

No. 622,983.

Patented Apr. 11, 1899.

E. TATHAM.

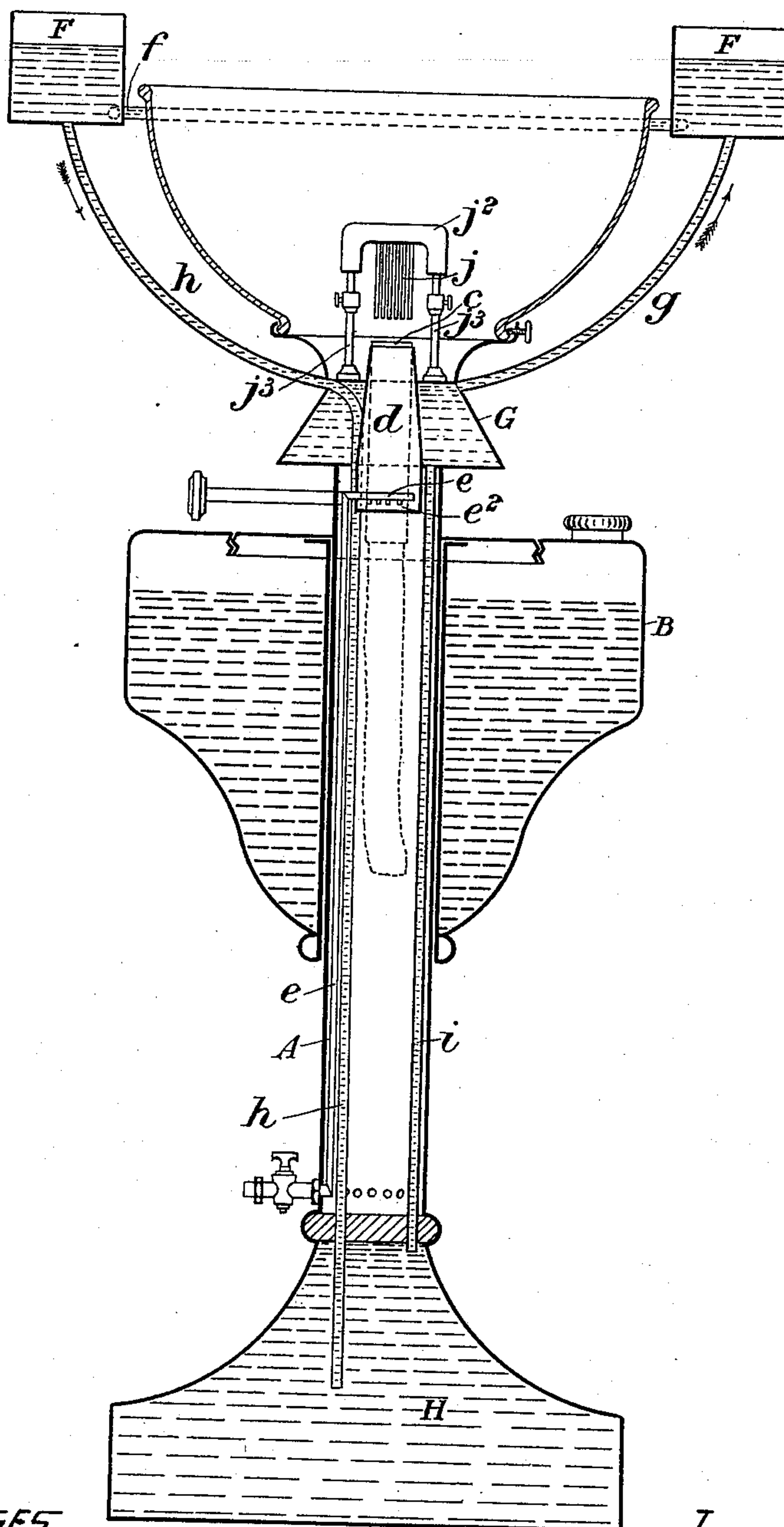
LAMP FOR BURNING LIQUID HYDROCARBONS.

(Application filed Aug. 25, 1896.)

(No Model.)

2 Sheets—Sheet 1.

FIG. 1.



WITNESSES
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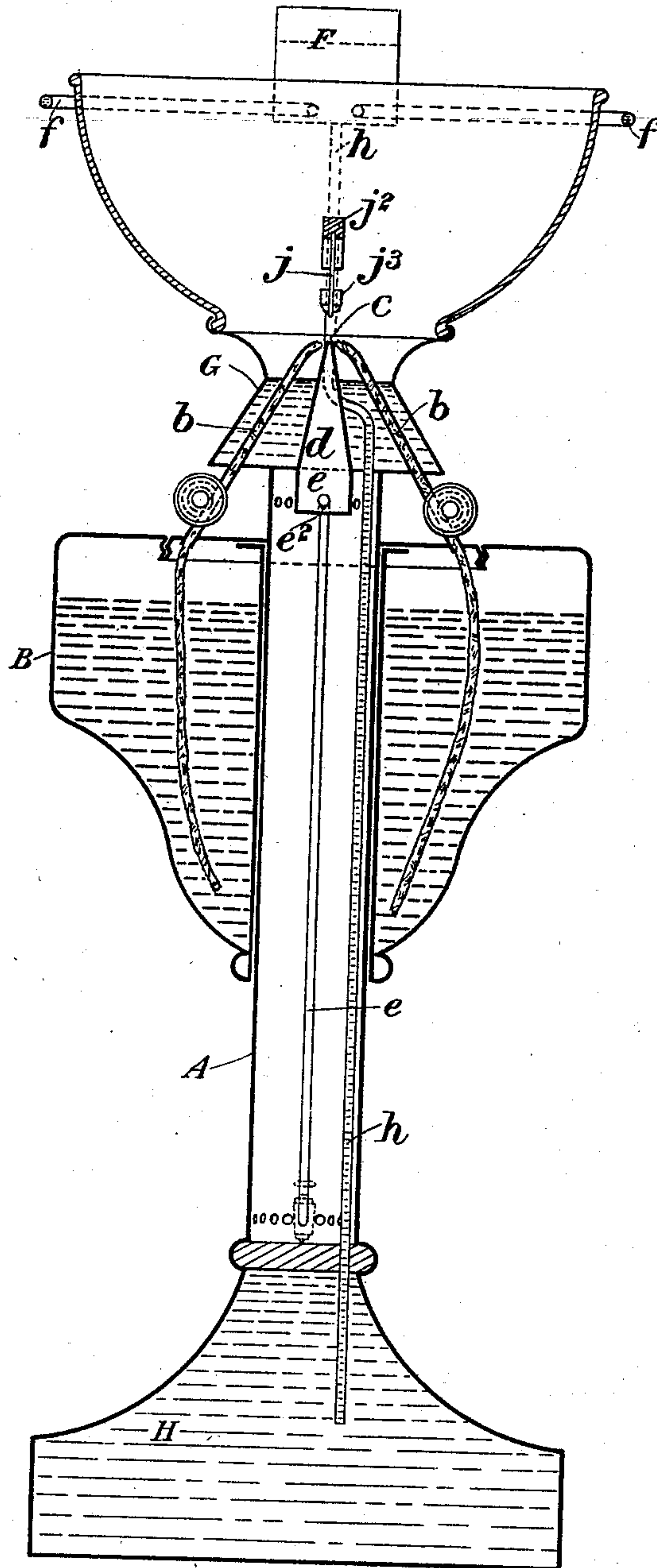
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2 Sheets—Sheet 2.

FIG. 2.



WITNESSES

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UNITED STATES PATENT OFFICE.

EDWIN TATHAM, OF LONDON, ENGLAND.

LAMP FOR BURNING LIQUID HYDROCARBONS.

SPECIFICATION forming part of Letters Patent No. 622,983, dated April 11, 1899.

Application filed August 25, 1896. Serial No. 603,873. (No model.)

To all whom it may concern:

Be it known that I, EDWIN TATHAM, a subject of the Queen of Great Britain and Ireland, residing at Colfe Lodge, Lewisham Hill, London, in the county of Kent, England, have invented certain Improvements in Lamps for Burning Liquid Hydrocarbons, of which the following is a specification.

My invention has for its object to provide means whereby liquid hydrocarbons are utilized in a very efficient and economical manner for the production of intense light or heat. This I effect by supplying oxygen gas at the point where the hydrocarbon is ignited and burned, the said oxygen gas being conveniently supplied from a receptacle containing it under pressure, such as a gasometer or a cylinder, such as those in which gas under pressure is usually sold, the liquid hydrocarbon being supplied by a wick or wicks and the oxygen gas being led by a pipe or passage, so that it emerges at a point a little above the top or tops of the wick or wicks. When the obtainment of intense light is required, I support in proximity to the point of combustion of the hydrocarbon and the oxygen a refractory material, which is rendered incandescent by the heat of the said combustion. The said refractory material may be of any suitable description—such, for example, as lime, magnesium, or the rare earths, or the well-known water-gas pencils, such as are used for being brought to incandescence by the combustion of water-gas.

Figures 1 and 2 of the accompanying drawings are vertical sections at right angles to each other of a lamp made in accordance with my invention.

Upon the pedestal A is supported the reservoir B, in which the liquid hydrocarbon—such, for instance, as ordinary paraffin lamp-oil—is contained. In the upper side of this reservoir wick-tubes *b* are inserted, they inclining toward each other and being provided with the usual devices for raising and lowering the wicks. A tube *c*, leading from a receptacle of oxygen gas under pressure, opens at a point between the tops of the wicks and a little above the level of the tops of the wicks. The jet for the oxygen preferably takes the form of a chamber *d*, wider at bottom than at top, the said top being a long

slit or series of perforations parallel with the wicks, and the bottom being closed and the oxygen being supplied into the said chamber *d* through a pipe *e*, with orifices *e*² directed downward, so that the oxygen is impinged upon the bottom of the chamber *d* and so it issues from the slit or series of perforations above in a proper condition for giving the best effect.

The tubes *b*, which carry the wicks, should be cooled by means of water passing around them and preferably circulating, so that it passes to and from a receptacle above and to and from a receptacle beneath, and is caused to circulate from one to the other and through the vessels surrounding the wick-tubes by the action of the heat of the lamp. In the drawings I have shown two water vessels F, connected by the pipe *f*. G is a vessel surrounding the upper parts of the wick-tubes *b*. The base of the lamp forms another water vessel H. One of the vessels F communicates with the vessel G by the pipe *g*, and the other of the vessels F communicates with the vessel H by the pipe *h*. The vessels G and H are connected by the pipe *i*. By this means a circulation of cooling-water is maintained around the wick-tubes. In the zone heated by the combustion of the oxygen and hydrocarbon I support a pencil or pencils *j* or other form of refractory material, as hereinbefore mentioned, the said pencils or the like being held in any suitable way. They are shown as being carried by a bridge-piece *j*², supported by the standard *j*³. I have shown two straight wicks on each side of the oxygen-outlet; but I do not limit myself to this arrangement, as one wick or any suitable number of wicks can be used. I may, for example, use a circular wick surrounding the oxygen-outlet, which may then be of annular form. The wicks may be of cotton, asbestos, or any other suitable material.

The lamp may of course be arranged as a pedestal-lamp, or as a bracket-lamp, or as a suspended lamp, and with one burner or two or more burners.

Having now particularly described and ascertained the nature of this invention and in what manner the same is to be performed, I declare that what I claim is—

In lamps for burning liquid hydrocarbons

the combination with the wick, or wicks,
by which the liquid hydrocarbon is elevated,
of an oxygen-gas supply having an outlet
consisting of a chamber with a slit, or perfo-
5 rated, top, and with a supply-pipe by which
the oxygen is passed into the said chamber
in a downward direction substantially as,
and for the purpose, hereinbefore described.

In testimony whereof I have signed my
name to this specification in the presence of 10
two subscribing witnesses.

E. TATHAM.

Witnesses:

CHAS. MILLS,

EDWD. GEO. DAVIES.