

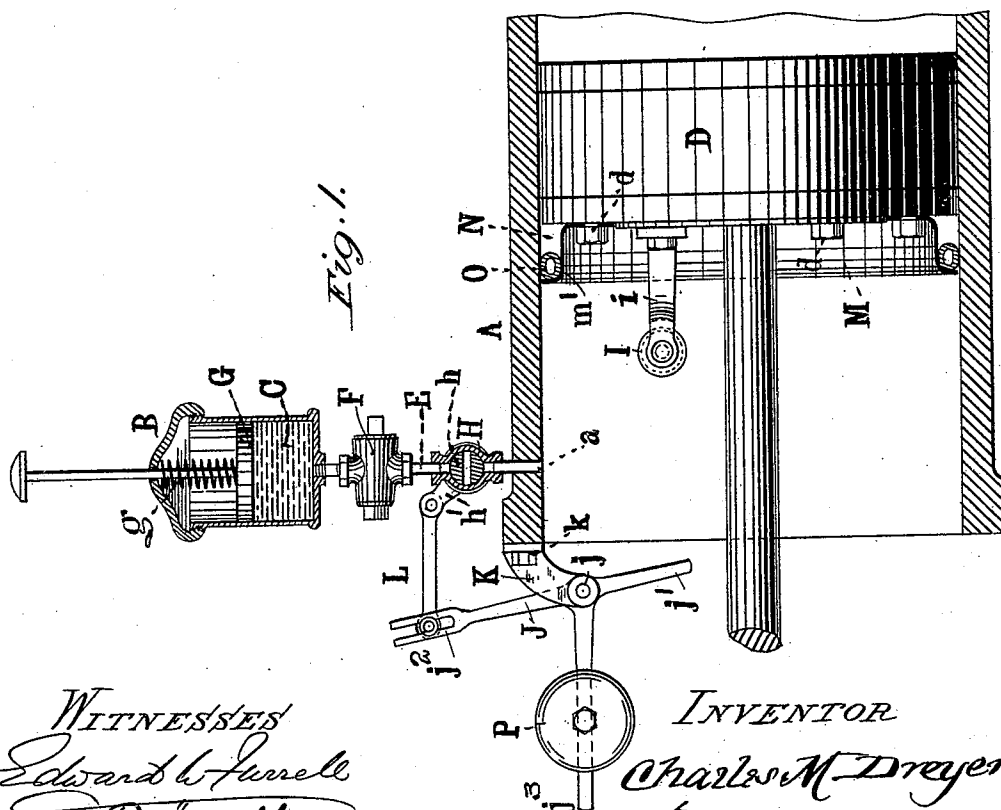
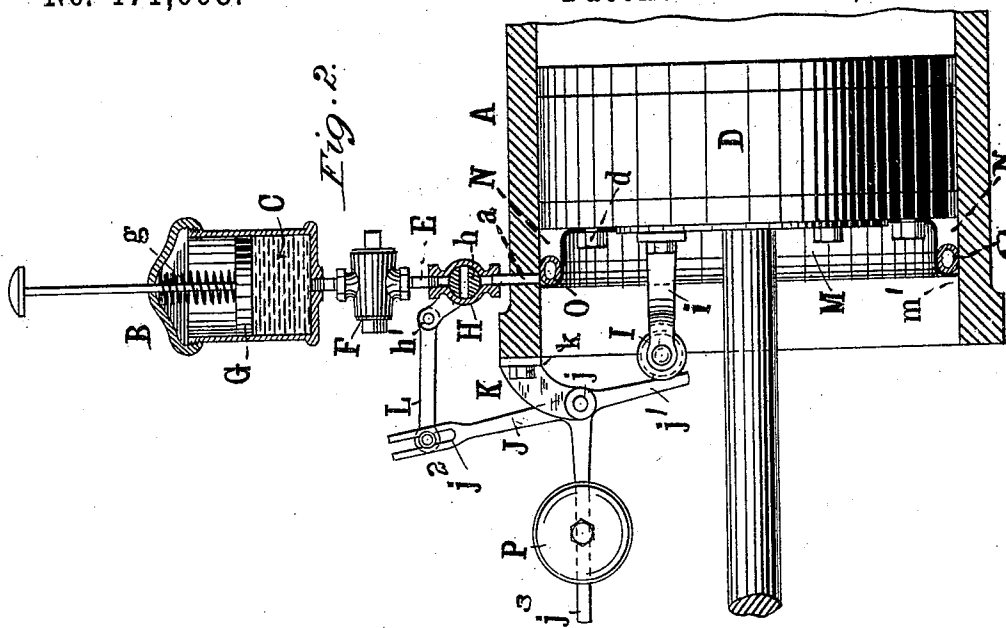
(No Model.)

2 Sheets—Sheet 1.

C. M. DREYER.
PISTON LUBRICATOR.

No. 471,068.

Patented Mar. 15, 1892.



WITNESSES
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A. Bonville

INVENTOR
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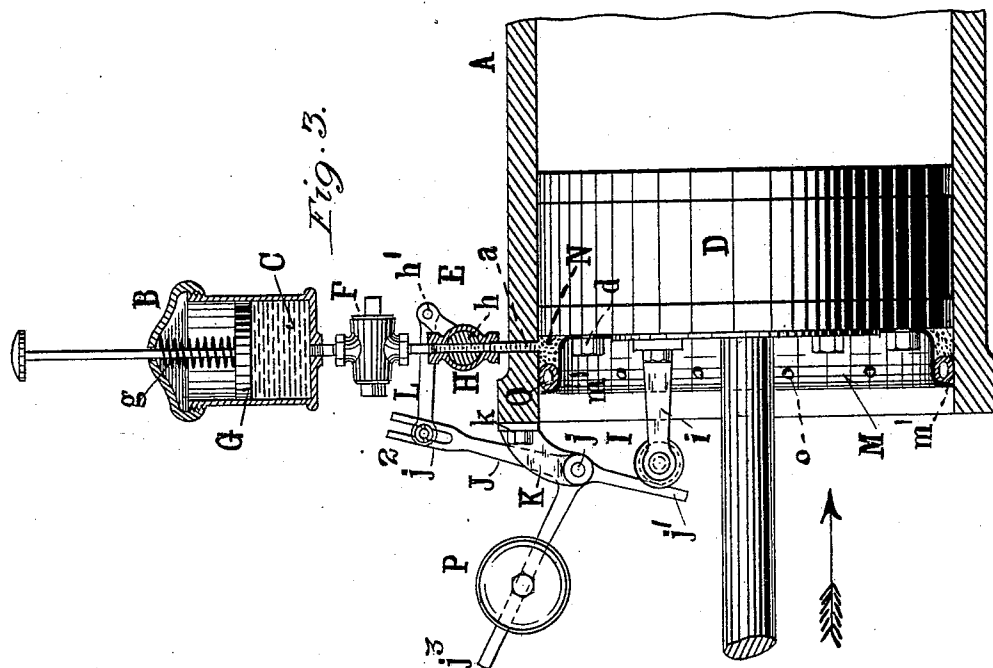
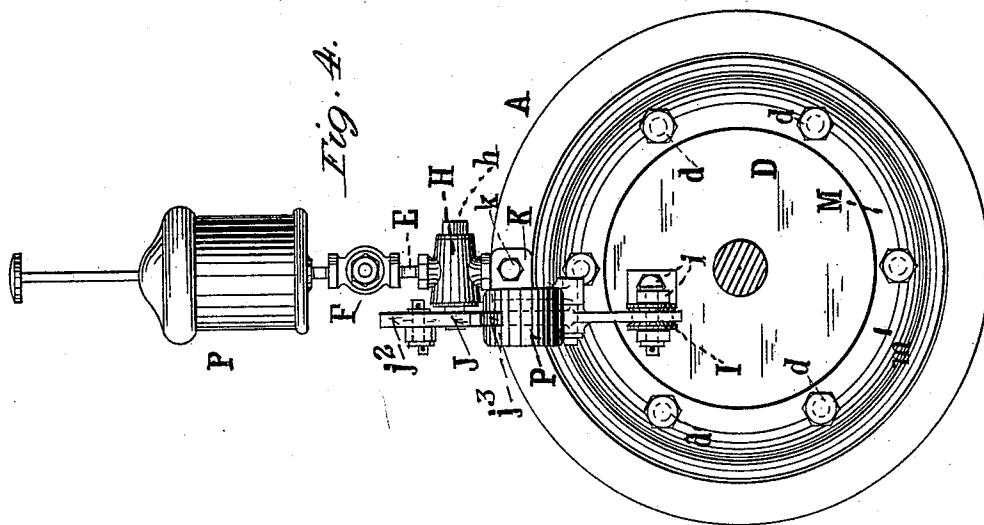
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2 Sheets—Sheet 2.

C. M. DREYER.
PISTON LUBRICATOR.

No. 471,068.

Patented Mar. 15, 1892.



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UNITED STATES PATENT OFFICE.

CHARLES M. DREYER, OF ST. LOUIS, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, TO MARTHA J. MARSDEN, OF BRIDGETON, AND JAMES G. GRACEY, OF ST. LOUIS, MISSOURI.

PISTON-LUBRICATOR.

SPECIFICATION forming part of Letters Patent No. 471,068, dated March 15, 1892.

Application filed September 14, 1891. Serial No. 405,635. (No model.)

To all whom it may concern:

Be it known that I, CHARLES M. DREYER, of St. Louis, Missouri, have made a new and useful Improvement in Lubricators, of which the following is a full, clear, and exact description.

The present invention, when fully carried out, comprises an oil or grease cup attached to a hydraulic cylinder and having means whereby its contents are injected into the cylinder to oil the same at each stroke of the cylinder-piston, said piston in its movement actuating mechanism for opening and closing the passage leading from said cup to the cylinder, substantially as is hereinafter described and claimed, aided by the annexed drawings, making part of this specification and exhibiting the most desirable mode of carrying out the improvement, and in which—

Figure 1 is a longitudinal sectional elevation exhibiting the improved mechanism, and also a sufficient portion of a hydraulic cylinder for an understanding of the working of the improvement, the parts being arranged as before the piston has been moved into the position for actuating the valvular mechanism of the grease-cup; Fig. 2, a similar view, the piston being moved out to encounter but not to operate the valvular mechanism; Fig. 3, a similar view, the piston having completed its stroke and the passage for supplying the grease to the cylinder being open; and Fig. 4, an end elevation of the parts, the view being in the direction of the arrow of Fig. 3.

The same letters of reference denote the same parts.

The cylinder A is of the usual construction, saving as it is modified or supplemented by the improvement under consideration. B represents any vessel or cup suitable for containing the lubricating material C. If said material is sufficiently fluid, it will when the passage is open flow into the cylinder; but as in many instances it is desirable to use grease for the lubricating material, or some form of lubricating material which requires an application of force to effect its delivery into the cylinder, provision is made for producing the

downward pressure upon the contents of the cup.

G represents a piston, which, by reason of its weight and the spring *g*, presses downward upon the material C with sufficient force to cause said material to flow readily into the cylinder when the passage-pipe E, leading from the cup to the cylinder, is opened. By means of a valve F the passage E may be opened or closed or partly opened, as may be desired. The cylinder is suitably perforated at *a* to complete the passage-pipe E. When the cylinder is to be lubricated, the valve F is suitably opened to permit of the passage of the lubricating material. The introduction of the lubricating material into the cylinder, however, is at intervals—namely, at each stroke of the cylinder-piston D—and to this end another valve H is employed. This last-named valve is inserted in the passage-pipe E, substantially as shown, and the motion of the piston is communicated to its stem *h* to open the valve, preferably in the following manner: The piston is provided with a projection, which is preferably in the form of a roller I, journaled in arm *i*, which is suitably attached to the piston. A lever J is pivoted at *j* to a bracket K, which, by means of the bolt *k*, is fastened to the cylinder. The lower end *j'* of said lever extends into the field of the movement of the piston projection. The upper end *j''* of this lever, by means of the rod L, is jointed to the handle *h'* of the valve-stem *h*. The action of the parts is illustrated in Figs. 1, 2, and 3. In Fig. 1 the piston is withdrawn into the cylinder and the valve H is closed. In Fig. 2 the piston has moved outward and its projection I has encountered the lever J. At this point in the stroke of the piston the device preferably employed for distributing the lubricating material is nearly in position for receiving the lubricant. This device is attached to the piston upon the outer side thereof, moving to and fro with the same, and consisting as follows: M represents a ring composed, say, of copper, which, by means of the bolts *d*, is attached to the piston. The ring is projected first horizontally

from the piston and then radially outward at *m'* to meet or come quite near to the internal surface of the cylinder and thereby to inclose a space N in front of the piston and next to the inner surface of the cylinder suited to receive and carry the lubricant delivered from the passage-pipe E. A part O, composed, preferably, of a piece of rubber tubing and serving partly as a packing and partly as a lubricant-distributor, is secured to the ring M, within its flange *m'*. In the position of the piston in Fig. 2 said part O is opposite the outlet from the passage-pipe E and the piston has not yet completed its stroke and the valve H is still closed. In Fig. 3 the piston has moved outward to the end of its stroke. Its motion, by means of the parts I, J, and L, has been communicated to the stem *h*, and the valve H has been thereby opened and the lubricant has been injected into the space N. The piston now makes its return stroke, and as the piston projection I withdraws from the lever J a weight P upon an arm *j'* of the lever J acts to turn said arm and lever again into the position of Figs. 1 and 2, thereby closing the valve H, and said valve H and the described parts for operating it remain in that position until the piston is again moved outward, when the operation is repeated. The packing O is held in place, as shown, by any suitable means, such as the rivets *o*, which pass through the ring M into the packing.

I claim—

1. In a piston-lubricator, the combination of the cylinder, the piston D, working therein and having an arm *i*, the lever J in front of the cylinder, and the oil-pipe E, and valve H,

and mechanism connecting the lever J with said valve H, substantially as and for the purposes set forth.

2. In a piston-lubricator, the combination of the cylinder having thereon the ring M, inclosing the space N in front of the piston, and the packing and lubricant-distributor O, secured to the ring, the arm *i*, and the oil-pipe having valve H, and mechanism for automatically opening and closing same, substantially as described.

3. In a piston-lubricator, the combination of the cylinder and the piston, as described, operating in it and having an arm *i*, the pipe E, communicating with the interior of the cylinder at *a*, and the weighted lever J, pivoted to the bracket K, the rod L, and the valve H in said pipe, the said rod connected with and adapted to operate said valve, all substantially as described.

4. In a piston-lubricator, the combination of the cylinder carrying an automatic force-feed reservoir, as set forth, and a piston operating in it and provided with arm *i*, of the pipe E, communicating with the interior of the cylinder at *a*, the weighted lever J, pivoted to the bracket K, the rod L, and the valve H in said pipe E, said rod L being connected with and adapted to operate said valve, substantially as shown and described.

Witness my hand this 5th day of September, 1891.

CHARLES M. DREYER.

Witnesses:

C. D. MOODY,
A. BONVILLE.