

A. H. & F. J. HUMPHREY & R. WRIGHT.
GAS LAMP.

APPLICATION FILED JULY 13, 1908.

933,177.

Patented Sept. 7, 1909.

4 SHEETS—SHEET 1.

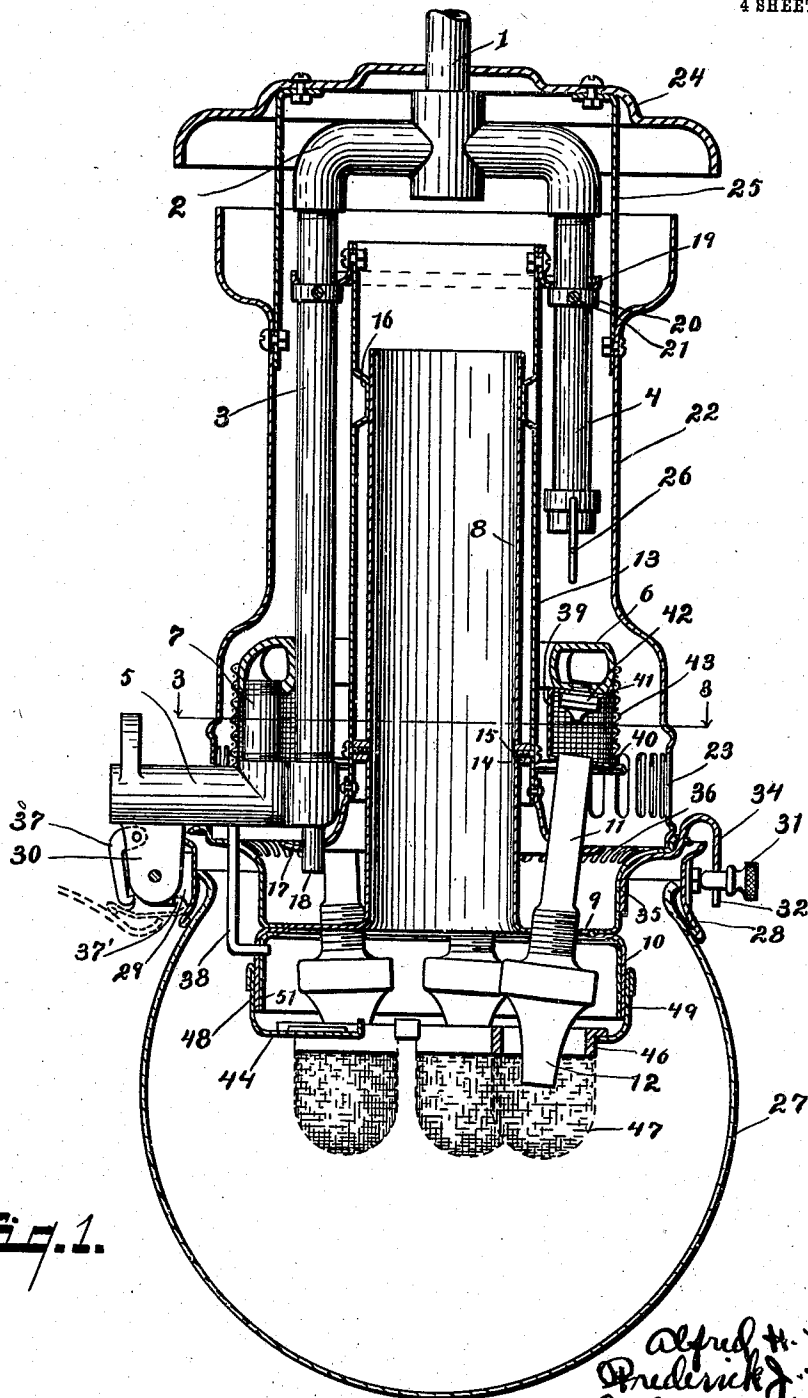


Fig. 1.

Inventors.

Alfred H. Humphrey
Frederick J. Humphrey
and Reginald Wright,
Chapman & Co.

Attorneys

Witnesses
Lulu Greenfield
Gertrude Tallman

By

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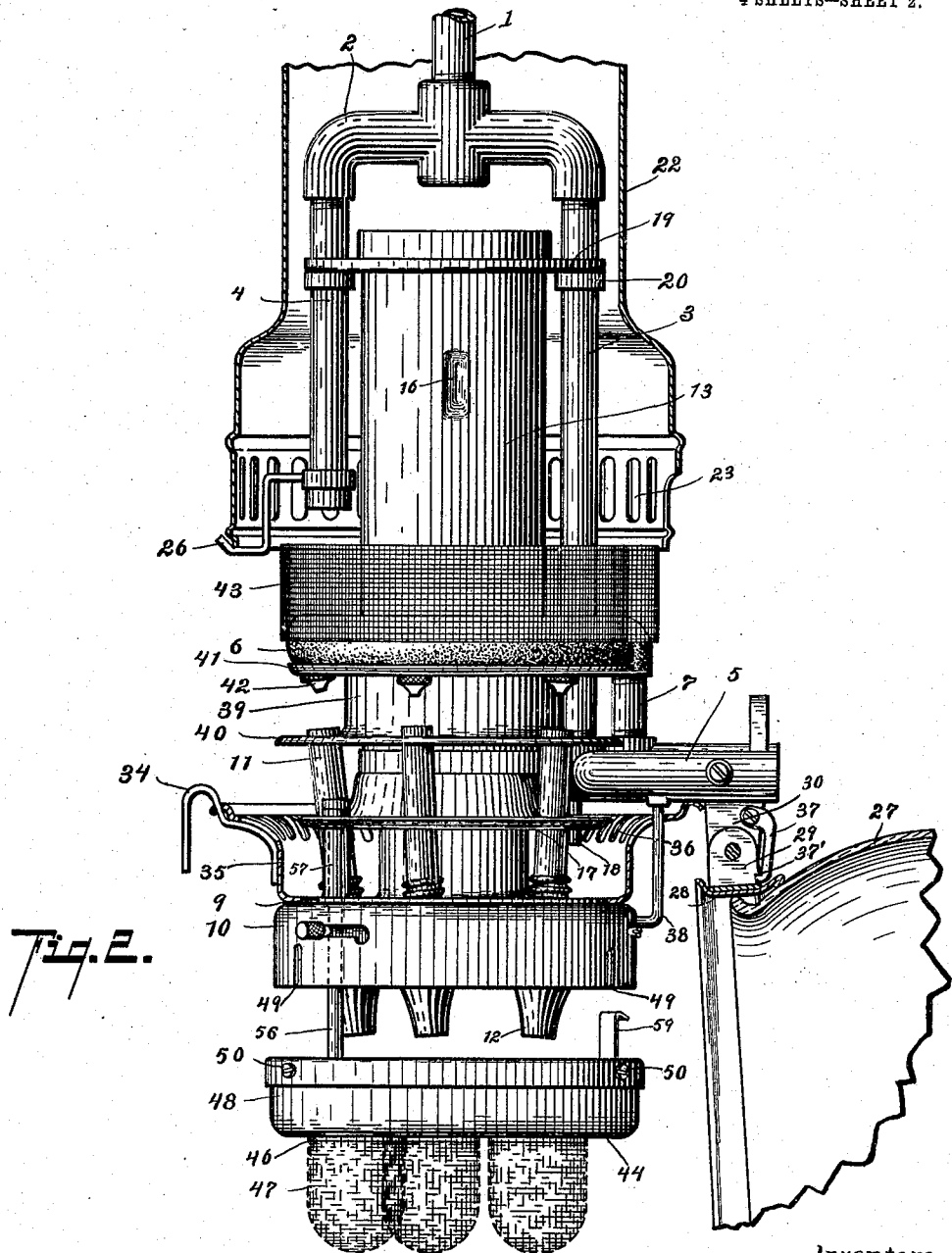


Fig. 2.

Inventors.

Alfred H. Humphrey
Frederick J. Humphrey
and Reginald Wright

By

Chapman & Co.

Attorneys

Witnesses

Lulu Greenfield
Gertrude Tallman

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4 SHEETS—SHEET 3.

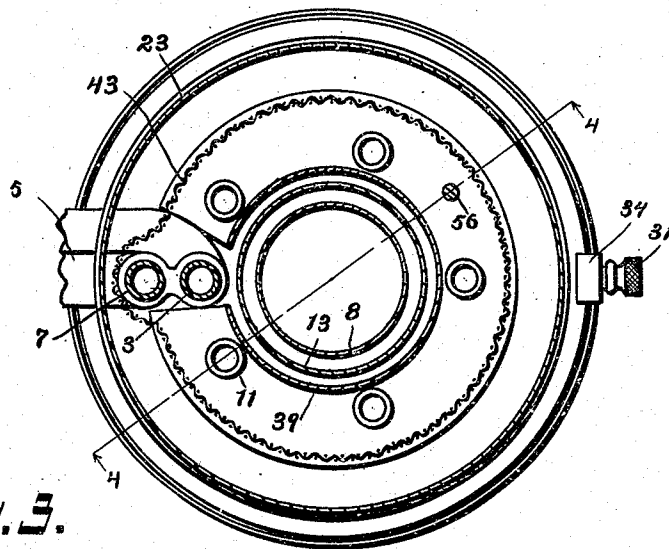


Fig. 3.

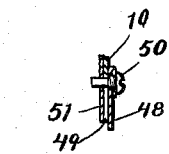
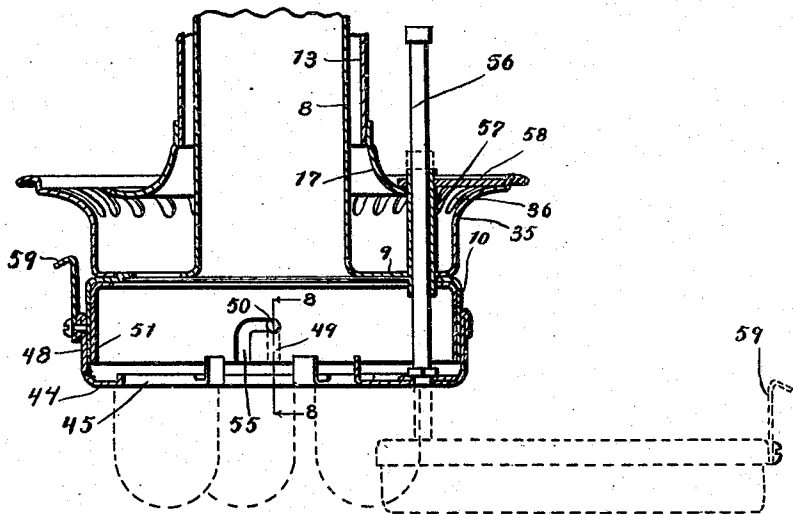


Fig. 5.

Fig. 4.

Witnesses

Lulu Greenfield
Gertrude Tallman

Inventors.
Alfred H. Humphrey
Frederick J. Humphrey
and Reginald Wright
Chapelle & Co.

Attorneys

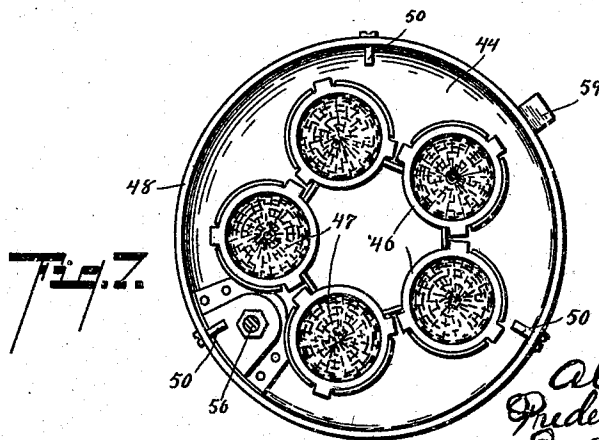
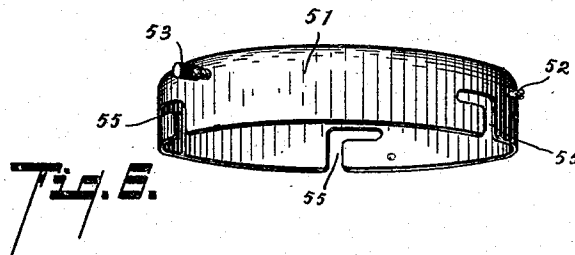
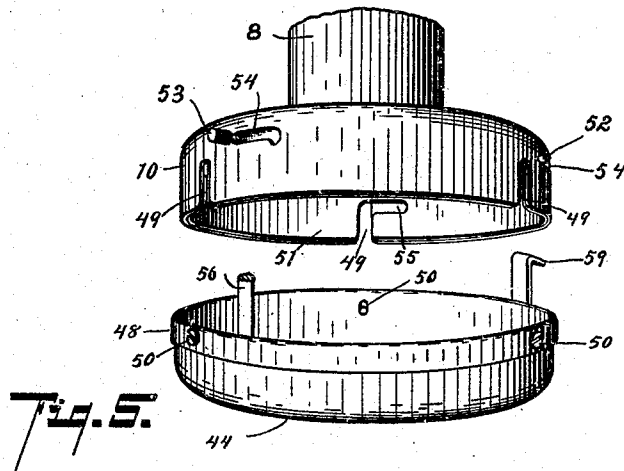
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4 SHEETS—SHEET 4.



Witnesses

Lulu Greenfield
Gertrude Tallman

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Inventors.
Alfred H. Humphrey
Frederick J. Humphrey
and Reginald Wright
Chapman & Co.

Attorneys

UNITED STATES PATENT OFFICE.

ALFRED H. HUMPHREY, OF NEW YORK, N. Y., AND FREDERICK J. HUMPHREY AND
REGINALD WRIGHT, OF KALAMAZOO, MICHIGAN, ASSIGNORS TO GENERAL GAS LIGHT
COMPANY, OF KALAMAZOO, MICHIGAN.

GAS-LAMP.

933,177.

Specification of Letters Patent.

Patented Sept. 7, 1909.

Application filed July 13, 1908. Serial No. 443,292.

To all whom it may concern:

Be it known that we, ALFRED H. HUMPHREY, a citizen of the United States, residing at the city of New York, county of New York, State of New York, and FREDERICK J. HUMPHREY and REGINALD WRIGHT, citizens of the United States, residing at the city of Kalamazoo, county of Kalamazoo, State of Michigan, have invented certain new and useful Improvements in Gas-Lamps, of which the following is a specification.

This invention relates to improvements in gas lamps.

Our invention relates particularly to improvements in gas lamps, such as illustrated in Patent No. 841,323, issued January 15, 1907, to Alfred H. Humphrey, and is a modification of, and, in some respects, an improvement upon the structure there illustrated.

The main objects of this invention are: First, to provide in a gas lamp having inverted burners means for protecting the burners from dust, lint, insects and the like; second, to provide in a gas lamp having inverted burners an improved arrangement of the burners whereby they are completely accessible for adjustment; third, to provide in a gas lamp having inverted burners an improved mantle support or holder; fourth, to provide in a gas lamp having inverted burners means for carrying away the products of combustion; and fifth, to provide in a gas lamp an improved construction and arrangement of the parts whereby they may be readily assembled and are conveniently arranged for assembling.

Further objects, and objects relating to structural details, will definitely appear from the detailed description to follow.

We accomplish the objects of our invention by the devices and means described in the following specification.

The invention is clearly defined and pointed out in the claims.

A structure embodying the features of our invention is clearly illustrated in the accompanying drawing, forming a part of this specification, in which:

Figure 1 is a vertical section of a structure embodying the features of our invention, the gas delivery pipe and the burners being shown in full lines. Fig. 2 is a detail side

elevation of our improved lamp in its open position; that is, the parts of the lamp being adjusted for the manipulation and adjustment of the lamp, and parts of the lamp, as the outer casing and globe, being shown in vertical section. Fig. 3 is a horizontal section taken on a line corresponding to line 3—3 of Fig. 1. Fig. 4 is a detail vertical section taken on a line corresponding to line 4—4 of Fig. 3. Fig. 5 is a detail perspective view of the lower end of the chimney and the mantle support and air guide plate disconnected. Fig. 6 is a perspective view of the locking ring for the mantle holder plate. Fig. 7 is a plan view of the mantle holder and air guide plate. Fig. 8 is a detail vertical section taken on a line corresponding to line 8—8 of Fig. 4, showing the interlocking of the parts.

In the drawing, the sectional views are taken looking in the direction of the little arrows at the ends of the section lines, and similar numerals of reference refer to similar parts throughout the several views.

Referring to the drawing, the gas supply pipe 1 is preferably provided with a T-coupling 2 from which the arms 3 and 4 depend, the arm 4 being a dummy. At the lower end of the arm 3 is a valve casing 5, which is connected to the gas delivery ring 6 by the coupling section 7. Through the ring we arrange the chimney 8 which is provided with a flange 9 at its lower end having a downwardly-projecting portion 10.

The mixing tubes 11 of the burners are arranged through the flange 9 so that the burner tips 12 are below the flange and within the downwardly-projecting portion 10 thereof. These parts are substantially the same as those shown and described in the patent of Alfred H. Humphrey of January 15, 1907, hereinbefore referred to.

We preferably provide the chimney with a chimney casing 13 which is secured in a spaced relation to the chimney by means of the studs 14 and the screws 15, which are tapped into the same, and the spacing lugs 16 toward the upper end of the chimney casing, which are preferably formed by punching in parts of the chimney casing, as illustrated. The chimney casing is open at its upper and lower end, this arrangement of the chimney and casing being substantially

the same as that shown, described and claimed in the application for Letters Patent of Alfred H. Humphrey filed May 15, 1907, Serial No. 373,823. The chimney casing is provided with an outwardly-projecting flange 17 at its lower end through which the burner tubes are arranged. This chimney casing in operation serves to prevent the radiation of heat from the chimney and also causes a circulation of air to set up through the chimney casing, thereby drawing the air across the burner tubes to assist in keeping the same cool.

The valve casing is provided with a downwardly-projecting pin 18, which is arranged through the flange of the chimney casing and assists in holding the parts in position. On the upper end of the chimney casing is a ring-like support 19 which is provided with openings through which the arms 3 and 4 of the gas supply pipe are arranged.

On the arms 3 and 4 we arrange collars 20, which are adjustably secured upon the arms by means of the set screws 21. These collars, engaging the supporting ring very effectively support the chimney casing, and, through its connection to the chimney, the chimney and connected parts.

We preferably provide an outer casing 22 which embraces the upper ends of the burner tube, the gas delivery ring, and chimney casing. This outer casing is open at the top for the escape of the products of combustion, and is also open at the bottom for the inlet of air, it preferably having openings 23 formed therein. Above the outer casing is a deflector 24. This is mounted upon the delivery pipe and connected to the casing by means of the straps 25, so that the outer casing may be adjusted when access is desired to the burner tubes.

A support 26 is provided for holding the casing in its elevated position. This support is pivotally mounted upon the arm 4. The globe 27 is carried by the globe-supporting band 28 and provided with a hinge member 29 at one side. The hinge member 30 preferably depends from the valve casing 5. The globe-supporting band is secured in its closed position by means of a spring pin 31, which is adapted to engage a slot 32 in the bracket 34, which is provided for the purpose, the bracket being arranged oppositely of the hinge. This bracket is mounted on an upwardly and outwardly-projecting flange 35 carried on the chimney flange. This flange forms a partition between the chamber above the chimney flange and the parts below and within the globe, it being provided with openings 36 for the admission of air to the globe from the chamber within the lamp casing, the air passing through these openings to the burners below the chimney flange.

We preferably provide a hook 37 for se-

curing the globe in its open position, the hook being adapted to engage in the notch 37' provided in the hinge member 29. The object of this is to prevent the swinging of the globe and to hold it out of the way, when it is desired to manipulate the burners or mantles. The pilot burner 38 is arranged through the chimney flange to deliver across the burners. We have not illustrated the details of the valve mechanism herein, as it forms no part of this invention. The burner tubes 11 are arranged to open into an air chamber, which is preferably mounted on the under side of the gas delivery ring, the inner wall 39 of the chamber being preferably provided with a flange 41 on its upper edge through which the delivery nozzles 42 for the gas delivery ring 6 are threaded, thereby securing the chamber walls in place. As the details of these nozzles will be readily understood, they are not here illustrated. The outer wall 43 of the air chamber is preferably formed of a wire screen of sufficiently fine mesh so that it prevents the entrance of insects into the air chamber from which the burner tubes take their air, and also lint and particles, which are likely to be floating in the air, particularly in shops. The wall 43 is preferably in the form of a ring and is adapted to be slipped up over the gas delivery ring 6 to afford access to the nozzles for their adjustment, the lower wall 40 projecting to receive the screen 43 and forming a support therefor. The arrangement of the burners through the flange on the chimney casing and through the lower wall 40 to the air chamber supports them in proper relation to the air delivery nozzle. The chimney casing flange or lower wall 40 would either accomplish the purpose. In the structure illustrated, the burners are guided by both. By this arrangement, the burners are effectively protected, and the entrance of insects or particles to the burner tubes is prevented, as stated, which is a very material advantage in the operation of the lamp; and in the event that lint or other particles should collect upon the screen, it can be readily and quickly brushed off without disturbing the burner in any way.

We preferably provide our improved lamp with a mantle support, consisting of the plate 44 having openings 45 therein adapted to receive the mantle holders 46 for the mantles, which are shown by dotted lines 47. These plates 44 not only serve as mantle supports, but also serve to direct the air to the mantles. The plate 44 is provided with an upwardly-projecting flange 48 at its outer edge, which is adapted to telescope with the downwardly-projecting portion 10 of the chimney flange, it being preferably arranged to embrace the same, as illustrated. The portion 10 of the chimney flange is pro-

vided with vertical slots 49 adapted to receive the pins 50 on the plate flange 48 when the plate is telescoped with the chimney flange. We preferably secure the flange 48 by means of a locking ring 51 which is arranged within the flange and adjustably secured therein by means of the pins 52 and 53, which engage suitable slots 54 provided therefor in the chimney flange, so that the locking ring can be turned to bring the bayonet slots 55 thereof into register with the slots 49 of the chimney flange to receive the pins 50 on the plate flange, so that, by turning the ring, the pins are engaged by the slots 55, thereby securing it in place. The pin 53 preferably projects to form a finger piece. By this means, we are enabled to support the plate 44 at a plurality of points which we find to be of very great advantage as it prevents the sagging or warping of the plate on account of the excessive heat of the burners to which it is subjected. The plate 44 is preferably supported, when disengaged from the chimney, by means of the rod 56 which is arranged in a sleeve 57 carried by the chimney flange, and a supporting plate 58 provided for the upper end of the sleeve. This supporting rod supports the plate 44 for the adjustment of the mantles and also while the burners are being adjusted or cleaned, and, if desired, the mantle supports can be swung to one side out of the way of the burners or for greater convenience in the adjusting of the mantles. We preferably provide the plate 44 with a finger piece 59 which may be grasped by the fingers if the lamp is cool, or with a pair of pliers if the lamp is hot.

In Fig. 2 we illustrate the lamp in its open position, or adjusted in position for the manipulation and adjustment thereof. The outer casing 23 is shown in its elevated position, being supported by the arm 26. The screen 43 is adjusted to open the air chambers for the burners and the mantle support is dropped down to permit the adjustment of the mantles. As before stated, this mantle support may be swung to one side out of the way of the burner tips, and also so that the mantles can be readily inserted from the top of the support.

By thus arranging and forming the parts, we secure an effective support for the mantles, and properly guide the air to the burners to secure a proper combustion. We wish to remark, however, in this connection, that separate mantle holders might be provided, if desired, the plate being desirable for use merely for the purpose of directing the air to the burners and chimney, as stated.

We have illustrated and described our improved lamp in detail in the form preferred by us on account of its structural simplicity and economy and the convenience with which the parts may be adjusted in use. We are

aware, however, that the structural details may be greatly varied without departing from our invention, and we desire to be understood as claiming the same broadly, as well as specifically, as illustrated.

Having thus described our invention, what we claim as new and desire to secure by Letters Patent is:

1. In a gas lamp, the combination with a gas delivery pipe comprising a T-coupling with depending arms, of a chimney having an outwardly-projecting deflector flange at its lower end; a chimney casing having an outwardly-projecting flange at its lower end, secured to said chimney in a spaced relation thereto; a flange-like supporting member arranged to embrace and secured to said chimney casing, said member having openings therein through which said arms are arranged; and burners comprising burner tubes and tips arranged through said flange of said chimney and through said flange of said chimney casing with their tips below said flange of said chimney; an outer casing; and a deflector arranged above said coupling of said gas delivery pipe.

2. In a gas lamp, the combination with a gas delivery pipe comprising a T-coupling with depending arms, of a chimney having an outwardly-projecting deflector flange at its lower end; a chimney casing having an outwardly-projecting flange at its lower end, secured to said chimney in a spaced relation thereto; a flange-like supporting member arranged to embrace and secured to said chimney casing, said member having openings therein through which said arms are arranged; and burners comprising burner tubes and tips arranged through said flange of said chimney casing with their tips below said flange of said chimney.

3. In a gas lamp, the combination with a gas delivery pipe comprising a T-coupling with depending arms; a chimney arranged between said arms and having an outwardly-projecting deflector flange at its lower end; a flange-like supporting member for said chimney having openings therein through which said arms are arranged; burners comprising burner tubes and tips arranged through said flange of said chimney with their tips below the same; an outer casing; and a deflector arranged above said coupling of said gas delivery pipe.

4. In a gas lamp, the combination with a gas delivery pipe comprising a T-coupling with depending arms, of a chimney arranged between said arms and having an outwardly-projecting deflector flange at its lower end; a flange-like supporting member for said chimney having openings therein through which said arms are arranged; and burners comprising burner tubes and tips arranged through said flange of said chimney with their tips below the same.

5. In a gas lamp, the combination with a gas delivery pipe comprising a T-coupling with depending arms, of a chimney arranged between said arms; a flange-like supporting member for said chimney having openings therein for said arms; collars on said arms arranged to engage said supporting member; a burner; an outer casing; and a deflector arranged above said coupling of said gas delivery pipe.

6. In a gas lamp, the combination with a gas delivery pipe comprising a T-coupling with depending arms, of a chimney arranged between said arms; a flange-like supporting member for said chimney having openings therein for said arms; collars on said arms arranged to engage said supporting member; and a burner.

7. In a gas lamp, the combination with a gas delivery pipe comprising a T-coupling with depending arms, of a chimney arranged between said arms; a flange-like supporting member for said chimney having openings therein through which said arms are arranged; a burner; an outer casing; and a deflector arranged above said coupling of said gas delivery pipe.

8. In a gas lamp, the combination with a gas delivery pipe comprising a T-coupling with depending arms, of a chimney arranged between said arms; a flange-like supporting member for said chimney having openings therein through which said arms are arranged; and a burner.

9. In a gas lamp, the combination with a gas delivery pipe, of a chimney having an outwardly-projecting deflector flange at its lower end; a chimney casing having an outwardly-projecting flange at its lower end secured to said chimney in a spaced relation thereto; a flange-like supporting member arranged to embrace said chimney casing and secured thereto having an opening therein for said pipe; means for securing said member to said pipe; and burners comprising burner tubes and tips arranged through said flange of said chimney and through said flange of said chimney casing with their tips below said flange of said chimney.

10. In a gas lamp, the combination with a gas delivery pipe, of a chimney, said delivery pipe being arranged to extend down at the side of said chimney; a flange-like supporting member for said chimney secured to said pipe; and a burner.

11. In a gas lamp, the combination with a gas delivery ring, of a chimney having an outwardly-projecting flange at its lower end arranged through said ring; a chimney casing having an outwardly-projecting flange at its lower end arranged about said chimney in a spaced relation thereto, the chimney casing being open at its upper and lower ends; an air chamber arranged below said gas delivery ring, said air chamber having

an adjustable foraminated outer wall, its inner wall being spaced from said chimney casing; burners arranged in an inverted position through said flange of said chimney and through said flange of said chimney casing with their upper ends arranged through the bottom wall of said air chamber; gas delivery nozzles for said ring arranged in said air chamber to deliver to said burner tubes; and an outer casing surrounding said chimney, ring and air chamber, said outer casing being open at the top and bottom thereof.

12. In a gas lamp, the combination with a gas delivery ring, of a chimney having an outwardly-projecting flange at its lower end arranged through said ring; a chimney casing having an outwardly-projecting flange at its lower end arranged about said chimney in a spaced relation thereto, the chimney casing being open at its upper and lower ends; an air chamber arranged below said gas delivery ring, said air chamber having an adjustable foraminated outer wall; burners arranged in an inverted position through said flange of said chimney and through said flange of said chimney casing with their upper ends arranged through the bottom wall of said air chamber; gas delivery nozzles for said ring arranged in said air chamber to deliver to said burner tubes; and an outer casing surrounding said chimney, ring and air chamber, said outer casing being open at the top and bottom thereof.

13. In a gas lamp, the combination with a gas delivery ring, of a chimney having an outwardly-projecting flange at its lower end arranged through said ring; a chimney casing having an outwardly-projecting flange at its lower end arranged about said chimney in a spaced relation thereto, the chimney casing being open at its upper and lower ends; an air chamber arranged below said gas delivery ring, said air chamber having an adjustable foraminated outer wall, its inner wall being spaced from said chimney casing; burners arranged in an inverted position through said flange of said chimney and through said flange of said chimney casing with their upper ends arranged through the bottom wall of said air chamber; and gas delivery nozzles for said ring arranged in said air chamber to deliver to said burner tubes.

14. In a gas lamp, the combination with a gas delivery ring, of a chimney having an outwardly-projecting flange at its lower end arranged through said ring; a chimney casing having an outwardly-projecting flange at its lower end arranged about said chimney in a spaced relation thereto, the chimney casing being open at its upper and lower ends; an air chamber arranged below said gas delivery ring, said air chamber having an adjustable foraminated outer wall; burners arranged in an inverted position through

said flange of said chimney and through said flange of said chimney casing with their upper ends arranged through the bottom wall of said air chamber; and gas delivery nozzles for said ring arranged in said air chamber to deliver to said burner tubes.

15. In a gas lamp, the combination with a gas delivery ring, of a chimney having an outwardly-projecting deflector flange at its lower end arranged through said ring; a chimney casing having an outwardly-projecting flange at its lower end arranged about said chimney in a spaced relation thereto, the chimney casing being open at its upper and lower ends; an air chamber having a screened opening for the inlet of air; burners arranged in an inverted position through said flange of said chimney and through said flange of said chimney casing with their upper ends opening into said air chamber; gas delivery nozzles for said ring arranged to deliver to said burner tubes; and an outer casing surrounding said chimney, ring, and air chamber, said outer casing being open at the top and bottom thereof.

16. In a gas lamp, the combination with a gas delivery ring, of a chimney having an outwardly-projecting deflector flange at its lower end arranged through said ring; a chimney casing having an outwardly-projecting flange at its lower end arranged about said chimney in a spaced relation thereto, the chimney casing being open at its upper and lower ends; an air chamber having a screened opening for the inlet of air; burners arranged in an inverted position through said flange of said chimney and through said flange of said chimney casing with their upper ends opening into said air chamber; and gas delivery nozzles for said ring arranged to deliver to said burner tubes.

17. In a gas lamp, the combination with a gas delivery ring, of a chimney having an outwardly-projecting flange at its lower end arranged through said ring; an air chamber arranged below said gas delivery ring, said air chamber having an adjustable foraminated outer wall, its inner wall being spaced from said chimney; burners arranged in an inverted position through said flange of said chimney with their upper ends arranged through the bottom wall of said air chamber; gas delivery nozzles for said ring arranged in said air chamber to deliver to said burner tubes; and an outer casing surrounding said chimney, ring and air chamber, said outer casing being open at the top and bottom thereof.

18. In a gas lamp, the combination with a gas delivery ring, of a chimney having an outwardly-projecting flange at its lower end arranged through said ring; an inclosed air chamber arranged below said gas delivery ring, said air chamber having an adjustable

foraminated outer wall; burners arranged in an inverted position through said flange of said chimney with their upper ends arranged through the bottom wall of said air chamber; gas delivery nozzles for said ring arranged in said air chamber to deliver to said burner tubes; and an outer casing surrounding said chimney, ring and air chamber, said outer casing being open at the top and bottom thereof.

19. In a gas lamp, the combination with a gas delivery ring, of a chimney having an outwardly projecting flange at its lower end arranged through said ring; an air chamber arranged below said gas delivery ring, said air chamber having an adjustable foraminated outer wall, its inner wall being spaced from said chimney; burners arranged in an inverted position through said flange of said chimney with their upper ends arranged through the bottom wall of said air chamber; and gas delivery nozzles for said ring arranged in said air chamber to deliver to said burner tubes.

20. In a gas lamp, the combination with a gas delivery ring, of a chimney having an outwardly-projecting flange at its lower end arranged through said ring; an inclosed air chamber arranged below said delivery ring, said air chamber having an adjustable foraminated outer wall; burners arranged in an inverted position through said flange of said chimney with their upper ends arranged through the bottom wall of said air chamber; and gas delivery nozzles for said ring arranged in said air chamber to deliver to said burner tubes.

21. In a gas lamp, the combination with a gas delivery ring, of a chimney having an outwardly-projecting flange at its lower end arranged through said ring; an inclosed air chamber having a screened opening for the inlet of air; burners arranged through said flange of said chimney with their upper ends opening into said air chamber; gas delivery nozzles for said ring arranged to deliver to said burner tubes; and an outer casing surrounding said chimney, ring and air chamber, said outer casing being open at the top and bottom thereof.

22. In a gas lamp, the combination with a gas delivery ring, of a chimney having an outwardly-projecting flange at its lower end arranged through said ring; an inclosed air chamber having a screened opening for the inlet of air; burners arranged through said flange of said chimney with their upper ends opening into said air chamber; and gas delivery nozzles for said ring arranged to deliver to said burner tubes.

23. In a gas lamp, the combination with a gas delivery pipe, of a chimney; an inclosed air chamber having a screened air inlet opening; an inverted burner comprising a burner tube arranged through the wall of said chim-

ney with its upper end opening into said air chamber; a gas delivery nozzle arranged in said air chamber to deliver to said burner tube; and an outer casing surrounding said chimney and air chamber, said outer casing being open at the top and bottom thereof.

24. In a gas lamp, the combination with a gas delivery pipe, of a chimney; an inclosed air chamber having a screened air inlet opening; an inverted burner comprising a burner tube arranged through the wall of said chimney with its upper end opening into said air chamber; and a gas delivery nozzle arranged in said air chamber to deliver to said burner tube.

25. In a gas lamp, the combination with a gas delivery pipe, of a chimney; an inclosed air chamber having a screened air inlet opening; a burner comprising a tube opening into said air chamber; a gas delivery nozzle arranged to deliver to said burner tube; and an outer casing surrounding said chimney and air chamber, said outer casing being open at the top and bottom thereof.

26. In a gas lamp, the combination with a chimney having an outwardly and downwardly-projecting flange at its lower end, said flange having vertical slots therein; a plurality of burners arranged in an inverted position through said flange; mantles for said burners; a mantle support having mantle openings therein, provided with an upwardly-projecting flange adapted to embrace said flange on said chimney; pins on said support adapted to engage said slots; a securing ring adjustably arranged within the flange of said chimney having bayonet slots therein adapted to be brought into register with said slots in said chimney to receive the said pins on said support; and a vertically and revolubly adjustable supporting rod for said support.

27. In a gas lamp, the combination with a chimney having an outwardly and downwardly-projecting flange at its lower end, said flange having vertical slots therein; a plurality of burners arranged in an inverted position through said flange; mantles for said burners; a mantle support having mantle openings therein, provided with an upwardly-projecting flange adapted to embrace said flange on said chimney; pins on said support adapted to engage said slots; and a securing ring adjustably arranged within the flange of said chimney having bayonet slots therein adapted to be brought into register with said slots in said chimney to receive the said pins on said support.

28. In a gas lamp, the combination with a chimney having an outwardly and downwardly-projecting flange at its lower end, said flange having vertical slots therein; a plurality of burners arranged in an inverted position through said flange; mantles for said burners; a mantle support having a

plurality of openings therein adapted to receive the mantles and provided with an upwardly projecting flange adapted to embrace said flange on said chimney; pins on said support adapted to engage said slots; a securing ring adjustably arranged within the flange of said chimney having bayonet slots therein adapted to be brought into register with said slots in said chimney to receive the said pins on said support; and a vertically and revolubly adjustable supporting rod for said support.

29. In a gas lamp, the combination with a chimney having an outwardly and downwardly-projecting flange at its lower end, said flange having vertical slots therein; a plurality of burners arranged in an inverted position through said flange; mantles for said burners; a member having a plurality of openings therein adapted to receive the mantles and provided with an upwardly projecting flange adapted to embrace said flange on said chimney; pins on said member adapted to engage said slots; and a securing ring adjustably arranged within the flange of said chimney having bayonet slots therein adapted to be brought into register with said slots in said chimney to receive the said pins on said member.

30. In a gas lamp, the combination with a chimney having an outwardly and downwardly-projecting flange at its lower end, said flange having vertical slots therein; a burner arranged in an inverted position through said flange; a mantle for said burner; a member having a mantle opening therein, provided with an upwardly-projecting flange adapted to embrace said flange on said chimney; pins on said member adapted to engage said slots; a securing ring adjustably arranged within the flange of said chimney having bayonet slots therein adapted to be brought into register with said slots in said chimney to receive the said pins on said member; and a vertically and revolubly supporting rod for said member.

31. In a gas lamp, the combination with a chimney having an outwardly and downwardly-projecting flange at its lower end, said flange having vertical slots therein; a burner arranged in an inverted position through said flange; a mantle for said burner; a member having a mantle opening therein, provided with an upwardly-projecting flange adapted to embrace said flange on said chimney; pins on said member adapted to engage said slots; and a securing ring adjustably arranged within the flange of said chimney having bayonet slots therein adapted to be brought into register with said slots in said chimney to receive the said pins on said member.

32. In a gas lamp, the combination with the chimney having an outwardly and downwardly-projecting flange at its lower end, of

a plurality of burners arranged in an inverted position through said flange; mantles for said burners; a member having a plurality of openings therein adapted to receive the mantles and provided with an upwardly-projecting flange adapted to telescope with said flange on said chimney; a locking member for said member mounted on said chimney flange; and a vertically and revolubly adjustable supporting rod for said member.

33. In a gas lamp, the combination with the chimney having an outwardly and downwardly-projecting flange at its lower end, of a plurality of burners arranged in an inverted position through said flange; mantles for said burners; a member having a plurality of openings therein adapted to receive the mantles and provided with an upwardly-projecting flange adapted to telescope with said flange on said chimney; and a locking member for said member mounted on said chimney flange.

34. In a gas lamp, the combination with the chimney having an outwardly and downwardly-projecting flange at its lower end, of a plurality of burners arranged in an inverted position through said flange; mantles for said burners; a member having a plurality of openings therein adapted to receive the mantles and provided with an upwardly-projecting flange adapted to telescope with said flange on said chimney; a locking member for said flanges; and a vertically and revolubly adjustable supporting rod for said member.

35. In a gas lamp, the combination with the chimney having an outwardly and downwardly-projecting flange at its lower end, of a plurality of burners arranged in an inverted position through said flange; mantles for said burners; a member having a plurality of openings therein adapted to receive the mantles and provided with an upwardly-projecting flange adapted to telescope with said flange on said chimney; and a locking member for said flanges.

36. In a gas lamp, the combination with the chimney having an outwardly and downwardly-projecting flange at its lower end, of burners arranged in an inverted position through said flange; a member having an opening therein adapted to receive the burner tip and provided with an upwardly-projecting flange adapted to telescope with said flange on said chimney; a locking member for said member mounted on said chimney flange; and a vertically and revolubly adjustable supporting rod for said member.

37. In a gas lamp, the combination with the chimney having an outwardly and downwardly-projecting flange at its lower end, of burners arranged in an inverted position through said flange; a member having an opening therein adapted to receive the burner tip and provided with an upwardly-project-

ing flange adapted to telescope with said flange on said chimney; and a locking member for said member mounted on said chimney flange.

38. In a gas lamp, the combination with the chimney having an outwardly and downwardly-projecting flange at its lower end, of burners arranged in an inverted position through said flange; a member having an opening therein adapted to receive the burner tip and provided with an upwardly-projecting flange adapted to telescope with said flange on said chimney; a locking member for said flanges; and a vertically and revolubly adjustable supporting rod for said member.

39. In a gas lamp, the combination with the chimney having an outwardly and downwardly-projecting flange at its lower end, of burners arranged in an inverted position through said flange; a member having an opening therein adapted to receive the burner tip and provided with an upwardly-projecting flange adapted to telescope with said flange on said chimney; and a locking member for said flanges.

40. In a gas lamp, the combination with the chimney, of a burner arranged in an inverted position through the wall of said chimney; a member having an opening therein adapted to receive the burner tip and provided with an upwardly-projecting flange adapted to telescope with said chimney; a locking member for said member carried by said chimney and adapted to engage said member at a plurality of points; said means being adapted to be simultaneously engaged or disengaged; and a vertically and revolubly adjustable supporting rod for said member.

41. In a gas lamp, the combination with the chimney, of a burner arranged in an inverted position through the wall of said chimney; a member having an opening therein adapted to receive the burner tip and provided with an upwardly-projecting flange adapted to telescope with said chimney; and a locking member for said member carried by said chimney and adapted to engage said member at a plurality of points; said means being adapted to be simultaneously engaged or disengaged.

42. In a gas lamp, the combination with the chimney, of a burner arranged in an inverted position through the wall of said chimney; a member having an opening therein adapted to telescope with said chimney; a locking member for said member adapted to engage said member at a plurality of points; said means being adapted to be simultaneously engaged or disengaged; and a vertically and revolubly adjustable supporting rod for said member.

43. In a gas lamp, the combination with the chimney, of a burner arranged in an in-

verted position through the wall of said chimney; a member having an opening therein adapted to receive the burner tip and provided with an upwardly-projecting flange adapted to telescope with said chimney; and a locking member for said member adapted to engage said member at a plurality of points; said means being adapted to be simultaneously engaged or disengaged.

44. In a lamp, the combination with a chimney, of a burner arranged in an inverted position through the wall of said chimney; a member having an opening therein adapted to receive the burner tip; means for detachably securing said member in operative position adapted to support said member at a plurality of points; said means being adapted to be simultaneously engaged or disengaged; and a support for said member when it is disengaged from said chimney.

45. In a gas lamp, the combination with a chimney, of a burner arranged in an inverted position through the wall of said chimney; a member having an opening therein adapted to receive the burner tip; means for detachably securing said member in operative position adapted to support said member at a plurality of points; said means being adapted to be simultaneously engaged or disengaged.

46. In a gas lamp, the combination with an inverted burner, of a draft chimney therefor; a mantle support; and means for detachably securing said mantle support to said chimney, comprising a member adjustably mounted upon said chimney and arranged to engage said support at a plurality of points.

47. In a gas lamp, the combination with a gas delivery pipe, of a chimney; an inclosed air chamber having a screened air inlet opening; a burner comprising a tube opening into said air chamber; a gas delivery nozzle arranged to deliver to said tube; and an outer casing surrounding said chimney and air chamber.

In witness whereof, we have hereunto set out hands and seals in the presence of two witnesses.

ALFRED H. HUMPHREY. [L. s.]
FREDERICK J. HUMPHREY. [L. s.]
REGINALD WRIGHT. [L. s.]

Witnesses to the signature of Alfred H. Humphrey:

L. A. WOODS,
J. M. COLES.

Witnesses to the signature of Frederick J. Humphrey and Reginald Wright:

J. J. WRIGHT,
WALTER M. BLINKS.