

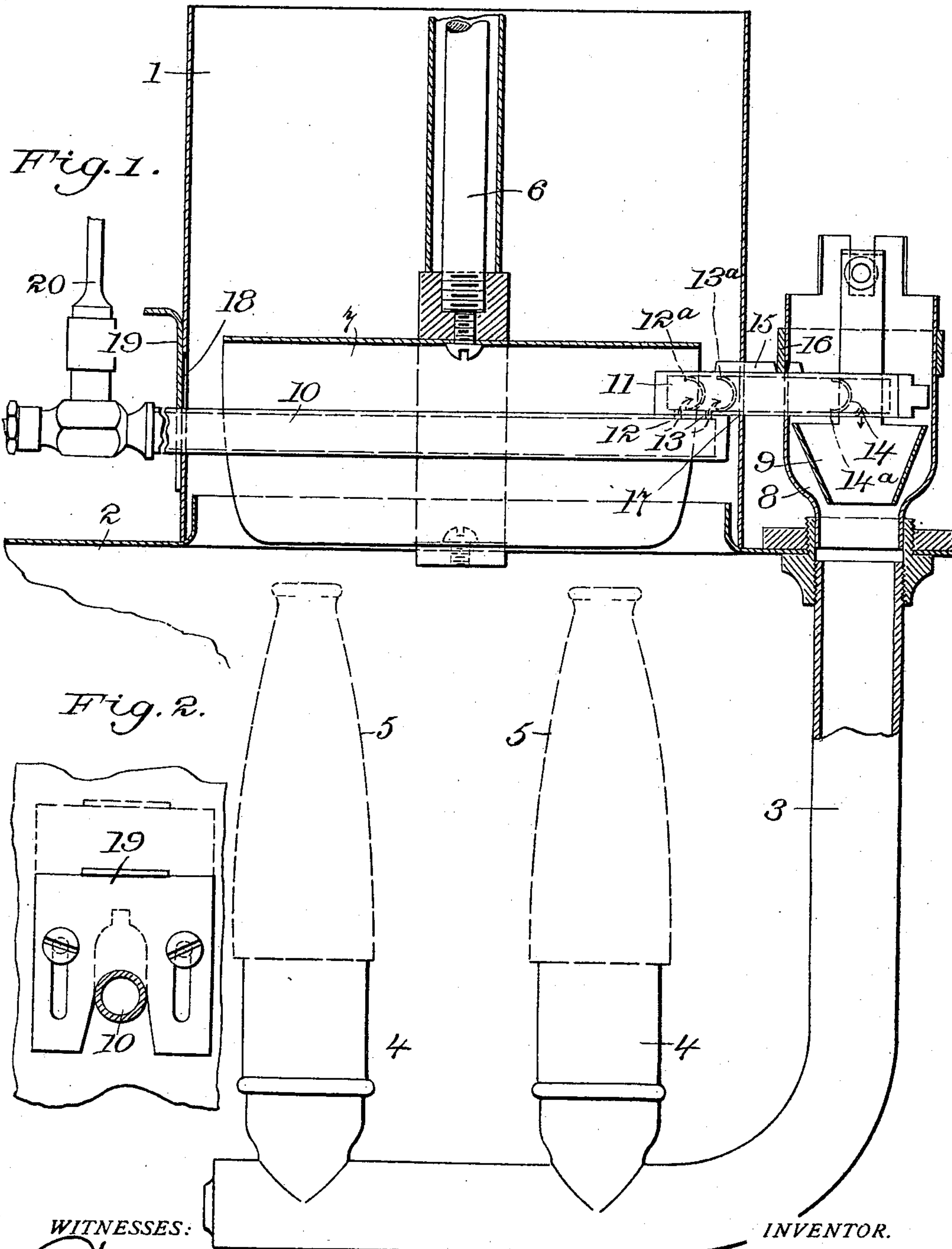
No. 635,554.

Patented Oct. 24, 1899.

A. KITSON.
VAPORIZING TUBE.

(Application filed Jan. 23, 1899.)

(No Model.)



WITNESSES:

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KITSON HYDROCARBON HEATING AND INCANDESCENT LIGHTING COM-
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VAPORIZING-TUBE.

SPECIFICATION forming part of Letters Patent No. 635,554, dated October 24, 1899.

Application filed January 23, 1899. Serial No. 703,197. (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 Philadelphia, county of Philadelphia,
5 State of Pennsylvania, have invented certain
new and useful Improvements in Vaporizing-
Tubes, of which the following is a specifica-
tion.

My invention relates to vapor-burning ap-
10 paratus, and is specifically designed to pro-
duce an improved form of vaporizing-tube.

One difficulty encountered in the use of va-
por-burning apparatus in which the heat of
the burner vaporizes the oil in the vaporizing-
15 tube or other chamber is that when poor
grades of oil are used a considerable quantity
of carbon or other solid material is deposited
in the vaporizing-tube and getting into the
discharge-orifice interferes with the discharge
20 of the vapor and the even operation of the
lamp. My present invention presents one
method of overcoming this difficulty; and it
consists, broadly stated, in making the vapo-
rizing-tube in two sections connected and
25 communicating, the lower section being ar-
ranged horizontally and connected with the
oil-supply, while the upper section has the
discharge-opening for the jet formed therein.
Thus all the carbon and other solid matter is
30 deposited in the lower section of the tube,
where it does little or no injury, and none
gets into the upper section and cannot, conse-
quently, reach the orifice through which the
vapor-jet is discharged.

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

Figure 1 is a central section of the opera-
tive portion of the vapor-burning lamp with
40 my improved vaporizing-tube in position.
Fig. 2 is a detail end view showing the vapo-
rizing-tube and shutter for closing the open-
ing through which it is withdrawn.

Throughout the drawings like reference-
45 figures refer to like parts.

The parts of the vapor-burning lamp shown
are the chimney 1, the reflector 2, mixing-tube
3, and the burners 4, preferably having the in-
candescent mantles 5 over them. The lamp
50 is suspended from the hanging rod 6 and has

the heat-shield 7. The mixing-tube has an
enlarged mouth 8, in which may be located
the injector-cone 9, if desired.

The vaporizing-tube is composed of the
lower and longer section 10 and of the upper 55
and shorter section 11, whose ends overlap.
At the overlapping portions the two sections
are fastened together by brazing or otherwise,
and one or more passage-ways 12 and 13 af-
ford communication between the two sec- 60
tions. These passage-ways are preferably
made small, as shown. The section 11 has the
discharge-opening 14 for the vapor-jet, which
is opposite the mouth of the mixing-tube.
The section 11 may also have a notched 65
feather 15 on it, with which the ring 16 en-
gages to hold the vaporizing-tube in proper
position with relation to the mixing-tube.
Gauze diaphragms 12^a and 13^a are arranged
in the shorter section 11 of the vaporizing- 70
tube, between the openings 12 and 13 and the
discharge-opening 14. A third wire-gauze
diaphragm 14^a may also be placed in front of
the discharge-orifice 14.

The shorter section 11 of the vaporizing- 75
tube projects through an opening 17, made for
it in the wall of the chimney, and in the op-
posite wall of the chimney is an oblong open-
ing 18, through which the two sections of the
vaporizing-tube may be withdrawn. When 80
the vaporizing-tube is in position, the open-
ing 18 is closed around the single section of
vaporizing-tube within, extending through
the opening 18, by sliding down the shutter
19. (Shown in Fig. 2.) 85

20 represents the oil-supply pipe, connected
to the end of the vaporizing-tube in any well-
known way.

The method of operation of my invention
is as follows: The parts being shown as in 90
Fig. 1, when the oil is turned on it is vapo-
rized in the longer section 10 of the vapo-
rizing-tube which is within the heating zone of
the burner or burners. Any solid carbon or
other solid material in the oil is deposited in 95
this section and cakes along the wall of it
without materially interfering with the op-
eration of the apparatus. The vapor passes
up through the openings 12 and 13 and through
the gauzes 12^a 13^a 14^a, so that every solid im- 100

purity is necessarily left behind by the time it reaches the discharge-opening 14. The jet passes through the cone 9 down the mixing-tube, supplying the necessary volume of mixed air and vapor to the burners in the well-known manner. All solid material having been eliminated in the manner described, the lamp will continue to burn, even on a poor quality of oil, for several hundred hours without the discharge-opening clogging up. When the tube is to be withdrawn, the shutter 19 is lifted and the ring 16 and the tube pulled out to the left. (See Fig. 1.)

The advantage of my invention consists in its eliminating the difficulty of clogging up the jet-opening, as above described.

Various changes could be made in the relative proportions of the parts of the apparatus and in their details of construction, evidently, without departing from the spirit and scope of my invention so long as the principle of operation above described is preserved.

Having therefore described my invention, what I claim as new, and desire to protect by Letters Patent, is—

1. A vaporizing apparatus comprising a longer horizontal section and a shorter horizontal section, their ends overlapping, and having one or more openings through the adjacent walls of said section, the discharge-opening of said vaporizing apparatus being in said shorter section, together with one or more gauze diaphragms located between said discharge-opening and the openings between the two sections.

2. In a vapor-burning apparatus the combination of the vapor-burner, the chimney over the same, the mixing-tube at one side of the chimney and extending down to the burner, the vaporizing-tube composed of two sections not in line one with the other, but connected together, a circular opening in the side of the chimney adjacent to the mixing-tube, through which opening one section of the vaporizing-tube extends, and an oblong opening in the other side of the chimney through which the entire vaporizing-tube may be withdrawn.

3. In a vapor-burning apparatus the combination of the vapor-burner, the chimney over the same, the mixing-tube at one side of the chimney and extending down to the burner, the vaporizing-tube composed of two sections not in line one with the other, but connected together, a circular opening in the side of the chimney adjacent to the mixing-tube, through which opening one section of the vaporizing-tube extends, and an oblong opening in the other side of the chimney through which the entire vaporizing-tube may be withdrawn, together with the shutter which closes said oblong opening when the vaporizing-tube is in position.

Signed by me at Philadelphia, Pennsylvania, this 14th day of January, 1899.

ARTHUR KITSON.

Witnesses:

E. STANLEY HART,
LOUIS R. BAKER.