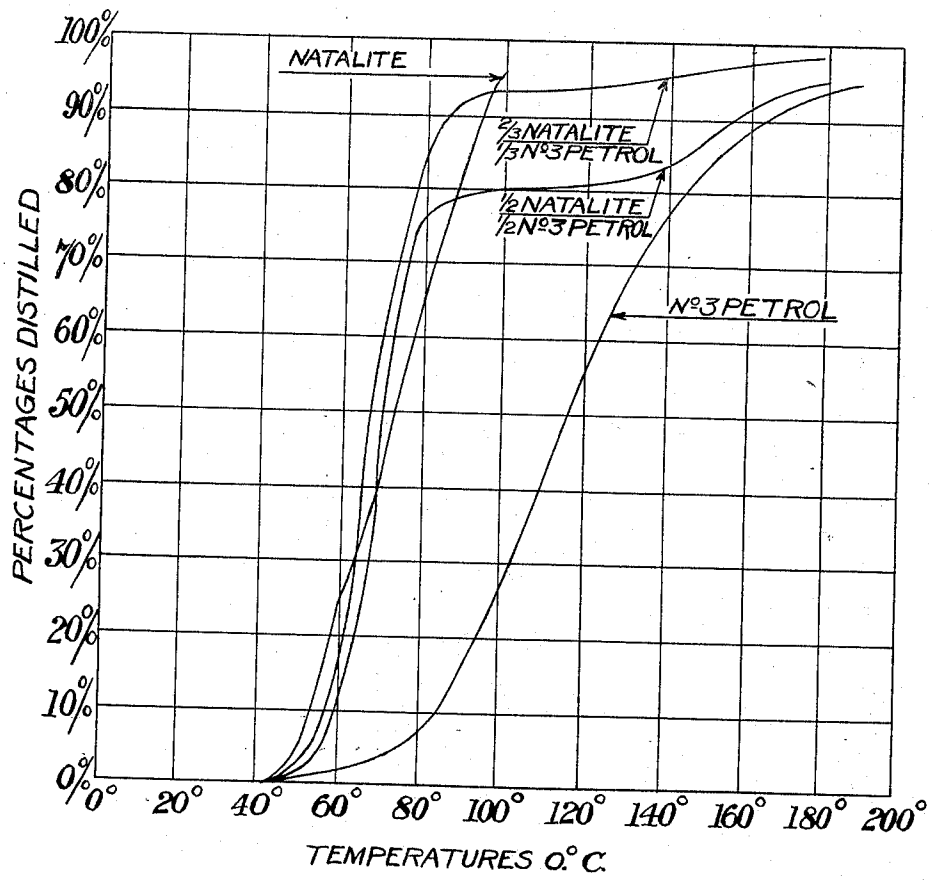
Feb. 9, 1926. 1,572,750

B. H. MORGAN

FUEL FOR INTERNAL COMBUSTION ENGINES

Filed April 4, 1925

DISTILLATION CURVE



Inventor.
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By Thos Ewrie Atty

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UNITED STATES PATENT OFFICE.

BENJAMIN HOWELL MORGAN, OF LONDON, ENGLAND.

FUEL FOR INTERNAL-COMBUSTION ENGINES.

Application filed April 4, 1925. Serial No. 20,861.

To all whom it may concern:

Be it known that I, BENJAMIN HOWELL MORGAN, a British subject, residing at 7 Princes Street, Westminster, London, SW. 1., England, have invented certain new and useful Improvements in Fuel for Internal-Combustion Engines, of which the following is a specification.

This invention relates to a new fuel for internal combustion engines. Mixtures of alcohol, ether and petrol have already been used as a fuel for internal combustion engines and have given results which compare favourably with those obtained from petrol alone. It has already also been proposed by me to add to alcohol and other fuel mixtures, a small proportion of castor oil varying from 0.2 per cent to 5 per cent by weight: the castor oil serving to obviate or diminish the difficulties which arise from the formation of acid by the combustion of the alcohol and serving as a protective coating for tanks, pipes and carburetors; and also assisting in the lubrication of the engine.

I have made the new discovery as a result of experimental investigation that if petrol be added in certain quantities to certain mixtures of alcohol and ether, the rate of distillation of the said mixture between temperatures (approximately) of 60° C. and 90° C. is higher than the rate for the alcohol and ether mixture alone, and that a very advantageous fuel for internal combustion engines is obtained.

The accompanying diagram shows four distillation curves, one for the motor spirit sold under the registered trade mark "Natalite", one for No. 3 petrol and two for mixtures of "Natalite" and No. 3 petrol. This diagram indicates generally the nature of the results I have obtained. The word "Natalite" used in the said diagram refers to a mixture of 60% alcohol and 40% ether by weight to which denaturants as prescribed by the excise authorities have been added. It is clear from the said diagram that an even smaller proportion of "Natalite" to petrol than one-half may be used and yet a distillation curve will be obtained which shows that a mixture of "Natalite" and petrol will have advantages from the point of view of distillation at low temperatures as a fuel over "Natalite" alone and a still more pronounced advantage over petrol alone.

My invention relates to an improved fuel for internal combustion engines and consists of a mixture of alcohol from sixty parts to thirty parts by weight and ether in from thirty parts to sixty parts by weight to which is added about a like quantity of petrol, the mixture thus being about half alcohol with ether and about half petrol. The alcohol need not be absolute alcohol. In all cases I prefer to add a small amount say up to five per cent of castor oil to the alcohol-ether-petrol mixture.

What I claim is:

1. A fuel for internal combustion engines consisting of as to about one-half a mixture of alcohol (60 parts to 30 parts) with ether (30 parts to 60 parts) and as to about the other half, petrol as defined.

2. A new fuel for internal combustion engines and of the combined alcohol, ether and petrol of the character defined, made in substantially the proportions herein stated plus a relatively small quantity say to 5 per cent of castor oil.

3. A fuel for internal combustion engines consisting of alcohol with ether in the relative proportions of 60 to 30 and 30 to 60 and a like quantity of petrol of the character defined plus up to five per cent of the aggregate of castor oil.

In testimony whereof I affix my signature.

BENJAMIN HOWELL MORGAN.