

E. S. DRAKE.  
Lamp Chimney.

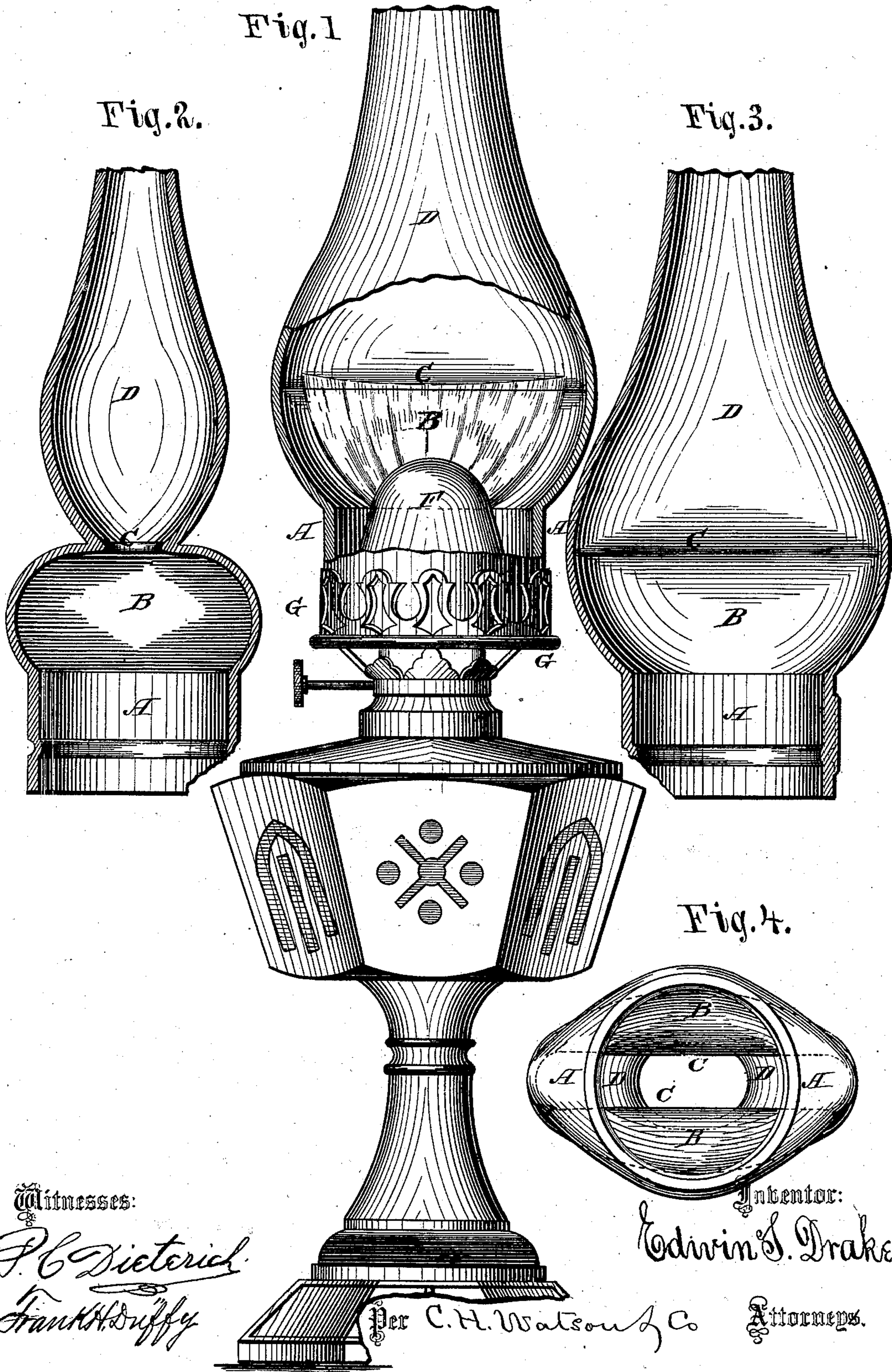
No. 201,509.

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Fig. 1

Fig. 2.

Fig. 3.



Witnesses:

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# UNITED STATES PATENT OFFICE.

EDWIN S. DRAKE, OF BROOKLYN, NEW YORK.

## IMPROVEMENT IN LAMP-CHIMNEYS.

Specification forming part of Letters Patent No. **201,509**, dated March 19, 1878; application filed February 21, 1878.

*To all whom it may concern:*

Be it known that I, EDWIN S. DRAKE, of Brooklyn, in the county of Kings, and State of New York, have invented certain new and useful Improvements in Lamp-Chimneys; and I do hereby declare that the following is a full, clear, and exact description of my invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to lamp-chimneys, and has for its object to construct the chimney in such shape that all the air passing upward through it shall aid in perfecting combustion, and, by spreading the flame into a broad fan shape, afford larger surface for the chemical combination occurring in combustion, and, by inclosing the flame between closely-approximating walls between which an active current of air is maintained, have the effect of preventing all vibration of the flame.

In the annexed drawings, to which reference is made, and which fully illustrate my invention, Figure 1 is a side elevation of a lamp with my improved chimney applied thereto. Figs. 2 and 3 are vertical sections of the chimney at right angles to each other. Fig. 4 is a bottom view of the chimney.

My improved chimney may properly be divided into four parts—the lower part or base A, of suitable form to fit on the burner of the lamp, the second or combustion chamber B, where the heated gases evolved from the oil are mixed with the air which enters below or within the deflector of the lamp-burner, and the third contracted portion C, where the air that enters outside the cone is deflected into the flame to complete the combustion which has not been effected by the air which entered within the cone; then comes the upper part D, which performs the office of the upper part of the ordinary chimney, carrying off the products of combustion, thereby producing the draft which supplies the requisite air.

As a shade holder or base and a shade or globe have been combined, by a recent invention, in such a manner that they perform the function of a chimney, and as the essential part of my invention is its lower part, it is

evident that a base may be made having the same construction shown in this chimney, by which all the air is deflected upon the flame. Such a base would have above the contracted part C a lateral extension, providing a resting-place for a shade or globe, and would in operation perform the same office which it does in the chimney shown, deflecting the air upon the flame and keeping the flame from vibration or wavering.

Thus it will be seen that this invention applies as well to chimney-bases, when such chimney-bases are constructed to support shades or globes, as to the ordinary lamp-chimney when made in one entire piece.

It has been demonstrated by experiment that the flame combines only with the oxygen contained in that portion of the air which comes within one-eighth of an inch of its surface. With this fact in view, the necessity, when perfect combustion is desired, of causing all the air passing through the chimney to pass near enough to the flame that its oxygen may be applied is obvious; and this is accomplished by means of the contracted portion C immediately above the combustion-chamber B.

In the drawing, G is the ordinary lamp-burner with cone or deflector F, over which my chimney is applied.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A lamp-chimney provided with the contracted portion C immediately above the combustion-chamber B, whereby the air passing through it is caused to impinge on the flame above the deflector, as herein set forth.

2. A lamp-chimney consisting of the base A, combustion-chamber B, contracted portion C and upper part D, substantially as and for the purposes herein set forth.

3. The combination of a chimney having the contracted portion C with a burner, G, having cone or deflector F, substantially as and for the purposes herein set forth.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

EDWIN S. DRAKE.

Witnesses:

G. H. BOUTON,  
RICHARD DOUGLASS.