R. STEINMANN.

LAMP.

No. 19,898. Patented Apr. 6, 1858.

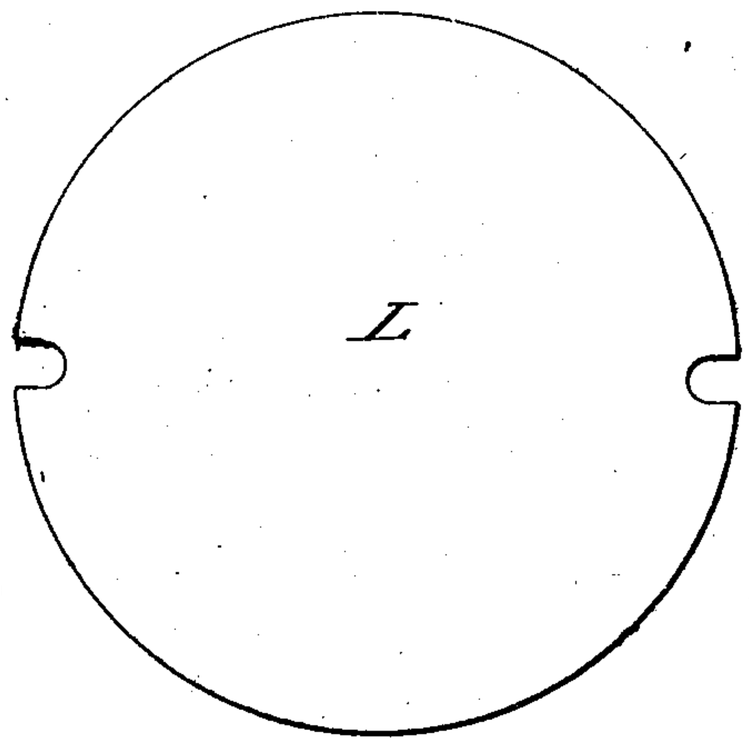

Fig. 2.

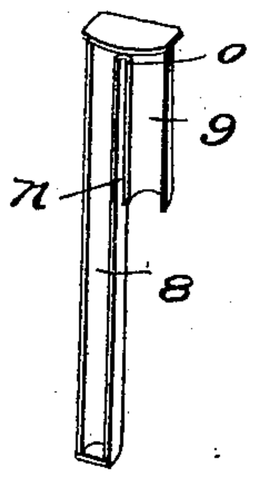

Fig. 3.

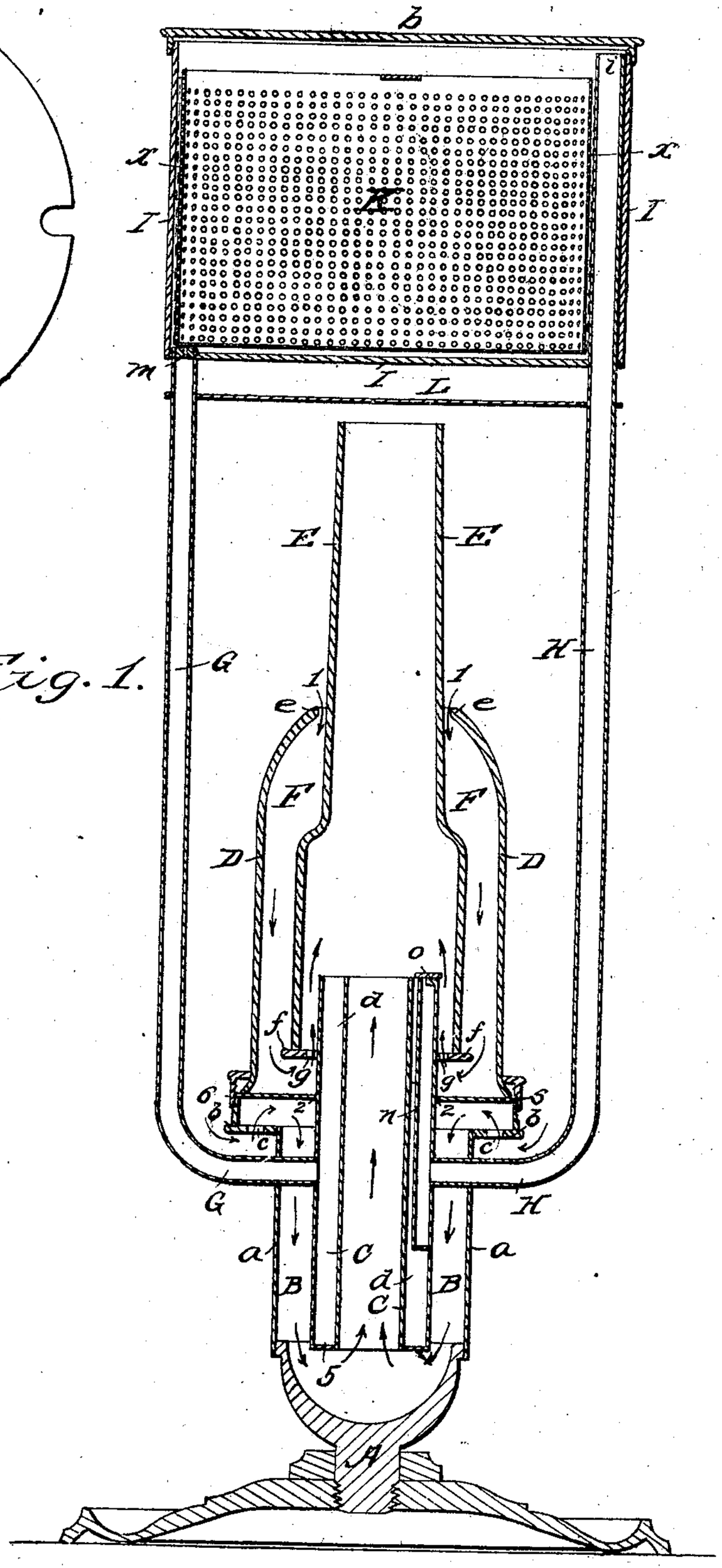

Fig. 1.

UNITED STATES PATENT OFFICE.

ROBERT STEINMANN, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO HIMSELF AND N. S. WAX, OF SAME PLACE.

LAMP.

Specification of Letters Patent No. 19,898, dated April 6, 1858.

To all whom it may concern:

Be it known that I, ROBERT STEINMANN, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Lamps, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a vertical section through the lamp; Figs. 2 and 3, details to be referred to hereafter.

The object of my present invention is to produce a lamp in which grease and fats of inferior quality can be burned without danger of choking up the lamp, and without producing the disagreeable smell which usually accompanies the use of such materials, and by heating the air which supplies the combustion of the oil or melted fat, before it comes into contact with the flame, to produce a more perfect combustion and thus give a clearer flame, and avoid the smoke and dirt.

That others skilled in the art may understand and use my invention I will proceed to describe the manner in which I have carried out the same.

In the drawings A is the base or stand of the lamp. Above this is a hollow cylinder *a* the interior of which forms a chamber B. The top of it is closed by a cap *b* which embraces and supports the wick tube C being attached to it at 2. This wick tube is double forming a space at *d* in which the wick is inserted. The two portions 3 and 4 of it are connected together at the bottom at 5. The tube C itself is open at both top and bottom. The cap *b* is furnished with a series of holes on its under side at *c* which admit air to the chamber B as indicated by the arrows, where it is heated by contact with the exterior of the wick tube C, and thence passes up through the center of this tube to the interior of the flame. The cap *b* also supports a bell glass D which is secured to it by a screw cap at 6. This glass has an opening at top at *e* through which rises the glass chimney E, the opening at *e* being of such a size as to leave a small space through which the air is admitted to the interior of the glass D as indicated by the arrow 1. The chimney E is supported on a rim *f* secured to the upper part of the wick tube C. This rim is furnished with a series of holes *g* through which the air (after having been heated in the space F within the glass D) is admitted to the exterior of the flame as indicated by the arrows. Two bent tubes G and H pass through the sides of the cylinder *a* and enter the tube C opening through the exterior portion 3 of it. These tubes after projecting laterally a short distance from the cylinder *a* rise vertically above the top of the chimney and serve to support the reservoir I which has a tight cap *h* screwed onto the top of it. The tube H passes up through the bottom of the reservoir I and extends nearly up to the cap *h* and is open at top at *i*. The tube G merely passes through the bottom of the reservoir I and is closed at *m* except a small orifice through which the melted fat flows. The reservoir I contains a cup or filter K of perforated metal or fine wire gaze which rises nearly to the top of the reservoir. For more perfect filtration it may be covered with cloth as seen at *x* Fig. 1. This cup is intended to receive the grease or fat to be melted and prevents the dirt or impurities which the fat may contain from obstructing the orifice at *m*. Below the reservoir I and between the bottom of it and the top of the chimney is placed a regulating plate L (shown in Fig. 2) which slides up and down on the tubes G and H and by its position regulates the amount of heat from the flame of the lamp admitted to the bottom of the reservoir I. In the space *d* in one side of the wick tube C is inserted a bent tube *n* (shown in Fig. 3) which is composed of parts of two tubes placed alongside of each other. The longer one 8 which is closed at the bottom is opposite to the outlet of the tube H and the shorter one 9 which is open extends down a short distance below the top of the wick. The two parts 8 and 9 are in communication at the top at *o*. By this arrangement air is admitted to the reservoir I above the fat in the cup K, which fat as it melts flows down through the orifice at *m* through the tube G to the wick in *d*, but when the melted fat or oil rises in the wick tube to a sufficient height it closes the mouth of the part 9 of the bent tube *n*, and prevents the air from ascending the tube H and the flow of fat through the orifice at *m* will be checked. In the accompanying drawings the bent tube *n*, is represented as detached from the lamp, and from the tube H, in order more clearly to show its

interior construction. It is obvious however that it should be a tight tube through its whole length forming a continuation of the pipe H, and secured permanently to the lamp. When arranged as in the accompanying drawings occupying a portion of the wick tube, a float wick is used occupying the remaining portion of the tube. If it be designed to make use of a cylindrical wick the bent tube *n*, should be placed outside of the wick tube, with which it communicates at a point opposite to the bottom of its short branch.

I have heretofore spoken only of fat or grease as the article to be used, but a portion of rosin may be mixed with it.

To prevent the too rapid flow of the melted grease from the reservoir I when the lamp is first lighted the orifice at *m* is made quite small or a cock may be placed in the tube G and the flow be regulated by hand.

What I claim as my invention and desire to secure by Letters Patent, as an improvement in lamps for burning crude oils and fats, is—

1. The arrangement of the elevated reservoir I, with its filter K, and passages of communication G and H, operating in the manner substantially as set forth.

2. In combination with the reservoir I, the passages G and H, and the oil chamber *d*, I claim the bent tube *n*, operating in the manner substantially as described.

3. And in combination with the elevated hot oil reservoir I, I claim the plate L for the purpose of regulating the temperature of the fat or oil as specified.

ROBERT STEINMANN.

Witnesses:
THOS. R. ROACH,
P. E. TESCHEMACHER.