Patented Nov. 10, 1931

1,830,970

UNITED STATES PATENT OFFICE

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LUBRICANT

No Drawing. Application filed November 1, 1926. Serial No. 145,700.

The present invention relates to improvements in lubricants and lubrication, and will be fully understood from the following description thereof.

I have found that the lubricating properties and "metal wetting" properties of mineral lubricant oils may be substantially increased by the addition thereto of soaps of fatty acids with strong organic nitrogenous bases, particularly those capable of forming carbonates stable at the boiling point of water, such soaps being further characterized in that they form substantially no ash on ignition, and are stable under conditions of use.

A material of the nature of a soap which may be incorporated into a mineral lubricant oil in accordance with the present invention may be produced by heating together, suitably at steam bath temperatures, dicyandiamid with slightly more than a monomolecular equivalent of a suitable fatty acid, such as oleic acid. Other fatty acids may also be employed, as stearic acid, the acid of tallow, cottonseed oil, palm oil and the like. The resulting material, which may be designated as a soap (although its precise composition has not yet been determined), may be incorporated in a mineral lubricant oil, for example, a viscous petroleum distillate having a viscosity of 200 sec. Saybolt at 100° F. or higher in proportions of 0.2% upwardly, and preferably about 0.5%, to substantially increase the lubricating properties of the oil. In a similar manner I may employ the higher fatty acid soaps of guanidine and of guanyl derivatives such as dicyandiamidine prepared by heating these compounds or their carbonates with a suitable fatty acid. In general, organic bases containing the guanyl radical are highly suitable for use in preparing soaps to be incorporated into mineral lubricating oils in accordance with the present invention.

The lubricating oils produced in accordance with the present invention are particularly suited for lubricating automotive engines. In types of automobiles such as those having planetary transmissions in a casing open to the crank casing of the automobile engine, lubricant oils prepared in accordance with the present invention provide not only a highly effective lubrication for the automotive engines, but also prevent glazing and consequent "chatter" of the transmission bands of the planetary transmission.

I claim:

1. A lubricating compound comprising a lubricant mineral oil and a fatty acid soap of a non-cyclic organic base having at least two amino nitrogens bonded to a carbon atom and capable of forming carbonates stable at the temperature of boiling water, said soap being substantially ashless upon ignition.

2. A lubricating compound comprising a lubricant hydrocarbon oil and a fatty acid compound of an organic base containing a guanyl radical.

3. A lubricating compound comprising a viscous hydrocarbon oil and a fatty acid soap of guanidine.

4. The method of treating brake and transmission bands used in connection with a planetary transmission to keep the bands soft and pliable which consists in maintaining in the transmission casing a bath consisting of a viscous hydrocarbon oil, combined with a fatty acid soap of a non-cyclic organic base having at least two amino nitrogens bonded to a carbon atom capable of forming carbonates stable at the temperature of boiling water.

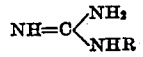
5. The method of treating brake and transmission bands used in connection with a planetary transmission to keep the bands soft and pliable which consists in maintaining in the transmission casing a bath consisting of a viscous hydrocarbon oil, combined with a fatty acid soap of an organic nitrogenous base containing a guanyl radical.

6. The method of improving the lubricant qualities of a viscous hydrocarbon oil vehicle consists in adding thereto a fatty acid soap of a non-cyclic organic base having at least two amino nitrogens bonded to a carbon atom and capable of forming carbonates stable at the temperature of boiling water, said soap being substantially ashless upon ignition.

7. The method of improving the lubricant

qualities of a viscous hydrocarbon oil which consists in adding thereto a fatty acid soap of an organic nitrogenous base containing a guanyl radical.

8. A lubricating compound comprising a viscous hydrocarbon oil and a fatty acid soap of a compound of the type formula



in which R is hydrogen or a substituting group.

9. A lubricating compound comprising a lubricant mineral oil and 0.2 to about 0.5% of a fatty acid soap of a non-cyclic organic base having at least two amino nitrogens bonded to a carbon atom and capable of forming carbonates stable at the temperature of boiling water, said soap being substantially ashless upon ignition.

10. A lubricating compound comprising a lubricant hydrocarbon oil and 0.2 to 0.5% of a fatty acid compound of an organic base containing a guanyl radical.

11. A lubricating compound comprising a viscous hydrocarbon oil and 0.2 to 0.5% of a fatty acid soap of guanidine.

12. A lubricating compound comprising a lubricant hydrocarbon oil and a fatty acid soap of dicyandiamid.

13. A lubricant compound comprising a viscous hydrocarbon oil and a fatty acid soap of dicyandiamidine.

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