

No. 868,503.

PATENTED OCT. 15, 1907.

J. M. STOKOE.
LANTERN.

APPLICATION FILED APR. 25, 1907.

2 SHEETS—SHEET 1.

Fig. 1.

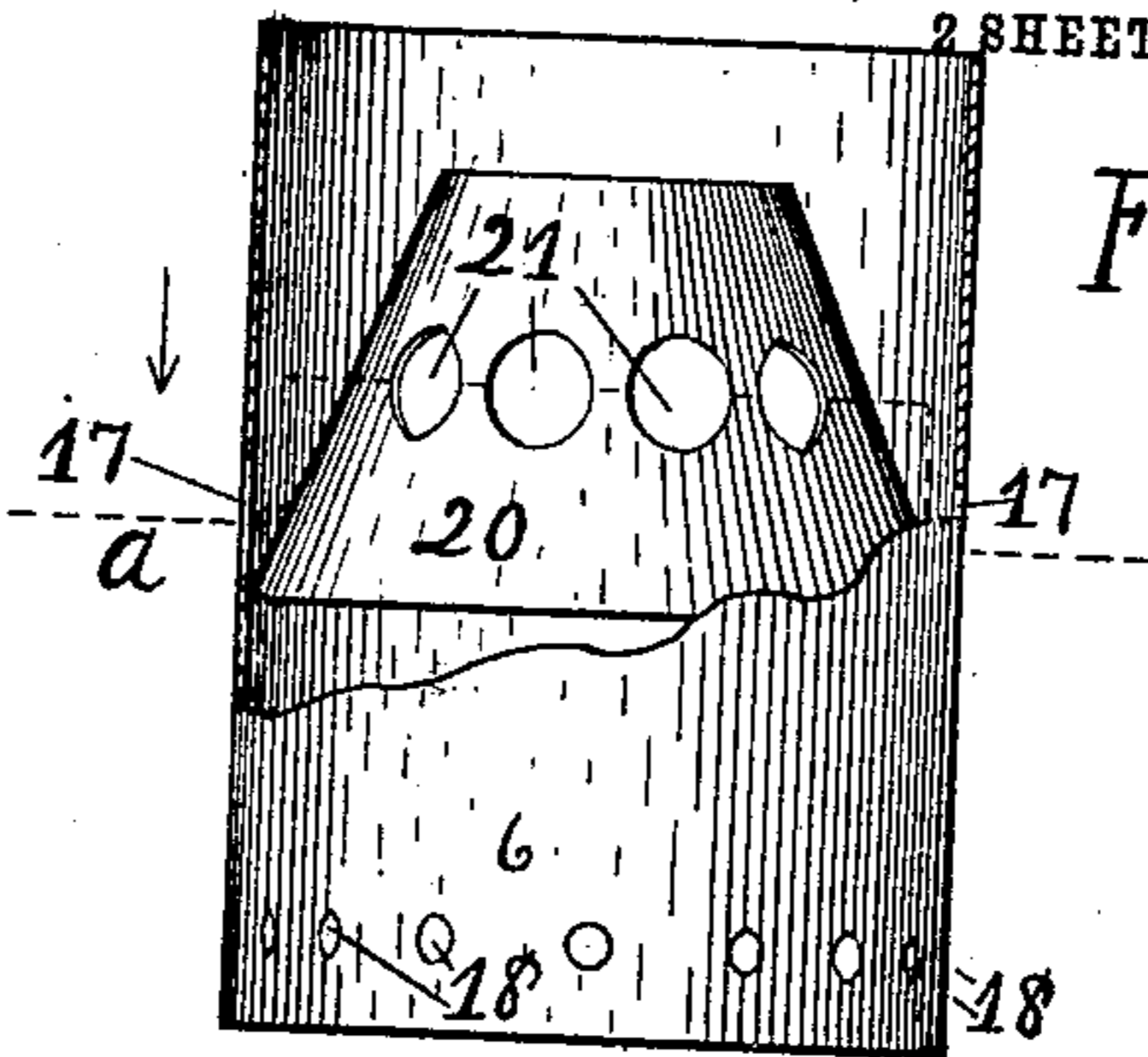
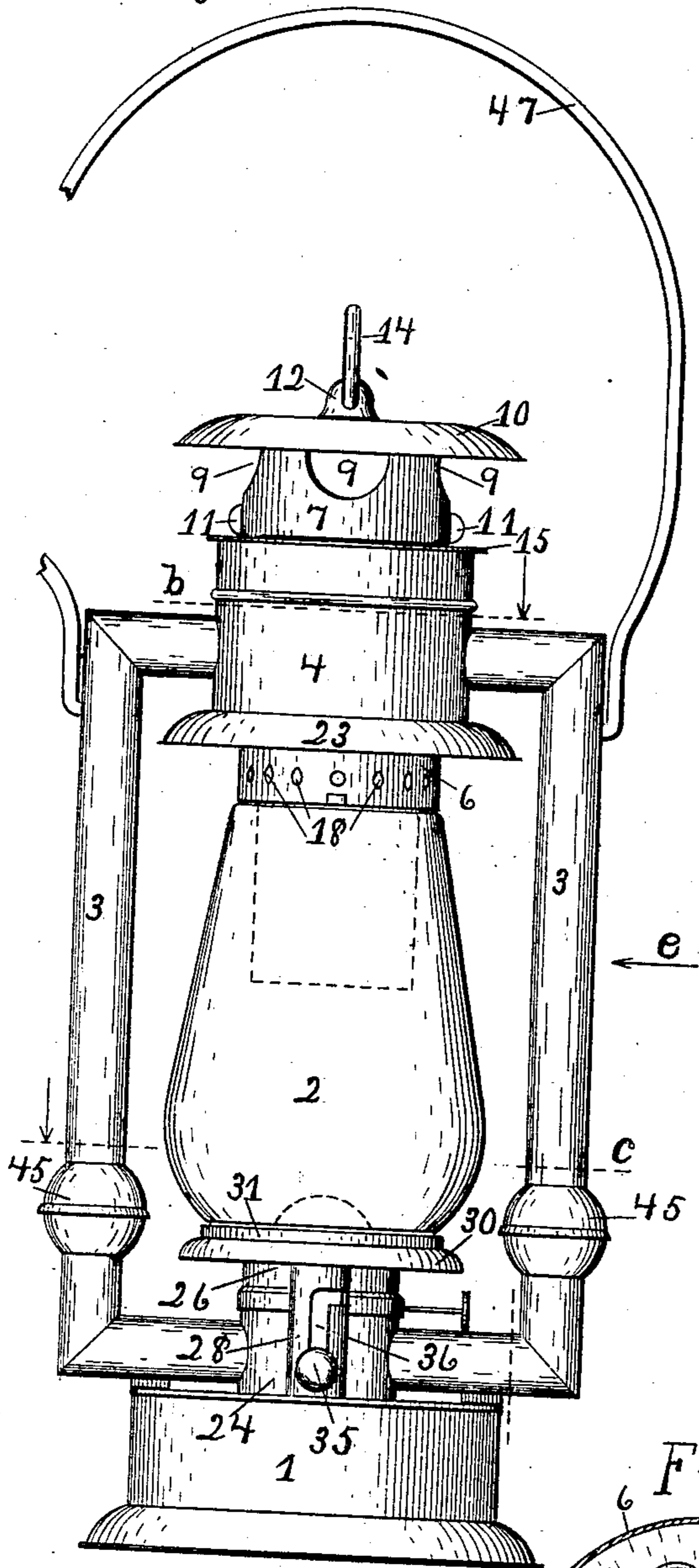


Fig. 3.

Fig. 2.

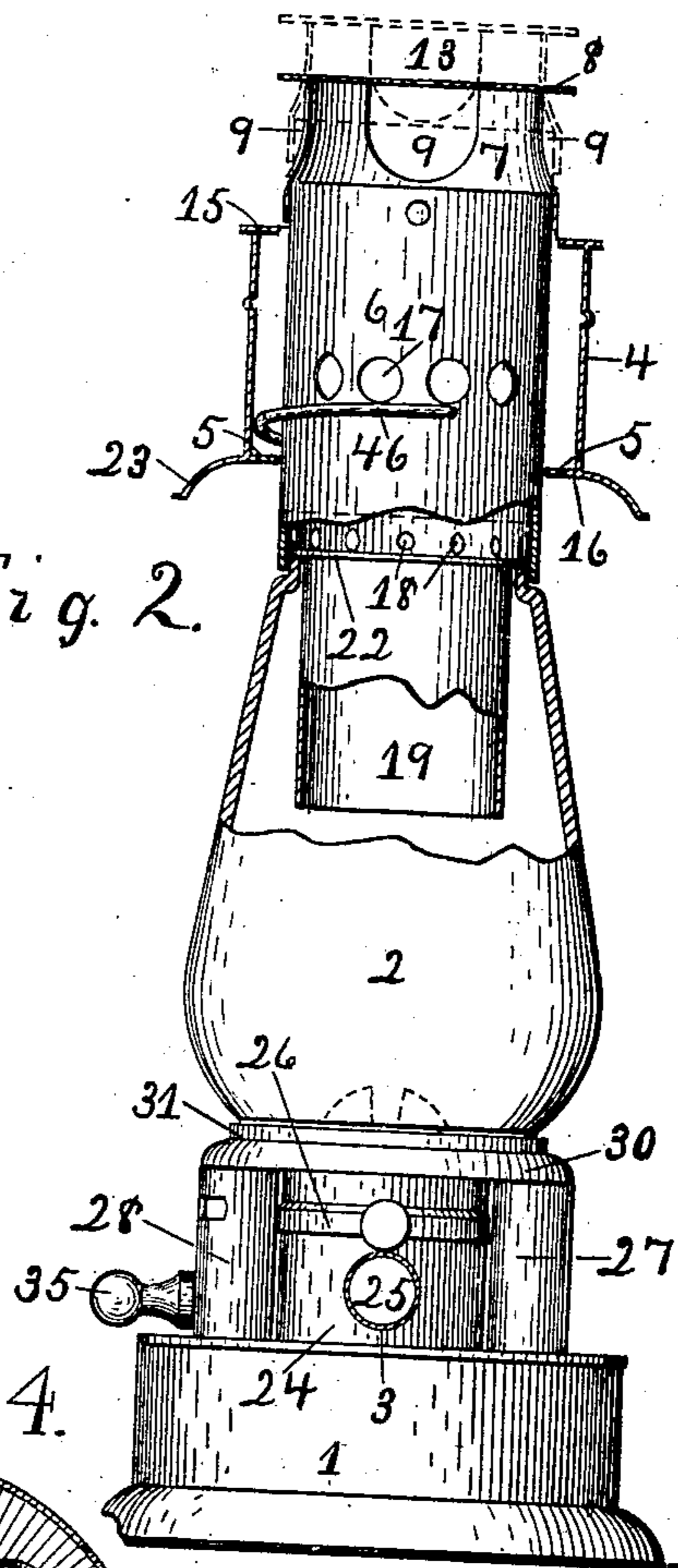
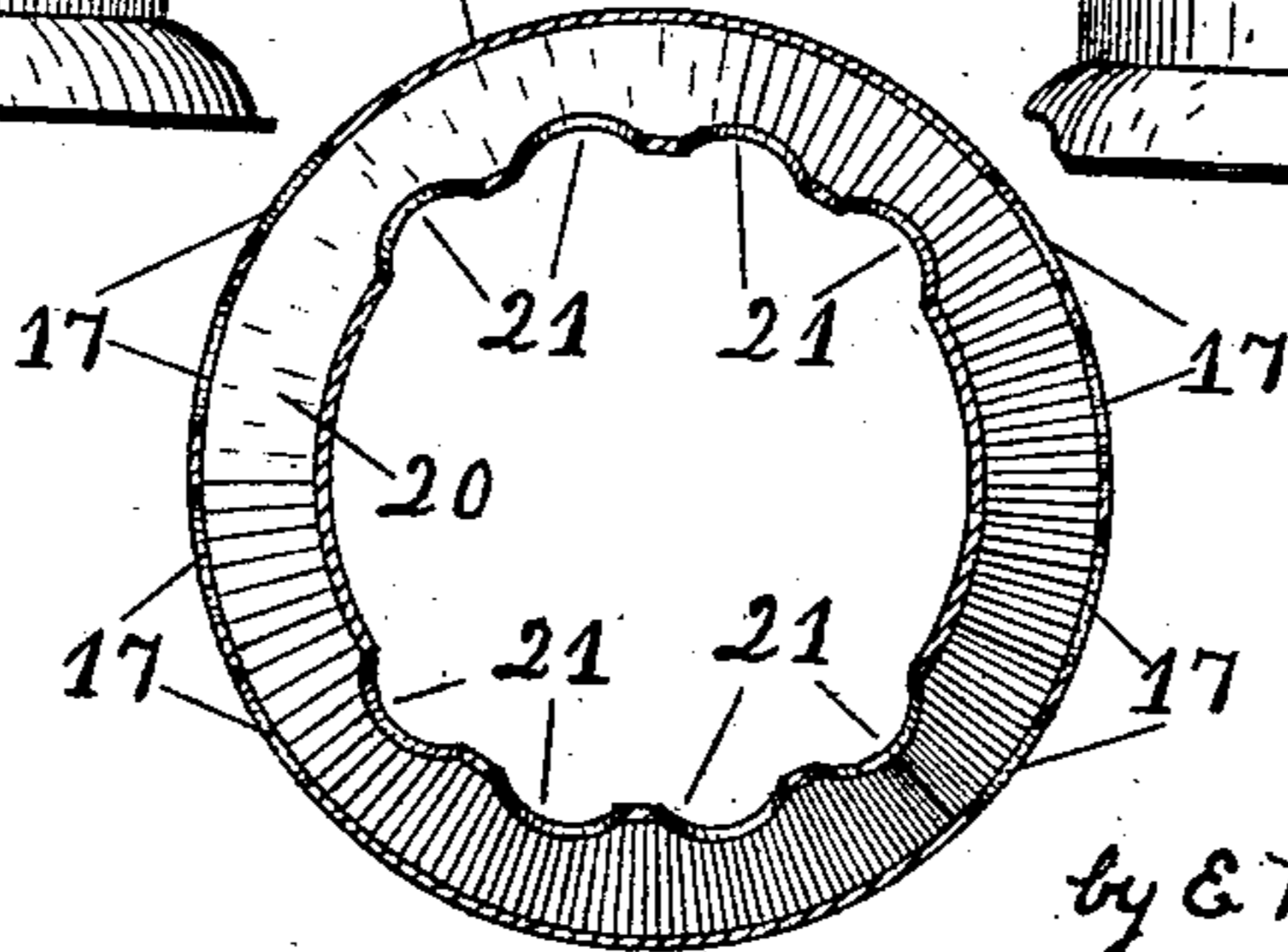


Fig. 4.



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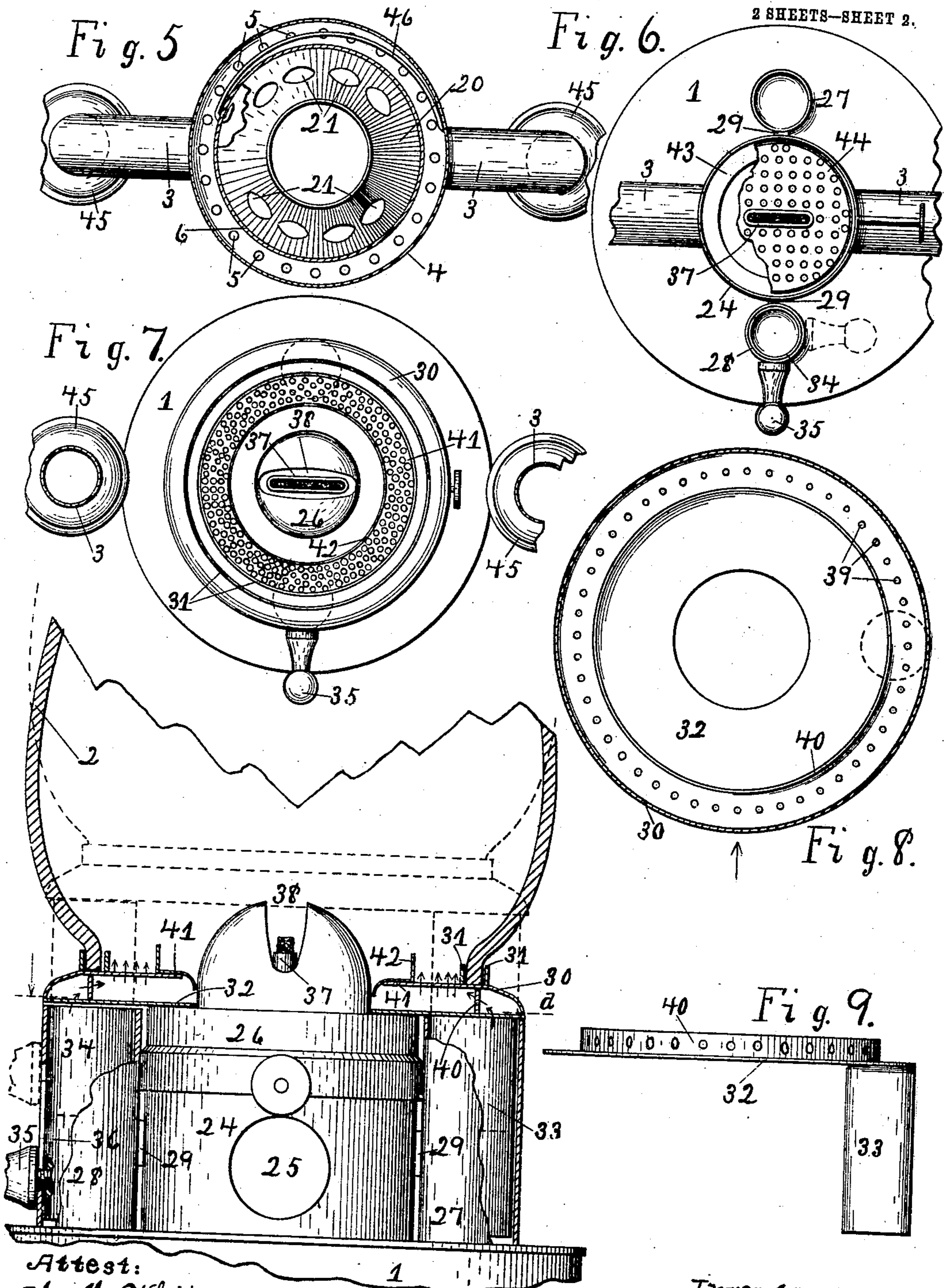
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2 SHEETS—SHEET 2.



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Fig. 10.

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UNITED STATES PATENT OFFICE.

JOHN M. STOKOE, OF CLEVELAND, OHIO.

LANTERN.

No. 868,503.

Specification of Letters Patent.

Patented Oct. 15, 1907.

Application filed April 25, 1907. Serial No. 370,223.

To all whom it may concern:

Be it known that I, JOHN M. STOKOE, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented a new and useful Improvement in Lanterns, which improvement is fully set forth in the following specification, and shown in the accompanying drawings.

My invention is an improved hand lantern, designed to be convenient for use on railroads and for general purposes.

Hand lanterns used out of doors, or where subjected to strong blasts and puffs of air are liable to have the flames rendered unsteady thereby, giving an unsatisfactory light and, at times, to become extinguished. Also, the lighting of lanterns as commonly constructed, is a more or less troublesome act; and to remedy these and some kindred difficulties is, mainly, the object of my present invention.

In constructing this improved lantern I have arranged for both a downward flow of air to the flame and an upward flow of air into the globe, with numerous barriers and checks for controlling and modifying the flowing air in both directions so that it may reach the interior of the globe and the flame in a calm state and with steady and easy flow. Certain means for controlling the intake of air are also provided, and means for quickly and conveniently lifting the globe and other parts for the purpose of lighting the wick, and also means providing for perfect combustion.

Other objects and advantages of the invention will be brought out and made to appear in the following description, and the novel features particularly pointed out in the appended claims, reference being had to the accompanying drawings which, with the reference characters marked thereon, form a part of this specification.

Figure 1 is a side elevation of the lantern, as in use. Fig. 2 is a side elevation, seen as indicated by arrow *e* in Fig. 1, parts being broken away and in central vertical section, the canopy being omitted, and parts shown in two positions by full and by dotted lines. Fig. 3 is a side elevation of the main flue, detached, a part being broken away and centrally longitudinally sectioned to uncover the conical flue. Fig. 4 is a horizontal cross section of the main flue and the conical flue, taken on the broken dotted line *a* in Fig. 3. Fig. 5 is a plan of some of the upper parts of the lantern, parts being in horizontal transverse section on the dotted line *b* in Fig. 1. Fig. 6 is a plan of the oil reservoir and some superincumbent parts, parts being broken away and omitted. Fig. 7 is a plan of the reservoir and attached parts including the globe base, the vertical draft tubes being transversely sectioned as on the dotted line *c* in Fig. 1. Fig. 8 is a plan of the bottom perforated plate of the globe base, the side of the latter being horizontally sectioned on the dotted line *d* in Fig. 10. Fig. 9 is an edge

view of the bottom plate of the globe base seen as indicated by arrow in Fig. 8. Fig. 10 is a side elevation of parts over the reservoir mainly in central vertical section, parts being broken away and other parts shown in two positions by full and by dotted lines.

Referring to the drawings 1, in the various figures, is the oil font or reservoir of the lantern, preferably cylindrical in form, 2 being the glass globe, 3 the downward draft tubes for the flame, and 4 the inclosing band over the globe. The band 4 is formed at top and bottom with inwardly-turned flanges 15 16, Fig. 2, and it is pierced at opposite sides to receive the intumed upper ends of the draft tubes 3 which open into the interior of the band, these tubes being supplied with air for the flame through a series of small holes 5 in the flange 16, Figs. 2 and 5. Concentrically within the inclosing band 4 is placed a main cylindrical flue-section 6, Figs. 1 to 4, receiving and holding within its lower open end the upper end of the globe 2, the upper end of this flue projecting some distance out of and above the band 4, as shown.

Upon the upper end of the flue 6 is placed a removable extension flue-section 7, Figs. 1 and 2, having a rigidly fixed horizontal cap-plate 8, and formed with outflow openings 9, for the products of combustion from the flame, this extension flue being secured to the main section 6 by simple means as ordinary cap-screws 11. Upon the plate 8 is placed a circular curved canopy 10, Fig. 1, shaped like an inverted saucer with its edge overhanging the band 4 to cover and shelter the parts beneath, it being secured upon the part 7 by a clamping screw 12 the threaded stem of which piercing the canopy and passing through a central opening 13, Fig. 2, in the cap-plate 8, has an ordinary screw-nut beneath. I also employ a ring or finger-rest 14, Fig. 1, piercing the screw 12, by means of which the flue 6 may be at any time lifted from the globe 2 for the purpose of removing or replacing the globe, the flue having free vertical longitudinal motion within the flanges 15 16, of the band 4. A simple spring 46, Fig. 5, secured at one end to the inner surface of the band 4 and having the other end attached to the flue 6 acts to hold the latter normally downward or in position to receive and control the upper end of the globe, as shown in Fig. 2.

The flue-section 6 is pierced with two series of openings 17, Figs. 2, 3 and 4, closely clustered at opposite sides of the section, within the inclosing band 4, said clusters of openings being in the horizontal plane of the intumed ends of the draft tubes 3 and in the sides of the flue respectively adjacent to the open ends of the tubes. The flue is also pierced with a horizontal row of small inlet openings 18, Figs. 1, 2 and 3, slightly above the globe 2, to supply a small quantity of air to the combustion chamber 19 over the flame to aid in

completing the combustion. I further provide a conical flue-section 20, Figs. 3, 4 and 5, coaxially within the section 6, with its base touching the inner surface of the section 6 just below the series of openings 17.

5 This section is frusto-conical in shape, open at its upper reduced end for the escape of the heat and other products of the flame, and it is pierced on opposite inclined sides by two opposing clusters of holes 21 21 alternated with the clusters of holes 17 in the main flue 6, or opposite the respective imperforate sides of the main flue between the clusters of holes 17, as clearly appears in Fig. 4.

The combustion chamber 19, Fig. 2, is a plain metallic cylinder of an external diameter to admit it to freely enter the upper end of the globe 2, it being formed with a narrow flange 22 at its upper end to rest upon the globe, and pend therein over the flame, as shown. The openings 18 in the flue 6 are slightly above the flange 22 and are covered and protected by a downwardly-curved ring or shelter 23, Figs. 1 and 2, the same being an outward extension of the lower flange 16 of the band 4. This part 23 also constitutes a protection or housing for the series of vertical intake draft openings 5, through which the draft tubes 3 are supplied, as stated, downward blasts or puffs of air being warded off and prevented from entering the said openings in a condition to injuriously effect the flame.

Centrally upon the reservoir 1 is mounted the ring or band 24 for supporting the burner cone 26, it receiving through openings 25 in its opposite sides, Figs. 2 and 10, the intumed lower ends of the draft tubes 3. Adjacent to and on opposite sides of the ring 24, and in a diametrical plane at right angles with the axes of said intumed ends of the tubes, are provided two vertical cylindrical thimbles 27 28, Figs. 1, 2, 6 and 10, rigid with the reservoir and rigidly joined to the ring 24 by ties 29. Upon the burner cone 26 is placed a hollow circular globe base 30, Figs. 1, 2, 7 and 10, supporting, between parallel circular flanges 31, the usual glass globe 2, the bottom plate 32 of which, Figs. 8, 9 and 10, having a rigid downwardly-projecting finger 33 telescoping within the thimble 27, as shown. Within the opposite thimble 28 is placed an inner movable piston body 34, provided with an operating handle or knob 35, Figs. 1, 2, 6, 7 and 10, adapted to have free vertical motions in a slot 36, the upper end of said piston body 34 being normally near or in contact with the plate 32. By lifting the handle 35 the globe base 30 and the globe will be raised to the position shown by dotted lines in Fig. 10, temporarily uncovering the slot 38 of the burner cone 26 and the wick tube 37 convenient for lighting the lantern without removing the globe. When the parts mentioned are thus raised by means of the handle 35 and the body 34, the flue 6 with incumbent parts will be correspondingly raised through the band 4, as appears by dotted lines in Fig. 2. At its upper end the slot 36 bends abruptly to one side, as appears in Figs. 1 and 2, and by turning the knob 35 correspondingly the globe base and incumbent parts will be temporarily held in their elevated positions.

The lower plate 32 of the globe base 30 is formed with a series of small vertical perforations 39, in a circle, Fig. 8, for the intake of air, within which perforations is a circular perforated standing ring or flange 40, Figs. 9 and 10, secured at its upper edge to the upper plate

41 and constituting a circular partition for the interior of the globe base. The plate 41 is closely and finely perforated like a gauze, as shown in Fig. 7, by means of which a limited quantity of external air passing primarily upward through the perforations 39 and laterally through the perforated partition 40 will enter the globe 2, as indicated by arrows. An inner flange 42, Figs. 7 and 10, rising from the upper plate 41 between the perforators of the plate and the burner serves to direct the inflowing air upward and acting to expand the flame and supply its upper portion or part where it disappears with a sufficient quantity of fresh oxygen to complete the combustion in the chamber 19. The lower plate 32 of the globe base is imperforate within the partition 40 (save as to the central opening for the cone 26) the openings 39 being without the partition while the perforations through the upper plate 41 are within the partition, making it necessary for the inflowing air to pass through the partition, this being additional means for breaking the force of gusts of wind circling about the lantern.

The draft tubes 3 are in the plane of the axis of the lantern and the air flowing downward through them to the flame enters the space 43 within the ring 24, Fig. 6, on opposite sides flowing thence upward to the flame through the perforated holder 44 for the wick tube, formed in the usual manner. These tubes connect parts above the globe 2 with parts below it and are formed with expanded parts or bulbs 45, Figs. 1, 5 and 7, as an additional security or means for protecting the flame against sudden puffs or gusts of wind. If, at any time, on account of the state of the weather, the air be inclined to move fitfully or irregularly down the tubes its action will be modified and rendered more even and steady by passing into and through the expanded or enlarged spaces within the bulbs.

As a matter of convenience the bail 47, has its ends hooked into openings in the side tubes 3, as shown in Fig. 1.

What I claim as my invention and desire to secure by Letters Patent is:—

1. A lantern having a globe, an inclosing band above the globe formed with inwardly-extended flanges at its ends, a perforated cylindrical flue section in the inclosing band controlled by said flanges and engaging the globe, an inclosure below the globe, air passages communicating between the inclosing band and the inclosure beneath the globe, means embodying an air retarder located beneath the globe for regulating the flow of air upwardly for controlling and modifying the inflow of such air, and a double base portion having upper and lower perforations upon opposite sides of said retarder and an inner flange rising from the base for directing the inflowing air upward between the upper perforations and the burner.

2. A lantern having an oil reservoir and a globe base made with a chamber having therein a perforated air retarder, a vertical inclosing casing upon the reservoir, a pair of vertical thimbles upon the reservoir at opposite sides of the casing beneath the globe base, one having a vertical slot, a finger on the globe base projecting downwardly into one thimble, a vertically movable piston body in the other thimble bearing against the under side of said base to press the globe base and a knob rigid with the piston body and projecting horizontally outward through the said vertical slot.

3. A lantern having a globe and globe base, a reservoir and hollow casing thereon inclosing the wick tube, the globe base having lower and upper plates with air passages through them leading into the interior of the globe, a perforated air retarder between said plates and a circular

flange projecting upward from the upper plate of the globe base between the perforations of said plate and the wick tube.

5 4. A lantern having a reservoir and hollow casing thereon, a globe base over the casing having a lower and an upper circular plate, a concentric perforated standing ring between said lower and upper plates, and a concentric ring projecting upwardly from the upper plate, said lower and upper plates being perforated the perforations of the lower

plate being without the standing ring and the perfora- 10
tions of the upper plate being within the standing ring.

In witness whereof, I have hereunto set my hand this
20th day of April, 1907, in the presence of two subscribing
witnesses.

JOHN M. STOKOE.

Witnesses:

FRANK W. HERRICK,
EDWARD O. HOWARD.