

UNITED STATES PATENT OFFICE.

GUSTAV BLASS, OF CATERNBERG, GERMANY.

PROCESS FOR SOLIDIFYING FATS, OILS, TAR, RESIN, &c.

No. 877,289.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, GUSTAV BLASS, manufacturer, subject of the German Emperor, residing at 35 Rotthausenerstrasse, Caternberg, Rhineland, Germany, have invented new and useful Improvements in Processes for Solidifying Fats, Oils, Tar, Resin, &c., of which the following is a specification.

Naphthalene has hitherto been added to oils in order to thereby obtain a lubricant of increased consistency. By such a process, however, partly by reason of the low melting point of naphthalene (80° C.) it is not possible to obtain lubricants which are sufficiently solid during use, for instance, with heavy and easily heating bearings, and further such lubricants in consequence of the comparatively great hardness of the naphthalene do not lubricate cold bearings and thus are unsatisfactory as lubricants. In the first case, that is to say with all journals which tend to become heated, the naphthalene as carrier of the lubricant has also the drawback that it decreases the total lubricating action, because it has, even in a fluid condition, only very moderate lubricating properties and thus so to speak has a diluting action on the actual lubricant. It also happens that naphthalene evaporates even at a low temperature and then gives off an annoying and also unwholesome smell, so that lubricants treated with naphthalene may be annoying and unwholesome for workmen employed in a trade. All these drawbacks are removed if crude anthracene (also called anthracene residues), purified anthracene and also its homologues, which have a higher boiling point than naphthalene, be employed either raw or purified for producing solid lubricants, and these substances be added to the lubricant in such proportionate equivalents, that the solid constituents serve as carriers for the lubricant. The anthracene shall be used in the state after pressing out the soft particles or in the purified condition, the impurities (paraffin and the like) having been removed by means of a convenient solvent.

Instead of lubricants, other soft substances, such as tar, pitch or the like may also be converted into solid bodies by the same process.

By the use of crude anthracene and the like as carrier for the fluid, and semi-fluid, substances in question, since the melting point of these substances only lies at about 135° C., solid bodies are obtained of such a

kind that, for instance, lubricants obtained by the present process retain their form and are consumed extremely economically even in the case of heavy and easily heating bearings. The lubrication is also a thoroughly practical one, as, on the one hand, the anthracene itself acts as a lubricant, and on the other hand on account of the anthracene remaining solid, no evaporation of the lubricant itself takes place.

By reason of its solid form the lubricant may be employed on bearings, shafts or the like without a lubricator, and on the rotation of the said parts, the giving off of deleterious and unwholesome odors is entirely avoided.

This improved process may be carried out practically in various ways. Anthracene is preferably mixed with oil, fat, tar, resin, wax, pitch, asphalt, soap and the like, or mixtures of the same, the compound is melted and then allowed to cool, if desired under agitation. On cooling a crystallization of the anthracene takes place, and these innumerable small crystals form a skeleton in the interstices of which the introduced substances are deposited.

If substances the melting point of which lies below that of anthracene are to be brought into a solid form or made more solid in condition the process may also be carried out in the following way:—The anthracene is first melted separately, run into molds and then allowed to cool. Crystallization of the mass then again takes place, innumerable intercommunicating spaces being formed between the crystals. This crystalline mass is then immersed in the oil, grease or the like which has been reduced to a fluid condition, or the latter is poured over it until the desired quantity is absorbed in the mass.

One example of each of the methods herein before described of carrying out the process will now be more particularly described:—

Example 1. 50 parts of anthracene, 30 parts of wool grease acid or sebacic acid, 20 parts of oil of any suitable origin are melted together and then 4 parts of powdered lime added under vigorous agitation. When saponification has taken place the mass is ladled out and allowed to rapidly cool.

Example 2. The mass formed of anthracene by melting and molding is placed in castor oil until 10 % of the latter is absorbed.

Substances which are themselves of a consistent nature obtain a more solid form by treatment according to the foregoing pro-

ess, and this is of considerable value for certain applications of the substances, for instance, in the case of pitch or asphalt, where they are to be employed as insulating material. It is of importance that the substances in question should not lose their particular technically valuable properties by the treatment hereinbefore described, as no solution in a chemical sense is formed by melting the said substances with anthracene, but only a fluid mixture is obtained which on cooling yields a thorough mixture of the original substances, the solid constituents of the anthracene crystallizing out.

What I claim as my invention and desire to secure by Letters Patent, is

The hereindescribed process for solidifying fluid fats and increasing the consistency of solid fats, which consists in incorporating anthracene with the fat.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

GUSTAV BLASS.

Witnesses:

PETER LIEBER,

WILLIAM ESSENWEIN.