APPLICATION VOID.

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PATENT SPECIFICATION

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Specification not accepted

3367

COMPLETE SPECIFICATION

Process for the Preparation of Methyl Alcohol from Marble and the Production of Fuel therefrom

We, A.P.I.S. Soc. An. Prodotti Italiani Sintetici, a body corporate organised under the laws of Italy, of 4, Via Vincenzo, Monti, Milan, Italy, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

The present invention which refers to a novel process for the production of methyl alcohol and other organic compounds derived and derivable therefrom is characterised essentially in that the basic substance is carbonic acid obtained by the reaction of acids (preferably sulphuric acid) on marble powder. The carbonic acid thus obtained is reduced successively into oxide of carbon which is combined with a double volume of hydrogen and compressed to 200 atm. which mixture when treated in a catalysing apparatus produces methyl alcohol.

The process is carried out most favourably in the manner described below, using apparatus which is already known and in common use in the chemical industry.

There is introduced into a receptacle of the desired capacity, provided with an agitator, a definite quantity of marble in powder form on which there is poured gradually a 10% sulphuric acid solution. The sulphuric acid in contact with the marble produces carbonic acid gas which by means of piping is directed into a purifying column. The possible residues are discharged at the bottom of the receptacle.

The purifying column is filled with layers of wood charcoal. The carbonic acid gas is purified, passing through the layers of wood charcoal from the bottom towards the top, from any traces of water which may be carried along by it.

The purified carbonic acid continues its course towards a reducing apparatus, heated by means of steam. In this reducer there is effected in the presence of wood charcoal and scraps of iron at a definite temperature, the reduction of the carbonic acid into carbon monoxide, which passes from the reducer to a gasometer.

From this gasometer, containing carbon monoxide and a second gasometer containing hydrogen, there are taken by means of a suitable compressor, two volumes of carbon monoxide and four volumes of hydrogen.

The mixture of these aspirated gases is compressed to 200 atm. and directed to a catalyser apparatus constituted for example by an autoclave containing scraps of iron, caustic potash and oxide of zinc which have been previously reduced and heated to 410° C.

The compressed mixture on coming into contact with the catalyser produces methyl alcohol which on leaving the apparatus is passed into a heat exchanger which by reducing the pressure of the gases permits the methanol or methyl alcohol to be condensed and at the same time the steam to be used either for the reducing apparatus or for the rectification. The crude methanol thus produced is then passed into a rectification and distillation apparatus. The distilled methanol is then condensed and collected in barrels ready to be used in commerce.

From the methyl alcohol thus obtained, the preparation of other organically derived compounds can be proceeded with, by means of the conversion known in the chemical industry.

One of the principal applications of the methanol is the preparation of an excellent synthetic fuel.

The composition of this fuel is as follows:

Methyl alcohol - - -	94.530%
Synthetic camphor - -	0.010%
Acetone - - - - -	0.165%

[*Price* 1/-]

Ethyl ether - - - -	1.000%
Terebenthine essence -	0.010%
Benzene - - - - - -	4.285%
Mirbene essence in drops -	—

To obtain the above-mentioned fuel the following procedure must be adopted:

There is introduced into a metal plate receptacle first the percentage shown of synthetic camphor and then the percentage of methanol or methyl alcohol. Using a wooden spatular the mixture is stirred until there is obtained a perfectly limpid and clear solution of the two compounds; there is then added the percentage of acetone, of ether, of benzene and of trementhene, the mixture being stirred until there is again obtained perfect limpidity of the fuel thus produced.

This fuel has given excellent results in tests made, in spite of the complete absence of natural spirit.

Having now particularly described and ascertained the nature of our said invention and in what manner the same is to be performed we declare that what we claim is:—

1. Process for the preparation of methyl alcohol and other organic compounds derived or derivable therefrom, characterised in that carbonic acid obtained from the reaction of sulphuric acid on marble in powder form is reduced to carbon monoxide in the presence of wood charcoal and iron scrap, the hydrogenation of the carbon monoxide being then carried out under high pressure and high temperature, methyl alcohol being obtained therefrom.

2. Process according to claim 1, characterised by the fact that the marble powder is treated in an agitating apparatus a 10% solution of sulphuric acid being poured gradually and in a continuous manner on this powder.

3. Application of the methyl alcohol obtained according to claims 1 and 2 as a fuel, characterised by this being mixed in the following manner:

Methyl alcohol obtained from marble - - -	94.530%
Synthetic camphor - -	0.010%
Acetone - - - - -	0.165%
Ethyl ether - - -	1.000%
Trementhine essence - -	0.010%
Benzene - - - - -	4.285%
Mirbane essence in drops	—

4. Process for the preparation of methyl alcohol from marble and the production of fuel therefrom substantially as described.

Dated this 23rd day of December, 1936.

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40, Chancery Lane, London, W.C.2,
Agents.

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