W. H. RACEY.

Lamp.

No. 21,627. Patented Sept. 28, 1858.

Fig. 2

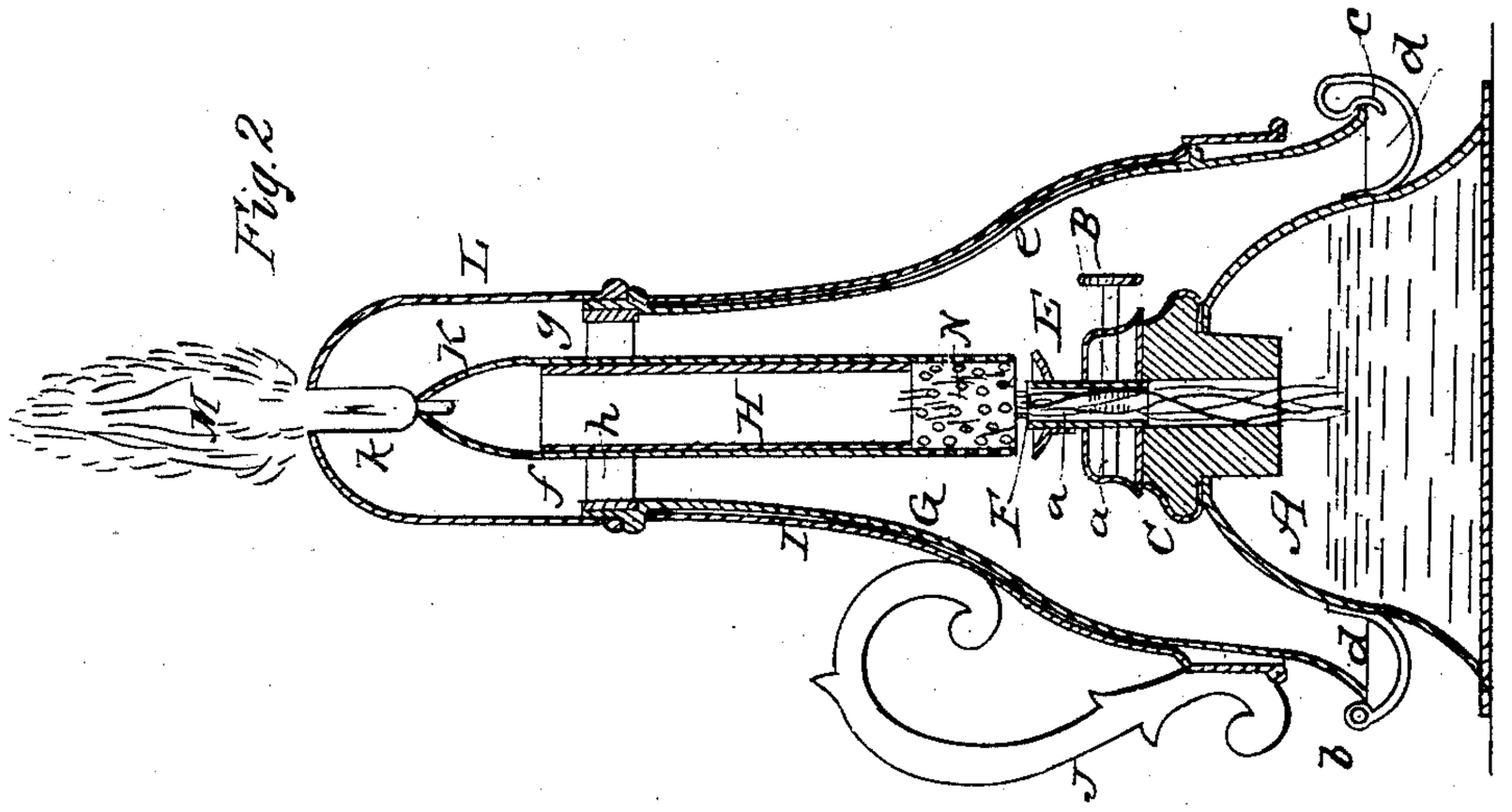
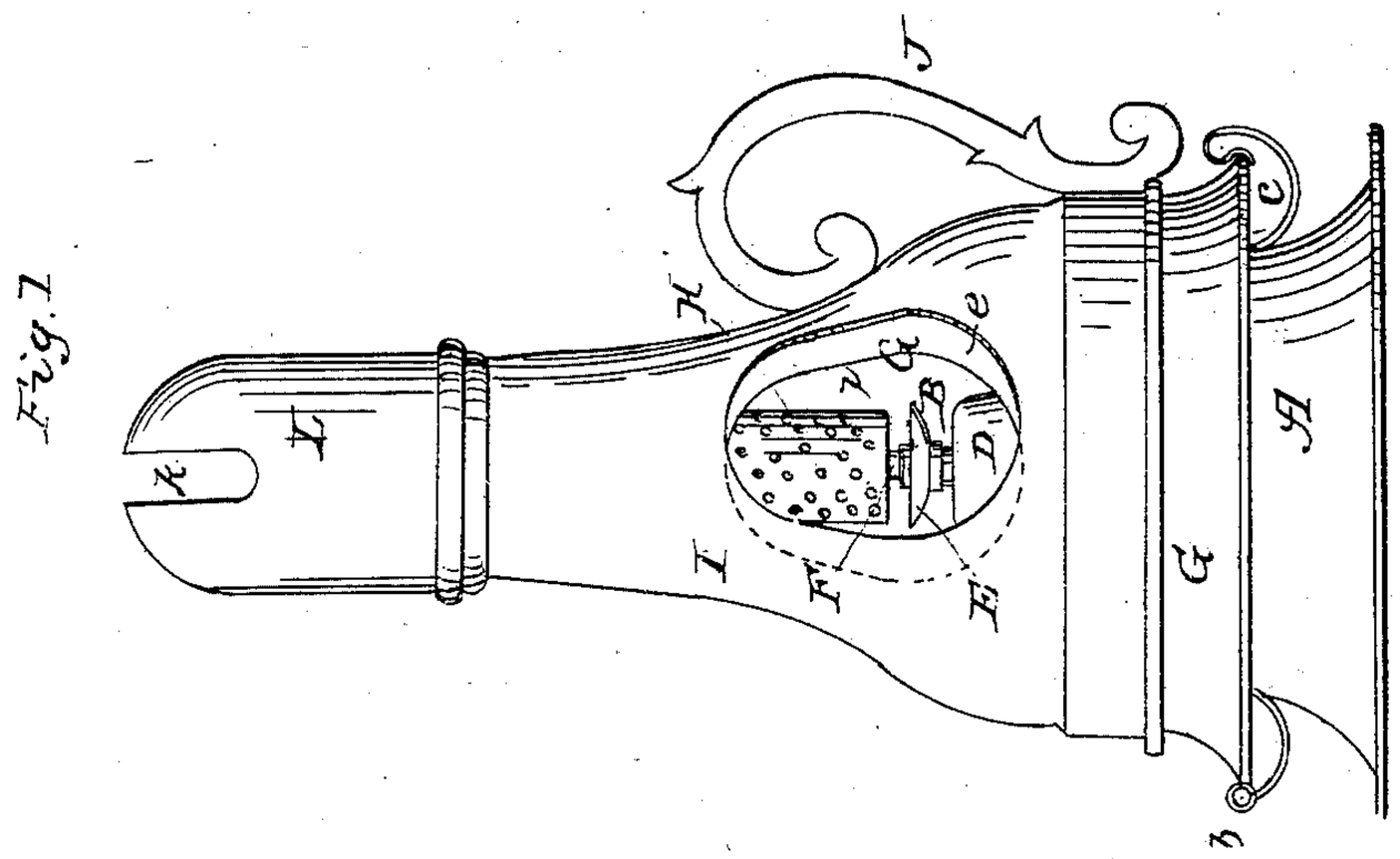


Fig. 1



UNITED STATES PATENT OFFICE.

W. H. RACEY, OF ST. AUGUSTINE, FLORIDA.

LAMP.

Specification of Letters Patent No. 21,627, dated September 28, 1858.

To all whom it may concern:

Be it known that I, W. H. RACEY, of St. Augustine, in the county of St. John and State of Florida, have invented a new and useful Improvement in Lamps; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1, is an external view of a lamp constructed according to my invention. Fig. 2, is a vertical central section of ditto.

Similar letters of reference indicate corresponding parts in the two figures.

The object of this invention is to obtain a lamp by which the flame may be supplied with a large or requisite amount of oxygen without the employment of the glass chimney which has hitherto been used for such purpose. The lamp hereinafter described although applicable to burning any of the materials or substances now used for illuminating purposes, is more especially designed for burning coal oil and similar substances that are rich in carbon and which consequently require a large amount of oxygen to support proper or perfect combustion. Materials of this nature, when supplied with the necessary amount of oxygen, emit a beautiful and pure light, but as their use has been hitherto restricted to chimney lamps, which cannot be readily moved or carried from place to place, such materials are not very generally employed for illuminating purposes, at least not as much as they otherwise would be.

To enable those skilled in the art to fully understand and construct my invention I will proceed to describe it.

A, represents the body of the lamp or fountain in which the material to be burned is placed.

B, is a wick tube which is inserted in a stopper C, constructed of wood or other non-conducting material, said stopper being fitted in the apex of the fountain A, see Fig. 2. The stopper C, is surmounted by a metal cap D, which is hollow and provided with slots or perforations to allow the air to pass through and keep it in a cool state. The cap D, is not in contact with the fountain at any point, the design is to insulate as far as possible the wick tube from the fountain.

E, is a deflector which is placed on the wick tube B. This deflector is of circular form and its upper surface is concave. The wick F, is raised and lowered by a small wheel $a^{\times}$, having a serrated edge and fitted in a slot in the wick tube, the wheel being fitted on an axis *a*, which passes through the cap D. The wick tube B, is made of slightly conical form to admit of the easy movement of the wick.

G, is a case which as well as the fountain A, may be constructed or "spun" out of sheet metal. This case is of conical or other form and extends some distance above the fountain A. The lower end of the case G, is connected by a hinge or joint *b*, to the fountain A, and it is secured to the fountain by proper catches. The case G, does not extend down to the bottom of the fountain, nor does it touch its sides, a space *d*, being allowed all around as shown clearly in Fig. 2. The case G, has an aperture *e*, made in it opposite the wick tube of the fountain A, and in the upper end of the case G, a rim *f*, is fitted, said rim being provided with radial arms *g*, the inner ends of which have a small concentric rim *h*, attached. To the smaller rim *h*, the upper end of a tube H, is secured. This tube has its lower part perforated and it extends down nearly to the top of the wick tube B, or, the tube H, may be made adjustable so that it may be raised or lowered to any desired height. The case G, is encompassed by a case I, precisely similar in form to the case G, and allowed to turn freely on it. The case I, is provided with a handle J, and also has an aperture *i*, made in it. On the upper end of the tube H, a burner K, is fitted. This burner may be formed of a flattened tube, or constructed in any way so that an oblong narrow orifice *j* will be obtained.

L, is a cap, the lower end of which is fitted over the upper end of the case G. This cap incloses the burner K, and has an oblong slot *k*, made in its upper end.

The illuminating flame designated by M, issues from the burner K, and passes through the slot *k*, of the cap L, said flame being produced by a gas-generating flame N, which is fed by capilarity from the fountain A. This mode of producing the illuminating flame does not form a part of this specification and therefore does not require to be described more fully. It forms the subject of another specification. This flame M, in which ever way it is produced is supplied with a requisite amount of oxygen by the

case G, the air in the upper part of which is rarefied by the flame M, and the heat is conducted from the burner K, to the case G, by the rims *f*, arms *g*, and rim *h*. Heat is also conducted to the case G, by the cap L.

The case G, if constructed of a good conductor of heat will conduct the same downward from the flame and keep the air in quite a rarefied state within it, so much so as to create a powerful draft. The external case I, if covered with a non-conducting substance will prevent the heat radiating from G. It would be generally preferable of course to have the case G constructed of copper or other good conductor of heat, and the external case I, formed of a poor conductor of heat, in some cases however perhaps the air within the case might be kept in a sufficiently rarefied state without regard to the conducting powers of the cases. The case may be of any proper form either cylindrical, conical, or other shape, and they may be applied to any lamp, the parts being so arranged that the cap L, will encompass the lower part of the illuminating flame and the case G, extend a requisite distance below it.

By this improvement the glass chimney is dispensed with, for a powerful draft is obtained by the case G, and the lamp may be carried about from place to place equally as well as the ordinary hand lamps.

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

The case G, provided with a cap L, and used with or without the external case I, the case and cap being placed relatively with the flame M, as described, so as to operate as and for the purpose set forth.

WILLIAM H. RACEY.

Witnesses:

J. D. BUCKLEY,

MICH. HUGHES.