

UNITED STATES PATENT OFFICE

2,283,581

LUBRICANT

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No Drawing. Application January 22, 1940,
Serial No. 315,023

1 Claim. (Cl. 252—25)

This invention relates to a new and useful lubricant, especially well adapted for use with all kinds of machinery, car axles and the like, for the purpose of reducing friction as well as bearing wear.

The lubricating compound according to my invention has body enough to prevent the surfaces of machinery to which it is applied to come into contact with each other, is free of corrosive acid of either mineral or organic acid origin; it has great fluidity as possible and consistent with its body and a minimum coefficient of friction or torsional and tensional resistance of the particles to motion, high flashing and burning points, and is free from all material liable to produce oxidation or result in gumming and has many other special advantages pointed out more fully hereinafter.

It is the principal object of my invention to produce a lubricant composed of a proper oily lubricating base and containing zinc sulfide preferably about six percent by weight of zinc sulfide well dispersed therein, all as explained in the following.

Another object of my invention is the use of barium sulfate to retard the decomposition of the zinc sulfide, the proportions used are one part of zinc sulfide to one part of barium sulfate.

The addition of the barium sulfate has the same beneficial effect on the lubricating properties of the lubricant as the zinc sulfide.

I am aware of the fact that heretofore it has been proposed to produce a lubricant by the admixture of zinc oxide to an oily and fatty body, the practice however has shown that the addition of zinc oxide in certain quantities will produce a temporary beneficial effect only, however during continued operation it will wear out the relatively moving parts considerably on account of the solid particles of zinc white contained in the lubricant and its admixtures by producing oxidation. I have therefore invented a lubricant composed of an oily body and addition of zinc sulfide also with the admixture of barium sulfate as stabilizers, which will positively avoid the above named disadvantages.

This is particularly true if the body is composed of heavy mineral oils mixed with from five to twenty five percent of rape or other fixed oils whereby the proportion of the latter is reduced as low as possible without impairing the lubricating quality, making it well fit for cylinder lubrication where vegetable and animal fats are unsuitable as they undergo, when subjected to high temperatures, a chemical change, resulting

in the formation of free fatty acids which may cause serious corrosion, while fatty oils when mixed with mineral oils in quantities not exceeding from five to twenty percent, do not appear to produce such objectionable results.

The limited abrasive action of the zinc sulfide mixed with barium sulfate in the oily base will not materially affect the lubricated elements as being of a certain distinct fineness and well dispersed and present only within certain percentage limits, but will polish these elements to a certain degree and impart to the same a very desirable brightness as to all appearances the texture of the relatively moving elements or parts will experience a plating effect as the minute metallic particles contained in the zinc sulfide, barium sulfate will be microscopically deposited on the surfaces of the moving element so as to protect these surfaces against excessive wear while in no way interfering with the lubrication.

In practice the zinc sulfide and barium sulfate are intimately and thoroughly mixed with the oily base or body.

The following formulae represent satisfactory compositions for the improved lubricant which will suffice for purposes of illustration.

Formula No. 1

	Per cent
Non-volatile, fatty, fixed oils such as for instance lard oil.....	10
Rape oil derived from plant seeds.....	14
Refined mineral oils.....	70
Zinc sulfide.....	6

Formula No. 2

	Per cent
Non-volatile, fatty, fixed animal oil, such as for instance lard oil.....	10
Rape oil.....	14
Refined mineral oils.....	70
Zinc sulfide.....	3
Barium sulfate.....	3

In all cases the solid content consisting of zinc sulfide, barium sulfate is kept within the limits of two to twelve percent by weight of the mixture.

While the two formulae above are both of liquid density, the invention is by no means confined to the compounding of oils since like amounts of zinc sulfide, barium sulfate incorporated in suitable greases have been found to be of equal benefit and to function as above described, whether the grease be of the conventional calcium or sodium soap base or otherwise. Aluminum and other stearates have, for example, been used as

grease bases with equal success. In each case, however, between two and twelve percent solid content of zinc sulfide, barium sulfate is used. The barium sulfate contents of the lubricant will preserve in the proportions stated the zinc sulfide against decomposition by overheating.

It is to be understood however, that the oily body of the mixture must be such that a perfect lubrication is produced at all times, and that I may make such changes in the ingredients named, 10 in the proportions, admixture, and manner of combining the same as come within the scope of the appended claim without departure from the spirit of my invention and the principles involved,

so for instance where a light consistency or heavy consistency oil lubricant is required, such changes in the oily base are made so as to meet these requirements.

5 Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

A lubricating compound composed of 94% of an oily base and containing 3% of zinc sulfide well dispersed therein, 3% of barium sulfate for retarding the decomposition of the zinc sulfide by overheating between movable parts of machinery.

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