(No Model.)

M. H. SINCLAIR.

LAMP STOVE.

No. 562,254. Patented June 16, 1896.

Fig. 1.

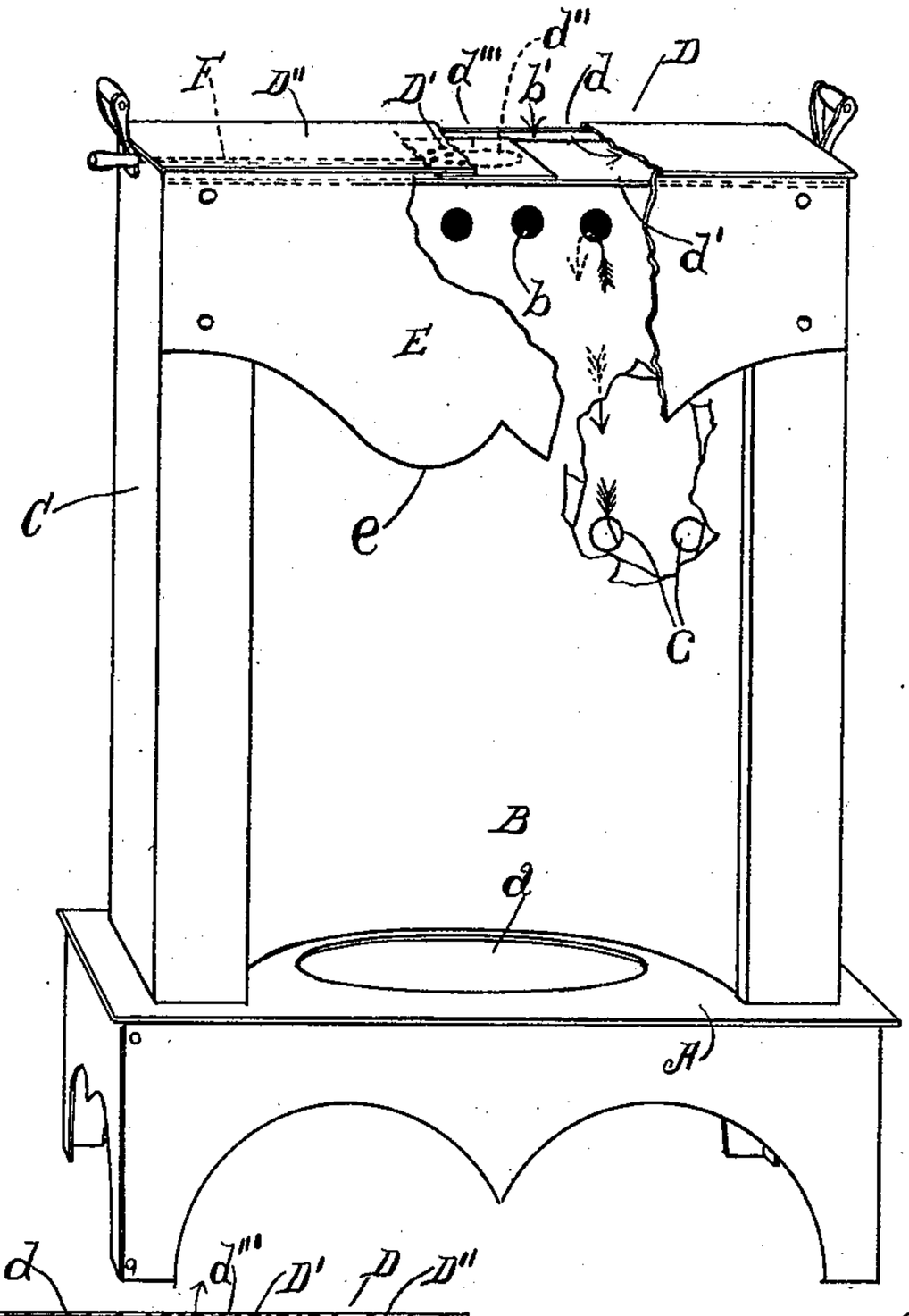
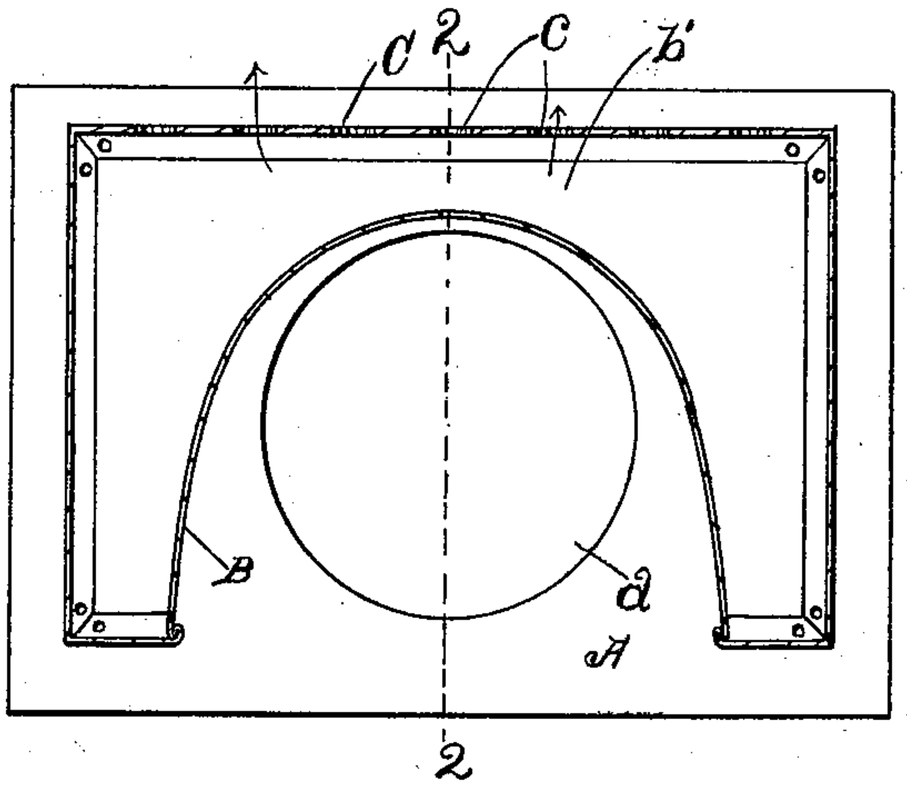


Fig. 2.

Fig. 3.



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UNITED STATES PATENT OFFICE.

MOSES H. SINCLAIR, OF LOS ANGELES, CALIFORNIA.

LAMP-STOVE.

SPECIFICATION forming part of Letters Patent No. 562,254, dated June 16, 1896.

Application filed January 3, 1895. Serial No. 533,723. (No model.)

To all whom it may concern:

Be it known that I, MOSES H. SINCLAIR, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented new and useful Improvements in Lamp-Stoves, of which the following is a specification.

My invention relates particularly to that class of heaters in which a lamp is placed in a casing having a portion of one side open in order to allow the light and heat from the lamp to pass out into the room. The great objection to these devices has arisen from the disagreeable odor of the oil and unconsumed gases from the lamp which are thus discharged directly into the room. It is well known that if air containing unconsumed carbon and other matter is passed slowly through a room or chamber the matter will deposit in the chamber and the air emerge therefrom comparatively pure. It is evident that these products of combustion can be readily directed through a settling-chamber if the lamp is entirely inclosed and the entire current of air passing through the lamp and arising from the heated chimney is confined, but this would, by shutting off the light and heat, greatly impair the effectiveness of the heater.

The object of my invention is to provide a stove of this character in which the light and heat will have unobstructed exit from the stove into the room, but one in which the unconsumed gases and products of combustion will be caused to pass through a settling-chamber, so to speak, and to deposit therein the carbon and other noxious matter before it finally passes out into the room.

A further object of my invention is to provide a lamp-stove in which the top will serve as a table or stand for the reception of vessels containing articles of food or other matter, and one in which the heat which is applied to keep the articles heated may be regulated to a nicety without reference to the amount of heat produced by the lamp.

My invention embraces the various features of construction and combinations of parts hereinafter set forth and claimed.

The accompanying drawings illustrate my invention.

Figure 1 is a perspective front elevation of a device embodying my invention. In this view a portion of the stove is broken away to expose the construction. Fig. 2 is a sectional view on line 2 2, Fig. 3, looking toward the right, showing a lamp in position in the device. Fig. 3 is a cross-section on line 3 3, Fig. 2, looking down.

In the drawings, A represents the base of the stove, and B represents a semicylindrical wall mounted upon the base and provided near its top with perforations *b*. The base A is provided with a lamp-seat *a* in which to seat the lamp B′, (shown in Fig. 2,) and the semicylindrical side wall B partially surrounds such lamp-seat in the ordinary manner of lamp-stoves employing a semicylindrical side wall.

The semicylindrical side wall is not of my invention, and my invention relates more especially to providing a chamber into which the products of combustion are conducted and allowed to deposit upon the side walls thereof, the air afterward passing from the chamber comparatively free from soot or odor. To form this chamber, I provide a casing C, which incloses the rear of the semicylindrical side wall and is arranged to form in combination with such side wall an air-chamber *b′*, and in such casing C, I arrange a series of perforations *c*, through which the heated air which enters the chamber *b′* through the openings *b* has egress into the room. The front edges of the semicylindrical wall B are secured to the casing C, which, as shown in the drawings, is made square, so that the stove when viewed from the rear has the appearance of a box-stove.

Upon the top of the semicylindrical wall B and casing C, I provide a top D, which is double and arranged to form an air-chamber *d* above the top of the lamp. In the lower wall *d′* of this chamber I provide an opening *d″*, which is controlled by a damper *d‴*, which regulates the admission of heated air into the chamber *d*. I provide perforations D′ in the top wall D″ of the air-chamber directly above the opening *d″* in the lower wall of such chamber, so that when the damper is fully opened the heat will pass upward through the opening *d″* and the perforations D′ and will quickly heat any vessel which may be placed upon the top over the perforations. By this arrangement of the double top, when the dam-

per d''' is closed, the top wall D'' of the chamber will be only sufficiently warmed by convection to keep any article placed upon such top at a lukewarm temperature. By regulating the damper to admit more or less heat into the chamber d the temperature of the top wall D'' can be regulated to a nicety without in any manner regulating the blaze of the lamp. This is very important, for in many instances it is desired to keep food warm and at the same time to utilize the full heating capacity of the lamp for the purpose of warming a room, and as ordinarily constructed this would heat the cover or top so hot as to cook any article placed upon the top instead of keeping it warm, and heretofore the only manner of regulating the temperature of the top has been by regulating the blaze of the lamp to give a greater or a less supply of heat.

In order to cause the gases and products of combustion to pass through the chamber b', so that the soot or noxious gases may settle or be deposited upon the walls of such chamber, I provide a hood E, which is arranged extending downward from the top D and non-perforate, closing the upper open front portion of the semicylindrical side wall B. This hood extends downward below the openings b in such semicylindrical wall, and the gases and products of combustion which pass from the lamp are confined in the top of the semicylindrical side wall and are caused to pass through the openings b into the chamber b' and thence out through the openings c in the casing C.

The rapid current of air passing through the lamp-chimney carries all the unconsumed products of combustion up into the closed top of the semicylindrical side wall and hence such products are thus caused to pass through the openings b into the chamber b', while that air which is heated by contact with the exterior of the lamp-chimney produces a constant current of hot air which rises and flows out beneath the bottom of the hood, endeavoring to pass upward into the hood, and thereby assisting in preventing the products of combustion from descending and passing out beneath the hood into the room. This hood E preferably has its bottom e arranged at a distance above the openings or perforations c in the casing, in order that the circulation of air through the chamber b' may not be sufficiently rapid to draw the air heated exterior the chimney into the chamber b' or to prevent the soot and noxious gases or products of combustion from depositing in such chamber. That is to say, by reason of the openings c being below the bottom of the hood the circulation of air through the chamber b' is not so rapid as it would be were the openings c arranged above the bottom of such hood, since the natural tendency of heated air is to rise and to discharge at the highest available opening.

The damper d'' is controlled by means of a damper-rod F, which passes through the chamber d and the side wall of the casing C so that such damper may be operated without disturbing or removing the top of the heater. That is to say, I secure the top and bottom walls of the air-chamber rigidly together and the damper is readily adjusted without removing any portion of the stove.

My stove is also perfectly flat upon the top and gives considerable room upon which to place articles which it is desired to keep warm. In practice I have made the entire stove from black sheet-iron, including the semicylindrical side wall. It has been common in lamp-stoves to make the semicylindrical side walls of heat-reflecting material such as polished tin, but I find in practice that the bright reflection thus produced is very objectionable for the reason that lamps which are very powerful and give an intense light are employed in such heaters, and the additional brightness resulting from the use of the reflector proves very trying upon the eyes. Furthermore, by making this side wall a reflector, the heat is thrown downward upon the bowl of the lamp and heats the oil, thus to produce gases which escape from the lamp and are very disagreeable. By employing black sheet-iron for the semicylindrical wall I avoid the reflection of heat therefrom, and this heat is absorbed and passes through the wall and warms the air within the chamber b' and this air in turn transmits the heat to the casing C, and the casing transmits it to the outer atmosphere. It will be understood however that I do not limit myself to the use of any especial material in constructing the side wall or any other part of my heaters, and although I have shown the base and top made from sheet-iron, still they may be made from cast-iron without departing from the spirit of my invention.

In the drawings I have shown the different parts of my stove connected to each other by riveting and by lapped seams in the ordinary manner of making such connections, but it is to be understood that I do not limit my invention to any especial manner of securing the various parts together and therefore I have not given herein a detailed description for the reason that any mechanic versed in the art may devise means suitable for this purpose.

My invention is to be distinguished from those in which the heat source is surrounded by a cylindrical casing closed at all sides, and also from those devices in which a chamber is arranged above the top of the lamp, for the reason that with the first-named devices the entire amount of air heated by the burner passes through the chamber, thus causing such a draft that the matter does not deposit, but passes out into the room together with the heated air. In the last-named devices, by reason of the drum being arranged above the top of the lamp, the air in the drum is heated very highly and consequently the cir-

culation of the air is made very rapid when the damper is opened sufficiently to allow the products of combustion to enter the chamber. By my construction, only the gases and noxious vapors pass into the chamber, and since this chamber is arranged behind the lamp, the air in the chamber is not as highly heated as in the other described devices, and furthermore, by my arrangement of placing the inlet-perforations above the outlet-perforations, and of leaving the front of the semicylindrical side wall open to allow the bulk of the heated air to escape directly into the room instead of passing through the chamber, the circulation is very gentle and slow. In practice I find that I can leave one of my appliances in a tightly-closed room, with the lamp turned up to its full heating capacity, and even after several hours no odor of unconsumed gases will be present in the room. This cannot be done with any other device of this class of which I am aware.

Now, having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

A lamp-stove comprising a base, a semicylindrical side wall mounted upon the base and perforated near its top; a double top arranged upon the semicylindrical side wall to form an air-chamber above the lamp, the lower wall of such top being provided with an opening arranged to admit heated air into such double top; a damper arranged to open and close such opening; an external casing arranged to form in combination with the semicylindrical casing an air-chamber, and provided with perforations arranged below the perforations in the semicylindrical wall; and a non-perforate hood arranged closing the top of the open front of the stove and extending downward below the perforations in the semicylindrical wall.

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