

R. M. DIXON.  
GAS LIGHTING APPARATUS.  
APPLICATION FILED FEB. 16, 1906.

958,375.

Patented May 17, 1910.

Fig. 1

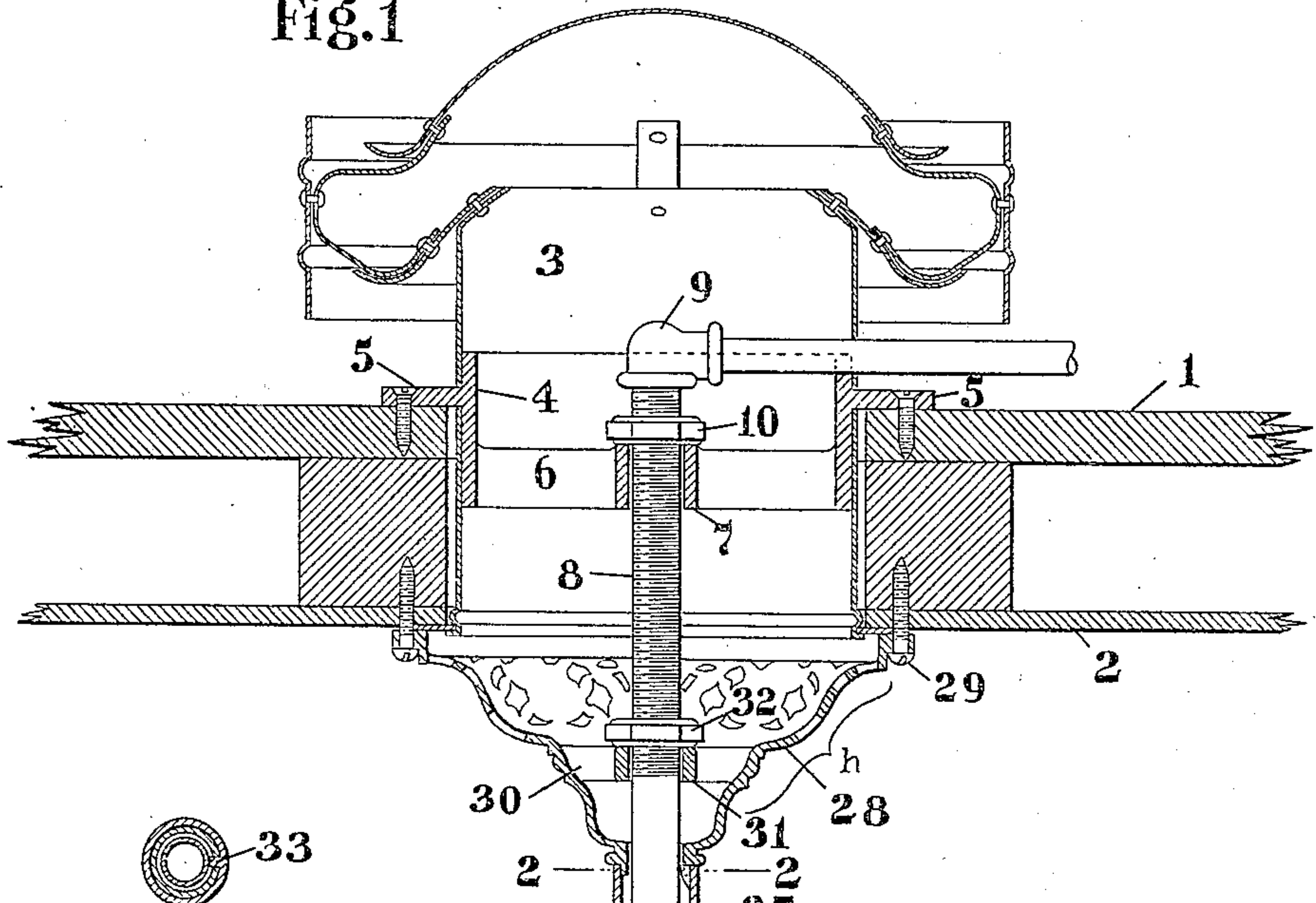
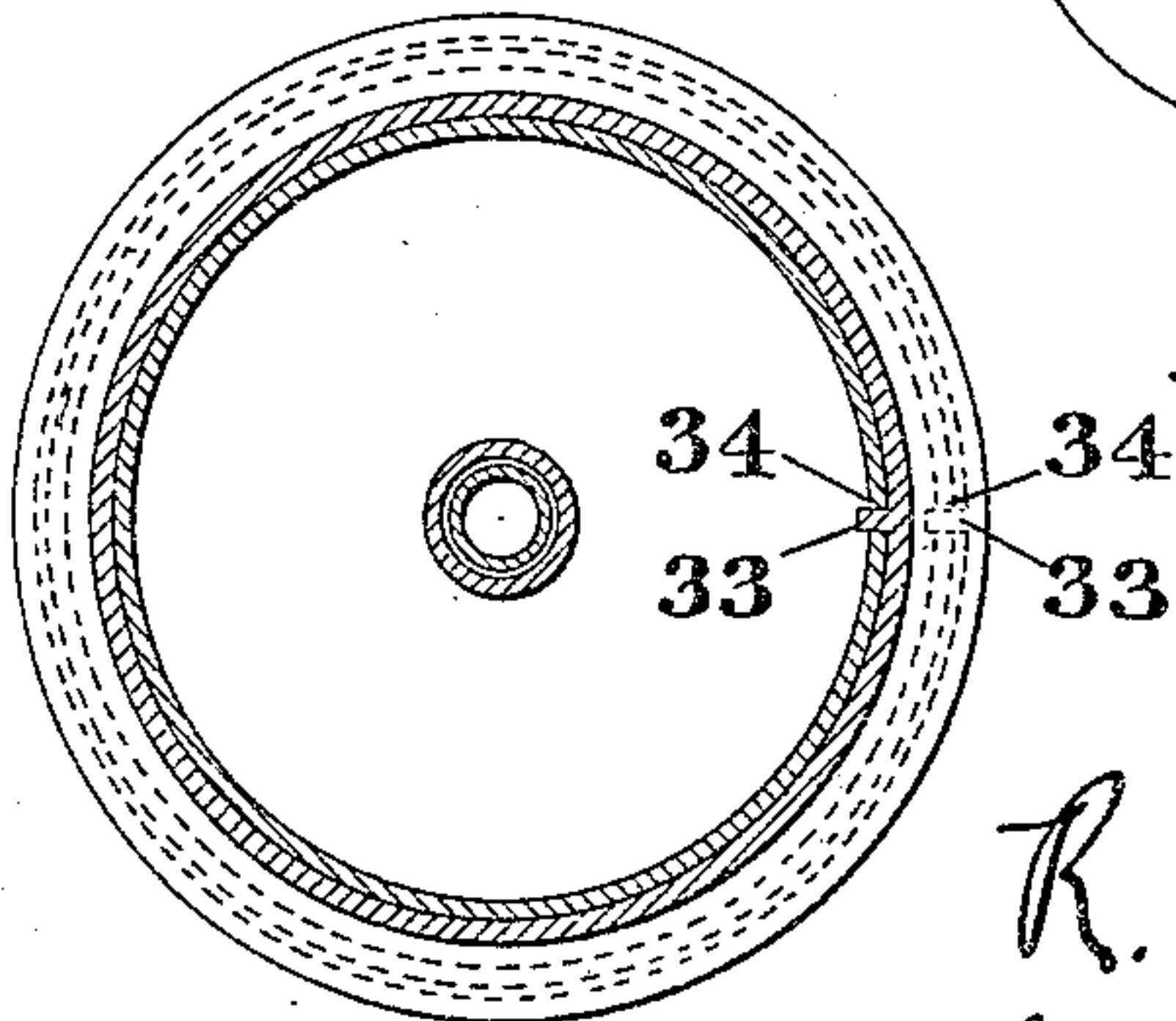
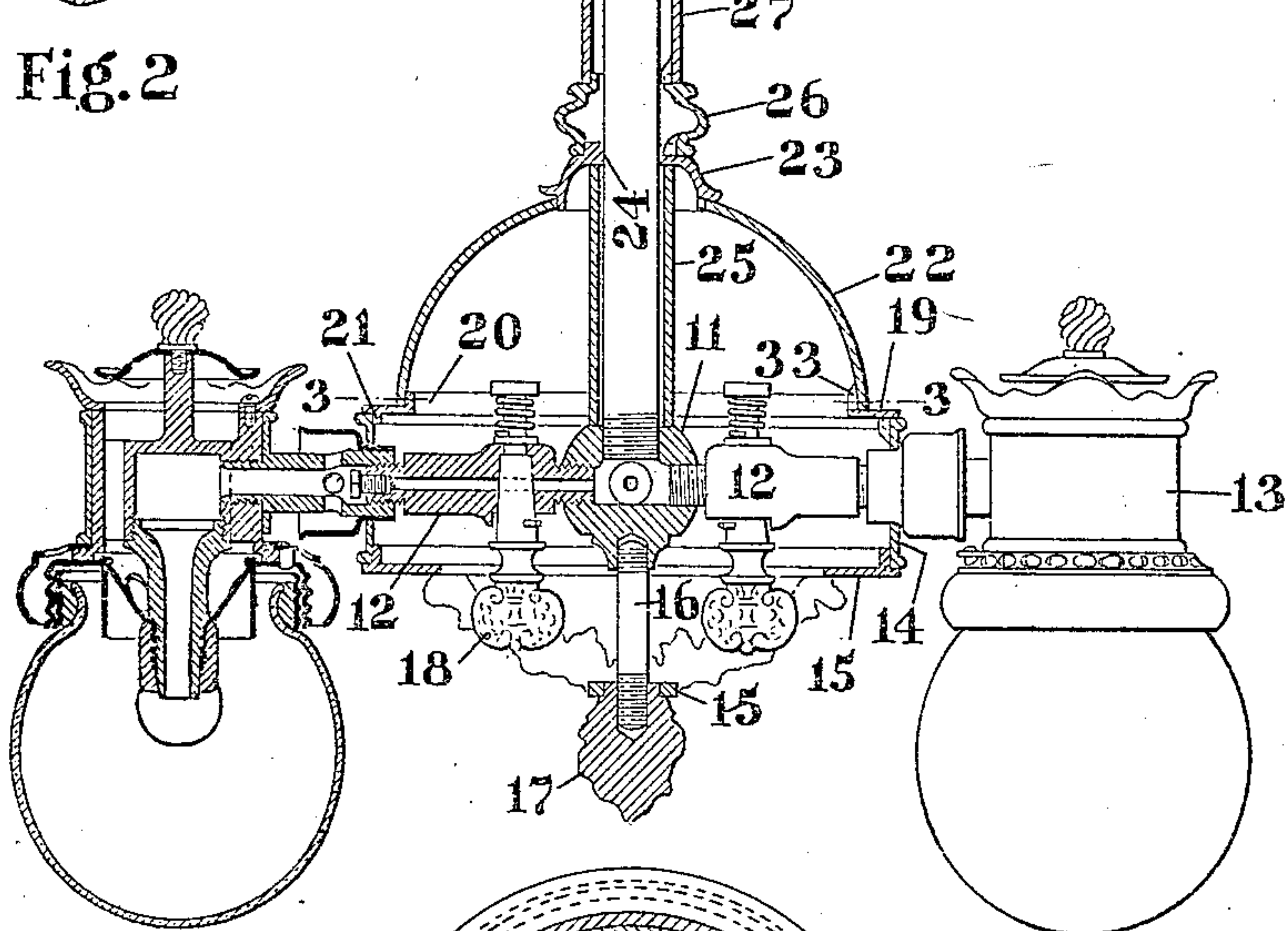


Fig. 2



WITNESSES:

J. C. Sumner

Albert Nathan

Fig. 3

INVENTOR

R. M. Dixon

BY

W. J. Dyer

ATTORNEYS



# UNITED STATES PATENT OFFICE.

ROBERT M. DIXON, OF EAST ORANGE, NEW JERSEY, ASSIGNOR TO THE SAFETY CAR HEATING & LIGHTING COMPANY, A CORPORATION OF NEW JERSEY.

## GAS-LIGHTING APPARATUS.

958,375.

Specification of Letters Patent.

Patented May 17, 1910.

Application filed February 16, 1906. Serial No. 301,350.

*To all whom it may concern:*

Be it known that I, ROBERT M. DIXON, residing at East Orange, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Gas-Lighting Apparatus, 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 lighting apparatus, but more particularly it concerns improvements in the suspension features thereof. Since, however, the invention is applicable with characteristic advantages to the gas illumination of railroad cars or other inclosures, it will be conducive to clearness to describe the same through its preferred embodiment in such connection.

Heretofore a difficulty has been experienced with the means commonly adopted for suspending gas lamps from the roof or other portions of a railroad car, inasmuch as the same tends to become loosened and disassembled under the influence of the excessive vibrations necessarily attendant upon railroad service. This defect is especially prominent in devices of the foregoing character, in which a cluster of lamps is carried by a single central support.

This invention, accordingly, has in view, among other objects, the provision of a simple means in which all the parts are so arranged as to effectively resist the disintegrating forces caused by constant vibrations.

A further object within the purpose of this invention consists in a suspension device which is especially adapted for railroad work, and by means of which a single gas conduit serves to effectively carry a dependent cluster of lamps.

Another object is to provide a gas-illuminating apparatus which, from an operative standpoint, will possess a high degree of efficiency and durability in usage, and which, structurally considered, will be of the utmost simplicity consonant with the ends to be attained, being composed of but few parts, all adapted for being made at a minimum of cost and individually so formed as to be capable of being easily assembled into a neat and compact arrangement for accomplishing the purposes intended.

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

With these and other ends in view, this invention accordingly consists in the features of construction, combinations of parts and arrangement of elements which will be exemplified in the embodiment thereof hereinafter described and the scope of the application of which will be indicated in the following claims.

In order that the invention may be more fully understood and made comprehensible to others skilled in its relating arts, drawings illustrating a convenient manner of carrying out the same are appended as a part of this specification, and, while the controlling principles of the invention may be otherwise applied by modifications falling within the scope of the claims, the herein-disclosed embodiment is that which will ordinarily be preferable to employ in practice, and is regarded as representing substantial improvements over the many implied and obvious variations of the same.

In the appended drawings, like numerals of reference refer to corresponding parts throughout the several views of the drawings, of which,

Figure 1 is a view in sectional elevation showing the details of this invention, as assembled for regular service and as applied to the roof of a railroad car. Fig. 2 is a horizontal section taken along line 2—2 of Fig. 1 and showing the detailed construction of the ornamental casing, whereby the parts thereof are joined in an interlocking, non-rotary relationship. Fig. 3 is a like view taken along line 3—3 of Fig. 1 and showing the same expedient in its application to another portion of the casing.

In the practical carrying out of this invention, it will be understood that it is equally applicable to lamps of various kinds and in diverse positions, although it may preferably be employed in connection with a gas-lighting system, such as has been exemplified in the accompanying drawings. In such drawings, 1 designates the outer and 2 the inner surfaces of an ordinary car ceiling, which provides any desirable form of ventilator, such as that schematically designated by 3. A bridge 4 is carried by the car



roof, and while such part may be of any preferred construction, that illustrated on the drawing will ordinarily be found to be serviceable in practice and consists of an annular hoop-like portion having an exteriorly projecting flange 5 and a series of arms 6 interiorly converging toward a perforate hub 7. Passing through the perforation in said hub is a gas conduit 8, which is threaded along its upper periphery and, at its upper end, is in gas-pipe connection with a suitable conduit 9 leading from the gas supply. Encircling and in engagement with such threaded conduit is a suitable locknut 10, which is arranged to bear upon the upper end of hub 7 and thereby support conduit 8 against downward movement. A center casting 11 is in screw-threaded engagement with the lower end of said conduit and serves to connect thereto a series of transverse, or otherwise, radiating gas tubes 12, each of which carries at its end a suitable lamp 13. It will be obvious that, as the lamps are of considerable size and weight and at a distance from the center casting 11, an undue bending strain will ordinarily occur at the point of union with the gas tube and center piece. It will also be clear that the depending conduit, together with the lamps carried at the lower end, tend to oscillate in relative opposition to the movements of the car and, accordingly, unless other provision be had, an excessive bending strain will occur at the upper portion of the depending conduit 8. To obviate such defects, this invention proposes a casing which, while it may be ornamental in appearance, if so desired, is capable of being of such construction and arrangement as to effectively truss the foregoing parts and carry the major strains thereof. Such casing may comprise a perforate ring 14, which is in relatively tight connection with the radiating gas tubes 12, and serves to limit the same against relative displacement, and when such ring is securely positioned against vertical movement, it will also serve to prevent a movement of such gas tubes relative to the depending conduit. A downward movement of the ring is restrained through a bottom piece 15 which by means of a link 16 is securely affixed to the center-casting 11. An adjustable nut 17 constitutes a means for tightening and otherwise increasing the pressure upon the part. In case the stop-cocks 18 should be positioned in proximity with the center-piece 11, as shown by the drawing, the bottom piece would be perforated at corresponding positions, in order that access might be readily had to the handles of said cocks. It follows that some expedient should be adopted for limiting the gas tubes and lamps carried at the extremities thereof against any upward movement, and, accordingly, a series

of co-acting casing pieces are provided upon the upper portion of the gas conduit. Piece 19 is in the form of an annular ring having upturned and downturned flanges 21 and 20, which are adapted to properly interfit such piece with the ring 14 and the overlying dome-piece 22, respectively. A cup-like piece 23 may interfit with the upper end of dome-piece 22, preferably by means of a lower annular flange which closely circumscribes within a suitable orifice in the rise of said dome-piece. At a suitable point, as indicated by 24, such cup piece closely encircles the depending conduit 8, and vertically in underlying abutment with such end and resting at its opposite end upon the aforesaid center casting 11, is a tube 25, which lies close to said conduit 8 constituting the supporting member. Such tube is adapted for receiving and resisting any undue strains that may be downwardly brought against the parts just described. If so desired, a bellows-like piece 26 may also be interposed in order that the requisite elasticity and yield may be given the parts, and if so desired, such piece may be connected by means of a short tube or other portion 27 to a ceiling plate 28 which extends upwardly and outwardly in a funnel-like shape toward the ceiling, to which it is peripherally attached as by means of suitable screws 29. This ceiling plate will comprise a bridge element, as 30, consisting of a plurality of converging arms terminating in a hub 31, which closely circumscribes the aforesaid depending conduit 8, and encircling such conduit in threaded relation therewith so as to be capable of forming an adjustable abutment with the said hub 31 is a suitable locknut 32, the function of which will now be set forth.

The parts having been assembled, as indicated in the foregoing description, any suitable degree of rigidity and thrust throughout the various parts may be secured through actuation of nuts 17 and 32, the former being adapted for transmitting through the various parts an upward thrust against the radiating tubes 12, and the latter through proper interposed parts being adapted to offer an opposing thrust. As a consequence of this arrangement, the desired degree of rigidity of the whole may be quickly attained and, at the same, a sufficient elasticity of the structure obtains to particularly adapt the same for railroad uses. The upper nut 10 is adapted for elevating the structure as a whole so as to bring the peripheral edge of the ceiling plate firmly against the lower surface of the car roof and thereby enable such ceiling plate to act as a thrust member and prevent any undue oscillation of the complete, unitary device.

A further feature of this invention consists in a means adapted to prevent any rotation of the lamp about the depending sup-



porting conduit as an axis, and to this end, the casing parts are all keyed together at their joints to insure against any such movement. The preferred manner of effecting this will be more clearly illustrated by reference to Figs. 2 and 3 taken in connection with Fig. 1, from which it will be seen that, while one of the contacting edges may be provided with wings, such as 33, the corresponding edge of the other part will provide matching recesses 34, which may ordinarily be arranged as depressions in an annular rim or flange. This expedient will effectively resist any ordinary turning movement and is simple and capable of ready construction.

As will be quite apparent, many changes in detail may be made in this invention without departing from the spirit or purpose thereof, thus, the number of parts going to make up the casing may be increased or diminished as desired, and the specific forms and proportions thereof may likewise be adapted to new conditions. Furthermore, it is to be understood that the essence of this invention may be combined with elements old to the art and certain changes in detail may be made by substituting for parts here shown certain well-known features without effecting a variance from this invention.

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 contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense. I desire it also to be understood that the language used in the following claims is intended to cover all of the generic and specific features of the invention herein-described and all statements of the scope of the invention which, as a matter of language, might be said to fall therebetween.

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

1. In apparatus of the class described, in combination, an upright supply pipe, a plurality of diversely disposed lamp supporting conduits directly leading from said pipe to receive gas therefrom, a casing mounted on said pipe and supporting said conduits at a distance from said pipe and adapted for longitudinal adjustment along said pipe whereby it may be translated to restrict relative movement between said pipe and conduits, and adjusting means for limiting the upward translation of said casing.

2. In apparatus of the class described, in combination, an upright supply pipe, a plurality of diversely disposed connected lamp supporting conduits directly communicating with the lower end of said supply pipe, a

ring in engagement with a series of said conduits and adapted to restrict relative movement therebetween, a casing longitudinally adjustable on said pipe and adapted to be brought into end abutment with said ring to restrict upward movement thereof, and a locking means for restraining said casing against relative rotary motion with respect to its supporting pipe and said ring.

3. In apparatus of the class described, in combination, an upright supply pipe, a plurality of diversely disposed connected conduits directly communicating with the lower end of said supply pipe, a casing interfitting with two or more of said conduits whereby they are restrained against relative movement, a second casing mounted on said pipe and adjustable therealong and abutting the first mentioned casing, and a third casing adapted to oppositely abut said first casing whereby relative movement thereof and the conduits interfitting therewith will be restrained, two or more of said casings being interlocked together against rotary movement.

4. In apparatus of the class described, in combination, an upright supply pipe, a plurality of diversely disposed connected lamp supporting conduits, a casing in engagement with a series of said conduits and adapted to restrict relative movement therebetween, a casing longitudinally adjustable upon said pipe and adapted to be brought into abutment with said first mentioned casing to restrict the movement thereof, means for restraining said latter casing against relative rotary motion with respect to its supporting pipe, and a casing adapted to be moved in opposition to said latter casing and adapted to abut the opposite side of said first mentioned casing to restrict the movement thereof.

5. In apparatus of the class described, in combination a downwardly extending gas pipe, a plurality of diversely disposed connected lamp supporting conduits adapted to receive gas from said pipe, a casing interfitting with said conduits, said casing comprising a plurality of abutting and interlocking sections, one of said sections being relatively resilient, and a means adjustably arranged for forcing said sections together, whereby said conduits will be restricted against relative movement.

6. In apparatus of the class described, in combination a ventilator, a plurality of diversely disposed connected lamp supporting conduits, a casing interfitting with said conduits, said casing comprising a plurality of sections interlocked against rotary movement, one of said sections being relatively resilient the uppermost of said sections being perforate and adapted to permit the flow of gas therethrough toward said ventilator, and a means for adjustably forcing said



sections together, whereby said conduits will be restricted against relative longitudinal movement.

5 7. An illuminating apparatus, comprising  
in combination, a gas pipe depending  
through an opening in a roof and terminat-  
ing in a burner below the same, a casing  
forming a ceiling plate at its upper extrem-  
ity adjustably attached to said pipe, and  
10 adjustable means whereby said ceiling plate  
may be drawn up into close contact with  
the ceiling.

8. In an apparatus of the class described,  
in combination, a supply pipe depending  
15 through a roof opening, a plurality of di-

versely disposed lamp supporting conduits  
directly connected at their inner ends to the  
lower end of said pipe, a casing comprising  
upper and lower sections adjustable toward  
each other on said pipe, the end of said up- 20  
per section forming a ceiling plate, and ad-  
justable means on said pipe for bringing  
said ceiling plate into position against the  
ceiling.

In testimony whereof I affix my signa- 25  
ture, in the presence of two witnesses.

ROBERT M. DIXON.

Witnesses:

A. C. MOORE,

ELMER E. ALLBEE.