

## Automobiles and Good Roads

A Department Designed to Help Farmers With Progressive Road Ideas.

**G**IVEN complete data as regards location, traffic and all other conditions, the expert in highway construction can advise intelligently as to the kind of pavement which will most nearly meet the requirements in a given case, but without the complete information he cannot hope to give any satisfactory answer, says Good Roads.

Before the advent of the automobile, when the traffic consisted of horse drawn vehicles, equipped for the most part with iron tires, water bound macadam was the standard construction for practically all roads except those carrying the heaviest traffic. But present traffic conditions are different. The vehicles using the roads consist not only of horse drawn vehicles equipped with iron tires, but also of motor driven vehicles equipped with rubber tires. Moreover, these two dissimilar kinds are found in varying proportions. At present there is no standard type of construction. Roads or streets carrying light traffic can be satisfactorily paved with certain materials, those carrying a heavier traffic can be paved properly with certain other materials, and those carrying the heaviest traffic require still other kinds of pavements.

Considering these facts, the logical conclusion is that traffic is the chief factor in determining the type of construction to be adopted. It is also known that the two different types of vehicles now using the highways require different surfaces. It may be inferred, therefore, that so long as the traffic is mixed, and mixed in varying proportions, a pavement that will be universally satisfactory will not be found unless the amount of one or the other of the two kinds of traffic becomes small enough to be negligible. We can be certain that motor driven vehicles will never become negligible factors, so that the next step to be taken is to consider whether or not the ratio between motor driven and horse drawn vehicles will ever become so great as to eliminate the latter from consideration. If this does happen the situation will be similar to that before the advent of the automobile, and we shall have a traffic varying only in intensity. In that case some certain pavement may be evolved which will be as universally acceptable as was the water bound macadam pavement under former conditions.

Unless this change in traffic does come about it seems probable that the selection of the type of pavement to be put down will remain a problem which has to be solved for each particular road, having due regard to local considerations.

### DON'T TINKER.

**O**NE of the most important things for the automobilist to learn is not to "tinker."

There is no mystery concealed under the hood of a car, there is nothing that should be kept secret from the owner. In fact the progressive manufacturer is very much gratified when his customer shows a desire to learn, because the well informed is usually the satisfied owner. But the difficulty arises after the control of the car has been mastered and a slight knowledge acquired of the care and attention that the car should receive. Instructive literature accompanies the car; magneto timing is studied and that the carburetor sometimes needs adjusting is learned. Enthusiasm prevails and the temptation to "tinker" usually becomes too great; a delicate adjusting screw is turned or a wire is disconnected and then—trouble begins. Nearly all manufacturers caution the owner against "tinkering."

Talk to the repairman, study the instructions, learn all you can, and then, when the emergency comes, you'll be prepared. But wait for the emergency. Do not tinker. Don't try to make adjustments when the car is already in adjustment. Don't begin tearing down until you have located the trouble. Don't try to improve the timing of the valves or the ignition; the manufacturer knows best.

Treat your car as you would an expensive watch. A lot of trouble may be avoided by having an expert examine the car about once every two months. There are many little wrongs

## Relation of Good Roads to Rural Schools

The rural population is more willing to support better schools today than at any previous time. It is being realized that all educational activities or agencies must be more or less correlated, and, more than all else, that they must be made accessible to the children. In many countries where bad roads prevail, most of the schools are of the antiquated one-room variety. They are usually located along bad roads which, during the winter, when the schools are usually in session, become so nearly impassable as to make it difficult for the children to reach them. This condition causes irregular attendance and restricts the educational opportunities of the child. Not only this, but it often impedes the economic consolidation of these smaller schools into larger, stronger graded schools, with high school courses, directed by a competent principal and corps of teachers.

On the other hand, in counties which have improved their roads, the schools

are easily reached, the average attendance greater, the efficiency largely increased and economic consolidation made possible. Regular attendance at school means consistent and regular growth of both the school and pupil, and consolidation of schools means a maximum of efficiency at a minimum of cost. It is also noteworthy that there is a marked tendency for the consolidated school to become the social and intellectual center of the community. Most modern rural school houses are so constructed as to serve the community as gathering places for various kinds of public meetings, and where vans are used to convey the children to school during the day. The consolidated school becomes a sort of community center to which all educational and social activities converge, and in order that it may properly perform that function all of the highways leading to it should be so improved as to render it readily accessible throughout the year.

## Future of Automobiles

Dr. Charles P. Steinmetz, the eminent electrical expert, expressed his views on the future of the automobile at the recent convention of the National Electric Light Association. According to Dr. Steinmetz, the large gasoline-driven touring car, manned by an expert chauffeur-mechanic, and the electrically driven roadster, coupe and truck are to handle the private motor-vehicle transportation requirements of the next decade. In his Philadelphia address upon the electric vehicle, the speaker said that inside of ten years at least a million electric automobiles, costing not over \$500 each and weighing not in excess of 1000 lbs., with a mileage per charge of at least 30, a maximum speed of 20 miles per hour, and a maintenance cost of \$10 per month each, will be in service, the steam-driven automobile will have disappeared and the gasoline roadster and town car will have succumbed to the simplicity and economy of the electric. Dr. Steinmetz made an exceedingly important point in demonstrating that neither high-speed nor extra long mileage are needed for the great proportion of automobile travel and commercial service, and he unquestionably hit the nail on the head in setting forth the diminishing enthusiasm of the gasoline-car owner for practicing the technique of repairs in a sport which is rapidly losing its exclusiveness. If the type of car he described makes its appearance within a year or two, there is no question that if the electric service companies provide the necessary charging facilities, the gasoline motor-vehicle manufacturer will have to do some pretty energetic development work to keep in the running.

## Automobile Tires

### AT FACTORY PRICES

SAVE FROM 30 to 60 PER CENT

Tire	Tube
28x3	\$ 7.20 \$1.65
30x3	7.80 1.95
30x3½	10.80 2.80
32x3½	11.90 2.95
34x3½	12.40 3.00
32x4	13.70 3.35
33x4	14.80 3.50
34x4	16.80 3.60
36x4	17.85 3.90
35x4½	19.75 4.85
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37x4½	21.50 5.10
37x5	24.90 5.90

All other sizes in stock. Non-Skid tires 15 per cent additional, red tubes ten per cent above gray. All new, clean, fresh, guaranteed tires. Best standard and independent makes. Buy direct from us and save money. 5 per cent discount if payment in full accompanies each order. C. O. D. on 10 per cent deposit. Allowing examination.

TIRE FACTORIES SALES CO.,  
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that may quickly develop into big wrongs if not discovered and checked.

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## "Non-Puncture" Auto Tires

Guaranteed 7,500 Miles Service

These tires bear the greatest known mileage guarantee, yet are sold at a price even less than tires of ordinary guarantee. This guarantee covers punctures, blow-outs and general wear. Guarantee covers 7,500 miles' service against everything except abuse. These tires are intended to most severe service.

Orders have been received for these tires for use in United States Government Service.

As a SPECIAL INTRODUCTORY offer, we will allow the following prices for the next ten days.

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Tire	Tube
28x3	\$ 9.20 \$2.00
30x3	10.25 2.30
30x3½	13.50 2.80
32x3½	14.05 3.00
34x3½	15.25 3.20
31x4	17.00 3.25
32x4	18.00 3.30
33x4	19.50 3.40
34x4	20.40 3.60
35x4	21.00 3.80
36x4	22.00 3.90
35x4½	26.00 5.00
36x4½	27.00 5.10
37x4½	27.50 5.15
37x5	32.60 5.40

All other sizes. Non-Skids 20 per cent extra. 5 per cent discount if payment in full accompanies order and if two are so ordered, shipping charges will be paid by us. C. O. D. on 15 per cent of amount of order. Our output is limited, so we suggest early ordering. We sell direct only, giving purchaser the advantage of all middlemen's profits.

### NON-PUNCTURE RELINERS

Use our famous reliners, they eliminate blow outs and 90 per cent of punctures besides giving many thousand more miles' service to each tire. When in your tires you ride without worry or tire troubles.

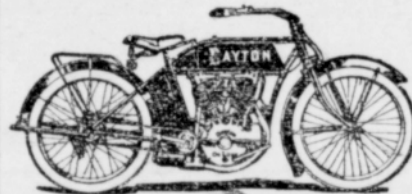
For all 3 inch tires	.....\$1.95
For all 3½ inch tires	.....\$2.20
For all 4 inch tires	.....\$2.60
For all 4½ inch tires	.....\$2.75
For all 5 inch tires	.....\$2.90
For all 5½ inch tires	.....\$3.00

### NON-PUNCTURE TIRE FACTORY

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with the Gearless Improved Standard Well Drilling Machine. Drills through any formation. Five years ahead of any other. Has record of drilling 130 feet and driving casing in 9 hours. Another record where 70 feet was drilled in 2½ gal. distillate at 9¢ per gal. One man can operate. Electrically equipped for running night. Fishing job. Engine ignition. Catalogue V2. REIERSON MACHINERY CO., Manfrs., Portland, Ore.



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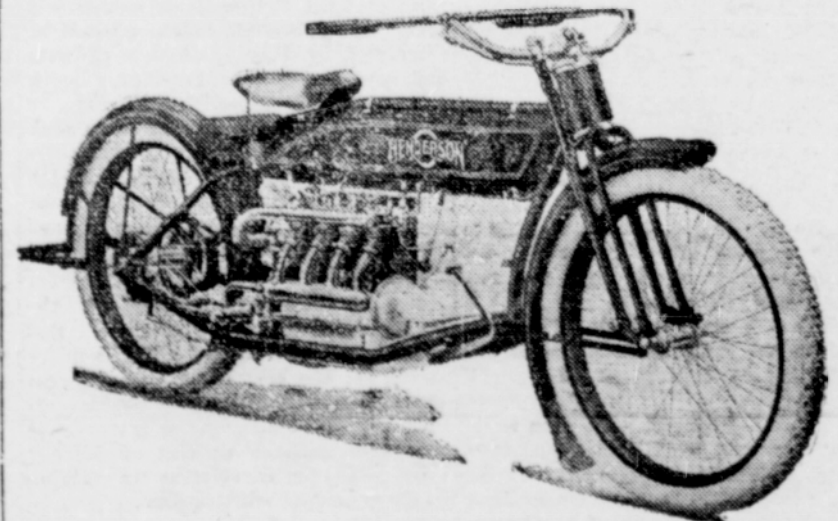
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Brass Signs, Box Printing, Plates and Burning Brands, Numbering Machine Experts.  
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*The Henderson*  
AUTO CONTROL AUTO MAGNETO AUTO TIRES



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The first motorcycle was constructed with a single cylinder. This was a big improvement over the bicycle and very satisfactory for the city messenger service. But it was not until 2-cylinder machines came out that cross-country riding became popular. Only those who have fairly burned up their machines trying to climb a hill or pull through sand know the value of surplus power when touring. As the single was an improvement over the bicycle and the twin an advance over the single, so is the 4-CYLINDER 8 H. P. HENDERSON a big advantage over the twin. Write for illustrated catalogue or call for a Free Demonstration.

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