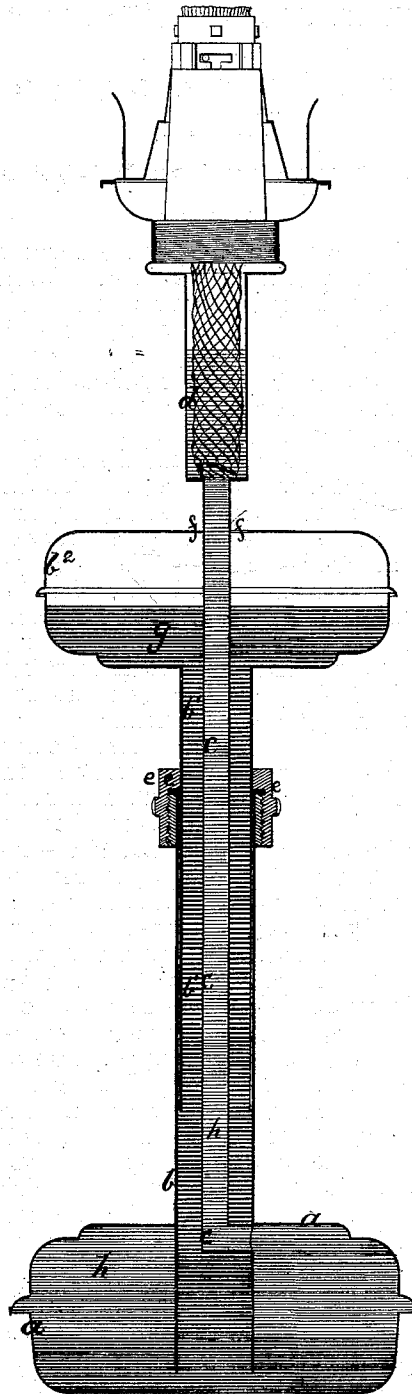


E. D. KENDALL.
Hydrostatic Lamp.

No. 127,067.

Patented May 21, 1872.



WITNESSES.

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E. DWIGHT KENDALL, OF NEW YORK, N. Y.

IMPROVEMENT IN HYDROSTATIC LAMPS.

Specification forming part of Letters Patent No. 127,067, dated May 21, 1872.

I, E. DWIGHT KENDALL, of the city, county, and State of New York, have invented a new and Improved Hydrostatic Lamp, of which the following is a specification:

It has been heretofore proposed to feed oil from a reservoir to a wick-tube or fountain by means of the pressure of a column of water or other unflammable liquid heavier than oil; but the devices suggested for this purpose have not included any contrivance for adjusting or regulating the height of the reservoir of water. Hence, as the oil was consumed, and the place of the oil in the oil-reservoir taken by the water, the height of the column of water was lessened, and, consequently, the pressure on the oil decreased, so as to reduce the flow of oil into the wick-tube or fountain.

My object is to supply this deficiency; and my improvement consists in making the water-reservoir adjustable vertically.

The accompanying drawing represents a vertical section of a lamp embodying an application of my invention.

The base of the lamp *a* is hollow, and is the oil-reservoir. To the center of the top of this reservoir is affixed the larger tube *b*. Another tube, *b*¹, which slides telescopically in the upper end of the tube *b*, is secured to the base of the chamber *b*². The chamber *b*² is the reservoir for containing the unflammable fluid, which, being heavier than the oil, presses through the tubes *b*¹ and *b* upon the lower surface of the oil contained in the reservoir *a*, and forces the oil upward through the innermost tube *c*. The tube *c* terminates at its upper extremity in the wick-tube *d*, which latter projects above the top of the chamber *b*².

The shape of the wick-tube is, of course, determined by the kind of burner which it is desired to use, and may be either flat or round accordingly.

I do not confine myself to any particular form of burner, nor to any particular mode of attaching the burner to the wick-tube, my invention being equally applicable to all kinds of burners.

The telescopic joint between the tubes *b* and *b*¹ must be water-tight, and the drawing exhibits a mode of accomplishing this result by means of packing contained in the collar

e, at the upper end of the tube *b*. The object of this telescopic arrangement of the tubes *b* and *b*¹ is to provide for the adjustment of the height of the chamber *b*², so that the length of the column of heavier liquid may be increased as the oil is gradually consumed, and also may be varied to suit oils of considerably different specific gravities. It is intended that the column of oil shall reach up within the wick-tube, so as to saturate the wick, and that the column of unflammable liquid shall be just heavy enough to balance the weight of the column of oil when the oil is standing at the desired height.

If the lighter oils are used, water will answer for the chamber *b*, as water is enough heavier than kerosene to raise the oil column to the necessary height in the wick-tube or fountain.

Where the heavier oils are used, I propose to employ in the chamber *b*² salt-water, or even a still heavier liquid, as, for instance, a solution of chloride of zinc. I do not confine myself to the use of any particular liquid for this purpose, the conditions of my improvement being met when an adjustable device is present, by means of which the weight of a column of liquid so used forces oil from a reservoir into a wick-tube or fountain, so that the supply of oil to the wick-tube or fountain is uniform and steady, and, while the water-chamber is stationary, is automatically determined or regulated by the rate of combustion.

The chamber *b*² has an opening in the top for the introduction of the liquid, and for the supply of air when the apparatus is in operation. In the drawing this opening is represented in the center of the top of the chamber at *f*, and the water or unflammable liquid is indicated by the heavier lines *g*. The lower end of the tube *h* is near the bottom of the reservoir *a*, while the lower end of the tube *c* is bent to a right angle, so as to pass through the side of the tube *h*, near the top of the reservoir *a*. The oil is indicated by the lighter lines *h*. The tight fit of the tube *b*¹ into the lower tube *b* occasions sufficient friction to hold the water-reservoir at any desired elevation.

My invention is fully exhibited in the lamp which I have described; but I contemplate its

application on a larger scale to the supply of a number of fixed burners, either for illuminating or heating purposes.

I claim as my invention—

1. In an apparatus for burning hydrocarbon oils, a water-chamber, capable of vertical adjustment.

2. The combination of an adjustable water-

chamber with an oil-reservoir and wick-tube or fountain.

E. DWIGHT KENDALL.

Witnesses:

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E. D. GILBERT.