

# UNITED STATES PATENT OFFICE.

WILHELM BRINCK, OF LINDEN, NEAR HANOVER, GERMANY.

## LUBRICATING COMPOUND.

SPECIFICATION forming part of Letters Patent No. 444,626, dated January 13, 1891.

Application filed September 25, 1890. Serial No. 366,115. (No model.) Patented in Belgium November 15, 1889, No. 88,259; in France January 13, 1890, No. 201,654, and in Austria-Hungary February 7, 1890, No. 47,118 and No. 70,568.

*To all whom it may concern:*

Be it known that I, WILHELM BRINCK, a subject of the King of Prussia, residing at Linden, near Hanover, in the Kingdom of Prussia and German Empire, have invented new and useful Improvements in Lubricating Compounds, (for which Letters Patent have been obtained in France, No. 201,654, dated January 13, 1890; in Belgium, No. 88,259, dated November 15, 1889, and in Austria-Hungary, No. 47,118 and No. 70,568, dated February 7, 1890,) of which the following is a specification.

This invention consists in increasing the lubricating capacity and viscosity of mineral oils or fats used for lubricating machinery and the like by an addition of caoutchouc. Caoutchouc dissolves directly in sufficient quantities in the mineral oils used as lubricants. It requires only slight quantities of caoutchouc (only a few grams to the kilo) to materially increase the viscosity and lubricating quality of the lubricants. The lubricants prepared by these means have very great adhesiveness, which is retained even in heavily-weighted journals or bearings. A material saving of lubricating material is thus attained and the objection of the lubricant becoming resinous is avoided, since caoutchouc remains constantly soft or in solution.

In preparing the foregoing lubricant the effort of the inventor is directed, principally, to the following points: first, to avoid as a base a material from animal and vegetable kingdoms which is readily decomposed and to employ a barely changeable or non-changeable lubricant from the series of substances which undergo chemical change with great difficulty, such as hydrocarbons of the methane series, oil containing paraffine, a mineral oil of a high boiling-point and having already of itself great lubricating capacity; second, not to dissolve the caoutchouc by fusing, boiling, or by the use of special solvents, but to obtain the solution by operating without heat, so as not to affect the elasticity of natural caoutchouc. Mineral oil thus prepared, containing dissolved caoutchouc unchanged in form and elasticity and being throughout of homogenous character, has a considerably-increased lubricating-

power as compared with other lubricants. In consequence of its own adhesiveness it does not spread beyond those parts where it is required to prevent friction. Consequently by the use of this new combination I obtain an increased lubrication and great saving of material, as also the greatest possible cleanliness.

In preparing the lubricant I use the following process: One kilogram of washed caoutchouc is cut into small pieces, which are uniformly spread over the bottom of a vessel, said bottom having an area of about one square meter. Three kilograms of mineral oil are then poured over the caoutchouc and the whole is allowed to stand about from twenty-four to forty-eight hours, after which time a very sticky pappy mass has been formed. To this mass are poured twenty kilograms mineral oil. The mixture is then well stirred and after a half-hour is poured on a mull filter. After the fluid has been filtered off the residue is again placed in the first-named vessel and twenty kilograms of mineral oil are again added, the mixture stirred, and after a half-hour again filtered. This is repeated from three to six times, waiting each time for a somewhat longer period (from one to four hours) before filtering, and also stirring somewhat more forcibly than at first. The slight residue still remaining is added to and used with the next kilogram of caoutchouc prior to the first filtration. The entire process is carried on at an ordinary temperature. The one hundred to one hundred and sixty kilograms of fluid thus obtained are a homogeneous oil of extraordinarily tough fluidity, which is directly applicable for lubricating purposes and which contains from about six to ten grams of caoutchouc per kilogram of mineral oil. If desired, the solution can be made more concentrated.

Since the oil by this treatment can receive only so much caoutchouc as will dissolve in the oil at an ordinary temperature, the oil will not have its lubricating qualities diminished while it contains enough caoutchouc to prevent its being forced out from heavily-weighted journal-boxes.

I am aware that caoutchouc has heretofore been dissolved in mineral oils by the aid of



heat, which, however, affects the caoutchouc injuriously and seriously impairs or destroys its elasticity. I am also aware that special solvents—such, for instance, as benzoline—  
 5 have been employed to dissolve caoutchouc prior to its mixture with oil for use as a lubricant. These methods of preparing a lubricant from oil and caoutchouc I do not claim; neither do I broadly claim anything described  
 10 in the patents to E. E. Hendrick, No. 35,753, dated July 1, 1862; W. H. Spooner, No. 45,090, dated November 15, 1864, nor Eames and Seely, No. 66,573, dated July 9, 1867. My method of dissolving caoutchouc in a lubricating-oil dif-  
 15 fers from others, so far as I am aware, in pouring successive quantities of oil over the comminuted caoutchouc at intervals, filtering the resulting compound after it has been thoroughly stirred, and carrying on the entire  
 20 process of treatment at the ordinary temperature without the aid of artificial heat or of any special solvent, whereby the elasticity of the caoutchouc is unimpaired and the lubricant rendered homogeneous and its adhesive  
 25 quality greatly improved, so that it will be readily retained evenly in heavily-weighted journals or bearings.

What I claim as new, and desire to secure by Letters Patent, is—

30 1 The process for improving mineral oils

for lubricating purposes by spreading finely divided or comminuted caoutchouc over the bottom of a suitable vessel, supplying successive quantities of the oil to the caoutchouc and stirring or agitating the mixture, and then  
 35 filtering the resulting compound, the entire operation being carried on at the ordinary temperature, substantially as described.

2. The process for dissolving caoutchouc in mineral oils at the ordinary temperature, 40 which consists in spreading over the bottom of a vessel about one part, by weight, of caoutchouc in a thin layer, covering this layer with about three parts, by weight, of mineral oil, allowing the whole to stand from twenty-four  
 45 to forty-eight hours, then adding about twenty parts, by weight, of mineral oil, agitating and filtering the mixture, then exposing the residue which remains on the filter to additional successive quantities each of about  
 50 twenty parts, by weight, of mineral oil, and agitating and filtering such successive mixtures, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing  
 55 witnesses.

WILHELM BRINCK.

Witnesses:

ALB. PEPPERMÜLLER,  
 W. KESSLER.