

# UNITED STATES PATENT OFFICE.

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## OPERATING EXPLOSION MOTORS.

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Recently, successful attempts have been made to convert carbon monoxid and dioxid into valuable liquid organic compounds such as methanol and other oxygenated organic compounds, which latter for a great part consist of isobutyl alcohol and other alcohols, or into liquid hydrocarbons or mixtures of both, the process of producing such compounds consisting in reducing the oxids of carbon by means of hydrogen or hydrocarbons at a high pressure and temperature and under the influence of suitable catalysts. The production of methanol is described for instance in the French Patent 571,356.

We have now discovered that all the synthetic products aforementioned are excellent motor fuels and, as they can be produced from any kind of coal, they are apt as substitutes for gasoline, where and when a shortage of the latter should exist and they may also be used to dilute the usual motor fuels by mixing the latter with the aforementioned synthetic products or either of them.

The synthetic fuels mentioned which are obtained from carbon oxids by catalytic reduction under increased pressure are characterized by their regularly containing traces of iron carbonyl, for example between 50 and 200 milligrammes per gallon which traces however do not influence the use of the products either advantageously or in a bad manner.

The said synthetic products may be used either directly or beforehand subjected to any suitable treatment, for example purification or fractional distillation, or other treatment, such as for example catalytic hydrogenation. Different products, for example synthetic methanol or higher alcohols or hydrocarbons may also be mixed with each other.

What we claim is:—

1. A motor fuel comprising a liquid product obtained by the hydrogenation of a carbon oxid under high pressure by catalytic reduction and containing traces of an iron carbonyl.

2. A motor fuel comprising a liquid product obtained by the hydrogenation of a carbon oxid under high pressure by catalytic reduction and containing traces of a metal carbonyl.

3. A motor fuel comprising a liquid product obtained by the hydrogenation of a carbon oxid under high pressure, which product is characterized by containing a trace of metal carbonyl.

4. As a composition of matter a motor fuel comprising a usual motor fuel mixed with a liquid product obtained by the hydrogenation of a carbon oxid under high pressure containing a metal carbonyl.

5. A motor fuel including an aliphatic alcohol obtained by the hydrogenation of a carbon oxid under high pressure by catalytic reduction.

6. As a motor fuel a liquid product including the mixtures of aliphatic alcohols obtained by the hydrogenation of a carbon oxid under high pressure by catalytic reduction.

7. As a motor fuel a liquid product including the mixtures of aliphatic alcohols obtained by the hydrogenation of a carbon oxid under high pressure by catalytic reduction, mixed with a usual motor fuel.

In testimony whereof we hereunto affix our signatures.

WILLIAM GAÜS.  
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