

UNITED STATES PATENT OFFICE.

CALVIN T. THOMPSON, OF TOPEKA, KANSAS.

LEAF-SPRING LUBRICANT.

1,410,967.

Specification of Letters Patent. Patented Mar. 28, 1922.

No Drawing.

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To all whom it may concern:

Be it known that I, CALVIN T. THOMPSON, a citizen of the United States, residing at Topeka, in the county of Shawnee and State of Kansas, have invented a new and useful Leaf-Spring Lubricant, of which the following is a specification.

The present invention relates to compositions for lubricating purposes, particularly adapted to lubricate the laminations of leaf springs.

In the manufacture of spring steel there is a shrinkage in the center of the steel bar, with the result that when it is built into a leaf spring, the various laminations do not lie flat one upon another. The result is that a very small area of one leaf rests upon the adjacent leaf and most of the wear takes place along the edges and points of each leaf. There is a pocket left in the center of the leaves where rust, dust, sand and grit accumulate to the detriment of the leaf of the spring. A compound, to properly lubricate leaf springs, must fill these pockets and must have a long lubricating life, must have sufficient body to prevent the entrance of dust, sand and grit, and at the same time eliminate the formation of rust.

The object of the present invention is to provide a compound which will perfectly lubricate the leaves of leaf springs, giving to the same a long life, permitting each leaf of the spring to function separately so that the spring has a high resiliency.

Further objects are to provide a lubricant compound which has sufficient body to fill all the uneven places between the leaves and the pockets in the spring, and which, under the action of the leaves, becomes burnished to form a perfect wearing surface.

The improved composition is made up of graphite, 2 parts; varnish, 3 parts; and liquid glue, 1 part. The part or proportions are by measure. The graphite is used because of its lubricating value; the varnish is used in the compound as a binder; the glue has the function of toughening the compound. These three ingredients are thoroughly mixed and ground together to form a stiff paste. The leaves of the springs are forced apart and the lubricant is forced in between the leaves. When the laminations assume their original position, the lubricant is forced into all the uneven places between the leaves and any surplus of the compound

is squeezed out. The friction of the leaves, when in use, helps to set and burnish the lubricant, which action will be completed in from three to six days, according to conditions. The lubricant, when once applied has a remarkably long life and permits each leaf of the spring to function separately so that the leaf spring does not act like a solid bar of iron, as does a rusty leaf spring.

By actual test, I have found that graphite and varnish alone form a compound which is too brittle, which chips off of the spring and is therefore unsatisfactory. If graphite and glue are used together, the lubricant is too tough and will not allow the graphite to lubricate the laminations in the proper manner. Proportions of 2 parts of graphite, 3 parts of varnish and 1 part of glue, all parts by measure I have found by actual tests to form a practical and perfect lubricant for leaf springs. The compound, when set, forms a hard substance which, under the action of the spring, forms a smooth burnished surface and has sufficient body to stand up under the weight of the load and not wear out at short intervals. The compound fills the pockets or low places between the leaves, giving a solid wearing surface between two adjacent leaves in place of the small wearing area found in unlubricated leaf springs.

The varnish used may either be a spirit varnish; that is, a solution of resin and alcohol; or it may be an oleo-resinous varnish. I do not wish to be limited to any precise varnish composition. The glue used should be common liquid glue, as put upon the market, such glue being of animal origin. I do not wish to be limited to a precise kind of glue, since it is possible that other viscid adhesives or cements may be employed. I also do not wish to be limited to the precise formula given above, as the relative proportions of the varnish, glue and graphite may be varied to a certain extent, according to the nature of the varnish and glue used.

What is claimed is:—

1. A composition for lubricating purposes, comprising a solution of resinous matter, a glue, and graphite, all mixed together to form a homogeneous paste.

2. A composition for lubricating purposes, comprising a mixture of a varnish, a glue, and graphite, to form a stiff paste.

3. A composition for lubricating purposes, comprising a mixture of varnish, liquid glue,

and graphite, ground or mixed together to form a stiff paste, the varnish forming approximately one-half of the mixture by volume.

- 3 4. A composition for lubricating purposes, comprising a mixture of varnish, liquid glue, and graphite, mixed together to form a stiff homogeneous paste, the volume of the varnish being greater than that of the graphite
10 and there being approximately twice as much graphite as glue.

5. A composition for lubricating purposes, comprising a mixture of varnish, glue, and graphite, ground or mixed together to form a stiff homogeneous paste, the ingredients 15 being in the proportions of three parts of varnish to two parts of graphite and one part of liquid glue.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature. 20

CALVIN T. THOMPSON.