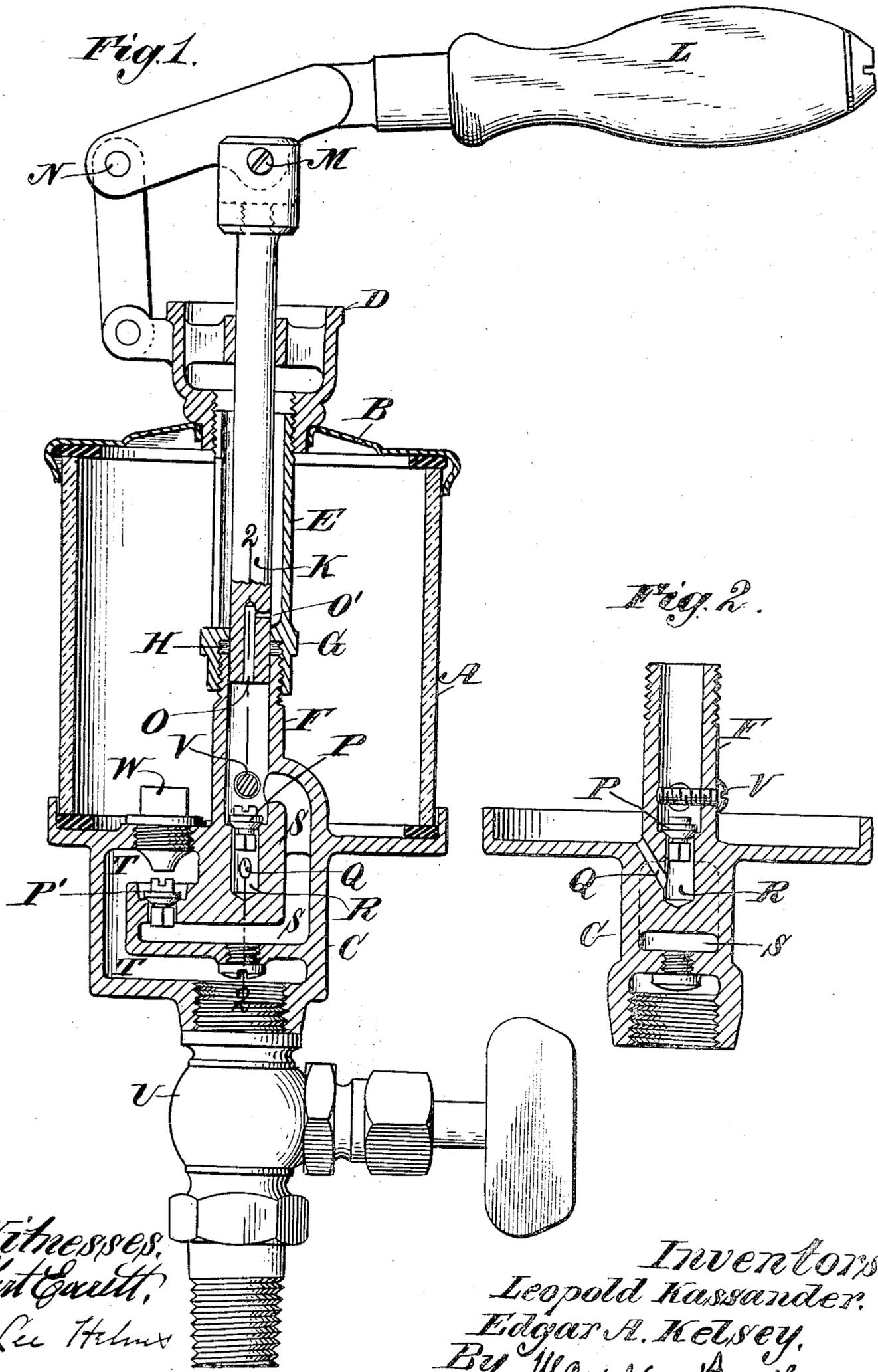


L. KASSANDER & E. A. KELSEY.
 OIL PUMP LUBRICATOR.
 APPLICATION FILED JUNE 25, 1908.

908,274.

Patented Dec. 29, 1908.



Witnesses,
 Albert Gault,
 H. Lee Helms

Inventors,
 Leopold Kassander,
 Edgar A. Kelsey,
 By *Manly Bailey*
Attys.

UNITED STATES PATENT OFFICE.

LEOPOLD KASSANDER, OF NEW YORK, AND EDGAR A. KELSEY, OF MOUNT VERNON, NEW YORK, ASSIGNORS TO NATHAN MANUFACTURING COMPANY, OF NEW YORK, N. Y.

OIL-PUMP LUBRICATOR.

No. 908,274.

Specification of Letters Patent.

Patented Dec. 29, 1908.

Application filed June 25, 1908. Serial No. 440,291.

To all whom it may concern:

Be it known that we, LEOPOLD KASSANDER and EDGAR A. KELSEY, citizens of the United States, residing, respectively, in the city, county, and State of New York, and in the city of Mount Vernon, county of Westchester, and State of New York, have invented certain new and useful Improvements in Oil-Pump Lubricators for the Lubrication of Bearings Under Pressure, of which the following is a full and clear description.

In oil pump lubricators of this description, as usually constructed, the plunger operates in an open cylinder, and, unless the plunger is fitted into the cylinder very tightly, the oil, on the pressure stroke of the plunger, is liable to be pressed back into the reservoir through the minute space between the exterior of the plunger and the interior of the cylinder, whereby the pump loses its efficiency, and will not deliver the oil to the part to be lubricated. On the other hand, a very tightly fitted plunger has the disadvantage that it operates stiffly, binds in the cylinder and may break or bend under the strain.

Oil pumps heretofore made with a closed plunger-cylinder, that is, with packing around the plunger, usually become what is termed in the art "air-bound", that is, when, as a result of carelessness or oversight on the part of the operator, air is pumped into the plunger-cylinder, it has no avenue of escape from it, which materially influences, or altogether prevents, the proper operation of the pump. Pumps of this description are usually provided with a suction and a pressure valve, but, as heretofore constructed, these valves as a rule are lifted to their seats by the pressure against which the pump operates, assisted in most cases by a spring, and experience is that these valves are difficult to keep tight. In some cases such pumps are made with gravity valves, but, as far as we know, when so made they require special delivery connections and joints, making the construction and the application of the pump cumbersome and complicated.

The object of our invention is to overcome all these defects and inconveniences in the construction of a pump of this description, making the construction more compact, reliable and efficient.

In the accompanying drawing to which

we shall now refer for a more complete understanding of our improvements—Figure 1 is an axial section of the lubricator. Fig. 2 is a section on line 2—2 Fig. 1, of the body casting, omitting other parts.

A is the oil reservoir, preferably consisting of a glass vessel, held tight between cap B at the top and the rim of the body part C at the bottom. These two parts are drawn together by means of the filler cap D and the slotted tube E, which screws upon the threaded neck F of body part C. The lower portion G of the tube E also forms a packing nut, packing material being inserted in the space H between the top of the threaded neck F and the bottom of G.

K is the plunger of the pump, operated by means of the handle L, which is pivoted to the plunger at M and to an oscillating fulcrum at N in the usual manner. The plunger moves in the cylindrical bore of the neck F, which constitutes the plunger-cylinder, and it will be noticed that in the highest position, presented in the drawing, the lower portion of the plunger remains below the packing at H, so that no oil can pass back into the reservoir, as the plunger is tightly packed by means of the arrangement shown and described. It will also be noticed that, for the purpose of venting the plunger-cylinder, the plunger is provided with a vent passage which extends through it for some distance upward from its lower end and then terminates in a lateral opening in the plunger so located that it comes slightly above the packing nut G when the plunger is in its highest position, as shown. This vent passage is formed in the present instance by providing the plunger with an axial bore O and a cross bore O' leading from the top of the axial bore O out through the side of the plunger—so that any air which may get into the plunger cylinder will have an opportunity to escape as soon as the plunger starts on the downward stroke, thereby venting the plunger cylinder and preventing it from becoming "air-bound". The mouth of the cross bore O' is of course closed except when the plunger is raised.

P is the suction valve and P' the pressure valve. The suction valve finds its seat in the body casting C at the bottom of the plunger cylinder. An opening Q leads by means of an oblique passage or bore from the chamber R below the suction valve into the oil reser-

60

65

70

75

80

85

90

95

100

105

110

voir. A cored passage S leads from above the suction valve P to below the pressure valve P', and another cored passage T leads from above the pressure valve to the inlet of the valve U, which forms the final outlet for the oil, and by means of which the pump is screwed to the part to be lubricated.

V is a pin and W a plug to limit the stroke of valves P and P' respectively.

It will be observed that all inlet passages to, and outlet passages from, the pump proper, and the seats for the suction and pressure valves, are in a single, integral casting, without any extra pipe joints or connecting pieces whatever, constituting a very compact and efficient arrangement, with no more joint points than in any ordinary oil pump not embodying our improvements. It will also be observed that any back pressure from the delivery side will act upon the top of valves P and P'—simply holding them to their seats, and is not required to lift them up to their seats, as in pumps of ordinary construction.

Having described our improvements and the best way now known to us of carrying the same into practical effect we state in conclusion that we do not limit ourselves strictly to the structural details herein set forth in illustration of our invention, for, manifestly, the same can be varied in a number of particulars without departure from the spirit of the invention: But—

What we claim as new and desire to secure by Letters Patent is as follows:

1. The combination with an oil reservoir, a plunger cylinder and an oil passage leading direct from the reservoir to the cylinder, of a plunger provided with an air vent pas-

sage independent of and separate from the oil passage, substantially as and for the purposes hereinbefore set forth.

2. The combination with an oil reservoir, a plunger cylinder, and an oil passage leading direct from said reservoir into said cylinder, of a plunger having a vent passage independent of and separate from said oil passage communicating at its lower end with the plunger cylinder, and at its upper end opening out through the side of the plunger at a point to communicate with the reservoir when the plunger is in its highest position, substantially as and for the purposes hereinbefore set forth.

3. In an oil pump of the character described, an oil reservoir, a plunger cylinder and an oil passage Q from the oil reservoir to the plunger cylinder, in combination with a plunger having a vent passage independent of and separate from the oil passage and comprising an axial bore O and a cross bore O' meeting the axial bore, substantially as and for the purposes hereinbefore set forth.

4. In an oil pump of the character described, a single integral body casting formed with plunger cylinder, pressure and suction valve seats and oil inlet passages, and a vented plunger fitted to and adapted to work in the plunger cylinder, as set forth.

In testimony whereof we affix our signatures in presence of two witnesses.

LEOPOLD KASSANDER.
EDGAR A. KELSEY.

Witnesses:

CHARLES A. SCHWARZ,
GEORGE U. WAGNER.