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EDWARD GOODRICH ACHESON, OF NEW YORK, N. Y.

TREATING LUBRICATING OILS.

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It is well known that lubricating oils of mineral origin comprise a rather complex mixture of hydrocarbon components; and it has been regarded as altogether probable that the lubricating value of the oil inheres in certain of these components to the exclusion of others, or at least, that the several components of the mixture are of unequal lubricating value. However, so far as I am aware, but little is actually known relative to this subject-matter.

I have found that it is possible so to treat mineral lubricating oils as materially to enhance their lubricating value; and my invention comprises a process whereby this result is attained by treating the oils with certain solvents having a selective action thereon. My preferred solvent for this purpose is a mixture of acetone and water, but my invention is not limited thereto, inasmuch as many other solvents or liquid mixtures may prove to be equivalent for the purposes of the invention. Without limiting the invention by reference to theoretical considerations, it may be assumed that the function of the solvent is to act selectively on the oil complex, removing therefrom components of lesser lubricating value, and thereby concentrating in the residual oil the components of higher lubricating value. Irrespective of the truth of this assumption, it has been amply demonstrated in practice that the actual result of treatment in the manner described is to effect a material improvement in the lubricating quality of the oil.

One specific embodiment of my invention is as follows, it being understood that the invention is not restricted to the particular materials or the specific proportions mentioned therein:

To 100 pounds of a mineral lubricating oil having a viscosity of 210 at 100° F. as determined by the Saybolt viscosimeter, I add about 100 pounds of a mixture in equal proportions of acetone and water. The mixture is then thoroughly shaken or agitated at ordinary temperature and is permitted to settle, after which the two layers are parted in any suitable manner.

The undissolved fraction of the oil, amounting in this specific case to about 80% of the original weight, will be found to be decidedly improved in lubricating value. The dissolved fraction may readily be separated from the acetone-water mixture by distilling the latter, and the recovered acetone is available for use in a repetition of the process.

Instead of acetone I may use other compounds, and more especially other ketonic or alcoholic bodies having a similar selective solvent action upon the components of the mineral oil. The character and proportions of the solvent may of course vary according to the specific oil subjected to treatment.

I claim:—

1. Process of treating mineral lubricating oils to enhance their lubricating value, comprising treating the same with a selective solvent having the essential solvent properties of a mixture of acetone and water, separating the treated oil and recovering the solvent for re-use in the process.

2. Process of treating mineral lubricating oils to enhance their lubricating value, comprising agitating the oil with a mixture containing acetone and water, settling the mixture and separating the treated oil, and recovering the acetone from the solution for re-use in the process.

3. Process of treating mineral lubricating oils to enhance their lubricating value, comprising agitating the oil with a selective solvent for the components of lower lubricating value, settling the mixture and separating the treated oil, and recovering the solvent from the solution for re-use in the process.

In testimony whereof, I affix my signature.

EDWARD G. ACHESON.