(No Model.) 2 Sheets—Sheet 1.

T. GORDON & W. R. SWIFT.

LAMP HAVING REGENERATIVE BURNER.

No. 585,817. Patented July 6, 1897.

Fig. 1

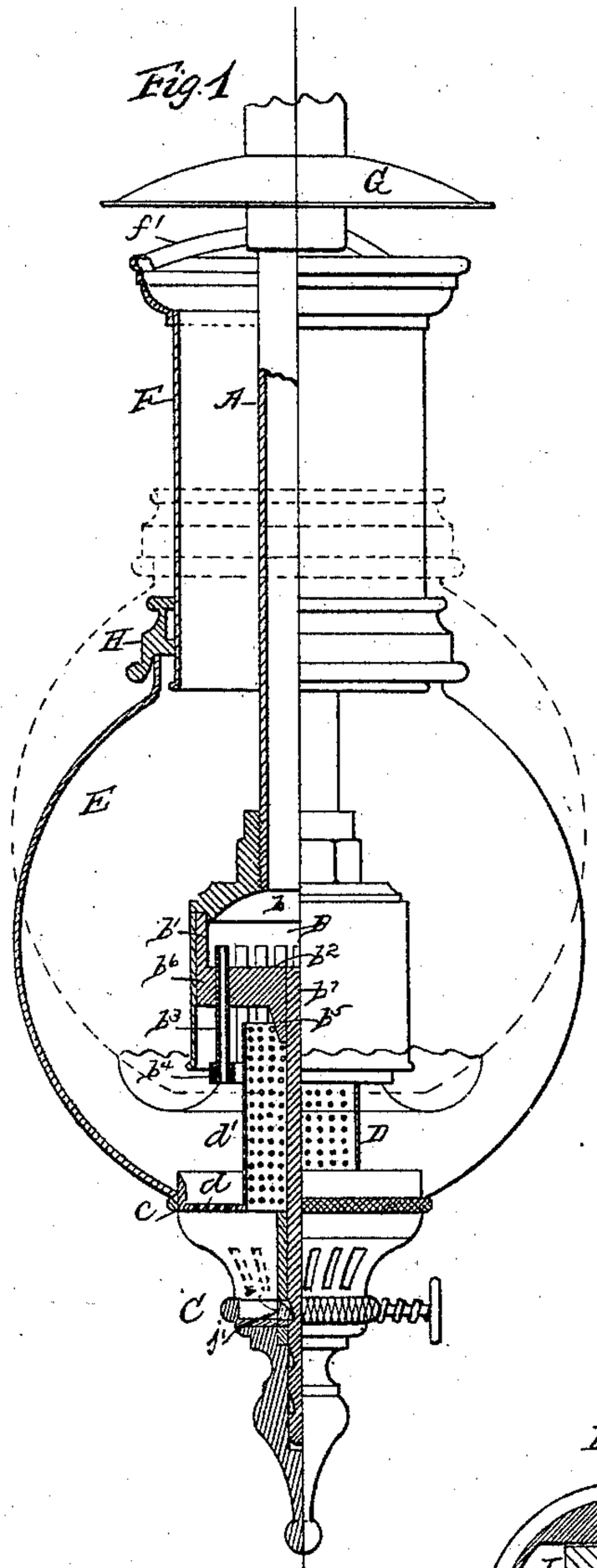

Fig. 4.

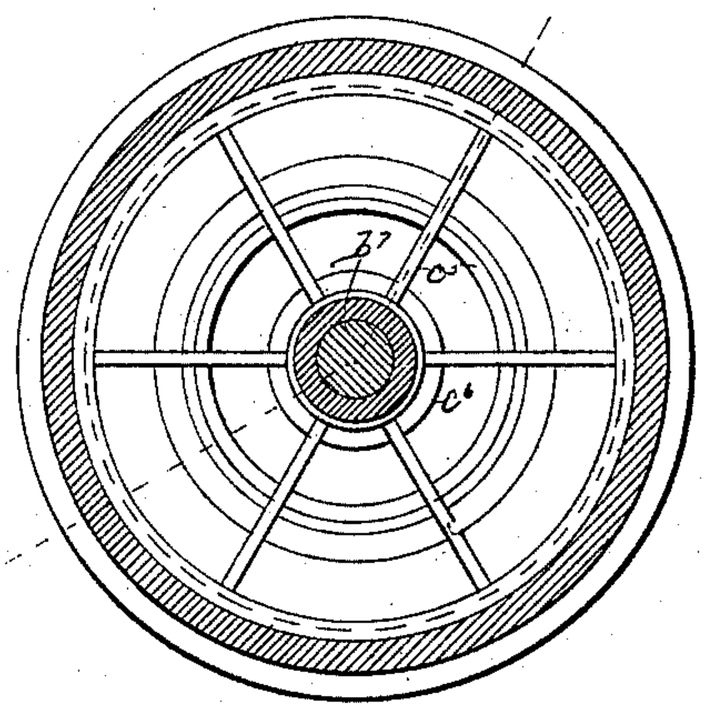

Fig. 2.

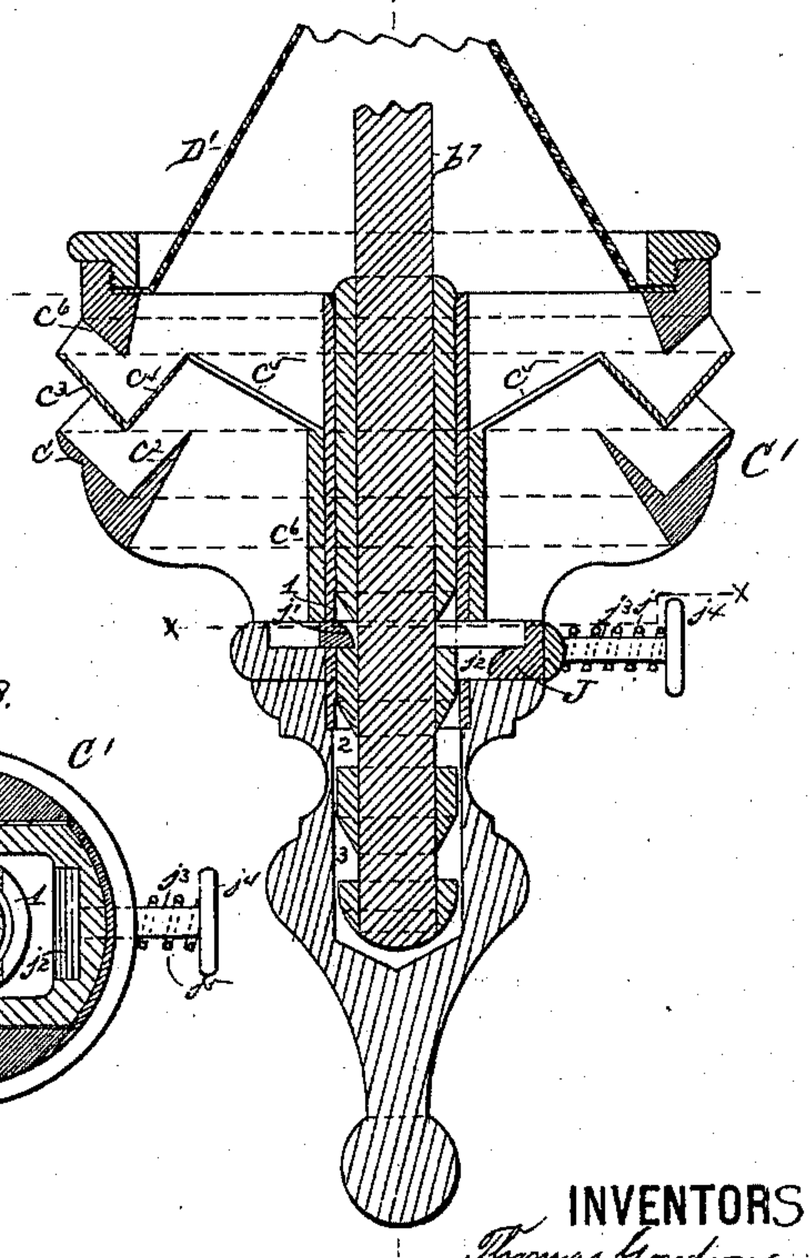

Fig. 3.

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(No Model.) 2 Sheets—Sheet 2.

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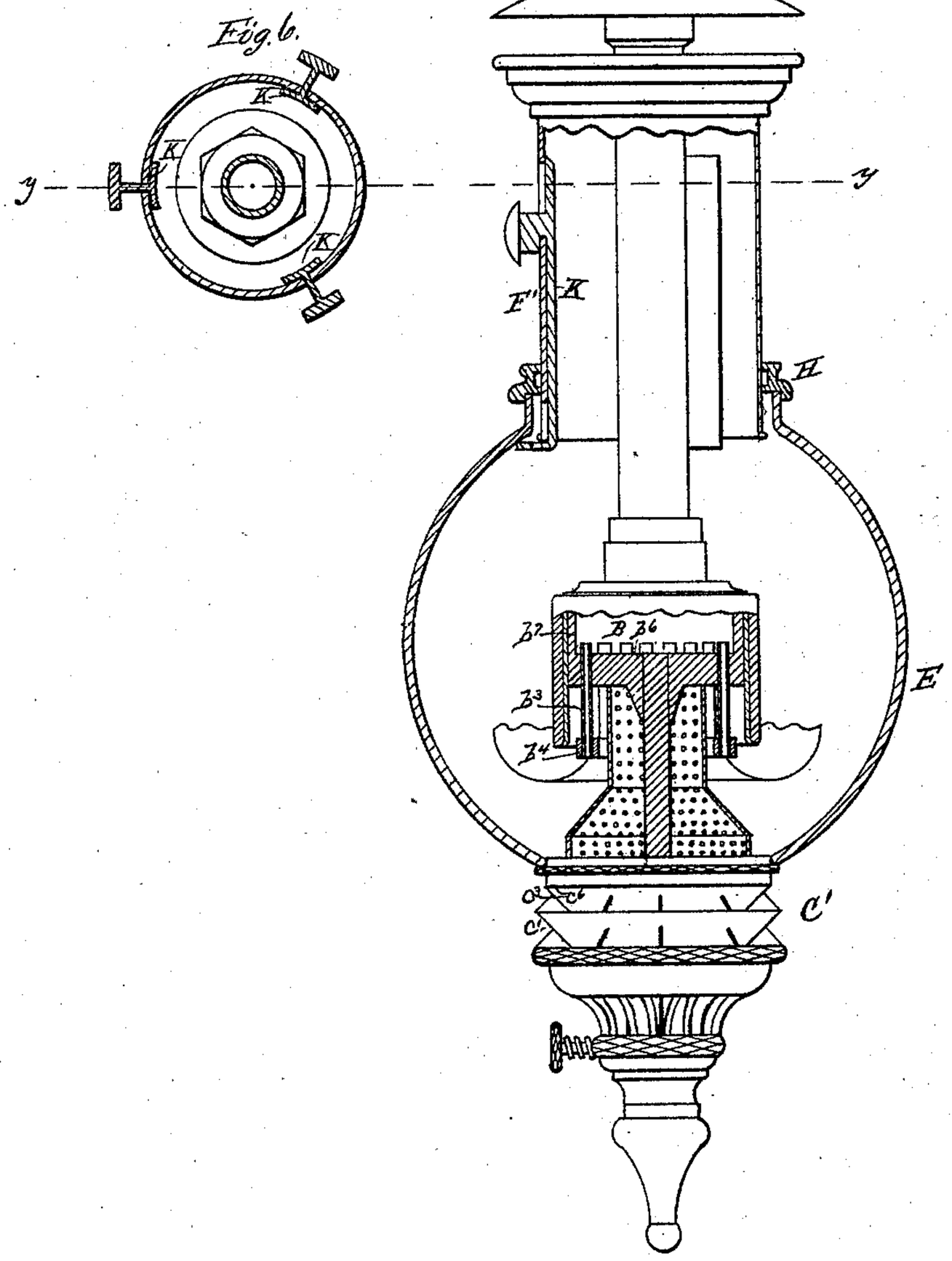
Fig. 5.



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UNITED STATES PATENT OFFICE.

THOMAS GORDON AND WILLIAM R. SWIFT, OF NEW YORK, N. Y., ASSIGNORS TO THE GORDON-MITCHELL GAS LAMP COMPANY, OF SAME PLACE.

LAMP HAVING REGENERATIVE BURNER.

SPECIFICATION forming part of Letters Patent No. 585,817, dated July 6, 1897.

Application filed April 3, 1891. Serial No. 387,501. (No model.)

To all whom it may concern:

Be it known that we, THOMAS GORDON and WILLIAM R. SWIFT, of New York, in the county and State of New York, have invented a certain new and useful Improvement in Lamps Having Regenerative Burners, of which the following is a specification.

The principal object of the present improvement is to facilitate the lighting of a burner of the regenerative type, certain of the improvements herein shown and described being claimed in Patent No. 539,175.

We will describe a lamp having a regenerative burner and embodying our improvement and then point out the novel features in the claims.

In the accompanying drawings, Figure 1 represents a lamp having a regenerative burner. At the right of the center line an outside view of the lamp is given, but at the left of the center line the lamp is shown in longitudinal section. Fig. 2 is an enlarged view of the base portion of a lamp somewhat modified in construction. Fig. 3 is a horizontal section at the plane of the dotted line $x\ x$, Fig. 2. Fig. 4 is a top view of parts shown in Fig. 2. Fig. 5 shows a lamp of somewhat modified construction. It is mainly shown in section, but the upper and lower parts are not sectioned. Fig. 6 is a transverse section of the lamp shown in Fig. 5 at the plane of the dotted line $y\ y$, Fig. 5, and looking downward.

Referring first to the lamp shown in Fig. 1, A designates a gas-supply pipe, and B a regenerative burner at the lower extremity thereof. This burner B consists, as here shown, of a dome-shaped top b, attached by a screw-thread or otherwise to the gas-supply pipe A, a cylindric part b', united by means of a screw-thread or other means with the top part, and a diaphragm or bottom part b^2, formed integral with the cylindric part. In the diaphragm b^2 gas-tubes b^3 are fitted, and these are arranged in a circular row and have their lower extremities fitted to holes in a ring b^4, whereby they are spaced and sustained. The central portion of the diaphragm b^2 is extended downwardly and externally tapered, so as to form a part b^5. Outside the cylindric part b' a deflector b^6, consisting of a cylinder of sheet metal, is fitted so as to extend downwardly almost as low as the gas-tubes. From the diaphragm b^2 a post b^7 extends downwardly. It may be secured to the diaphragm in any suitable manner—as, for instance, by being screwed into the same. At its lower extremity it has fastened to it a part C, which is of spider-like construction, being provided with a number of radial openings for the entrance of air. It supports an air-distributer D, here shown as consisting of a radial flange-like portion d and a cylindric portion d', extending above the former to or nearly to the part b^5.

Air entering the passages of the part C may pass upwardly through the horizontal or flange-like portion of the air-distributer D to the top of the gas-tubes b^3 and may also pass to the same point through the perforations of the vertical portion and from the latter also to the part b^5, whence it would be directed between the gas-tubes to the outer deflector b^6. The part C is provided with a seat c, upon which may rest a combustion-chamber E, here shown as made in the form of a globe.

Above the combustion-chamber is a waste-flue F, which may be made of sheet metal and fastened to a spider f', which is secured by a screw-thread or otherwise to the gas-supply pipe A. Above the spider and waste-flue a hood G is shown as fastened to the supply-pipe. It may be secured by means of the spider f'. The lower extremity of the waste-flue F extends down into the combustion-chamber.

A collar H is fitted to the waste-flue F so as to be capable of a sliding movement vertically thereon. It normally rests upon the top of the combustion-chamber E. Whenever it is desired to light the burner, the combustion-chamber may be elevated above the part C and a match or other igniting device inserted through the bottom of the chamber. Afterward the chamber may be allowed to descend to the seat c of the part C.

Provision may be afforded for dropping down the part C, and this is illustrated in Fig. 1, but better illustrated in Figs. 2 and 3. The part C′ in Fig. 3 differs from the part C in Fig. 1 in that its air openings or passages are protected by a number of inclined rings.

The lower ring c' is upwardly inclined in an outward direction and has at its inner edge an inwardly-inclined upwardly-extending flange c^2. The ring c^3 corresponds generally with the ring c' and has at its inner edge a flange like the flange c^4 of the ring c'. This ring c^3 may be supported by arms c^5, extending from a cylinder c^6, which surrounds the post b^7 and rests upon a portion of the part C'. The part C' has a surface c^6, inclined similarly to the rings c' c^3. An air-distributer D' extends upwardly from the upper portion of the part C', and, as here shown, is upwardly tapered from its base.

In the post b^7 are a number of notches 1 2 3, which may extend entirely around the post and may be formed by fastening on the post a number of sleeves. A ring J surrounds the post and is provided on one side with a tooth or detent j', adapted to engage with one of the notches, and on the opposite side with a tooth or detent j^2, which is lower down, so that when the tooth j' engages with a notch of this post the tooth j^2 will be opposite the space between two notches of the post. The ring J fits in a seat formed in the part C' and is free to slide horizontally. It has a shank j^3, which passes through a hole in the part C', and outside the latter is provided with a head j^4. A spring j^5 surrounds the shank j^3 between the head j^4 and the exterior of the part C', so as to draw the ring outward into a position which will cause its tooth j' to engage with one of the notches of the post b^7. If the ring be forced inwardly against the resistance of the spring j^5 by pressure applied to the head, the tooth j' may be disengaged from the post and the tooth j^2 brought into a position to engage with one of the notches. As one or the other of the two teeth j' j^2 will be in a position to engage with a notch of the post, the part C' will be prevented from slipping off the post, and yet may be lowered from notch to notch of the post. By lowering the part C' provision will be afforded for inserting a match to light the burner, the combustion-chamber being of course held in its normal position by hand.

In Figs. 5 and 6 we have shown a lamp having a base part C' like the part already described in connection with Figs. 2 and 3 and its other parts similar to those of the lamp described in connection with Fig. 1. Its waste-flue F' is provided with a number of rods K, which fit against its under side and have outwardly-turned lower ends. Near the upper ends these rods K are provided with hooks which extend through slots formed vertically in the waste-flue. By raising the rods by applying the fingers to the heads formed on the extremities of the hooks the rods K may be raised so as to disengage the hooks from the waste-flue and then the rods may be forced bodily inward to move their outwardly-turned lower extremities inward of the globe or combustion-chamber. This will enable the globe or combustion-chamber to be detached. Normally the rods K will support the globe or combustion-chamber when the part C' is lowered.

We do not propose to claim in this application the air-injector comprising the series of rings located at the base of the combustion-chamber, as this construction forms the subject-matter of our pending application, Serial No. 387,500, filed April 3, 1891, Patent No. 554,866, granted February 18, 1896.

What we claim as our invention, and desire to secure by Letters Patent, is—

1. In a lamp, the combination of a regenerative burner, a combustion-chamber, a post extending below the burner and provided with notches at opposite sides, a tooth for engaging with the notches at one side and another tooth for engaging with the notches at the other side, the teeth being located in different planes, substantially as specified.

2. In a lamp, the combination of a regenerative burner, a combustion-chamber, a post extending below the burner and provided with notches at opposite sides, a tooth for engaging with the notches at one side and another tooth for engaging with the notches at the other side, the teeth being rigidly secured together, substantially as specified.

3. In a lamp, the combination of a regenerative burner, a combustion-chamber, a post extending below the burner and provided with notches at opposite sides, a tooth for engaging with the notches at one side, another tooth for engaging with the notches at the other side and a spring, the teeth being located in different planes, substantially as specified.

4. In a lamp, the combination of a regenerative burner, a combustion-chamber, a post extending below the burner and provided with notches, a part having a sliding connection with the post for supporting the combustion-chamber and a catch, J, provided with teeth, j', j^2, projecting in different horizontal planes substantially as specified.

5. In a lamp, the combination of a regenerative burner, a combustion-chamber, a waste-flue above the combustion-chamber with which said combustion-chamber has a sliding connection and rods, K, having outwardly-turned lower ends and having hooks for engaging with slots in the waste-flue, substantially as specified.

6. In a lamp, the combination of a regenerative burner, a combustion-chamber, a waste-flue above the combustion-chamber with which said combustion-chamber has a sliding connection and rods or fingers adjustable toward and from the center of the waste-flue so as to assume positions wherein they may engage with the combustion-chamber or positions in which they will not contact with the combustion-chamber, substantially as specified.

7. In a lamp, the combination of a regenerative burner, a combustion-chamber, a post extending below the burner and provided with notches, a part having a sliding connection

with said post and constituting the normal support for the combustion-chamber, means for detachably securing said part to said post comprising a detent adapted to engage with the notches on the post and means for holding the combustion-chamber in its elevated position when said part is disengaged from said post, substantially as specified.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

THOMAS GORDON.
WILLIAM R. SWIFT.

Witnesses:
S. O. EDMONDS,
WILLIAM M. ILIFF.