

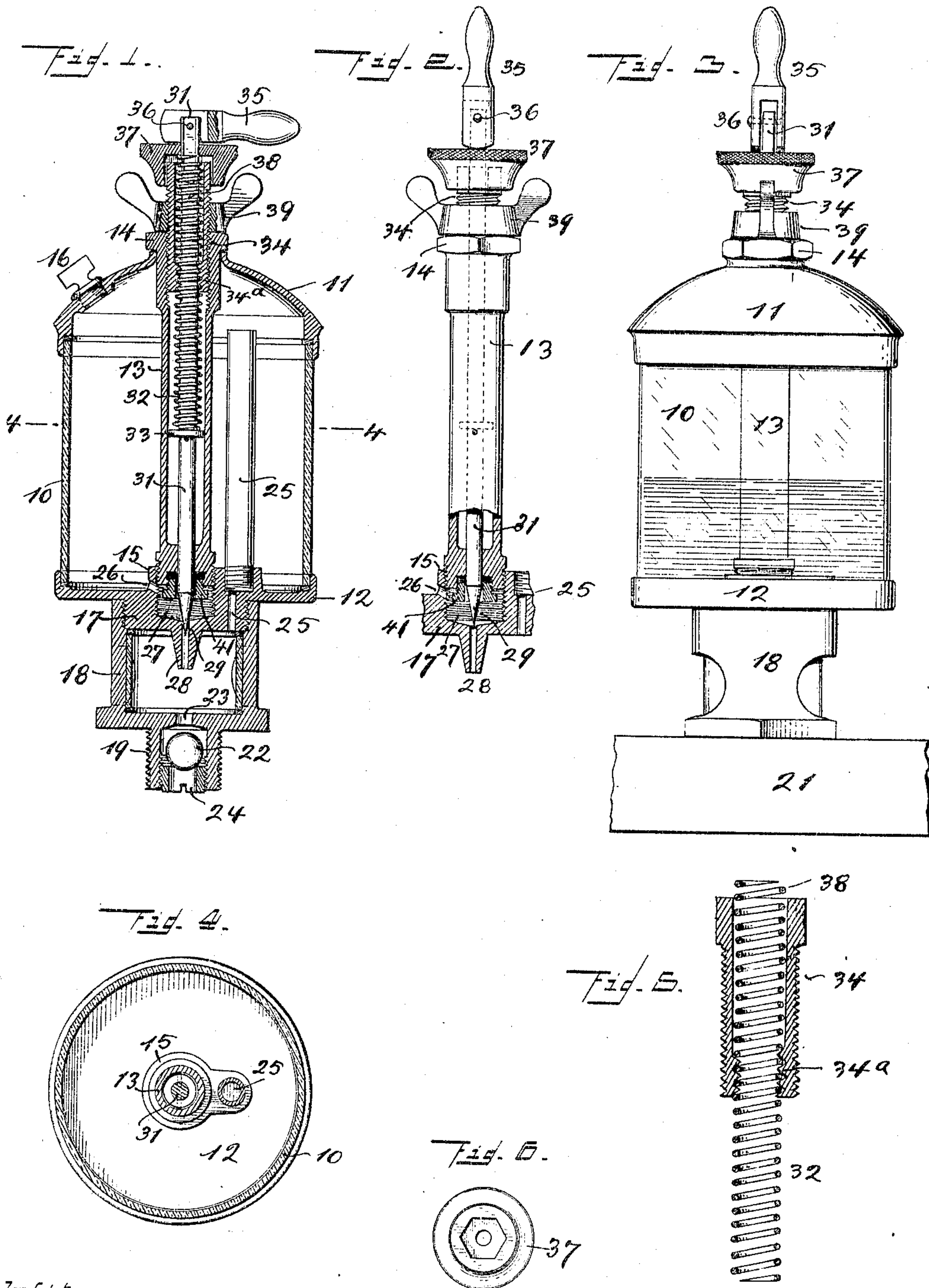
No. 776,422.

PATENTED NOV. 29, 1904.

J. POWELL.
LUBRICATOR.

APPLICATION FILED DEC. 23, 1903.

NO MODEL.



Witnesses
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UNITED STATES PATENT OFFICE.

JAMES POWELL, OF CINCINNATI, OHIO.

LUBRICATOR.

SPECIFICATION forming part of Letters Patent No. 776,422, dated November 29, 1904.

Application filed December 23, 1903. Serial No. 186,270. (No model.)

To all whom it may concern:

Be it known that I, JAMES POWELL, a citizen of the United States, residing in the city of Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Lubricators; and I do declare the following to be a clear, full, and exact description thereof, attention being called to the accompanying drawings, with the reference characters marked thereon, which form also a part of this specification.

This invention relates to improvements in lubricators or oil-cups used for supplying lubricant automatically to moving and operating parts in machinery. It relates more particularly to such oilers in which the operation is by gravity and where the discharge may be regulated as to quantity as well as entirely interrupted when desired.

The invention consists of certain features of such a device whereby its construction is improved, its manufacture simplified, and its efficiency increased.

In the following specification, and particularly pointed out in the claims, is found a full description of the invention, together with its manner of use, parts, and construction, which latter is also illustrated in the accompanying drawings, in which—

Figure 1 is a vertical section of an oiler of the type mentioned. Fig. 2 shows in side view, with parts broken away, the mechanical or operating parts detached. Fig. 3 is a side elevation of the device, the view being taken in a plane at right angles to Fig. 1. Fig. 4 is a horizontal section of it on line 4 4 of Fig. 1. Fig. 5 is an enlarged sectional detail view of the spring-bearing and screw-plug. Fig. 6 is an underside view of cap 37.

Such devices consist, substantially, of the oil retainer or reservoir, a shank or nipple on it permitting attachment, such nipple containing also the discharge-outlet and means to regulate and control the discharge of the oil. There usually intervenes a so-called "sight-chamber" between the attaching means and the oil-reservoir, which as to part of its inclosure being formed of glass permits observation of the action of the device.

The oil-reservoir consists principally of a

shell 10, usually cylindrical and of glass and closed by two heads, the upper one or cap being indicated by 11 and the lower one or bottom being indicated by 12. These three parts are held to each other to form the oil cup or chamber in any suitable way—as, for instance, by a central post or tie 13, having a flange 14 to bear on the outside of cap 11 and being seated with its lower screw-threaded end in a tapped socket 15 on the inner side of bottom 12. Flange 14 forms a nut, so that tie-post 13 may be readily turned into its socket 15, whereby the two heads are drawn together and held toward each other with shell 10 clamped between them, thereby forming the oil-chamber complete.

16 is a plug to close a suitable fill-opening.

On the under side of bottom 12 there is a screw-threaded boss 17, receiving the correspondingly-threaded housing 18, which forms the sight chamber, above referred to, and for which purpose part of this inclosing housing is provided with sight-openings closed by glass to permit inspection of the interior. Below this sight-chamber there is the perforated attaching-nipple 19, screw-threaded to permit placing of the device in a position as shown in Fig. 3, 21 indicating a certain machine member in said figure on which this oiler is to be used for lubricating. This present oiler being particularly designed for lubricating the cylinder of an explosive-engine, it is necessary to provide a check-valve 22 to reduce or prevent reaction from the charge or gases exploded within said cylinder. This check-valve, which may be in form of a ball, is adapted to close the outlet-opening 23 in the sight-chamber from below and is confined within nipple 19 by means of a perforated plug 24.

The oil-chamber is vented by means of a vent tube or passage 25, part of the gases which escape past the check-valve 22 forming a sufficient venting medium in place of air, the use of this latter being inadmissible, since an air-inlet opening in the oil-chamber would also permit escape of such gases, which is objectionable on account of the odor, as well as because of the fact that it would force up the oil. Hence the oil-chamber whenever the de-

vice is used in such connection is accordingly closed air-tight. The oil feeds by gravity out through a port 26 in socket 15 into a recess 27, formed within boss 17, and from here out through a perforated drip-nozzle 28 into the sight-chamber below. From here the final escape takes place through opening 23, the oil passing out through nipple 19 at moments when the check-valve is thrown up from its seat. The discharge of oil from the oil-reservoir is controlled by a valve 29, fitted against a seat at the upper or inner end of drip-nozzle 28. This valve is carried at the lower end of a stem 31 and normally held to its seat by a spring 32 bearing against a collar 33 on said stem and all contained within post 13, which is hollow for such purpose. A screw-plug 34 serves to stop the upward thrust of the spring, the latter for such purpose being held within such plug by being seated in threads cut in the bore of such plug and fitting the coils of the spring, as shown at 34^a. (See also Fig. 5.)

For lifting the valve there is a handle 35, pivoted to the upper end of the valve-stem and so arranged that the length of the lower part of it—that is, that part of it below pivot-pin 36—exceeds at least half of the width of such handle. The effect of such arrangement is that if the handle is raised from a position shown in Fig. 1 to one shown in Figs. 2 or 3 the valve is raised off from its seat, as best shown in Fig. 2. In both these positions the handle bears against a cap 37, seated on the upper end of screw-plug 34. The object of this particular feature, not considered as new, is to permit the feed to be quickly started or stopped, a knock on this handle closing the valve and a turn of it upwardly opening it. The quantity of the feed may be regulated by adjusting the extent of opening of the valve, which is done by raising or lowering it with respect to its seat on the inner end of the drip-nozzle. This is done by raising or lowering screw-plug 34 within post 13, it being seated therein by means of a screw connection.

In Fig. 2 the valve is shown adjusted to open to about its fullest extent. This opening may be decreased by lowering it toward its seat by means of the screw-plug within post 13. This adjustment being of course necessarily a limited one has no bearing on the opening or closing manipulation of the handle, since this latter will always raise the valve to the position to which it has been adjusted, while on closing spring 32 will readily yield, and thus compensate for the reduced throw of the valve 29, the only effect being that the valve-stem remains in a little higher position relatively to the screw-plug. For turning this latter for purpose of so adjusting the valve, cap 37, seated on the upper end of the screw-plug, is used, its recess which receives this upper end being otherwise than round—as, for instance, as shown in Fig. 6—such upper end being correspondingly shaped and fitted into it.

To prevent lost motion and rattling of handle 35 when the same by reason of changed adjustment of the valve would be lifted clear of cap 37 in the position of parts shown in Fig. 1, I cause this cap to follow up such handle, which is done by inserting a spring under it, such spring being contained in hollow screw-plug 34 and held as before described for spring 32, it being seated in threads cut to fit the coils of such spring. As a matter of fact springs 32 and 38 are formed in one continuous spring held between its ends by the threads mentioned and as shown at 34^a, whereby as to function it is caused to form the two springs. It will now be seen that if the throw of the valve, shortened by adjustment, would cause the valve-stem to be slightly raised out of the upper end of the screw-plug the handle will still be held spring-tight, since cap 37, raised by spring 38, follows it, sliding up on screw-plug 34. The adjustment of the valve by means of this screw-plug is preserved by a jam or lock nut 39, which is turned down against flange 14.

To prevent oil from leaking into the hollow post 13 and working out above, I provide a stuffing-box in the lower end of such post, the packing used being held by a gland 41.

When this oil-cup is used otherwise than on explosive-engines, the check-valve and internal vent-tube may be omitted.

Having described my invention, I claim as new—

1. In a lubricator, the combination of an oil-reservoir formed of a cylindrical shell, an upper and a lower head, the latter having a socket on its inner side provided with an outlet-port in its bottom and a drip-nozzle below, a hollow tie-post provided with a shoulder which engages the upper head and by being tapped into the socket of the lower head, holds the heads to each other and in position on the shell to form the oil-reservoir, a spring-actuated valve-stem contained in this tie-post, having a valve at its lower end, a screw-plug open at both ends to adjust the position of this valve-stem, a cap seated on the upper end of this plug closing the same thereat and engaging it for purposes of rotation to adjust the same, a manipulating-handle pivotally attached to the upper end of the valve-stem which latter extends through this plug and cap, protruding beyond this latter and a spring contained under the cap to hold the same normally against the handle in all adjusted positions.

2. In an oil-cup, the combination of an oil-reservoir formed of a cylindrical shell and two heads, a hollow tie-post to hold these two latter in position, a hollow screw-plug seated in the upper part of this tie-post, a spring engaging both the tie-post and the screw-plug and held between its ends by the screw-plug, a valve-stem passing through this tie-post and screw-plug and having a valve at its lower end

and a manipulating-handle at its upper one, a collar seated on this valve-stem engaged by the lower end of the spring and a cap seated on the upper end of the screw-plug for manipulating the same said cap also closing this upper end and being kept normally against the handle by the upper end of this spring.

3. In an oil-cup provided with an outlet-port, the combination of a valve controlling this outlet, means to adjust this valve, a

spring to hold this valve normally to its seat and a plug provided with interior threads in which said spring is seated.

In testimony whereof I hereunto set my signature in the presence of two witnesses.

JAMES POWELL.

Witnesses:

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ARTHUR KLINE.