

(No Model.)

F. KAUFHOLD.
LUBRICATOR.

No. 569,717.

Patented Oct. 20, 1896.

Fig 1

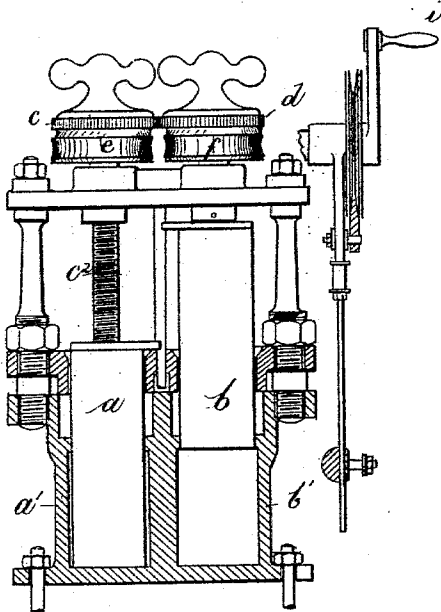


Fig II

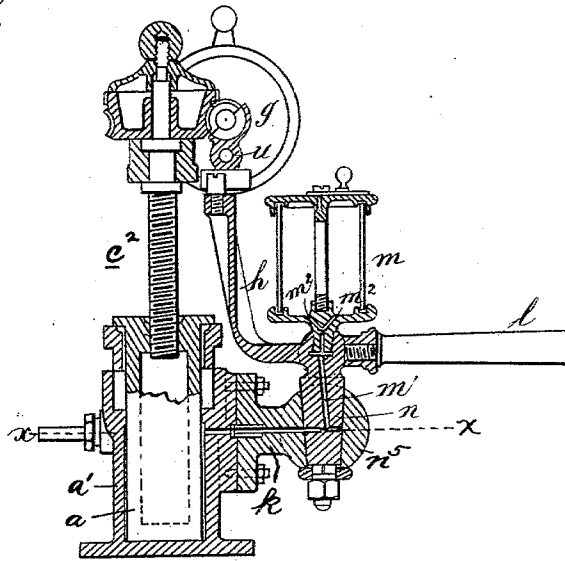


Fig III

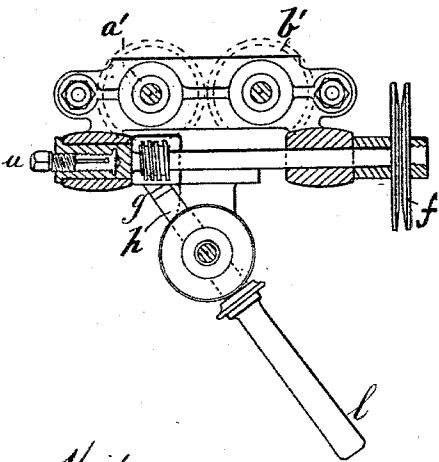
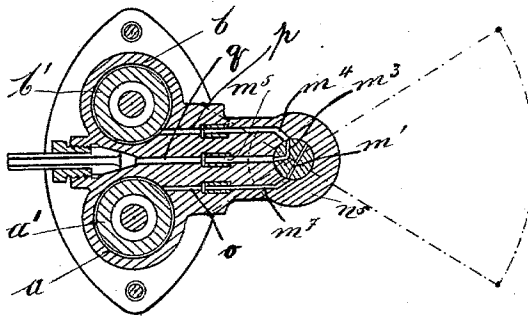


Fig. 4.



Witnesses:

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UNITED STATES PATENT OFFICE.

FRIEDRICH KAUFHOLD, OF MERSEBURG, GERMANY.

LUBRICATOR.

SPECIFICATION forming part of Letters Patent No. 569,717, dated October 20, 1896.

Application filed January 6, 1896. Serial No. 574,516. (No model.) Patented in Germany February 15, 1895, No. 83,611.

To all whom it may concern:

Be it known that I, FRIEDRICH KAUFHOLD, a subject of the Emperor of Germany, residing at Merseburg, Prussia, German Empire, have invented certain new and useful Improvements in Double-Cylinder Lubricators, (for which Letters Patent have been obtained in Germany, No. 83,611, dated February 15, 1895,) of which the following is a description.

My invention has relation to lubricators wherein two cylinders each having a piston are employed which by their alternately-reciprocating movements serve to force the lubricant to the part to be lubricated.

My invention has for its object, among others, to provide simple, efficient, and inexpensive means whereby lubrication of any device or part thereof may be uniformly lubricated; and the invention consists in the novel construction, arrangement, and combination of parts, as hereinafter fully described, illustrated in the drawings, and pointed out in the appended claims.

In the drawings, Figure 1 is a sectional elevation of a lubricator constructed in accordance with my invention. Fig. 2 is a vertical sectional view at right angles to Fig. 1. Fig. 3 is a sectional plan view. Fig. 4 is a horizontal sectional view on line xx of Fig. 2.

In carrying out my invention I provide two cylinders a' b' , within which are adapted to reciprocate, respectively, the pistons a b . With the said pistons are engaged screw-spindles c^2 , which carry at their upper ends gear-wheels c and d , meshing with each other. Integral with said gear-wheels are worm-wheels e f , adapted to be engaged alternately by a worm-shaft or screw g , the extended spindle or shaft of which carries a pulley f and a crank i , whereby said screw-shaft may be driven from any suitable source of power or by hand. The screw or worm portion g is in practice adapted to be slid, so as to engage alternately with the worm-wheels e and f , for which purpose it is guided by a guide u , and is suitably connected with an arm h , connected with a plug-valve n , provided with a lever or operating-handle l . It will thus be seen that by throwing the lever l to one side or the other the worm g will be caused to engage with either the worm-wheel e or f to thus

reverse the direction of rotation of the screw-spindles c^2 .

m indicates an oil-reservoir, which communicates with a channel m' in the valve n by means of ports m^2 , and said valve is also provided with a channel m^3 , which latter channel, when the parts are in the position represented in the drawings, is adapted to communicate with a channel m^4 in the casing n^5 and with the eduction or feed channel g , which is to conduct the lubricant to the device to be lubricated. The channel m^4 is in communication with a channel p , which leads into the cylinder b' . The channel m' at the same time communicates with a channel m^7 in the casing n^5 , which channel in turn communicates with a channel o , which leads into the cylinder a' .

It will be noted that when the worm g is in gear with worm-wheel e , as shown, with the piston a lowered and the piston b in its raised position, the valve n is in a position to bring the various channels into the relative position, as just above described, the lubricant having then been forced out of cylinder a' and cylinder b' then containing lubricant. As the piston b commences its descent, the lubricant within cylinder b' will be forced through the channels p m^4 m^3 into the feed-channel m^5 , and during the descent of said piston b the piston a will be ascending and drawing into cylinder a' lubricant from the oil-reservoir through channels m^2 m' m^7 o . The forcing of lubricant to the device or part thereof to be lubricated will continue until the piston b has descended fully, by which time the piston a will have reached its highest limit.

By moving the lever l so as to bring the worm g in gear with worm-wheel f and the channel m^3 into communication with channels m' p and channel m' into communication with channel m^4 the lubricant in cylinder a' will be forced therefrom into feed-channel m^5 and lubricant drawn from the reservoir m into cylinder b' . In other words, the piston a now becomes the force-piston and the piston b the suction-piston, the feed-channel p in either case serving for the feed of the lubricant to the device to be lubricated.

The diagram at the right of Fig. 4 indi-

cates the positions assumed by the lever *l* when reversing the device.

What I claim, and desire to secure by Letters Patent, is—

- 5 1. In a lubricator, the combination with the cylinders, and their pistons, of screw-spindles connected with said pistons, gear-wheels on said spindles and engaging so as to rotate the spindles in opposite directions, worm-
10 wheels connected with the gear-wheels, a worm adapted to be brought into engagement with either of said worm-wheels, and an oil-education channel adapted to be brought into
15 nately, as and for the purpose specified.
2. In a lubricator, the combination with the cylinders, and their pistons, of screw-spin-

dles connected with said pistons, gear-wheels on said spindles and engaging so as to rotate the spindles in opposite directions, worm- 20 wheels connected with the gear-wheels, a worm adapted to be brought into engagement with either of said worm-wheels, a valve in communication with an oil supply, and hav- 25 ing a channel adapted to bring the cylinders alternately into communication with an oil-education channel, and means for operating the valve simultaneously with the operation of the worm, for the purpose described.

FRIEDRICH KAUFHOLD.

Witnesses:

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