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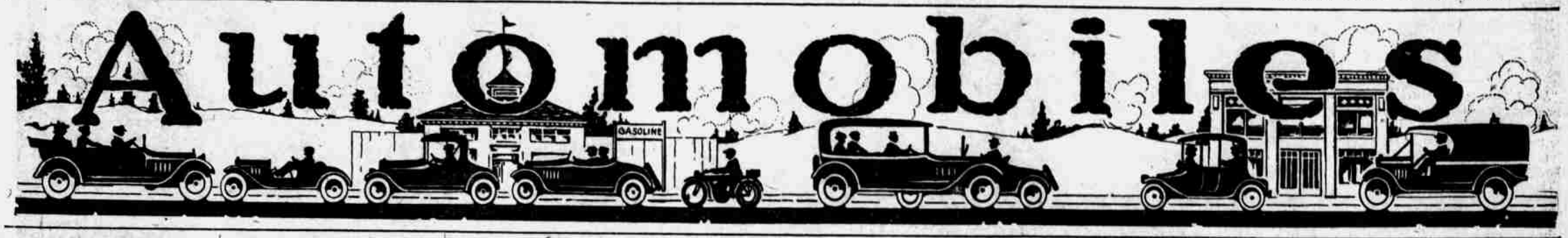

GASOLINE MUST KEEP PACE WITH AUTO INDUSTRY

Process of Cracking Is Expected to Supply Most of Added Motor Fuel Needed.

By ELLWOOD HENDRICK.

In Dr. Walter F. Rittman's address before the spring meeting of the American Chemical society he gave some interesting figures about gasoline and the automobile industry and he also made some predictions. It is published in full in the society's Industrial Journal.

Of 3,000,000,000 gallons of gasoline to be produced in the United States in 1917, he said that one-fifth would be made by cracking. Cracking petroleum means taking petroleum residues after the gasoline and kerosene have been distilled off and treating this residue according to various processes, but usually with heat and pressure. What happens is that, in a chemical sense, and to use a very loose expression, the residue is knocked to pieces; into big and little pieces, let us say. Then some of the little pieces are found to be gasoline. It has been observed that there is a limit to cracking and that after three times in succession the residue refused to separate into gasoline and other bodies. On further treatment it shows a disposition to go back into its original elements, carbon and hydrogen. The rule seems to be about three times and out.

Four Million Autos Here.

By July 1 Dr. Rittman said there will be 4,000,000 automobiles in operation in the United States. The address was written before the declaration of war, but he predicted that when materials reach normal prices again the costs and consequent selling prices will be so reduced that 10,000,000 cars will be the automobile census of this country at its present population. This means an annual replacement of 2,000,000 machines. Only the steel, lumber and clothing industries exceed the automobile business today. The annual bill for the upkeep of motor cars now operated in the United States he places approximately as follows:

Gasoline	$ 500,000,000
Tires	500,000,000
Accessories	200,000,000
Garage hire	150,000,000
Repairs	150,000,000
Total	$1,500,000,000

The number of automobiles in this country on January 1 of each of a number of years past he gives as follows:

Year.	Cars.
1905	85,000
1910	460,000
1911	600,000
1912	677,000
1913	1,010,000
1914	1,253,000
1915	1,754,000
1916	2,225,000
1917	3,250,000
1918 (estimated)	4,750,000

The average consumption of gasoline per machine per annum is placed at 500 gallons, besides the use in motorboats, motorcycles, farm engines, chemical manufacture, cleaning establishments, etc. Therefore the fuel problem is the big one for automobiles. Alcohol he puts down as a commercial possibility when gasoline reaches 35 cents a gallon, but not before. This considers alcohol at before-the-war prices. Present values are away up in the air. Benzol and the light oils from coal tar make a grand motor fuel, but the doctor does not see over 100,000,000 gallons a year to be produced under present methods of using coal, and chemical industry is likely to take so large a part of this as to render the remainder unimportant as a factor in the situation.

Casing Head Oil.

Then there is casing head gasoline, which is that obtained from natural gas. This is so volatile that it is blended with naphthas that are not otherwise available, but the product is limited. The annual output of casing head gasoline for the past seven years has been:

Year.	Gallons.	Year.	Gallons.
1911	7,425,839	1915	65,364,000
1912	12,081,000	1916	125,000,000
1913	24,060,000	1917	200,000,000
1914	42,652,000		

The use of kerosene demands a carburetor that has not been invented yet, or, if all possible kinds have already been invented, then the right combination of them has not been made. Dr. Rittman stated that the number of possible explosive mixtures of kerosene and air is not so great as the number of explosive mixtures of gasoline and air and he expresses doubt whether a carburetor can be

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