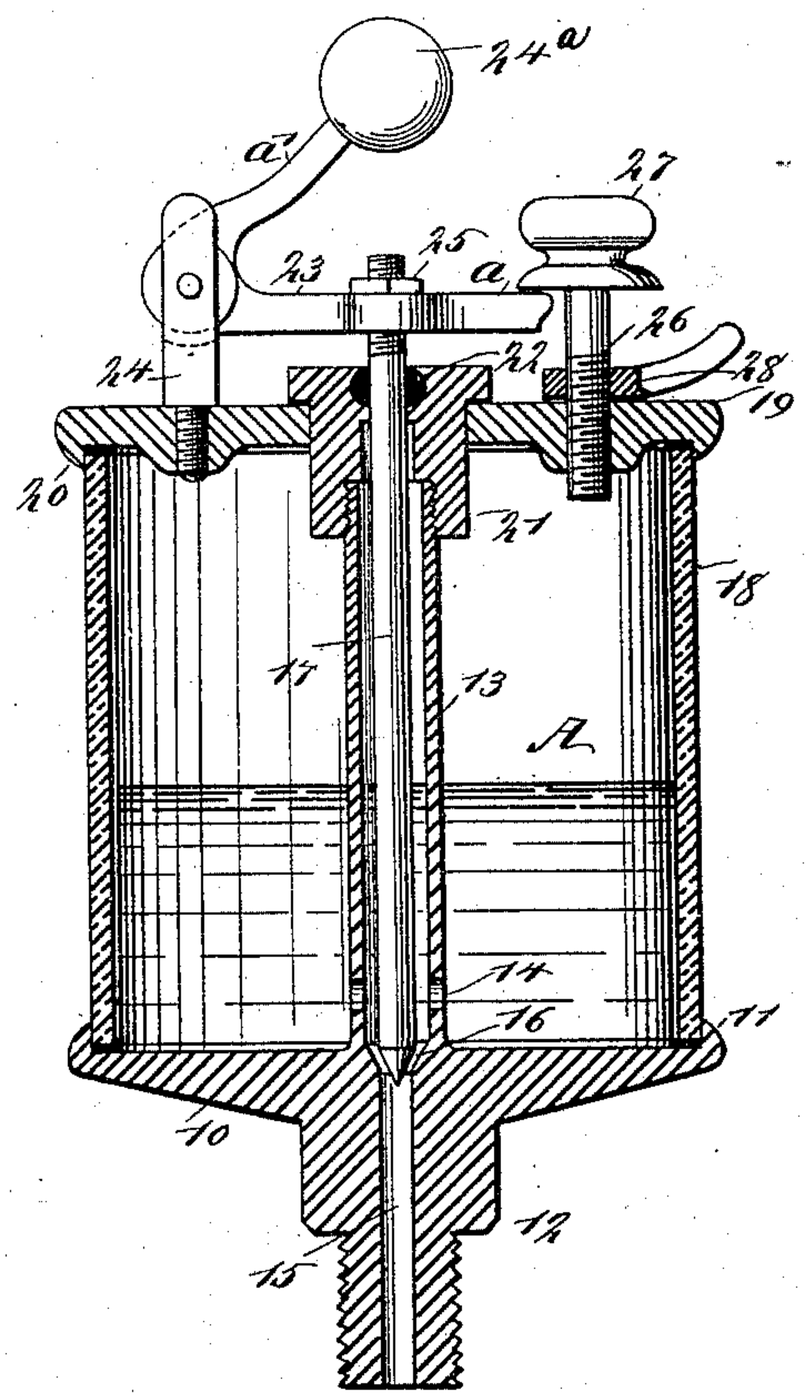
(No Model.)

G. W. MITCHELL.

LUBRICATOR.

No. 533,417 Patented Jan. 29, 1895.

Fig. 1



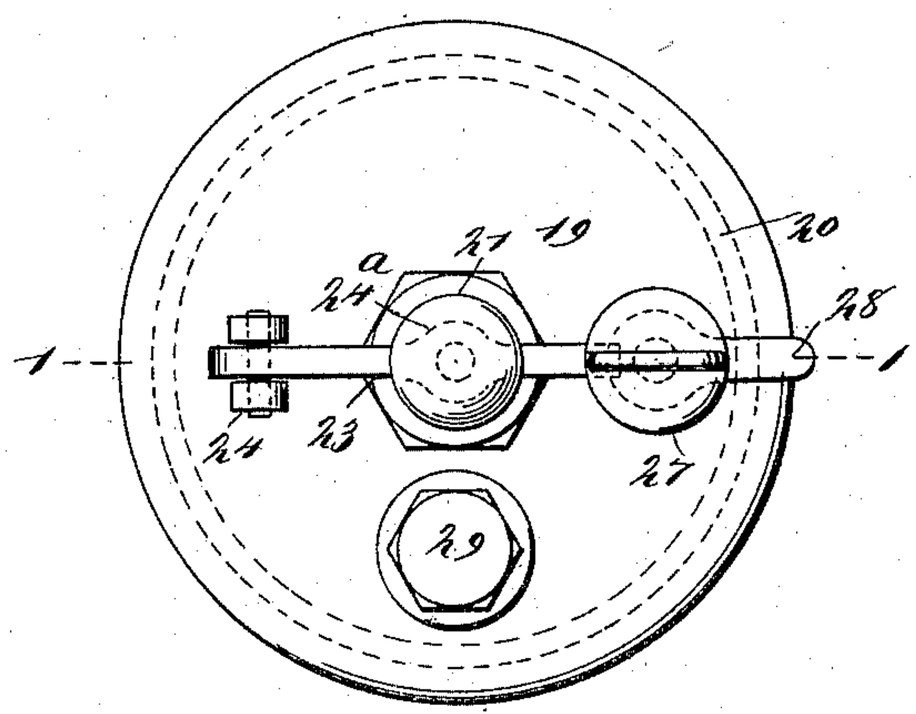


Fig. 2

WITNESSES:

J. a. Bergstrom

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UNITED STATES PATENT OFFICE.

GEORGE W. MITCHELL, OF LUNENBURG, CANADA.

LUBRICATOR.

SPECIFICATION forming part of Letters Patent No. 533,417, dated January 29, 1895.

Application filed March 23, 1894. Serial No. 504,779. (No model.)

To all whom it may concern:

Be it known that I, GEORGE WASHINGTON MITCHELL, of Lunenburg, in the Province of Nova Scotia and Dominion of Canada, have invented a new and Improved Oil-Cup, of which the following is a full, clear, and exact description.

My invention relates to an improvement in oil cups, and it has for its object to provide a cup of simple, durable and economic construction, which may be used to decided advantage upon, and which may be conveniently applied to any reciprocating portion of an engine, whether the part moves horizontally, perpendicularly, or at any angle between, or the application may be equally well made to any part having crank motion.

A further object of the invention is to provide an oil cup which will automatically and regularly feed the oil in predetermined quantities to the parts to be lubricated, and without any waste of oil.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claim.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures and letters of reference indicate corresponding parts in both the views.

Figure 1 is a vertical section through the oil cup, taken practically on the line 1—1 of Fig. 2; and Fig. 2 is a plan view thereof.

In carrying out the invention the base of the oil cup consists of a plate or a plate-like casting 10, which is preferably of disk form, and is provided with an upturned marginal flange 11 and with a shank 12, the shank being reduced at its lower extremity and exteriorly threaded in order that it may be introduced into a socket communicating with the part to be oiled. The base 10 is further provided with a tubular extension 13, located upon the central portion of its upper face, and the said tubular extension is provided with an exterior thread at its upper end, and with apertures 14 near its lower end. The base is provided with a channel 15, which extends through it from top to bottom, and the said channel has communication with the interior of the tubular extension or casing 13, and where the tubular extension or casing connects with the channel 15 in the base the said channel is provided with a beveled wall 16, adapted to form a seat for the lower conical end of a regulating rod 17, which rod is of considerably less diameter than the tubular extension or casing, and even when seated upon the wall 16 of the base channel extends some distance beyond the upper end of the extension.

The body of the oil cup preferably consists of a cylindrical casing 18, constructed of glass or of a transparent material, but other material may be used if in practice it is found desirable; and the upper end of the transparent casing 18, is engaged by a cap plate 19, provided with a downwardly-extending marginal flange 20. The said cap plate is provided with a central aperture into which a tubular plug 21, is introduced, and the said tubular plug extends below the under face of the cap plate, and is provided with an upper flange which limits its downward movement. The interior bore of the plug is made in different diameters, the diameter of the bore being largest at its lower end, and the wall at that portion is threaded to receive the upper threaded section of the inner casing or base extension 13; and by this means the cap plate and the base 10 clamp between them the outer casing 18 of the cup.

The regulating rod 17, extends upward through and beyond the plug 21, and a packing or gland 22, is produced in the upper portion of the plug around the regulating rod. The upper end of the regulating rod, or that projecting beyond the top of the cup is preferably threaded to receive the horizontal member a of an angular lever 23, the other member a' of the lever being provided at its upper end with a weight 24^a. The lever at the point where its parts connect is fulcrumed in a bearing 24, preferably consisting of a bifurcated bracket secured upon the cap plate 19 at one side of its center; and the threaded end of the regulating rod is made to screw into and pass through the horizontal member of the lever, and is provided with a suitable lock nut 25.

A guide screw 26, is secured in the cap plate opposite the fulcrum of the lever 23, and the said screw is provided with a head 27, against

which on the under surface the horizontal member of the lever is adapted to have bearing. Instead of a screw any equivalent thereof may be employed, and the said screw is adapted to regulate the throw of the lever and consequently the seating of the regulating rod 17, which may be termed a needle valve, in the conical wall of the base opening 15, which constitutes the seat for the valve; and after the screw 26 has been adjusted it is held in its adjusted position by means of a lock nut 28, which is usually provided with a wing in order that it may be the more readily manipulated.

The chamber A of the cup, or that portion contained within the walls of the outer casing 18, is adapted to receive oil or a lubricating compound in suitable quantities; and the said lubricating compound is introduced into the chamber through the medium of an opening made in the cap plate and closed by a cap 29 of any approved construction.

The lever 23 is so constructed that a line passed through its fulcrum and through the center of its weight will be at an angle of about forty-five degrees to the lower or horizontal member *a*. Therefore, the lever 23 will have the same motion or power on a back-and-forth, or an up-and-down movement, or a combination of both movements, and the lever will always act as a pendulum for the needle valve, and it is evident that when a portion of the machinery to which the oil cup is applied is in motion, no matter in what direction the motion may be, the weighted lever will, with its pendulum action, longitudinally reciprocate the needle valve in such manner that the oil which enters the inner casing 13 of the base extension will be admitted in predetermined quantities and at regular intervals into the base channel 15, as the needle valve will alternately seat and unseat itself.

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

An oil cup, consisting of a vessel formed of an apertured base having a tubular apertured extension, a casing, an apertured cap and a tubular plug fitting in the aperture of the cap and secured to the tubular extension, a needle valve working in the tubular extension and plug, an angular lever pivoted on the cap of the vessel and having one member weighted and its other member secured to the needle valve, and a headed screw secured in the cap of the vessel and with the head of which the member of the lever which is secured to the needle valve, engages, substantially as herein shown and described.

GEORGE W. MITCHELL.

Witnesses:
ALBERT H. ANDERSON,
S. A. CHESLEY.