

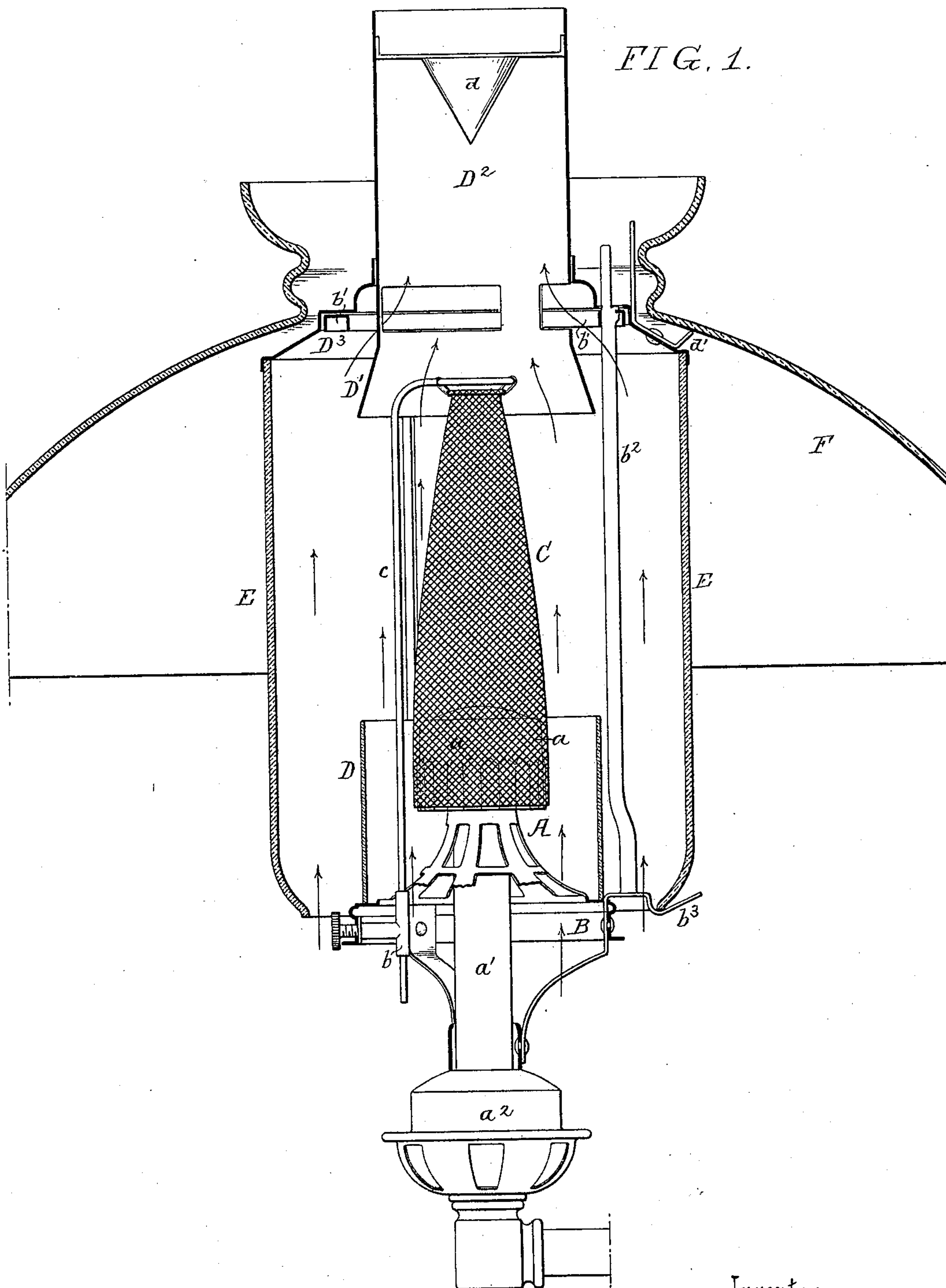
(No Model.)

3 Sheets—Sheet 1.

E. M. WHITE.
CHIMNEY FOR INCANDESCENT GAS BURNERS.

No. 589,322.

Patented Aug. 31, 1897.



Witnesses:
Hamilton D. Turner
Will. A. Barr.

Inventor
ERNEST M. WHITE
by his Attorneys
Howson & Howson

(No Model.)

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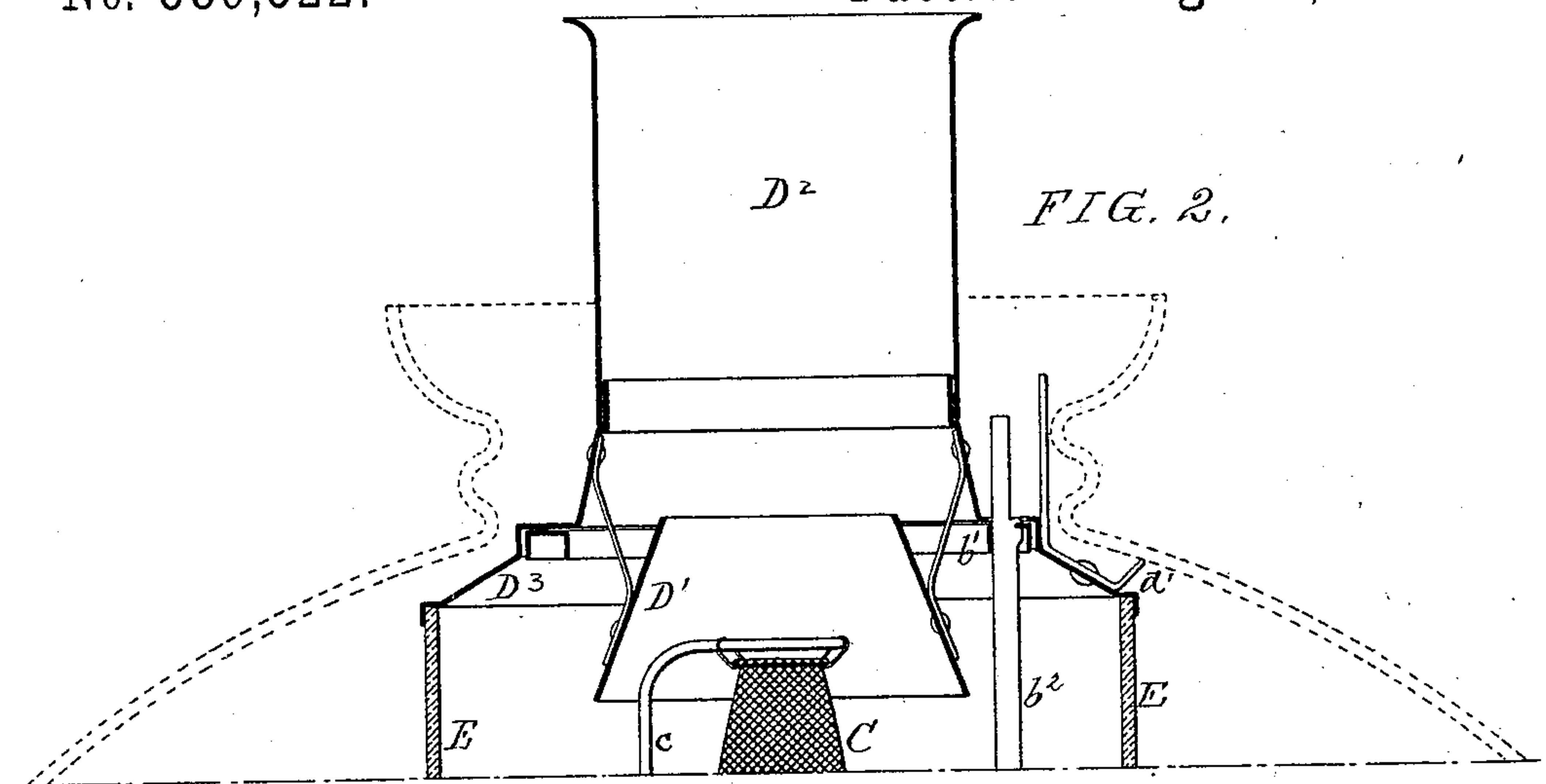


FIG. 3.

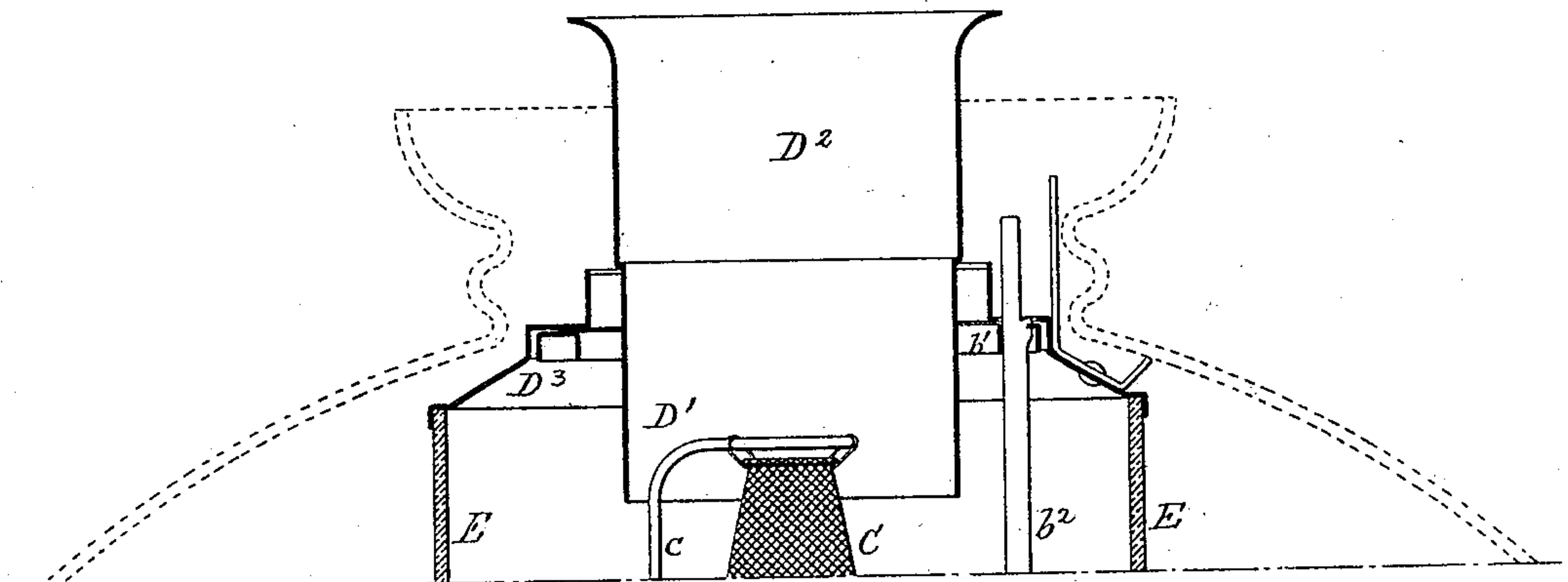
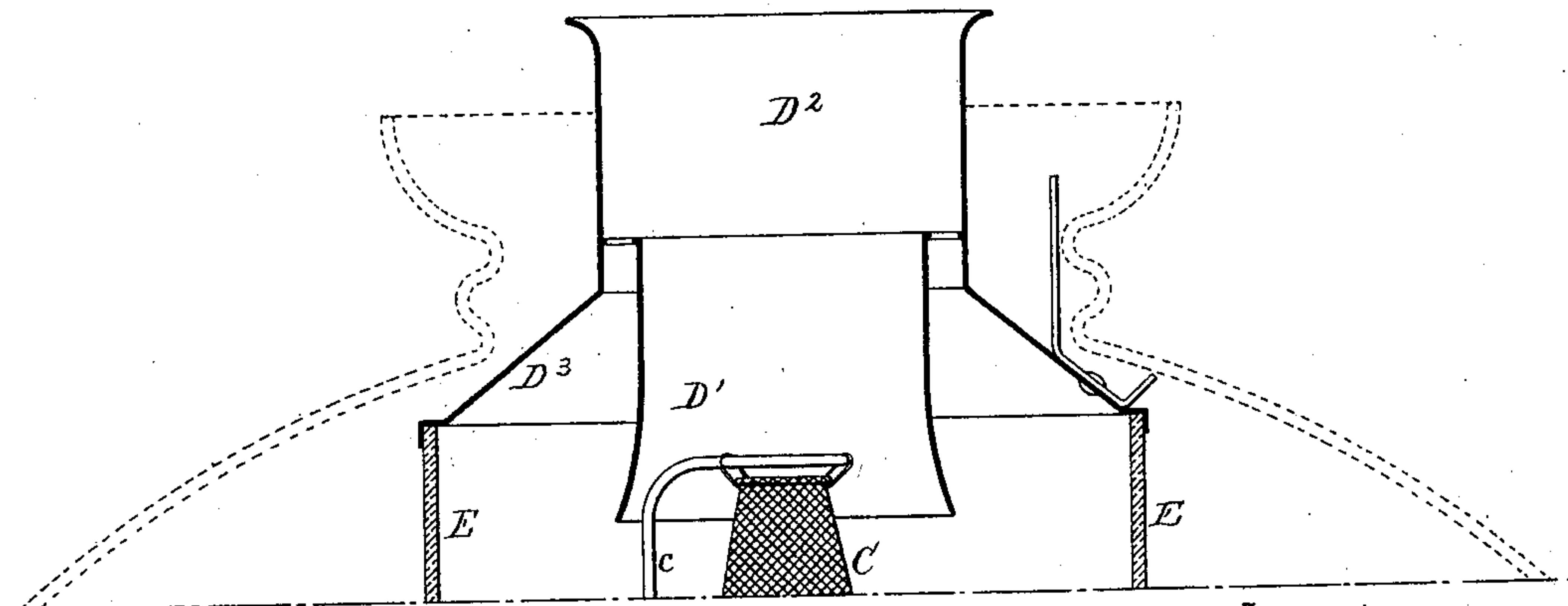


FIG. 4.



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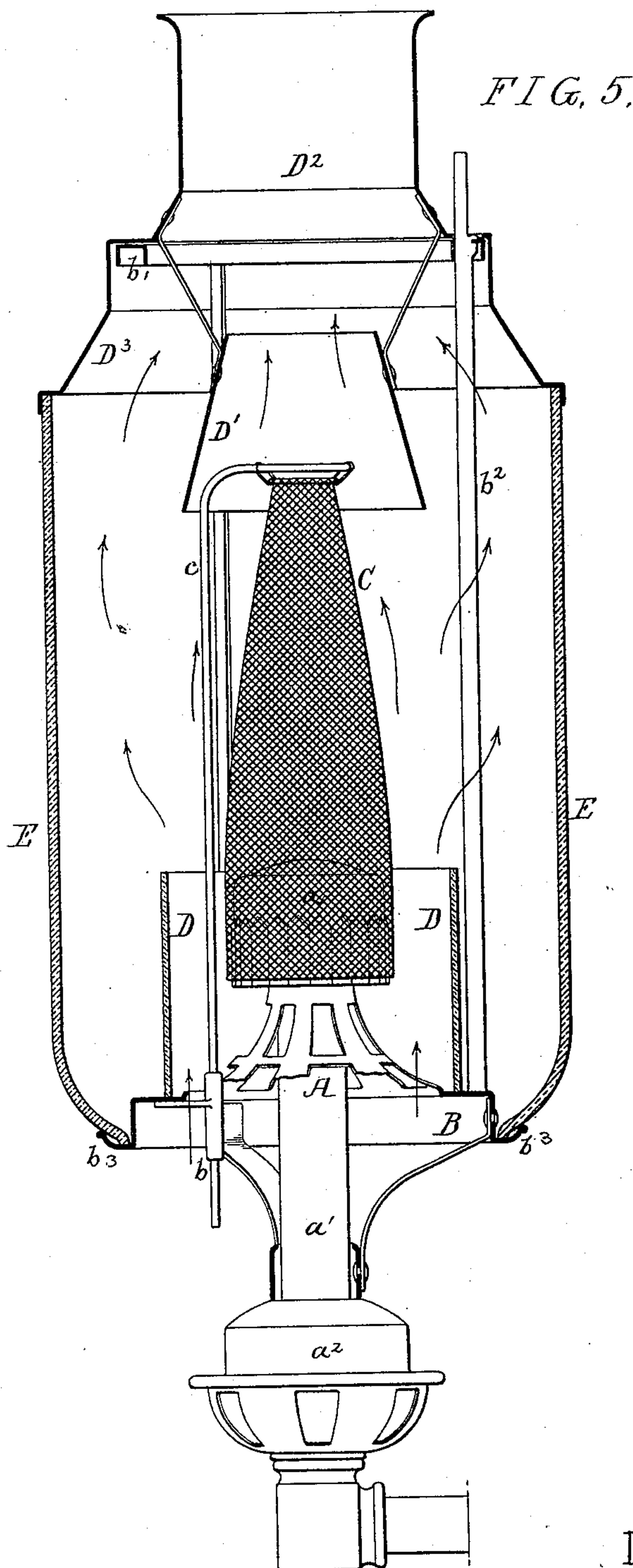
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E. M. WHITE.
CHIMNEY FOR INCANDESCENT GAS BURNERS.

No. 589,322.

Patented Aug. 31, 1897.



Witnesses:
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UNITED STATES PATENT OFFICE.

ERNEST M. WHITE, OF PHILADELPHIA, PENNSYLVANIA.

CHIMNEY FOR INCANDESCENT GAS-BURNERS.

SPECIFICATION forming part of Letters Patent No. 589,322, dated August 31, 1897.

Application filed January 13, 1897. Serial No. 619,086. (No model.)

To all whom it may concern:

Be it known that I, ERNEST M. WHITE, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented certain
5 Improvements in Chimneys for Incandescent Gas-Burners, of which the following is a specification.

The main object of my invention is to construct a chimney for an incandescent gas-
10 lamp, so that a strong current of air will be maintained, thus increasing the illuminating power of the lamp.

A further object of my invention is to make the chimney in two parts, so as to prevent
15 the breaking or smutting of the globe, owing to a defect in the incandescent mantle.

By my invention I can utilize a mantle until it drops from the holder, and the perforations or tears in the mantle will not affect the light
20 and will not destroy the chimney. Prior to my invention the great difficulty in what has been known as the "Welsbach" light has been that the glass chimneys and the mantles used were broken as soon as the mantle was
25 perforated, as the gas within the mantle would escape through this perforation and the jet of flame would strike the chimney and immediately crack it, and portions of the cracked chimney would in many instances fall onto
30 the mantle and destroy it, so that the mantle and chimney would have to be renewed. By my invention this difficulty is overcome and, as mentioned above, the mantle can be used until it is in shreds.

In the accompanying drawings, Figure 1 is a sectional elevation, illustrating my invention. Figs. 2, 3, and 4 are sectional views of the upper portion of the lamp, illustrating
40 modifications; and Fig. 5 is a view of the lamp, illustrating a still further modification of the invention.

A is a burner of the ordinary Welsbach incandescent lamp, consisting of a crown *a*, air-and-gas-mixing tubes *a'*, air-valve *a''*, and
45 the chimney-holder B. Secured to a bracket *b* on the chimney-holder is the rod *c*, suspended from which is the mantle C.

The chimney is made in two sections *DD'*, and above the chimney is a stack *D''*. Surrounding the upper portion of the chimney
50 is a funnel-shaped hood *D'''*, which in the present instance is secured to the stack *D''* and

rests upon the gallery *b'*, supported by the usual rods *b''* of the Welsbach burner.

E is the globe, which rests on the supports
55 *b'''* of the holder B and extends to the hood *D'''*.

The space between the upper portion *D'* of the chimney and the hood *D'''* communicates with the stack *D''*, and as the space within the lower portion of the chimney *D* is open to the
60 atmosphere at the bottom and the space between the chimney and the globe is also open to the atmosphere at the bottom, and the upper part of the chimney is open to the stack
65 as well as the portion between the chimney and the hood, two currents of air are formed, one within the chimney and in contact with the mantle, while the other is between the chimney and the globe. I preferably make
70 the upper portion *D'* of the chimney in the form of a cone, and in some instances I mount in the stack an inverted cone *d*, which will divert the currents as they pass up through the stack.

I prefer to extend the lower portion of the chimney *D* above the lower portion of the
75 mantle and the upper portion of the chimney below the upper portion of the mantle, as I find that I can by this construction materially increase the illuminating power of the incan-
80 descent mantle. It will therefore be seen that by making the chimney in two parts I prevent the breaking of the chimney by the jets of flame which issue through perforations of any size in the mantle, and I turn these
85 jets upward by the outside current, so that they will not come in contact with the globe. Thus I am enabled by this construction not only to greatly increase the illuminating
90 power of the lamp, but also prolong the life of the mantle and economize in its use, as I have used mantles in lamps of my construction until they were in shreds.

The shade F rests upon the shade-holders
95 *d'* on the hood *D'''*, as shown in Fig. 1, although the shade may be mounted on the lamp in any suitable manner, or may be dispensed with, as shown in Fig. 5.

In Fig. 1 I have shown the upper portion of the chimney and the stack made in one
100 piece and the openings for the passage of the air from the space between the chimney and globe made by punching.

In Fig. 2 I have shown the upper portion

of the chimney and the stack made in two pieces, the stack and the upper portion of the chimney contracted more than in Fig. 1.

In Fig. 3 I have shown the upper portion of the chimney cylindrical and the stack made a continuation of the chimney. In this instance instead of the space between the globe and chimney opening into the stack perforations are made in the upper portion of the hood.

In Fig. 4 I have shown the upper portion of the chimney extending up into the stack and the stack and hood made in one piece, with passages between the chimney and the stack communicating with the space between the chimney and the globe.

In Fig. 5 I have shown the hood having more of a taper than the hood shown in Fig. 1 and the upper portion of the chimney suspended from the hood. This form, while not quite as compact as that shown in Fig. 1, gives very good results, and while I prefer to have the globe open at the bottom, so as to have the two currents of air independent, the globe may be closed at the bottom, as shown in Fig. 5, and the currents of air will be separated after leaving the lower portion of the chimney, as shown by dotted lines, gaining the same results as the form shown in Fig. 1.

The combination as described above forms a lamp in which a strong draft is produced, by which I am enabled to materially increase the illuminating power of the incandescent mantle.

I claim as my invention—

1. The combination in an incandescent lamp, of the burner, a mantle above the burner, a two-part chimney, one part at the base of the mantle and the other part above the mantle, a globe inclosing the chimney and mantle whereby two currents of air are formed one within the chimney and the other between the chimney and the globe, substantially as described.

2. The combination in an incandescent lamp, of the burner, a mantle mounted above the burner, a two-part chimney, one part at the lower portion of the mantle and the other part mounted above the mantle, a stack above the chimney, a hood, a globe below the hood inclosing the chimney and mantle, a space between the chimney and globe communicat-

ing with the stack so that two currents of air are formed, one within the chimney and in contact with the mantle and the other between the chimney and the globe, substantially as described.

3. The combination of a burner, an incandescent mantle mounted above the same, a two-part chimney separated at the center opposite the mantle, a globe inclosing the mantle and chimney and open to the atmosphere at the bottom, with a hood above the globe and openings for the escape of the heated air from the space between the globe and chimney so that two currents of air are produced, one through the chimney in close contact with the mantle and the other between the chimney and the globe, substantially as described.

4. The combination of a burner, an incandescent mantle mounted above the same, a two-part chimney separated at the center opposite the mantle, the lower portion of the chimney extending to or slightly above the end of the mantle and open at the bottom, the upper portion of the chimney being conical, a globe inclosing the chimney and the mantle and open at the bottom and a hood above the globe, the space between the mantle and the globe communicating under the hood with the chimney, substantially as described.

5. The combination of a burner, a mantle mounted above the burner, a two-part chimney separated at the center opposite the mantle, the upper portion of the chimney being in the form of a cone, a flue into which the upper end of the chimney extends and an inverted cone mounted directly above the chimney, substantially as described.

6. The combination of the burner, a mantle mounted above the same, a two-part chimney separated at the center opposite the mantle, a hood, a globe extending from the burner to the hood and brackets on the hood for supporting the reflector, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ERNEST M. WHITE.

Witnesses:

WILL. A. BARR,
JOS. H. KLEIN.