

No. 609,193.

Patented Aug. 16, 1898.

C. BERGENER.
LAMP.

(Application filed Nov. 7, 1896.)

(No Model.)

3 Sheets—Sheet 1.

Fig. 1.

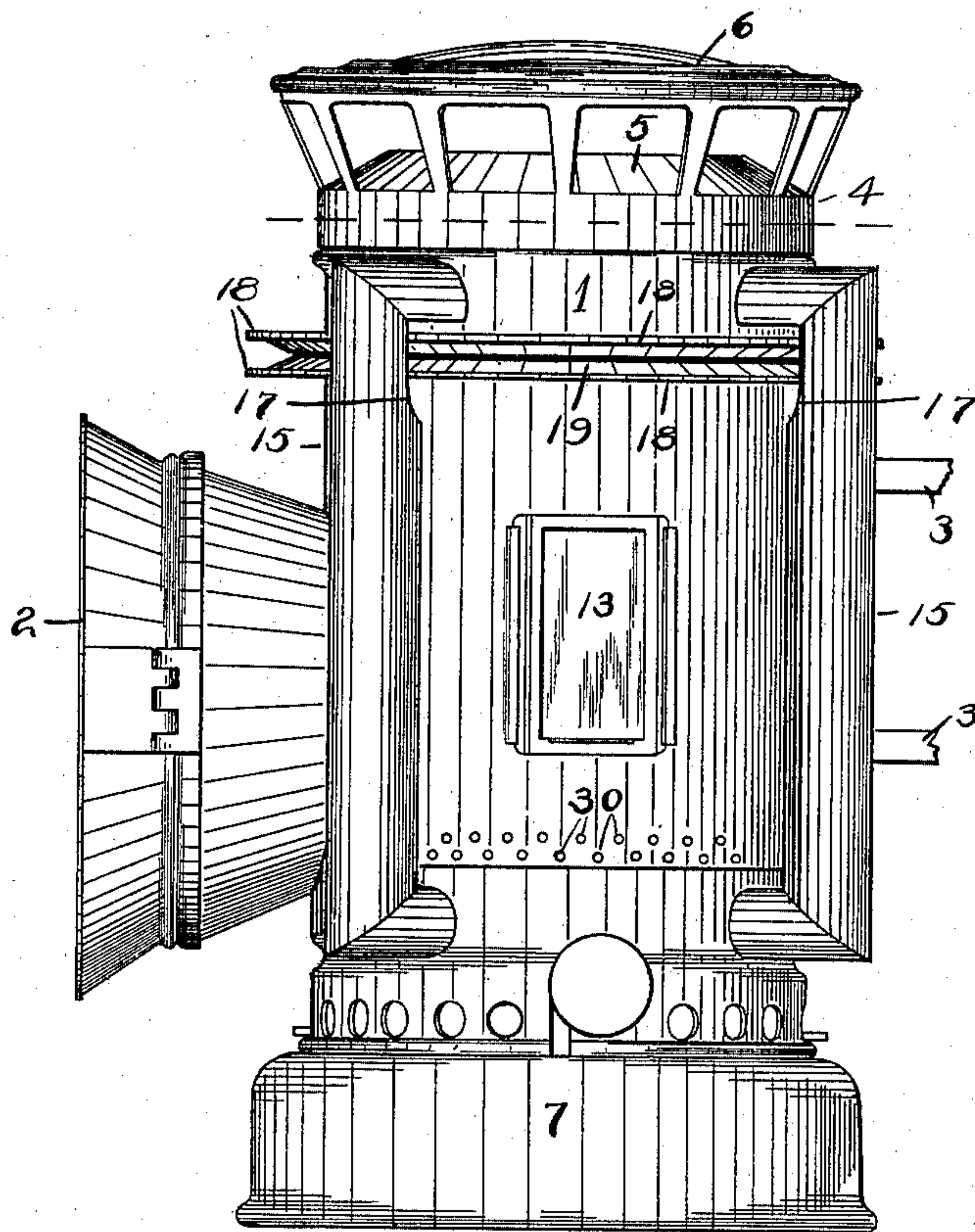
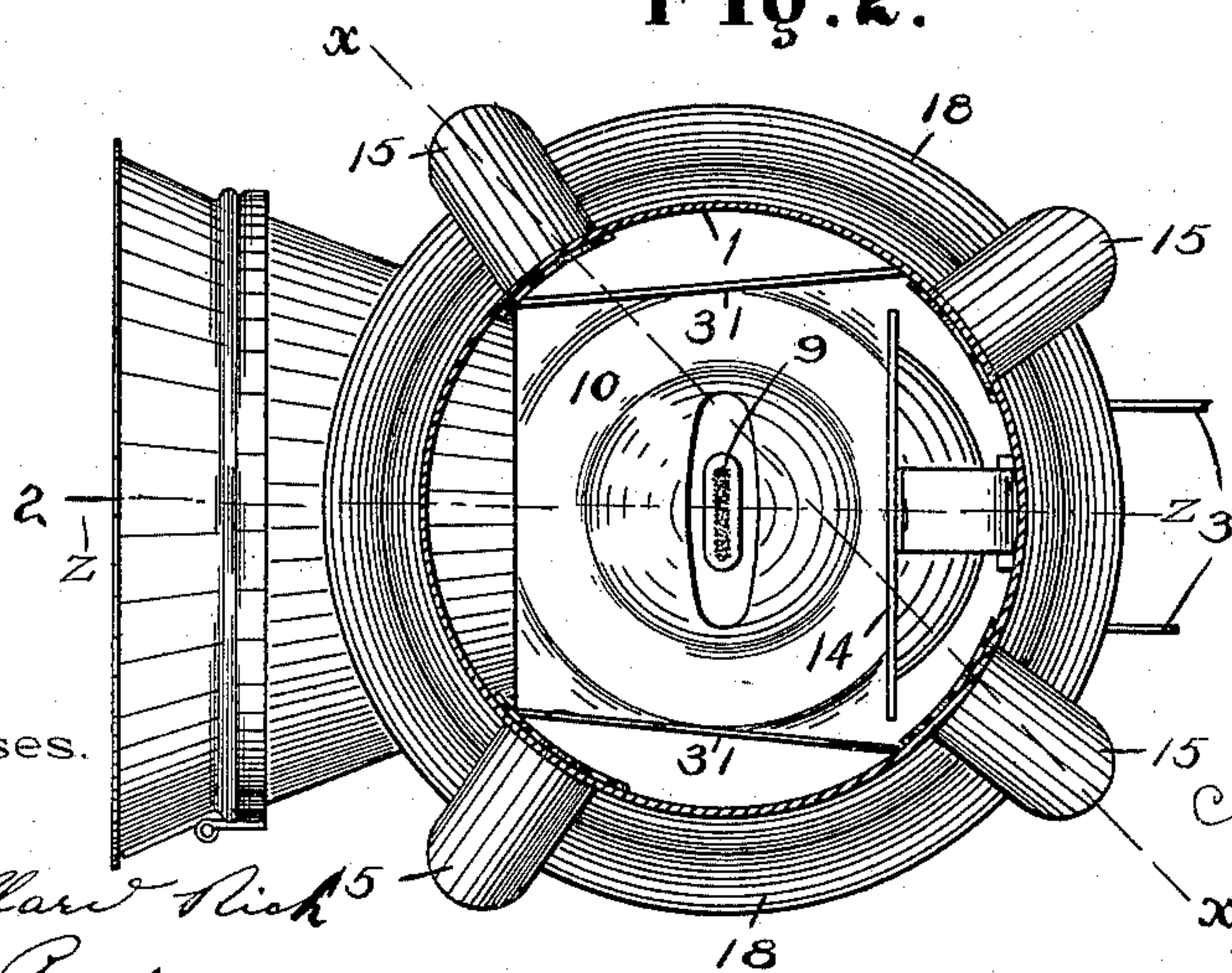


Fig. 2.



Witnesses.

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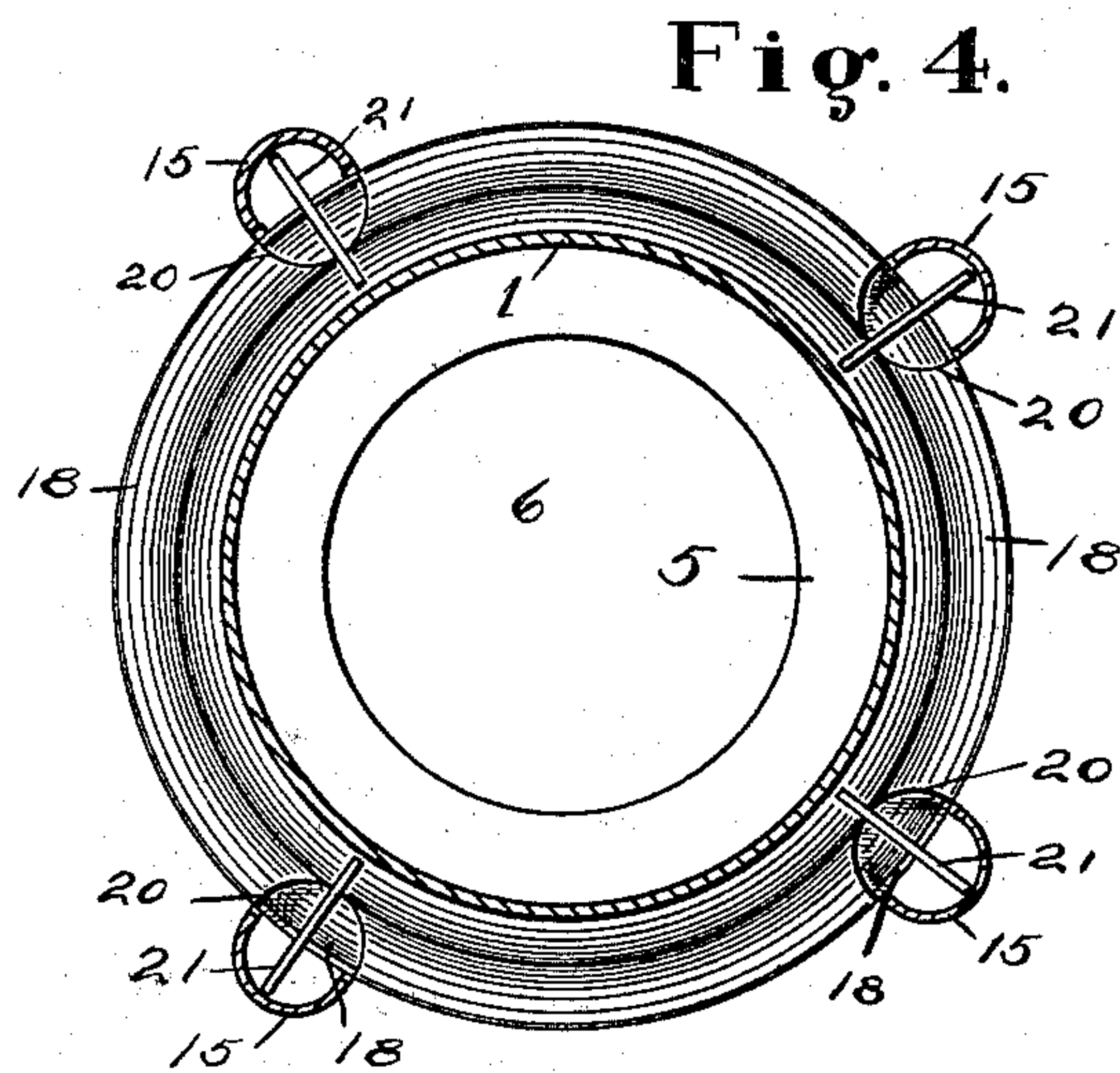
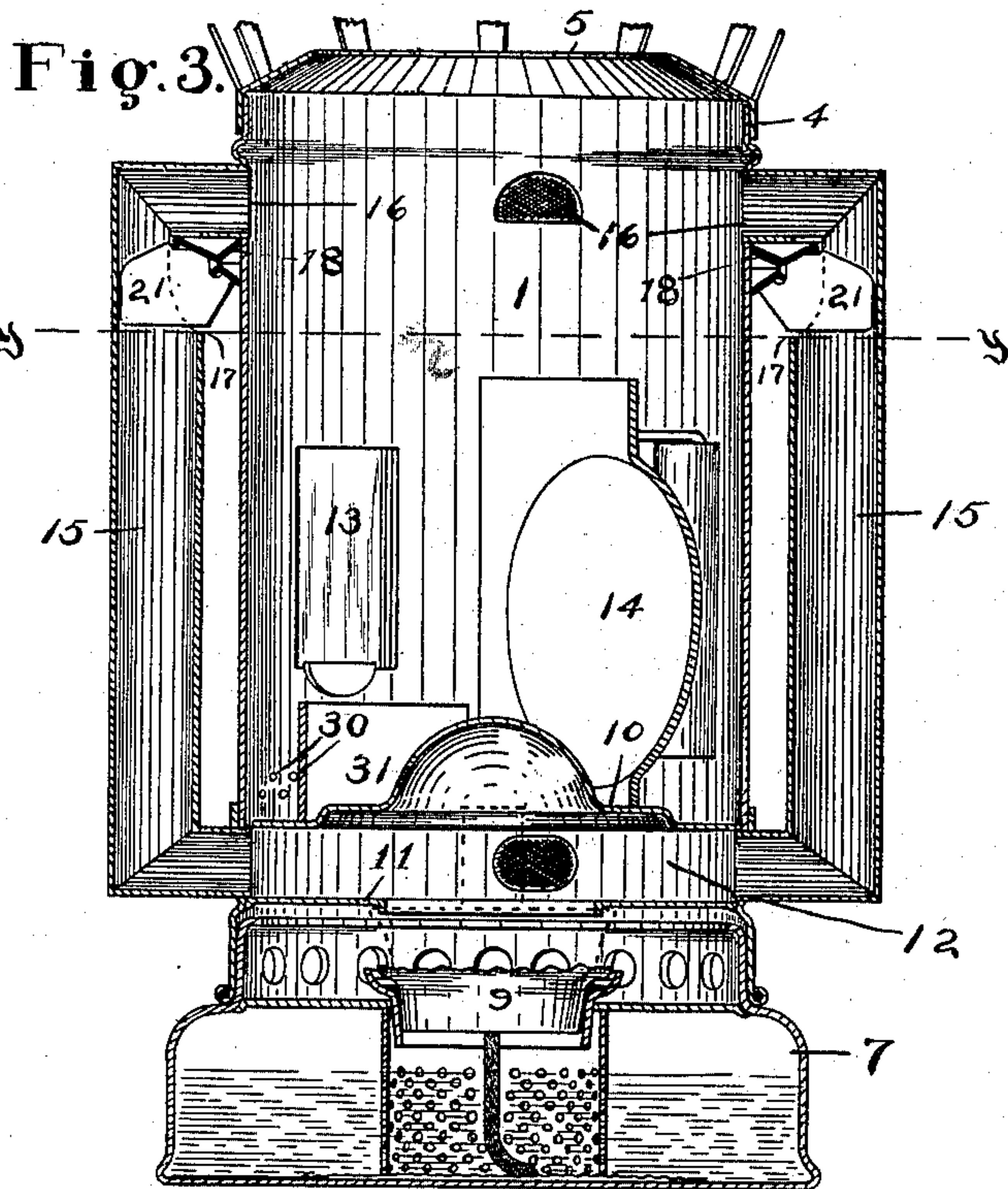
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3 Sheets—Sheet 2.



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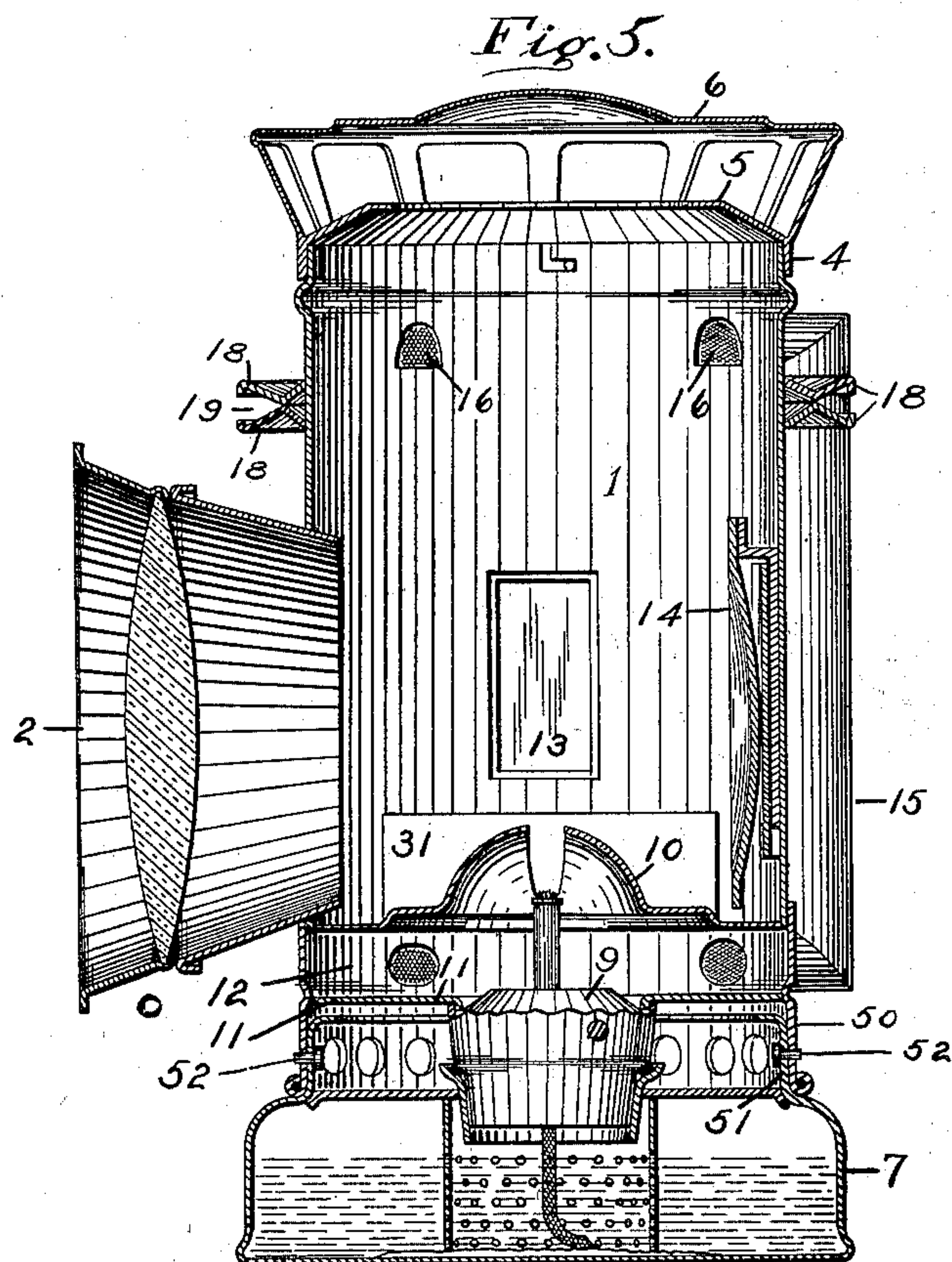
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3 Sheets—Sheet 3.



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UNITED STATES PATENT OFFICE.

CHARLES BERGENER, OF ROCHESTER, NEW YORK, ASSIGNOR TO THE
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LAMP.

SPECIFICATION forming part of Letters Patent No. 609,193, dated August 16, 1898.

Application filed November 7, 1896. Serial No. 611,385. (No model.) Patented in England December 15, 1896, No. 28,684,
and in France April 17, 1897, No. 262,247.

To all whom it may concern:

Be it known that I, CHARLES BERGENER, of Rochester, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Lamps; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, and to the reference-numerals marked thereon.

The subject-matter of this application is contained in British Letters Patent No. 28,684, dated December 15, 1896, and also in French Letters Patent No. 262,247, dated April 17, 1897.

My present invention has for its object to provide an improved lamp or lantern particularly adapted for use on bicycles or vehicles, and has for its object to provide an improved construction whereby a sufficient quantity of air to support combustion will be supplied, and the lamp is not liable to be extinguished either by jars to which it may be subjected or by reason of gusts of air or the blasts incident to its rapid movement.

Heretofore attempts have been made to construct a small tubular lamp or lantern particularly adapted for bicyclists' use, because such lamps and lanterns are best adapted to withstand shocks and gusts of wind without being extinguished; but such attempts have not been commercially successful, for the reason, among others, that it is exceedingly difficult to make a small, symmetrical, and slightly structure of this kind without sacrificing some of the advantageous features of tubular lanterns, unduly heating the air-tubes, and reversing the air-current supplying the flame, or impairing the ability to withstand gusts of wind from all directions (as when the lamp is still) when arranging the parts for the proper burning when the lamp is moved in one direction at speed. My present structure, however, overcomes all the objections noted and others and fulfils all the requirements of a perfect lamp adapted for bicyclists' use; and it consists in certain improvements, which will be hereinafter described, and the novel features pointed out in the claims at the end of this specification.

In the drawings, Figure 1 is a side eleva-

tion of a vehicle-lantern constructed in accordance with my invention; Fig. 2, a plan view of the same with the top removed; Fig. 3, a vertical sectional view on the line xx of Fig. 2; Fig. 4, a horizontal sectional view on the line yy , looking upwardly; Fig. 5, a vertical sectional view on the line zz of Fig. 2.

Similar reference-numerals in the several figures indicate similar parts.

The lamp embodies generally a cylindrical body portion 1, having a goggle or projection 2 at its forward end containing a lens or window and at the rear suitable projecting arms 3 for attachment to a suitable holder, either spring or rigid. At the upper end of the body is the top, embodying the ring 4, detachably connected to the body (by a bayonet-joint or other detachable connection) and having the conical plate 5 and the top plate 6 above it, the opening between said plates 5 and 6 affording an escape for the heated air and products.

7 indicates the oil-pot, secured to the bottom of the body, with a space between for preventing heating the former.

9 is the burner; 10, the burner-cone; 11, the bottom plate, having the aperture for the burner and forming, with the cone and its plate, the air-chamber 12.

13 are windows in the body, and 14 a removable reflector.

The sides of the body are perforated at 30 to afford a supply of air above the burner, and the vertical plates 31, arranged inside of the body, prevent the air entering said apertures from striking the flame directly.

The lower portion of the body of the lamp beneath the plate 11 is provided with a perforated skirt 50, and the upper portion of the oil-pot is provided with the vertically-extending flange 51, having perforations therein corresponding to those in the skirt 50, and it is arranged to enter the said skirt and to be secured thereto by a suitable fastening, such as a bayonet-joint, the pins 52 on one member entering the angular slots in the other. The upper portion of the burner 9 engages the under side of the plate 11, closing the aperture therein, thereby preventing the entrance of air to the chamber 12 otherwise than through the tubes 15 when the parts are se-

cured together. The skirt 50 and flange 51, it will be noticed, form a space between the oil-pot and the plate 11, through which air can freely circulate, thereby preventing over-
 5 heating of the oil-pot, and by this means I am enabled to employ a slip-burner, which is held in place by the plate 11, and there are no joints in the air-circulating tubes or cham-
 bers necessary to be kept tight.

10 Arranged around the body of the lantern are several (four in the present embodiment) vertically-extending air-tubes 15, communi-
 cating at their lower ends with the air-cham-
 15 ber 12 beneath the burner-cone, and the up-
 per ends of said tubes communicate with the interior of the lamp-body near the top through
 openings 16, and intermediate the ends of
 20 these tubes and on their inner sides next the
 body are openings 17, which are preferably
 arranged at the upper portion of the lamp at
 the upper elbow or the part where they turn
 toward the body to connect therewith. En-
 circling the upper portion of the body is an
 25 air-director constructed, in the present in-
 stance, of two annular dished plates 18, hav-
 ing the outer edges or flanges turned toward
 each other and forming an open-sided annular
 air chamber or passage 19. The lower one of
 30 the plates 18 is cut away at 20 opposite the
 openings in the tubes 15, and the vertical di-
 viding or directing plates 21 are arranged in
 said cut-away portions, extending also verti-
 cally across the open portions of the tubes,
 as in Figs. 3 and 4.

35 While I prefer to employ four tubes, this par-
 ticular number is not absolutely necessary;
 but the tubes should be symmetrically ar-
 ranged around the lamp-body in such manner
 that when the lamp is subjected to blasts of
 40 air coming from any direction the proper
 amount of air will be supplied to support com-
 bustion and the currents will be balanced.
 The separation of the tubes from the body of
 the lamp is desirable, particularly in small
 45 lamps, as the tubes are not liable to be heated
 and the air-currents reversed. It is also emi-
 nently desirable that the top and bottom
 plates of the air-director encircling the body
 be dished, as shown, in order that vertical
 50 currents of air, as those due to the vertical
 movements of the lamp while in use, may cause
 a sufficient supply to support combustion un-
 der all conditions. It is essential that the di-
 55 rector project sufficiently from the body to al-
 low vertical currents in either direction to co-
 operate with the annular director and be di-
 rected into the tubes. This arrangement of
 air tubes and directors provides for a suffi-
 cient supply of fresh air beneath the burner-
 60 cone to produce a brilliant light, while the
 connection with the upper portion of the
 body balances the currents to such an extent
 as to render the light brilliant and steady
 under all circumstances, no matter whether
 65 the lamp is moving forward at speed or is at
 rest in a strong wind.

This lamp is particularly adapted for use

on bicycles or other vehicles by reason of the
 fact that it is not liable to be extinguished
 by any jarring to which it is subjected, and
 70 the air-currents are so balanced that it will
 not be extinguished by high winds or when
 moving at great speed; but it will be under-
 stood that it could be used for other purposes,
 if desired. 75

I claim as my invention—

1. In a lamp, the combination with the body
 having the open top and the burner, burner-
 cone and the air-chamber beneath the cone,
 of the air-tubes connected to the air-cham- 80
 ber at the burner and with the interior of the
 upper portion of the body and having the
 apertures, an annular air-director at the up-
 per portion of the body intersecting the tube-
 apertures, and the vertical plates in the tube- 85
 apertures, substantially as described.

2. In a lamp, the combination with the body
 having the open top, the burner, the burner-
 cone, and the air-chamber beneath the cone,
 of the air-tubes connected to the air-cham- 90
 ber at the burner and to the upper portion of
 the body and having the apertures, an annu-
 lar air-director intersecting the tube-aper-
 tures, having the central air-passage, the
 vertical plates in the tube-apertures extend- 95
 ing across the air-passage in the director,
 substantially as described.

3. In a lamp, the combination with the body
 having the open top, the window at the front,
 the burner, burner-cone, and the air-chamber 100
 beneath the cone, of four air-tubes connected
 to the air-chamber at their lower ends and
 with the interior of the body above the burner,
 and having apertures intermediate their
 length, a horizontal air-director extending 105
 laterally of the openings in the tubes, and
 vertical dividing-plates in the tube-openings,
 substantially as described.

4. In a lamp, the combination with the body
 having the open top, the burner, burner-cone 110
 and the air-chamber beneath the cone, of the
 air-tubes separated from the body and com-
 municating with the body above the burner
 and with the air-chamber beneath the cone,
 said tubes having air-inlet openings interme- 115
 diate their ends and the horizontal air-di-
 rector on the body coöperating with the tube-
 openings, substantially as described.

5. The combination with the body having
 the open top, the burner, burner-cone and the 120
 air-chamber beneath the cone, of the air-tubes
 separated from the body and communicating
 with the interior of the latter above the burner
 and with the air-chamber below it, said tubes
 having the apertures 17, the dividing-plates 125
 21 and the horizontal air-director having the
 dished upper and lower sides and projecting
 beyond the body of the lamp, substantially
 as described.

6. In a lamp, the combination with the body 130
 open at the upper end, and the burner-cone
 at the bottom, the bottom plate beneath the
 cone having the aperture and forming with
 the cone an air-chamber, of air-tubes sepa-

rated from the body and communicating with the latter above the cone and with said air-chamber, an oil-fount separated from the body by an air-space, and the burner in the fount coöperating with the bottom plate and closing the aperture therein, substantially as described.

7. In a lamp, the combination with the body open at the upper end, and the burner-cone at the bottom, the bottom plate having the aperture and forming with the cone an air-chamber, of air-tubes separated from the body communicating with the latter above the cone, having air-feeding apertures intermediate their length and entering the air-chamber beneath the cone, the oil-fount connected to the body and separated therefrom by an open air-space, and the burner in the fount coöperating with the aperture in the bottom plate, to form a tight joint therewith, substantially as described.

8. In a lamp, the combination with the body open at the upper end, the bottom plate having the aperture and the cone above it, and an air-supply tube separated from the body connected with the latter above the burner and communicating with the chamber beneath the cone having air-supplying devices intermediate its length, of the oil-fount detachably connected with the bottom of the body and separated therefrom by an air-space, a removable burner in the oil-fount, engaging the under side of the air-chamber around the aperture to close the latter.

9. The combination with the body having the window at the front and the plates 10 and 11 at the bottom, forming an air-chamber, an air-tube communicating at its lower end with the air-chamber in the body, of the oil-fount, detachable fastenings between it and the body and leaving an air-space between the bottom plate and the top of the oil-fount, and the burner in the oil-fount entering the air-chamber in the body and forming a tight joint with the bottom plate of the chamber.

10. The combination with the body having the cap, the window at the front, an air-chamber at the base, and an air-supply tube separated from the body and communicating with the air-chamber, the burner-cone above the air-chamber, the oil-fount detachably connected to the body and separated therefrom by an air-space, and the burner in the fount entering the bottom of the air-chamber and forming a tight joint therewith.

11. In a lamp, the combination with the

body, the cone-plate therein, and the bottom plate having an aperture, air-supplying tubes on the body above the bottom plate communicating with the air-space between the cone and bottom plates, and the perforated apron on the bottom of the body, of the oil-fount having the perforated flange coöperating with the apron and detachable connections between them, and the slip-burner in the fount engaging the bottom plate close to the edges of the aperture, substantially as described.

12. In a lamp, the combination with the body having the open top, the burner, burner-cone, and the air-chamber beneath the cone, of a plurality of air-tubes arranged symmetrically around the body separated therefrom and connected to the body above the burner and to the air-chamber beneath the cone, said tubes having apertures intermediate their length, a horizontal air-director extending laterally of the openings in the tubes and having the dished upper and lower sides and vertical dividing-plates in the tube-openings, substantially as described.

13. In a lamp, the combination with the body, the top plate, the conical plate beneath it, and the burner-cone, of the air-chamber beneath the cone, a plurality of air-tubes around the body communicating with the interior of the upper portion of the latter and with the air-chamber at the burner and having the apertures intermediate their length, the dividing-plates in the apertures and the annular air-director extending around the body and intersecting the apertures in the tubes, substantially as described.

14. In a lamp, the combination with the body, having a cone and an air-chamber beneath the cone, of an air-tube separated from the body and communicating with the air-chamber, and having an opening in the side, the annular air-director embodying the top and bottom channels and the intermediate channel and coöperating with the opening in the tube, substantially as described.

15. In a lamp, the combination with the body, and a vertical air-tube connected with the lower portion of the body, of the annular air-director on the body coöperating with the tube intermediate its ends, and having the dished upper and lower sides, and the intermediate air-passage, substantially as described.

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Witnesses:

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