Patented July 11, 1933 1,917,875

# UNITED STATES PATENT OFFICE

GARLAND H. B. DAVIS, OF BATON ROUGE, LOUISIANA, ASSIGNOR TO STANDARD OIL DEVELOPMENT COMPANY, A CORPORATION OF DELAWARE

## LUBRICATING OIL AND METHOD OF MAKING THE SAME

No Drawing. Application filed May 17, 1929. Serial No. 364,004.

The present invention relates to improvements in hydrocarbon oils, and more specifically comprises a new product and its method of manufacture. My invention will be fully understood from the following description.

Heavy oils from wax-bearing crudes contain both wax and petrolatum, which cause the oil to set or solidify at a relatively high temperature. In the language of petroleum technology, these oils are said to have high pour points. It has been previously recognized that an addition of an asphalt or tarry materials had a tendency to reduce the pour point of lubricating oils, but the color of the oil was ruined at the same time and the Conradson carbon value was unduly raised. I have discovered that the addition of relatively small quantities of certain other substances will greatly reduce the pour point without detriment to the color of the oil or its other properties.

I have found that the addition of small quantities of certain oil-soluble, high molecular weight substances of a colloidal nature derived from petroleum are particularly advantageous in reducing pour points of lubricating oils since the color of the oil is not seriously damaged. The quantity varies somewhat with the particular agent added, but is only a few per cent; generally about 1% is sufficient for most purposes.

The material which I prefer to use is waxtailings or oxidized waxtailings. The former is a product obtained as the final distillate during the coking distillation, and the latter is formed by exposing the waxtailings to air at an elevated temperature to effect its partial oxidation.

These substances are often difficult to dissolve in the oil, and may be either liquefied by heat or first dissolved in a better solvent which is miscible in the heavy oil, such as naphtha or benzol, and the solution then added to the oil. The solvent may then be evaporated, but in many cases it is so small in amount as to have no deleterious effect. Whether the substance is actually in true solution in the oil is unknown to me, and it may be that it is colloidally dispersed, but in any event it produces a marked lowering of the pour point without other disadvantages, at a relatively low cost, and appears to be in a stable form.

As an example of the use of my process, an oil derived from a wax-bearing crude has a color of 1 Robinson and a pour of 45° F. To this oil 1% of oxidized waxtailings is added and dispersed homogeneously through it by agitation and heating. The oil is then allowed to cool and is found to have a color of ¾ Robinson and a pour of 10° F.

My invention is not to be limited by any theory of the mechanism of the process, nor by any illustrative example given merely by way of illustration. My invention is to be limited only by the attached claims in which I wish to claim all novelty inherent in the invention.

I claim:

1. A composition of matter comprising a waxy hydrocarbon oil to which has been added a small amount of wax tailings, sufficient to produce a substantial reduction of the pour point of the oil without substantial decrease in color.

2. A composition of matter comprising a waxy hydrocarbon oil to which has been added about 1% of partially oxidized wax tailings.

GARLAND H. B. DAVIS.