



Carbon Monoxide May Now Be Removed From Auto Exhaust

Engineering

Dr. J. C. W. Frazer, chairman of department of chemistry, Johns Hopkins University, who has devised a method for eliminating the deadly menace of carbon monoxide in exhaust gases.

ACHEMICAL device to replace mufflers on automobiles that will eliminate the deadly carbon monoxide contained in the exhaust gases has been developed by Dr. J. C. W. Frazer, professor and chairman of the department of chemistry at Johns Hopkins University.

Since carbon monoxide, odorless, colorless, tasteless and poisonous swiftly in small concentrations, claims many lives each month through the carelessness of automobilists failing to open garage doors before warming up their engines, this latest chemical achievement is hailed as an important step in making the machine age less dangerous.

Dr. Frazer declared today that an automobile equipped with the new oxidizing device could be run in a closed garage without danger from carbon monoxide poisoning.

Because of patent claims, Dr. Frazer has not yet revealed the exact nature of the material that transforms the deadly carbon monoxide to carbon dioxide, the same gas that human beings breathe out of their lungs. But it is known that it is a catalyst, a substance that causes a chemical reaction without itself participating. It is similar in action to the catalyst, consisting of manganese dioxide and copper oxide, that was an outgrowth of chemical warfare work by Dr. Frazer and a laboratory staff during the World War. Fire departments and mine rescue squads use gas masks

today that rely on this wartime catalyst for purifying the air of carbon monoxide.

For a year and a half, Dr. Frazer worked to develop the new catalyst that will add oxygen to carbon monoxide even when in direct contact with hot, moist gases. Laboratory tests and thousands of miles of road testing convince him that a canister of the catalyst substituted for a regulation muffler will not only deaden the noise of the engine explosions but remove all the unburned fuel gases in the exhaust, the ill-smelling ones as well as the deadly carbon monoxide. Tests have also been conducted in confined spaces simulating closed garages. Dr. Frazer says the catalyst has been found effective in all these tests, and that there is no doubt that a possible means has been found to eliminate a cause of fatal accidents as well as a source of discomfort and impaired vitality of those who are compelled to breathe atmosphere polluted by gas engine exhausts.

The catalyst produced has worked effectively under all possible operating conditions when properly controlled, it is stated. The adaptation of the discovery to practical automobile use requires only the perfection of a simple, efficient mechanical device to carry the catalyst in such manner that the exhaust gases may be exposed to its action. A satisfactory attachment will require no attention on the part of the operator of the vehicle on which

it is installed. That, Dr. Frazer says, is a problem which from present indications can be solved. It is now in the hands of experts who have already produced a reliable device but one which must be further simplified.

As about a third of the fuel is unconsumed in the engine cylinders, the small canister of catalyst has the task of burning half as much fuel as the engine does. Heat from this reaction may be utilized in some way in future installations, such as for car heating or pre-heating the fuel.

At present only one experimental unit of the catalyst muffler is in operation, mounted for convenience on the running board of Dr. Frazer's experimental car. A company for the commercial exploitation of the invention is in the process of organization.

Dr. Frazer, the discoverer of the catalyst, has spent twenty-five years at Johns Hopkins University. He received his degree there in 1901, and remained as research associate until 1907. He then went with the U. S. Government where he was associated with the Bureau of Mines until 1911. He then returned to Johns Hopkins University where he has been ever since. He has been Chairman of the Department of Chemistry of the University for many years and is the B. N. Baker Professor of Chemistry.

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The three highest mountains in the world are in India: Mount Everest, Kangchajunga and Kabru.

Aluminum is being tested as a substitute for tin in the canning of foods in Norway.

The average temperature of streams in northern states has been noticeably raised by the cutting of timber that shaded the streams.