I. VAN BUNSCHOTEN.

Lamp.

No. 14,478. Patented March 18, 1856.

Fig: 1.

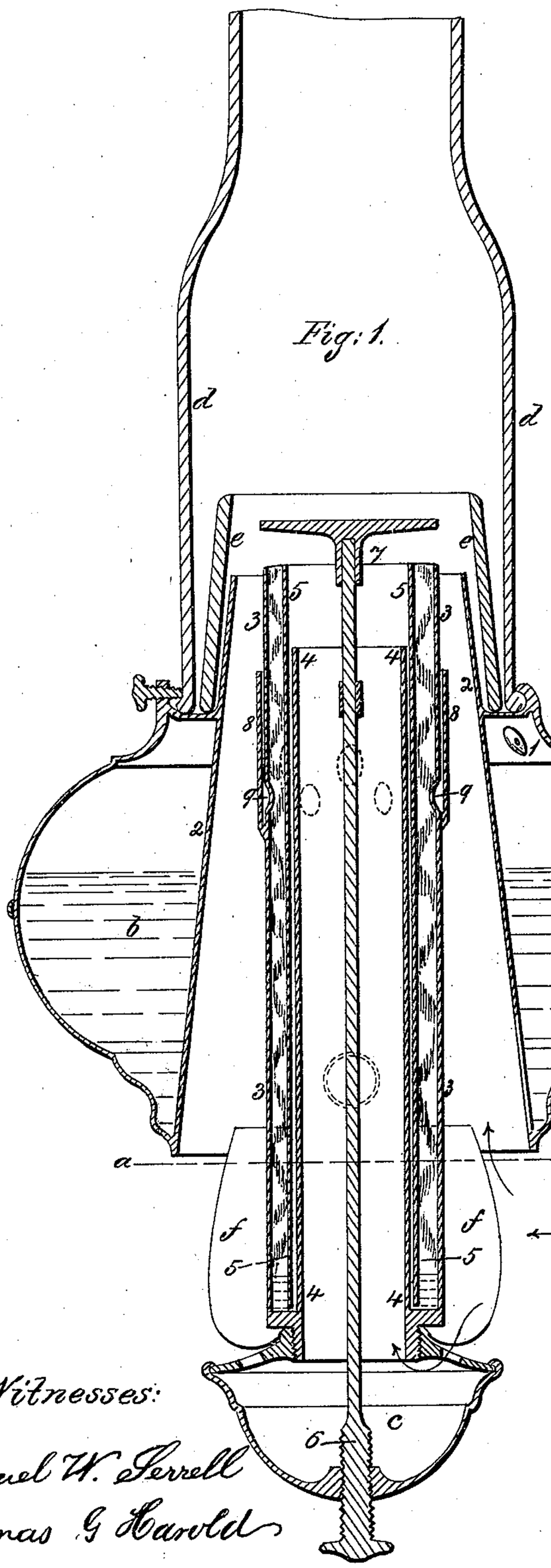
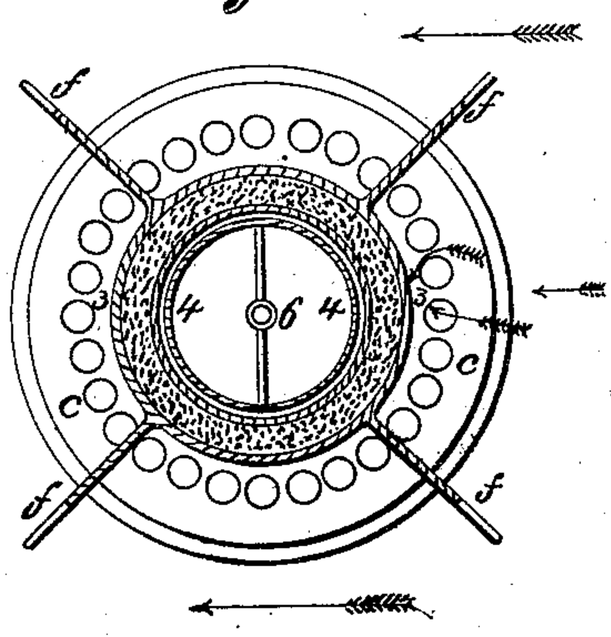


Fig: 2.



Witnesses:

Samuel W. Serrell

Thomas G Harold

Inventor:

Isaac Van Bunschoten.

UNITED STATES PATENT OFFICE.

ISAAC VAN BUNSCHOTEN, OF NEW YORK, N. Y.

ARGAND LAMP FOR BURNING ROSIN-OIL.

Specification of Letters Patent No. 14,478, dated March 18, 1856.

To all whom it may concern:

Be it known that I, ISAAC VAN BUNSCHOTEN, of the city, county, and State of New York, have invented, made, and applied to use certain new and useful Improvements in Lamps for Burning Rosin-Oil or Similar Substances; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawing, making part of this specification, wherein—

Figure 1, is a vertical section through the center of the lamp and Fig. 2, is a plan, at and below the line *a*, *a*, of Fig. 1.

Similar marks of reference denote corresponding parts.

The nature of my said invention consists in providing means which shall prevent a sudden current or draft of air from causing a lamp to smoke in consequence of said passing current, forming a partial vacuum and thereby withdrawing a portion of the air from the flame and causing it to smoke. I also make use of a glass cone rising above the flame, said cone being within and a separate piece from the glass chimney; and my invention also relates to a method of constructing the exterior wick tube so that heat from the flame shall not be conducted down to the material being burned, and also that the overflow shall be returned to the lamp by means of a cup or sleeve surrounding said exterior wick tube and the openings therein that are made use of to check the heat and prevent the same being conducted down the lamp.

b, *b*, is a reservoir of any suitable character surrounding the parts of the burner and connected thereto by a pipe or pipes as usual.

1, is the supply screw cap.

2, is the cone to the burner either made separately or a continuation of the inner part of the reservoir *b*.

3, is the exterior wick tube and 4, is the interior wick or air tube; these are joined together at their lower ends and receive the drip cup *c*, and screw wire 6 with its button 7 all as usual.

5, is the wick holder and wick.

Around the wick tube 3, I make openings 9, of sufficient size and number to check and to a considerable extent prevent the heat passing down the same to the material being burned. If these openings alone were used in my lamp (as they have heretofore been in other lamps of a different construction) the material being burned might catch fire through the openings 9, and the overflow from the lamp at the top of the wick would also pass down the wick tube. I therefore combine with the said openings 9, the exterior sleeve or cylinder 8, which inclosing said openings and only having a narrow mouth at the top will surround the wick tube and holes 9, and that sufficiently close to prevent the material being burned from catching fire at the openings 9, and will also catch and return all overflow from the wick that would otherwise run down the wick tube 3, and return the same into the lamp.

In burning rosin oil it is necessary that the glass chimney should contract conically to at least the height of the button, and in making use of chimneys of this character great difficulty arises because they are so near the flame and become so very hot that they will frequently break, particularly when cooling after the light has been blown out or when exposed to any draft or wind. To obviate this difficulty I make use of a separate transparent or glass cone *e*, within the chimney *d*, of a height that rises above the button 7, and acts to compress the draft onto the flame in the required manner and said cone *e*, being transparent does not intercept the light as is the case with metallic deflectors or cones and although this glass cone *e*, becomes very hot, yet it is so small compared with the conical chimneys, that it will become uniformly heated and expand and contract as a whole, and being within the chimney *d*, is entirely protected from sudden drafts of cold air and therefore scarcely ever breaks, and when the lamps is blown out the cooling of said glass cone is very gradual as the rest of the lamp cools.

The rush or draft of air horizontally past a rosin oil lamp is very apt to make the same smoke, because a partial vacuum is formed at the top of the chimney, and also by the air passing quickly by the draft openings to the lamp, hence sufficient atmosphere is not supplied to the flame. I therefore provide flanges or wings *f*, *f*, standing out around the wick tube between the drip cup *c*, and reservoir *b*, which wings as the air passes in the direction of the ar-

rows intercept a portion of said air and deflect the same in different directions causing by said deflection the necessary currents of air to pass both up into the external draft cone 2, and down into the drip cup and center draft, and the rush of air past these wings does not hinder the natural ascent of the air between such of the wings as do not catch the said draft.

I am aware that the internal draft up the air tube has been regulated by cross plates at the lower end therefore I do not claim the wings *f* in themselves irrespective of the manner in which I have applied them; but I am not aware that wings *f*, *f*, or their equivalents have ever before been placed in such a manner around the wick tube that the air is compelled to pass with equal force into both internal and external draft, thereby insuring a uniform action on said light, whereas in cases where the wings are applied to the internal draft only, the action is not uniform and the light will not be steady nor the combustion perfect. I do not claim a conical glass chimney or a conical end to a glass chimney as these are well known and in general use; neither do I claim a metallic cone, but I am not aware of any separate glass cone ever having before been made use of, similar to that set forth herein.

What I claim and desire to secure by Letters Patent is—

1. Deflecting a portion of any passing draft or current of air up the exterior air tube by means of the wings *f*, *f* or their equivalents, to counteract the suction or partial vacuum produced at other portions of the lamp by said passing draft or current of air as specified.

2. I claim the wings *f f*, or their equivalents applied around the wick tube 3 to cause any sudden draft or current of air to be deflected with equal force up into the cone 2, and external draft and down into the drip cup *c*, and internal draft in the manner and for the purposes specified.

3. I claim the separate transparent cone *e*, within the chimney *d*, rising only to about the height of the button 7, for the purposes and as specified.

4. I claim the sleeve or cup 8, combined with the perforated wick tube, and inclosing said perforations in the manner and for the purposes specified.

In witness whereof, I have hereunto set my signature this thirtieth day of October, 1855.

ISAAC VAN BUNSCHOTEN.

Witnesses:

LEMUEL W. SERRELL,

THOMAS G. HAROLD.