UNITED STATES PATENT OFFICE.

ELI E. HENDRICK, OF CARBONDALE, PENNSYLVANIA.

IMPROVEMENT IN LUBRICATING-OIL COMPOUNDS.

Specification forming part of Letters Patent No. **197,129**, dated November 13, 1877; application filed April 3, 1877.

To all whom it may concern:

Be it known that I, ELI E. HENDRICK, of the city of Carbondale, county of Luzerne, and State of Pennsylvania, have invented a new and useful Lubricating-Oil Compound; and I do hereby declare the following to be a full, clear, and exact description of the mode of preparing the same.

To enable others skilled in the art to which my invention relates to make and use it, I will describe its composition and the manner of compounding the same, first calling attention to a well-known fact in the art—that mineral oils are valuable for lubricating purposes in proportion to their specific gravities.

The object of my invention is to provide a lubricating compound composed largely of petroleum or mineral oil, and of such a degree of gravity as to be desirable as a lubricator.

To prepare my new compound, I provide an upright iron vessel or retort with a concave bottom, having a stirring apparatus constructed therein, adapted to scrape said concave bottom, which stirrer may be connected through the side to a crank or other suitable propelling power outside the vessel.

The retort is to be set in brick-work, so that a fire can be made under it. Within this retort I place about equal parts of the carbonate or white lead of commerce, and whale or other animal oil. I then stir the contents moderately, at the same time applying fire underneath the retort. At first the compound has the appearance of white paint; but as the heat increases the color changes to a darker shade, and at about 250° Fahrenheit it foams considerably, and at from 350° to 400° the color of the same will become about an amber shade. (The compound, if allowed to become cold at this point, will be quite hard, brittle, and semi-transparent.) At this stage, and while the compound is hot, I stir into the mixture petroleum-oil, until the resulting compound is of a gravity and thickness suitable for the purpose for which it is to be used.

It may be stated that two ounces of carbonate of lead will reduce the gravity of one gallon of petroleum about 3° Baumé, coal-oil hydrometer.

It will, therefore, be readily understood that if the quantity of lead used in the first stage of the process, and the gravity of the petroleum used in the second stage, be known, the operator can easily determine how much petroleum to add to the first compound to make a lubricating compound of any desired gravity.

The action of this compound in its preparation is quite different from that of a compound in which the red or oxide of lead is used, as set forth in Letters Patent of the United States granted me, May 18, 1869, and numbered 90,100. When oxide of lead is used with animal or vegetable oil, as recited in that patent, the temperature of the mixture at a temperature of from 380° to 400° Fahrenheit suddenly rises, although the fire be entirely removed from the retort and quenched at the first sign of the temperature's unusual rise—sometimes 100° or more. The operator thus loses control of the temperature of the contents of the retort, often to the great injury of his compound, which should not be subjected to so sudden nor so high a heat. This extraordinary rise of temperature, incident to the use of oxide of lead, I have attributed to a chemical action, which in its use it seems impossible to prevent. The working of the process and its result are, therefore, quite variable and uncertain.

In the use of the carbonate or white lead, as hereinbefore set forth, the chemical action in the first stage of the process is not so vigorous, and the temperature advances only as forced up by the fire, and is always under the control of the operator, and a definite and much more preferable compound is produced, being less likely to precipitate its lead, and hence better adapted to the uses for which it is intended.

I do not confine myself to the proportions named, for it is desirable to change the proportions in making different grades of oil for various uses.

What I claim as my invention, and desire to secure by Letters Patent of the United States, is—

A lubricating-oil compound composed of petroleum-oil, animal oil, and the carbonate or white lead of commerce, substantially as described.

E. E. HENDRICK.

Witnesses:
GEO. W. CONKLIN,
T. F. LANGDON.