T. G. SPRINGER.
Lamp-Burner.

No. 208,646. Patented Oct. 1, 1878.

Fig. 1.

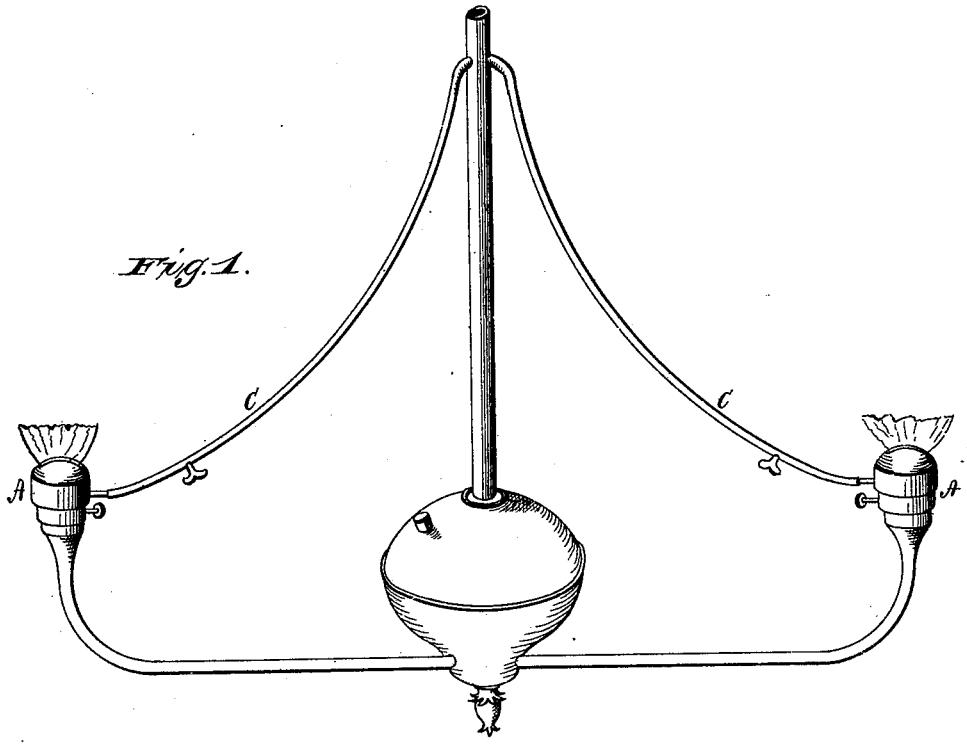


Fig. 2.

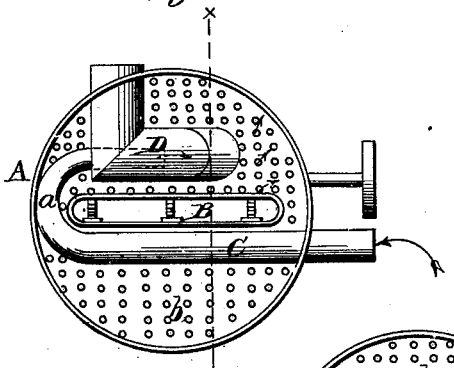


Fig. 3.

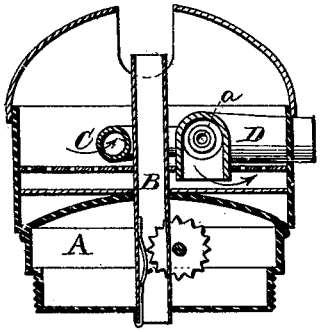
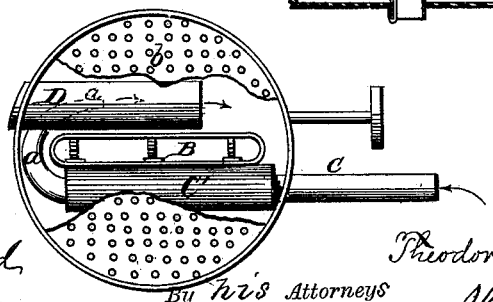


Fig. 4.



WITNESSES
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IMPROVEMENT IN LAMP-BURNERS.

Specification forming part of Letters Patent No. **208,646**, dated October 1, 1878; application filed September 26, 1878.

To all whom it may concern:

Be it known that I, THEODORE G. SPRINGER, of New York, in the county of New York, and in the State of New York, have invented certain new and useful Improvements in Lamp-Burners; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making a part of this specification.

My invention relates to burners used for burning coal and other oils in lamps without chimneys by the aid of a current of air forced into the burner to aid or facilitate the combustion; and the nature of my invention consists in passing compressed air through one or more tubes close to the burner for heating and expanding the air, and then forcing it through an injector, whereby atmospheric air is drawn in to supply the flame, as will be hereinafter more fully set forth.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawings, in which—

Figure 1 is a perspective view of a chandelier with burners embodying my invention. Fig. 2 is a plan view of the burner with the dome or cap removed. Fig. 3 is a vertical section on the line *x x*, Fig. 2. Fig. 4 shows a modification in the arrangement of the pipes in the burner.

A represents the burner, with wick-tube B, constructed in any of the known and usual ways. C represents the tube for conducting compressed air to the burner.

The mechanism for compressing the air may be of any desired form and construction, and is preferably located in the cellar of the house, pipes passing through the house and communicating with the pipe C of each burner.

The pipe C enters the burner at any suitable point, so as to pass along the side of the wick-tube, as shown, and is then bent around the end of the tube, and terminates in, or is provided with, an injector, *a*.

The pipe C at the side of the wick-tube may be enlarged, as shown in Fig. 4, forming, as it were, a retort, C′, which is in contact with the wick-tube.

D is an air-pipe leading from the outside to the inside of the burner, and the injector *a* is arranged in this pipe D in such a manner that as the compressed air escapes through the injector atmospheric air will be drawn in from the outside to aid in and facilitate combustion.

By the use of the injector only a small amount of compressed air is necessary to be used, as it will draw in about ten times its own amount of atmospheric air; and, furthermore, the compressed air, being heated in the pipe by the heat from the flame, will expand before it escapes from the injector, and hence it will require a still less amount of compressed air to draw in the required amount of atmospheric air to supply the flame.

A perforated diaphragm, *b*, is arranged over the pipes C D in the burner, to diffuse the air properly before it strikes the flame.

This invention is applicable to all kinds of burners, whether flat or round wicks are used.

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

1. In a lamp-burner, a pipe arranged within the burner and in close proximity to the wick-tube, for heating air passing through said pipe, and an injector connected therewith, and also arranged within the burner, for the purposes herein set forth.

2. A pipe containing compressed air, adapted, substantially as described, to be heated by the heat from the burner itself, and combined with an injector for transmitting heated air to the flame in a lamp-burner, for the purpose set forth.

3. In combination with a burner, A, and its wick-tube B, the compressed-air pipe C and injector *a*, both arranged within the burner, and the atmospheric-air pipe D, said parts being arranged to cause the compressed air to be heated and expanded before escaping to the injector, substantially as herein set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 26th day of September, 1878.

T. G. SPRINGER.

Witnesses:
H. A. TOULMIN,
FRANK GALT.