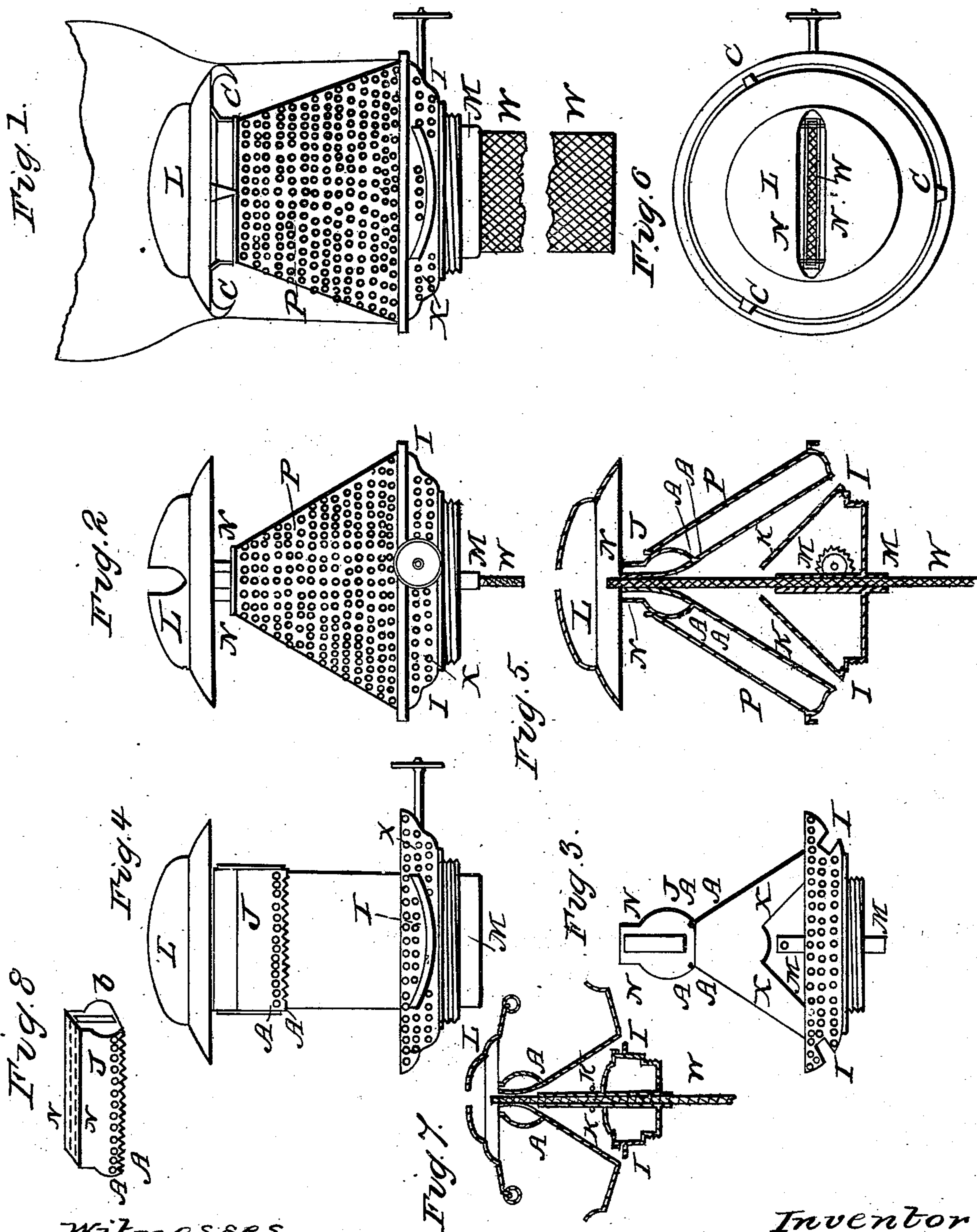


W. R. CRANNA.

Lamp Burner.

No. 82,495.

Patented Sept. 29, 1868.



Witnesses  
Lewis B. Dell  
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# United States Patent Office.

WILLIAM R. CRANNA, OF SAN FRANCISCO, CALIFORNIA.

*Letters Patent No. 82,495, dated September 29, 1868.*

## IMPROVEMENT IN LAMP-BURNERS.

*The Schedule referred to in these Letters Patent and making part of the same.*

### TO ALL WHOM IT MAY CONCERN:

Be it known that I, WILLIAM R. CRANNA, of the city and county of San Francisco, and State of California, have invented certain new and useful Improvements in Burners for Coal-Oil Lamps; and I hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

My invention pertains to that class of lamp-burners in which an elevated deflector, (or a deflector so arranged as to allow the light to pass out from beneath it,) is employed. One of the objects of thus constructing a burner, is to prevent the transmission of heat to the base of the burner, which takes place when the deflector rests directly upon the base. My invention is intended to still further isolate the base and lower part of the wick-tube from those parts of the burner which are in the immediate neighborhood of the flame; and to this end it principally consists in the means, hereinafter described, for causing a current of cold air to pass up and around the wick, between the top of the wick-tube and the flame, keeping the wick cool, and preventing the heating of the burner-base and the oil in the lamp; also, bringing a current of common air in direct contact with the flame, supplying oxygen to the same.

Figures 1 and 2 are perspective views of the burner complete.

Figures 3 and 4 represent the flue for cold air.

Figure 5 is a sectional view of the burner.

Figure 6 is a top view of the cone.

Figure 7 is a sectional view of a common burner, altered so as to combine the essential principles of the invention.

The base, X, of the burner, of any ordinary or suitable construction, is provided, as usual, with a wick-tube, M, and wick-adjusting pinions. The wick-tube, however, differs from those ordinarily employed, in extending but a short distance above the base of the burner, as shown in figs. 5 and 7, leaving that portion of the wick W, extending between the upper end of the tube and the point of combustion, almost entirely exposed, and free to the action of cold air, as hereinafter explained.

The upper end of the wick is held by the flue K, the top of which is drawn in for this purpose, as indicated clearly in figs. 5 and 7. The flue K is attached to the base of the burner, and is provided, at its lower end, with openings, I, through which cold air passes to that exposed portion of the wick between the end of the wick-tube and the top of the flue.

In the burner shown in figs. 1-6, inclusive, the flue is represented as divided, at its lower end, into two branches, so as to straddle the wick-tube, but in fig. 7, which illustrates the manner in which it may be applied to what is known as the "comet" burner, the flue entirely surrounds the wick-tube.

In both cases, however, (and it is in this feature that my invention mainly consists,) the wick passes up from the wick-tube, and is supported and enclosed by the head of the flue, or by equivalent means, so that portion of the wick between the point of combustion and the wick-tube is exposed and subjected to the action of the surrounding air, which dissipates the heat, and prevents it from being communicated to the wick-tube.

Over the top of the flue is placed a cap or sleeve, with air-passages at its top and bottom, as shown in figs. 3, 4, 5, 7, and 8, to supply air to the flame which proceeds from the lighted wick. This sleeve may be either permanently fastened to the flue K, as shown in fig. 7, or loosely fitted thereon, as represented in fig. 5.

In the latter case, the arms *a*, by which the deflector L is held in position above the flame, may be held in pockets, *b*, formed in the sides of the sleeve, so that when the latter is lifted away from the burner, the deflector will be removed with it. When, however, the sleeve or cap J is permanently secured to the flue, the pockets for the reception of the arms *a* of the deflector may be located on the flue, or sleeve, or other part of the burner, as preferred.

In the burner represented in figs. 1-6, I prefer to surround the flue, wick-tube, and such other parts of the burner as require protection, by a perforated jacket or case, P, the base of which is flanged so as to form at the same time the seat or rest for the chimney.

When the lamp is to be used, the wick is raised, by means of the pinions, just above the top of the flue K, and is then ignited. Cold air passes through the openings I into the flue and around the exposed part of the wick, and thus keeps the same cool while the lamp is burning.

In ordinary burners, the wick-tube is continued up to the flame, and consequently becomes much heated, communicating the heat to the base of the burner and to the oil in the lamp, thus forming explosive gases, and causing many accidents. But, in my improved burner, the flame is cut off from direct contact with the wick-tube, and does not heat the same, nor communicate with the base of the burner, so that the formation of gases in the lamp from this cause is prevented.

Air also passes through perforations in the base of the burner, and the jacket P, through the air-passages A and N in the cap or sleeve J, which thus keeps the flame supplied with the oxygen required for combustion.

Having now described my invention, and the manner in which the same is or may be carried into effect, what I claim, and desire to secure by Letters Patent, is—

1. The combination, with the base of the burner and its shortened wick-tube, and the elevated deflector, of a combined air-flue and wick-holder, with openings I, as described, and the sleeve or cap J supported upon the upper part of said flue and wick-holder, substantially as and for the purposes specified.

2. The combination, with the combined air-flue and wick-holder, and the sleeve or cap J, of the perforated casing or jacket by which the same are surrounded, as and for the purposes set forth.

3. The method of attaching the deflector, and of securing it in position, by means of arms *a* fitted into sockets formed on the burner for their reception, in the manner described.

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

WM. R. CRANNA.

Witnesses:

L. B. DELL,

JAMES R. PINLAYSON.