

UNITED STATES PATENT OFFICE.

JOHN B. NORRIS, OF RICHMOND, VIRGINIA.

DRY LUBRICANT FOR MACHINERY, &c.

SPECIFICATION forming part of Letters Patent No. 267,451, dated November 14, 1882.

Application filed October 19, 1882. (No specimens.)

To all whom it may concern:

Be it known that I, JOHN B. NORRIS, of the city of Richmond, in the county of Henrico and State of Virginia, have invented and made a new and useful Composition of Matter, which I term a "Dry Lubricant for Machinery, &c.," the object, purposes, and properties of which are fully described in the following specification, being composed of merely three simple well-known dry substances or ingredients in combination in or about in the proportions hereinafter given, and used as a whole for the purpose of lubricating machinery of all kinds, but more especially used for axles and boxes of railroad locomotives, tenders, cars, and trucks, sea-going and all other heavy steam-vessels, and ponderous machinery, and for various other purposes.

The nature of my new composition consists in rendering all surfaces, especially rough metal surfaces, smooth and slippery; and, also, owing to the peculiar properties of the three substances, when combined or mixed together, they produce the effect of suppressing and preventing the heating and consequent softening of metal; and, furthermore, owing to the inherent cooling properties of the several substances forming my compound, as a whole or unity, it becomes a most perfect and powerful anti-frictional agent, through and by which action the metal of axles and boxes, journals and spindles is kept in a natural or normal indurate and cool condition, and, in mechanical language, the "temper" retained and heat-expansion prevented, all of which are of valuable importance, thereby preventing undue wear and tear, especially in cases of high speed of railway conveyances, thus affording a perfect safeguard and preventive of the heating, softening, twisting, and burning of the axles and boxes of locomotives, trucks, and cars, and also acting as a safeguard against train accidents which have frequently occurred, as is well known, with most disastrous results.

Without entering into a minute description of the many valuable properties of my new composition of matter or dry lubricant, I will merely refer to a former application of mine, now pending, wherein I set forth and describe the same three substances as being used in combination with fluid, semi-fluid, and oleagi-

nous ingredients, forming a mass or compound of a soft paste-like consistency; also, in a patent granted to me, dated November 22, 1882, I refer to and show the laminiferous properties of mica in coating axles, boxes, and metal surfaces with a thin film or jacket of minute scales or laminae, affording a smooth, uniform, slippery surface.

Another object of my dry lubricant is to dispense with liquid, fluid, semi-fluid, and all oleaginous ingredients, when so desired, and more especially to avoid using soft or fluid lubricants on railroads located in high, cold, frigid latitudes, where soft or fluid matter would be more or less liable to congelation through extremes of cold.

To enable others to be skilled in the manufacture and use of my dry lubricant, I herewith give the formula. With proper machinery or other suitable appliances, in separate vessels or receptacles, grind or finely reduce to powder common wood-charcoal, sal-soda, and crude or unburned mica, and in another separate suitable receptacle put twenty (20) pounds of the reduced mica, twenty (20) pounds of the reduced sal-soda, thirty-five (35) pounds of the reduced charcoal, thoroughly mixing or incorporating all the substances together, thus forming a mechanical combination of the three substances, and making the compound at once ready for storing away and for use when required. For larger quantities, double, triple, or quadruple the several proportions. Also observe that any kind of charcoal or other carbonaceous substance can be used if the ordinary cheap soft-wood charcoal is not readily available. Also when mixing the several substances, should there be an undue tendency to charcoal-dust, the mass may be slightly sprinkled or moistened with water to keep down the dust and prevent waste. This moistening will be of no detriment, but found of great convenience in handling and storing the mass.

In applying my dry lubricant it is merely necessary to have good clean cotton, woolen, or other suitable fibrous waste or packing, using the required quantity for each axle-box, and filling the packing thoroughly by shaking the compound through it, as well also depositing a full supply of the compound in the box, seeing that the boxes are tight, to prevent

leakage and waste. Should the axle-boxes not be too large the compound or lubricant can be used without using fibrous packing, provided the boxes are tight and close. Furthermore, 5 this dry lubricant or new composition of matter has been found to possess manifold properties, being non-consuming, a non-conductor of heat, a fire-annihilator, and answers as a most superior and efficacious packing for coolers, refrigerators, fire-proof safes, and is further useful for many other purposes not deemed necessary here to mention, other than to say that 10 in the use of my new composition or dry lubricant on machinery of railroads running at high speed it develops the peculiar property of polishing and adhering closely to the metal surfaces, forming thereon a kind of thin film, casing, or jacket over the circumferences of the journals and boxes, besides filling up all cavities, indentations, fissures, and inequalities of 20 surface, thereby producing what is termed in mechanical language a "perfect bearing." This peculiar coating of the dry powdery matter seems to be the result of some as yet unexplained cause, but is supposed to be owing to a

force similar to a magneto or electro-galvanic action or agency, causing a kind of cohesive affinity of the three pulverized substances—mica, sal-soda, and charcoal.

Having fully explained the nature and object of my new composition of matter or dry lubricant, and stated the several purposes for which it can be used, and having described the many special advantages in its use, as well as given the formula in full, with the manner 30 or mode of its manufacture, what I claim, and desire to secure by Letters Patent of the United States, is as follows, viz:

The new compound of matter composed of reduced or pulverized mica, sal-soda, and charcoal or carbon, in or about in the proportions given, substantially as and for the purposes set forth and described. 40

JOHN B. ^{his} × NORRIS.
mark

Witnesses:

JAS. B. McCARTY,
E. M. MOSELEY.