

UNITED STATES PATENT OFFICE.

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GASEOUS FUEL.

1,420,622.

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No Drawing.

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To all whom it may concern:

Be it known that I, EDWARD A. CHARBONNEAUX, a citizen of France, residing at the city and county of San Francisco and State of California, have invented new and useful Improvements in Gaseous Fuel, of which the following is a specification.

This invention relates to a hydrocarbon fuel, and particularly pertains to a liquid fuel for use in internal combustion engines and a method of producing the same.

It is the principal object of the present invention to provide a liquid compound which may be satisfactorily used as a substitute for commercial gasoline in providing a fuel for explosive engines, said compound possessing all of the desirable qualities of gasoline and like mineral hydrocarbon oils, and, at the same time, being of such a character as to be independent of mineral oil shortage.

The present invention contemplates the use of a liquid fuel comprising proper proportions of a light grade hydrocarbon oil of vegetable derivation, a solvent therefor, which, at the same time, supplies the desired oxygen ingredient to the mixture and a volatile diluting agent.

In producing a substitute for gasoline and other like hydrocarbon fuels it is desirable to provide a gaseous fuel which does not have an excessive water content, is non-corrosive, and practically smokeless and odorless, while possessing a high flash point and producing at least an equivalent of power. With these requirements in mind, a liquid fuel has been produced and is embodied in the present invention comprising a light grade hydrocarbon oil, such as oil of eucalyptus, oil of cedar and turpentine, a solvent for said hydrocarbon oil, such as ether, acetone or amyl-acetate, and a suitable explosive diluting agent, as alcohol. In carrying out this invention, it is to be borne in mind that refined chemicals are not necessary and that, in each instance, raw or low grade ingredients may be used. These ingredients may be mixed in any suitable proportion, although experiment has proven that the following proportions are approximately correct:

- 1 part light grade hydrocarbon oil
- 2 parts solvent
- 3 parts diluting agent.

In mixing the ingredients, the hydrocarbon oil and the solvent, such as ether, are first mixed together. The ether will act to "cut" the oil and disintegrate the molecules

thereof, so that they may thereafter unite with the molecules of the solvent and the diluting agent to form a clear, non-viscous liquid. In this connection, it might be noted that if the diluting agent and the solvent were simultaneously mixed with the oil, or the solvent administered last, a cloudy, stratified liquid would result. When the ingredients have been properly mixed a desirable combustible liquid will be produced.

It is well known that the use of heavy grade vegetable hydrocarbon oils as gaseous fuel will result in an objectionable carbon deposit within the engine cylinders. It is also known that ether is objectionable for use alone, due to its prohibitive cost and its high volatile nature. These objections are, however, obviated by the combination of the ingredients in the fuel here described, and, in addition, new results are obtained, as, for example, the excessive carbon content of the vegetable oil combines with the oxygen content of the ether to insure that substantially all of the carbon molecules of the gaseous fuel will be burnt at the time of the explosion. It is also possible to produce a hydrocarbon fuel having a desirable high flash point, due to the alcohol content of the mixture.

It will thus be seen that by the proper mixing and proportion of ingredients forming the elements of the present invention a very desirable volatile fuel may be produced, and, due to the fact that this fuel may be made from low grade stock, competition may be had with commercial gasoline.

Having thus described my invention, what I claim and desire to secure by Letters Patent is:

1. A liquid fuel consisting of one part of a hydrocarbon vegetable oil and three parts of alcohol, and two parts of an oxygen supplying hydrocarbon compound which also acts to blend the ingredients.
2. A liquid fuel composed of turpentine, ether and alcohol.
3. A liquid fuel consisting of one part of a hydrocarbon vegetable oil, two parts of ether and three parts of alcohol.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

EDWARD A. CHARBONNEAUX.

Witnesses:

W. W. HEALEY,
M. E. EWING.