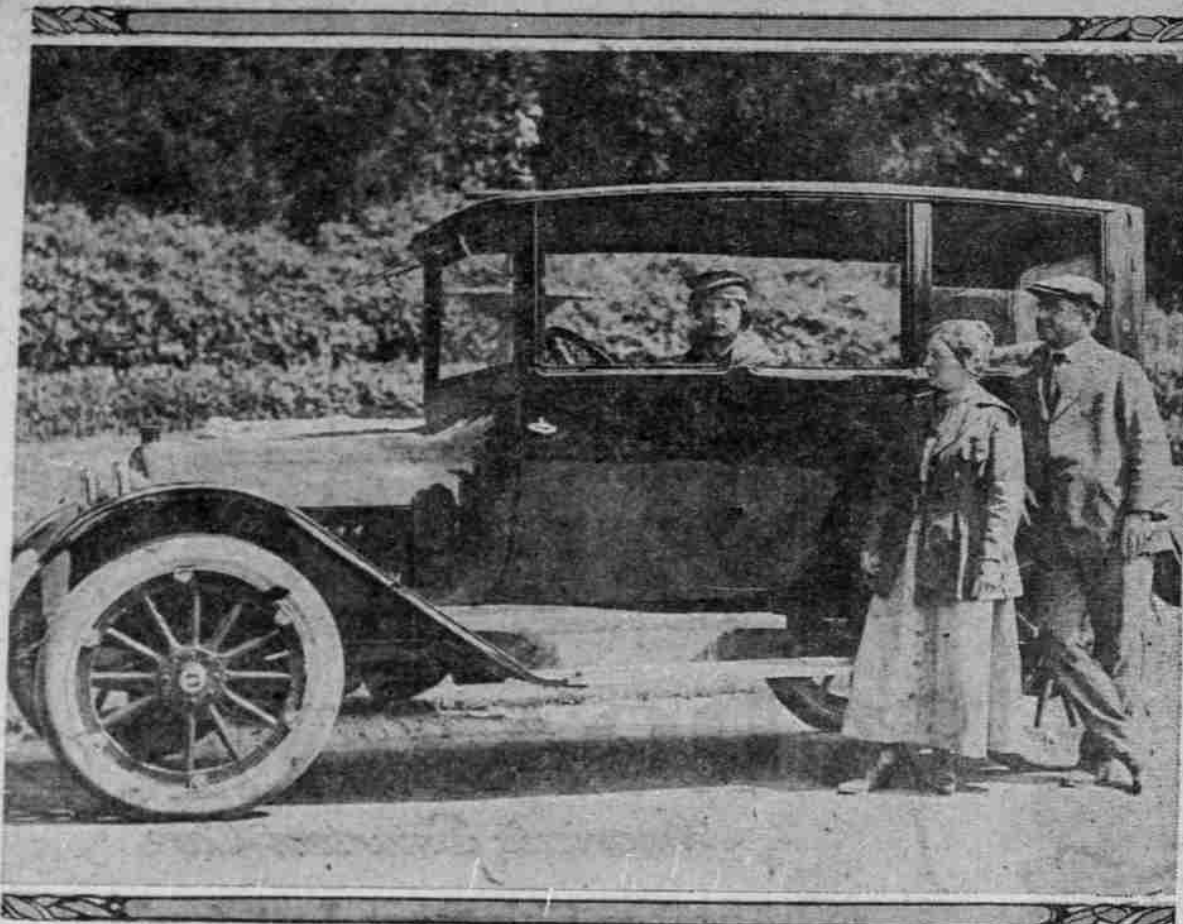
There are certain locations throughout the United States where a truck equipped with solid tires cannot operate because of insufficient traction due to sandy or muddy condition of the soil. I have in mind one instance in Maryland, where a company decided to lay up their trucks for the winter, due to the condition of the roads. They equipped their trucks with pneumatic tires and found that the traction permitted them to operate their trucks throughout the entire winter. In Arkansas a company operating a fleet of trucks had come to the conclusion that they would have to discontinue the use of their trucks during the winter months on account of lack of traction with solid tires. This company will equip its trucks with pneumatics and as a consequence will be able to work all winter.

Another attractive feature of pneumatic truck tires is that they can be applied and dismantled on the road instead of having to be applied or removed at a service station, as in the case of solid tires.

A phase of the desirability of the pneumatic truck tire in which every truck user is vitally concerned is that of mileage service. Of course, every one knows that any make or type of tire will give phenomenal mileage once to a while in isolated cases. A performance of this nature proves absolutely nothing, and if our truck pneumatics had to rely on such instances as proof of their reliability, we would consider that they were still in the experimental stage.

But the records show a uniformity of fine performance and we have affidavits showing where tires have given

HERE'S TRAVELING LUXURIOUSLY IN A CHEVROLET BABY GRAND SEDAN.



No dust, none of the discomforts of ordinary touring, is the verdict of Edgar Mayer of Chicago, after driving here from Fargo, N. D., via Yellowstone, in this new Chevrolet enclosed car.

Mr. and Mrs. Mayer are standing by the car and their daughter, Miss Adalyn Mayer, is at the wheel. Including three days in Yellowstone park, they traveled here from Fargo, where Mr. Mayer bought the car brand new, in 14 days for the 1900 miles. Despite its newness, they had no trouble at any time. Mr. Mayer has owned several expensive cars, this Baby Grand being his first to cost less than \$1500, but he declares with enthusiasm that he likes it just as well as the bigger cars, in which the family concurs. Some rough roads were encountered on the trip, particularly north of Mazon, Wash., where 58 miles on corduroy averaged six miles per hour.

20,000, 30,000 and in some instances 35,000 miles of service on entire sets. We have innumerable letters from users showing mileage of from 25,000 to 30,000 miles without a puncture. Actual records in the fourth assistant postmaster-general's office at Washington, D. C., show tire after tire and set after set that have given more than 20,000 miles. When we see this kind of record we know that the hour has arrived when pneumatic truck tires have come into their own and that they are no longer an experiment.

One of the most prominent engineers in the truck industry has made the statement that "to operate a truck successfully on pneumatic tires, the truck should be specially designed and that the truck should be on the order of the large passenger car chassis rather than the way trucks are constructed today." This is true. But the heavy built truck of today can, with no change other than that of preparing the wheels for pneumatic tires, show a very large saving in operating cost. This has been proved time after time on numerous makes of trucks, where trucks were originally designed for solid tire equipment.

I have noticed from time to time articles on pneumatic truck tires which advocate the use of pneumatic cord truck tires only in certain classes of service. I do not hesitate to recommend to our organization that wherever they have a customer who operates a 2½-ton truck, he be advised to equip with pneumatic truck tires regardless of the class of service in which the truck is used and regardless of road and other conditions. Sooner or later every user operating a truck of this weight is going to have pneumatic tires.

HUGE PROFITS IN TEXAS
TRUCK DRIVERS THERE SOAK OIL MEN THE LIMIT.
\$102 Per One Way Haul of 42.5 Miles Is About the Minimum They Charge in Oil Fields.

One hundred and two dollars for a haul of 42.5 miles would be considered a pretty good wage for motor truck drivers here, but it is just an ordinary return in the newly opened oil fields of northern Texas, according to L. B. Dudley, advertising manager to the Federal Truck company, who has just completed an investigation of the truck needs of oil prospectors in that section.

But then the trucks do not do an ordinary day's work. Hauling capacity loads over prairies and plains where the only road is perhaps a trail and where the storms of the Pan Handle region add misery to the ordinary discomforts of the trip isn't a job for the driver or truck either which lacks stamina. It may be worth even the high wages of 2 cents per mile-hundred weight; which lucky trucksters of the oil region are getting from the oil prospector.

While the rates vary somewhat in the different fields, they seldom fall below the figure named, and in view of the difficult tasks that must be performed by both driver and the truck, it is unlikely they will be lowered. The route between Moran, Tex., and the Parks field, for instance, is traversed by trucks carrying loads averaging 12,000 pounds each, over trails and roads that can be considered little less than unbroken prairie.

In addition to the capacity load of the trucks themselves, practically all trucks take trailers also. With these trailers the trucks carry the long oil well casings so necessary to the well drillers of the oil region. Many of these trucks and trailers are now being equipped with collapsible bodies so as to haul grain on the return trip, thus adding materially to the profits of the truck driver as well as moving part of the huge crop of wheat.

Don't depend upon your horn to clear your path.

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BEARING ON BEARINGS

HOW TO KEEP CAR IN EFFICIENT CONDITION.

Bearing Service Expert Gives Advice on Importance and Care of Bearings.

BY A. K. HERNER,
General Manager Bearings Service Company.

The average motorist who is not mechanically inclined is largely dependent upon the honesty of the manufacturer of his car for quality of materials and efficiency of the component parts when he purchases a motor car. Fortunately this confidence is not often misplaced as all American cars are thoroughly practical and capable of rendering service more than commensurate with the amounts invested in their purchase and upkeep.

The practical car, however, is not necessarily an efficient one. A car which has required but very little attention after an extended period of use but in which 50 per cent of the engine power is utilized in overcoming friction of the power transmissions might be considered practical to the layman who considers performance only. In effect, however, it cannot be considered as efficient as the car which has used but 25 per cent of the power plant capacity to overcome friction, nor as practical either, because the high power wastage adds materially to the cost of upkeep.

We find that many practical cars are not efficient because more fuel and oil are required to operate them for a given mileage than others of equal capacity but greater efficiency. The real cause of this lack of efficiency is usually friction in the mechanism and friction in the mechanism means deterioration of the bearing parts and frequent repairs and maintenance costs.

With these facts in mind, the real importance of the bearings in the car becomes apparent. Probably no machine ever devised by man requires bearing efficiency to so great a degree as the motor car. Not only are all parts of the car subject to stresses of great magnitude but the automobile mechanism is the only one that is handled for the most part by mechanically inexperienced operators. Few machine parts are called upon to withstand the constantly recurring shocks and vibratory loads which the automobile components must withstand thousands of times daily in every ordinary use. The power plant ability of even the lightest automobile is greater than the requirement of the average small machine shop.

It is of prime importance to transmit this power to the points where it becomes effective for vehicle propulsion. It is here that the bearings come in, in their full importance. The entire vehicle weight, except that of the wheels and tires, must be carried by the axle bearings. Four bearings are invariably provided on the front axle, two in each wheel hub. The same number is generally called upon to carry the weight of the rear end of the car in the rear axle. These bearings not only carry a great static or constant load, due to the weight of the car and passengers, but they must resist kinetic or variable loads applied suddenly and in great magnitude, due to resisting the sudden stops to skids when rounding the corners at high speed, when operating on rough roads, or when passing other vehicles on the sides of crowded roads.

In addition to the four rear wheel bearings, the average full floating axle has from four to six other bearings to support the bevel drive and differential gears. The standard gear box will require six anti-friction bearings to properly carry the loads. It will be apparent that each of these bearings consumes its quota of power. The ordinary pleasure car may be said to have about 20 bearings exclusive of those in the engine itself. A slight

power saving in each one would be of some moment in the aggregate, a reduction or depreciation in each one would be worth considering in the total number.

The motorist who, when buying a car, remembers that the car that lasts the longest is the one having the least friction, is not only conserving his investment, by lessening depreciation of the entire mechanism, but he is obtaining maximum efficiency in power utilization as well.

RUBBER IMPORTS LOWERED

Heavy Drop Noted Over Importations for Previous Month.

Imports of crude rubber into the United States in May were only 60 tons ahead of the amount imported in the same month last year, a drop of 11,600 tons from April figure. Comparative figures for the last four years, as compiled by the Rubber Association of America, follow:

	1919.	1918.	1917.	1916.
January	1,235	16,084	12,788	9,126
February	14,079	13,108	10,182	13,607
March	23,223	17,101	18,624	10,779
April	34,959	46,060	39,060	10,018
May	18,348	16,288	13,411	11,139

ARMY KEEPS CERTAIN CARS

HERE IS LIST OF TYPES RETAINED IN SERVICE.

Dodge and Cadillac Kept as Passenger Cars and Mack as the Standard Truck.

Brigadier-General Drake, motor transport corps, announces that the following types of trucks and passenger automobiles will be retained by the army for its use:

Type 1.—Passenger cars: Medium, open, Dodge; medium, closed, Dodge; heavy, open, Cadillac; heavy, closed, Cadillac.
Type 2.—Light delivery truck: Half-ton light delivery, Dodge; ¾-ton, White; ¾-ton G. M. C.; 1 ton, White, Tebo.
Type 3.—One and one-half and 2-ton trucks: White, Garford, Packard.
Type 4.—Three and 4-ton trucks: before attempting to start.

Commerce TRUCKS

FROM any point of view—units, materials, chassis, workmanship, capacity, power, strength, dependability, performance, equipment, price—the Commerce Truck ranks first as the greatest value in its class.

Investigation of Commerce war and commercial records will prove interesting to buyers of trucks in this class.

1 TON ½ Ton Overload Capacity \$1500

1½ TON ¾ Ton Overload Capacity \$1895

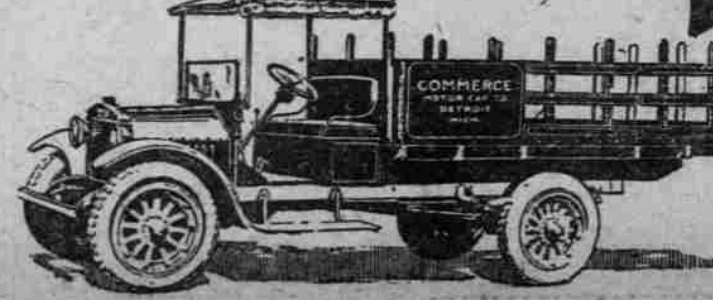
36x6 Pneumatic Cord Tires F. O. B. Detroit

McCRACKEN MOTOR CO.

490 Barnard St., Portland.

Distributors, Phone Broadway 93.

COMMERCIAL MOTOR CAR COMPANY, DETROIT, MICHIGAN



CANTON Cord represents our ideals of the very best tire that can possibly be bought.

The idea was to make a tire so downright good that its first cost would appear insignificant in comparison with the mileage it yields.

To those who habitually invest in the best, and expect the most, we confidently offer the Canton Cord Tire.

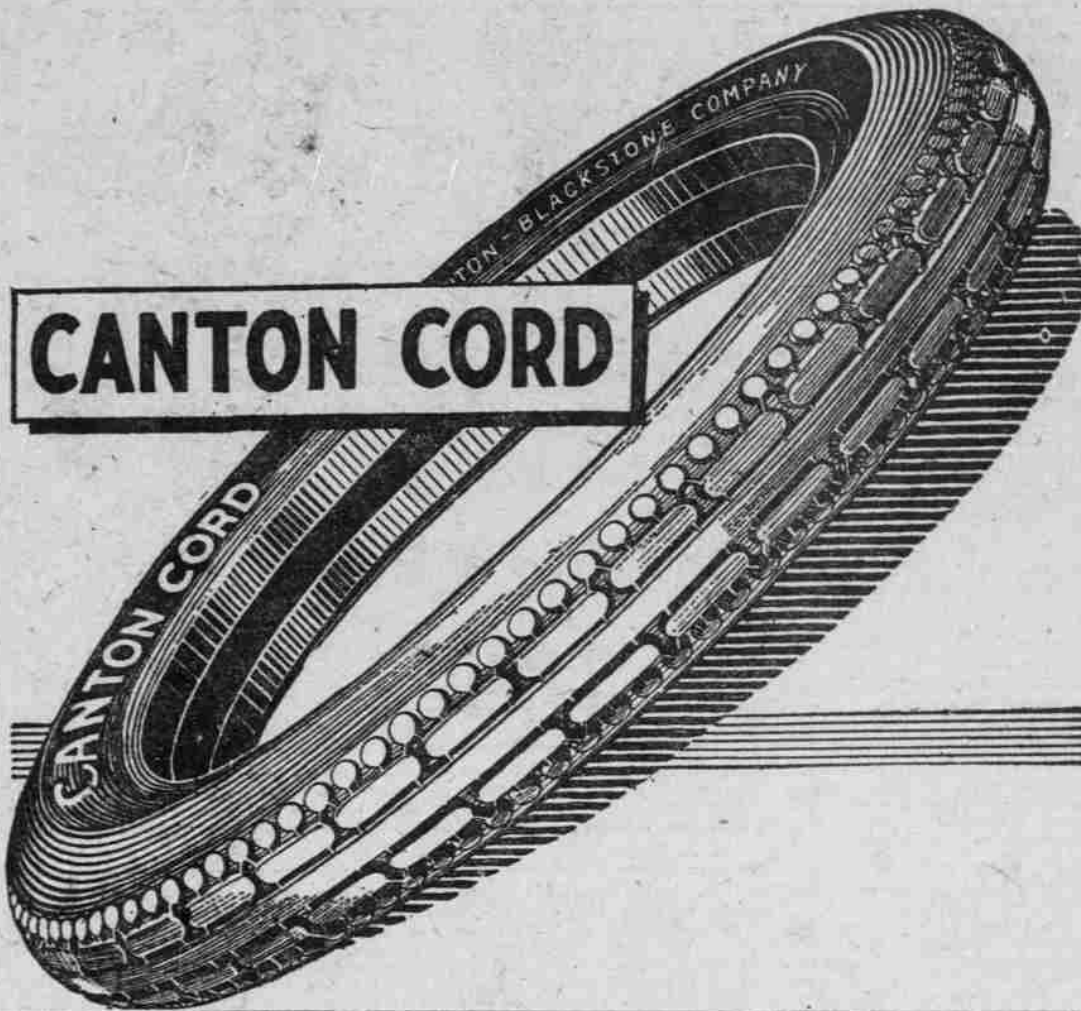
Factory Distributors

Howell-Swift Tire Co. and
Pacific Tire & Rubber Co.

Broadway 290

445-447 Stark St.

Portland, Or.



Standardized "B"; Riker; Mack, 3½-ton trucks; F. W. D.

Type 5.—Five-ton trucks or over; Mack, 5½-ton trucks; Mack, Special Engineer.

Type 6.—Motorcycles—Harley-Davidson.

Type 7.—Ambulances: G. M. C.

Type 8.—Trailers, Cargo: Trailers, ¾-ton, tank, water, 180 gallons; trailers, ¾-ton, ration and spare parts; trailer, 1½-ton, 2-wheel, light aviation; trailers, 1½-ton, 4-wheel, cargo; trailers, 1½-ton, 4-wheel, special bodies; trailers, 3-ton, gun and cannon; trailers, 4-ton, 4-wheel, cargo; trailers, 4-ton, 4-wheel, special bodies; trailers, 5-ton, tire press; trailers, 10-ton, portable crane; trailers, 10-ton tank corps with ramp.

Type 9.—Trailers, kitchen: Trailers, 1½-ton, 2-wheel, kitchen, A and B type.

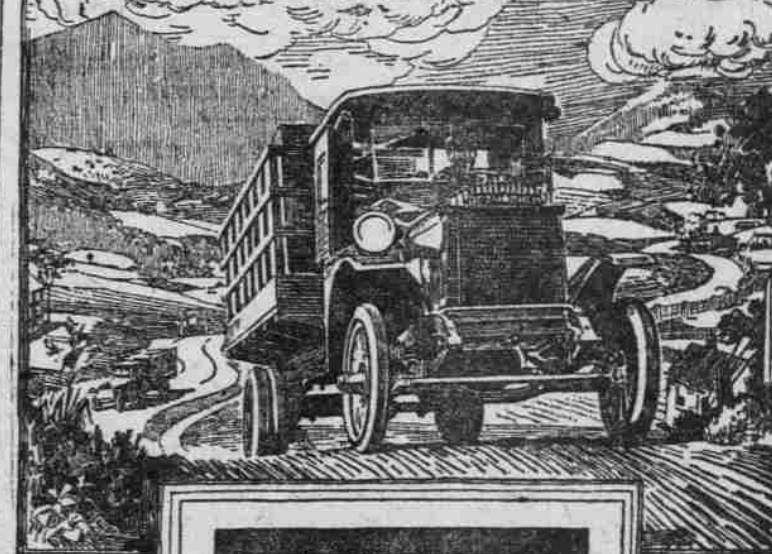
Type 10.—Trailers, machine shop: Trailers, 4-ton, 4-wheel, machine shop, spare parts.

Bicycles: Westfield.

None of these machines will be placed in the surplus equipment. The statement says specifically that these cars are not placed as army standards at the present time.

Don't fail to release the hand brake before attempting to start.

Where Roads Go Bethlehems Go



BETHELEHEM

Internal Gearbox

MOTOR TRUCKS

Dependable Delivery

BETHELEHEM MOTORS CORP., ALLENTOWN, PA.

Up hills and through valleys, along desert trails and in traffic-crowded cities—wherever there is a transportation problem there is a Bethlehem Truck.

The ability of a Bethlehem to stand the gaff, to deliver under the severest conditions—has been proved by thousands of Bethlehem owners on thousands of jobs.

Bethlehem Performance is assured by Bethlehem design and construction. The superstrong frame, the husky, enduring power plant, the economy and advantage of electric starting and lighting, the Internal Gear Drive and Drive Shaft Steady Bearing—are some of the reasons for the new Motor Truck Service Standards which Bethlehems have established. We will demonstrate a Bethlehem your way. See us today.

1½ Ton Chassis \$1965 2½ Ton Chassis \$2365 3½ Ton Chassis \$3465

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NORTHWEST AUTO CO.

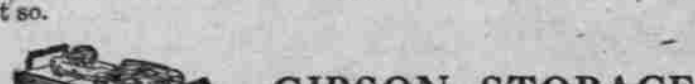
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VESTA DOUBLE LIFE STORAGE BATTERY

"COSTS LESS PER MONTH OF SERVICE"

The exclusive features employed in its construction make it so.



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