

No. 677,313..

Patented June 25, 1901.

A. KITSON.
PORTABLE VAPOR BURNING LAMP.

(Application filed June 21, 1900.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.

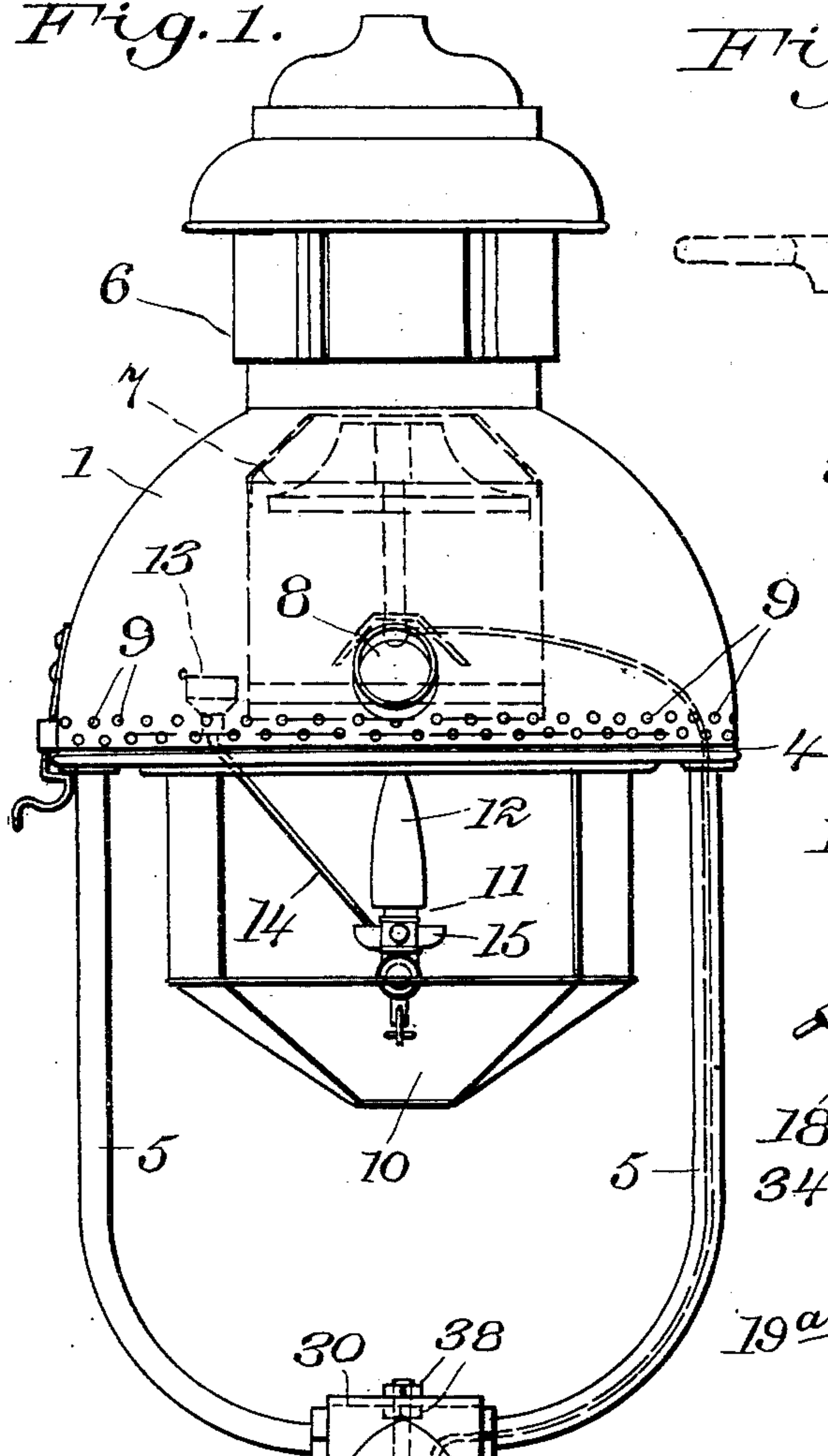


Fig. 2.

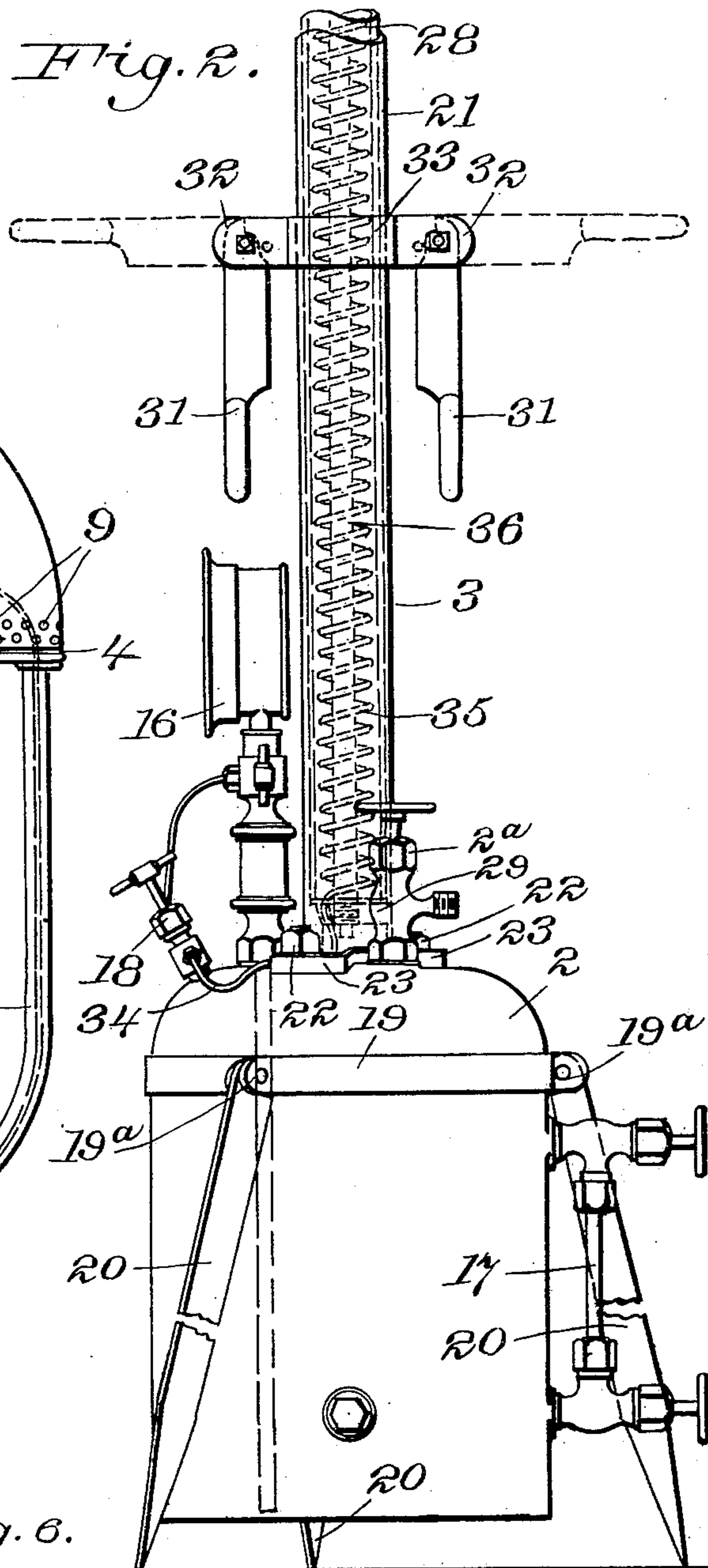
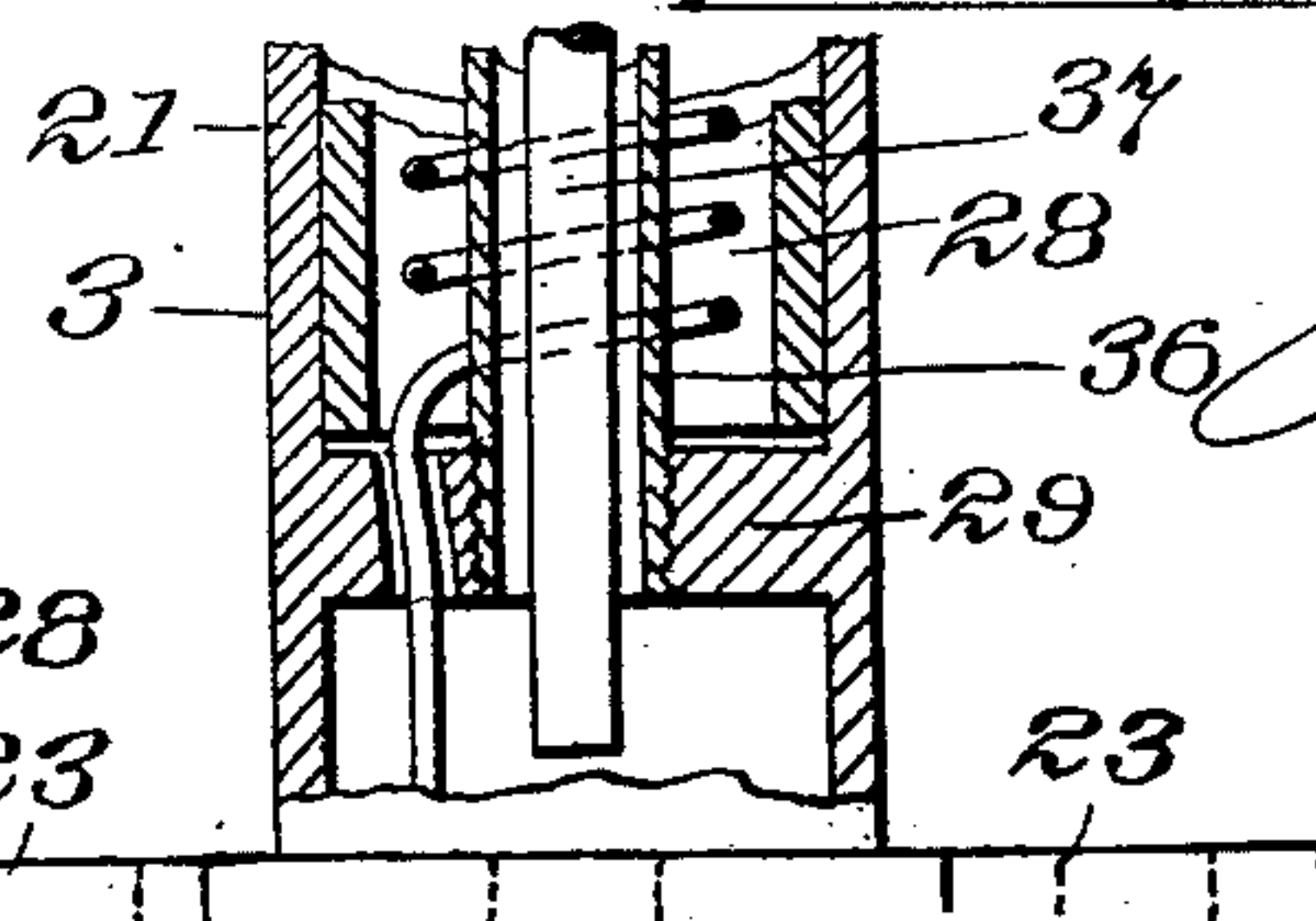


Fig. 6.



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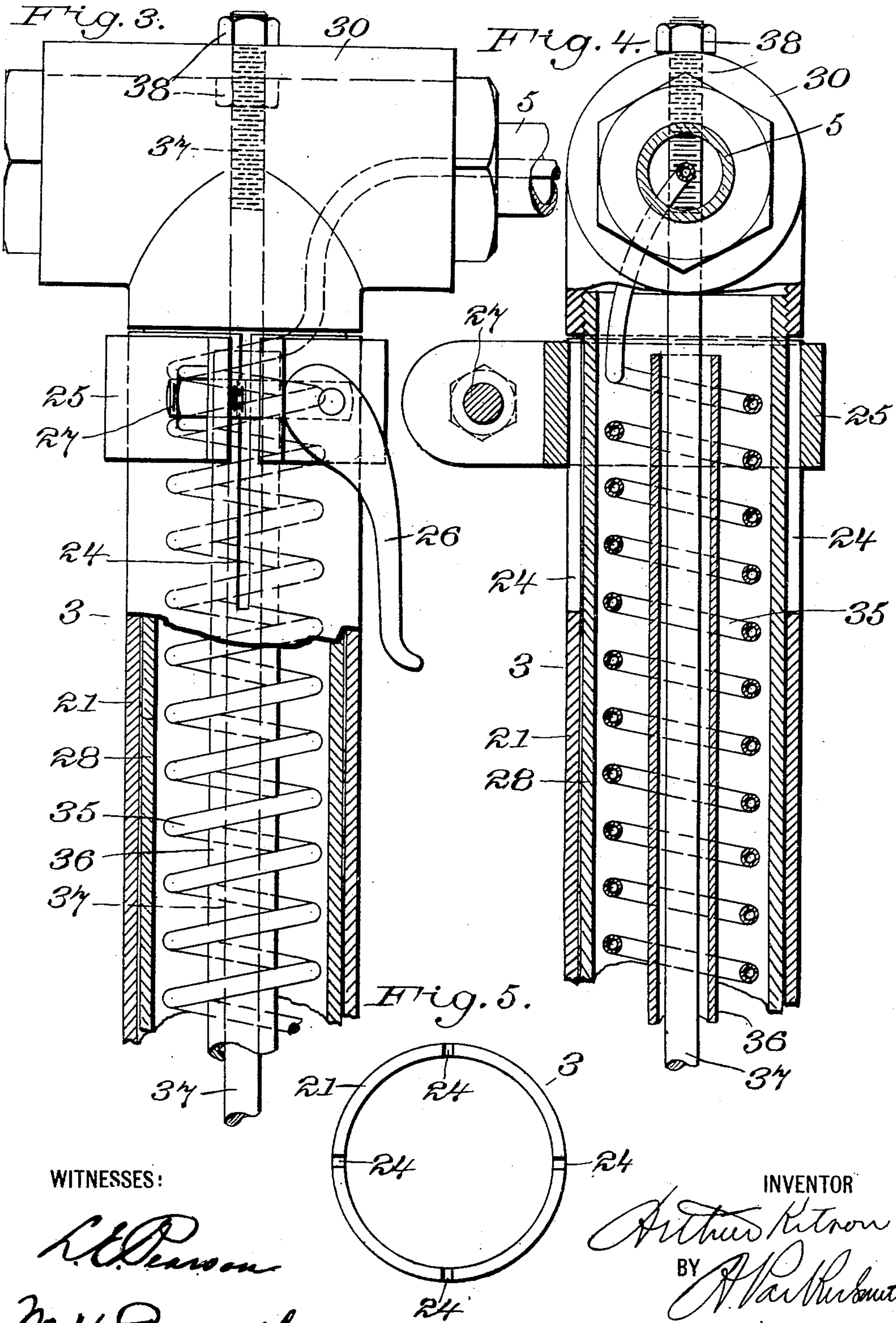
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2 Sheets—Sheet 2.



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UNITED STATES PATENT OFFICE.

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PANY, OF SAME PLACE AND CHARLESTON, WEST VIRGINIA.

PORTABLE VAPOR-BURNING LAMP.

SPECIFICATION forming part of Letters Patent No. 677,313, dated June 25, 1901.

Application filed June 21, 1900. Serial No. 21,066. (No model.)

To all whom it may concern:

Be it known that I, ARTHUR KITSON, a sub-
ject of the Queen of Great Britain, and a resi-
dent of the city of Philadelphia, county of
5 Philadelphia, State of Pennsylvania, have in-
vented certain new and useful Improvements
in Portable Vapor-Burning Lamps, of which
the following is a specification.

My invention relates in general to vapor-
10 burning apparatus, and is more specifically
designed to produce a portable lamp of com-
plete and self-contained form capable of be-
ing readily and conveniently placed in opera-
tive position for instant use. Apparatus of
15 this character is particularly adapted for use
in railway or other construction work, &c.,
where temporary illumination is required, ow-
ing to the readiness with which it may be set
up, moved from place to place, &c., and be-
20 cause of its high efficiency in the production
of light and the comparatively low cost of
maintenance.

The preferred form of apparatus embody-
ing my invention is illustrated in the accom-
25 panying two sheets of drawings, in which—

Figure 1 is a view in elevation of the upper
half of the lamp, showing the vapor-burner,
the globe and the chimney together forming
an inclosing casing for the burner, and the
30 upper part of the extensible support or col-
umn upon which the lamp is mounted. Fig. 2
is a similar view of the lower part of the ap-
paratus, showing the oil-tank, its supporting-
tripod, &c., and the lower portion or continu-
35 ation of the extensible column. Fig. 3 is an
enlarged detail view in elevation and partial
section of the upper end of the extensible col-
umn, showing the clamp by which the tele-
scoping members thereof are relatively se-
40 cured to produce any desired adjustment or
variation in the length of the supporting-col-
umn. Fig. 4 is a similar view taken on a
plane at a right angle to Fig. 3. Fig. 5 is a
plan view showing the upper split end of the
45 outer tubular member of the extensible tele-
scoping column, and Fig. 6 is a detail sec-
tional view of the lower end of the column.

Throughout the several views like figures
of reference indicate like parts.

50 Referring to the drawings, a portable va-

por-burning apparatus is illustrated of a type
specially adapted for outdoor or underground
illumination and is known generally as a
"contractor's lamp." This apparatus com-
prises a lantern 1, a fuel-reservoir or oil-tank 55
2, and an extensible column or support 3,
connecting the lantern and tank.

The lantern consists of an annular frame
4, sustained in position by the oppositely-dis-
posed curved tubes 5 5, which together form 60
a U-shaped support or extension of the col-
umn 3. An ornamental cap 6 is hinged to the
upper side of the annular frame and incloses
the chimney proper, which latter is indicated
at 7 by dotted lines. A flanged opening 8, 65
formed in this cap, serves to admit and guide
a torch or other device entered for producing
the initial vaporization by preheating the
vaporizing-tube as a preliminary step in the
operation of the lamp. A series of inlet-open- 70
ings 9 9, &c., are formed around the base of
the cap, through which air enters and passes
downward along the inner wall of the glass
globe inclosing the burner as a protection to
the same against the intense heat of the flame. 75
From the under side of the annular frame the
globe 10 depends and may be of any form suit-
able for inclosing the burner 11. This burner
is preferably adapted for burning the vapor
of kerosene or other hydrocarbon, and there- 80
by renders incandescent a mantle 12, sup-
ported above the same. Instead of effecting
the preheating of the vaporizing-tube by
means of a torch, as above stated, alcohol
may be entered by way of a funnel 13 and 85
conducted therefrom through a tube 14 to a
trough 15, containing asbestos or other wick-
ing, surrounding or adjacent to the burner,
where on being ignited the alcohol burns and
the flame ascends and heats the tube until its 90
temperature is raised to the point of vaporiz-
ation.

The tank or reservoir 2, constituting the
base of the apparatus, is of ordinary form,
construction, &c., and provided with a valved 95
inlet 2^a, through which oil is entered, and also
with pressure and liquid gages 16 and 17.
The gage 16 serves to indicate the amount of
air-pressure within the tank and the gage 17
the oil-level. An oil-supply tube leads from 100

the gage 16 to a valve 18, which latter serves to control the supply to the lamp. The tank is preferably mounted in a tripod-carrying frame, a ring or band 19 of which encircling the same near the upper end is secured thereon and provided with lugs 19^a 19^b, &c., to which the legs 20 20 20 are pivoted. These legs may have more or less spread or adjustment about their pivotal centers to enable the lamp to be raised or lowered and readily and conveniently set up on uneven ground, the same being pointed at their lower ends to enter the ground to a slight depth, and thereby securely brace the apparatus against being accidentally overturned.

The extensible column or support 3 comprises an outer tubular member 21, secured at its lower end upon the tank by the bolts 22 22, &c., passing through terminal lugs or projections 23 23, &c., of said tubular member. The upper open end of the tube is split, as indicated at 24 24, &c., (see Figs. 3 and 5,) so as to yield under the action of an encircling band or strap 25, which latter is clamped thereon by a cam-lever 26 engaging the bolt 27, connecting the ends of the band or strap in the manner shown. A second tubular member 28 is employed to cooperate with the tubular casing 21 and serves as the extensible section of the column or support by being telescopically arranged therein and held in any desired relation thereto by means of the clamp above described. This second member when not extended is supported by having its lower end rest upon a flange or wall 29, formed interiorly of the outer tube-section, as shown in Fig. 6. At the upper end the inner tube-section 28 is threaded into a T-connection 30, from the opposite ends of which the curved tubes 5 5 extend as a support for the annular lamp-frame above referred to. These tubular extensions are threaded or otherwise secured to the T-connection, preferably in the manner shown in Fig. 3. Suitable handles 31 31 are provided to facilitate carrying the apparatus from place to place and are preferably mounted between lugs 32 32 of a band 33, clamped upon the column or support. In Fig. 2 the handles are shown in their normal position in full lines and in dotted lines in the position they occupy when in use.

From the valve 18 of the reservoir or tank an oil-supply tube 34 is led and enters the extensible column at or near its base, (see Figs. 2 and 6,) and after passing through the interior wall or flange of the outer tubular member extends upward in the form of a helix 35 to a point adjacent to the upper end of the column, and from thence is led through one of the curved tubes 5 and connected with the supply end of the vaporizing-tube. (Not shown.) To sustain the helix centrally and clear of the inner tubular section of the column, an extensible central guide is provided and consists of two telescoping members 36 37. The outer section 36 of the guide is free

at its upper end, but secured at its lower end by being threaded in the interior wall or flange of the column member 21, while the second section, preferably solid, (see Figs. 4 and 6,) telescopes within the tubular section and is free at its lower end, but is secured at its upper end to the T-connection of the inner column member by the nuts 38 38.

The method of operation of my invention is as follows: The lamp is first placed in any desired position by spreading the legs of the tripod and firmly bracing the same in the ground to provide a secure and firm support. The weight of the tank and its close proximity to the ground tends to render the apparatus steady and prevents its being readily overturned in the event of being struck accidentally. After the preheating of the vaporizing-tube has been effected in the well-known manner by means of a torch, alcohol-flame, or other device the supply-valve is opened to admit oil from the tank, and it passes by way of the helical tube to the vaporizing-chamber, where it is converted into vapor and conducted therefrom to the burner through the mixing-tube. (Not shown.) Having thus set the lamp in operation, it at once becomes self-maintaining and will continue to burn without requiring further attention until the oil-supply is exhausted. During the operation of the lamp it may be moved from place to place without necessarily being shut down or discontinued during the time it is in transit. To vary the height of the lamp, the cam-lever is raised to release the ring-clamp, and the inner tubular member may then be freely adjusted to any desired position and again secured by forcing the lever downward, thereby camming the clamp-bolt. In thus extending the column or support the helical supply-tube and its telescoping guide become correspondingly lengthened and are self-adjusting to any variation in the length of the supporting-column.

Prominent among the main advantages of my invention may be mentioned the production of a high candle-power lamp in complete, self-contained, and portable form available for instant use and capable of being readily and conveniently set up to provide temporary or permanent illumination. Furthermore, the telescoping column or support affords a ready means of elevating or lowering the lamp when required and without interfering or interrupting the operation thereof. Finally the use of a tank or reservoir in connection with the tripod-carrying frame constitutes a firm base for and insures safety to the upper structure.

I do not wish to be understood as limiting myself to the exact construction illustrated and described, as various changes may be made without departing from the spirit and scope of my invention. For example, an extensible column, other than of telescoping form might be employed, as might also a different form of clamp for use in connec-

tion therewith. Other forms of supply tank or reservoir or burner-casing, &c., might be substituted; but all such changes I consider immaterial modifications and still within my invention.

Having thus fully described my invention, I claim—

1. In a portable lamp, the combination of the oil-reservoir, the burner, and the interposed extensible support and oil-supply connections between the burner and reservoir, and a telescoping guide within the extensible support by which said connections are sustained centrally thereof.

2. In a portable lamp, the combination of the oil-reservoir, the burner, the interposed extensible support, an extensible guide within said support, and oil-supply connections between the burner and reservoir, said connections for a portion of their length being in the form of a helix encircling said guide.

3. In a portable lamp, the combination of the oil-reservoir, the burner, the telescoping extensible support, a telescoping guide centrally within said support, and oil-supply connections between the burner and reservoir, said connections extending interiorly of the extensible support as a helix encircling the telescoping guide.

4. In a portable lamp, the combination of a tank, a burner, and a telescoping support between the tank and burner, a telescoping guide within the support, the telescoping members of said support and guide being connected to move in unison, and a helical tube encircling the guide, and forming part of the oil-supply connections.

5. In a portable lamp, the combination of a tank, a burner, requisite oil-supply connections, an extensible support between the tank and burner, an extensible guide movable with the support and an extensible section forming part of said oil-supply connections, said section being carried by the guide and self-adjusting to variations in the length of the support.

6. In a portable lamp, the combination of a tank, a burner, an extensible support between the tank and burner, an extensible guide within the support, and an extensible section forming part of the oil-supply connections and encircling the guide.

Signed at New York, N. Y., this 13th day of June, 1900.

ARTHUR KITSON.

Witnesses:

A. PARKER-SMITH,
L. E. PEARSON.