2 Sheets—Sheet 1.

E. J. STEARNS.

FOUNTAIN-LAMP.

No. 189,398. Patented April 10, 1877.

Fig. 1.

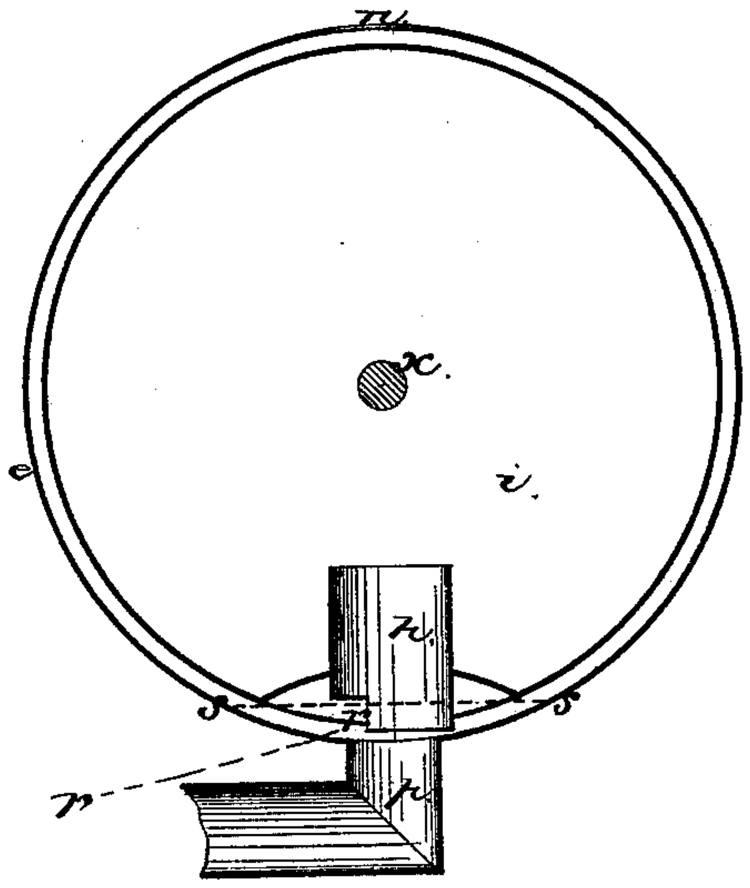


Fig. 2.

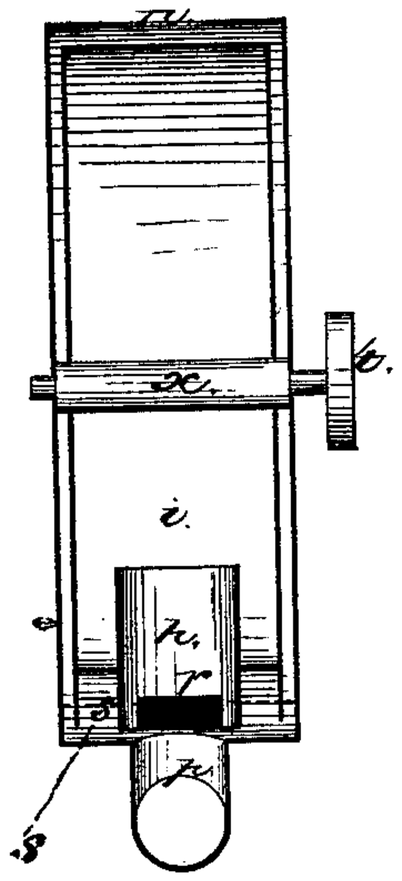


Fig. 3.

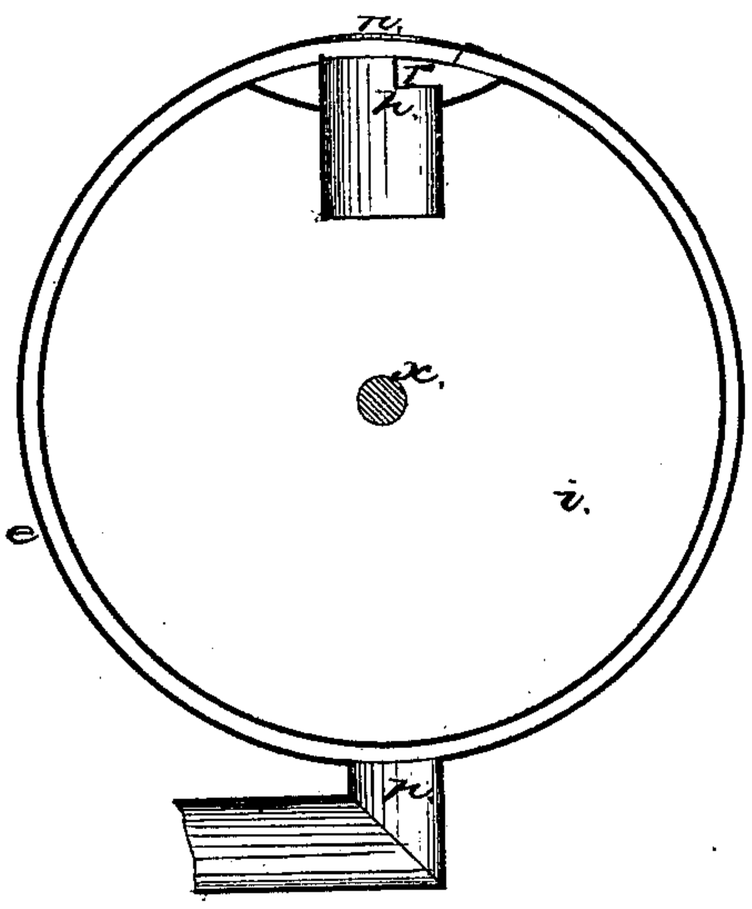
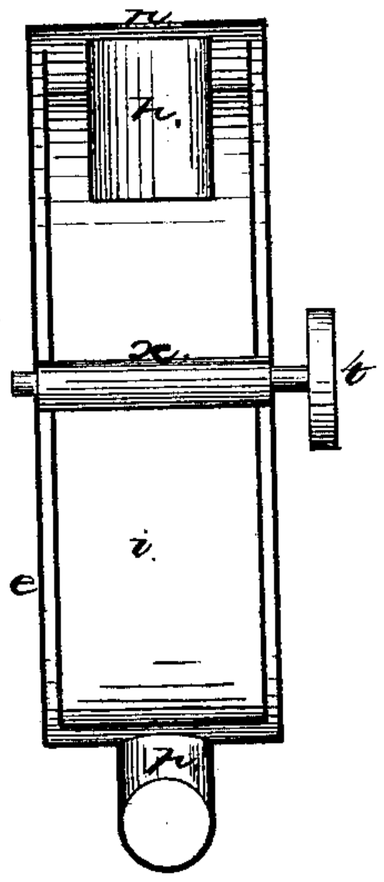


Fig. 4.



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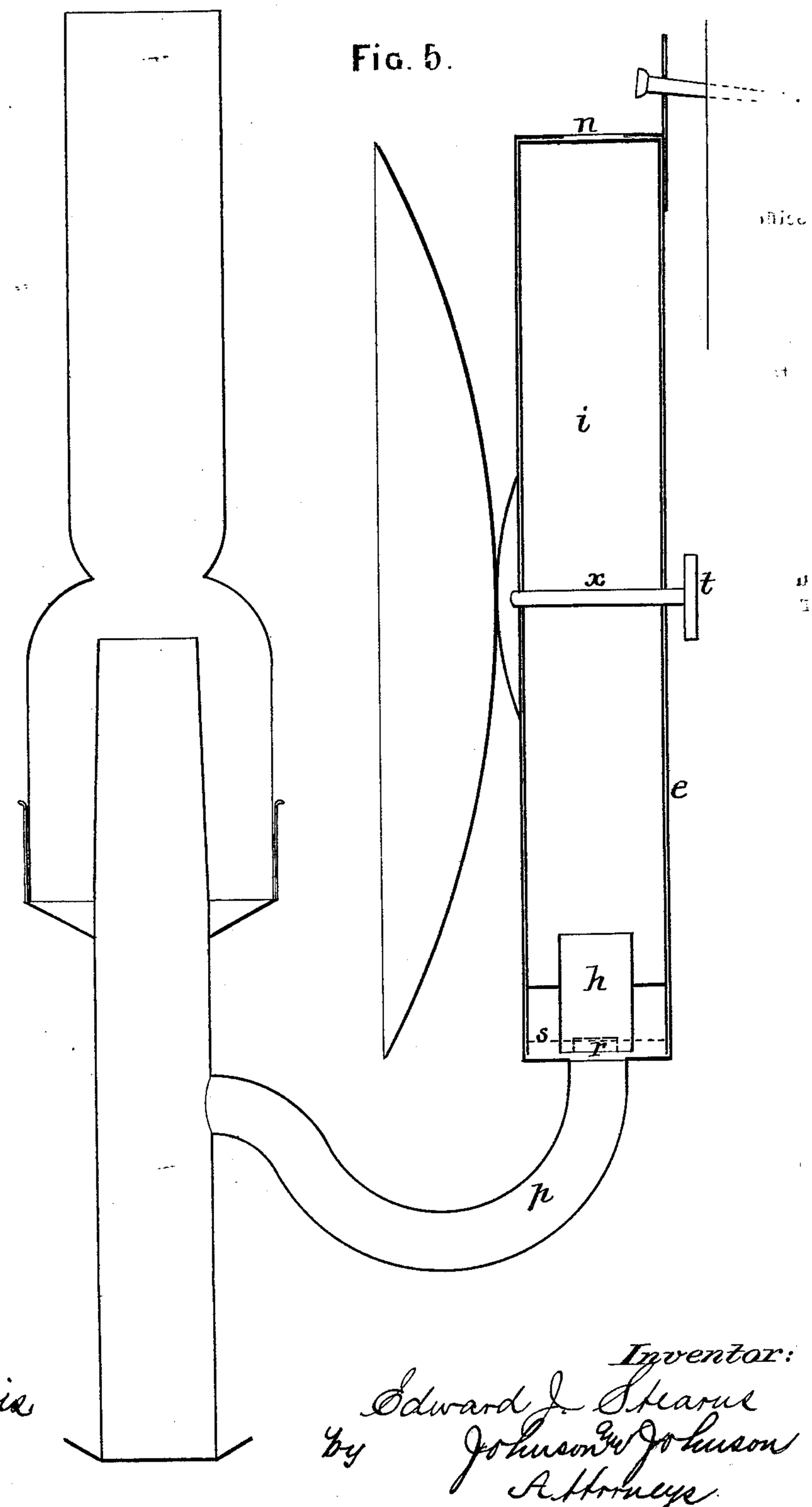
2 Sheets—Sheet 2.

E. J. STEARNS.

FOUNTAIN-LAMP.

No. 189,398. Patented April 10, 1877.

Fig. 5.



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UNITED STATES PATENT OFFICE.

EDWARD J. STEARNS, OF DENTON, MARYLAND.

IMPROVEMENT IN FOUNTAIN-LAMPS.

Specification forming part of Letters Patent No. **189,398**, dated April 10, 1877; application filed December 6, 1876.

To all whom it may concern:

Be it known that I, EDWARD J. STEARNS, of Denton, in the county of Caroline, State of Maryland, have invented an Improvement in Fountain-Lamps, of which the following is a specification:

The object of my invention is to avoid the inconveniences and difficulties of manipulation incident to the construction and arrangement of the cylindrical vessels constituting the fountain or reservoir of that class of lamps known as the "student-lamp," thereby rendering the principle of the fountain more readily applicable to lamps and lamp-chandeliers of all kinds.

The particular features of improvement by which this object is carried into effect consist in providing a reservoir adapted to revolve through half a revolution within a fixed case, with a supply-pipe projecting externally from the circumferential side of said reservoir, in combination with a concave formation in the reservoir surrounding said supply-pipe, and extending a short distance on either side thereof, whereby an air and oil chamber is formed above the delivery-point in a manner to regulate the flow of the oil from the reservoir into the pipe leading to the wick-tube, when these openings are coincident. This construction and combination also admits of a comparatively close joint between the reservoir and its inclosing fixed case.

A pocket or receptacle for the overflow, in filling the reservoir, is also formed by this concave formation, in combination with a notch or opening in one side, at or near the outer end of the pipe, so that when the latter is turned up coincident with the top opening in the fixed case to fill the reservoir, in the event of the oil mounting in the tube and running over, it will be caught, and held in said departure from the outer curve of the reservoir, and carried down and delivered at the supply-point, as the walls of the reservoir are left intact to form the cup or pocket.

This pocket formation, moreover, serves to form an air and oil chamber at the point of supply, to hold the oil above the delivery-pipe, and give air to the interior of the reservoir, so that when the oil falls sufficiently below the notch in the supply-pipe, a bubble of air will be allowed to pass up, and an equal volume of oil will pass down, and thus the effective head of oil will be kept nearly uniform. This is the result of the co-operation of the notched supply-pipe, and the concave formation of the reservoir at the junction with said pipe, so that this feature not only serves an important advantage in filling the reservoir, but, in regulating the supply therefrom, the change in position from the top to the bottom of the reservoir brings these functions into action.

Figure 1 is a vertical cross-section through the center. Fig. 2 is a vertical longitudinal section, also through the center. Figs. 3 and 4 are the same as Figs. 1 and 2, respectively, except that they represent the inner vessel in reverse position. Fig. 5 represents a sectional elevation, showing the reservoir applied to a wall-lamp.

The inner vessel or oil-receptacle *i* is fixed rigidly to the axis *x*, the journals of which turn in holes in the wall or shell of the outer vessel *e*. The tube *h* is for regulating the downward flow of the oil through the pipe *p* to the wick-tube. To enable it to project a little externally, the rim into which it is inserted is curved inward a little, but the circular ends of the vessel do not follow this inward curve, but are, on the contrary, complete circles, thus walling in the concavity, as is indicated by the sectional representation of these circular ends extending downward in Fig. 2, upward in Fig. 4, as far as the tube *h* extends. The dotted line *s*, Figs. 1 and 2, represents the average height of the oil in the cavity above the pipe *p;* when it falls sufficiently below the notch *r* in the end of the tube *h*, indicated in Fig. 1, by the shortened length of the line to the left, a bubble of air will pass up, and an equal volume of oil will pass down, and thus the effective head of oil will be kept, as in the student's lamp, nearly uniform. The air passing in at the hole *n*, in the outer vessel, reaches the tube *h* through the thin space—say a thirtieth of an inch—between the two vessels. The same hole serves also for filling the inner vessel with oil. To accomplish this, turn the vessel half-way around by means of the thumb-piece *t*. The tube *h* will thus be brought into line with the hole *n*. Fill the vessel with oil, turn it, with a quick motion, back to its

original position, as shown in Fig. 1, and it will be ready for use. If, through inadvertence in filling the vessel, the oil should mount into the tube, and run over at the top, it will be caught in the concavity surrounding the tube, and be carried with it, in the revolution of the vessel, to the receptacle at the bottom. To prevent the vessel being carried in either direction through more than half a revolution, a detent should be so arranged as to stop it at the proper point.

In applying the arrangement to a chandelier, the globular form of the fountain will be found most suitable, and as the top of the outer vessel has, in that case, to be connected with the suspending-rod, the hole *n* should be placed a little one side, and the detent arranged accordingly.

It is not absolutely essential, though most convenient, that the outer vessel should be of the same shape with the inner one. All that is essential is, that the outer one should be of such shape, or of such magnitude, that the inner one can revolve freely through half a revolution.

It will be seen from the foregoing that my invention embodies not an application to practice of a newly-discovered principle, but a new and improved method of utilizing an old and well-known principle.

I claim—

1. The combination, with a semi-rotating reservoir and a fixed inclosing-case therefor, of a concave formation or cup in the circumferential side of said reservoir, and a supply-pipe projecting externally within said concave or cup, and adapted for operation in relation to the case and the delivery-pipe, substantially as herein set forth.

2. The supply-pipe *h* of the reservoir, provided with the side opening *r*, in combination with the top and delivery openings *n* and *p* of the fixed case, substantially as and for the purpose herein set forth.

3. An air and oil chamber formed above the delivery-pipe *p*, below the supply-pipe *h*, and between the reservoir and fixed case, when these pipes are coincident, in combination with the top opening *n* and the said supply-pipe, substantially as and for the purpose herein set forth.

EDWARD J. STEARNS.

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