

(No Model.)

F. B. TORREY,
LUBRICANT.

No. 460,410.

Patented Sept. 29, 1891.

Fig. 1

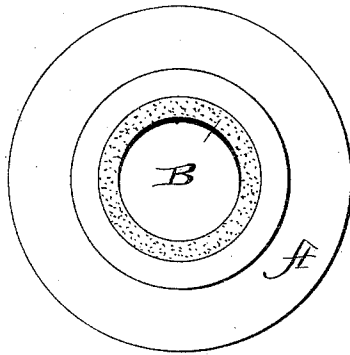
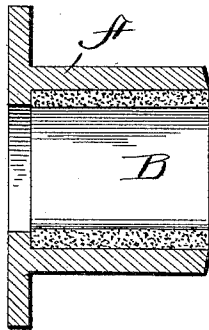


Fig. 2.



Witnesses

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UNITED STATES PATENT OFFICE.

FRANCIS B. TORREY, OF BATH, MAINE.

LUBRICANT.

SPECIFICATION forming part of Letters Patent No. 460,410, dated September 29, 1891.

Application filed February 24, 1891. Serial No. 382,489. (No specimens.)

To all whom it may concern:

Be it known that I, FRANCIS B. TORREY, a citizen of the United States of America, residing at Bath, in the county of Sagadahoc and State of Maine, have invented certain new and useful Improvements in Lubricants, of which the following is a specification.

My invention is an improvement upon a composition heretofore known, of wood and plumbago, intended to be used as a self-lubricating material for bearings. Heretofore in such compositions the wood has been wholly or partially of fibrous form. These fibers I have found injurious both in respect to the practical operation of the bearing and to the coherence and compactness of the ingredients. The wood ingredient may be used as the largest proportion of the mass of the composition; but if in the form of the fiber or with masses of unbroken fiber—such as exist in sawdust, for example—the component parts do not intermix so completely nor pack so densely, and not only require an additional binding material, but leave on the bearing-surface small portions of clear wood. These intermixed wood fragments have in themselves too little coherence, and in the places where they occur are not sufficiently lubricant, and when subjected to friction tend to heat.

My object is to provide a perfectly homogeneous composition, uniform in all its parts, dense and coherent, and at the same time self-lubricant. Plumbago or graphite forms an excellent self-lubricant, but lacks cohesiveness. Ordinary binding materials mixed with it detract from its lubricating qualities. I have discovered that wood in the form of fine dust or meal, so as to be thoroughly intermixed with the plumbago, constitutes in itself a binding material and forms a bearing-surface, in every part of which the plumbago is practically present and acting as a lubricant, and in this form wood of any kind will not interfere with or lessen the lubricating qualities of the plumbago. At the same time it lessens the cost of the bearing and binds the plumbago and renders the mass when condensed cohesive, solid, and durable. I have also discovered that lignum-vitæ will in this finely-pulverized condition itself act as a lubricant, and in the practical use of my invention I prefer this particular kind of wood.

In the manufacture of the composition according to my invention I finely pulverize the plumbago. I reduce the wood also to a finely-pulverized condition and practically destroy its fibers. This may be done by grinding a block with the end of the fiber in contact with the stone or by reducing the chips, sawdust, or other waste material in a suitable manner to a fine granular condition, like dust or meal, and sifting out any fiber remaining therein. The materials when thus finely pulverized are mixed together, preferably moistened, so as to reduce them to a plastic form. When I use lignum-vitæ, I may take three parts of the wood-dust and one part of the plumbago, and thoroughly mix them together, after which the material may be molded or pressed into the proper form, and then baked or dried to a proper degree of hardness.

In the accompanying drawings I have illustrated a form of bearing in which my invention is applicable.

Figure 1 of the drawings represents in end elevation a bearing for pulley-sheaves. Fig. 2 is a central axial section of Fig. 1.

In the drawings, A is a flanged sleeve, and B indicates the composition bearing above described. After the composition is put in place within the sleeve and molded into proper form the material is baked or thoroughly dried. This form is simple and representative, and for other forms the material is molded or pressed into the desired shape, and treated then in the manner above described.

I claim as my invention—

1. A composition of matter for bearings, composed of wood in the condition of dust or meal and pulverized plumbago mixed together, substantially as described.

2. The composition of matter for bearings, composed of pulverized lignum-vitæ in the condition of dust or meal and pulverized plumbago mixed together, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

FRANCIS B. TORREY.

Witnesses:

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