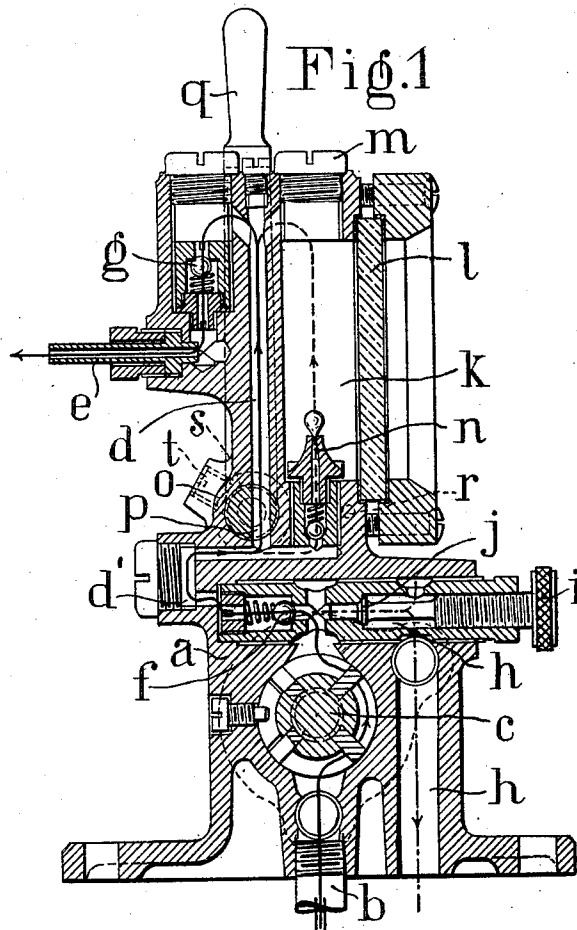


R. KLINGER.
LUBRICATING OIL PUMP.
APPLICATION FILED DEC. 30, 1910.

1,030,665.

Patented June 25, 1912.

2 SHEETS—SHEET 1.



Witnesses:

[Signature]
[Signature]

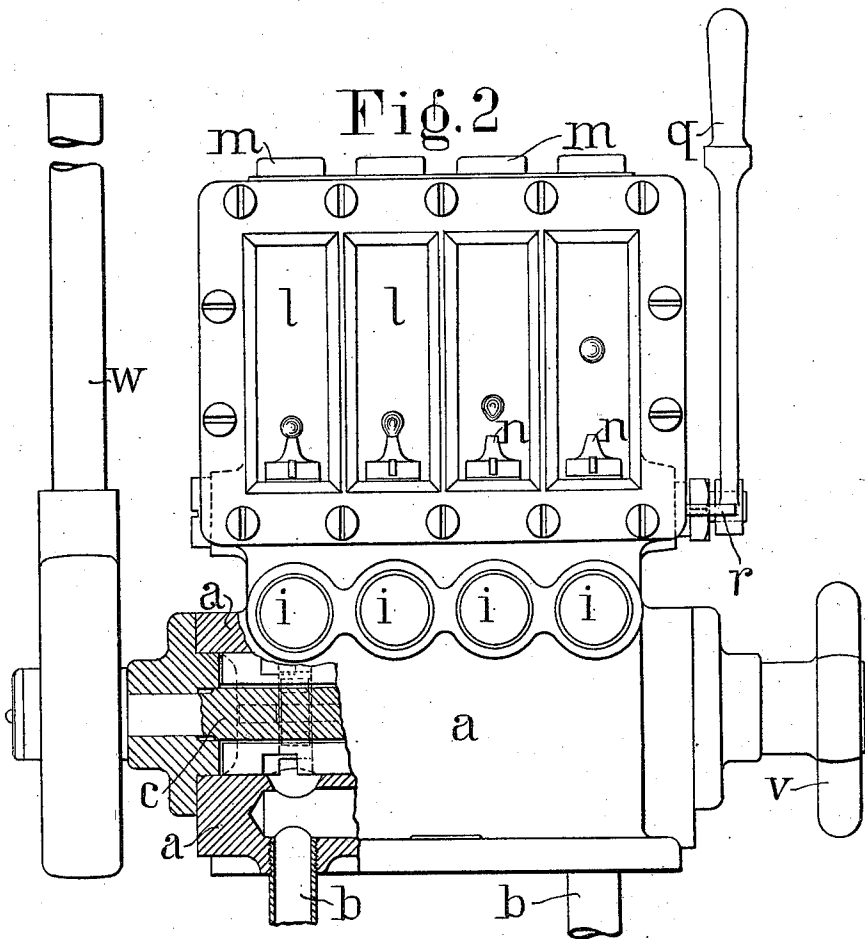
Inventor
Richard Klinger
by *[Signature]*
James L. Morris Jr.
[Signature]

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Inventor

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by

James L. Morris Jr.

Atty.

UNITED STATES PATENT OFFICE.

RICHARD KLINGER, OF GUMPOLDSKIRCHEN, AUSTRIA-HUNGARY.

LUBRICATING-OIL PUMP.

1,030,665.

Specification of Letters Patent.

Patented June 25, 1912.

Application filed December 30, 1910. Serial No. 600,174.

To all whom it may concern:

Be it known that I, RICHARD KLINGER, subject of the Emperor of Austria-Hungary, residing at Gumpoldskirchen, Lower Austria, Austria-Hungary, have invented certain new and useful Improvements in Lubricating-Oil Pumps, of which the following is a specification.

This invention has for its object to provide a simple and efficient lubricating oil pump provided in addition to the oil discharge passage with a valve controlled by-pass passage fitted with a sight feed nozzle whereby the amount of lubricant being supplied by the pump can be seen when desired, the supply of such lubricant being readily and accurately controlled by adjustment of a valve that governs a lubricant overflow branch. For this purpose according to this invention the lubricant delivery passage of the improved pump is adapted to be closed between the delivery port of the pump and the part to be lubricated and arranged alongside of such passage is an auxiliary or by-pass passage, communication between which and the delivery port of the pump is established through an oil-drop-feed nozzle fitted with a self-closing valve. This by-pass passage contains a column of liquid through which the drops of oil issuing from the drop-feed nozzle rise and can be seen from the exterior of the apparatus. With the improved pump it is therefore possible to ascertain the flow of oil to the place to be lubricated from the number of drops of oil rising from the drop-feed nozzle after the oil delivery passage has been closed.

The fluid through which the drops of oil rise may be glycerin and the chamber containing it is fitted with an inspection glass window and is closed at the top by a removable plug and at the bottom is fitted with the sight-feed nozzle. Both ends of this chamber are in communication with the oil delivery passage.

The oil pump may in some constructions be arranged to supply lubricant to a number of parts or places, in which case all the lubricating passages may be closed by a common cylindrical valve formed with a transverse port for each lubricating passage and also with annular grooves fitted with packing material that serves to separate the lubricating passages from each other. The amount of oil delivered into each lubricating passage can be controlled by an adjustable

valve arranged in an overflow passage which leads the excess of oil flowing back to the oil reservoir.

Figure 1 of the accompanying illustrative drawings is a transverse vertical section and Fig. 2 a front elevation, partly in section, illustrating, by way of example, a lubricating pump embodying this invention and intended for supplying four lubrication points.

The casing *a* of the pump is in communication with the oil reservoir by means of the suction pipes *b*. Arranged within the casing *a* is a rotary pump piston *c* adapted to deliver oil into a passage *d'*, the oil normally passing to a lubricating passage *d* through which it flows in a column to a pipe *e* forming a continuation of the passage *d* and leading to the part to be lubricated or lubrication point.

In the passages *d* and *d'* are two non-return valves *f* and *g* that merely serve to prevent back flow should the lubricating pump be used as a steam-lubricator. Branching from each passage *d'* just above the delivery port of the pump is an overflow passage *h* leading back to the oil reservoir and containing a valve *j* that is adjustable by means of a regulating screw *i*. Each passage *d'* is also connected to a by-pass passage *k* that branches off therefrom between the delivery port of the pump and the pipe *e*, such by-pass passage being enlarged in part to form a chamber charged with glycerin and closed at one side by an inspection or sight glass *l*. The upper end of the glycerin chamber is closed by a removable screw-plug *m* for filling purposes and its lower end is fitted with a sight-feed nozzle *n* containing a self-closing valve.

All the lubricating passages *d* are adapted to be closed by a common cylindrical valve *o* formed with a transverse perforation or port *p* for each lubricating passage and adapted to be turned by a hand lever *q* the movement of which is limited by a stop pin or stud *r*. The valve *o* is formed between each two lubricating passages *d* with an annular peripheral groove *s* containing suitable packing material which is supplied thereto and pressed in through a hole fitted with a screw-plug *t*.

In starting to work with the improved lubricating pump the filling plugs *m* are first of all removed and the chambers *k* filled with pellucid or transparent glycerin,

whereupon the plugs *m* are again screwed home. The regulating valves *j* are then fully opened to allow the air in the pump chamber to escape on the pump being started, after which a few turns are given to the rotary piston by means of a hand-wheel *v* or an operating lever *w*. The pump is now set to work at the proper rate of delivery by delicate adjustment of the regulating valves *j*, the piston *c* drawing in the oil through the suction pipe *b* and delivering it into and through the passages *d'* to the lubricating passages *d* whence it passes to the parts to be lubricated, the path of the oil at this time being shown in full lines in Fig. 1. To ascertain with certainty whether the several places to be lubricated are receiving the proper number of drops of oil the lever *q* is turned until it bears against the stop pin or stud stop *r*, the oil being thereby caused to take the path shown in the dash lines and to issue from the nozzles *n* in the form of drops that rise in the glycerin and can be seen through the window *l* so that from the number of drops which pass in a given time it can be seen whether the lubrication is being performed as desired or not. The rate of such lubrication can be controlled or determined by the regulating screws *i*, the excess of oil flowing back to the oil reservoir through the by-pass connection *h*, as shown in dot and dash lines. If the lubrication is being effected at the desired rate it is best to turn the lever *q* back into its original position in order to avoid the necessity for frequent renewal of the glycerin which is occasionally entrained by the drops of oil.

Claim:

40 In a lubricant supply device, in combina-

tion, a casing having an oil delivery passage through which oil normally flows in a column and having also a by-pass liquid containing sight feed passage communicating at its discharge end with the oil delivery passage and through which the oil may flow drop-by-drop, the oil delivery passage terminating in a discharge pipe, a pump for forcing oil at a constant rate through the casing to either of the passages aforesaid, a valve operable to cause the oil delivered by the pump to flow through either of said passages, the casing also having a return passage leading to the source of oil supply and having another passage which communicates at one end both with the oil delivery passage and with the sight feed passage and at its other end both with the pump chamber and with the return passage, and a valve for controlling the flow of oil through the return passage and thereby regulating the rate at which the oil flows through either the sight feed or the oil delivery passage, the valve last named being operated to regulate the flow as desired during the period that the oil is allowed to flow through the sight feed passage and serving to maintain the flow at the rate to which it is thus regulated during the period of normal operation in which the oil is caused to flow through the oil delivery passage.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

RICHARD KLINGER.

Witnesses:

JOSEF RUBREICH,
AUGUST FUGGER.