

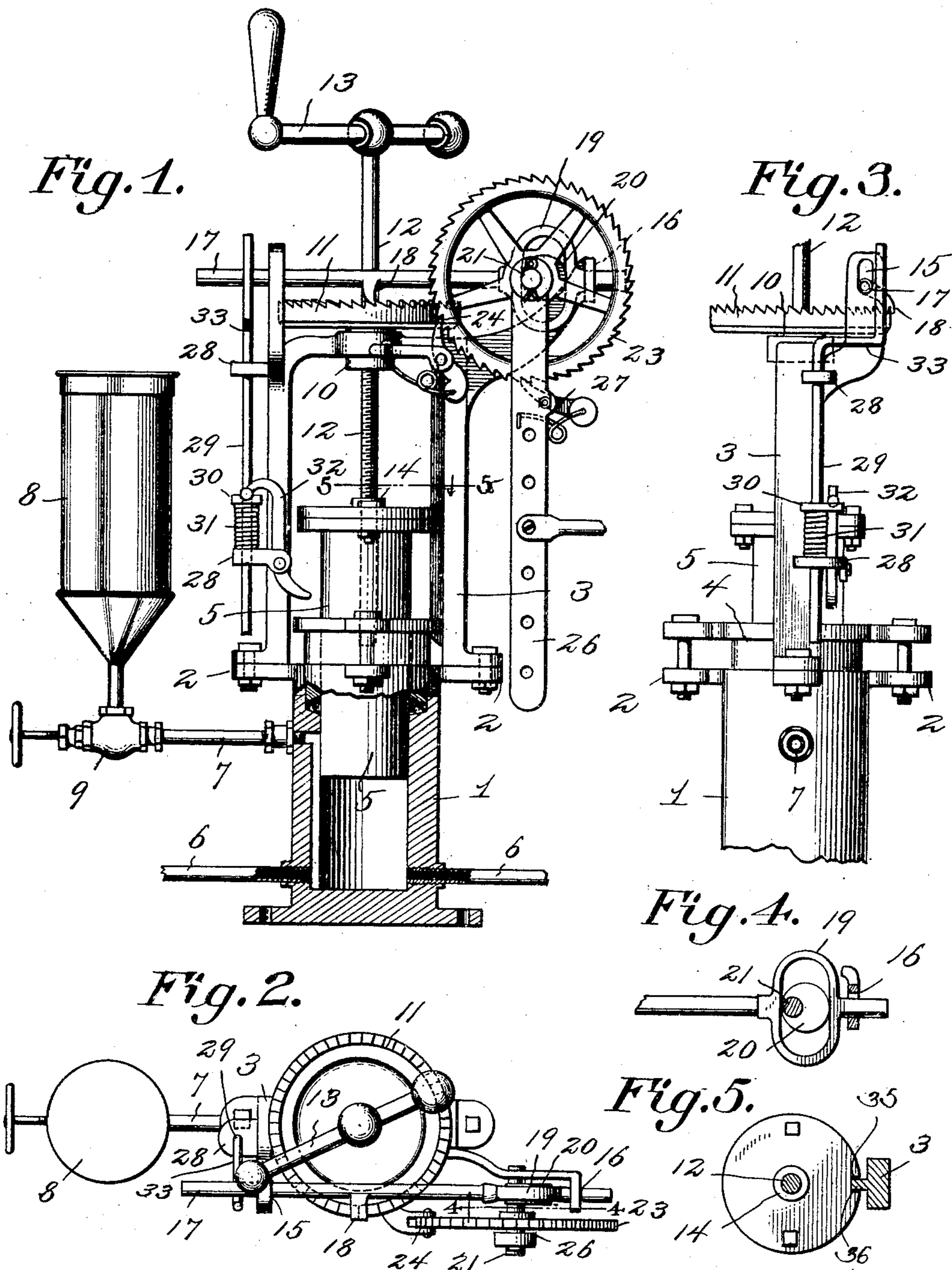
No. 765,934.

PATENTED JULY 26, 1904.

W. Q. PFAHLER.
OIL PUMP OR LUBRICATOR.

APPLICATION FILED APR. 4, 1904.

NO MODEL.



Witnesses
E. J. Howard
Geo. E. Carter

William Q. Pfahler, Inventor,
by *C. A. Snow & Co.* Attorneys

UNITED STATES PATENT OFFICE.

WILLIAM Q. PFAHLER, OF LEIPSIC, OHIO.

OIL-PUMP OR LUBRICATOR.

SPECIFICATION forming part of Letters Patent No. 765,934, dated July 26, 1904.

Application filed April 4, 1904. Serial No. 201,505. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM Q. PFAHLER, a citizen of the United States, residing at Leipsic, in the county of Putnam and State of Ohio, have invented a new and useful Oil-Pump or Lubricator, of which the following is a specification.

The principal object of the present invention is to provide a device for forcing oil or other lubricating material to the interior of engine-cylinders and to other points where lubricant cannot be supplied by an ordinary oil-can.

A further object of the invention is to provide an oil-feeder in which the parts are so arranged as to provide for the automatic disconnection of the operating parts when the supply of oil is about exhausted.

A still further object of the invention is to provide a device of this character in which provision is made for refilling the oil-containing cylinder, and, further, to provide novel means for moving the oil-forcing piston or plunger, provision being also made for adjusting the various parts of the apparatus in accordance with the quantity of oil to be fed.

With these and other objects in view, as will more fully hereinafter appear, the invention consists in the novel construction and arrangement of parts hereinafter described, illustrated in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that various changes in the form, proportions, size, and minor details of the structure can be made without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawings, Figure 1 is an elevation of an oil-feeder constructed in accordance with the invention, a portion of the cylinder being broken away in order to illustrate the construction. Fig. 2 is a plan view of the same. Fig. 3 is a side elevation of the device, the oil-inlet pipe being shown in section. Fig. 4 is a sectional elevation of a portion of the device on the line 4 4 of Fig. 2. Fig. 5 is a sectional plan view on the line 5 5 of Fig. 1.

Similar numerals of reference are employed

to indicate corresponding parts throughout the several figures of the drawings.

The device is intended principally for supplying lubricating material to engine-cylinders and other places where oil cannot be ordinarily applied owing to the excessive pressure or where the part to be lubricated is concealed or is in such position that it would be dangerous to attempt to supply oil from a can. The cylinder 1 of the pumping apparatus is supported on a suitable base in convenient position and at its upper or outer end has a pair of laterally-projecting arms 2, to which is bolted a yoke-like frame 3. In the upper end of the cylinder is a stuffing-box 4, through which passes a plunger 5, which is manipulated to force the oil of the cylinder out through one or more discharge-pipes 6 to the point of consumption. At one side of the cylinder is connected a valved oil-supply pipe 7, that may be placed in communication with an oil-tank 8 by means of the valve 9, and when the contents of the cylinder have been exhausted this valve is opened, and the plunger is raised, thereby creating a partial vacuum in the cylinder and causing the flow thereof into of the oil contained in the tank 8.

In the top of the frame 3 is a bearing-opening for the reception of the hub 10 of a crown ratchet-wheel 11, which is keyed or otherwise rigidly locked to a threaded shaft 12, having at its upper end a crank-handle 13, by which the shaft may be operated manually when necessary. The lower threaded end of the shaft 12 extends through a suitable boss 14 at the top of the plunger 5, and when the shaft is turned in the proper direction the plunger will be forced downward and expel the oil through the pipe or pipes 6. The frame 3 carries a pair of arms having guiding-openings 15 and 16 to receive the opposite ends of a pawl-carrying bar 17. The pawl-bar is provided with a tooth 18, which engages the ratchet-wheel 11, and when the pawl-bar is reciprocated longitudinally it will impart a step-by-step rotative movement to the ratchet-wheel and shaft.

Near one end of the pawl-bar 17 is a yoke 19, in which plays a cam 20 on a short shaft

21, adapted to suitable bearings in the upper portion of the frame. The shaft further carries a ratchet-wheel 23, with which engages a spring-pressed pawl 24, supported by the frame and serving to prevent independent movement of the ratchet-wheel.

Hung on the shaft 21 is an arm 26, carrying a pawl 27, which engages the teeth of the ratchet-wheel 23. The arm 26 is provided with a number of perforations, through any one of which may pass a rod or link which is connected to a movable member, such as an eccentric or cross-head of the engine, if the device is employed in connection with an engine, or it is otherwise so arranged as to permit movement of the arm, and thereby effect a step-by-step rotative movement of the ratchet-wheel, and at each revolution of the ratchet-wheel the wheel 11 will be rotated to an extent of a single tooth or two or three teeth, in accordance with the throw of the cam.

At one side of the frame are lugs 28, having openings for the passage of a vertically-movable bar or rod 29, and on the rod is secured a rigid collar 30, between which and one of the lugs 28 is a helical compression-spring 31, normally tending to throw the rod upward; but this is prevented by a catch 32, that is pivoted to the frame and has an upper hook-like end engaging a recess in the collar 30, while the tail of the catch is disposed in the path of movement of the plunger-head, so that as the latter nears its lowest possible position the catch will be thrown to releasing position, and the spring 31 will force the rod 29 upward.

The upper end of the rod 29 is adapted to engage with one end of the pawl-bar 17, and for this purpose the upper end of the rod is bent slightly to one side, so as to form a shoulder 33 to engage with the under side of the pawl-bar, while the rod is continued upward and is partly guided by contact with the side of said pawl-bar.

In the operation of the device, the cylinder having been filled with oil or other material, the arm 26 is connected to a movable member, and the pawl 27 effects a step-by-step rotative movement of the ratchet-wheel 23. At each complete revolution of the ratchet-wheel 23 the shaft 21 and cam 20 will reciprocate the rack-bar 15, and the crown-ratchet 11 will be moved to the extent of one or more teeth. This movement is transmitted to the screw-shaft, and as the latter is turned the plunger will be forced downward as the screw turns out of the nut, so that the oil will be forced gradually up through the delivery pipe or pipes 6.

In order to prevent turning movement of the plunger during the operation of the screw, the plunger-head is provided with a marginal recess 35, with which engages a guide-rod 36,

forming a part of the rigid frame, as shown more clearly in Fig. 5.

When the supply has been exhausted, the head of the plunger will engage the catch 22, and the spring 31 will then elevate the bar 29 and throw the pawl-bar 15 to inoperative position, thus preventing the further downward movement of the plunger and result in breakage of the parts. In order to renew the supply of oil, the valve 9 is opened and the cylinder is filled by drawing up the plunger 5. To effect this, the handle 13 is turned and the screw in the nut will speedily elevate the plunger, the upward movement of the latter causing a partial vacuum in the cylinder and resulting in the free flow of oil or the like from the oil-supply tank 8 into the cylinder.

Having thus described the invention, what is claimed is—

1. The combination with a cylinder having a discharge-opening, of a plunger in said cylinder, a screw-shaft adapted to a threaded opening in the plunger, a ratchet-wheel secured to the shaft, a pawl engaging said ratchet-wheel, a pawl-bar carrying the pawl, a cam for actuating the pawl-bar, a shaft carrying said cam, a ratchet-wheel on the cam-shaft, and a pivotally-mounted pawl for engaging said ratchet-wheel.

2. The combination with a cylinder having a discharge-opening, of a plunger, a plunger-actuating screw, a ratchet-wheel secured thereto, a pawl for engaging the ratchet-wheel, a reciprocating pawl-bar carrying said pawl, a spring-pressed bar-engaging means for raising the pawl from engagement with the teeth of the ratchet-wheel, and a pivotally-mounted catch for locking said spring-pressed bar-engaging means in inoperative position, said catch being disposed in the path of movement of the plunger.

3. The combination with a cylinder having a discharge-opening, of a plunger disposed in the cylinder, a screw-shaft engaging in a threaded opening in the plunger, a ratchet-wheel connected to and rotating with the screw-shaft, a pawl-bar for actuating the ratchet-wheel, a normally locked spring-pressed arm adjacent to the pawl-bar, and means for automatically releasing the rod and causing it to move the pawl-bar to inoperative position.

4. The combination with a cylinder having a discharge-opening, of a plunger, a screw-shaft adapted to a threaded opening in the plunger, a ratchet-wheel secured to the shaft, a guided pawl-bar for engaging the ratchet-wheel, a vertically-guided spring-pressed rod adapted to engage the pawl-bar and move the same to inoperative position, a flange or collar carried by the rod, and a pivotally-mounted catch engaging said flange or collar, one end of the catch being disposed in the path of movement of the plunger.

5. The combination with a cylinder having a discharge-opening, of a plunger disposed in the cylinder and provided with a threaded opening, a frame rigidly secured to the cylinder, a threaded shaft adapted to the opening in the plunger, a ratchet-wheel secured to the shaft and having a hub portion passing through a guide-opening in said frame, a pair of upstanding arms forming a part of the frame and provided with guiding-openings, a pawl-bar extending through said guide-openings and engaging the ratchet-wheel, said pawl-bar having a yoke at one end, a cam-shaft adapted to bearings in the frame, a cam mounted on the shaft, and engaging the yoke, a ratchet-wheel on the cam-shaft, means for

operating said ratchet-wheel, a vertically-guided spring-pressed rod having an offset portion extending under one end of the pawl-bar, a spring encircling said rod, a recessed collar secured to the rod, and a catch having one end engaged in the recess of the collar and the opposite end in the path of movement of the head of the plunger.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

WILLIAM Q. PFAHLER.

Witnesses:

A. A. SLAYBAUGH,
W. A. BELL.