

R. MARSH.  
LAMP CHIMNEY.

(Application filed Oct. 25, 1897.)

(No Model.)

Fig. 1,

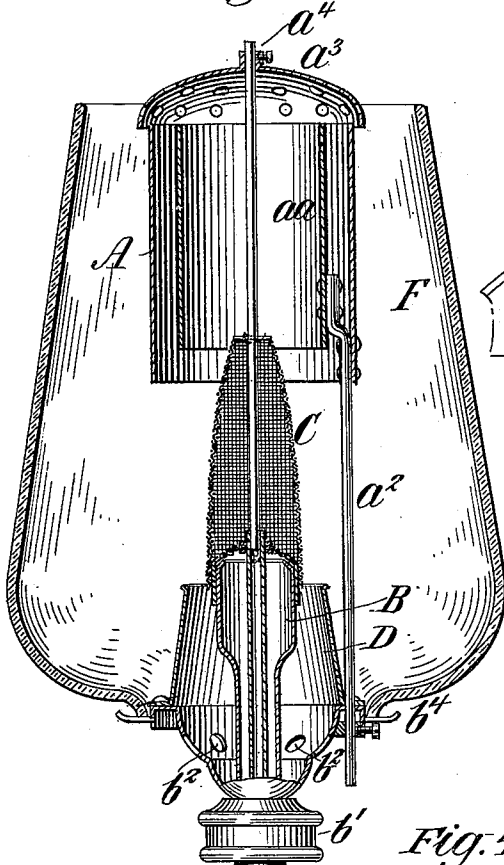


Fig. 2,

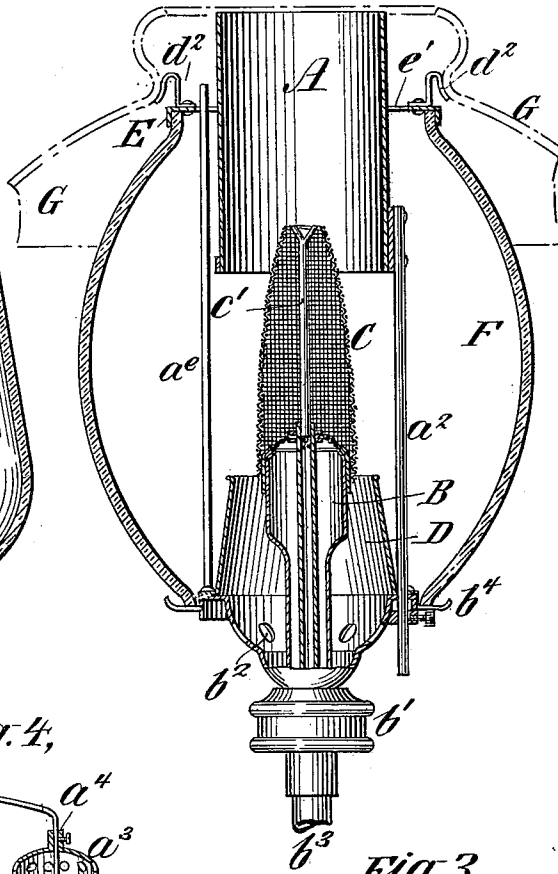
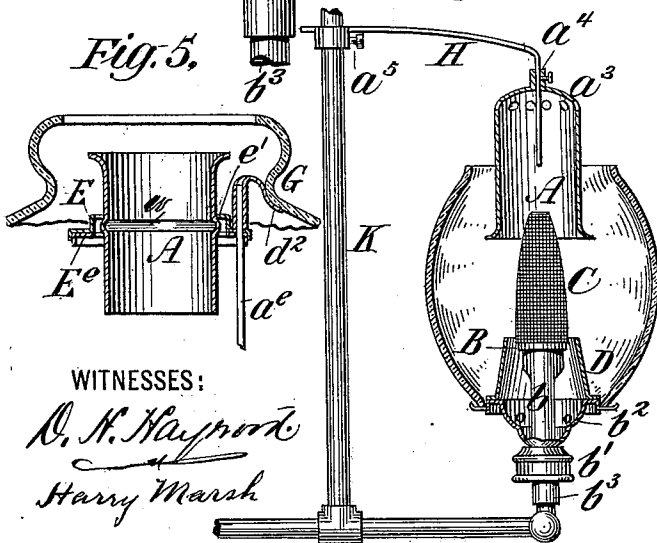


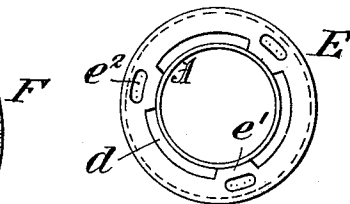
Fig. 4,



WITNESSES:

R. H. Haywood  
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Fig. 3,



INVENTOR

Riverius Marsh  
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# UNITED STATES PATENT OFFICE.

RIVERIUS MARSH, OF NEW BRUNSWICK, NEW JERSEY, ASSIGNOR TO  
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## LAMP-CHIMNEY.

SPECIFICATION forming part of Letters Patent No. 652,730, dated June 26, 1900.

Application filed October 25, 1897. Serial No. 656,306. (No model.)

*To all whom it may concern:*

Be it known that I, RIVERIUS MARSH, a citizen of the United States, residing at New Brunswick, in the county of Middlesex and State of New Jersey, have invented certain new and useful Improvements in Lamp-Chimneys; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to chimneys for incandescent gas-burners; and its object is to provide an improved construction of the same which shall possess superior advantages with respect to efficiency in use.

The invention consists in the novel construction and combination of parts, as hereinafter fully described and claimed.

In the accompanying drawings, Figure 1 is a longitudinal sectional view showing an incandescent gas-burner provided with my improvements. Fig. 2 is a similar view showing a modified construction. Fig. 3 is a plan view of the same. Fig. 4 is a longitudinal sectional view showing another modification. Fig. 5 is a detail sectional view of another modification.

In the said drawings, referring now to Fig. 1, is shown a gas-burner B of ordinary construction, encircled by a perforator-shell  $b^2$ , having extending arms  $b^4$ , which support globe F, by which a current of air is admitted about the burner-tube, and one current of air enters the globe within the circle of the base thereof. Air-shutter  $b'$  coöperates with the said burner in the supply of air, which mixes with gas received through pipe  $b^3$ , thus providing for a Bunsen flame. Directly over burner B is an incandescing mantle C of refractory material, supported by rod and screw  $a^3$ , which fixture also retains perforated shell  $a^2$ . Encircling the top and bottom and separated above and below the main body of said mantle is a three-part chimney. D is the lower section thereof, which rests upon the perforated shell  $b^2$  and encircles the lower end of said mantle and the top of burner B. The inner part  $a$  and the outer part A are held in concentric position, and also operated by an adjustable rod  $a^2$  and screw located near

the lower end of rod, for the purpose of lowering part A over said mantle for shipment or otherwise. Perforated disk  $a^3$  prevents sudden drafts of air within the lamp.

I do not confine my improvements to a three-part chimney, but add more parts at will. Said improvements permit only radiated heat from reaching the globe which encircles the three-part-chimney mantle C and burner B.

In Fig. 2 is shown a modification of my invention. B is the burner, which is encircled in part by a perforated shell  $b^2$ , having arms  $b^4$  extending therefrom to support globe F. A is the top section, and D is the bottom section, of a metal chimney. The top section of said chimney is held in elevation or lowered upon the bottom section D by means of adjustable rod  $a^2$  and set-screw near arm  $b^4$ . The top section can be lowered over mantle C and firmly secured upon the lower section D at will. Extended arms  $b^4$  admit air to globe F and the perforated shell  $b^2$  admits air to burner, which rises in circular form about said mantle, while the top section receives and expels the same. Combination-plate E rests on the top of globe F and is provided with arms  $d^2$  to hold shade G in central position.

Fig. 3 is a plan view of combination-plate E, also shown in Figs. 2 and 5. A is the metal chimney.  $b$  represents openings made by cutting away a portion of the plate. The remaining circle thus provides projections  $e'$ , which impinge on the chimney A.  $e^2$  represents holes which admit gallery-post  $a^e$ .

Fig. 5 is a modification of said improvement which shows further details in the use of combination-plate E. A is the chimney.  $a^e$  is the gallery-post.  $d^2$  is the common shade-support, which hangs from top of post  $a^e$ .  $E^e$  is the ordinary gallery-ring, supported by post  $a^e$ , upon which said combination-plate may rest at will and be used with stationary or removable arms  $d^2$ .  $e$  represents impinging points in contact with chimney by which said chimney may be held lightly or firmly, as desired. G is the shade.

Fig. 4 is a modification of said improvement. B is the burner.  $b^2$  is a perforated shell having extending arms  $b^4$ , which support globe F and provide vent within said globe and also within said shell.  $b'$  is the air-shutter;  $b^3$ , the

gas-supply. C is a mantle. D is the lower section of a chimney which encircles the base of said mantle C and the upper part of burner B. A is the top section of said chimney, which is held in position by support H, in connection with chandelier K, by means of adjustable slide  $a^4$  and adjustable slide  $a^5$ , by which the suspended chimney may be lowered over said mantle when not in use or elevated and adjusted at will.  $a^3$  are perforations which may be of desired size or number, or an open top may be used.

It will be observed that by this construction two separate currents of air are provided for in the forms shown in Figs. 2 and 4—that is, two currents are provided for entirely through the lamp, one current being within the base cone or tube D around the mantle by passing upwardly thence through the flue A, and the other current passes up around the base of the tube D and thence along the inner surface of the glass or globe, escaping at the top of the globe, outside of the flue A. The former current is therefore within the heat-zone and the latter current in the cooling-zone, thus serving the useful purpose of preventing the intense heat of the mantle from unduly heating and breaking the glass globe.

In operation the lower section D of said chimney receives and impinges the warm air from the burner B in circular form about said mantle, while section A A induces, receives, and expels the heat from incandescence. A second draft of less but varying velocity operates between the side walls of concentric sections A A and A of said chimneys to receive excessive heat caused by broken mantles, overflow of gas, &c., while the heat-zone within said globe F is regulated and preserved by a normal and varying draft between chimney A and globe F and also underneath the base of said globe, as described, thus producing an accelerated current within the circle of the heat-zone which illuminates the mantle to its very top and at the same time more than doubles the life thereof.

What I claim as new is—

1. In a gas-lamp, the combination of a gas-burner, an incandescing mantle of refractory material above the burner, an outer removable glass globe, a vertically-adjustable tubular chimney adapted to be raised above or moved down over the mantle to inclose it, means for adjusting the said tubular chimney from the outside of the globe whereby the chimney may be adjusted without removing the globe.

2. In a gas-burner, the combination of the main burner, a refractory mantle supported above the burner, an adjustable chimney adapted to be vertically adjustable to expose or completely inclose the refractory mantle, a glass globe inclosing the chimney, mantle and burner and means to support the chimney in its adjusted position.

3. In a gas-burner, the combination of the

main burner, a refractory mantle supported above the burner, an adjustable chimney adapted to be vertically adjustable to expose or completely inclose the refractory mantle, means to support the chimney in its adjusted position, and a conical shield encircling the base of the refractory mantle or burner and over which the vertically-adjustable chimney fits.

4. In a gas-lamp, the combination of a gas-burner, a refractory mantle supported above the burner, concentric chimneys united above the mantle so as to form a central draft and also a draft between the walls of said chimneys substantially as set forth.

5. In a gas-lamp, the combination of a gas-burner, a refractory mantle above the burner, a three-part chimney, consisting of two concentric parts which encircle the top of mantle, and one part encircling the base of mantle, and the burner, whereby two separate drafts of air are formed, one current within the base of the chimney encircling the burner and mantle to pass up through the central top chimney, and one current between the walls of said concentric chimneys substantially as set forth.

6. In a gas-lamp, the combination of a gas-burner a refractory mantle supported above the burner, concentric chimneys united, and suspended above the mantle, a conical shield encircling the base of mantle or burner, and a globe inclosing said burner, chimneys and mantle; whereby three separate drafts are formed, one current within the conical shield and up through the central chimney, one current between the concentric chimneys, and one current between the base of globe and burner, and the top of globe and outside cylindrical chimney.

7. The combination in a gas-lamp, of a burner, a mantle above the burner, a three-part chimney, one part surrounding base of mantle and two parts combined and operated by an adjustable rod, and a globe inclosing said chimneys, a combination-plate resting on said globe, vent-openings in said plate, and a shade supported thereon, substantially as set forth.

8. The combination in a gas-lamp of a burner, a mantle above the burner, a two-part chimney, one part above and one part below the center of the mantle, the upper section of said chimney being adapted to be raised or lowered at will by an adjustable rod, having a set-screw connection, substantially as set forth.

9. The combination in a gas-lamp of a burner, a mantle above the burner, a two-part chimney divided, one part encircling the bottom of the mantle and the burner, and the top section being secured to an adjustable rod, having a set-screw connection for closing the parts thereof and for elevating the same over the mantle when in use, the mantle and burner being encircled by a globe whereby two sepa-

rate drafts are maintained, one within the metallic chimney, and one between the chimney and globe, substantially as set forth.

10 5 burner, a mantle above the burner, a suspended chimney above the mantle, an adjustable arm connected with and retaining said chimney, and a globe encircling the burner, mantle and chimney whereby the air is forced  
10 upward in circular form, induced, received and expelled by the chimney, substantially as set forth.

15 11. The combination in a gas-lamp of a burner, a mantle above the burner, a metallic chimney above the mantle, a metallic plate impinging the chimney and resting on a globe which encircles the mantle and chimney and a vent-opening in said plate between the globe and metal chimney.

20 12. The combination in a gas-lamp of a burner, a mantle above the burner, a globe inclosing the mantle and burner, a metal plate encircling the globe, having vent-opening therein, and an adjustable metallic chimney  
25 above the mantle, and arms holding the shade, substantially as set forth.

13. The combination in a gas-lamp, of a

burner, the mantle above the burner, one or more posts attached to the burner a metal plate-ring, having vent-openings, attached to  
30 said post or posts and an adjustable chimney encircled by said plate, substantially as set forth.

14. The combination in a gas-lamp, of a burner, one or more posts rising from said  
35 burner, a plate being attached to post or posts near the top thereof, a removable combination-plate resting on said plate-ring, having arms impinging, and a metallic chimney held in elevation near the top of a mantle, suspended  
40 over the burner, substantially as set forth.

15. In combination in a gas-chandelier, a gas-lamp having a refractory mantle, a cone surrounding the lower end of the mantle a metallic chimney encircling the top of said  
45 mantle, an adjustable support and a globe encircling the burner, cone, mantle and chimney substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

RIVERIUS MARSH.

Witnesses:

HARRY M. WYRTZEN,  
FRANCIS BILLINGHAM.