S. RODMAN.

Lamp.

No. 5,870. Patented Oct. 17, 1848.

Fig. 3

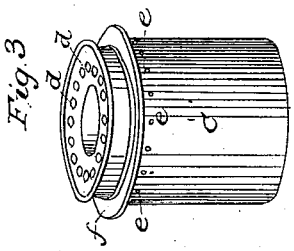


Fig. 2.

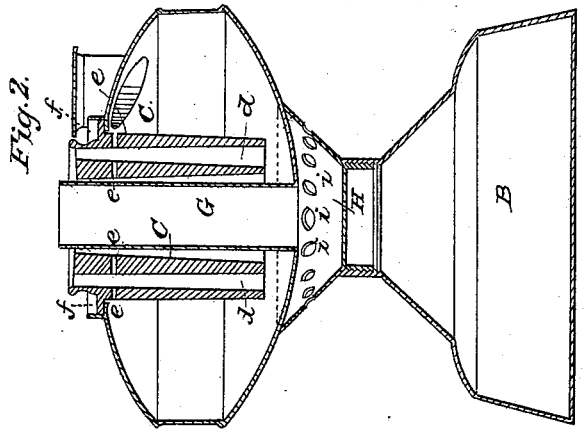
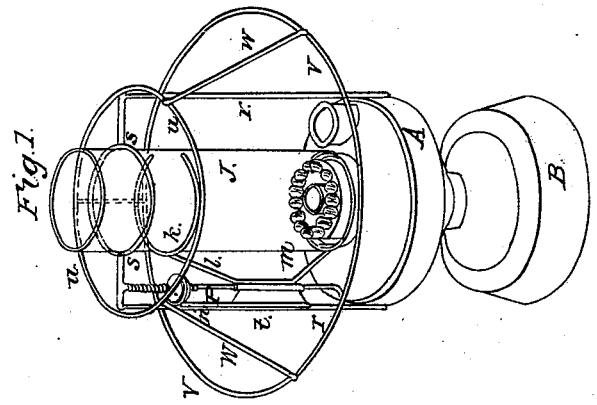


Fig. 1.



UNITED STATES PATENT OFFICE.

SAMUEL RODMAN, OF NEW BEDFORD, MASSACHUSETTS.

IMPROVEMENT IN LAMPS.

Specification forming part of Letters Patent No. **5,870**, dated October 17, 1848.

To all whom it may concern:

Be it known that I, SAMUEL RODMAN, of New Bedford, in the county of Bristol and State of Massachusetts, have invented a new and Improved Lamp Adapted to Burning Oil, Lard, or Grease, which I denominate the "American Lamp;" and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification.

Figure 1 is a perspective view of my American lamp; Fig. 2, a vertical section through the center of the same, and Fig. 3 a perspective view of a portion of the lamp detached.

Similar letters indicate like parts in all the figures.

My invention consists of an improvement on the Argand lamp, which improvement is in substituting for the tubular woven wick a series of small wicks passing through perforations *d d*, drilled in a heavy metallic tube *d*, surrounding the central air-tube G, as represented in the drawings. So high a temperature will be imparted to the tube C by the burning of the series of wicks passing through the same, and thereby to the oil, lard, or other fatty substance with which the lamp may be filled, that it will burn freely and brightly in any situation with oil or grease of an inferior quality after it has been put in action and a high temperature imparted to the charge, either gradually by the slow combustion of the inferior grease, or more rapidly by the burning of a small quantity of good oil resting on the surface of the inferior grease or by any other means. The tube C rests upon the flange *f*, which fits accurately into a seat surrounding the opening in the top of the body of the lamp. The perforations *d d* in the tube C for the reception of the wicks are of a cylindrical form, the diameter of the part below the flange being greater than that above it to admit of the oil or grease being drawn up freely by the wicks till it gets near the point of combustion, where it is necessary that the wicks should be tighter in the tubes to keep them in the desired position. At the upper extremities the perforations are a little enlarged or countersunk to admit of the convenient use of the forceps for raising the wicks. A little below the flange *f* small apertures *e e* are drilled through the tube C, passing into and through each of the wick-perforations *d d* into the central space between the air-tube G and the tube or burner C, the interior bore of the tube C being a little conical, enlarging as it descends from the top, where it is in contact with the cylindrical air-tube G. These apertures are for the purpose of enabling the oil or grease, which is on the surface and first becomes heated, to flow into the wicks, when the lamp is full and first lighted, or for conducting to the wicks the small portion of oil or other combustible fluid when this is used as the upper stratum of the charge to commence the combustion when the charge consists mainly of lard or other grease which assumes the solid form at the atmospheric temperature. The top of the burner C is slightly beveled inward from the raised exterior edge, so as to conduct the oil which may escape from the wicks while burning toward the center to pass into the lamp again by the side of the air-tube G. The tube or burner C descends to within about half an inch of the bottom of the body of the lamp to heat the oil or grease, and that the wicks may draw their supply, after the oil sinks below the apertures *e e*, from the bottom, and thereby prevent the accumulation there of sediment or of the less inflammable parts of the substance used, as is the case with other lamps. Another advantage of this arrangement is that if the combustible matter is not almost wholly exhausted the lower end of the burner remains immersed, so that the air cannot act on the wicks and impair their capillary effect. The central air-tube G opens into the chamber H, into which air is admitted through the series of apertures *i i*.

A glass chimney J is placed over the wick-tube or burner C, and is supported and adjusted by means of a wire frame-work, as represented in Fig. 1. Air is admitted to the outer side of the series of wicks under the bottom of the chimney, and consequently by raising or lowering the chimney the quantity of air admitted can be properly regulated. A is a movable band fitting accurately to the central portion of the body of the lamp, to which the wire frame-work is connected that supports the chimney J, and also the shade-frame *u v w*. A hook on the lower end of the arm *m* sustains the chimney, (which is slightly notched at the point of contact,) and

a spring-clamp k on the upper end of the arm l steadies the same and keeps it in a vertical position. The arms l and m project from a slide L, which works upon the guiding and supporting rods p and r.

n is a regulating-nut working on a screw on the upper end of the rod p, which nut is connected with the slide L in such a manner that by turning the nut the chimney J will be elevated or depressed. The main supporting-rods r r of the wire frame-work are united at the top by the ring S, which surrounds the chimney J. The construction of the American lamp being such that with good oil it will burn freely and brightly in exposed situations in the coldest weather after being first put in full action, renders it for the use of light-houses superior to any lamp that has yet been invented.

Having thus fully described the distinguishing features of my improved or American lamp, what I claim therein as new, and desire to secure by Letters Patent, is—

The combination and arrangement of the heavy metallic tube or burner C, having longitudinal perforations filled with a series of wicks, with the central air-tube G, substantially in the manner and for the purpose herein set forth.

SAM. RODMAN.

Witnesses:
BENJ. RODMAN,
WM. LOGAN RODMAN.