

UNITED STATES PATENT OFFICE.

WILLIAM N. BLAKEMAN, JR., OF MOUNT VERNON, NEW YORK.

MINERAL OIL.

1,385,036.

Specification of Letters Patent. Patented July 19, 1921.

No Drawing.

Application filed February 9, 1921. Serial No. 443,672.

To all whom it may concern:

Be it known that I, WILLIAM N. BLAKEMAN, Jr., a citizen of the United States, and resident of the city of Mount Vernon, in the county of Westchester and State of New York, have invented a new and useful Improvement in Mineral Oils, which invention is fully set forth in the following specification.

The invention relates to the mineral hydrocarbon oils obtained chiefly from the Texas, Gulf, and California oil fields. The oils in this class, or group, of which the Texas oils are regarded as the type, are known commercially as asphaltic base oils and are recognized chemically as being largely composed of unsaturated hydrocarbons. In applications Nos. 174,255 and 174,256, filed June 12, 1917, I have described and claimed the utilization of these oils in the formation of paint-vehicles and paint compounds, and the object of the present invention is to treat these oils in such a manner that, when used in various combinations, they will exhibit increased activity and produce more satisfactory results.

This I accomplish by subjecting the oil to an oxidizing process, as I have discovered that mineral oils of Texas type, are susceptible to oxidation at moderate temperatures.

Either the crude oil, or any of its fractions, distillates, or residuals may be used in carrying out my invention, and hence by the term "Texas oil," "hydrocarbon" or "mineral oil," as used in this specification and in the claims, I intend to include the crude oil and also the fractions, distillates, and residuals. The specific oil which I have employed is that from the Sour Lake district, Texas, preferably the available distillates now on the market, varying from .92 to .94 sp. gr. The specific gravity of the crude oil varies from .90 to .92, and that of the residuals from .990 to 1.000.

In demonstration of my invention, I select a distillate of a light straw color and of .9340 sp. gr., and subject it to the action of oxygen, with the aid of heat, using the higher oxides of manganese, for a run of 2 or 3 hours, a gradual deepening of color indicating the progressive oxidation. The presence of from 3 to 5 per cent. of an oxygen-carrier, such as turpentine spirits, will greatly accentuate the reaction.

The resulting oxidized product will be very much heavier and thicker than the untreated oil and will be found to be an affinitive component when combined with other oils, and, as such, will unite with all the drying, semi-drying, and non-drying animal and vegetable fatty oils, in all plastic compositions. By combining these oxidized hydrocarbons, in varying proportions, with other oils, either drying or non-drying, a drying oil may be formed which will constitute a new paint-vehicle, particularly adapted for use with anhydrous pigments which will exhibit improved spreading and drying properties and diffusion of opacity when ground therein, as is fully described in my applications above referred to.

The oils with which the oxidized hydrocarbon may be combined include tung, linseed, cottonseed, corn, sunflower seed, soy bean, cocoanut, palm kernel, and the various marine animal oils.

As described in my application No. 443,671 filed herewith, remarkable results are obtained when tung oil is employed in conjunction with the Texas oils, there being apparently some affinity between them which results in a greatly increased activity on the part of the Texas oil when combined with fatty oils, and this activity is still further increased when the Texas oil is oxidized as herein described. The tung oil is preferably mixed with the oxidized Texas oil before the latter is combined with other oils, and the percentage to be used will vary in practice. As little as 5% will show an indicated action, but 15% will be found to give satisfactory results in most cases. An oxidized Texas oil, carrying 15% of tung oil, properly blended and spread on a plain surface, in a thin film, will firm to the touch in a few hours under favorable atmospheric conditions.

The proportion of the oxidized Texas oil to be mixed with fatty oils will depend upon the character of the fatty oil and the purpose for which the mixture is to be used. From 5 to 25 per cent. may be used in the formation of paint-vehicles, as described in my application No. 174,255. It may also be used as a diluent in liquid drier compositions.

The Texas oil, in addition to being oxidized, may be hydrogenated by being subjected to the action of hydrogen, in the

presence of catalysts, as described in my application No. 443,673 filed herewith. Such hydrogenation may be effected either before or after oxidation, and the activity of the oil will be found to be greatly increased by the double treatment.

Having thus fully described my invention, I claim:

1. A mixture of a mineral oil, of the Texas oil type, oxidized, and a fatty oil.

2. A mixture of a mineral oil, of the Texas oil type, oxidized, and tung oil.

3. A mixture of a mineral oil, of the Texas oil type, oxidized; tung oil; and another fatty oil.

WM. N. BLAKEMAN, JR.

Witnesses:

FRANCIS P. REILLY,
PASQUALE JOSEPH STIRO.