

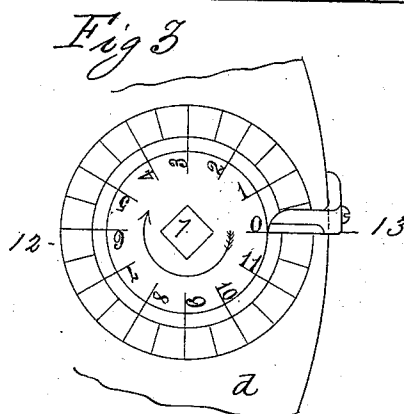
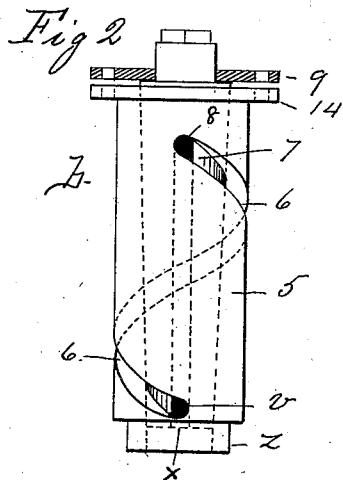
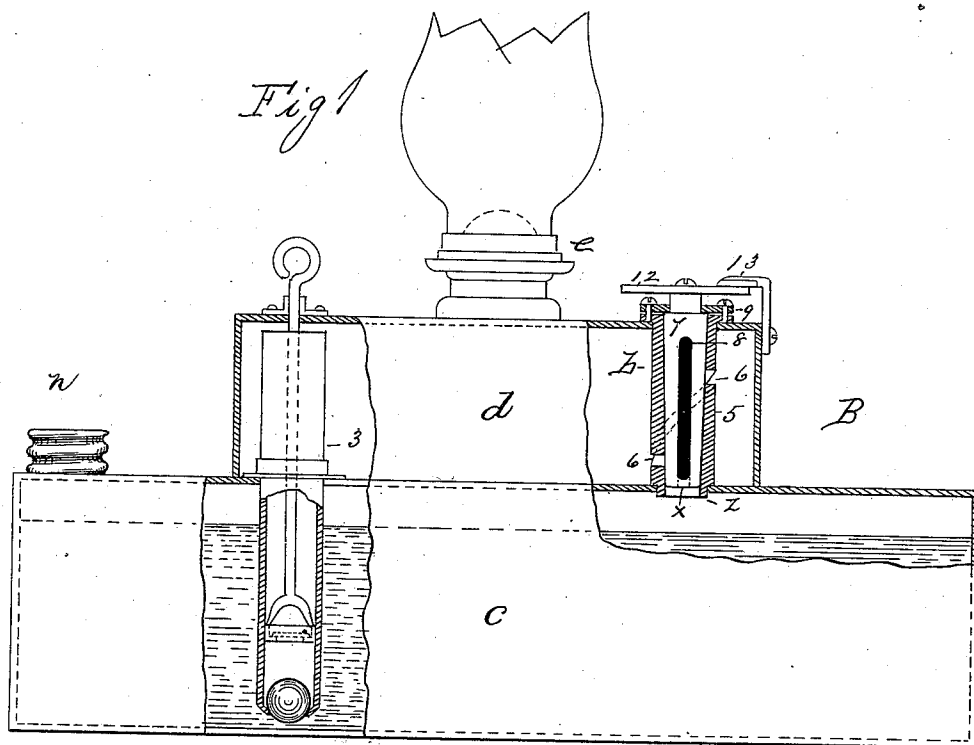
(No Model.)

O. J. HEYNE.

ADJUSTABLE OVERFLOW DEVICE FOR LAMPS.

No. 359,567.

Patented Mar. 15, 1887.



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UNITED STATES PATENT OFFICE.

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ADJUSTABLE OVERFLOW DEVICE FOR LAMPS.

SPECIFICATION forming part of Letters Patent No. 359,567, dated March 15, 1887.

Application filed December 20, 1886. Serial No. 222,031. (No model.)

To all whom it may concern:

Be it known that I, OTTO J. HEYNE, a citizen of the United States, residing at Springfield, in the county of Hampden and State of Massachusetts, have invented new and useful Improvements in Adjustable Overflow Gates, of which the following is a specification.

This invention relates to lamps having an upper and a lower oil-reservoir, sometimes called "pump-lamps," which contain means for lifting oil from the lower to the upper reservoir, and adjustable overflow devices to cause the oil which is delivered into the upper reservoir to be partially drawn back into the lower reservoir to a greater or less degree, as may be desirable, whereby the number of hours that the lamp will burn, drawing its supply from the upper reservoir, is determined, the object of this invention being to provide improved overflow devices for lamps of this class, said devices being also applicable to any vessel containing fluid, for the purpose of drawing the contents of the vessel off down to a certain level.

In the drawings forming part of this specification, Figure 1 is a side elevation of a lamp having an upper and a lower oil-reservoir and a pump for transferring oil from the latter to the former reservoir, provided with adjustable overflow devices constructed according to my invention, said figure showing portions of the side of the lamp broken away and the pump and a portion of the overflow devices in section, the top of the chimney of the lamp being shown broken off. Fig. 2 is a side elevation of the overflow devices separate from the lamp, in which the flange which secures the rotating plug in its case is shown in section. Fig. 3 is a plan view of the top of the overflow devices and a portion of the top of the lamp.

In the drawings, *c* indicates the lower portion or main reservoir of the lamp *B*, which is ordinarily supplied with a considerably larger quantity of oil than is required to fill the upper oil-reservoir, *d*, from which the supply for the burner *e* is directly drawn in the ordinary way, the said lower reservoir being filled with oil through a common tube covered by a screw-cap, *n*.

A pump, 3, fixed in the interior of the lamp, as shown, is employed to pump the oil from the lower into the upper reservoir, *d*.

Lamps of this class are used principally for street-lamps, and the use thereof for this purpose demands that they shall be provided with means which are simple and easily adjustable, whereby, after the reservoir *d* has been filled, or nearly so, with oil from the lower reservoir, such part of said oil as may be in excess of the quantity required to supply the burner of the lamp for a certain number of hours shall be drawn off into the lower reservoir, so that there shall be no waste of oil; and it is also required in lamps of this class that said overflow devices shall be adjustable, to the end that sufficient oil for a greater or less supply of oil to the burner may be left in the upper reservoir to provide for the varying hours of burning the lamp.

My improved adjustable overflow devices consist of a metallic plug, 7, having a longitudinal slot, 8, in one side thereof, which communicates with a central longitudinal chamber in said plug, which chamber is open at *a* at the lower end of the plug, and of a metallic plug-case, 5, in which the plug 7 is fitted to turn closely and prevent leakage between the two, said plug having through its side a spiral groove, 6, which makes a complete turn in the case, or nearly so, as shown in Fig. 2. The upper end of the case 5 is provided with a laterally-projecting flange, 14, and a flange, 9, is placed loosely over the head of the plug 7, against its upper end, and is secured thereon by screws passing through it into the said flange on the case, whereby means are provided for holding the plug to its bearing in the case, which can be reached for adjusting purposes when the overflow devices occupy their operative positions in the lamp, as shown in Fig. 1.

An index-wheel, 12, is secured on the head of the plug 7, which serves as a hand-wheel for turning said plug, and the graduation-marks, indicated by numerals on said wheel, together with a fixed finger, 13, which is secured on the lamp and extends over the face of the wheel, provide means for turning the plug 7 to certain known positions, for the purpose below described, said numerals and graduation-marks on the wheel indicating the number of hours and parts of hours that the oil which the overflow devices cause to be left in the upper reservoir will supply the burner *e*.

The overflow devices *b* are secured in the lamp in the position indicated in Fig. 1—that is to say, with the under side of the flange 14 of the case 5 resting against the upper side of the reservoir *d* and extending through the latter vertically, the lower small end, *z*, of the case passing through the bottom of the upper reservoir, so that the said longitudinal chamber in the plug 7 communicates with the lower reservoir, *c*.

The operation of my improved overflow devices is as follows: When the plug 7 occupies the position shown in Fig. 2 relative to the spiral slot 6 in the case, the index-wheel 12 stands with the zero-mark at the finger, as shown in Fig. 3—that is to say, the position of the index-wheel indicates that the plug 7 occupies such a position in the case 5 as permits no oil to be retained in the upper reservoir, which position is one that brings the lower end of the slot 8 in the plug in coincidence with the lower end of the spiral slot 6 in the case 5, whereby oil is permitted to flow through the lower end of the slot 6 into the lower end of the slot 8 of the plug, and escaping from the latter, through its lower end at *z*, into the lower reservoir, thereby drawing all of the oil from the upper reservoir down to the level of the lower end of the spiral slot in the case 5, and consequently leaving no oil in the upper reservoir. When the index-wheel 12 and the plug to which it is attached are rotated in the direction indicated by the arrow on said wheel in Fig. 3, to bring the figure 1 opposite the end of finger 13, the plug is sufficiently rotated to bring that portion of its slot 8 which is exposed by the opening through said spiral slot still farther above the lower end of the case and above the bottom of the reservoir *d*, and hence oil which is supplied to the reservoir by the pump, as aforesaid, will be drawn down to the level of

said exposed portion of the plug, leaving sufficient in the upper reservoir to supply the lamp for one hour, and in the same manner the position of the slot in the plug relative to the spiral slot in the case is adjusted to bring the exposed portion of said slot 8 to such a distance above the bottom of the upper reservoir as will leave sufficient oil in the latter for the required number of hours that the lamp should burn.

The said adjustable overflow devices may be applied advantageously in tanks and tubs in breweries and similar establishments where it becomes desirable that the contents of a tank be drawn down to a certain level, thereby leaving a known quantity of liquid in the tank.

What I claim as my invention is—

1. Adjustable overflow devices for fluid-reservoirs, consisting of a hollow case having a spiral slot through its side nearly from end to end, and a plug having a longitudinal slot, 8, therein, communicating with an internal chamber extending through the lower end of the plug, the latter being fitted to be rotated within said case to expose portions of said slot 8 through the spiral slot of the case at different distances from the lower end of the last-named slot, substantially as set forth.

2. Adjustable overflow devices for fluid-tanks, consisting of a case, 5, having a spiral slot, 6, through its side, a plug, 7, fitted to rotate in said case, having a slot, 8, communicating with an internal chamber therein, having an outlet through the lower end of the plug, an index-wheel attached to said plug, and a finger located near said wheel to indicate marks thereon, substantially as set forth.

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