

(No Model.)

2 Sheets—Sheet 1.

J. KIRBY, Jr.
LAMP.

No. 484,323.

Patented Oct. 11, 1892.

Fig 3.

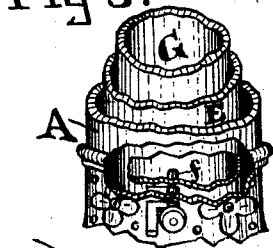


Fig 1.

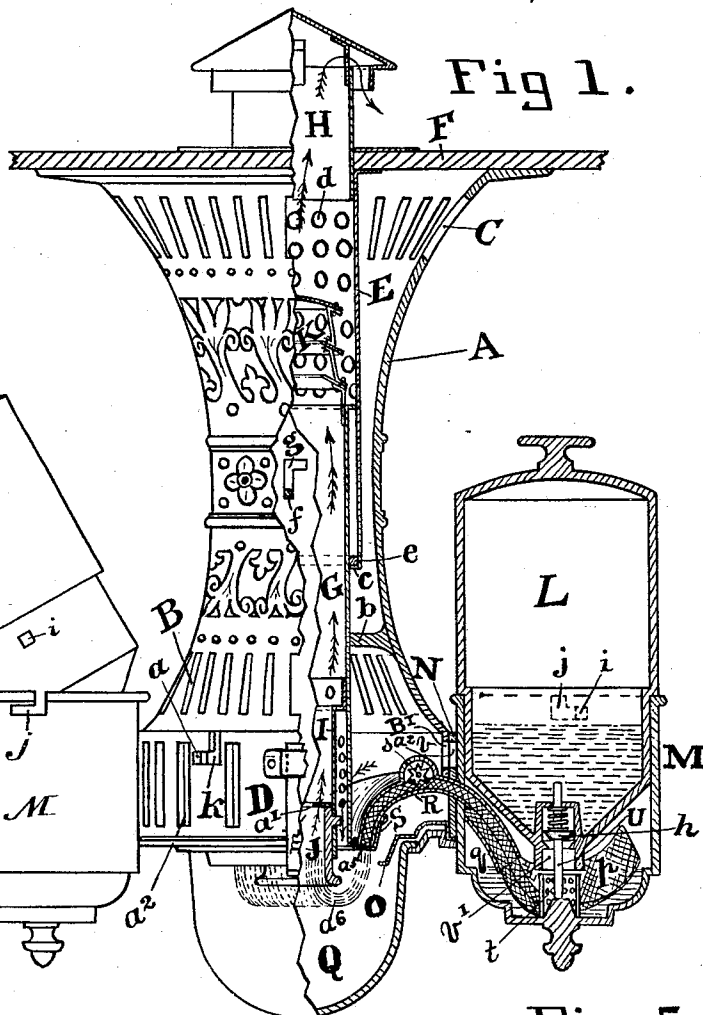


Fig 4.

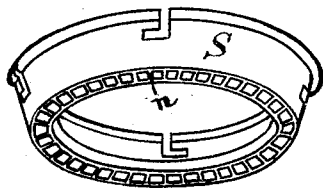
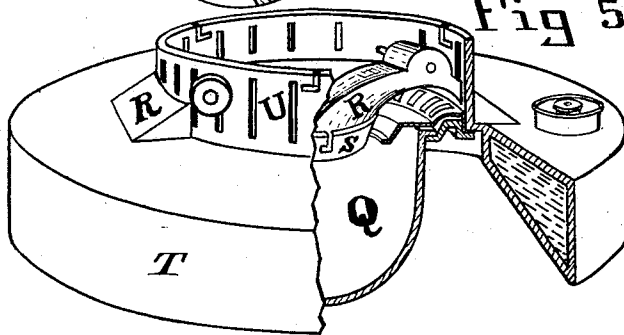


Fig 5.



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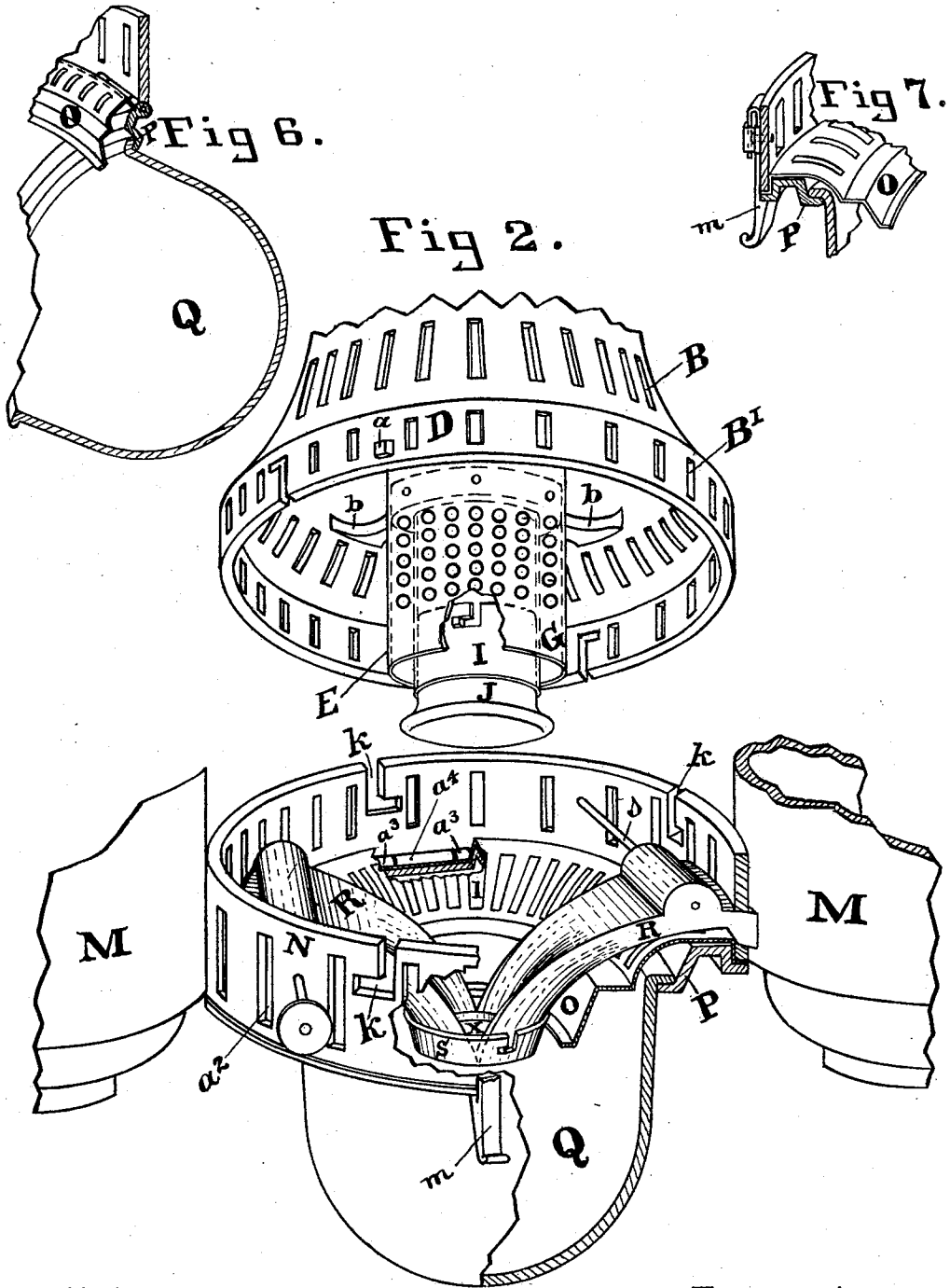
(No Model.)

2 Sheets—Sheet 2.

J. KIRBY, Jr.
LAMP.

No. 484,323.

Patented Oct. 11, 1892.



Attest:
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UNITED STATES PATENT OFFICE.

JOHN KIRBY, JR., OF DAYTON, OHIO, ASSIGNOR TO THE DAYTON
MANUFACTURING COMPANY, OF SAME PLACE.

LAMP.

SPECIFICATION forming part of Letters Patent No. 484,323, dated October 11, 1892.

Application filed August 12, 1891. Serial No. 402,423. (No model.)

To all whom it may concern:

Be it known that I, JOHN KIRBY, Jr., a citizen of the United States, residing at Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Lamps; and I do hereby declare that the following is a full, clear, and exact description of the invention.

My invention relates to oil-lamps adapted to be suspended from the ceilings of railroad-cars, steamboats, and other similar supports, and has special reference to that class of lamps in which a central chimney is employed, around the exterior of which the wicks are arranged, the flame first taking a downward course, and thence upward through the center of the chimney in substantially the same manner as in the well-known Siemens regenerative gas-lamp.

The invention consists, chiefly, in the manner of arranging the reservoirs and wick-tubes whereby they may be readily detached from their support, together with certain other improved features of such lamps, as will be hereinafter fully described with reference to the accompanying drawings, in which—

Figure 1 is a side view of the lamp, one-half being shown in vertical section through its center, a hand being represented in the act of removing one of the reservoirs from its holder. Fig. 2 is an enlarged broken perspective view showing the lower part of the lamp detached from the lamp-hanger. Fig. 3 is a broken perspective view of the lamp-hanger, showing the chimney in a raised position and the means employed for raising the same. Fig. 4 represents the wick-tube cap detached from the tubes. Fig. 5 is a broken perspective view of a single annular detachable reservoir adapted to be coupled to the lamp-hanger in lieu of the two shown in Fig. 1. Fig. 6 represents a broken perspective view of the air-deflecting and bezel rings in a lowered position and shows the manner in which they are hinged to the coupling-ring. Fig. 7 is a section showing the manner in which the bezel-ring and air-deflector are secured to the coupling-ring.

Like letters of reference indicate corresponding parts in all the figures.

A represents a hollow centrally-contracted

hanger or frame, having its upper end somewhat enlarged for rigid support to a car-ceiling or other place from which it is to be suspended, and to the lower end of which reservoirs are coupled, as will presently appear. This hanger is provided with perforations B B' near its lower end, which admit air to the burner, the latter perforations corresponding with openings in a coupling-ring hereinafter described, and the upper end of the hanger is provided with perforations C, the said perforations being made of proper size and number to counterbalance the currents of air within the hanger and thus protect the flame from irregular air-currents which may at times surround the lamp, for if the flame is not protected in some such manner as above described these irregular air-currents will disturb it and cause it to smoke and in some instances to be extinguished.

The lower end of hanger A is provided with an annular perforated ring D, having studs *a* located on its periphery. A number of guide-arms *b* project from the interior of hanger A toward the center, whose function will presently appear.

E represents a tube suspended from the overhead support F of the lamp and extending to about midway of the hanger A. The lower end of this tube is turned inward, as seen in Fig. 1, at *c*, its upper end being provided with perforations or openings *d* to allow free circulation of air through an exterior ventilator H, through which latter the products of combustion escape to the open air, as indicated by arrows in Fig. 1.

G is the lamp-chimney, which is of less diameter than tube E and flanged outwardly at its upper end to fit snugly within the tube E. A collar *e*, Fig. 1, is attached to and encircles chimney G and supports the same by resting on flange *c* of tube E.

I is a cylinder-shaped piece of metal or other suitable material of less diameter than chimney G, to which it is attached, as seen in Figs. 1 and 2. To the interior of this cylinder at its lower end is attached by any suitable means another cylinder J, preferably made of porcelain or other similar refractory material and flanged outward at the bottom, an annular ring *a'*, having a central opening

of proper diameter to regulate the draft, being located just above the cylinder J, chimney G being perforated to allow air to pass between it and cylinder I in the direction indicated by arrows in Fig. 1.

K represents a wind-break or hurricane-cap attached to and located above the top of chimney G to prevent downward currents of air entering the latter.

When lighting the lamp, it is desirable to first raise chimney G sufficient to immediately form an upward draft through the center of the chimney, and thereby prevent the accumulation of soot around the exterior of the latter, and for this purpose a projecting arm or handle *f* is attached to the chimney and extends through a bayonet-slot *g* in tube E, and also through a corresponding slot in hanger A, as more clearly shown in Fig. 3.

When it is desired to raise the chimney, handle *f* is lifted and turned into the horizontal portion of slot *g*, and as the handle *f* carries with it the chimney G the latter will remain elevated until the former is turned back into the vertical portion of slot *g*, when both will return to their normal positions, the guide-arms *b* serving to retain the lower end of the chimney in a central and proper position with relation to the other parts of the lamp.

L represents oil-reservoirs of the ordinary student-lamp type provided with the usual valves *h* and two or more studs *i*. Two such reservoirs are shown held in receivers M, the latter being provided with bayonet-slots *j*, with which studs *i* engage to hold the reservoirs in place in the manner shown in Fig. 1. The receivers M also act as oil-holders and are attached to an annular ring N, provided with air-openings *a*², which ring fits over ring D of the lamp-hanger previously described, and is also provided with bayonet-slots *k* to engage studs *a* of ring D. By thus engaging studs *a* with the horizontal portions of slots *k* ring N, with the receivers and other parts attached, is coupled to the lamp-hanger, as seen in Fig. 1. A suitable lock or catch may be employed to prevent uncoupling of the parts last described by any agitation to which the lamp may be subjected.

A deflecting-ring O, provided with air-openings *l*, and a bezel-ring P, carrying a glass bowl Q, forming the bottom of the lamp, are each hinged at *a*³ *a*⁴ to the ring N and held up to place by a spring-catch *m*, located opposite the hinge, as more clearly shown in Figs. 6 and 7. By releasing the spring-catch *m* deflecting-ring O and bezel-ring P, together with bowl Q, will drop to the positions shown in Fig. 6, thus allowing free access to the burner and wicks for trimming, &c.

Wick-tubes R are attached to the receivers M and radiate therefrom, passing through ring N toward the center of the lamp, forming at their inner ends a circular burner X, with an annular opening for the burning ends *a*⁵ of the wicks, which meet each other here and when burning give out a circular flame *a*⁶,

first descending around the exterior of the chimney and then ascending through its center, as seen in Fig. 1.

A shield or cap S, Fig. 4, one end of which is perforated, forming a series of bars *n*, is placed over the annular open end of the wick-tube and secured in place by any suitable fastening, its function being to form a stop for the burning ends of wicks *p*, thereby insuring a uniform flame at the maximum point, the ends of the wicks coming in contact with the bars *n*, which prevent their further adjustment.

As the oil commonly used for the lighting of railroad-cars, steamboats, &c., is of a heavy grade, burners for such oil must be constructed with special reference to its use, and it is essential that the point of combustion be as close to the oil as other requirements will permit. It is also desirable that the oil should be maintained at a constant level until the reservoir from which it is supplied is exhausted, as in such construction the capillary attraction of the wicks will be uniform during the consumption of oil from the reservoir, and therefore a sufficient supply of oil will be maintained at the burning points of wicks *p* until the reservoir is empty. For the reasons above stated I prefer the construction of reservoirs shown in Fig. 1. As an aid in supplying the flame with oil, I employ auxiliary wicks *q*, which dip into the oil and extend partially through the wick-tubes toward the point of combustion, the wick-tubes being deepened to receive them, as shown in section in Fig. 1. To advance and retract the wicks *p*, I employ a number of spur-wheels *v*, mounted on shafts *s*, behind which an opening (not shown) is made in the top side of the wick-tubes for convenience in inserting the wicks. In the bottom of the reservoirs I arrange a cylinder or guard *t*, preferably perforated, as seen in section in Fig. 1, around about which the wicks lie in the bottom of the oil-holder. This cylinder serves to keep the wicks clear of the stem U of valve *h*, which stem when the reservoir is secured in place, as seen in section in Fig. 1, rests upon the bottom of the oil-holder, thereby raising the valve and permitting oil to flow from the reservoir until it rises to the lower end of a tube *v*, when the air is thereby prevented from entering the reservoir and the flow of oil ceases, continuing thereafter in small quantities only as the oil in the holder is consumed and air thus admitted to the reservoir, by which operation the oil maintains a constant level within the holder while feeding from the reservoirs and being consumed.

In Fig. 5 I have shown a single annular oil holder or reservoir T, carried by a coupling-ring U, adapted to couple to the hanger-ring D and to be substituted for the reservoirs previously described and shown in Figs. 1 and 2. This form of reservoir is, however, somewhat objectionable for the reasons that it casts a heavy shadow overhead, and as the oil is consumed it recedes from the burning point of

the wicks, which, in consequence thereof, become crusted, thereby requiring frequent attention and trimming, and for the further reason that to remove the reservoir for filling the glass bowl must be removed with it, and the latter is liable to get broken in handling, while the reservoirs shown in Fig. 1 can be removed and filled independently without uncoupling the other parts, which need only be done when new wicks are required, and, owing to the oil remaining at one level, renewing of the wicks is seldom required.

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

1. In a lamp, a hanger adapted to be rigidly secured to a car-ceiling or other overhead support and provided with a perforated ring at its lower end, in combination with a perforated coupling-ring adapted to pass over and be detachably secured to said hanger-ring in a manner to put the perforations in both rings in register, and one or more oil-holders attached to and supported by the coupling-ring, substantially as described.

2. In a lamp, a hanger adapted to be rigidly secured to a car-ceiling or other overhead support and provided with a ring at its lower end, in combination with a coupling-ring adapted to pass over and be detachably secured to said hanger-ring, one or more oil-holders attached to and supported by the coupling-ring, and wick-tubes radiating from said oil holder or holders toward the center of the lamp.

3. In a lamp, a hanger adapted to be rigidly secured to a car-ceiling or other overhead support and provided with a ring at its lower end, in combination with a coupling-ring adapted to pass over and be detachably secured to said hanger-ring, one or more oil-holders attached to and supported by the coupling-ring, wick-tubes radiating from said oil holder or holders toward the center of the lamp, a bezel-ring hinged to the coupling-ring, and a bowl forming the bottom of the lamp, carried by the bezel-ring.

4. In a lamp, a hanger adapted to be rigidly suspended from a car-ceiling or other overhead support and provided with a ring at its lower end, in combination with a coupling-ring adapted to pass over and be detachably secured to said hanger-ring, a plurality of oil-holders attached to and supported by the coupling-ring, a plurality of reservoirs located in the oil-holders, a chimney, and wick-tubes radiating from said oil-holders toward the center of the lamp, forming at their meeting-points a circular burner surrounding the lower end of the chimney.

5. In a lamp, a hanger adapted to be rigidly secured to a car-ceiling or other overhead support and provided with a ring at its lower end, in combination with a coupling-ring adapted to pass over and be removably secured to said hanger-ring, a plurality of oil-holders attached to and supported by the

coupling-ring, a plurality of reservoirs located in the oil-holders and detachably connected therewith, a chimney, and wick-tubes radiating from said oil-holders toward the center of the lamp, forming at their meeting-points a circular burner surrounding the lower end of the chimney.

6. In a lamp, a hanger adapted to be rigidly secured to a car-ceiling or other overhead support and provided with a ring at its lower end, in combination with a coupling-ring adapted to pass over and be removably secured to said hanger-ring, a plurality of oil-holders attached to and supported by the coupling-ring, a plurality of reservoirs located in the oil-holders and detachably connected therewith, a chimney, wick-tubes radiating from said oil-holders toward the center of the lamp, forming at their meeting-points a circular burner surrounding the lower end of the chimney, a bezel-ring, and a lamp-bottom carried by the bezel-ring.

7. In a lamp, a central hanger adapted to be rigidly suspended from a car-ceiling or other overhead support and provided with an integral ring at its lower end, in combination with a coupling-ring adapted to pass over and be detachably secured to said hanger-ring, a plurality of oil-holders attached to and supported by the coupling-ring, a plurality of reservoirs located in the oil-holders, a chimney, wick-tubes radiating from said oil-holders toward the center of the lamp, forming at their meeting-points a circular burner surrounding the lower end of the chimney, a glass bowl forming the bottom of the lamp, and a bezel-ring carrying said bowl.

8. In a lamp, a central hanger adapted to be rigidly suspended from a car-ceiling or other overhead support and provided with a ring at its lower end, in combination with a coupling-ring adapted to pass over and be detachably secured to said hanger-ring, a plurality of oil-holders attached to and supported by the coupling-ring, a plurality of reservoirs located in the oil-holders, a chimney, wick-tubes radiating from said oil-holders toward the center of the lamp, forming at their meeting-points a circular burner surrounding the lower end of the chimney, a bowl forming the bottom of the lamp, a bezel-ring carrying said bowl, and a deflecting-ring located between the wick-tubes and bezel-ring.

9. In a lamp, a hanger adapted to be rigidly secured to a car-ceiling or other overhead support and provided with a ring at its lower end, in combination with a coupling-ring adapted to pass over and be detachably secured to said hanger-ring, a plurality of oil-holders attached to and supported by the coupling-ring, a plurality of reservoirs located in the oil-holders and detachably connected therewith, a chimney, wick-tubes radiating from said oil-holders toward the center of the lamp, forming at their meeting-points a circular burner surrounding the lower end of the chimney, a bezel-ring, a glass lamp-

bottom carried by the bezel-ring, and a deflecting-ring located between the wick-tubes and the bezel-ring.

10. In a lamp of the class herein described,
5 a hollow central hanger adapted to be rigidly
suspended from a car-ceiling or other over-
head support and having a ring at its lower
end, in combination with a coupling-ring
adapted to pass over and be removably at-
10 tached to said hanger-ring, a plurality of oil-
holders carried by the coupling-ring, a plu-
rality of reservoirs located in the oil-holders,
a chimney within said hollow hanger, wick-
tubes radiating from said oil-holders toward
15 the center of the lamp, forming at their meet-
ing-points a circular burner surrounding the
lower end of the chimney, and a perforated
cap adapted to fit over the open end of said
burner and limit the forward movement of
20 the wicks.

11. In a lamp, the combination, with a car-
ceiling or other overhead support, of a cen-
tral hollow hanger provided with an integral
ring at its lower end, a coupling-ring adapted
to fit over and be detachably connected with 25
said hanger-ring, one or more oil-holders at-
tached to said coupling-ring, wick-tubes radi-
ating from said oil holder or holders toward
the center of the lamp and forming at their
meeting-points a circular burner, a chimney 30
centrally located above said burner, means
for supporting said chimney from above,
guides for directing and retaining the chim-
ney in a central position, and an exterior
ventilator, through which the products of 35
combustion escape.

JOHN KIRBY, JR.

Witnesses:

E. B. LEHMAN,
GUY FULTON.