(No Model.)

E. WILD.

LAMP.

No. 303,774. Patented Aug. 19, 1884.

Fig. 1.

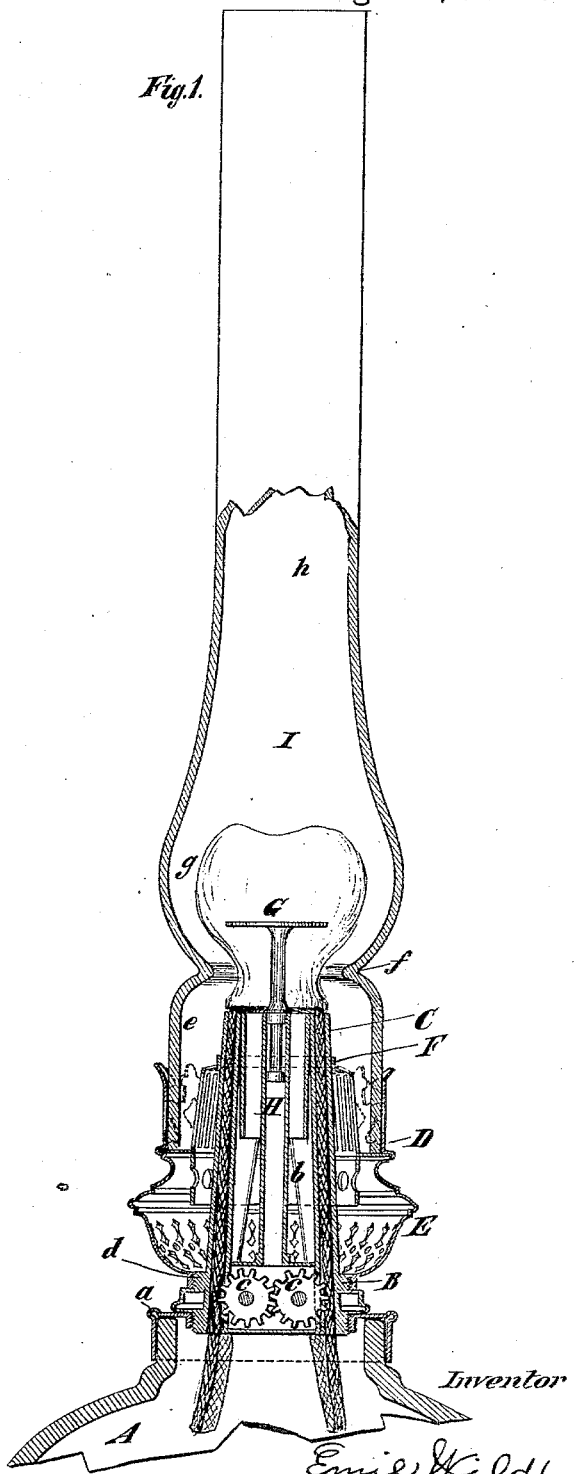
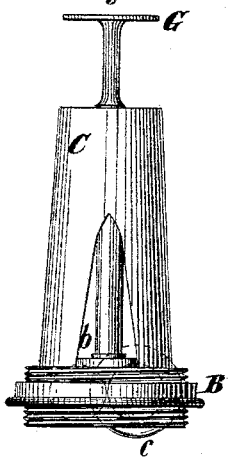


Fig. 2



Witnesses
James R Bowen.
J. J. Keane

Inventor
Emil Wild,
by his Atty
Edwin H. Brown.

UNITED STATES PATENT OFFICE.

EMIL WILD, OF BERLIN, GERMANY, ASSIGNOR TO BENNETT B. SCHNEIDER, OF ORANGE, NEW JERSEY.

LAMP.

SPECIFICATION forming part of Letters Patent No. 303,774, dated August 19, 1884.

Application filed February 13, 1883. (No model.) Patented in Germany June 14, 1881, No. 16,783, and in Austria-Hungary August 27, 1881, No. 1,145.

To all whom it may concern:

Be it known that I, EMIL WILD, of Berlin, Prussia, in the Empire of Germany, have invented a certain new and useful Improvement in Lamps, of which the following is a specification.

This improvement consists in the combination, with a lamp-burner having an annular burner-tube and a button or spreader approximately of the same size diametrically as the tip of the burner-tube, shaped so that its under side extends abruptly outward, and elevated at a considerable distance above the tip of the burner-tube, of a chimney having a cylindric base portion, a neck contracted abruptly inward almost as far as the periphery of the tip of the burner-tube and the button or spreader, and having above the neck a flame-chamber, which is expanded around and below the button or spreader, and contracted a short distance above the same, whereby air entering the cylindric base portion of the chimney will be deflected inward, so as to contract the flame above the tip of the burner-tube into contact with air ascending from within the inner wall of the burner-tube, and the button or spreader will cause the air arriving under it from the inner wall of the wick-tube to expand the flame abruptly outward into the flame-chamber.

In the accompanying drawings, Figure 1 is a central vertical section of a lamp embodying the improvement, and Fig. 2 is a side view of the wick or burner tube of the burner.

Similar letters of reference designate corresponding parts in both figures.

A designates a reservoir adapted for holding kerosene or other suitable oil, and provided with an internally-screw-threaded collar, *a*.

B designates the body of a lamp-burner provided with an externally-screw-threaded hub adapted to be screwed into the collar *a* of the reservoir A.

C designates the wick-tube or burner-tube of the burner. It is of annular form and adapted for the use of a flat wick. It has an opening, *b*, extending from its interior to its exterior, and affording provision for the ingress of air to its interior. It is also provided with mechanism *c*, whereby the wick may be raised and lowered.

D designates a gallery for supporting a chimney. It surmounts an air-distributer consisting of a perforated shell, E, and in this instance is permanently affixed thereto. The shell E is detachably secured to an externally-screw-threaded boss, *d*, extending from the body B of the burner.

Affixed to the shell E is a cone, F, which is perforated, so as to permit the passage of air to the outside of the wick-tube or burner-tube. It will therefore be seen that the air entering the air-distributer passes partly to the inside of the wick-tube and partly through the cone and to the outside of the wick-tube.

G designates a button or spreader supported by a rod, G′, which is slipped into a tube, H, located within the wick-tube or burner-tube C.

I designates a chimney supported in the gallery D. It has a cylindric base portion, *e*, an abruptly-contracted neck, *f*, which is located a little higher than the tip of the wick-tube, and expanded flame-chamber *g*, above the contracted neck, and a contracted upper portion, *h*. This flame-chamber *g* is expanded around and below the button or spreader, and is contracted a short distance above the button or spreader. The contracted neck of the chimney deflects air abruptly inward against the flame at a point above the tip of the burner-tube and below the button or spreader, thereby bending the flame inward over the tip of the burner-tube into contact with air ascending from the inner wall of the burner-tube. The air ascending from the inner wall of the burner-tube, and arriving at the under side of the button or spreader, is deflected abruptly outward against the inner surface of the flame. The flame is thus caused to expand outward close to the inner surface of the flame-chamber. The air passing upward above the contracted neck of the chimney is obliged to come in contact with the outer surface of the flame, because of the outward expansion of the flame. The currents of air supplied to the inner and outer sides of the flame are thus caused to be in close contact with the flame, and an improved combustion is secured. The action of these currents of air produces a novel flame resembling a tulip.

I am aware that a chimney having a contraction surmounted by a flame-chamber has been

combined with an annular burner having a button or spreader elevated within the flame-chamber of the chimney. The under side of the contraction in the chimney in this instance did not, however, bear such relation to the tip of the burner-tube as in my improvement, and consequently the flame was not forced or bent abruptly over the burner-tube into contact with air ascending from the inner wall of the burner-tube. Such combination of parts would not produce the results attained by the combination which forms the subject-matter of my improvement.

I am also aware that a chimney having a contraction surmounted by a cylindric portion very much smaller than the base portion has been combined with an annular burner-tip which did not extend as high as the contraction, and which had a button or spreader considerably smaller diametrically than the inner wall of the wick-tube arranged in the cylindric portion of the chimney above the contraction. The chimney in this case did not have a flame-chamber expanded around and below the button or spreader and contracted above the same, and for this reason such combination would not produce the result attained by the combination which constitutes my improvement, notably in that the flame could not be expanded out into a large space when the current of air was somewhat sluggish, and consequently the flame was drawn up in an approximately straight line.

What I claim as my invention, and desire to secure by Letters Patent, is—

The combination, with a lamp-burner having an annular burner-tube and a button or spreader approximately of the same diameter as the tip of the burner-tube, and elevated at a considerable distance above the tip of the burner-tube, of a chimney having a cylindric base portion, a neck contracted abruptly inward almost as far as the periphery of the tip of the burner-tube and the button or spreader, and located about midway between said burner-tube and said button or spreader, and having above the neck a flame-chamber which is expanded around and below the button or spreader, and contracted a short distance above the same, substantially as described, whereby air entering the cylindric base portion of the chimney will be deflected inward, so as to contract the flame above the tip of the burner-tube into contact with air ascending from within the inner wall of the burner-tube, and the button or spreader will cause the air arriving under it from the inner wall of the burner-tube to expand the flame abruptly outward into the flame-chamber, substantially as specified.

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

EMIL WILD.

Witnesses:
GEO. GAGERN,
OTHMAR LENZ.