G. B. SNIDER.

ILLUMINATING APPARATUS.

No. 184,183. Patented Nov. 7, 1876.

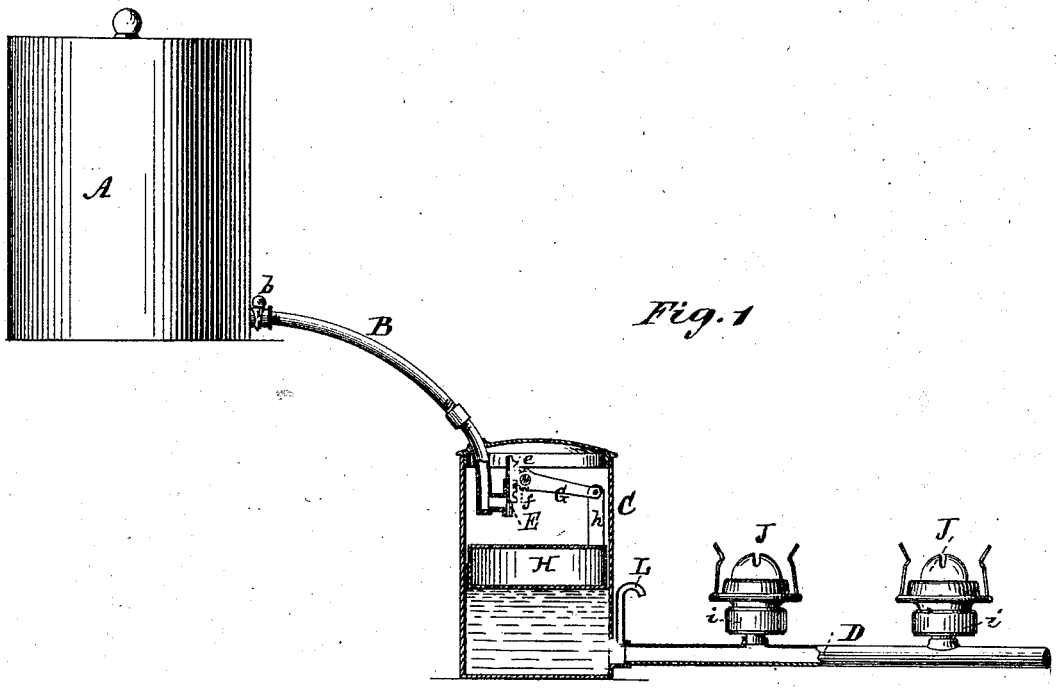

Fig. 1

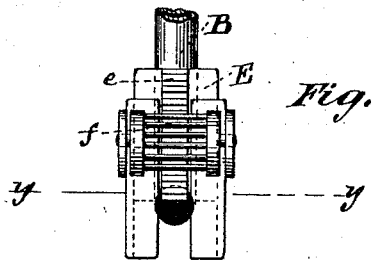

Fig. 2

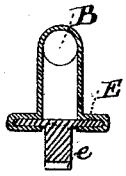

Fig. 3

Witnesses:
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UNITED STATES PATENT OFFICE.

GEORGE B. SNIDER, OF NEW YORK, N. Y.

IMPROVEMENT IN ILLUMINATING APPARATUS.

Specification forming part of Letters Patent No. **184,183**, dated November 7, 1876; application filed April 24, 1876.

To all whom it may concern:

Be it known that I, GEORGE B. SNIDER, of New York, in the county and State of New York, have invented an Improvement in Illuminating Apparatus; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention relates to an apparatus for supplying several burners with oil from one reservoir conveyed through a pipe or pipes, whereby all or any of the burners in a store or other place, which are at the same level, may be constantly supplied from a single reservoir, thus dispensing with the need of a lamp for every burner, and using only a wick-receptacle.

The invention consists in a novel construction of a regulator composed of a vessel or chamber, and a valve operated by a float, and the combination thereof with the reservoir or source of supply, and a pipe leading to the wick or burner, whereby the flow of oil is automatically regulated, and the overflow thereof is prevented.

The reservoir or tank for holding the oil to be supplied may be of any suitable description, and may be located in close proximity to the burner or at any desired distance therefrom—being connected therewith by means of a pipe or pipes. The regulator consists of a closed vessel or chamber, into which the oil from the reservoir is conducted by a pipe, and out of which it is conducted to the burner or burners by another pipe—the regulator being located between the reservoir and burners, and preferably near the latter. The end of the pipe which leads into the regulator is provided with a valve of suitable construction, connected with a float arranged inside the vessel or chamber, so as to rise and fall according to the height of the oil in said vessel or chamber. As the oil rises, the float operates on the valve to close the orifice, and prevent or diminish the flow of oil; and as the oil falls to a lower level the valve opens and allows the oil to flow more freely. The oil is conducted from the vessel or chamber by a pipe, which may have any desired number of burners attached to or connected with it. By means of the regulator, interposed between the reservoir and the burners, the oil is caused to maintain a uniform level, and is prevented from rising too high or overflowing the burner. In order to still further insure the prevention of any overflow, the pipe leading to the burner may be provided with an outlet-pipe so arranged as to carry off any excess of oil, which may be forced or allowed to flow into the same, and conduct it to a drip-cup or other suitable receptacle.

The accompanying drawing represents a mode of carrying out my invention—

Figure 1 being a side view, partly in section, of an apparatus constructed in accordance therewith; Fig. 2, a vertical section, taken in the line *x x* of Fig. 1; and Fig. 3, a horizontal section, taken in the line *y y* of Fig. 2.

The reservoir A is here represented as a tank or can of ordinary construction, located in proximity to, and somewhat higher than, the regulator and burners, and provided with an outlet-pipe, B, furnished with a stop-cock, *b*. The regulator consists of a closed vessel or chamber, and a valve operated by a float. The vessel C is provided with an outlet-pipe, D, for conveying the oil to the burners. The valve may be of any suitable construction, but is here represented as a slide-valve, E, provided with a rack or toothed back, *e*, operated by a pinion, *f*, and lever G—the pinion meshing into the rack, and its axis forming the fulcrum of the lever. The valve E slides in a seat formed at the termination of the pipe B; and the valve is closed or opened according as the lever G is oscillated in one direction or another. A drum, H, is arranged to work freely in the vessel C so as to constitute a float when said vessel contains liquid. An arm or standard, *h*, extends upward from the float H, and its upper end is pivoted to the long arm of the lever G.

To the pipe D any desired number of burners may be attached. The burners may consist of ordinary wick-tubes, or they may be provided with founts for holding oil. The burners J shown herein are represented as provided with wick-cups *i*, each of such dimensions as to accommodate the wick and a quantity of oil sufficient to saturate the

same, said wick-cups communicating through their bottoms with the pipe D, which supplies the burning-fluid.

The parts being in the position shown in Fig. 1, with the float H and valve E properly adjusted with relation to each other and to the level to which the oil is to be permitted to rise, the oil flows from the reservoir until it reaches a height sufficient to supply the wick. As the oil rises in the vessel C, the float H also rises, resting on the surface of the oil; and as the float rises the arm *h* elevates the long arm of the lever G, and causes the pinion *f* by its engagement with the rack *e* to close the valve, and prevent the further flow of oil from the reservoir. When the burner or burners have consumed a sufficient quantity of oil to reduce the level in the vessel C, the float descends and reverses the motion of the lever G so as to cause the pinion to open the valve, and permit more oil to flow into the vessel.

By this means the flow of oil to the burner is automatically regulated, and the overflow of the same is prevented.

In order to still further insure the prevention of overflow of the oil, and to provide against accident in the event of the failure of the valve to perform its functions properly, I provide the pipe D with an outlet-pipe, L, which rises to a height corresponding with the desired level of the oil in the chamber C, and is then turned downward, as shown in Fig. 1. If the oil should rise above the desired level in the vessel C, it will be carried off by the pipe L, and may be conveyed to a drip-cup or other suitable receptacle.

The invention is applicable to chandeliers, in which case the regulating-chamber C would occupy a position at the junction of the pendant of the chandelier with the arms thereof, and the said arms would consist of two or more pipes like D.

What I claim as new, and desire to secure by Letters Patent, is—

The combination, with the oil-supply pipe B, and the regulating vessel or chamber C, of the slide-valve E, and its rack *e*, the pinion *f*, and lever G, and the arm *h*, and float H, arranged and operating as herein shown and described.

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Witnesses:

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