

PROPHECIES FICKLE AS FASHION FANCY IN AUTOMOBILE FIELD

Engineers and Moneyed Men Have Lost Out in Pinning Faith to Insubstantial.

IS PROLIFIC IN PITFALLS

Some of the Important Ideas Indicative of Tendencies in Car Construction Are Given in Detail.

By David L. Gallup, M. E.
Professor of Gas Engineering at Worcester Polytechnic Institute and member of the Research Division of the Society of Automotive Engineers, in the New York Times. Prophecies in the automobile field, as a general thing, are as precarious as questions of fashion. Many an engineer has obliterated his reputation, and the moneyed man his fortune by pinning his faith to something no more substantial than this form of illusion.

Consequently, a discussion such as is implied by the subject under consideration is prolific in possibilities of pitfalls or other things of a similar nature. Nevertheless, due possibly to an accumulation of courage based upon previous good luck in this regard, certain statements are going to be made and certain lines pointed out which it is believed indicate in a fairly definite way the trend of power plant development which will be exemplified in the coming few years.

Pleasure Cars.
On the other hand, this is not as susceptible of criticism as would have been the case had the subject been of a more serious nature. For then development was more or less erratic and miscellaneous, whereas now it has become much more established and there is a general tendency toward crystallization of certain ideas representative of future progress.

In this discussion attention will be given only to the pleasure cars field, and still further to the straight gasoline car solely. Merely as a means of exciting the interest, the statement may be made here that the probability of a twelve-cylinder car, with a displacement of twelve and twelve and a half, will be found remarkable advance in the four and six, and to such an extent that it can never be assumed that the latter classes are anything but of increasing importance. From what has preceded it might appear that these multiple cylinder forms possess no intrinsic advantages. On the contrary, they do. One of them is that the advantage of smaller parts, pistons, cylinders, valves, and so forth, is becoming recognized, and another is that the development of the four and six has been very greatly stimulated by the advent of these types.

Multi-cylinder Engines.
Another apparent reason for excitement concerning these two forms of multi-cylinder engines came about as a result of the relatively superior performance of the eight and twelve as against the four and six. Naturally, this was true, but only to a small extent. When the eight and twelve were designed they had incorporated in them all of the corrections of faults discovered in the four and six up to that time, so that in making comparisons it resulted unfortunately for the engine with the fewer cylinders, since they still possessed these faults. However, the day has gone by, and now we find a number of sixes that not only compare well in all, but power with certain eights and twelves, but in certain cases actually outshine them.

This again is significant, for coupled with the similarity in performance goes certain advantages, one of which is embodied in the question of fuel economy, and this will not be overlooked.

Output and Input Relations.
Returning now to the main question: The big struggle today and for some time to come is the struggle for a greater relation between output and input in whatever contrivance or mechanism in existence. By this is not necessarily meant the stereotyped term "efficiency," which is, generally speaking, a computation involving heat units. Rather is it "performance" on the one hand and the thing which made it possible on the other. In a sense, it is the relation between dollars spent and pleasure or value received.

Since the early days of the industry there has never been such a scramble for big results from little things, and this is by no means confined to automobiles. Up to within a few years the question of horsepower, even though important, had to a certain extent been overshadowed by the attempt to discover the proper size, shape, quality, and durability of the "assemblies" rather than organized attempts to increase the output of the power plant.

More From Same Things.
Whenever in the past it was found that the power plant was insufficient—why more cylinders, or more ones—there was the answer. In few cases was the attempt made to analyze the why and wherefore which would provide the solution in the form of "more from the same thing." Now, however, we have a totally different situation. From a surprise to a belief, from a belief to a realization, is the fact that this is not development. This comes as a result of a number of things. Now that the body and chassis details have become more or less standardized, designers have had more time to look into engine possibilities.

Manufacturers are now turning their attention to refinement in engine design and construction to the end that more power will be obtained from the same displacement. Engines of the past have been very ineffective in this regard. The horsepower per cubic inch has been way below the possibilities, possibilities that were known to exist in certain specialized forms of racing cars.

The only problem unsolved was durability. Durability is a function of speed and size of parts. Horsepower in general is a function of speed. Consequently, any move which permits of increased speed (within limits) without sacrificing durability is an advance. This leads to the introduction of the double valve engine.

Riding Comfort Important.
Probably next in importance in this question of "tendencies" is that of riding comfort. Recent developments show conclusively that it is possible to medium heavy car it is possible by the proper combination to get easy riding qualities in the entire range represented by no-load to full-passenger capacity. To do this, it is necessary to lengthen the springs, increase their width and number, decreasing their

MY NAME IS MUD

By H. G. Andrews.
(Copyright, 1916, by the William Penn Highway Association.)
I AM the unimproved highway. My name is Mud!
The feet that pattered in pre-meral alms gave me birth. Unchanged while the ages passed, I have endured. Time has but served to increase my infinite variety. Earth-born and without a soul, yet have I lived. From the beginning have I been man's enemy.
A dust-colored python am I, stretching my length across the hills, waiting my time to crush my endeavors.
I have snared caravans that left bleaching bones in lands now desert. Empires have fallen because of me.
I am a disrupter of home. I speed the first-born to the cities when I am crushed armies.
I am without faith, and those who trust me I deceive.
Today I am fair to look upon; tomorrow a steaming bog.
I add difficulty to distance.
With isolation do I conspire to unjoin the endeavors of man. I tug at the wheels of the grain cart; that bread may be denied those who would feed the race. I am an enemy of church and school. I mire the healer on his rounds and delay the coming that little ones may die.
I am fair to see, and when he would return I face him with my forbidding depths. I minister to bitterness and lay a tax on all the world. There is none who lives who does not pay me tribute.
When men plowed with a crooked stick, I was there. When the ancients covered me with stones, I slipped to other lands. I am the oldest He that lives today. Men count me cheap. I know the price they pay who count me so.
I am the unimproved highway.
My name is Mud!

thickness. Quality of material must also be considered.
Body construction must be more substantial. Continuous use now produces squeaks and eventually cracks and breaks. This will all be remedied.
Along this same line there will be attempts made to remove the obnoxiousness of squeaks and rattles in general. Better fits, larger bearing surfaces, reduced rate of wear, inclosed parts, grease cups, ample in size and number—all these will be noticed.

Carburetors must involve radical changes due to anticipations relative to less volatile fuels. We are on the verge of it now.
Foot and Hand Controls.
Still another feature which will be forthcoming, but not so soon as some that mentioned, has reference to the foot and hand controls. The final design will incorporate a clear space in the "front seat"—no passenger cluttered with emergency brake and gear shift. When this is accomplished, and it can be done very easily, there will be little complaint from the man driving the car with the right-hand steering and control, right-hand steering and control, left hand steering and control, or left-hand steering and center control.

The discussion will be ended by inserting a sort of tabular resume, giving not necessarily in the order of their importance, the items which are considered indicative of tendencies. Some of these are already in existence, some are not—none of them, however, is so completely established that it can be argued as anything but tentative:
Tendencies Foreshadowed.
1. Increase in horsepower capacity from a given bore and stroke, leading to the small bore, high-speed, double valve engine.
2. Increased interest in the four and six for the average car.
3. Critical analysis with particular reference to details of operation of all types of engines.
4. Extreme balancing of all moving parts, especially the crank shaft.
5. Extended use of aluminum alloys.
6. Detachable heads.
7. Unit power plant.
8. More effective lubrication tending toward the pressure type and controllable with the throttle.
9. Easier riding qualities.
10. General reduction in total

weight by judicious design and use of parts and materials.
11. General improvement in body details, eliminating weaknesses now apparent from distortion.
12. Greater attention to small details involving wear such as brake levers, rods, spring shackles, etc.
13. Improved carburetion, as effected by more flexible carburetors and thermostatic control.
14. Clearing of the passageway between the dash and front seat.

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REVIEW OF LAWS OF THE STATES USING MOTOR VEHICLE FEES

Suggestion That Fees in Oregon Go to State Road Fund Brings Forth Comparisons.

PRACTICES ARE VARIED

In Twenty States Fees Go Into the State Treasury; In Thirteen States the Fees Are Divided.

In connection with the suggestion that the fees from the registration of motor vehicles in Oregon should go into the state road fund instead of being returned to the counties in which they originate, as under the present law, it is interesting to review the law of other states on this subject.

Out of the 48 states of the union, 29 embracing the larger ones, requires that the fee shall go into the state treasury, to be spent on state and state aided roads. In two of the states, Minnesota and West Virginia, the money goes into the state general fund instead of the road fund.

Thirteen states divide the fee between the state and county, in different proportions. In the remaining 13 it goes to the county, less the expense of collection.

States in which the registration fee goes into the state treasury to the credit of the road fund are Arizona, Connecticut, Delaware, Georgia, Illinois, Kentucky, Maine, Massachusetts, Missouri, Montana, New Hampshire, New Jersey, New York, Ohio, Pennsylvania, Rhode Island, Tennessee, Utah, Vermont and Virginia.
Those in which it reverts to the counties are Indiana, Kansas, Louisiana, Mississippi, Nebraska, Nevada, North Dakota, Oklahoma, Oregon, South Carolina, South Dakota, Texas and Wyoming.
In Alabama 40 per cent goes to the city or town, 40 per cent to the county and 17 1/2 per cent to the state. The fees are collected by the probate judges, who retain 2 1/2 per cent commission. In Arkansas, Colorado, Michigan and New Mexico the fee is divided half to the state and half to the county. This rule also prevails in California, where the amount collected in 1915 was \$1,500,000. In Florida the division is 15 per cent to the state and 85 per cent to the county. In Idaho 25 per cent to the state and 75 per cent to the county. Iowa gives only 5 per cent to the state.

In North Carolina 80 per cent goes to the county and in Wisconsin 75 per cent. In Washington, while the fees are paid into the state treasury, they are credited to the permanent highway fund, thus going indirectly to the county. In Maryland 20 per cent goes to the city of Baltimore and the remainder to the counties.

Arranged at large business houses for the appearance of the officers. All employees of delivery departments are to attend the meetings.

HIGHWAY CODE FOR OREGON PREPARED BY FEDERAL OFFICIALS

(Concluded From Preceding Page)

town or county would not maintain and could not be induced to maintain by financial aid, maintenance was taken over by the state and the locality required to pay a part of the cost. The proposed code provides a fifty-fifty cooperative fund for maintenance to be carried out entirely by the state highway department, but allows that department to make a contract with the county commissioners for such maintenance with ample safeguards against failure on the part of the county. In order to insure a fund for maintenance as has been mentioned above, one section provides that no construction money becomes available until the state's portion of the cost of properly maintaining highways previously built has been deducted from the state highway fund.

Accounting System Advisable.
"The accounts of local road expenditures in counties, townships, burroughs, parishes and other local units in the United States have been poorly kept or neglected. As road construction and maintenance expenditures have increased the resulting conditions have become more and more troublesome, and unsatisfactory. With-out doubt such conditions are partly due to the lack of proper advice and the absence of adequate knowledge of accounting. To provide that communities in Oregon shall be assured of an accounting system, a section provides that the state shall formulate and prescribe a uniform system of road accounting for the several counties, and shall issue necessary forms and rules, and that the county shall comply with such regulation under penalty of fine."

"To enable local road officials to avail themselves of the trained service of the state highway engineer and his assistants, it is provided that they must submit plans to his office for any road work costing in excess of \$1000, and that he must aid the counties and prescribe the manner in which such work shall be done. A similar provision is made with respect to bridges which have a span in excess of 20 feet. Specifications for design and construction of such bridges is made part of the duty of the state highway engineer. Provision is also made for abolishing the road supervisors and for the removal of highway matters from the duties of the county surveyor and for the creation of the office of county engineer or district highway engineer when two or more counties wish to cooperate."

"As this is a land of comparatively small farms, it is almost imperative that collective users must enter into the arrangements for purchase. The refund will be based on the cost of machinery and freight to destination, and it is stipulated that the association must have more than one-half its farmhands in the section tributary to the railway. The offer of the company is limited to the first 30 tractors purchased."

"Believing that the quickest action making for wider introduction will come from farmers themselves, the company has now granted a subsidy, or refund, of 10 per cent of the purchase price of tractor and plow combined up to the value of 10,000 francs (about \$1910) to syndicates or associations of farmers buying outfits before January 1, 1918.

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MOTOR AGRICULTURAL MACHINERY PROMOTED BY FRENCH CAPITAL

Government of France Grants Subventions to Encourage Modern Farming.

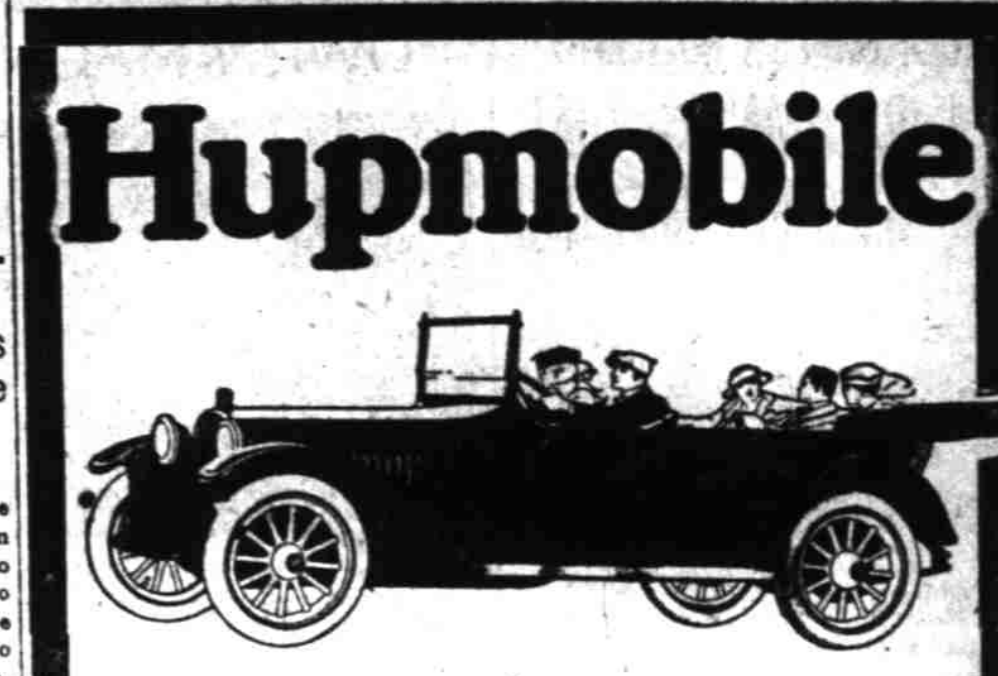
Notable Steps to Encourage the Use of Agriculture Motor Machinery in France, Have Been Taken in Order to Reduce the Cost of Farm Operation to the Lowest Possible Figure.

Some time ago the French government decided to grant subventions to agricultural syndicates, cooperative associations, and municipalities purchasing agricultural motor machinery. Now comes the news of a railroad company deciding on the same course. Vice Consul David B. Lewis of St. Etienne reports: "The Paris, Lyons & Mediterranean railway, which has adopted a policy of assistance to agricultural advancement along its lines, has been a keen observer of and greatly interested in experiments with farm tractors, or 'mote-culture,' as it is called here. From the earliest trials of tractors this company has cooperated with farmers and agricultural experimental stations, has given free transportation for the machinery and men necessary for the demonstrations, and has delegated inspectors from its mechanical and traffic departments not only to follow the experiments in its own territory, but also to note the extension of use and the results in other countries."

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The Best Car of Its Class in the World
Equipped With the **HUPMOBILE** Perfected Four-Cylinder Motor

Its high gear performance on hills, in sand and mud is not excelled by any multi-cylinder cars, and equalled only by the better and more expensive types.

Five-Passenger Touring Car. \$1185.00
Seven-Passenger Touring Car. \$1340.00
Three-Passenger Touring Car. \$1185.00
Five-Passenger Sedan. \$1735.00
Year 'Round Coupe. \$1370.00
Year 'Round Touring Car. \$1385.00
Prices F. O. B. Detroit

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One Block South of Automobile Show

Will Prevent Tires Sticking to Moulds

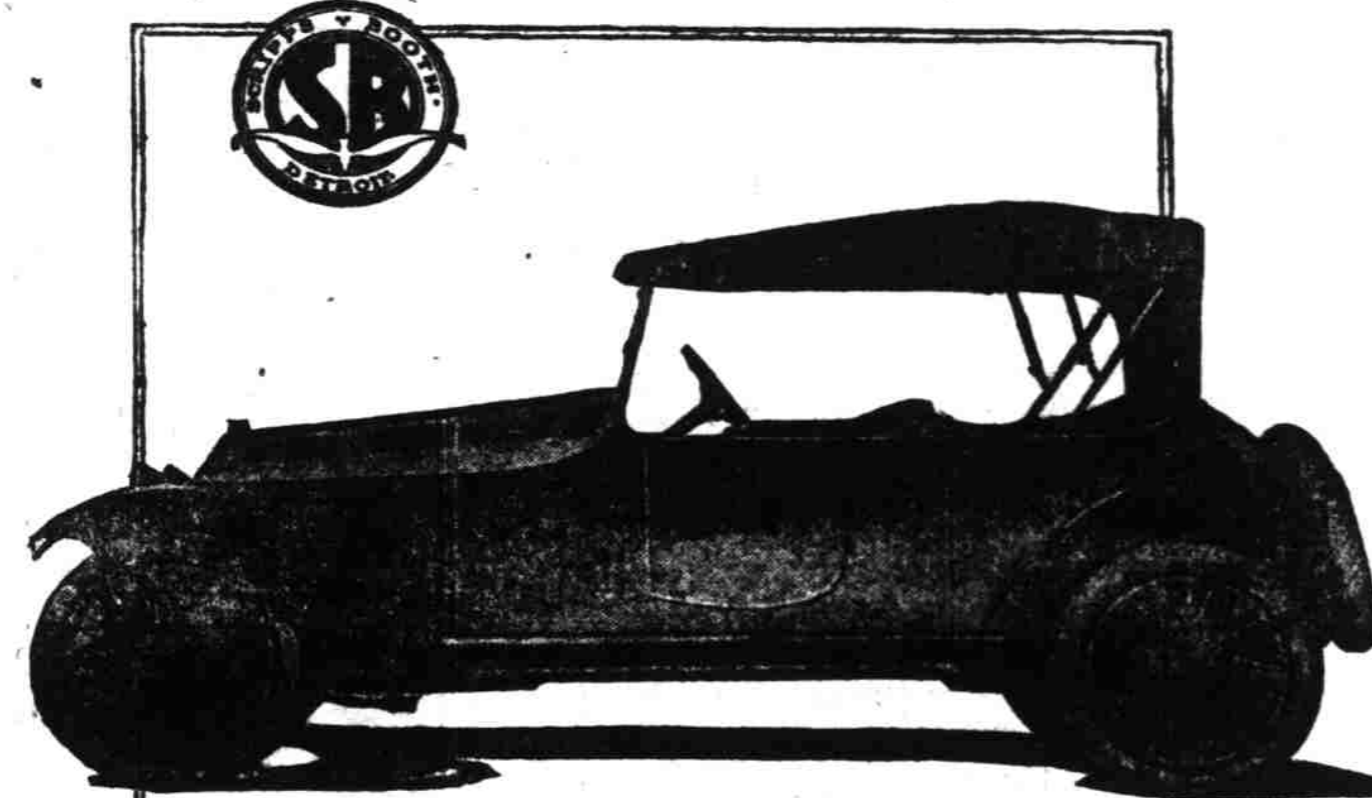
As Simple a Substitute as Cocoa Butter Has Been Found to Solve the Vexatious Problem.

Sticking of tires to the mold after vulcanization has always been a great source of annoyance to all repairmen. The best applications heretofore used as possible preventives have been lacking in some respects. Therefore the discovery by G. R. Carmichael, a repairman of Perth Amboy, N. J., of the use of a material which overcomes this trouble will be welcomed by vulcanizers everywhere. Since the discovery is so simple, the wonder is that no one has reported it before. So simple a substance as cocoa butter solves the problem.

The method followed is this: Clean the mold thoroughly with fine emery paper. Then, after allowing it to warm up a little, go over it with a piece of cheesecloth saturated with cocoa butter. Next wipe till glassy and apply soapstone. This method of preparing the mold has been tried in the Goodyear repair school and found to work perfectly.

Denver Police Start Auto Lecture Bureau

Denver, Colo., Jan. 20.—(I. N. S.)—A lecture bureau has been added to Denver's police department. Members of the traffic squad will be the orators and will be sent out to explain the new auto ordinance to auto truck drivers in all business establishments. Managers of large stores have cooperated with the police, and dates have been arranged at large business houses for the appearance of the officers. All employees of delivery departments are to attend the meetings.



Eight

In the new Scripps-Booth eight-cylinder, four passenger model, we have, for the first time, the admitted advantages of multi-cylinders merged with Scripps-Booth lightness and luxury—giving a maximum day's run with minimum fatigue, maximum mileage on minimum fuel.

In the Scripps-Booth eight, one has in one machine, not only the luxury of riding and extreme pride of ownership of the multiple-cylinder car, but the ease of driving and economy of fuel and tires, which light weight only can give. This includes also ability on soft roads where heavy cars mis.

Scripps-Booth

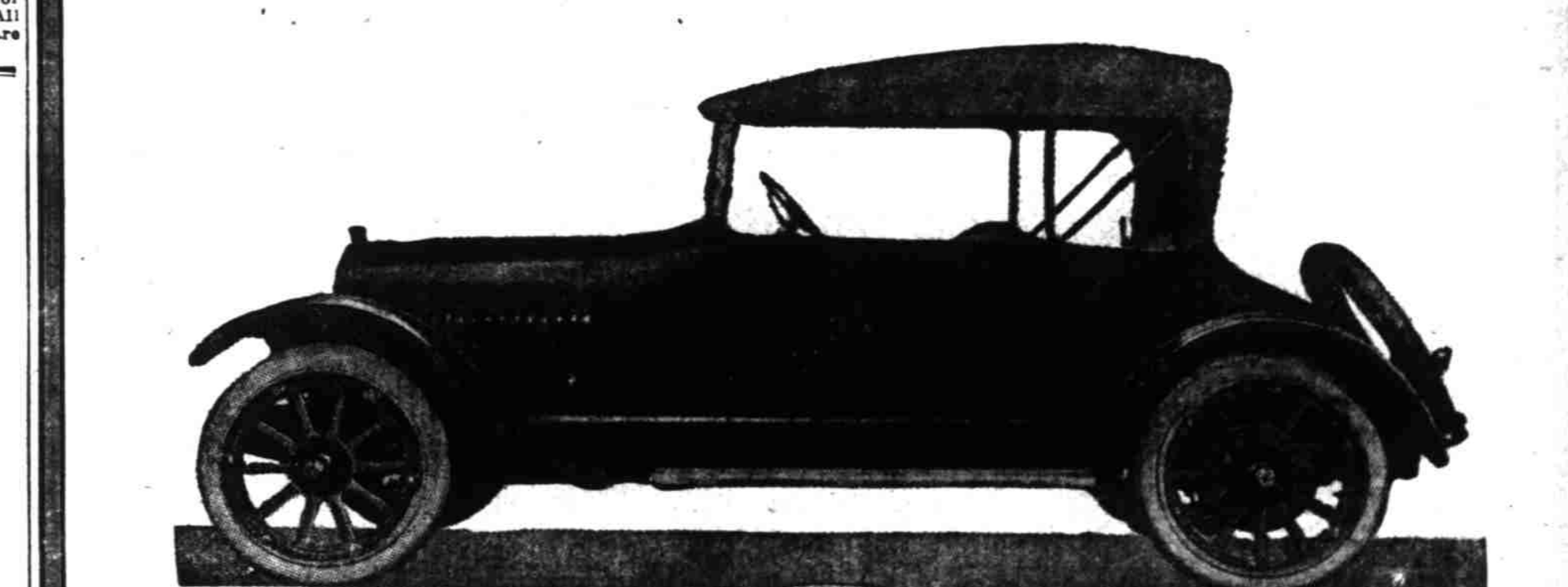
This high-speed, eight-cylinder motor is the most compact of its type. Its moving parts are light. It runs with the minimum of vibration. It achieves the maximum of flexibility.

Thus we have efficiency in the highest degree; and with it an economy that enables the average user to travel 18 to 20 miles to the gallon of gasoline.

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- 8-CYLINDER 4-PASSENGER \$1175
- 4-CYLINDER 3-PASSENGER ROADSTER \$895
- 4-CYLINDER 3-PASSENGER COUPE \$1400

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- Seven-Passenger Convertible Sedan, \$1995
- Four-Passenger Convertible Coupe, \$1995
- Limousine, \$2695

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363 OREGON STREET, PORTLAND, OREGON