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UNITED STATES PATENT OFFICE.

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FUEL FOR MOTORS.

No Drawing. Original application filed June 25, 1918, Serial No. 241,755. Divided and this application filed May 28, 1921, Serial No. 473,326. Renewed September 13, 1924.

To all whom it may concern:

Be it known that I, ARTHUR A. BACKHAUS, a citizen of the United States, residing at Baltimore, in the State of Maryland, have invented a certain new and useful Improvement in Fuel for Motors, of which the following is a specification.

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 variabilty 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.

This is a divisional application of my copending application upon motor fuel for aeroplanes, Serial Number 241,755, filed June 25, 1918.

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:

50 parts by volume of methyl alcohol,

50 parts by volume of naphtha or gasolene having a specific gravity of from 52° Bé. to 66° Bé.

The percentages of the above constituents may vary to some extent, if desired. For example, the alcohol may vary from 40 to 70%, although I have obtained the best results by the specific composition above given.

The invention resides broadly in the use of these substances as essential constituents, although other fuels might be added in minor quantities as long as they do not alter the essential character of the composition.

The alcohol in the above composition is preferably a high-strength alcohol having a strength of at least 98%, but I may use an alcohol having even a higher strength, as, for example, an absolute alcohol.

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

Furthermore, the percentage of light petroleum distillate, that is gasolene or naphtha, therein is sufficiently low to prevent the variations in the composition thereof from having any appreciable effect upon the operation of internal combustion engines operated thereby.

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:

1. A fuel comprising a petroleum distillate and an absolute methyl alcohol.

2. A fuel comprising naphtha and an absolute methyl alcohol.

3. A fuel consisting of about 50% naphtha and about 50% methyl alcohol having a strength over 98%.

4. A fuel consisting of 50% of a petroleum distillate and 50% of an absolute methyl alcohol.

5. A fuel consisting of 50% of naphtha and 50% of an absolute methyl alcohol.

6. A fuel comprising a petroleum distillate and methyl alcohol having a strength above 98%.

7. A fuel comprising from 40% to 70% of methyl alcohol having a strength above 98%, and petroleum naphtha.

8. A fuel comprising from 40 to 70% of methyl alcohol, and petroleum naphtha having a specific gravity lying between 52 and 66° Bé.

9. A fuel comprising from 40 to 70% methyl alcohol having a strength over 98%, and petroleum naphtha having a specific gravity lying between 52 and 66° Bé.

10. A fuel comprising methyl alcohol having a strength above 98%, and petroleum naphtha having a specific gravity lying between 52° and 66° Bé.

In testimony that I claim the foregoing, I have hereunto set my hand this 12th day of May, 1921.

ARTHUR A. BACKHAUS.