

(No Model.)

2 Sheets—Sheet 1.

W. WESTLAKE.
VENTILATING CAR LAMP.

No. 552,079.

Patented Dec. 24, 1895.

FIG:1.

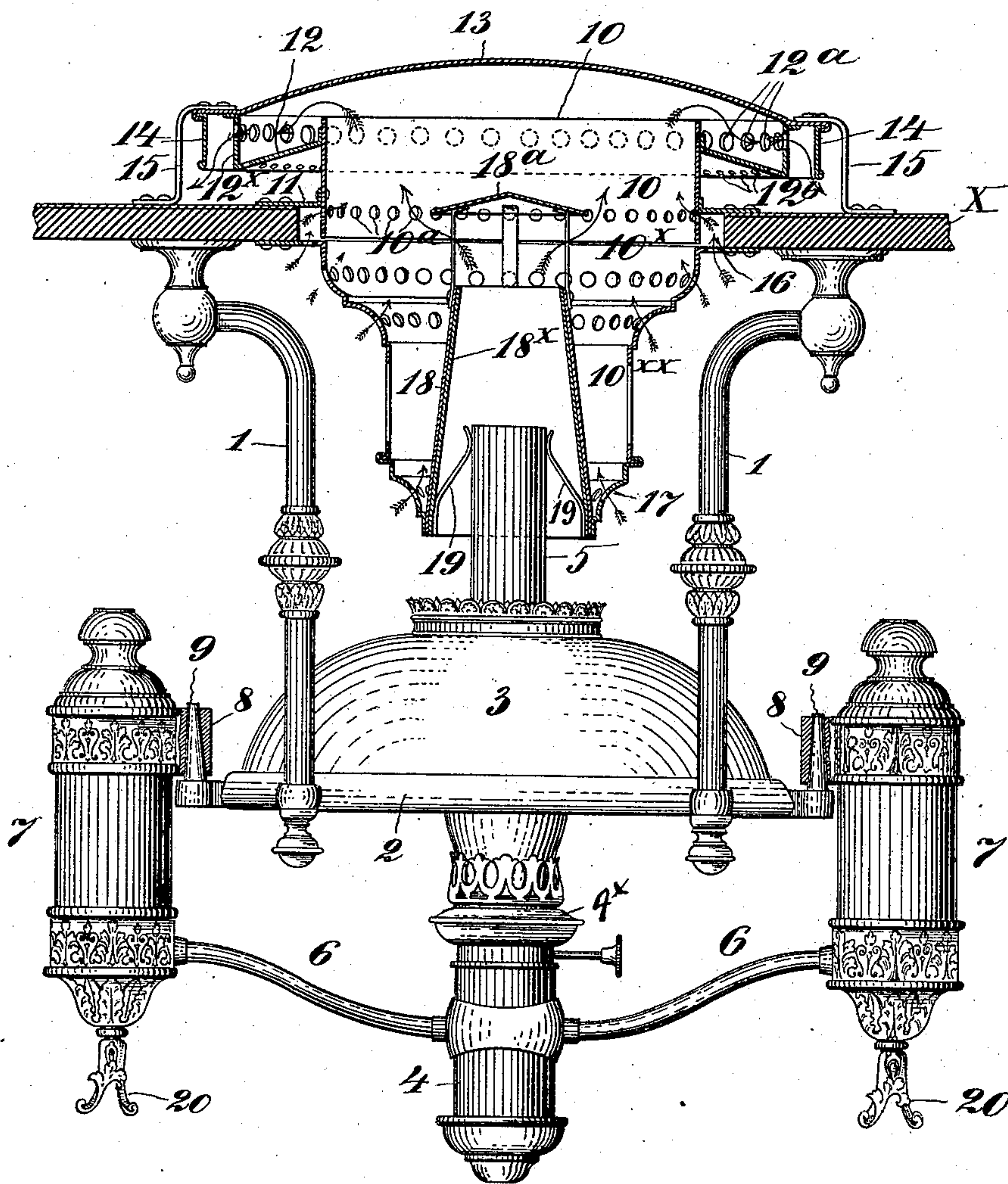
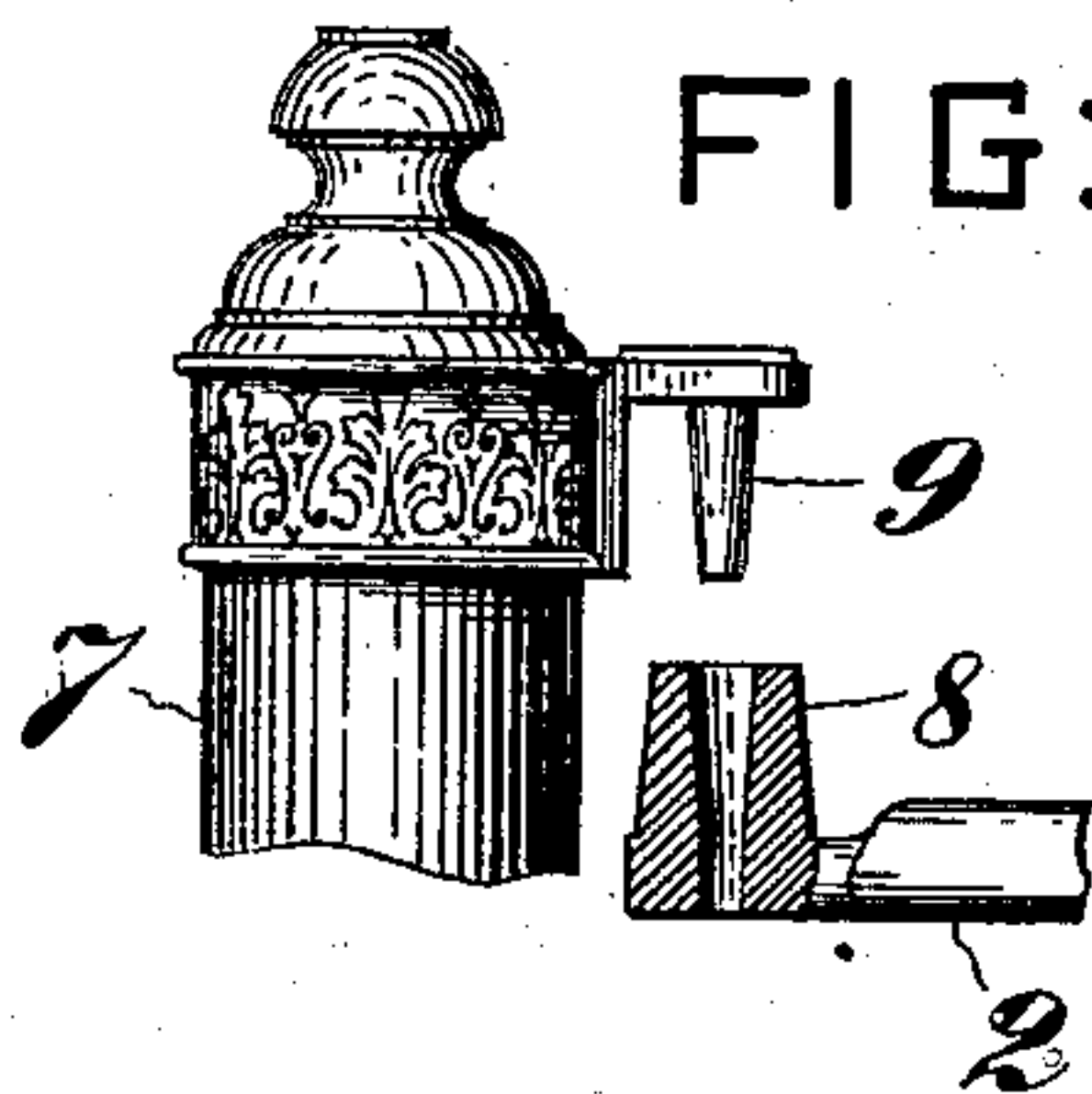


FIG:1^a.



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2 Sheets—Sheet 2.

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FIG:2.

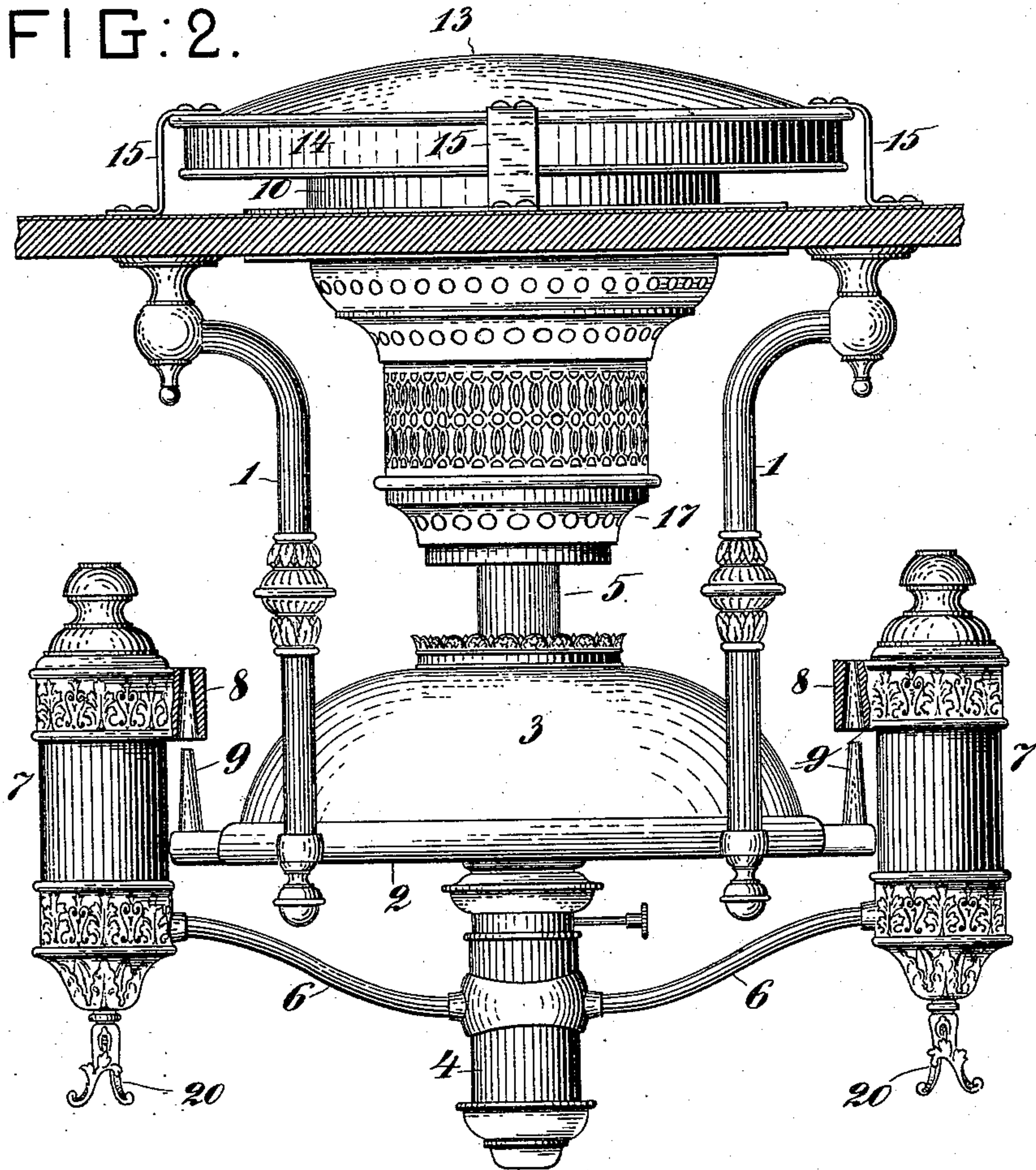
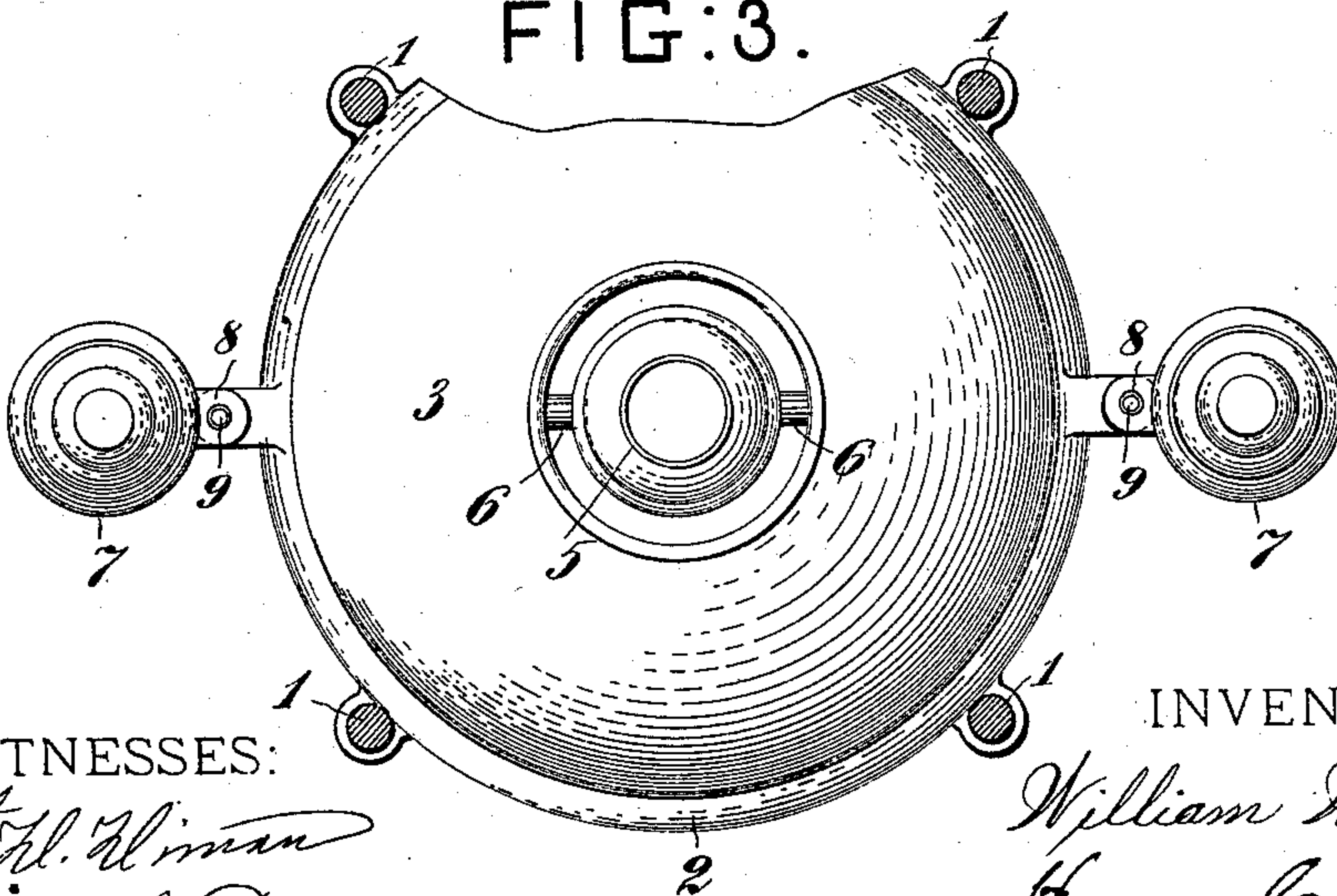


FIG:3.



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UNITED STATES PATENT OFFICE.

WILLIAM WESTLAKE, OF BROOKLYN, NEW YORK.

VENTILATING CAR-LAMP.

SPECIFICATION forming part of Letters Patent No. 552,079, dated December 24, 1895.

Application filed June 4, 1895. Serial No. 551,613. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM WESTLAKE, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Ventilating Car-Lamps, of which the following is a specification.

My invention relates to the class of lamps such as are employed on cars.

A part of the invention relates particularly to the construction and mounting the lamp and a part to the means for utilizing the lamp in ventilating the car and getting rid of the products of combustion.

So far as the first part of the invention is concerned, the object of the same is to provide a single central burner or lamp proper, supported removably in a ring pendent from the car-ceiling or other support, through the medium of a plurality of oil-reservoirs or tanks arranged about the central lamp-body and connected therewith by means of tubes. This construction enables me to employ one burner, one chimney, one shade and a relatively small lamp-body, whereby a relatively large burner may be used and the casting of a large shadow is avoided. Thus I attain the maximum of light and reduce the loss from breakage very materially, as only one chimney and shade are needed. The large body of oil supplied to the single large burner is divided into several small bodies in such a manner that the oil-holders cast no shadows downward, said holders occupying positions at some distance from the burner, on about the same level, and at the sides of the burner. Another important object of this part of the invention is to provide means whereby the connected lamp-body and oil-reservoirs may be removed conveniently for cleaning and re-filling.

So far as the second part of the invention is concerned the object is to provide an ample outlet for the products of combustion, so as to avoid fouling the air in the car with the same and to prevent smoking the car-ceiling, to provide against injury to the car-ceiling from the intense heat developed by the large burner, to provide ventilation of the car about the point where the products of com-

bustion pass off, to provide against back-draft and the entry of cinders from the locomotive, and to provide against the entry of rain at the gas-outlet.

The invention will be fully described hereinafter with reference to the accompanying drawings, wherein—

Figure 1 is a side elevation of the lamp with the upper or ventilating part in section and the lamp-body and reservoirs mounted in the supporting-ring. Fig. 1^a is a fragmentary view illustrating a slightly-modified form of the detachable fastening of the oil-reservoirs. Fig. 2 is a side elevation of the lamp, showing the lamp-body and reservoirs lifted off from their supports. Fig. 3 is a plan view of the supporting-ring detached.

X represents the roof of the car, in which are mounted the smoke-flue and ventilating devices and from which is suspended the frame which supports the lamp proper.

Secured to the ceiling of the car are suspending posts, arms, or hangers 1 1, which are secured at their lower extremities to a supporting-ring 2. The shade 3 is mounted on this ring.

4 is the lamp-body, and 5 its chimney. This lamp-body is of the upright pattern, adapted to contain a small quantity of oil and the wicks pendent from the burner 4^x on its upper end where the chimney is placed. The lamp-body is connected by tubular branches 6 with two or more reservoirs 7, constructed similar to those of the ordinary student-lamp. Each reservoir is provided with a lug 8, in which is a socket to receive an upright pin 9 on a lug projecting from the ring 2. Preferably this pin and the socket it is to enter will be tapered, as clearly shown in Fig. 1, where the lugs are seen in section. The object of this tapering of the pins is to make it easier to replace the lamp after its removal, and to make its connection with the ring 2 firm and solid.

To remove the lamp for cleaning and filling, the attendant has only to lift it and the connected reservoirs high enough for the socketed lugs 8 to clear the pins 9, as seen in Fig. 2, and then turn it a little axially, when it may be lowered. To replace the lamp the operation is reversed. Of course the pins 9 may be

on the reservoirs 7 and the sockets in the lugs on the ring 2. This reverse construction is illustrated in Fig. 1^a.

The hangers 1 are bent or turned outwardly at their upper parts to afford room for the exceptionally large outlet for the gases mounted in the car-roof. As this gas-outlet device serves to ventilate the car as well as to carry away the smoke and gases, I will call it, as a whole, the "ventilator." It comprises certain instrumentalities which I will now describe.

In an opening in the roof of the car is mounted a drum 10, secured to the roof through the medium of a flanged ring 11, which rests on the roof and is attached thereto in any secure manner. This drum projects above the roof and has secured to it a little below its top an annular gallery. This gallery comprises a bottom or floor 12, which inclines or slopes outwardly, and an upright wall 12^x around its outer edge. This wall has in it a series of apertures 12^a, and the sloping bottom of the gallery has in it also a series of perforations 12^b at its lower part near the upright wall. The gallery and drum are covered in by a cap or roof 13, which will be convex, by preference, as shown in Figs. 1 and 2. The margin of the roof 13 projects out beyond the wall 12^x, and about its margin is a pendent screen or shield 14. This roof structure above the gallery and drum may be braced and supported by stays 15, secured at their lower ends to the roof of the car.

Within the car and below the ceiling thereof is mounted that portion of the ventilator which I call the "receiver." This comprises, as to its upper part, a drum 10^x, which, at its upper end, is of substantially the same diameter as the drum 10, and is coincident with it in the aperture in the car-roof. Indeed the drums 10 and 10^x may be considered as one drum, they being made separate mainly for convenience of manufacture. The drum 10^x is secured to the car-ceiling, as herein shown, through the medium of a flange turned outwardly on its upper edge. In order to protect the wood in the car-roof from the intense heat, the aperture in the roof is made considerably larger than the drum 10, leaving an annular space 16 in the opening about the drum, said space being covered above the flanged ring 11 and below by the outwardly-turned attaching-flange on the drum 10^x. This latter flange has apertures in it to admit air to the annular space 16, the air flowing thence into the drum 10 through apertures 10^a therein or through the space between the adjacent ends of the drums 10 and 10^x. This current of air tends to cool the adjacent metal parts and to keep the woodwork from taking fire.

Below the ceiling of the car the drum 10^x is contracted by graceful curves and easements to the lower section 10^{xx} of the drum 10^x, which is provided with ornamental slots or

perforations to admit air freely, and the parts of the receiver above the section 10^{xx} are also provided with rows of apertures or perforations for the same purpose. The object is to admit air freely to the ventilator below the car-ceiling through numerous lateral slits or apertures, but the exact form and arrangement of these are not material. To the lower end of the drum-section 10^{xx} is secured a reducing-section 17, which completes the receiver and ventilator proper.

Within the receiver, and secured at its base to the base of the section 17, is the smoke-flue 18, which has within it spring-fingers 19 to receive and steady the chimney of the lamp when the latter is in place. This smoke-flue 18 is made of metal and has a lining 18^x of asbestos. The flue may also have a smoke-cap 18^a to deflect the hot gases outward into the upper part of the ventilator.

I will now explain the purpose of the various features of the ventilator and smoke-flue which have been described.

The screen or shield 14 prevents the air, through which the car is rapidly moving, from entering the apertures 12^a and producing back-draft in the lamp. The sloping form of the gallery-floor 12 prevents the air impinging on the drum 10 from backing up under the overhanging cap and entering the apertures 12^a, thereby producing back-draft and carrying in cinders with which the air is charged. The perforations 12^b drain off any water that may collect in the gallery from rain beating up from the roof. The arrangement of the apertures 12^a high up in the wall 12^x, and the extension of the drum 10 above their level, both serve to prevent back-draft and to keep out the cinders from the locomotive, which is a serious difficulty with car-lamps. The relatively large drum 10 and the numerous air-inlets in the drum-sections 10^x and 10^{xx} serve to increase the ventilating capacity of the lamp. The lining of the smoke-flue 18 with asbestos protects the metal from the intense heat and impedes the transmission and radiation of heat.

The reservoirs 7 of the lamp are or may be provided with thumb-pieces 20, to be grasped by the attendant in lifting the lamp for removal.

The ventilating device mounted in the car-roof will be circular in plan, by preference.

My lamp and ventilating device will effectually remove all smoke, products of combustion, and foul air from the car, will prevent back-draft while the car is in rapid motion, will keep out cinders, and will prevent the heat from setting fire to the car-roof.

It will be noted that the reservoirs or oil-holders 7 stand off beyond the outer limits of the shade or reflector 3, and at about the level of the burner, and that the lamp-body 4 is relatively small. This construction prevents the obstruction of the light due to a large lamp-body, such as is commonly employed to

hold the oil which supplies the burner. The oil-holders shown are similar to those employed on the well-known student-lamp; but this form of holder is not essential to my invention. I may employ ordinary reservoirs so set that when full the oil-level therein will be a little below the tips of the wicks of the lamp-burner.

I have shown my lamp rigidly secured directly to the car-ceiling, but of course it may be indirectly and rigidly secured to the roof of the car through any intermediate overhead support. This matter will depend on the particular form or kind of roof on the car.

Having thus described my invention, I claim—

1. In a car-lamp adapted to be rigidly secured to the car-ceiling or roof, the combination with the arms or hangers 1, of the supporting ring 2, secured thereto, the shade supported on the ring 2, the lamp-body, and a plurality of oil-reservoirs connected rigidly to the lamp-body, said reservoirs and ring 2 being provided, the one with sockets and the other with pins to fit in said sockets, to form a readily detachable fastening for securing the reservoirs to said ring, substantially as set forth.

2. In a car-lamp adapted to be rigidly secured to the car-ceiling or roof, the combination with the arms or hangers 1, and the supporting ring 2, secured in a rigid manner to said arms and provided with upright pins 9, of the shade 3, supported on the ring, the lamp-body, a plurality of oil-reservoirs 7, each connected to the lamp-body by a tube 6, and provided with a lug 8, having in it a socket adapted to engage one of the pins 9 on the supporting ring, and the said connecting tubes 6, substantially as set forth.

3. In a car-lamp adapted to be rigidly secured to the car-ceiling or roof, the combination with the depending arms or hangers, and the supporting ring for the shade provided

with outwardly projecting lugs each provided with an upright tapered pin 9, of the oil-reservoirs 7, each provided with a lug 8, having in it a tapered socket adapted to fit on a pin 9, a centrally arranged lamp-body 4, and tubes 6, connecting the lamp-body and the respective oil-reservoirs rigidly together, the space between the lugs 8 on oppositely arranged oil-reservoirs being sufficient to permit of the free passage of the supporting ring in mounting the lamp-body and reservoirs on the ring.

4. A ventilating device for a car having a drum 10, adapted to extend above the roof of the car when in place, a gallery about the upper end of said drum, said gallery comprising a sloping floor 12, arranged below the level of the top of the drum and an apertured upright wall 12^x, a cap or roof 13, which projects beyond said gallery, and a pendent shield, 14, on the outer, projecting edge of said roof, in combination with a car-lamp, substantially as set forth.

5. A ventilating device for a car having a drum 10, mounted in an aperture in the roof of a car, said drum projecting above the car-roof, a gallery about the upper part of said drum, said gallery comprising a sloping, perforated bottom and a perforated or apertured upright outer wall, a cap or roof over said drum and gallery, a shield pendent from said roof exterior to the gallery, and an apertured receiver within the car below said drum, in combination with the car, a car-lamp secured to the car-roof below said receiver, and a smoke-flue within said receiver, substantially as set forth.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

WILLIAM WESTLAKE.

Witnesses:

PETER A. ROSS,
JAS. KING DUFFY.