UNITED STATES PATENT OFFICE.

HALVOR HALVORSON, OF NASHUA, NEW HAMPSHIRE, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, TO THE HALVORSEN PROCESS COMPANY, OF NEW YORK, N. Y.

MODE OF PREPARING LUBRICATING-OILS OBTAINED FROM PETROLEUM.

SPECIFICATION forming part of Letters Patent No. 305,181, dated September 16, 1884.

Application filed November 10, 1883. (No specimens.)

To all whom it may concern:

Be it known that I, HALVOR HALVORSON, a citizen of the United States, and a resident of Nashua, in the county of Hillsborough and State of New Hampshire, have invented an Improved Mode of Preparing Lubricating-Oils Obtained from Petroleum, of which the following is a specification.

In carrying out my invention I take crude petroleum and separate it into two distinct and independent oils, of which, as I believe, it is comprised. I designate them as "primary" and "secondary" oils. Any means may be employed to effect this primary separation; but in order that my invention may be the better understood I will briefly describe a method of effecting the division of the crude oil, which method forms the subject of another application for patent made by me, filed November 10, 1883, and numbered 111,436. I take any quantity of crude petroleum and mix it with about an equal quantity, by measure, of commercial benzine. The benzine is volatilized at a low temperature, preferably not exceeding 130° Fahrenheit, and carries over with it that portion which I call the "primary" oil, leaving the "secondary" oil behind. If this operation be carried on in the open air, the benzine will pass off as a vapor, leaving primary oil, which equals with some oils about forty-two per cent. of the entire mass of the crude petroleum treated. With the remaining fifty-eight per cent. of secondary this application has nothing to do. The primary oil thus obtained is mixed with about one per cent. of amyl alcohol, (fusel-oil,) with which it is miscible in all proportions. To this mixture is then added ethyl alcohol (commercial alcohol) until the mass becomes milky or opalescent. The heavier portion of the primary oil now separates and subsides, leaving a mixture of amyl and ethyl alcohols and certain lighter elements of the primary oil dissolved in them as a supernatant liquid. This supernatant liquid is drawn off and the heavier oil at the bottom removed, and, if necessary or desirable, filtered through bone-black to give it a lighter color. The primary oil thus treated has a density of about 28° Baumé and great wearing qualities as a lubricator. The object of the treatment with the amyl and ethyl alcohols is to take out certain elements, which, when allowed to remain, materially affect the endurance of the oil as a lubricant.

I will say here that the separate portion of the crude petroleum which I have herein called "primary" oil contains, as I believe, the nucleus of paraffine, and is also the source of tar and the non-condensable gases evolved from petroleum by the ordinary process of distillation. This crude primary oil I have claimed in an application filed November 10, 1883, and numbered 111,437.

About one per cent. of amyl alcohol and the same quantity of ethyl alcohol are sufficient to effect the removal of the lighter constituent of the primary oil; but I do not limit myself to these proportions, as they may vary somewhat with different oils.

The alcohols may be recovered by distillation.

Having thus described my invention, I claim—

The herein-described method of treating the primary oil obtained by the division of the crude petroleum, which consists in first mixing it with amyl alcohol, then adding ethyl alcohol until it acquires opalescence, and then removing the supernatant mixture of alcohols and the lighter constituents of the primary oil, substantially as set forth.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

HALVOR HALVORSON.

Witnesses:
HENRY CONNETT,
ARTHUR C. FRASER.