

UNITED STATES PATENT OFFICE.

STILLMAN H. STORY AND RICHARD J. CHARD, OF BROOKLYN, ASSIGNORS
TO CHARD & HOWE LUBRICATING COMPANY, OF NEW YORK, N. Y.

IMPROVEMENT IN LUBRICATING COMPOUNDS.

Specification forming part of Letters Patent No. 154,622, dated September 1, 1874; application filed
April 28, 1874.

To all whom it may concern:

Be it known that we, STILLMAN H. STORY and RICHARD J. CHARD, both of Brooklyn, in the county of Kings and State of New York, have invented an Improvement in Lubricating Compounds, of which the following is a specification:

This invention is designed to provide a lubricant which will combine, in an unusually high degree, the property of lubricity with that of great cohesion of its particles, whereby the said lubricant is adapted for use upon journals having a wide range as to speed and pressure, and is rendered extremely permanent or durable in its action.

To this end the invention consists in a novel lubricating material composed of tallow, paraffine-oil, neat's-foot oil, castor-oil, and liquor potassa, intimately combined in certain proportions, the peculiar characteristic of each component being brought to act in conjunction with those of the others to produce the result desired.

In the production or manufacture of our improved lubricating compound we take, say, twenty pounds of beef or mutton tallow, which, aside from its smooth or lubrescent nature, is characterized by hardness; seven pounds of paraffine-oil, having its well-known limpid and solvent properties, which prevent the gumming of fixed oils or fats with which it may be mingled; one pound of neat's-foot oil, favorably known for its permanence, combined with great fluidity; and one pound of castor-oil, which, as a lubricating substance, is ascertained to possess great smoothness, united with comparative viscosity, when subjected to even a moderate increase of temperature from friction. Taking these oleaginous materials, each having its distinctive properties, as described, I melt them together in a suitable vessel, and commingle them by any appropriate means. To the mass I add two pounds of a solution of caustic potash, which may be prepared in the manner hereinafter set forth. I then stir the whole together until the caustic alkali, by uniting with a portion, and a portion only, of the other materials, forms a saponified substance, which commingles with the

rest, giving a certain homogeneity to the whole, without in any essential degree modifying the characteristic of each element, which, as hereinbefore indicated, gives it an advantage as an element in a lubricating compound designed for use under a wide variety of conditions and requirements.

As thus constituted, our improved lubricant will be found adapted to all ordinary uses, with a greater efficiency in the reduction of friction, a greater permanence against dissipation by heat and pressure, and a greater freedom from gumming or thickening than has hitherto been secured in compounds designed for the same or similar purposes.

In certain cases, where the journals, steps, or the like to be lubricated are very light, or are run under very moderate pressure, the quantity of tallow may be reduced, say, ten per cent.; and when the reverse is the case—viz., the journals are extremely heavy or run under extreme pressure—the quantity of tallow may be increased by, say, ten per cent.

We propose, in practice, to add to the mass, in quantity, as hereinbefore specified, say, one ounce of nitro-benzole, whereby any rank or noxious odor that otherwise might prove objectionable in the use of the lubricant, is nullified or destroyed.

The solution of potash hereinbefore referred to may be made by boiling one pound of common crude potash in eight gallons of water, and adding thereto three pounds hydrate of lime, the lime removing the carbonic acid from the crude potash, and, being precipitated, leaving the potash in solution in a caustic condition.

What we claim as our invention is—

The improved lubricating compound composed of beef or mutton tallow, paraffine-oil, neat's-foot oil, castor-oil, and solution of caustic potash, the whole combined substantially as and in about the proportions herein set forth.

STILLMAN H. STORY.
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Witnesses:

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