

No. 713,126.

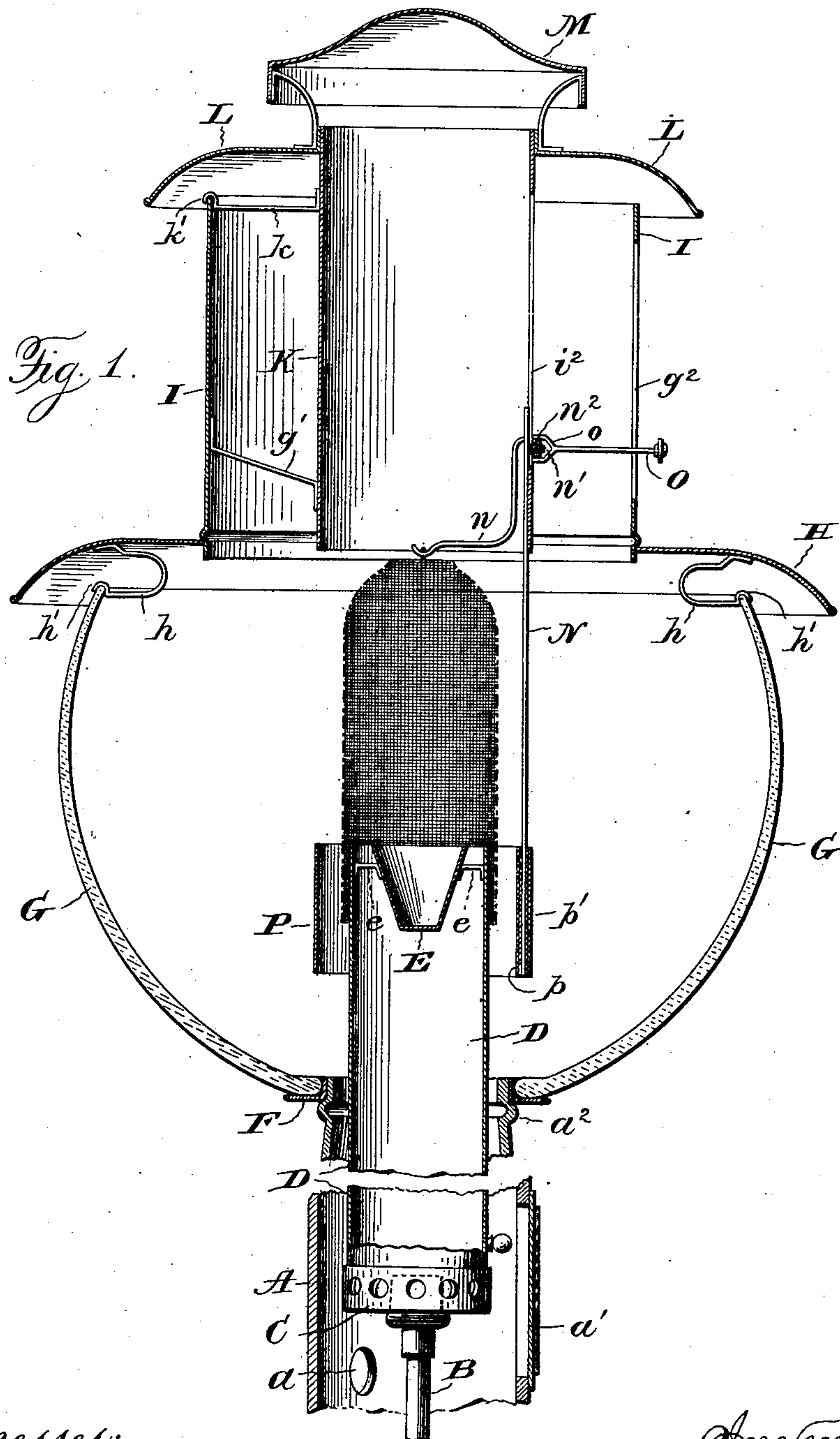
Patented Nov. 11, 1902.

R. MARSH.  
LAMP.

(Application filed Dec. 20, 1900.)

(No Model.)

3 Sheets—Sheet 1.



Witnesses:  
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Henry C. Hazard

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Prindle & Russell, his Attys

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Fig. 2.

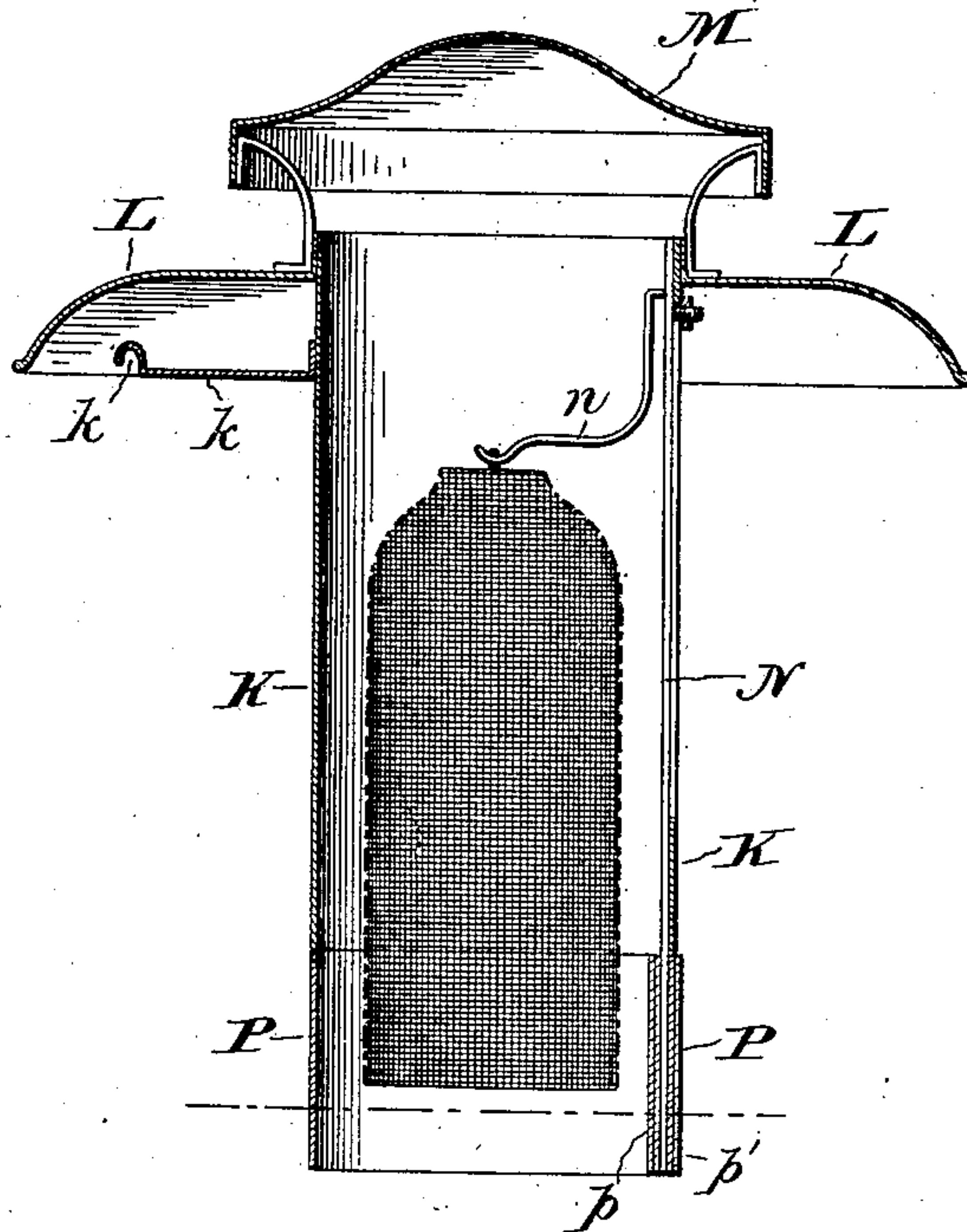
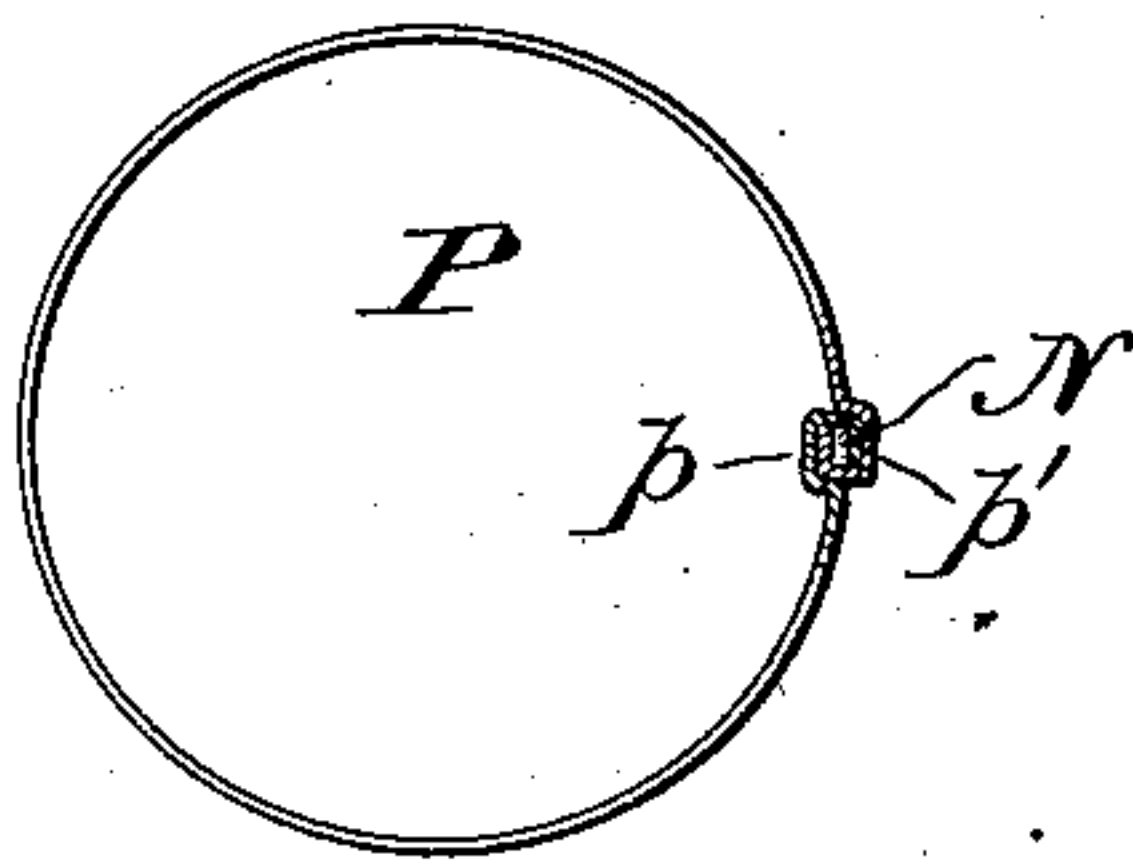


Fig. 3.



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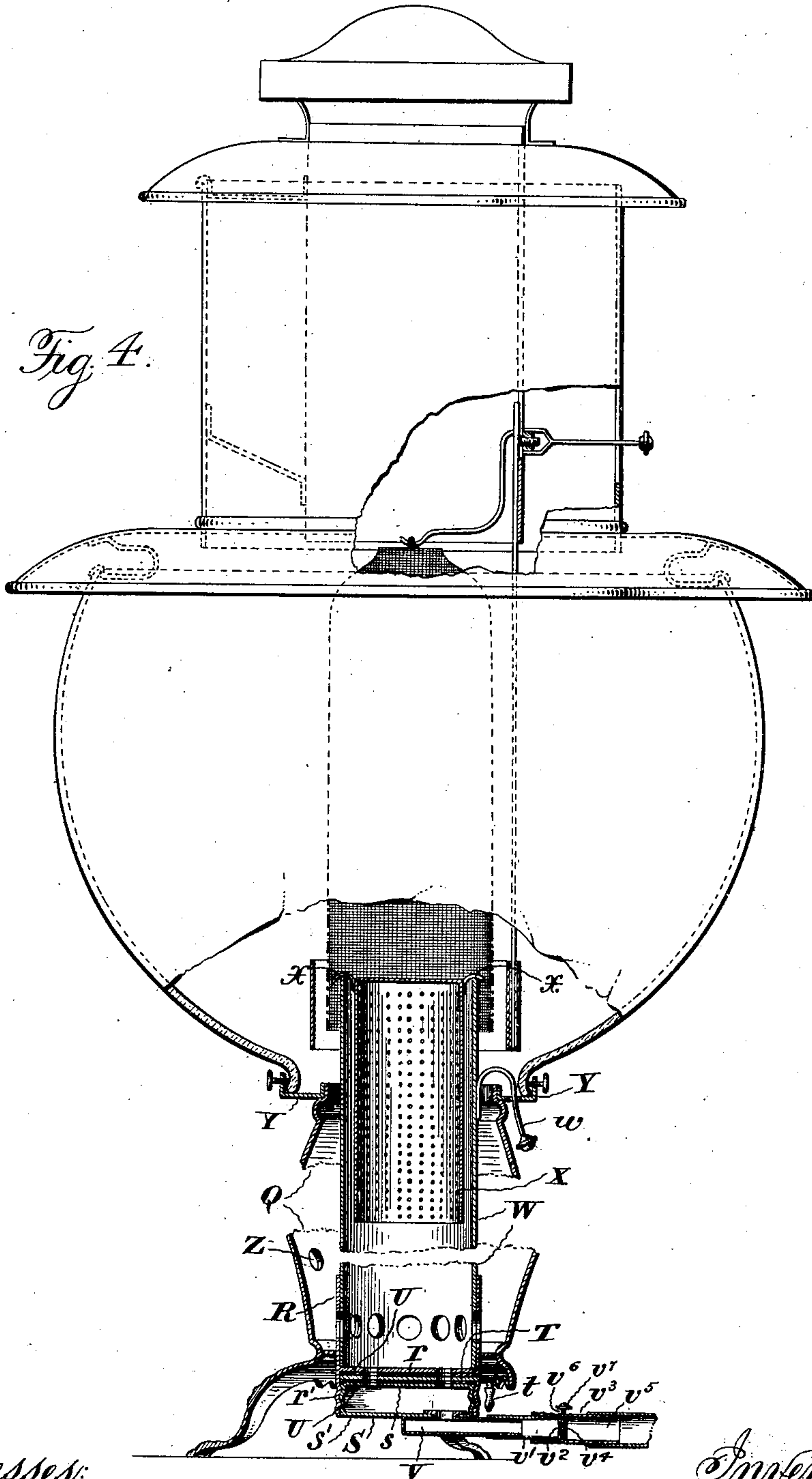
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# UNITED STATES PATENT OFFICE.

RIVERIUS MARSH, OF NEW BRUNSWICK, NEW JERSEY, ASSIGNOR TO  
GEORGE W. GLAENTZER, OF NEW YORK, N. Y.

## LAMP.

SPECIFICATION forming part of Letters Patent No. 713,126, dated November 11, 1902.

Application filed December 20, 1900. Serial No. 40,519. (No model.)

*To all whom it may concern:*

Be it known that I, RIVERIUS MARSH, of New Brunswick, in the county of Middlesex, and in the State of New Jersey, have invented  
5 certain new and useful Improvements in Lamps; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which—

10 Figure 1 is a vertical sectional view of a lamp and lamp-post embodying my invention, the mantle and inner tube being in their normal positions. Fig. 2 is a similar view, showing the mantle raised into the inner tube and  
15 the latter withdrawn from the lamp. Fig. 3 is a horizontal sectional view of the tube which surrounds the lower portion of the mantle, and Fig. 4 is a vertical section view of a portable lamp embodying my invention.

20 Letters of like name and kind refer to like parts in each of the figures.

The object of my invention is to provide a gas-lamp of the incandescent type which shall be adapted, among other uses, to serve  
25 as a street-lamp, and which shall have, among other advantages, those of being simple in construction, capable of being lighted, regulated, and extinguished without opening the lamp, of protecting the refractory mantle  
30 from injury by knocks and jars during the normal use of the lamp, of having a part by which said mantle can be protected from wind, rain, or knocks during the cleaning of the lamp, of having a part which shall pro-  
35 tect the mantle during transportation and while it is being placed in the lamp, and of utilizing the lamp-post as a source from which to supply a uniform current of air for the lamp, such current being free from influ-  
40 ence by the wind; and to such ends my invention consists in the lamp hereinafter specified.

In carrying my invention into practice I provide a hollow lamp-post A, having an air-  
45 opening  $a$  therein and having a gas-pipe B extending up within such post. On the upper end of the gas-pipe at a height conveniently reached by a person standing on the sidewalk a part C is secured, which part sup-  
50 ports a mixer-tube and air and gas valves of

any desired description. A door  $a'$  in the lamp-post affords access to the part C and tube D. The tube D extends upward through the lamp-post and above the top thereof. Within the upper end of the tube D an in-  
55 verted cone E is supported, as by arms  $e$  and  $e'$ , which are attached to the cone and to the tube D. The base of the cone is smaller than the tube D, so that an annular space is formed between the cone and tube. A bead  $a^2$  is  
60 formed on the lamp-post near the upper end thereof, and a globe-holder F rests on such bead and itself supports a globe G. A reflector H is supported on the upper edge of the globe by spring-arms  $h$  and  $h'$ , which are  
65 attached to such reflector and are provided with U-shaped bends  $h'$  and  $h'$ , that engage such upper edge. An outer tube I is attached to the reflector H, and an inner tube K is supported within the outer tube by spring-  
70 arms  $k$  and  $k'$ , attached to the inner tube and having bends  $k'$  and  $k'$ , which engage the upper edge of the outer tube. Spring-arms  $g'$  and  $g'$  are secured within the lower portion of the outer tube and bear against and retain  
75 the inner tube in a central position. A protector L is attached to the inner tube and extends over and above the outer tube, and a protector M is supported above the upper end of such tube, the protector M having an  
80 apron which is larger in diameter than said tube and that preferably extends down below its upper edge.

A mantle-holder is attached to the inner tube, such holder consisting of a preferably  
85 flat strip N, having an arm  $n$  formed on or attached thereto, which arm extends to the center of the inner tube, where it has a hook for the support of the mantle. The strip N has a threaded stud  $n'$  projecting outward there-  
90 from, and a nut  $n^2$  is screwed on said stud. The inner tube and the outer tube are each provided with a vertical slot  $i^2$  and  $g^2$ , respectively, and the strip N is situated inside the inner tube, while the threaded stud projects  
95 through the slot  $i^2$ , so that the mantle-holder can be clamped to the inner tube by screwing the nut against the outer side of such tube. A key O, having a forked or socketed end  $o$ , is inserted through the slot  $g^2$  and en- 100



gages the nut  $n^2$  to loosen or tighten and raise or lower the same for the purpose of adjusting the mantle-holder up or down.

The lower end of the strip N of the mantle-holder supports a short tube P, which surrounds the lower portion of the mantle. Such tube is preferably formed by bending a sheet of metal about an axis and into cylindrical form and uniting the meeting edges by a seam. The seam I prefer is formed by bending a narrow strip  $p$  along one edge of the sheet toward one face of the sheet, bending a similar strip  $p'$  along the opposite edge of the sheet toward the opposite edge of the sheet, and then when the sheet is bent into cylindrical form engaging the hooks thus formed and pressing them together to fasten the seam. Before pressing the strips  $p$  and  $p'$ , together the strip N is inserted into the seam, and when the strips  $p$  and  $p'$  are pressed together on each side of the strip N a guideway is formed, in which the strip N is securely but adjustably held.

In the operation of my lamp when it is desired to light the lamp, the parts being in the positions shown in Fig. 1, the gas is turned on in the pipe B and passes into the tube D. The mixture of gas and air then passes up through the long tube D, becoming thoroughly and evenly mixed during its passage, and traverses the inner tube, from which it finds exit under the protector M. A torch is applied at such point, and the flame travels backward to the burner. As the mixture of gas and air ascends the tube D it strikes the cone and issues in a hollow conical stream, which strikes the mantle in an advantageous manner to cause a large proportion of the latter to become heated.

When it is desired to clean the lamp, the key O is inserted through the slot  $g^2$  and engaged with the nut  $n^2$ . Such nut is then loosened and moved upward, carrying with it the mantle-holder, the mantle, and the tube P until the latter tube is in contact with the lower end of the inner tube, when the mantle will be entirely inclosed and protected by the said tubes. The inner tube, with its attached parts, can then be raised out of the lamp and the latter be cleaned or repaired. A new mantle can be placed in the inner tube in a protected location and then carried to the lamp, or the mantle can, if desired, be shipped in such tube.

It will be observed that when the door is closed the air can only find admission to the burner by entrance through the air-opening  $a$ , and that it then has to traverse so long and tortuous a passage that neither the direction nor the force of the wind can seriously affect the action of the burner. It will also be noted that the proportions of air and gas can be varied as desired by parts which are in convenient reach of a person standing on the sidewalk.

In Fig. 4 is illustrated another embodiment of my invention. The lamp here illustrated

is portable. Its stand Q has formed on or attached at its base a tube R, which is closed near its lower end by a bottom  $r$ . The portion  $r'$  of the tube R below the bottom  $r$  is provided with a screw-thread. A threaded shell S is screwed into the tube R, and the upper end of the latter tube is formed by a plate  $s$ , while its lower end is formed by a plate  $s'$ , said plates being formed on or attached to such tube. Coinciding apertures are formed in the bottom  $r$  and plate  $s'$  for the passage of gas, and a valve in the form of a disk is located between said bottom and such plate. A handle  $t$  projects from such disk through a slot in the tube R, and perforations are formed in the said disk, such perforations being preferably so located that a graduated number of them will be coincident with the slots in the bottom  $r$  and plate  $s$  in successive positions of the disk. To insure packing of the disk, washers U and U are preferably placed on opposite sides of it and between the bottom  $r$  and plate  $s$ . Such washers are conveniently formed of cork. The stand is conveniently provided with legs, which raise its bottom, and the tube R extends below such bottom, so as to expose the handle of the valve to easy reach. A tube V for the attachment of a hose extending to a source of supply of gas is connected with the plate  $s'$  by having a sleeve  $v$  drawn up from the metal thereof and passed through an opening in such plate, the sleeve being turned down on the opposite face of the said plate. If desired, the sleeve can be formed on the plate instead of on the tube. The sleeve can be turned over so tightly as to prevent motion between the shell and the tube, or said connection can be such as to permit motion between the said parts.

An exteriorly-threaded shell  $v'$  is connected to the tube V either directly or by means of an interposed hose, and the end of such shell opposite the tube V is closed by a plate  $v^2$ , having slots therein. Such shell is screwed into the threaded open end of a tube  $v^3$ , the latter having a slotted diaphragm  $v^4$  formed or secured therein and having a portion extending beyond such diaphragm for the attachment of a further section of hose. A valve in the form of a disk is interposed between the plate  $v^2$  and the diaphragm  $v^4$ , and a handle  $v^7$  thereon extends through a slot in the tube  $v^3$ . The said valve has apertures, a greater or less number of which are open, according to its position relative to the slots in the plate  $v^2$  and the diaphragm  $v^4$ . The form of valve described is exceedingly cheap.

The mixer-tube W is seated in the tube R, and such tubes are, as before, provided with apertures which can be made to coincide more or less for the admission of more or less air. The upper end of the mixer-tube extends above the neck of the stand, and a handle  $w$ , attached to such tube, is bent over the edge of said neck, such handle serving to turn the



mixer-tube in the tube R. A perforated cylinder X is supported loosely in the upper end of the mixer-tube by hooked arms *x* and *x*, attached to such cylinder. A flanged ring Y rests on a bead on the stand and supports a globe. Such ring is slotted to permit the passage and movement of the handle *w*. The globe and its attached parts may be of the construction before described. Air is admitted through an aperture Z in the stand.

Features of the above-described invention are not claimed, broadly, herein, but are so claimed in an application executed of even date herewith.

It is obvious that changes can be made in my lamp and in my lamp-post which are within the scope of my invention.

Having thus described my invention, what I claim is—

1. In a lamp having a mantle, the combination with a tube above the mantle, said tube having a substantially vertical slot therein, of a mantle-holder having a part projecting through such slot and having means for engaging the inner and outer walls of said tube, substantially as and for the purpose described.

2. In a lamp having a mantle, the combination with a tube above the mantle, said tube having a substantially vertical slot therein, of a mantle-holder having a threaded stud projecting through such slot and having a nut on such stud for clamping said mantle-holder to such tube, substantially as and for the purpose described.

3. In a lamp having a mantle, the combination with an inner tube above the mantle, of an outer tube, such tubes having alining substantially vertical slots, a mantle-holder having a threaded stud projecting through the slot in the inner tube, a nut engaging such threaded stud, and a key adapted to be passed through the slot in the outer tube and engaged with said nut, substantially as and for the purpose described.

4. In a lamp, the combination with a tube having apertures in its sides, of a mixer-tube seated within such first-mentioned tube, said mixer-tube having corresponding apertures, a diaphragm extending across the first-mentioned tube, a shell screwed into the open end thereof, the end wall of the shell and the

diaphragm being correspondingly slotted, and a valve in the form of a disk interposed between such end wall and said diaphragm, substantially as and for the purpose described.

5. In a lamp, the combination with a tube having apertures in its sides, of a mixer-tube seated within such first-mentioned tube, said mixer-tube having corresponding apertures, a diaphragm extending across the first-mentioned tube, a shell screwed into the open end thereof, the end wall of the shell and the diaphragm being correspondingly slotted, and a valve in the form of a disk interposed between such end wall and said diaphragm, such valve having a handle extending through a slot in said tube, substantially as and for the purpose described.

6. In a lamp, the combination with a tube having apertures in its sides, of a mixer-tube seated within such first-mentioned tube, said mixer-tube having corresponding apertures, a diaphragm extending across the first-mentioned tube, a shell screwed into the open end of the latter, the end wall of the shell and the diaphragm being correspondingly slotted, a valve in the form of a disk interposed between such end wall and said diaphragm, and a gas-tube united to such shell, the union between such parts consisting of a sleeve passed through an opening in a wall and upset on the opposite side thereof, substantially as described.

7. In a lamp, the combination with a tube threaded at one end and having a diaphragm interposed therein, of a shell screwed into such tube, an end wall of the tube being parallel to said diaphragm, a valve in the form of a disk interposed between such diaphragm and said end wall, and a handle for such disk, said handle extending through a slot in such tube, said diaphragm and end wall and such disk being provided with apertures for the passage of gas, substantially as and for the purpose described.

In testimony that I claim the foregoing I have hereunto set my hand this 28th day of November, 1900.

RIVERIUS MARSH.

Witnesses:

JULIA D. MARSH,  
CAROLINE H. MARSH.