

UNITED STATES PATENT OFFICE.

DECATUR HARMON, OF IONIA, MICHIGAN.

LUBRICANT.

SPECIFICATION forming part of Letters Patent No. 482,249, dated September 6, 1892.

Application filed May 11, 1892. Serial No. 432,803. (No specimens.)

To all whom it may concern:

Be it known that I, DECATUR HARMON, a citizen of the United States, and a resident of Ionia, in the county of Ionia and State of Michigan, have invented certain new and useful Improvements in Lubricants; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to a lubricant designed especially for the commutators and brushes of dynamo-electrical machines and motors for electrical purposes and to the method of making the same.

My lubricant consists of silica, alumina, iron, plumbago, castor-oil, and a high grade of mineral oil. The plumbago, alumina, silica, and iron are first boiled in a proportionate amount of the mineral oil, and when brought to a boiling-point the impurities, consisting of feldspar, potash, silicon, and lime, will escape, and after this mixture is cooled the castor-oil is added.

In many of the lubricating compounds used for electrical machines non-conducting ingredients are employed, which greatly interfere with the proper operation of the machine to which the lubricant is applied, as it affords great resistance at the point of contact of the brush and the commutator, and thereby causes both of said parts to become heated and emit sparks, which results in serious injury to the most vital parts of the machine.

My compound serves, in addition to its lubricating qualities, as a conductor of electric energy and a non-conductor of heat, and it will effectually lubricate the parts without interfering with their operation.

The following are the preferred proportions of my ingredients, but they may be changed, as found desirable, to wit: silica, five per centum; iron, ten per centum; plumbago and alumina, thirty-five per centum, and castor-oil and first grade of mineral oil fifty per centum.

In making this lubricant the silica, iron,

plumbago, and alumina are placed in a suitable vessel with a proportionate amount of best grade of mineral oil, and said ingredients are mixed well together and heated to a temperature of about 300°. At the beginning of this temperature the mixture will froth and foam, during which the acids and impurities will escape by evaporation, and the mixture then becomes quiet. The mixture is allowed to cool and castor-oil is added to reduce it to the desired liquid consistency for use.

It will be found that this lubricant is especially desirable for use in electrical dynamos and motors; but it may also be employed for use on journals, bearings, and the like. The plumbago possesses conducting qualities and harmonizes readily with oil to form a lubricant. Alumina is a great assistant in the unit work of electricity, linking together the iron and silica, which possess to a greater or less degree the properties of magnetic permeability—that is to say, of favoring the conduction of magnetic lines of force.

I am aware that changes in the mode of preparation, proportion, and character of the ingredients may be made and I reserve the right to make all changes falling within the scope of my invention.

Having thus fully described my improved lubricant, what I claim as new, and desire to protect by Letters Patent, is—

1. The herein-described lubricant, comprising silica, alumina, iron, plumbago, castor-oil, and mineral oil, combined in or about the proportions specified.

2. An electrical conducting semi-fluid lubricant for dynamo-electric machines or motors, consisting of alumina, plumbago, silica, and iron, combined with a suitable lubricating-oil forming a vehicle, as and for the purpose described.

In testimony whereof I affix my signature in presence of two witnesses.

DECATUR HARMON.

Witnesses:

Q. E. CATTINGHAM,
E. T. MONTGOMERY.