

No. 835,705.

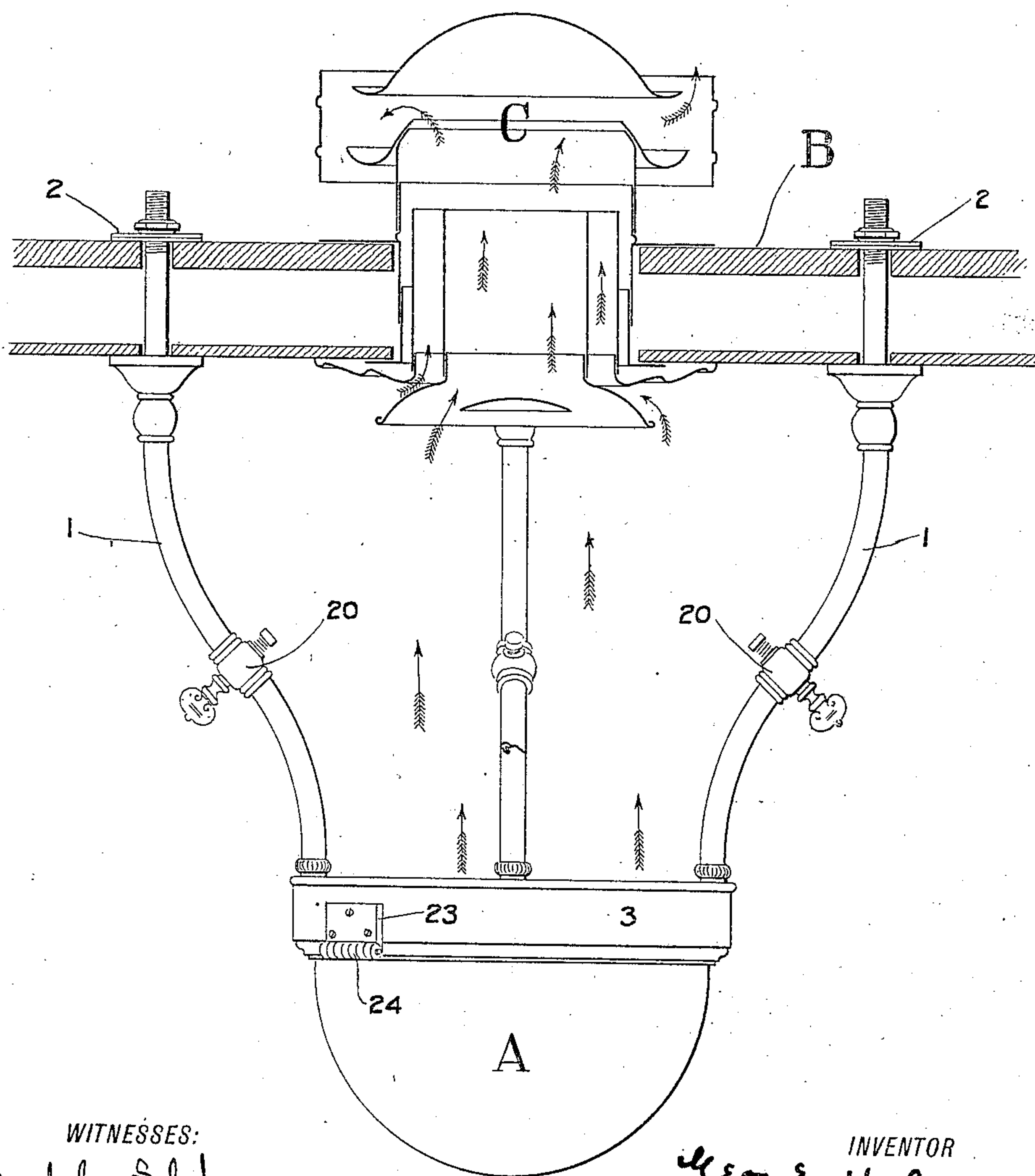
PATENTED NOV. 13, 1906.

G. E. HULSE.
GAS LAMP.

APPLICATION FILED JUNE 15, 1905.

3 SHEETS—SHEET 1.

Fig. 1.



WITNESSES:

Lindley Schifano
C. H. Wilson

INVENTOR

Geo. E. Hulse

BY

Warfield & Duell
ATTORNEYS

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3 SHEETS—SHEET 2.

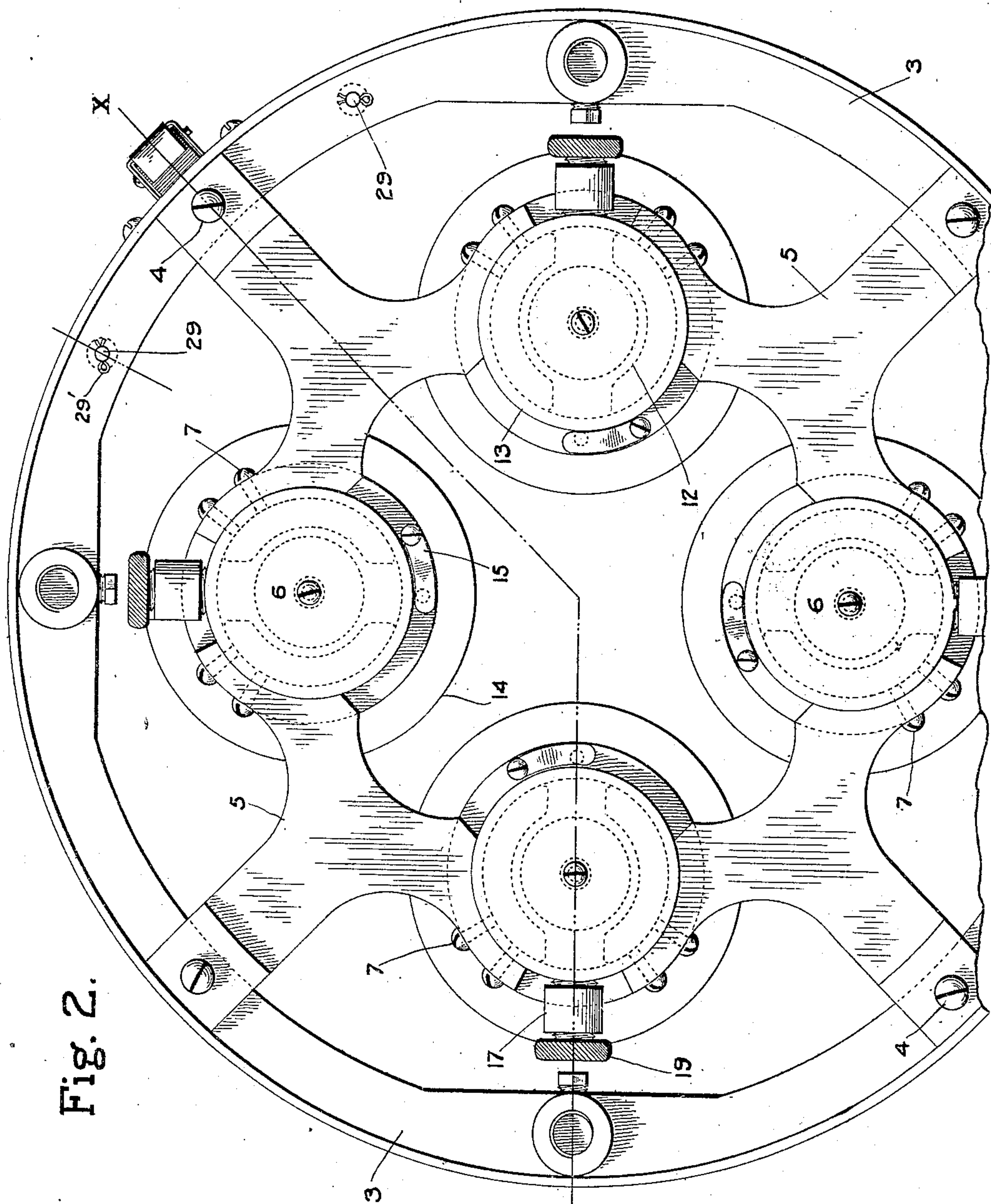


Fig. 2.

WITNESSES:
Lindsley Schepmeyer
C. H. Wilson

INVENTOR
Geo. E. Hulse
BY
Warfield & Duell
ATTORNEYS

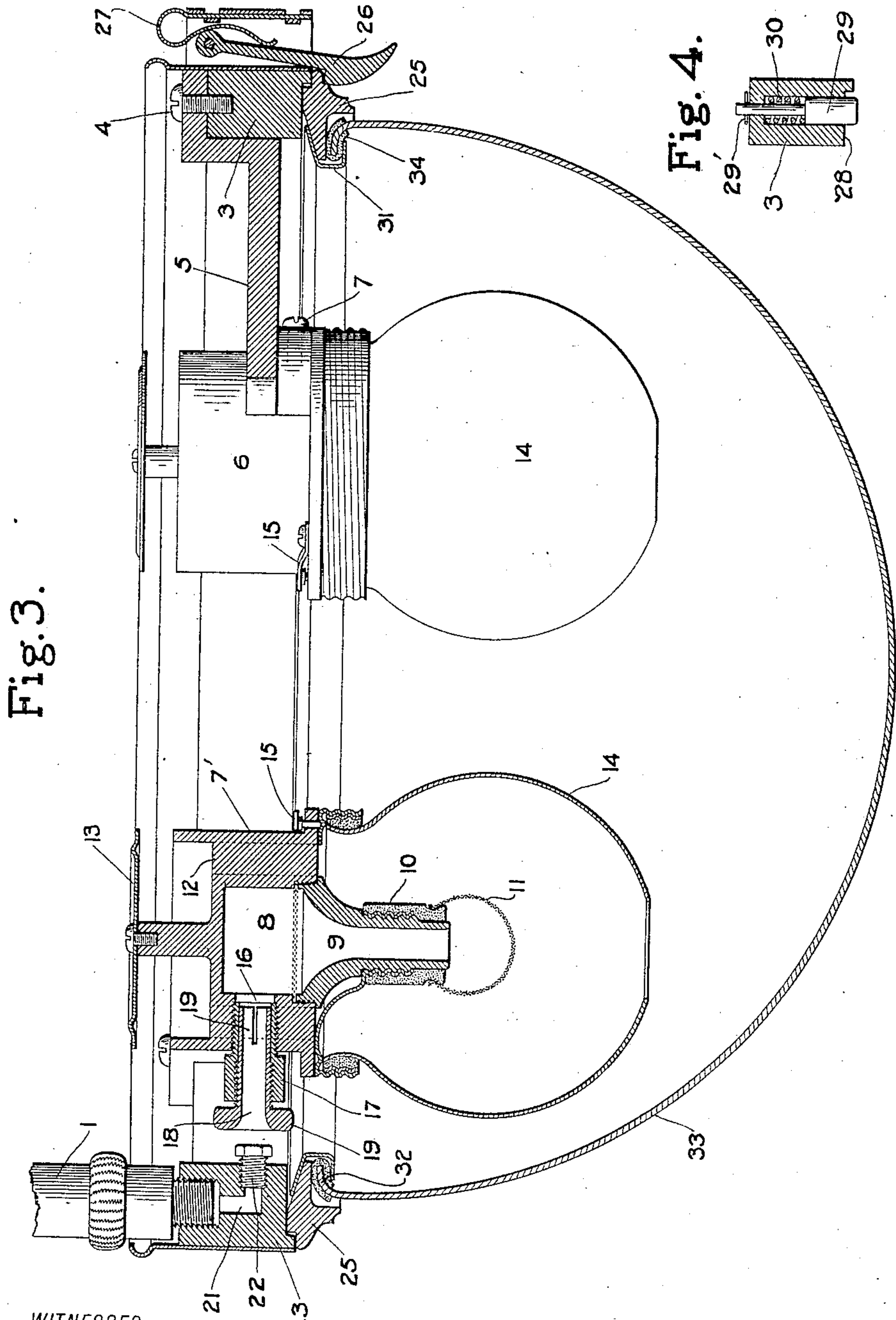
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3 SHEETS—SHEET 3.



WITNESSES:
Emdrley Schepman
C. H. Wilson

INVENTOR
Geo. E. Hulse
BY
Warfield D. Dwell
ATTORNEYS

UNITED STATES PATENT OFFICE.

GEORGE E. HULSE, OF EAST ORANGE, NEW JERSEY, ASSIGNOR TO THE SAFETY CAR HEATING & LIGHTING COMPANY, A CORPORATION OF NEW JERSEY.

GAS-LAMP.

No. 835,705.

Specification of Letters Patent.

Patented Nov. 13, 1906.

Application filed June 15, 1905. Serial No. 265,347.

To all whom it may concern:

Be it known that I, GEORGE E. HULSE, residing at East Orange, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Gas-Lamps, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to gas-lamps and the like, and is especially adapted for use in connection with car-lighting systems, although capable of use as to several of its features in a variety of relations.

One of the objects thereof is to provide a device characterized by increased simplicity, efficiency, and convenience.

Another object is to provide in a lamp structure of the above type an efficient and firm support for a plurality of independent lamps.

Another object is to provide means whereby the several lamps embodied in the lamp structure may be easy and convenient of access for purposes of cleaning or repair and at the same time one in which the jar or shock usually incident to such operations may be reduced to a minimum.

Another object is to so construct the lamp structure that the several assembled parts will not vibrate or rattle.

Another object is to provide means adapted to be conveniently operated to regulate the quantity of air admitted to the mixing-chambers of the several lamps comprising the lamp structure.

Other objects will be in part obvious and in part pointed out hereinafter.

The invention accordingly consists in the features of construction, combinations of elements, and arrangement of parts, which will be exemplified in the embodiment hereinafter described and the scope of the application of which will be indicated in the following claims.

Referring now to the drawings, wherein is illustrated one of the various possible embodiments of my invention, Figure 1 is an elevation, partly diagrammatic, of the same. Fig. 2 is a horizontal sectional view through the lamp structure, some of the parts being broken away. Fig. 3 is a vertical sectional view on the line *xx* of Fig. 2. Fig 4 is a sectional view of a detail.

Similar reference characters refer to similar parts throughout the several views of the drawings.

As tending to render clearer certain of the various features of my invention, it may here be noted that in lamp structures of this type wherein a plurality of independent lamps are employed it is essential that a firm and stable means be provided to hold the several lamps in position. It frequently becomes necessary to clean and repair the lamps or replace the mantles or other parts, and as such work is usually performed by a porter or other person equally unskilled means should be provided to allow a ready access to the several parts. This is usually accomplished by detaching a hinged globe or bowl inclosing the lamp or lamps, but often the replacing of the globe or bowl to its normal position has been accompanied by disastrous results either to the globe itself or to the fragile mantle on account of the incident jar or shock resulting therefrom.

The means employed to regulate the quantity of air admitted to the mixing-chamber of the lamp also requires regulating from time to time, and it therefore is essential that such means be rendered easy of adjustment, but at the same time so constructed as to be free from liability of working loose. I have therefore found it desirable to provide a frame or spider adapted to support the several lamps in a firm position and immovable relation, and while rendering the several parts ready of access I have provided a cushioning means interposed between the supporting member and the swinging globe or bowl adapted when the same is being swung into position to prevent all jar or shock which might be occasioned thereby from being communicated to the parts which the delicate mantles are suspended. The cushioning means also operates to reduce to a minimum the disagreeable rattling of the detachable parts. I have also provided regulating devices for the air-inlet apertures of the several lamps capable of convenient operations and at the same time not liable to work loose.

Referring now to the drawings, the lamp A is suspended from the deck B of railway-car or similar structure by a plurality of hollow suspension-arms 1, suitably secured to said deck B, as by plates 2, and are attached

at their lower ends in the present instance to a preferably annular supporting member or ring 3. While this supporting member 3 is herein shown annular in form and is designated a "ring," I wish it to be understood that the term is used only in a descriptive sense and that I intend to embrace by this term any structure of this nature whether annular or of a different shape.

Suitably secured to ring 3, as by screws 4, are a series of inwardly-extending substantially T-shaped members 5, to each pair of adjacent arms of which is secured one of a series of lamps 6 by suitable means, as screws 7, as clearly shown in Fig. 2 of the drawings. The lamps therefore form connecting means between the adjacent arms of members 5, forming a continuous structure, the whole comprising what might be termed a "composite spider."

As all of lamps 6 are of similar construction, a description of one lamp will suffice.

As clearly shown in Fig. 3 of the drawings, the body 7' of the lamp has arranged therein a mixing-chamber 8, leading into gas-nozzle 9, upon the exterior of which is secured a supporting-spool 10, of a hard refractory material, and tied to spool 10 is a pendent mantle 11. Lamp-body 7' is provided with a series of openings 12, (shown in dotted lines of Fig. 3 of the drawings,) which are adapted to conduct products of combustion from the lamp, and is surmounted by a deflector 13. A translucent globe 14 is detachably secured to lamp-body 7' by a suitable catch 15. The last above described features relating to lamp 6 form, however, no part of my present invention and are mentioned solely for the purpose of rendering my invention clearer of understanding. Lamp-body 7' is provided with an inlet-aperture 16, into which is tapped an externally-threaded bushing 17, designed to be seated firmly therein and held to frictionally resist rotation. Into an enlarged and internally-threaded end of bushing 17 inlet-nipple 18 is loosely tapped, which nipple is provided with a reduced split end, the sections 19 of which are adapted to spring outwardly and frictionally engage the interior walls of bushing 17. The nipple 18 is provided with a milled edge 19 and is capable of longitudinal adjustment in bushing 17, the purpose of which will be apparent hereinafter, the split ends operating to maintain the same in adjusted position. Hollow suspension-arms 1, provided with regulating-cocks 20, are adapted to convey a supply of gas to each of lamps 6; the gas passing through apertures 21 in supporting-ring 3, and into each of said apertures is tapped an inspirator-nipple 22, each arranged in proximity and in registry with one of air-inlet nipples 18, as clearly shown in Figs. 2 and 3 of the drawings. Exit and inlet nipples 22 and 18, respectively, comprise an inspirator,

the purpose of which is to carry into the mixing-chamber with the ingoing gas a suitable quantity of air to be mixed therewith to form a burning mixture, and inlet-nipple 18 is adjustable toward or from exit-nipple 22, as above explained, in order that the quantity of air taken in may be regulated or determined.

Supporting-ring 3 carries one member 23 of a hinge 24, to which is attached bezel-ring 25, normally held in a detachable position against supporting-ring 3 by latch 26, controlled by spring 27, suitably secured to supporting-ring 3. Interposed between bezel-ring 25 and supporting-ring 3 and located in depressions 28 in supporting-ring 3 are a series of pins 29, held in an extended position by springs 30 located therein and prevented from being detached by staples 29', said spring-controlled pins being adapted to engage with the upper surface of bezel-ring 25. A substantially U-shaped preferably annular supporting-ring 13 engages bezel-ring 25 and extends under an inturned edge or lip 32 of a translucent globe or bowl 33, inclosing lamps 6, which globe or bowl is supported from within by ring 31 and has interposed therebetween a strip 34 of asbestos or other soft highly refractory substance, said strip extending about the inturned edge or lip to also separate the same from bezel-ring 25. Arranged above lamp A and extending through deck B is a chimney C, designed to conduct the products of combustion therefrom to the exterior of the structure.

Although from the above description the operation of my invention should be largely obvious, it will be understood that the releasing of latch 26 from bezel-ring 25 will allow the translucent globe or bowl 33 to be swung downwardly, thus exposing the several lamps and permitting repair to be made or portions replaced or adjusted. When globe 33 is returned to its original position, the cushioning means interposed between the supporting-ring 3 and bezel-ring 25 will operate to take up any jar or shock incident thereto. While in this embodiment I have preferably shown spring-controlled pins 29 in the above relation, it is obvious that any other cushioning means may be employed in said relation without involving a departure from the spirit of my invention.

It will thus be seen that I have devised a lamp structure characterized by simplicity, efficiency, and convenience and one in which a firm and stable support is provided for the lamps, the several parts being rendered easy of access, and vibration and rattling is prevented, the cushioning means operating to prevent injury to the delicate mantles during the several operations above described.

Although my invention is herein shown and described as applied to lamps of the incandescent mantle type, I wish it to be under-

stood that I do not intend to limit its employment to lamps of such type, as many of the features are adapted for use in a variety of relations in other structures.

5 As many changes could be made in the above construction and many apparently widely different embodiments of my invention could be made without departing from the scope thereof, I intend that all matter
10 contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.

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

1. In a lamp structure, in combination, a supporting member, a plurality of supports from which said member is suspended, a plurality of separate means positioned upon said
20 supporting member, and a plurality of lamps, each of said separate means being connected to and adapted to position two adjacent lamps.

25 2. In a lamp structure, in combination, a supporting member, a plurality of supports from which said supporting member is suspended, a plurality of elements positioned upon said member, and a plurality of lamps,
30 each of said lamps being secured to two of said elements.

3. In a lamp structure, in combination, a supporting member, a plurality of supports from which said member is suspended, a plurality of spider elements positioned upon said
35 supporting member, and a plurality of lamps, each of said spider elements being connected to two adjacent lamps.

4. In a lamp structure, in combination, a supporting member, a plurality of lamps and
40 a spider positioned upon said supporting member, said spider comprising a plurality of separate positioning elements, each of said elements being connected to two lamps
45 to form a continuous structure.

5. In a lamp structure, in combination, a supporting-ring, a plurality of supports from which said ring is suspended, a plurality of substantially T-shaped spider elements positioned upon said ring, and a plurality of
50 lamps, each lamp being secured to the arms of adjacent spider elements, to form a continuous structure.

6. In combination, a lamp structure comprising a plurality of lamps, a supporting
55 member, and a spider made up of a plurality of separate positioning elements, one of said lamps being secured to an arm of each of the adjacent elements.

60 7. In combination, a lamp structure comprising an annular supporting member, a series of radially-arranged spider elements secured thereto, and a plurality of lamps, one of said lamps being secured between each
65 pair of said spider elements.

8. In combination, a lamp structure comprising an annular supporting-ring, and a series of radially-arranged, substantially T-shaped spider elements secured thereto, each of said spider elements being secured to two
70 adjacent lamps to form a continuous structure.

9. In a railway-car or similar structure, a supporting member, a plurality of lamps, a plurality of supports from which said supporting member is suspended, each of said
75 supports being so constructed as to convey gas from a suitable source of supply to one of said lamps, and a spider comprising a series of radially-arranged spider elements secured
80 to said supporting member, each of said lamps being secured between adjacent spider elements, thereby forming a continuous structure.

10. A gas-lighting system comprising, in
85 combination, a suitable depending hanger having a gas-channel running through a part thereof, a cluster of inverted mantle-lamps suspended adjacent the lower extremity
90 thereof, conduits connecting each of said lamps with said channeled hanger and arranged radially and horizontally, and a globe detachably carried by said hanger and arranged to circumscribe and inclose said
95 cluster to modulate the light emitted therefrom.

11. In a railway-car or similar structure, in combination, a supporting member, a plurality of lamps, a plurality of conduits from which said supporting member is suspended,
100 each of said conduits being adapted to furnish a supply of gas to one of said lamps, a spider comprising a plurality of separate positioning elements secured to said supporting member and extending radially therein, each
105 of said lamps forming a connecting means between adjacent spider elements to form a continuous structure, and an inspirator positioned between each of said supporting-conduits and its respective lamp.

12. In a railway-car or similar structure, in combination, a supporting member, a plurality of lamps secured thereto, a plurality of hollow supports from which said supporting
110 member is suspended, each of said hollow supports being adapted to conduct gas to one of said lamps, a translucent globe having a swinging engagement with said supporting member and inclosing said lamps, means for
115 holding said globe in position thereon, and a spring-controlled cushioning means interposed between said globe and said supporting member.

13. In a railway-car or similar structure, a supporting member, a plurality of lamps secured thereto, a plurality of hollow supports
120 from which said supporting member is suspended, each of said hollow supports being adapted to conduct gas to one of said lamps, a translucent globe having a swinging engage-
125 ment with said supporting member, and a spring-controlled cushioning means interposed between said globe and said supporting member.

ment with said supporting member and adapted to inclose said lamps, means for holding said translucent globe in position upon said supporting member, and a plurality of spring-pressed pins adapted to be interposed between said globe and said supporting member.

14. In a railway-car or similar structure, in combination, a supporting-ring, a plurality of lamps carried thereby, a plurality of tubes from which said supporting-ring is suspended, each tube being adapted to conduct gas to one of said lamps, a member hinged to said supporting-ring, means for holding said member in position thereon, a pendent translucent globe secured to said member, and cushioning means interposed between said ring and said member.

15. In a railway-car or similar structure, in combination, a supporting-ring, a plurality of lamps carried thereby, a plurality of tubes from which said supporting-ring is suspended, each of said tubes being adapted to conduct gas to one of said lamps, a member hinged to said supporting-ring, means for holding said member in position thereon, a pendent translucent globe secured to said member, and a plurality of spring-pressed pins adapted to form cushioning means interposed between said member and said supporting-ring.

16. In a lamp structure, in combination, a supporting-ring, a series of independent, hollow supports, a series of lamps, each lamp being adapted to receive a supply of gas from one of said hollow supports, a spider comprising a series of independent members each secured to said supporting-ring, each of said members being secured to two of said lamps to form a continuous structure, a bezel-ring hinged to said supporting-ring, spring-controlled means adapted to hold the same in engagement therewith, a series of cushioning means interposed therebetween, and a pendent translucent globe carried by said bezel-ring.

17. In a lamp structure, in combination, a supporting-ring, a series of independent hollow supports, a series of lamps, each lamp being adapted to receive a supply of gas from one of said hollow supports, a spider comprising a series of independent positioning members each secured to said supporting-ring, each of said members being secured to two of said lamps to form a continuous structure, a bezel-ring hinged to said supporting-ring, a spring-controlled latch adapted to hold said bezel-ring detachably thereon, a plurality of spring-pressed pins interposed between said ring or bezel and said supporting-ring, and a pendent translucent bowl carried by said bezel-ring.

18. In a lamp structure, in combination, a supporting-ring, a series of independent hollow supports, a series of lamps, each lamp

being adapted to receive a supply of gas from one of said hollow supports, a spider comprising a series of independent positioning members, each secured to said supporting-ring, each of said members being secured to two of said lamps to form a continuous structure, a bezel hinged to said supporting-ring, a spring-controlled latch adapted to hold said bezel in a detachable relation with respect to said supporting-ring, a plurality of spring-pressed pins interposed therebetween, a translucent pendent globe having an inturned lip, means carried by said bezel extending under the inturned lip of said globe, and a body of soft, heat-resisting substance interposed between said globe and said bezel.

19. In a lamp structure, in combination, a supporting-ring, a series of independent hollow supports, a series of lamps, each lamp being adapted to receive a supply of gas from one of said hollow supports, a spider comprising a series of independent members each secured to said supporting-ring, each of said members being secured to two of said lamps to form a continuous structure, a bezel hinged to said supporting-ring, means adapted to hold said bezel in detachable position thereon, spring-controlled means interposed between said bezel and said supporting-ring, a pendent translucent globe having an inturned lip, means carried by said bezel extending beneath the inturned lip of said globe, and a body of soft heat-resisting material extending about said lip separating the same from said supporting means and also from said bezel.

20. In a lamp, in combination, a supporting member, a series of independent elements positioned thereon, a plurality of inverted mantle-lamps, each one of said elements being secured to two of said lamps, means adapted to support a globe hinged to said supporting member, and cushioning means interposed between said means and said supporting member.

21. In a lamp, in combination, a supporting member, a plurality of substantially T-shaped spider elements extending radially with said supporting member, a plurality of lamps, each one of said lamps being secured to adjacent arms of said radially-extending spider elements, means adapted to support a globe hinged to said supporting member, a translucent globe carried by said means, and cushioning means interposed between said last-mentioned means and said supporting member.

22. In a lamp, in combination, a supporting member provided with a series of depressions, a bezel hinged thereto, a spring-controlled latch for holding said bezel in position thereon, a series of cushioning means located in said depressions and interposed between said bezel and said supporting member, a translucent globe having an inturned edge

and means carried by said bezel for supporting said globe from within.

23. In a lamp, in combination, a supporting member provided with a series of depressions, a bezel having a swinging engagement therewith, a spring-controlled latch for holding said bezel in a detachable position upon said supporting member, a series of spring-pressed pins located in said depressions and interposed between said bezel and said supporting member, a translucent globe having an inturned edge, means carried by said bezel for supporting said globe from within, and a soft, heat-resisting substance interposed between said globe and said supporting member and also between said globe and said bezel.

24. In a lamp structure, in combination, a supporting member, a swinging bezel attached thereto, a spring-controlled latch adapted to detachably hold said bezel in position thereon, a plurality of lamps, a composite spider secured to said supporting member, one of said lamps being secured between the adjacent positioning elements of said spider, a translucent globe having an inturned edge inclosing said lamps, means carried by said bezel and extending under the inturned edge of said globe, and a strip of soft heat-resisting material about said inturned edge.

25. In a lamp structure, in combination, a supporting member, a swinging bezel attached thereto, a spring-controlled latch adapted to detachably hold said bezel in position thereon, a plurality of cushioning means interposed between said supporting member and said bezel, a plurality of lamps, a composite spider secured to said supporting member, one of said lamps being secured between adjacent positioning elements of said spider, a translucent globe having an inturned edge and inclosing said lamps, means carried by said bezel and extending under the inturned edge of said translucent globe, and a strip of soft, heat-resisting material about said edge.

26. In a lamp structure, in combination, a supporting member, a swinging bezel attached thereto, a spring-controlled latch

adapted to detachably hold said bezel in position thereon, a plurality of cushioning means interposed between said supporting member and said bezel, a plurality of lamps, a plurality of incandescent mantles one for each lamp, a composite spider secured to said supporting member, one of said lamps being secured between adjacent positioning elements of said spider, a translucent globe having an inturned edge inclosing said lamps, means carried by said bezel and extending under the inturned edge of said globe, and a strip of soft, heat-resisting material about said inturned edge.

27. In combination, a lamp-body provided with an inlet-opening leading into a mixing-chamber, a conduit provided with an exit-opening for leading gas to a position adjacent said inlet-opening, and adjustable means positioned in said inlet-opening in registry with the exit-opening in said conduit.

28. In combination, a lamp-body provided with an inlet-opening leading into a mixing-chamber, a conduit provided with an exit-opening adapted to lead gas from a suitable source of supply to a position adjacent said inlet-opening, and a member provided with a split end tapped into said inlet-opening and arranged in proximity and in registry with the exit-opening in said conduit.

29. In combination, a lamp-body provided with an inlet-opening leading into a mixing-chamber, a conduit provided with an exit-opening and adapted to conduct gas from a suitable source of supply to a position adjacent said inlet-opening, a nipple secured in said exit-opening, and an adjustable member provided with a split end tapped into said inlet-opening and arranged in proximity and in registry with said nipple, said member being adapted to be adjusted to or from said nipple and held in adjustment by said split end.

In testimony whereof I affix my signature in the presence of two witnesses.

GEORGE E. HULSE.

Witnesses:

A. C. MOORE,
E. E. ALLBEE.