

UNITED STATES PATENT OFFICE.

ROBERT R. GRAF, OF BALTIMORE, MARYLAND, ASSIGNOR OF ONE-HALF TO
FERDINAND W. REIS, OF SAME PLACE.

LUBRICATING-OIL.

SPECIFICATION forming part of Letters Patent No. 446,344, dated February 10, 1891.

Application filed November 28, 1890. Serial No. 372,910. (No specimens.)

To all whom it may concern:

Be it known that I, ROBERT R. GRAF, a citizen of the United States, and a resident of Baltimore, in the State of Maryland, have invented certain new and useful Improvements in Fire-Proof Lubricating-Oils; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

This invention relates more particularly to lubricating-oils for railway-car axles, dynamos, electric motors, and other fast-running machinery where the axle or shaft revolves with great speed in its journal or bearings, and has for its object to render the lubricating material practically fire-proof and incombustible. As is well known, owing to the great heat generated in journal-boxes of such fast-running machinery, the oil will frequently become heated to such an extent as to take fire, and especially is this the case where the oil is used in combination with a packing of waste which has been saturated with the oil—as, for example, in the journal-boxes of locomotives and railway-cars. By my improvement this danger is entirely obviated by making the lubricating material practically fire-proof and incombustible without in the least detracting from its lubricating qualities, which remain the same as before fireproofing.

The character of the oil to be fireproofed will of course depend upon the purposes for which it is intended to be used, and, as an example, I will describe my method of fireproofing any ordinary lubricating-oil, the proportions of oil and other ingredients used being given by weight.

I mix together in the form of a powder thirty-two parts of sodium tungstate, thirty-two parts of sulphate of ammonia, eighteen parts of phosphate of ammonia, twelve parts of sal-ammoniac, and twenty-four parts of monocarbonate of soda. These several ingredients being reduced to powder and thoroughly mixed, this mixture or composition is triturated in small quantities at a time in a mortar with a suitable quantity of linseed-oil, so as to form a stiff paste of a smooth and even consistency, which is mixed gradually and by thorough

stirring with five hundred and twenty parts of any suitable heavy oil adapted to the purpose. The mixture will readily form an emulsion with the oil without leaving any sediment, and it will be found that the oil so treated is practically fire-proof and cannot be ignited even by thrusting a red-hot poker into it. At the same time the oil will be found not to have lost any of its lubricating qualities, it being in all respects just as good as before treatment, with the additional advantage that it cannot burn.

For railway purposes this oil is used with waste by saturating the waste with it, as usual, and I prefer to use for this particular purpose a fire-proof waste invented by me, for which I have filed an application for patent of even date herewith, Serial No. 372,909.

It will be obvious that I do not limit or confine myself to the treatment of any particular kind of oil, and I have found by experiment that all kinds of lubricating-oils may be made fire-proof by this treatment, the quantity of the fireproofing mixture varying somewhat according to the nature of the oil which is to be treated.

In the treatment of "tempering oils" for imparting a so-called "oil temper" to steel tools my method will also be found to possess important advantages from an economic point of view, as it prevents undue consumption by burning of the oil through its becoming ignited by immersing into it the heated articles which are to be tempered.

Having thus described my invention, I claim and desire to secure by Letters Patent of the United States—

A fire-proof lubricating-oil consisting of a mixture of an ordinary lubricating-oil with sodium tungstate, sulphate of ammonia, phosphate of ammonia, sal-ammoniac, and monocarbonate of soda, in about the proportions substantially as specified.

In testimony that I claim the foregoing as my own I have hereunto affixed my signature in presence of two witnesses.

ROBERT R. GRAF.

Witnesses:

AUGUST PETERSON,
BENNETT S. JONES.