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C. M. LUNGREN
MEANS OF SUSPENDING INCANDESCENT LAMP MANTLES.

APPLICATION FILED AUG. 12, 1904.

Fig. 1.

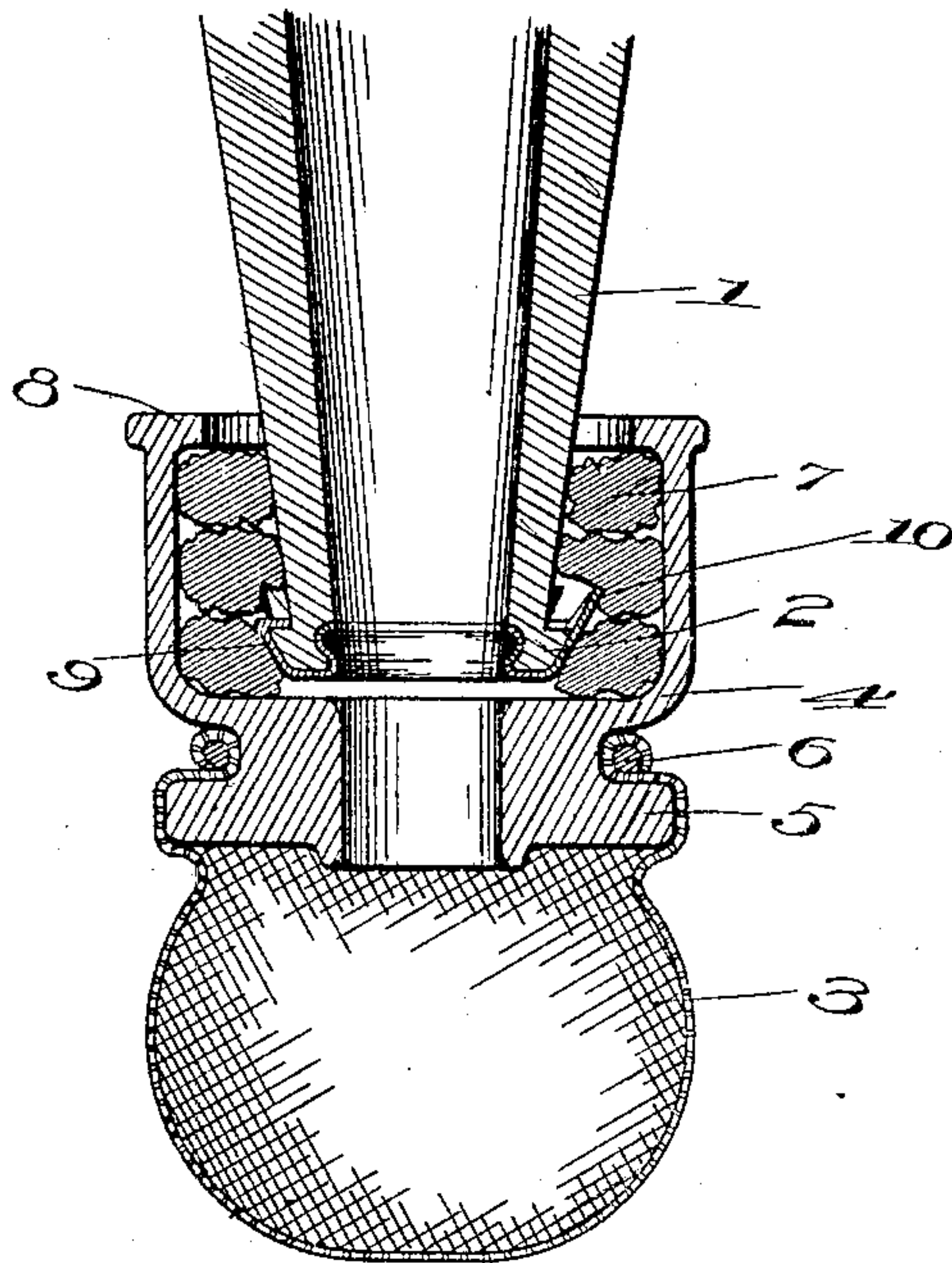


Fig. 2.

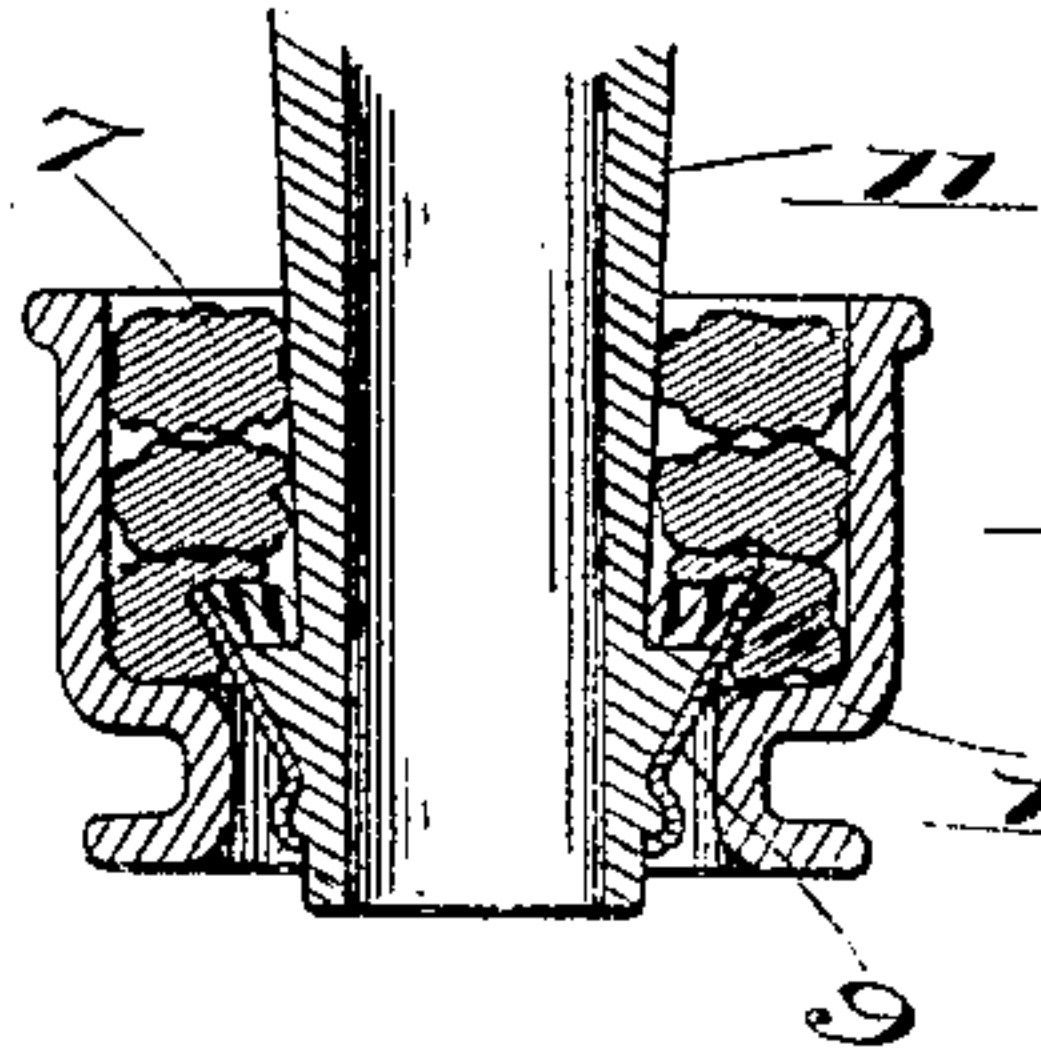


Fig. 3.

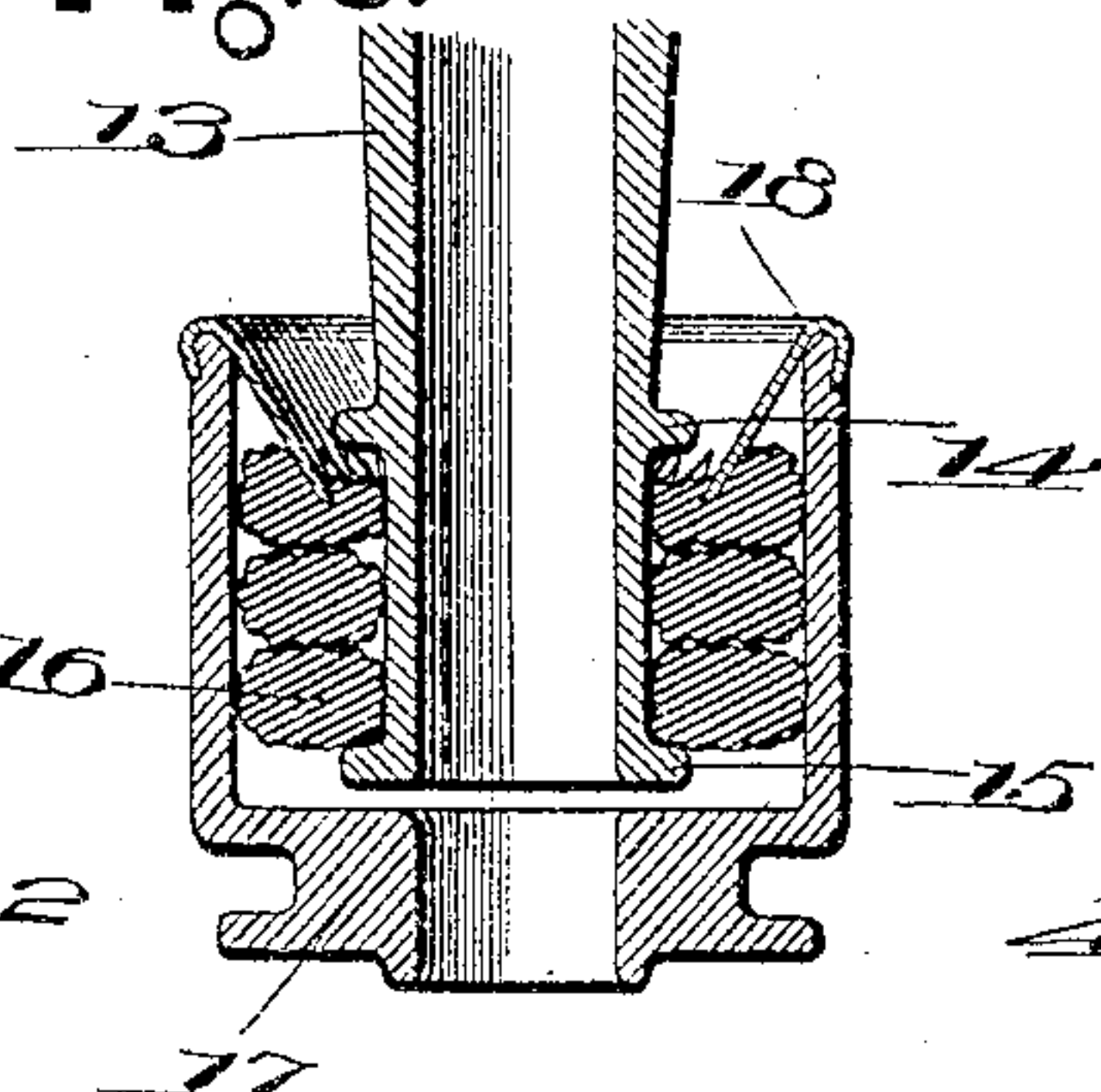
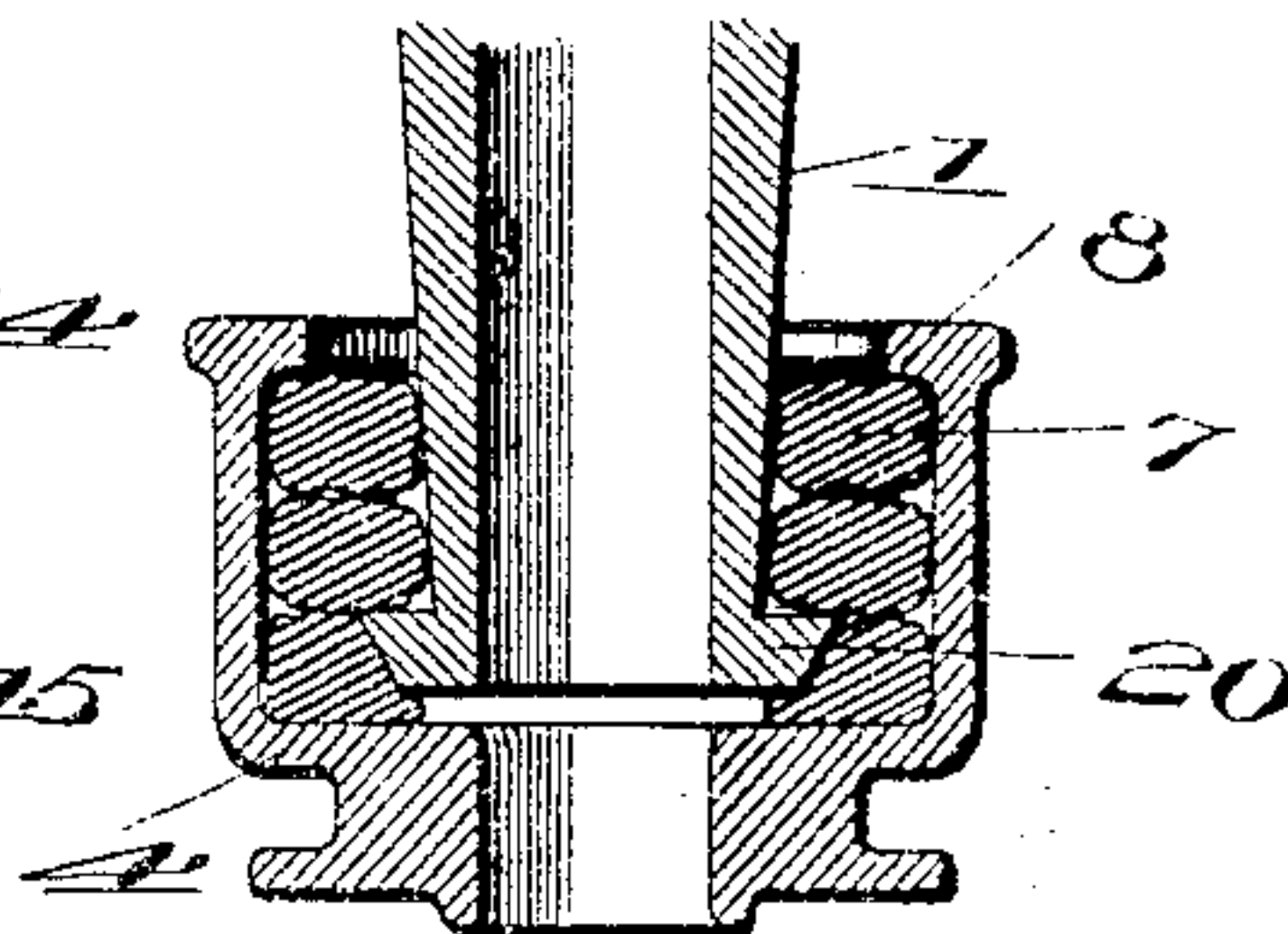


Fig. 4.



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MEANS OF SUSPENDING INCANDESCENT-LAMP MANTLES.

No. 803,913.

Specification of Letters Patent.

Patented Nov. 7, 1905.

Application filed August 12, 1904. Serial No. 220,472.

To all whom it may concern:

Be it known that I, CHARLES MARSHALL LUNGREN, residing at Bayonne, in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in Means of Suspending Incandescent-Lamp Mantles, 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.

The invention relates to means of suspending incandescent-lamp mantles.

One of the objects thereof is to provide a means of suspension for objects of the above type whereby they are protected from the injurious effects of the vibration of the structure in which they are mounted.

Another object is to provide means of the above nature which are easily replaced and substantially unaffected by heat.

A broad object is to provide a suspension for lamp-mantles peculiarly adapted for use in lighting cars, boats, factories, and similar places in which jarring and vibration are unavoidable and often severe.

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

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

In the accompanying drawings, wherein are illustrated several of various possible embodiments of my invention, Figure 1 is a sectional elevation of a lamp-mantle and means for suspending the same. Fig. 2 is a similar view of a slightly different embodiment of my invention. Fig. 3 is a similar view of another embodiment thereof. Fig. 4 is a similar view of another form.

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

The invention proposes, broadly, a mantle suspension in which the mantle is mounted upon its support by means of a resilient and preferably incombustible material and in such manner that the connection between the two may be readily made or broken manually, but is not likely to be broken accidentally while in use.

Referring first to the embodiment of the invention shown in Fig. 1, a supporting member or conduit for conveying gas to the burner is shown at 1. The lower end of this member is preferably provided with an outturned flange or shoulder 2 for a purpose hereinafter described. Mantle 3 is mounted upon a spool or ring 4, preferably formed of porcelain or similar material, and is secured to the same above an outwardly-projecting shoulder 5, preferably by means of an asbestos cord 6. The internal diameter of spool 4 is considerably larger than the lower end of support 1 and is adapted to surround the same, as shown in the drawings. Coiled within spool 4 is a resilient packing 7, which is preferably formed of a refractory fibrous material, as asbestos wicking. This wicking may be secured to the ring in any desired manner, as by the use of, water-glass or a similar heat-resisting cement and is of such size as normally to leave an inner opening slightly smaller in diameter than the outside of the lower end of support 1. The outer face of shoulder 2 is preferably beveled downwardly and inwardly, and it will accordingly be seen that the parts may be assembled by forcing the spool onto its support until the desired adjustment is attained, when the shoulder 2 will prevent disengagement thereof. If desired, an inwardly-extending flange 8 may be provided on the upper end of the spool, which will aid in holding the packing in place. The joint or connection between the support and spool may also be made more stable by means of a metal cap 9, spun about the end of support 1, following the upward bevel of shoulder 2 and extending beyond the same in a series of serrations or teeth 10. The connection between the cap and the support may be made more stable by bending down alternate teeth over the top face of shoulder 2, as shown in Fig. 1, thus assisting in locking the cap in position. The bevel of this cap being the same as that of the shoulder will permit the ready mounting of the spool upon the support, but tend to resist even more strongly than the shoulder any disengagement thereof. If it is desired to remove the spool from the support for the purpose of supplying a fresh mantle or otherwise, a comparatively slight manual pressure will break the joint between the two.

The normal assembled position of parts is such that the lower end of support 1 is out of contact with spool 4, thus permitting a slight relative movement of the two parts without contact between the same.

It will thus be seen that I have provided a means of suspension for members of the nature of incandescent-lamp mantles in which the vibration and jars transmitted to the supporting means are cushioned and the mantle thus protected from any undesirable shock.

The several parts used in embodying my invention are simple, inexpensive, and the same may easily be placed in connection with lighting systems at present in use with slight alterations. The resilient suspending means are simple and easily adjusted and are unaffected by the heat to which they may be subjected. The joint, moreover, between the supporting member and that part upon which the mantle is mounted may be rendered substantially gas-tight by reason of the fibrous quality of the packing without interfering with the resiliency of the mounting. It will be noted that although in my means of suspension the mantle will be mounted with any desired degree of resiliency it is nevertheless unnecessary to provide a considerable range of movement of the same, and the consequent objectionable feature of a moving source of light is avoided.

In the embodiment shown in Fig. 2 of the drawings the supporting member 11 extends entirely through spool 12 and forms the flame-nozzle of the burner, the spool being enlarged with reference to the supporting member, so as to permit such position. By the term "flame-nozzle" is meant such a member as is adapted to convey gas or similar matter and discharge the same in such manner as to permit the efficient burning of the same at the point of discharge, whereas "gas-nozzle" is used to designate a part adapted to convey and discharge gas. This embodiment differs from that shown in Fig. 1 also in the omission of the inwardly-extending flange on the upper end of the spool.

In Fig. 3 is shown another embodiment which is similar to that shown in Fig. 1, some of the parts being reverse in position with reference to that figure. Support 13 is extended downwardly and is preferably provided with slight ridges or shoulders 14 and 15. Between these shoulders is secured a resilient sustaining means 16, which may be of asbestos packing, as in the above embodiment. This packing means may be wound tightly about support 13 between shoulders 14 and 15 or may be secured to the same in any other desired manner. The spool or ring 17 is suspended from packing 16 by means of a metal ring or cap 18, spun thereon and held in place by means of a flange or shoulder formed on the spool, if desired.

The method of assembling the parts of the

last-described embodiment of my invention is substantially the same as that first described, the spool being forced upon packing about member 13 in a manner which should be apparent from the drawings and is secured in this assembled position by means of the teeth of cap 18.

In Fig. 4 is shown a construction similar to that shown in Fig. 1, the principal change lying in the elimination of a metal cap or crown. In this construction the shoulder 20 would be alone relied upon to form the slip-joint between the support and the spool, and it may accordingly be of somewhat greater width, if found desirable.

All of the embodiments of my invention may, if desired, be surrounded by a translucent shade or globe in a well-known manner, and the constructions above described are peculiarly adapted to withstand the shock attendant upon opening or closing or the removal and replacing of such member.

Although the several embodiments herein shown are represented as extending downwardly and the invention is peculiarly adapted for constructions in which the mantle is suspended from its upper portion, nevertheless the mantle may be mounted in any desired direction. In other words, with the construction indicated it is immaterial to what angle the gas-conduit is turned, and while the form in which the mantle is suspended vertically from the conduit is preferred the mantle will burn even although its position is reversed so that it extends upwardly from the support. It will also be obvious that it is immaterial whether the mantle is directly connected to the gas-conduit or whether it is connected to an auxiliary support, so long as it is properly positioned with reference to the conduit. Further modifications, as well as further objects and advantages not specifically herein pointed out will, it is believed, be obvious.

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 and shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.

Certain features broadly shown and described in this application are shown, described, and claimed in my copending application, filed of even date herewith, Serial No. 220,473.

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

1. In combination, a conduit, a mantle, a member upon which said mantle is mounted, and means adapted resiliently to suspend said member from said conduit and to cushion the

vertical movement thereof with respect to said conduit in both directions.

2. In combination, a conduit, a mantle, a member to which said mantle is secured, resilient suspending means secured to said member, and means upon said conduit adapted to take into and slightly impede the relative movement of the same in one direction and impede the relative movement to a greater extent in the other direction.

3. In combination, a conduit, a mantle, a member to which said mantle is secured, resilient suspending means secured to said member, and means upon said conduit adapted to engage said resilient means and permit a substantially free relative movement of the same in one direction and restrict relative movement in the other direction.

4. In combination, a gas-nozzle, a mantle, a member to which said mantle is secured, resilient suspending means secured to said member, and means upon said nozzle adapted to engage said resilient means and slightly impede the relative movement of the same in one direction and impede the relative movement to a greater extent in the other direction.

5. In combination, a supporting member, a mantle, a member upon which said mantle is mounted, and an asbestos packing between said supporting member and said last-mentioned member said packing projecting over and under parts upon the supporting member and being adapted to support the latter upon said supporting member and to cushion its vertical movement in both directions.

6. In combination, a conduit, a mantle, a metallic member secured to said conduit, and means adapted resiliently to suspend said mantle from said metallic member said metallic member being provided with a plurality of projections taking into said resilient suspending means.

7. In combination, a gas-nozzle, a mantle, a member to which said mantle is secured, a metallic member secured to said gas-nozzle, and resilient suspending means interposed between said first-mentioned member and said metallic member said resilient means projecting over and under certain parts upon said supporting member and adapted to suspend the former upon the latter and to cushion its vertical movement in both directions.

8. In combination, a supporting member, a metallic member secured to said supporting member, a mantle, and a refractory, resilient connection adapted to support said mantle upon said metallic member and to cushion its vertical movement in both directions, said metallic member being provided with a plurality of points taking into said resilient connection.

9. In combination, a conduit, a mantle, a member to which said mantle is secured, refractory, fibrous means secured upon its outer sides to said member, and means upon

said conduit adapted to take into the inner surface of said fibrous means and support said first-mentioned member upon said conduit.

10. In combination, a gas-nozzle, a metallic member secured to said gas-nozzle, a mantle, a member upon which said mantle is mounted and having an annular recess in which said mantle is secured, and refractory, resilient means interposed between said gas-nozzle and said second member and engaged by said metallic member and adapted to suspend said second member from said metallic member.

11. In combination, a conduit, a mantle, a member to which said mantle is secured, and an asbestos packing between said conduit and said member, said parts being so positioned as to have a slightly-impeded relative movement in one direction and to impede movement in the opposite direction to a greater degree.

12. In combination, a supporting member, a mantle, a member to which said mantle is secured, and resilient means secured to and laterally supported by said second-mentioned member adapted to suspend the same from said supporting member.

13. In combination, a supporting member, a metallic member secured thereto, a mantle, a member to which said mantle is secured, and resilient, suspending means secured to said last-mentioned member and adapted to support the same upon said metallic member said metallic member being provided with a plurality of points taking into said resilient suspending means.

14. In combination, a support, a mantle, and a connection between the two adapted to slightly impede relative movement in one direction and to impede to a greater extent such movement in the other and to cushion the relative vertical movement thereof in both directions.

15. In combination, a mantle, a support, a member upon which said mantle is mounted and a fibrous connection between the latter two adapted to slightly impede relative movement in one direction and to impede to a greater degree such movement in the opposite direction.

16. In combination, a mantle, a support, a member upon which said mantle is mounted and a refractory, fibrous connection between the latter two adapted to permit slightly-impeded relative movement in one direction and to impede to a greater extent such movement in the other direction.

17. In combination, a mantle, a support, a member upon which said mantle is mounted and a refractory, fibrous connection between the latter two adapted to permit a substantially free assemblage of the same and to impede their separation.

18. In combination, a supporting member, a mantle, a member upon which said mantle is mounted, and an asbestos packing upon the

lateral portions of said supporting member and projecting over and under parts upon said supporting member and interposed between the same and said second-mentioned member 5 and adapted to support the latter upon said supporting member and to cushion the movement of the same in all directions.

19. In combination, a mantle, a hollow member upon which said mantle is secured, a supporting member projecting into said hollow member, a plurality of layers of asbestos packing secured within said hollow member and between the same and said supporting member, and means upon said supporting 15 member engaging said asbestos packing.

20. In combination, a mantle, a spool upon

which said mantle is mounted, a plurality of layers of asbestos packing secured within and laterally supported by said spool, and a metallic member secured to the lower portion of 20 said supporting member and provided with a plurality of points adapted to take into said asbestos packing, said packing projecting over and under parts upon said supporting member and being adapted to cushion the move- 25 ment of said spool in all directions.

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

CHARLES M. LUNGREN.

Witnesses:

H. S. DUELL,

H. M. SEAMANS.