(No Model.)

W. M. BRINKERHOFF.

LUBRICATING MECHANISM.

No. 259,470. Patented June 13, 1882.

Fig. 1.

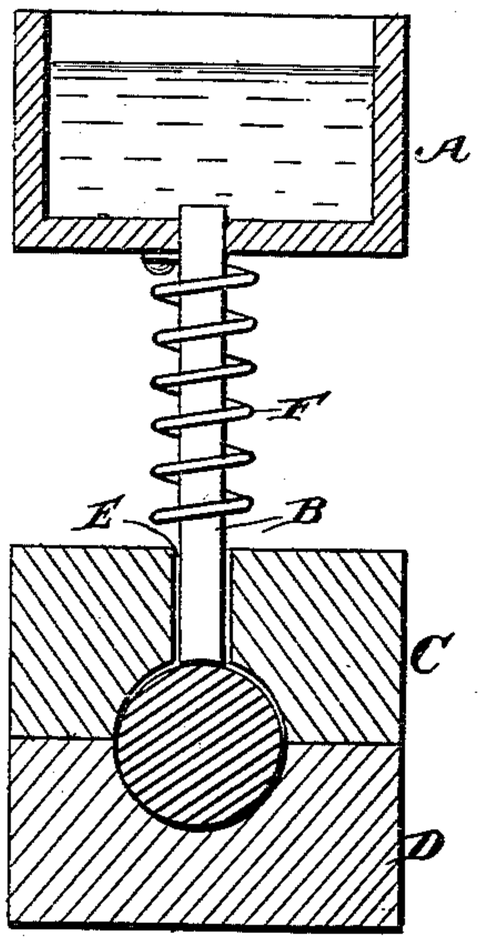


Fig. 2.

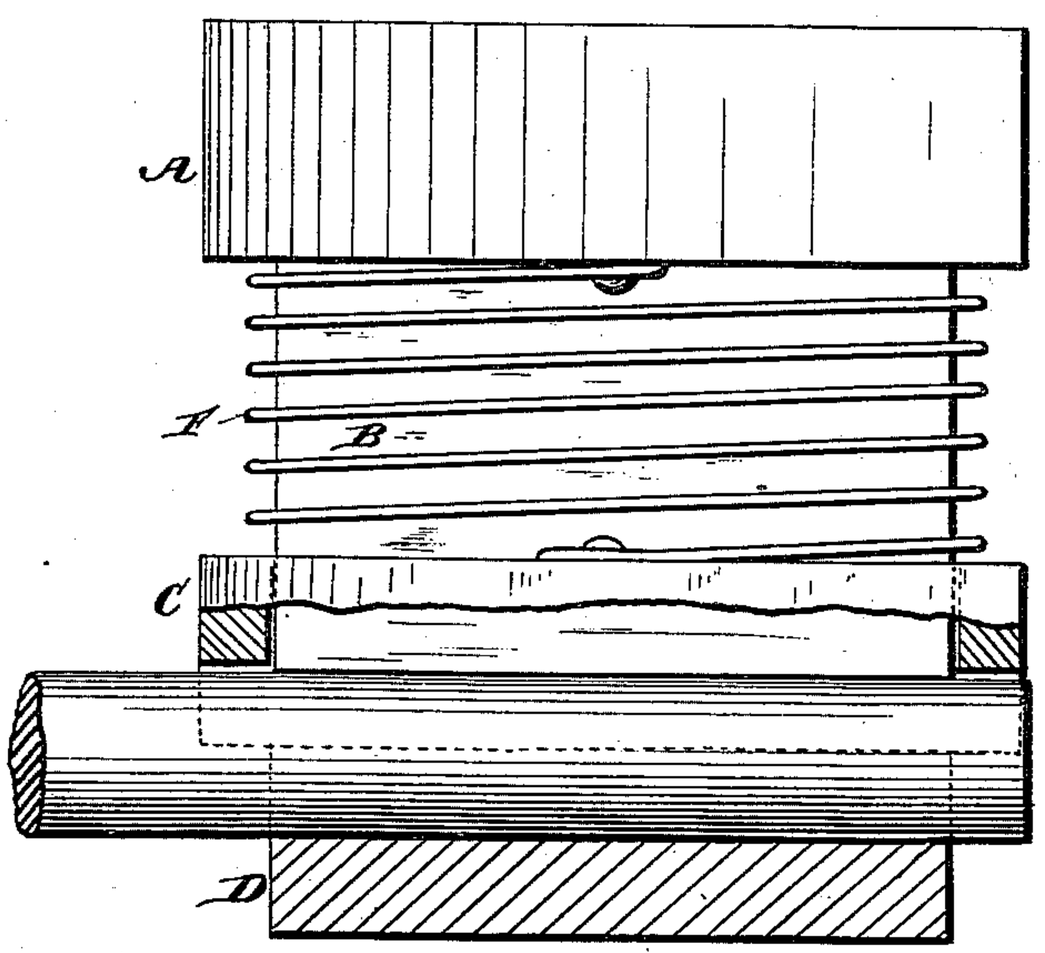


Fig. 5.

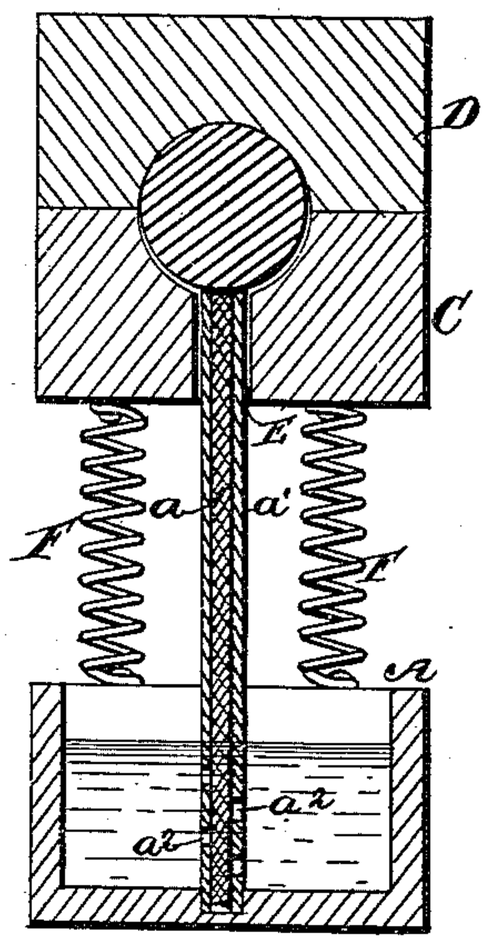


Fig. 6.

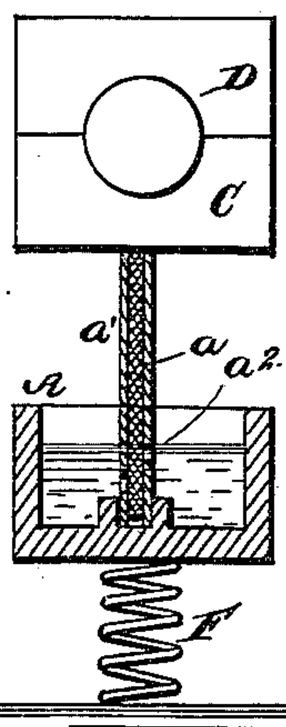


Fig. 3.

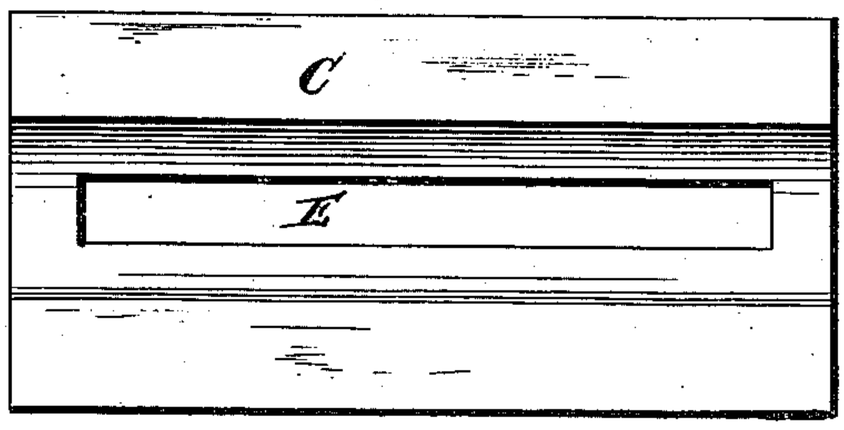
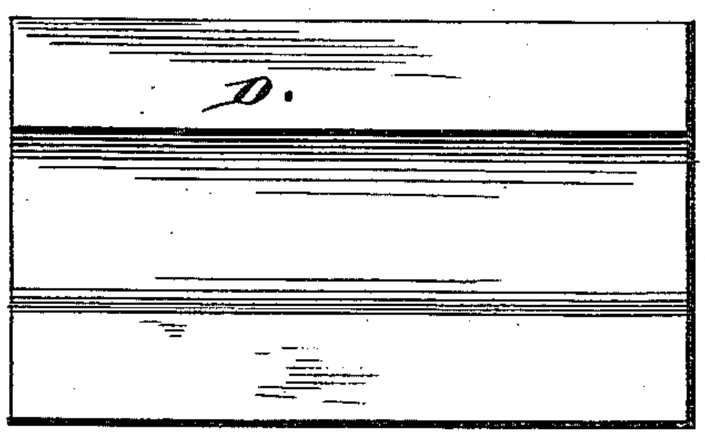


Fig. 4.



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UNITED STATES PATENT OFFICE.

WARREN M. BRINKERHOFF, OF AUBURN, NEW YORK.

LUBRICATING MECHANISM.

SPECIFICATION forming part of Letters Patent No. 259,470, dated June 13, 1882.

Application filed April 14, 1882. (No model.)

To all whom it may concern:

Be it known that I, WARREN M. BRINKERHOFF, a citizen of the United States, residing at Auburn, in the county of Cayuga and State of New York, have invented new and useful Improvements in Lubricating Mechanism for Journals, Hangers, Axles, &c., of which the following is a specification.

This invention relates to that class of lubricators for the journals of conveyances and all kinds of machinery in which the lubricant is conducted from an oil cup or reservoir to the journal by means of a wick that is maintained in contact with the journal and fed forward to the same by spring-pressure as it becomes reduced in length by frictional contact with the journal. These lubricators as heretofore constructed are open to the objection that as the oil-cup is held stationary and the wick fed forward independently of the oil-cup from which it derives its supply of oil to be conducted by capillary attraction to the journal the end of the wick which enters the oil cup or reservoir to there take up the lubricant will leave the lubricant as the supply of the latter becomes reduced and the wick is fed forward to a certain extent.

It is the object of my invention to overcome such defect and to adapt the oil-cup and the wick to be simultaneously advanced as the wick becomes reduced by frictional contact with the journal, whereby that end of the wick which enters the oil cup or reservoir and takes up the lubricant therefrom shall at all times maintain a fixed position within the same at or near the bottom of the receptacle, and thus take up the lubricant even when the supply thereof has been reduced to a minimum quantity. To such end I provide an oil cup or reservoir capable of being advanced toward the journal by means of spring-power or gravity, and rigidly connect the wick with the oil-cup, so that as the wick becomes worn the oil-cup and wick will be simultaneously advanced toward the journal, and at the same time the end of the wick which takes up the lubricant from the oil-cup maintains a fixed position at or near the bottom of the said receptacle.

In the accompanying drawings, Figure 1 represents a section taken on a vertical plane through the oil-cup located above the shaft or journal, the wick and the spring for advancing the box and the wick being shown in elevation. Fig. 2 is a side view of Fig. 1, with a portion of the box or bearing broken away and the remaining portion represented in section. Fig. 3 represents the upper part of the box or bearing shown in Figs. 1 and 2. Fig. 4 represents the lower part of the same. Fig. 5 is a view similar to Fig. 1, with the wick and springs somewhat differently constructed and arranged, the oil cup or reservoir being in this instance located below the shaft or journal to be lubricated. Fig. 6 represents the oil-cup located below the journal, with the spring arranged somewhat differently from the springs shown in Figs. 1 and 5.

The letter A indicates the oil cup or reservoir, and B the wick, which is adapted to conduct the lubricant from the cup or reservoir to the shaft or journal by capillary attraction. This wick, which can be composed entirely of some light porous wood, as indicated in Figs. 1 and 2, or of some fibrous material, *a*, inclosed by two or more thin wooden sheets, *a'*, as indicated in Figs. 5 and 6, is secured at one end in the bottom of the oil-cup, so as to be capable of taking up lubricant therefrom, even after the supply therein has been nearly exhausted.

In Figs. 1 and 2, where the oil-cup is located above the journal, the wick passes up through the bottom of the cup, while in Figs. 5 and 6, where the oil-cup is located below the journal, the wick extends down into the cup and is fitted to or brought against the bottom of the same. The arrangement shown in Fig. 1 is especially applicable for that class of hanger-bearings in which the journal bears against the lower half or section of the two parts C and D. In this instance the wick passes down through a slot, E, that is formed through the upper part, C, of the box or bearing, and a coiled spring, F, which is arranged around the wick, is secured at one end to the oil-cup and at its remaining end secured to the top part of the box or bearing. The spring employed in this connection is a contractile spring, so that as the wick becomes worn, and thereby reduced in length, it will be fed forward to the journal by the resiliency of the spring which advances the oil-cup, and hence causes a simultaneous movement on the part of the wick toward the

journal or part to be lubricated. It will be seen that such movement is in a great measure assisted by the combined weight of the oil-cup and the wick, and hence that in some instances the spring could be dispensed with and the advancement of the oil-cup and wick be left solely dependent upon their gravity.

In Figs. 5 and 6 the oil-cup is located below the shaft or journal, and this arrangement is especially applicable to boxes or bearings in which the shaft or journal bears upwardly against the upper part of the box or bearing, it being desirable that in either case the wick shall be at that side of the bearing which is opposite to the side receiving the greatest lateral pressure from the shaft or journal. In Fig. 5 the spring is not arranged around the wick, but in lieu thereof two contractile springs connecting the oil-cup with the box or bearing and located at the sides of the wick. The thin sheets, which may be of wood, metal, millboard, or other material, which support or inclose the fibrous portion of this wick, may, if desired, be provided with perforations a^2, so as to admit of the lubricant in the oil-cup being brought into immediate contact with the fibrous portion. In Fig. 6 an expansible or extension spring is employed, and this is located below the oil cup or reservoir on a suitable base or support, so as to raise the same, and hence feed the wick and reservoir forward to the journal as the wick becomes worn and reduced. In all of these devices the oil will be absorbed by the wooden wick, or by the fibrous and the wooden portions of the wick, and rapidly brought to the end that rests against the journal when the wick becomes heated by the friction incurred during the vibration of the journal. The wooden sheets in Figs. 5 and 6 serve to hold the fibrous layer in proper shape, although in place of two or more of said strips one can be employed on one side of the fibrous material or the wood covered by the said fibrous material, as desired. In fact, any of the known and suitable forms of lubricator-wicks, wicking, or packing can be employed in this connection.

It will of course be understood that my improvement can be employed in connection with axle boxes or bearings of all descriptions, and that it can be employed where the bearing is composed of but one upper portion only. After the wick has become worn too short for further use the oil-cup can be pressed or moved away from the journal or shaft, and the worn wick replaced by a fresh one.

The oil-reservoir, the wick, and its support or supports, including the spring or springs, should be suitably shielded and protected by a casing or housing, which may be so constructed as to form a guide for sustaining all in proper working position.

What I claim is—

1. In a lubricator for journals and shafting, in which the lubricant is conducted from the oil-cup to the shaft or journal by means of a wick, an oil-cup that is advanced toward the shaft or journal by spring-power or gravity as the wick becomes reduced by friction, substantially as described.

2. The combination, with a box or bearing for journals and shafting, of a movable oil-cup, a wick which is rigidly connected to the oil-cup, and a spring or springs connecting the oil-cup with the box or bearing, substantially as described, whereby the oil-cup will be simultaneously advanced toward the shaft or journal as the wick becomes reduced by friction, substantially as set forth.

3. The combination, with a box or bearing for shafting, of the oil-cup, the wick secured to the oil-cup and extending to the shaft or journal, and a contractile or expansible spring or springs for advancing the oil-cup, and thereby feeding forward the wick as the latter becomes reduced by friction, substantially as described.

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

WARREN M. BRINKERHOFF.

Witnesses:

JAMES L. NORRIS,

JAMES A. RUTHERFORD.