S. LIPPSTADT.

LIQUID DISPENSER.

APPLICATION FILED JUNE 11, 1908.

928,059. Patented July 13, 1909.

Fig. 1.

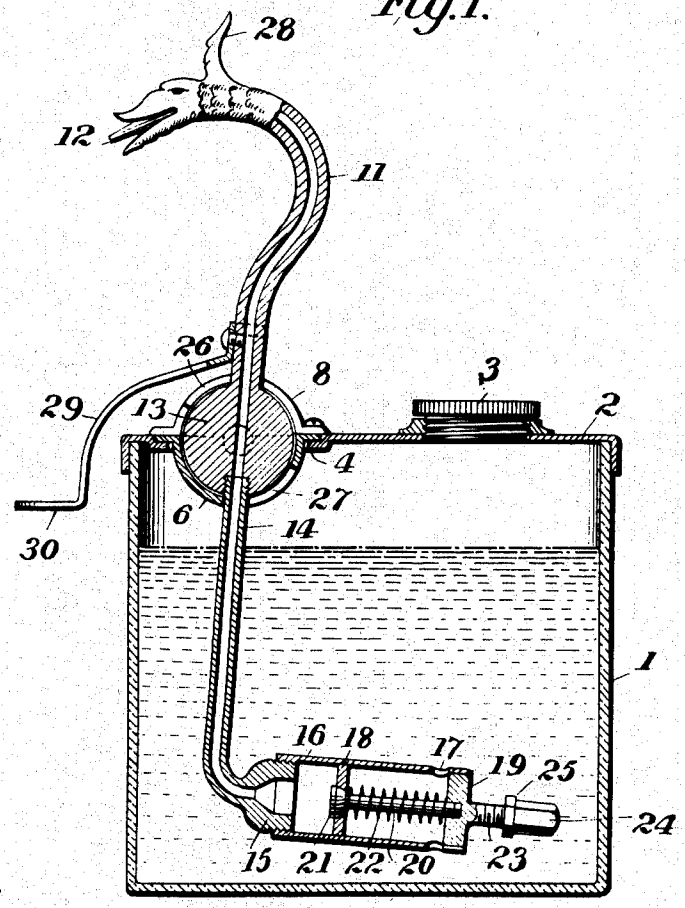


Fig. 2.

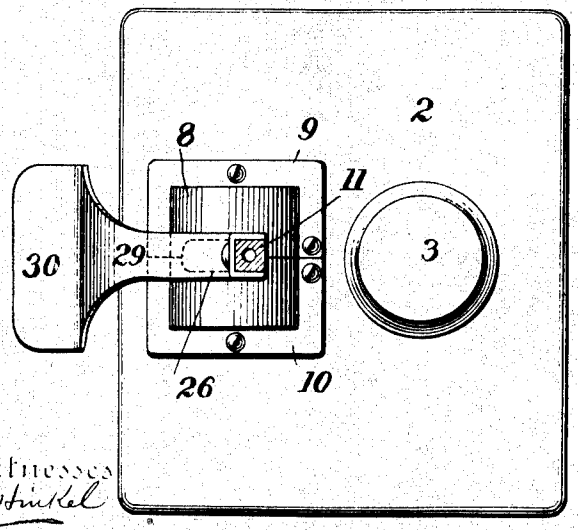
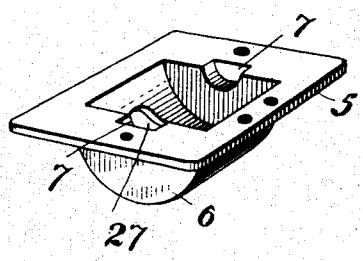


Fig. 3.



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UNITED STATES PATENT OFFICE.

SIGMUND LIPPSTADT, OF NEW YORK, N. Y.

LIQUID-DISPENSER.

No. 928,059. Specification of Letters Patent. Patented July 13, 1909.

Application filed June 11, 1908. Serial No. 437,939.

To all whom it may concern:

Be it known that I, SIGMUND LIPPSTADT, a citizen of the United States, residing at New York, in the county and State of New York, have invented certain new and useful Improvements in Liquid-Dispensers, of which the following is a specification.

This invention relates to liquid dispensers and is particularly adapted for use in dispensing liquid soap. It will be apparent however that it is adapted for use with other liquids besides soap. Its objects are to provide simple and effective means for discharging upon the hands of the user liquid from a receptacle, and it also includes means for regulating and controlling the amount of liquid discharged at each operation.

My discharging means is simply placed upon the receptacle and extends into it from the top, and therefore it is not necessary to make openings or inlet in the receptacle to receive the mechanism constituting my invention.

The novel features and advantages of my device will be understood from the following description and claims.

In the accompanying drawings,—Figure 1 is a cross section showing my invention; Fig. 2 is a plan view of Fig. 1; and Fig. 3 is a detail perspective view of the pivot bearing for my dispensing pipe.

In these drawings 1 represents a receptacle for liquid which may be made of any suitable form and of any suitable material. A cover 2 made of any suitable material fits on top of the receptacle 1 and is provided with a filling opening closed by the screw plug 3. This cover is also provided with an opening 4 adapted to receive a casing 5, which casing has a semi-cylindrical section 6, and which is provided with the bearing recesses 7 for pivotally supporting the pipe hereafter described. There is a second casing 8 similar to the casing 5 and fitting thereover, and this second casing is preferably made in two parts 9 and 10 for convenience in placing them in position around the pipe and bearings hereafter described.

As will be seen by reference to the drawing there is a pipe extending through the opening 4 mounted in bearings therein and carrying a force pump at its lower end within the receptacle 1. This pipe is made up of the section 11 which may be made curved and ornamental as shown, having the discharge outlet 12 directed forward at the proper angle for discharging soap or other liquid upon the hands of the operator.

Within the casings 5 and 8 there is a cylindrical horizontal section 13 which has trunnions at its ends fitting in the recesses 7 and thus furnishing a pivot bearing for supporting the pipe. This cylindrical portion 13 has screwed into its lower side in line with the pipe 11, a pipe 14 which extends down into the receptacle nearly to the bottom thereof, and which is there bent at substantially right angles so as to be directed toward one of the side walls of the receptacle. This pipe has the enlarged screw-threaded end 15 to which is secured the cylinder 16 of a force pump, and this cylinder has near its outer end inlet openings 17. There is a partition 18 within this cylinder and it is provided with a central opening for the passage of liquid. A piston 19 works within the cylinder passing the opening 17, and it has on its inner side a rod 20 extending through the opening in the partition 18 and having an enlarged head 21 which is adapted to close the opening in the partition 18 when the piston is in its outer position, as shown in Fig. 1. A spring 22 surrounds the rod 20 and bears against the partition 18 and the inner face of the piston 19, thus tending to force the piston outwardly and to maintain the valve 21 in closed position. On the outer side of the piston 19 there is a screw-threaded projection 23 which has mounted thereon the adjustable screw threaded cap 24 and the jam nut 25 which is intended to lock the cap 24 in any adjusted position.

Since the liquid dispensing pipe is intended to turn in the bearings 7 it is necessary to provide a slot 26 in the cover plate or casing 8, and a slot 27 in the casing 5, and it will be understood that the ends of the slot 26 will serve as stops for limiting the movement of the pipe. For turning the pipe upon its pivotal support I have provided a hook 28 at the upper end and have also provided the forwardly extending arm 29 having the flat shelf-like end projecting outwardly in front of and below the discharge end 12 of the pipe.

In operation my device is placed with the end of the cap 24 near the side wall of the receptacle, and when the upper end of the pipe 11 is pulled to the left in Fig. 1 the cap 24 is brought into contact with the wall of the receptacle, thus forcing the piston 19 inwardly, and at the same time opening the valve 21. After the piston passes the openings 17,

which openings admit the liquid to the interior of the piston, the liquid will be forced up through pipe 14 and pipe 11, and will be discharged from the outlet 12 onto the hand of the user. This operation of turning the pipe and discharging the soap may be performed by the user with the hand on which he wishes to receive the soap, or the pipe may be turned with one hand while the other is held in position to receive the discharge. It will be understood that since my force pump is submerged in the liquid the amount of liquid which would enter it and its connecting pipes would vary according to the height of the liquid in the receptacle. It was to overcome this and to insure the discharge of a fixed and definite amount of soap at each operation that I made use of the valve 21 in the partition 18. After one operation of the piston or plunger 19 it will be understood that no liquid can enter the cylinder until the piston passes the openings 17 in its outward movement, and as soon as it passes these openings the valve 21 is closed, thus preventing any of the liquid which enters the cylinder from passing beyond the partition 18 and into the connecting parts, and therefore whether the receptacle is full or nearly empty the same amount of liquid will be in the cylinder ready for the next operation of the piston, and the discharge is thus accurately controlled. The adjustable cap 24 also furnishes means for controlling the amount discharged at each operation, and it provides means for varying that amount as desired. This cap by turning upon screw threads on the extension 23 may be made to approach more or less nearly the wall of the receptacle and by this means the distance to which the piston will be forced into the cylinder at any one operation of the pipe may be controlled and regulated, and it is of course true that the distance which the piston enters the cylinder controls the amount discharged from the outlet 12.

Having thus described the invention, what is claimed is:

1. In a device of the class described, the combination with a liquid receptacle, of a cover therefor, a pipe leading through said cover into said receptacle and pivotally supported by said cover, liquid forcing means carried by said pipe within the receptacle, and an operating element connected to said forcing means adapted to make contact with the wall of the receptacle when the pipe is turned on its pivot.

2. In a device of the class described, the combination with a liquid receptacle, of a cover therefor, a pipe leading through said cover into said receptacle and pivotally supported by said cover, a force pump having a cylinder carried by the lower end of said pipe the piston rod of said pump extending toward a wall of said receptacle and adapted to make contact therewith when the pump is moved in one direction.

3. In a device of the class described, the combination with a liquid receptacle, of a cover therefor, a pipe leading through said cover into said receptacle and pivotally supported by said cover, a force pump having a cylinder carried by the lower end of said pipe the piston rod of said pump extending toward a wall of said receptacle and adapted to make contact therewith when the pump is moved in one direction, and a spring tending to force the piston outwardly.

4. In a device of the class described, the combination with a pipe, of a force pump having a cylinder connected to the end of said pipe, the said cylinder having inlets near its outer end, a piston working in said cylinder, means tending normally to force said piston outwardly beyond said inlets, and a valve connected with said piston for closing the inner end of said cylinder when the piston is in its outer position.

5. In a device of the class described, the combination with a pipe, of a force pump having a cylinder connected to the end of said pipe, the said cylinder having inlets near its outer end, a piston working in said cylinder, a partition in said cylinder having an opening therein, a rod extending from the inner face of the piston and having an enlargement at its end adapted to close said opening when the piston is at its outer position, and a spring surrounding said rod bearing upon said partition and tending to force the piston outwardly.

6. In a device of the class described, the combination with a receptacle, of a pipe extending into said receptacle from the top, a liquid force pump connected with said pipe within the receptacle and embodying a cylinder carrying a piston therein, a rod operatively connected with said piston and projecting from the end of said cylinder, and means for bringing said rod into contact with a wall of the receptacle to operate the pump.

In testimony whereof I affix my signature in presence of two witnesses.

SIGMUND LIPPSTADT.

Witnesses:

JOHN M. COIT,

B. C. RUST.