

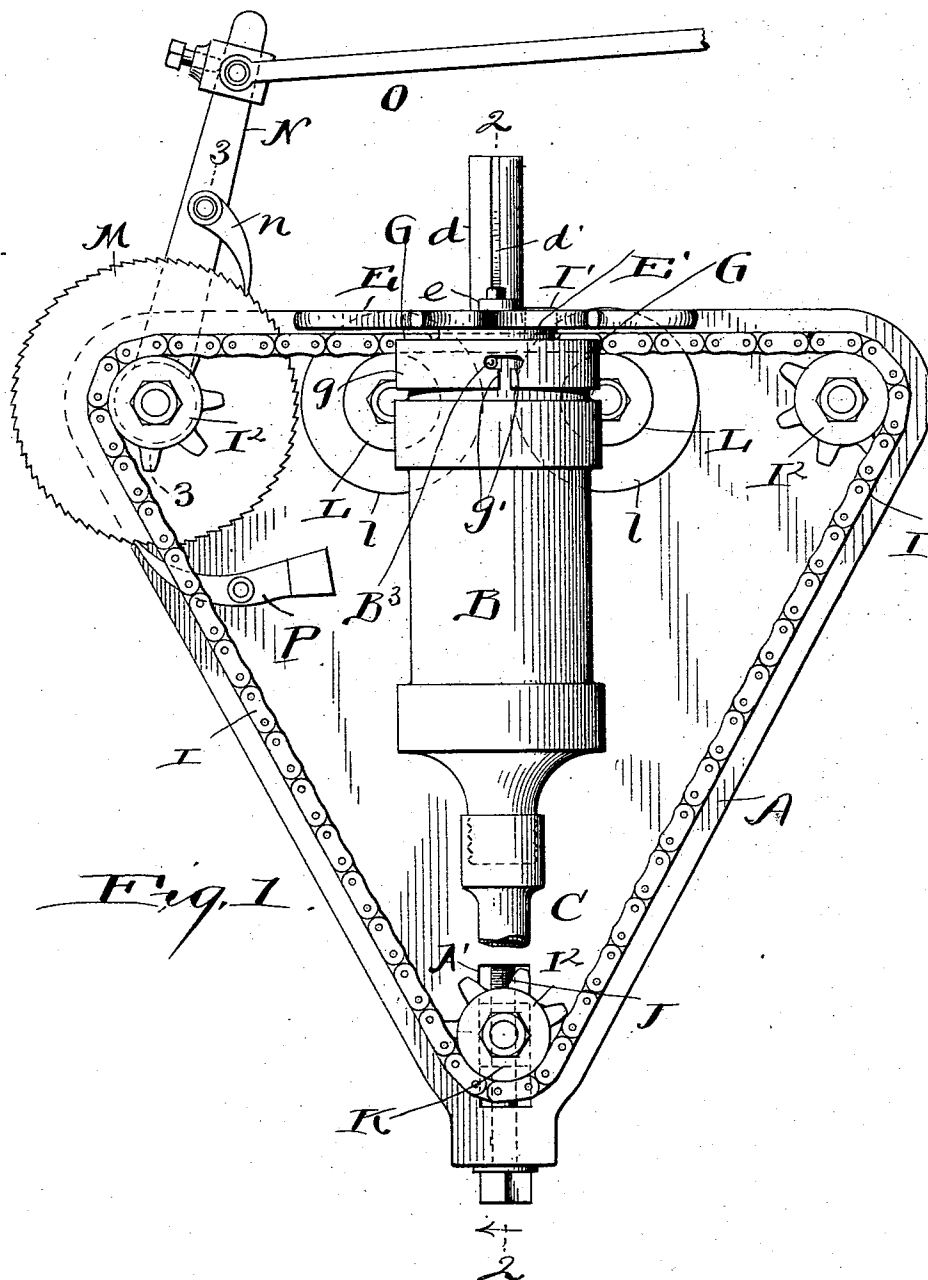
(No Model.)

2 Sheets—Sheet 1.

W. F. GREGORY.
LUBRICATOR.

No. 570,549.

Patented Nov. 3, 1896.



Witnesses.
E. B. Gilchrist
Ella E. Tilden

Inventor:
William F. Gregory
By Sykes, Dyer & Donnelly
his Attorneys

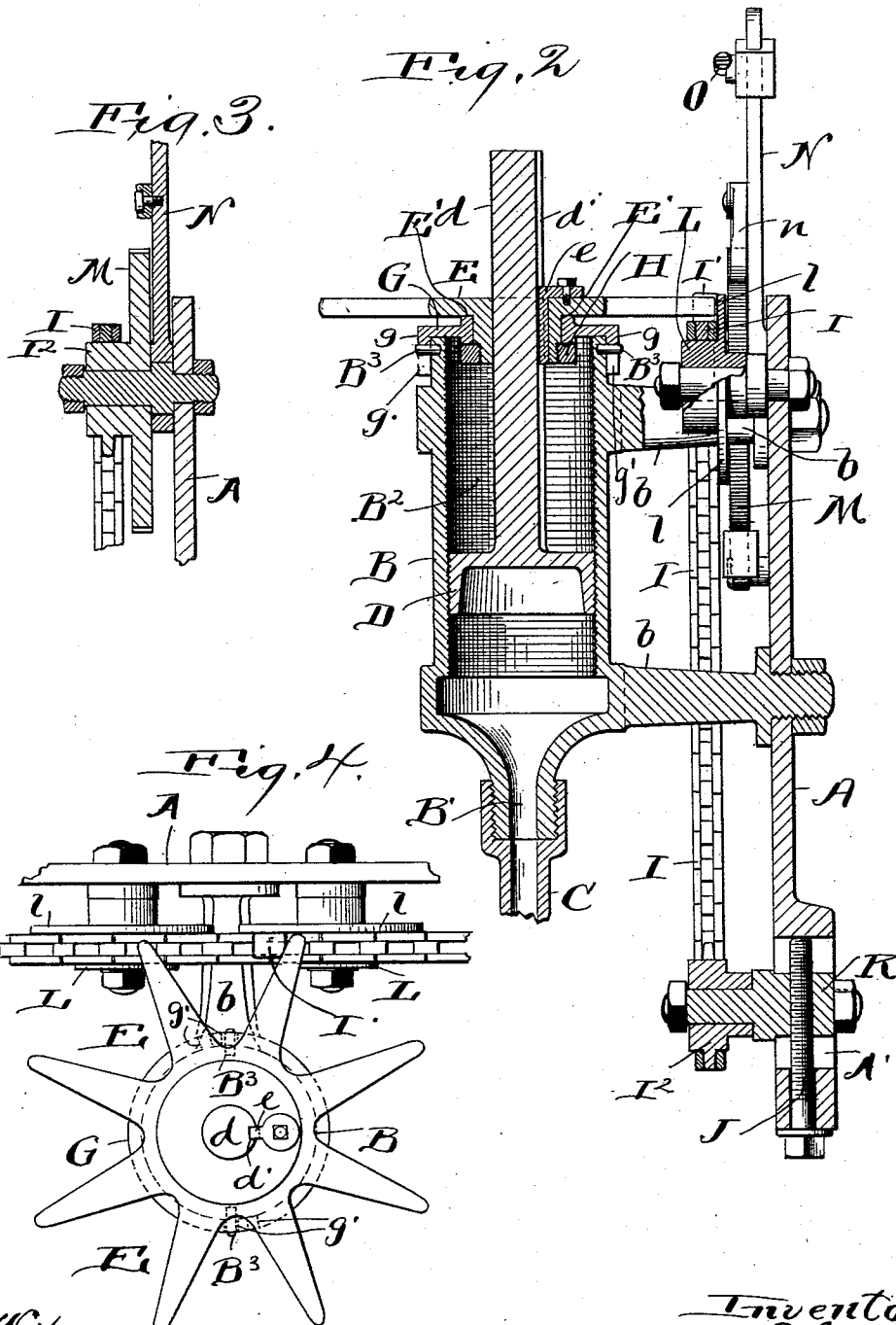
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UNITED STATES PATENT OFFICE.

WILLIAM F. GREGORY, OF BUFFALO, NEW YORK.

LUBRICATOR.

SPECIFICATION forming part of Letters Patent No. 570,549, dated November 3, 1896.

Application filed June 27, 1893. Serial No. 597,194. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM F. GREGORY, of Buffalo, Erie county, New York, have invented certain new and useful Improvements in Lubricators; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same.

My invention relates to improvements in lubricators, and more especially to mechanism for intermittently operating the piston of a lubricating dope-cup; and the invention consists in certain features of construction and combinations of parts hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a side elevation of the dope-cup and the mechanism for operating the dope-cup's piston. Fig. 2 is a right-hand side elevation relative to Fig. 1, mostly in vertical section on line 2 2, Fig. 1. Fig. 3 is a section on line 3 3, Fig. 1. Fig. 4 is a top plan of the dope-cup and a portion of the mechanism for operating the cup's piston.

Referring to the drawings, A designates an upright stationary plate supported in any approved manner, and preferably triangular.

B designates the body portion or shell of the dope-cup. Shell B, at its rear side, is provided with two rearwardly-projecting arms *b*, arranged a suitable distance apart vertically and secured in any approved manner to plate A. Shell B, at its lower end, is provided with a discharge-opening B', from which the dope that is discharged from the dope-cup is conducted to the point desired by a pipe C. Shell B is screw-threaded internally, as at B², and is engaged internally by the correspondingly externally screw-threaded piston D, that is instrumental in forcing the dope downwardly through the cup. The piston is removed for replenishing the cup by turning it in the direction required to elevate it out of the cup; and when the piston is within the cup and in contact with the dope the discharge of the dope is effected by turning the piston in the direction required to lower it. Piston D is provided with an upwardly-extending stem *d*, that extends above the dope-cup, and is provided with a groove *d'*, extending its entire length. A feather *e* engages groove *d* at the upper end of the dope-cup and is suitably se-

cured to the hub of the star-wheel or spider E, that is mounted upon stem *d*, and has its radial arms above the cup.

The hub of wheel E has an external annular shoulder E', that rests upon the cover G of the dope-cup. Star-wheel E has, therefore, bearing upon the dope-cup's cover, and is operatively and slidably mounted upon stem *e*, and the latter can move endwise while the wheel is being turned.

Cover G is provided with an annular rim *g*, that embraces the upper end of shell B. Rim *g* has two vertical slots *g'* at diametrically opposite points, respectively. Each slot *g'* is open at its lower end, and at its upper end is enlarged circumferentially of the rim in both directions.

Shell B, at its upper end, is provided externally with two pins B³ B³, projecting laterally from diametrically opposite points, respectively, of the dope-cup, and the dope-cup's cover, when applying it, is placed in position with the slots *g'* therein registering with pins B³, and is then depressed until the upper enlarged ends of the slots shall engage the pins, whereupon the turning of the cover in the one direction or the other will bring the one or the other extremity of the enlarged ends of the slots in engagement with the respective pin and thereby lock the cover in position. A collar H is fixed upon the lower end of the hub of wheel E and overlaps the under side of the dope-cup's cover, and thereby prevents upward displacement of said wheel. Collar H is preferably screw-threaded internally and screwed onto the correspondingly screw-threaded lower end of the hub of said wheel, as shown in Fig. 2.

By the construction hereinbefore described it is obvious that the piston of the dope-cup is elevated or lowered, according as the star-wheel or spider is turned in the one or the other direction, and said piston is lowered intermittently by giving said star-wheel or spider a fractional turn in the required direction at suitable intervals of time.

I would here remark that the primary object of my invention is to provide suitable mechanism for feeding dope from the cup intermittently and at suitable intervals of time. Star-wheel or spider E is actuated intermittently in the direction required to lower

the dope-cup's piston by an arm I', suitably secured to an endless chain or belt I, that leads over any suitable number of sprocket-wheels I², suitably supported from plate A. Two sprocket-wheels I² I² are located, in the case illustrated, a suitable distance apart at the upper end of plate A, at opposite sides, respectively, of the upper end of the cup, and have their axes parallel and in the same horizontal plane. Another sprocket-wheel I² is located a suitable distance below and centrally between the two upper sprocket-wheels, and is adjustable vertically to accommodate the maintenance of the chain or belt under proper tension. Said lower sprocket-wheel is supported, preferably, from a nut K within and movable vertically of a slot A', formed within plate A, (see Fig. 2,) and said nut is engaged by a screw J, that at its upper end bears against the upper end wall of slot A', and is instrumental, by turning it in the required direction, in lowering nut K and attached sprocket-wheel as required to tighten the chain or belt. Arm or projecting member I' is arranged to move through the path of the outer ends of the arms of wheel or spider E, and consequently the latter is given a fractional turn by said member I' whenever the latter, during the operation of the chain or belt, comes into engagement with an arm of said wheel or spider. The horizontal section of the endless chain between the two upper sprocket-wheels leads over two guide-rollers L L, that are arranged a suitable distance apart adjacent to the dope-cup, and each roller L, at the rear of the path of the chain, is provided with an annular flange l, adapted to prevent displacement of the chain laterally and away from the star-wheel or spider during the engagement and actuation of said wheel or spider by the arm or projecting member I' of the chain.

Motion is communicated to chain or belt I in any approved manner. In the case illustrated a ratchet-wheel M is operatively connected with one of the upper sprocket-wheels. A suitably-supported upright lever N has its fulcrum coincident with the axis of the ratchet-wheel, and is provided with a pawl n, that engages said wheel. A suitably-actuated reciprocating rod O is operatively connected with the upper end of said lever. By this construction it is obvious that motion is communicated to the chain during the movement of the actuating-rod in the one direction, and the chain is idle during the movement of said rod in the opposite direction; but of course other approved mechanism might be interposed between the actuating-rod and the endless belt. Another pawl P engages and is suitably arranged for preventing the return movement of the ratchet-wheel, and is suitably weighted for the purpose of retaining it in engagement with said wheel.

What I claim is—

1. The combination with the internally-screw-threaded shell and engaging externally-screw-threaded piston of the dope-cup, said piston having an upwardly-extending stem; of a suitably-supported star-wheel or spider operatively and slidably mounted upon said stem, a suitably-actuated and suitably-guided endless belt provided with an arm or projecting member arranged to engage and actuate the arms of the aforesaid wheel or spider during the operation of the belt, and means for preventing displacement of the belt laterally and away from the wheel or spider during the latter's actuation by the aforesaid arm or projecting member, substantially as set forth.

2. The combination with the internally-screw-threaded shell and engaging externally-screw-threaded piston of the dope-cup, said piston having an upwardly-extending stem, a suitably-supported star-wheel or spider operatively and slidably mounted upon said stem, and a suitably-actuated and suitably-supported endless belt provided with an arm or projecting member arranged to engage and actuate the arms of the aforesaid wheel or spider during the operation of the belt; of two suitably-supported guide-rollers having flanges suitably arranged to prevent displacement of the belt laterally and away from the aforesaid wheel or spider during the latter's actuation by the belt's arm or projecting member, substantially as set forth.

3. In a lubricator of the character indicated, the combination of the upright stationary plate A; the dope-cup arranged at the forward side of and suitably supported from said plate and comprising the internally-screw-threaded shell B and the engaging correspondingly externally-screw-threaded piston D provided with the upright stem d; two sprocket-wheels arranged at opposite sides, respectively, of the upper end of the cup, and one of said sprocket-wheels being positively driven; another sprocket-wheel arranged a suitable distance below and centrally between the two upper sprocket-wheels; a chain I leading over said wheels and provided with the arm or projecting member I'; and a star-wheel or spider operatively and slidably mounted upon the piston-stem at the upper end of the dope-cup and having the path of the revolving arms extending into the path of the aforesaid arm or projecting member of the chain, substantially as and for the purpose set forth.

In testimony whereof I sign this specification, in the presence of two witnesses, this 28th day of May, 1896.

WILLIAM F. GREGORY.

Witnesses:

C. H. DORER,
ELLA E. TILDEN.