Patented Apr. 8, 1924. 1,489,763

UNITED STATES PATENT OFFICE.

HARLON A. JACOBS, OF MINNEAPOLIS, MINNESOTA.

SYNTHETIC LIQUID FUEL.

No Drawing. Application filed September 30, 1922. Serial No. 591,648.

To all whom it may concern:

Be it known that I, HARLON A. JACOBS, a citizen of the United States, residing at Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain new and useful Improvements in Synthetic Liquid Fuels; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention provides a marked improvement in synthetic liquid fuels of the hydro-carbon type, adapted to be used as a substitute for the good or high grade hydro-carbon fluids, such as gasoline, and particularly adapted for use as the motive fluid in internal combustion engines. This improved fluid fuel produces a very powerful explosion and has various other characteristics hereinafter noted, which make it a more economical and better fuel for internal combustion engines. However, this improved fuel, because of the heat units therein contained, is more desirable than gasoline, even when burned in gas burners such as those employed in gasoline stoves and the like. It has hitherto been proposed to mix gasoline with other and more volatile liquids and sometimes also with a lubricating oil, but in such mixtures, the lubricating oil has decreased the volatility of the mixture and the more volatile oils have destroyed or damaged the lubricating qualities thereof. In my improved synthetic liquid fuel, I have employed both of the above noted elements combined with others, which serve to maintain the intended good qualities of all and without bad results from the use of either. Moreover, all of the ingredients add to the heat and force producing character of the composition.

The ingredients employed are gasoline, benzol, naphthol, kerosene, lubricating oil and carbon bisulphide. The proportions of these ingredients may be varied, but I have obtained a highly satisfactory and wonderfully efficient liquid fuel by use of the said ingredients in the following proportions, to wit:

Gasoline	30	gallons
Benzol	½	"
Naphthol	½	"
Kerosene	1	"
Lubricating oil	½	"
Carbon bisulphide	⅛	"

The gasoline, which is the main ingredient, acts as the main carrier and supplies heat, which, augmented in a system by the other materials, produces a very intense combustion and a very powerful explosion.

Benzol, as well as being very explosive, acts as a solvent to dissolve carbon and to carry the unconsumed carbon out through the exhaust.

The cylinders of internal combustion engines are almost universally made of cast iron and cast iron has a great affinity for oxygen, which makes the cylinders very susceptible to oxidation, especially when moisture develops within the cylinders caused by the condensation of air when at low temperatures. To prevent rust I use naphthol, which has a strong metal preserving action. Also, naphthol enters into chemical combinations with the other ingredients and increases the heat producing and explosive qualities of the mixture.

Kerosene not only is rich in heat units, but it acts to counteract the action of the naphthol and carbon bisulphide upon the lubricant.

Carbon bisulphide, in addition to being a carbon solvent, has a low flashing temperature and, hence, makes the mixture more easily ignited and, moreover, it mixes readily in almost any proportions with benzol and other volatile oils or hydro-carbons.

A high test lubricating oil of medium viscosity, such as the lubricating oil sold by the Standard Oil Company under the trade name of "Polarine," is preferably employed, as, by so doing, the oil consumption and car-

bon deposits are eliminated or reduced to a minimum. When a high test lubricant is used, the ignition of the volatile oils does not injure the lubricant to any considerable extent and, consequently, the lubricant performs its lubricating function in the cylinder.

What I claim is:

1. A synthetic liquid fuel consisting of benzol, naphthol, kerosene, lubricating oil, and carbon bisulphide, mixed together and adapted to be commingled with gasoline, the said ingredients being in approximately the follow proportions:

Benzol	1 quarter to 1 gallon,
Naphthol	1 to 3 pounds,
Kerosene	½ to 1½ gallons,
Lubricating oil	⅛ to ⅜ gallon,
Carbon bisulphide	1/16 to ¼ gallon.

2. A synthetic liquid fuel containing gasoline, benzol, naphthol, kerosene, a lubricating oil, and carbon bisulphide, in approximately the following proportions:

Gasoline	15 to 60 gallons,
Benzol	1 quarter to 1 gallon,
Naphthol	1 to 3 pounds,
Kerosene	½ to 1½ gallons,
Lubricating oil	⅛ to ⅜ gallon,
Carbon bisulphide	1/16 to ¼ gallon.

3. A synthetic liquid fuel containing gasoline, benzol, naphthol, kerosene, a lubricating oil and carbon bisulphide, in approximately the following proportions:

Gasoline	30 gallons
Benzol	½ "
Naphthol	½ "
Kerosene	1 "
Lubricating oil	¼ "
Carbon bisulphide	⅛ "

In testimony whereof I affix my signature.

HARLON A. JACOBS.