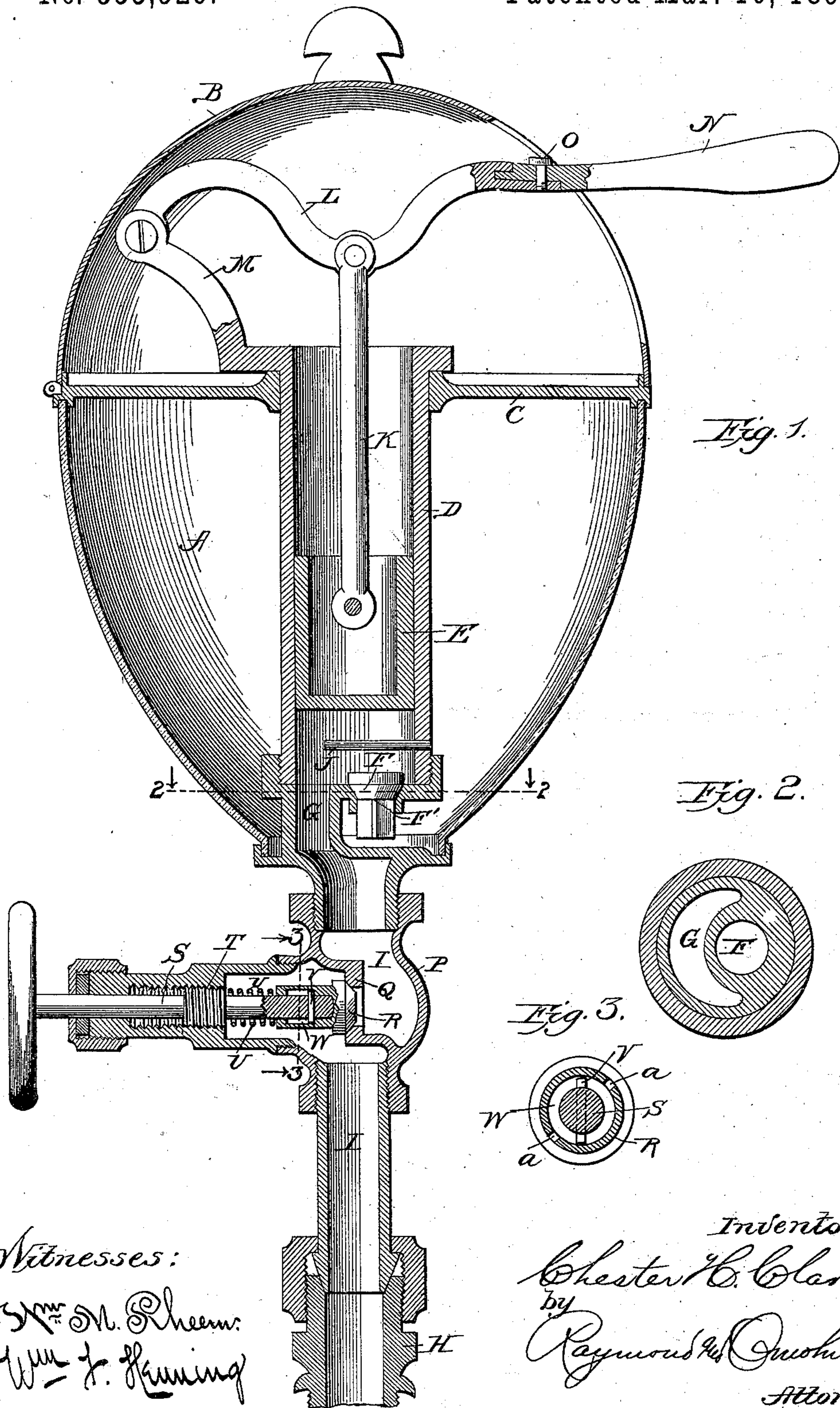


(No Model.)

C. H. CLARK.
LUBRICATOR FILLER.

No. 555,926.

Patented Mar. 10, 1896.



Witnesses:

Wm. M. Rheem.
Wm. F. Hanning

Inventor
Chester H. Clark.
by
Raymond W. Quinlan
Attorneys.

UNITED STATES PATENT OFFICE.

CHESTER H. CLARK, OF CHICAGO, ILLINOIS.

LUBRICATOR-FILLER.

SPECIFICATION forming part of Letters Patent No. 555,926, dated March 10, 1896.

Application filed March 13, 1893. Serial No. 465,737. (No model.)

To all whom it may concern:

Be it known that I, CHESTER H. CLARK, a citizen of the United States, and a resident of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Lubricator-Fillers, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to appliances for supplying lubricating-oil to the lubricators or oil-cups of engines and machinery of various kinds.

Among the primary objects of my invention is included that of producing a lubricator-filler by means of which lubricating-oil can be readily pumped into the lubricators or oil-cups whenever the latter require refilling, and which shall at the same time be capable of such adjustment as to permit a direct through feed of oil by gravity alone in the event of a lubricator becoming empty, thereby preventing the injurious results of the running of machinery without oil for any appreciable length of time.

The above-mentioned objects, and also such others as may appear from the ensuing description, are attained by the devices illustrated in the accompanying drawings, in which—

Figure 1 is a central transverse vertical section of a lubricator-filler embodying my invention. Fig. 2 is a horizontal section of the same, taken on the line 2 2 of Fig. 1, the direction of view being downward, as indicated by the arrows adjacent to the section-line. Fig. 3 is a transverse vertical section of the lubricator-filler, taken on the line 3 3 of Fig. 1, the direction of view being to the right, as indicated by the arrows adjacent to the section-line.

In the said drawings, A designates a chamber or reservoir which is designed to receive a gross quantity of lubricating-oil and the upper part of which supports a removable cover B, carrying at its lower part a horizontal partition C, which closes the top of the chamber A, the entire structure just described being

either of the ovoid or egg form shown or of any other suitable or preferred contour.

Centrally within the chamber A is placed a tubular barrel D, the upper end of which is tightly secured in the middle of the partition C and within which works a suitable piston E. This barrel D stands vertically within the chamber A and is open at its upper end to permit of the free working of a piston-rod K, the lower end of which is wristed to the piston E and the upper end similarly connected to an operating handle or lever J. This lever J lies principally within the cover B of the chamber A and above the partition C, and furthermore extends outward from the cover through a vertical slot in one side of the latter, the outer end portion of the lever being pivotally connected, as at O, to the inner portion thereof for a purpose to be hereinafter explained. The inner end of the lever L is pivotally connected to bracket M, (shown as carried by the upper end of the barrel D,) and the arrangement is such that by moving the lever L alternately upward and downward the piston E will be similarly moved upward and downward within the barrel D. The lower end of the barrel D is also open and has screw-threaded connection with the upper end of a valve-casing G, said casing having in turn screw-threaded connection with the lower end or bottom of the chamber A, so as to extend vertically upward from the latter. Within this valve-casing G is placed a gravity-valve F, which is arranged to open upward from its opening F', the upward movement of the valve being limited by a stop-arm J projecting inwardly from the wall of the barrel D at a point above the valve F. At one side of the valve-opening F' leads a channel G', which extends downwardly through the casing G.

The lower end of the casing G is shown as forming a nipple to which is screwed the upper end of a second valve-casing P, a coupling-pipe I of any suitable length being screwed to the lower end of this valve-casing P, and being in turn screw-threaded at its lower end to a gland H for connecting the filler to a lubricator.

For the sake of clearness I will term the

valve-casing G a "check-valve casing," and the valve-casing P a "regulating-valve casing." Within the regulator-valve casing P is located a vertical partition having an opening which is closed at times by a regulator-valve R. This valve is of plug form and is carried movably at the inner end of a valve-stem S. The outer part of the valve R is formed with a hollow sleeve-like extension W, into which loosely protrudes the inner end of the valve-stem S, a cross-pin V which extends through the inner end of the stem serving to permit longitudinal play of the valve upon the end of its stem and yet to prevent displacement of the valve from the stem. Intermediately of its ends the stem S is formed with a screw-threaded portion T, which engages with an internally-screw-threaded portion of the casing X of the valve-stem, it being particularly noted that the externally-screw-threaded portion T of the stem S is of greater diameter than the stem itself. A spiral spring U surrounds the inner part of the stem S and is interposed between the inner end of the enlarged externally-screw-threaded portion T of the stem and the inner end of the valve extension W. It will thus be seen that the outer end of the spring U impinges against the inner end of the enlarged portion T of the stem and the inner end of said spring impinges against the outer end of the valve extension W, the normal tendency of the spring being to retain the valve R at its innermost position upon the end of the stem. The arrangement is such that when the valve-stem S is screwed inward it will seat the regulating-valve in the opening in the partition Q, but the spring will yield and allow the valve R to open in consequence of any sufficient fluid-pressure against the face of the valve. Furthermore, the arrangement is also such that when the valve-stem S is moved outward a sufficient distance the valve R will be carried away from the opening in the partition Q and will consequently hold said valve unseated as long as desired. A hand-wheel at the outer end of the stem S is shown as the means for facilitating the turning of the valve-stem to effect the changes of position of the regulating-valve, as above described.

In the normal operation of the filler the valve-stem S is so set as to cause the valve R to yieldingly close the opening in the partition Q, and the check-valve F normally closes the opening in the partition of the valve-casing G. If now a lubricator is to be filled, the lever L is raised and lowered alternately, the check-valve rising automatically during each upward movement of the piston and closing during each downward movement of said piston. The regulator-valve R closes during each upward movement of the piston and opens during each downward movement of said piston, so that successive quantities of oil are forced through the filler and into the lubricator until the latter is properly charged with oil. In certain instances (as where an

attendant has a large number of lubricators to supply) one of the lubricators may become entirely empty and the wearing-surfaces of the machine may be working "dry." In such event it is desirable to be able to force the oil first directly through the lubricator and to the wearing-surfaces of the machine and then to subsequently fill the latter, this operation requiring an unusually copious and rapid supply of oil for a short time. My improved filler is perfectly adapted to such emergency service. The operator in such event first turns the stem S so as to hold the valve R open and then retains the lever and piston E in raised position. The oil raises the check-valve F by its specific gravity and the regulator-valve R being held open the oil flows rapidly and copiously from the filler, the feed-valve of the lubricator being of course set open, so that the oil can first flow directly to the dry wearing-surfaces. As soon as the oil appears in the oil-cup of the lubricator, the regulator-valve R is set to its normal position and the lever L is raised and lowered as before until the lubricator-cup has been filled. I wish also to state that when the filler is set for emergency service, as above explained, it is capable of supplying cold and consequently sluggishly-flowing oil, which cannot be done with other fillers, so far as I am aware.

The pivotal connection O of the handle N to the lever L is simply for the purpose of allowing the handle to be folded in upon the lever when desired.

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

1. In a lubricator-filler, the combination with a chamber and a partition for closing the top of the same, of a barrel in the chamber open at top and bottom and secured to the said partition, a hollow piston arranged within the barrel, a valve-casing attached to the bottom of the barrel within the chamber and projecting outside the same, an intermediate portion of the valve-casing being connected with the lower end or bottom of the chamber so as to extend vertically upward from the latter, said casing having inlet and discharge openings, both of which are within the circumference of the barrel, a check-valve located in the inlet-opening, and a stop-pin arranged within the barrel to limit the movement of both the piston and check-valve, substantially as described and for the purposes set forth.

2. In a lubricator-filler, the combination with a chamber or case, of a barrel arranged therein, a valve-casing attached to the bottom of the barrel and projecting beyond the chamber or case and having an intermediate portion connected to the bottom of the case so as to extend vertically upward from and support the same, said valve-casing being provided with inlet and discharge openings both within the diameter of the barrel, a check-

valve located in the inlet-opening, a stop-pin
fixed in the barrel directly above said valve,
a hollow piston working in the barrel, a rod
connected therewith, a sectional vibrating le-
5 ver located within the chamber or case and to
which said piston-rod is connected, and a cap
for covering the chamber or case and the le-

ver when the latter is folded and not in oper-
ation, substantially as shown and described.

CHESTER H. CLARK.

Witnesses:

O. R. BARNETT,
V. HUGO.