

(No Model.)

E. CAPITAINE.
LUBRICATOR.

No. 584,033.

Patented June 8, 1897.

Fig. 1.

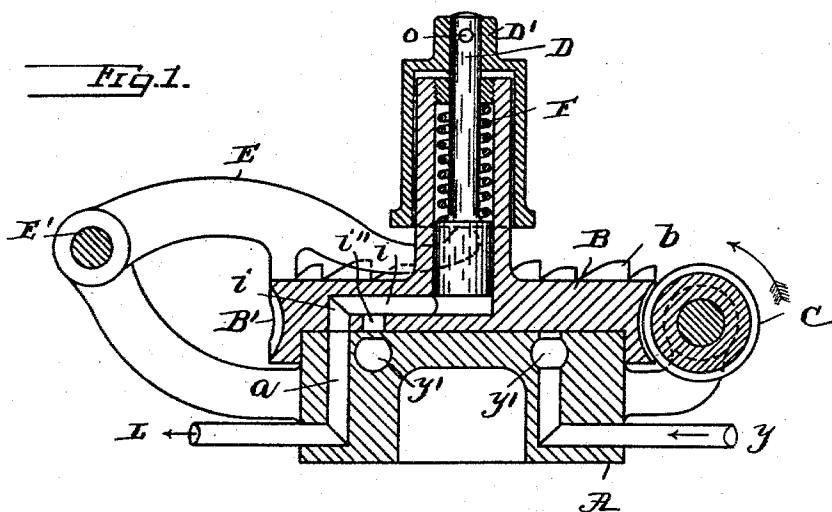


Fig. 2.

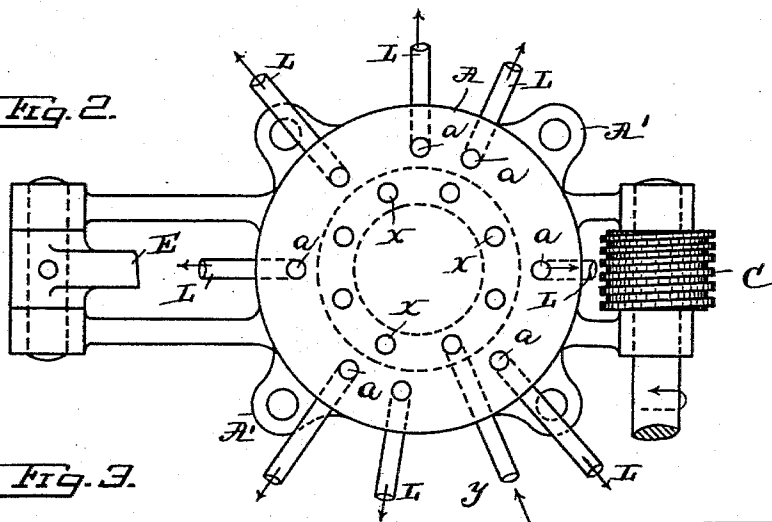


Fig. 3.

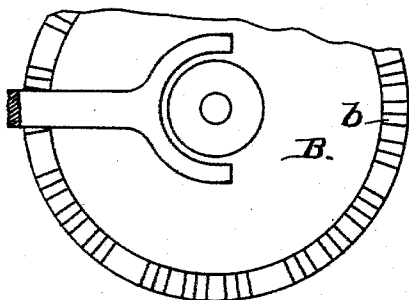
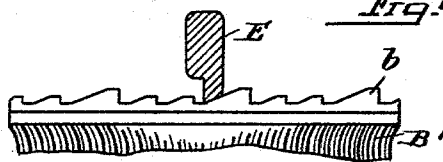


Fig. 4.



WITNESSES:

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LUBRICATOR.

SPECIFICATION forming part of Letters Patent No. 584,033, dated June 8, 1897.

Application filed November 7, 1896. Serial No. 611,325. (No model.)

To all whom it may concern:

Be it known that I, EMIL CAPITAINE, a citizen of the German Empire, residing at Frankfort-on-the-Main, Germany, have invented certain new and useful Improvements in Automatic Lubricating Devices, of which the following is a specification.

My invention relates to mechanism for automatically lubricating an engine or machine having parts needing constant oil lubrication, and has for its object to provide a single and automatically-operating device which shall be efficient for the purpose and a substitute for a series of otherwise necessary oil-cups.

To these ends my invention consists of the combination of mechanism hereinafter described, and particularly mentioned in the claims, having for its essential features a rotating toothed disk with actuating-gearing on its periphery, means to rotate the same, a spring-controlled piston actuating a lever-arm, a frame or body on which the said parts are mounted, provided with inlet and outlet passage-ways and orifices controlled by said rotating disk, and means to rotate the said disk.

In the accompanying drawings, illustrating my invention, Figure 1 is a vertical sectional view. Fig. 2 is a plan view with the rotating disk and piston removed. Fig. 3 is a plan, partly broken, of the disk and lever; and Fig. 4 is a vertical section of part of same intended to show the toothed upper side of the disk and the arrangement of the lever relatively thereto.

The device is provided with a body A, having lugs A', by which it is secured to the base or framework of the machine to be lubricated.

B is a disk fitted over A. The edge of B is cut at B' to form a worm-wheel around its periphery, and by means of the worm C the disk B can be rotated on the stationary body A, the power necessary being transmitted from any convenient rotating or reciprocating part of the engine.

D is a piston which is connected to the thimble D' by the pin O.

E is a lever or arm with a fulcrum at E'.

On the upper side of B are cut teeth or projections b somewhat resembling saw-teeth. (Shown more clearly in plan, Fig. 3, and side

elevation, Fig. 4.) Fig. 2 is a plan view of the body A without the disk B.

The pipe y is the inlet-pipe for oil. It leads from the oil-reservoir, which may be fastened on the machine or on the wall of the room, wherever convenient; but it must be above A, so that the oil flows to y' by gravity; and it is not shown in the drawings. In A is an annular channel y', which has holes x, Fig. 2, communicating with it.

L are outlet-pipes communicating with the holes a and leading to the different bearings and working parts to be lubricated.

The channel i in the rotating disk B has two holes i' i² drilled into it, and the outer one of these, i', is the same radial distance from the center as all the holes a in the body A, and the inner hole i² corresponds likewise in radial distance to the holes x in body A. From this it will be seen that if the disk B is rotated the channel i in same leading to the piston D is alternately in communication with the holes a and x, and exactly so, and that when either of the outside row of holes are open to the channel i the inside holes are closed, and vice versa.

The operation is now as follows: The worm C is turned in the direction shown by the arrow, causing the disk B to be very slowly rotated. In so doing each tooth or projection b will pass successively under the lever E, and each tooth will slowly lift the lever E as it passes under it. The lever E lifts the thimble D', and with it the piston D, against the spring F. The arrangement of the holes x is timed so that while the piston is being raised by the lever E the channel i is in communication with one of the holes x and channel y', and the space under the piston is being filled with oil as the disk is further rotated, and while the lever E and piston D are being held up by the width of the tooth b the communication with channel i is closing to y' and opening to a, and just at the time when one of the holes a and i' are in line the tooth has passed from under the lever E, and the latter is instantly forced down by the spring F, and the oil is ejected through the channels i and a, pipe Z, and into the particular bearing to be lubricated.

Bearings of different size and under differ-

ent pressure need different quantities of oil, and it will readily be seen that the height of the tooth *b* furnishes a ready means of regulating this supply.

- 5 If the piston D was moved down slowly—for instance, by a crank, as in plunger-pumps, and not quickly, as in this case, by the force of the spring F—the small quantity of oil would escape by leakage. The suddenness
10 of the downstroke of the piston D sends the oil out with some force. This quickness of action permits of the piston D being fitted loosely and without packings of any kind, yet it will always remain tight and effective.
15 It will also be seen that the arrangement of the disk B with the body A and with the holes *a* and *x* and the corresponding holes *i'* and *i''* makes it possible to pump oil in many different directions and without using valves or
20 checks of any kind.

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

1. In an automatic lubricating device, the
25 combination with a body or frame having inlet and outlet orifices and passages leading therefrom, of a rotating disk governing such orifices, and having a passage adapted to be brought into communication with either of
30 the same alternately, and means to discharge the contained oil in the disk-passages, under pressure, when it shall be brought into register with the discharge orifice and passage in the body or frame; substantially as
35 described.

2. In an automatic lubricating device, the combination with a body or frame having inlet and discharge passages and orifices, of a rotating disk having a passage adapted to be brought into register with either of the same
40 alternately, gearing upon the periphery of the disk, means to actuate the same, a spring-controlled piston adapted to normally operate to exert a pressure upon the contained oil in the disk-passages and means between the
45 disk and piston adapted to intermittently force back the piston against its spring, on the rotation of the disk; substantially as described.

3. In an automatic lubricating device, the
50 combination with the body A having inlet and outlet openings, of a rotating disk having a passage adapted to register with either of the same alternately, means to rotate the disk, a suitably-mounted spring-controlled
55 piston, a lever adapted to raise the piston against the pressure of its actuating-spring, and a series of tooth-like projections upon the upper side of the rotating disk adapted to raise the free end of the lever when brought
60 into contact therewith on the rotation of the disk; substantially as described.

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

EMIL CAPITAINÉ.

Witnesses:

VIGGO V. TORBENSEN,
JEAN GRUND.