UNITED STATES PATENT OFFICE.

WALTER T. SCHREIBER, OF BALTIMORE, MARYLAND, ASSIGNOR TO U. S. INDUSTRIAL ALCOHOL CO., A CORPORATION OF WEST VIRGINIA.

MOTOR-FUEL FOR AEROPLANES.

1,398,947. Specification of Letters Patent. Patented Nov. 29, 1921.

No Drawing. Application filed June 25, 1918. Serial No. 241,795.

To all whom it may concern:

Be it known that I, WALTER T. SCHREIBER, of Baltimore, in the State of Maryland, have invented a certain new and useful Improvement in Motor-Fuel for Aeroplanes; and do hereby declare that the following is a full, clear, and exact description thereof.

My invention relates particularly to fuels designed to be used in aeroplane motors, but is applicable for use in internal combustion motors of all kinds used in flying or for other purposes.

The object of my invention is to provide a fuel which is especially adapted for use in aeroplanes, although it is also applicable for use in internal combustion engines in general.

It is necessary that fuels which are to be used in aeroplane motors shall have great dependability, inasmuch as any uncertainty in the operation of the aeroplane, by reason of variability in the character of the fuel or failure of the fuel to perform its intended work, may bring about disastrous consequences.

For this reason, it is desirable to avoid using in such fuels large percentages of petroleum products, inasmuch as commercial petroleum products do not ordinarily have a constant composition, and are usually comprised of varying quantities of a number of different constituents.

It is, therefore, the object of my invention to provide an aeroplane fuel avoiding these disadvantages and taking into account the circumstances above referred to.

Still a further object of my invention is to provide fuels of the above character by the use of benzol, and the constituents of which are chosen in such a manner as to obviate any tendency of the benzol to crystallize out at the range of atmospheric temperatures to which aeroplane motors are subjected at the varying altitudes in which aeroplanes operate.

Further objects of my invention will appear from the detailed description thereof contained hereinafter.

While my invention is capable of being carried out in different ways, for the purpose of illustration I shall describe only certain ways of carrying out the same herein.

For example, a fuel made in accordance with my invention may be comprised of:

40 parts by volume of ethyl alcohol,
30 parts by volume of benzol,
30 parts by volume of ethyl ether.

The percentages of the above constituents may vary to some extent, if desired. For example, the alcohol may vary from 35 to 50%, the benzol may vary from 25 to 35%, and the ether may vary from 20 to 40%, although I have obtained the best results by the specific composition above given.

The ethyl alcohol in the above composition may be the ordinary alcohol having a strength of 95%, but I may, if desired, use an alcohol having a greater strength, or even absolute alcohol.

By the use of the ether I avoid the necessity of using alcohol having a greater strength than 95%, as the ether itself will prevent the benzol from crystallizing out at very low temperatures.

Instead of the ethyl alcohol, however, I may use methyl alcohol or butyl alcohol, and instead of the benzol I may use toluol, and instead of the ethyl ether I may use butyl ether.

Aeroplane fuels made in the manner described above can be used with greatest reliability in the operation of aeroplanes, notwithstanding the varied atmospheric conditions to which aeroplane motors are subjected.

Nevertheless, all of these fuels are of such a nature that they may be readily used in internal combustion engines generally, whether used for operating aeroplanes or not.

While I have described my invention above in detail, I wish it to be understood that many changes may be made therein without departing from the spirit thereof.

I claim:

A fuel comprising from 35% to 50% of ethyl alcohol, from 25% to 35% of benzol, and from 20% to 40% of ethyl ether.

In testimony that I claim the foregoing I have hereunto set my hand.

WALTER T. SCHREIBER.

Witnesses:
JOHN P. GISCHEL,
ARTHUR WRIGHT.