(No Model.)

B. ENGLAND.

LUBRICATOR.

No. 262,025. Patented Aug. 1, 1882.

Fig. 1.

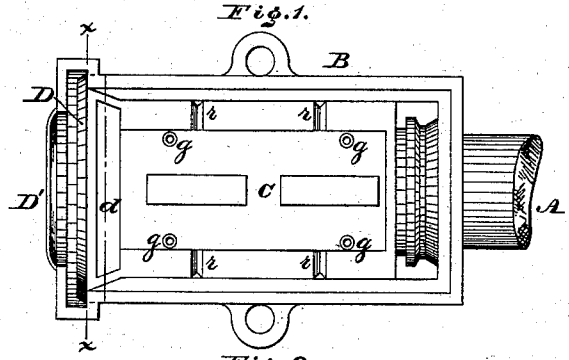


Fig. 5.

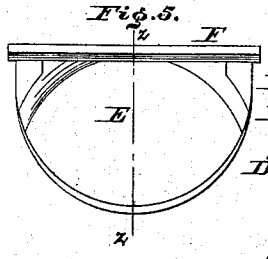


Fig. 2.

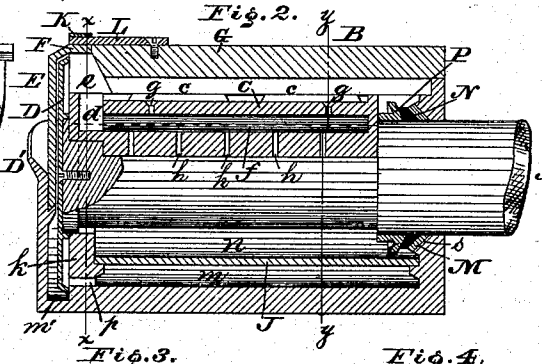


Fig. 6.

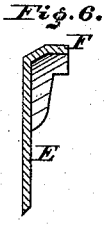


Fig. 3.

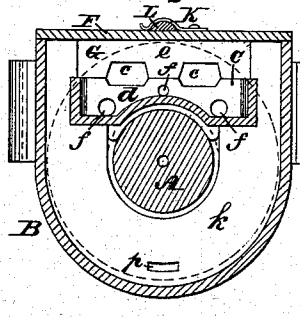


Fig. 4.

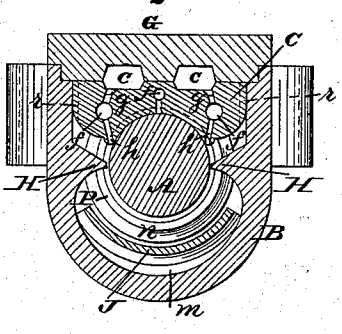


Fig. 7.

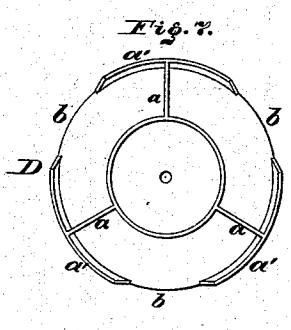


Fig. 8.

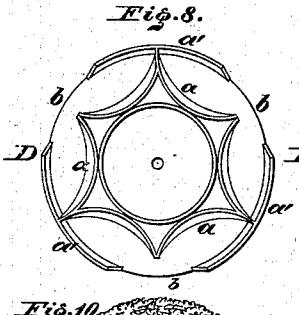


Fig. 9.

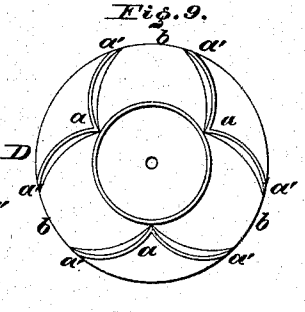
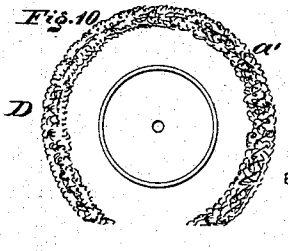


Fig. 10.



WITNESSES:

A. P. Grant,

W. F. Kirches

INVENTOR:

Bodo England,

BY John A. Wiedersheim

ATTORNEY.

N. PETERS. Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

BODO ENGLAND, OF PHILADELPHIA, PENNSYLVANIA.

LUBRICATOR.

SPECIFICATION forming part of Letters Patent No. 262,025, dated August 1, 1882.

Application filed June 7, 1882. (No model.)

To all whom it may concern:

Be it known that I, BODO ENGLAND, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Lubricators for Car-Axles, Shafting, &c., which improvement is fully set forth in the following specification and accompanying drawings, in which—

Figure 1 is a top or plan view of the interior of the lubricator embodying my invention. Fig. 2 is a longitudinal vertical section thereof. Fig. 3 is a transverse vertical section in line *x x*, Fig. 2. Fig. 4 is a transverse vertical section in line *y y*, Fig. 2. Fig. 5 is a view of the inner side of the front cap and deflector of the lubricator. Fig. 6 is a vertical section thereof in line *z z*, Fig. 5. Figs. 7, 8, 9, and 10 are views of different forms of the pumping-disks of the lubricators.

Similar letters of reference indicate corresponding parts in the several figures.

My invention consists in forming a lubricator of a rotary pumping device constructed substantially as described, which is operated by a journal, axle, or shafting, and adapted to raise the oil or fluid so that it will be directed to channels, by which it is uniformly, constantly, and effectually distributed to the journal.

It also consists of certain details of construction, as will be hereinafter fully set forth.

It also consists of means for preventing leakage of the box at the joint of the journal, axle, &c.

Referring to the drawings, A represents a journal, B the journal-box, and C the bearing or "brass."

To the front end of the journal is secured a disk, D, which rotates with the journal and dips into the box B in the space between said end of the journal and front wall of the box. The inner face of the disk has secured to or formed with it a series of wings or vanes, *a*, which may be variously constructed, examples of which are shown in Figs. 7, 8, 9, and 10, said vanes being right-lined, angular, or curved and radiating or otherwise extending to or toward the periphery of the disks, so that when the journal is rotated the attached disk acts as a rotary pump and lifts the oil or lubricating-fluid to said periphery, it being noticed that the diameter of the disk is greater than that of the journal, so that the disk reaches above the journal. The periphery of the disk may have an inwardly-projecting flange, *a'*, which is broken at intervals to leave peripheral passages *b*, or the vanes may extend to the periphery, the spaces between their outer ends forming said passages *b*.

It will be seen that when the disk is rotated the fluid raised by the vanes is forced by centrifugal action through the passages *b* beyond the periphery, the passage that arrives at the top of the disk directing the fluid upward.

E represents a plate or cap, which closes the upper part of the front of the box, and has at its upper end an inwardly-projecting flange, F, forming a deflector, which overhangs the disk D, as more readily seen in Fig. 2.

Between the top plate, G, and bearing C are channels *c*, which extend horizontally and longitudinally, and the front end of the bearing has a transversely-extending channel, *d*, which communicates with said channels *c*. The front end of the top plate is also cut away to form a channel, *e*, which communicates with both the channels *c* and channel *d*.

In the bearing C are longitudinally-extending channels *f*, which communicate with the channel *d*, and communicate above with the channel *c* by means of ducts *g* and lead to the periphery of the journal by means of ducts *h*.

Within the box B are ledges H, which project inwardly from the box, on opposite sides thereof, below the bearing C, and below the journal, within the box, is a segmental shelf, J, which extends longitudinally, and is supported on the rear wall of the box and the opposite front wall, *k*, which is inside of the disk D, said shelf being above the bottom of the box, so that there is a space, *m*, below the shelf and a space, *n*, above the shelf. At the bottom of the wall *k* is an opening, *p*, which forms a communication between the space *m* and the space *m'*, within which the disk D revolves, said space being between the wall *k* and the front wall of the box. The sides of the shelf J extend above the lower portion of the journal, so that the journal always rests in the lubricant.

In the sides of the bearing C are vertical passages *r*, whose lower terminations are above

the ledges H, said passages serving to discharge the overflow or surplus lubricant of the channels *c* and direct it to said ledges H.

It will be seen that when the lubricant oil or lubricating-fluid is forced upwardly beyond the periphery of the disk D it strikes the deflector F, and its direction is so changed as to flow into the channel *e*, channel *d*, and channels *c*. The fluid in the channels *c* seeks the ducts *g* and that in the channel *d* enters the channels *f* and seeks the ducts *h*, the channels *f* thus being supplied both by the channels *c* through the ducts *g* and the channel *d*, as has been stated. The fluid is thus uniformly and constantly distributed to the journal through the ducts *h*, and the lubrication will be found to be thorough, and consequently of a superior nature.

After the overflow fluid falls on the ledges H it is also directed against the journal, and that which drops from the journal or the ledges is caused to be received by the shelf J. When the accumulated fluid rises above the sides of said shelf it overflows at said sides and drops on the bottom of the box in the space *m*, from which it enters the space *m'* through the opening *p*, said space *m'* being the original place of supply of the lubricating-fluid, so that the latter may again be taken up by the pump-disk D, and thus reused.

The cap E may be removed, thus uncovering the discharge end of the front spout, D', whereby provision is made for replenishing the box with oil or fluid.

In order to hold the cap in position, the same is provided at top with a spring-eye, K, with which engages a hinged latch, L, connected with the top plate, G, of the box, one side of the eye being opened, so that by a lateral motion in one direction the latch may be disengaged from the eye K and in the other direction said latch may be forced into the eye, thus locking the cap and top plate.

The inner face of the rear wall of the box has a conical seat, *s*, in which is fitted a conical washer, M, encircling the journal A. Packing N is interposed between said washer and a washer, P, likewise encircling the journal adjacent to the inner end of the bearing. By this provision the rotation of the journal is not affected, and the joint between the journal and rear wall of the box is tight and secure, thus preventing leaking of oil or fluid thereat, the front of the box being also closed, so that there is no leakage thereat.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a lubricator, a rotary pumping device provided with vanes *a* and openings *b*, operated by the journal and adapted to raise the oil or fluid, substantially as and for the purpose set forth.

2. The disk-pump, in combination with a fixed deflector, substantially as and for the purpose set forth.

3. A bearing having horizontal passages *c f*, the one above the other, ducts *g*, which connect them, and ducts *h*, which allow the lubricating-liquid to flow down from them upon the journal, in combination with a box having passage *e*, which communicates with said passages *c* and *f*, and the rotary pumping-disk, operating as set forth.

4. A bearing having transverse channel *d*, a longitudinal channel, *c*, in its top, another longitudinal channel, *f*, in its middle portion, a series of vertical ducts, *g*, connecting said channels *c f*, and a series of vertical channels, *h*, extending from said channel *f* to the bottom or inner face of the bearing.

5. The overflow-passages *r*, in combination with the ledges H and shelf J, substantially as and for the purpose set forth.

6. The shelf J, intermediate of the journal and bottom of the box, in combination with the wall *k*, having an outlet or opening, *p*, and the space *m'*, substantially as and for the purpose set forth.

7. The box B, provided with the lower space, *m*, and opening *p*, in combination with the rotary disk, substantially as set forth.

8. The journal and box, in combination with the conical washers M P and packing N, substantially as and for the purpose set forth.

BODO ENGLAND.

Witnesses:
W. F. KIRCHER,
H. R. SHULTZ.