

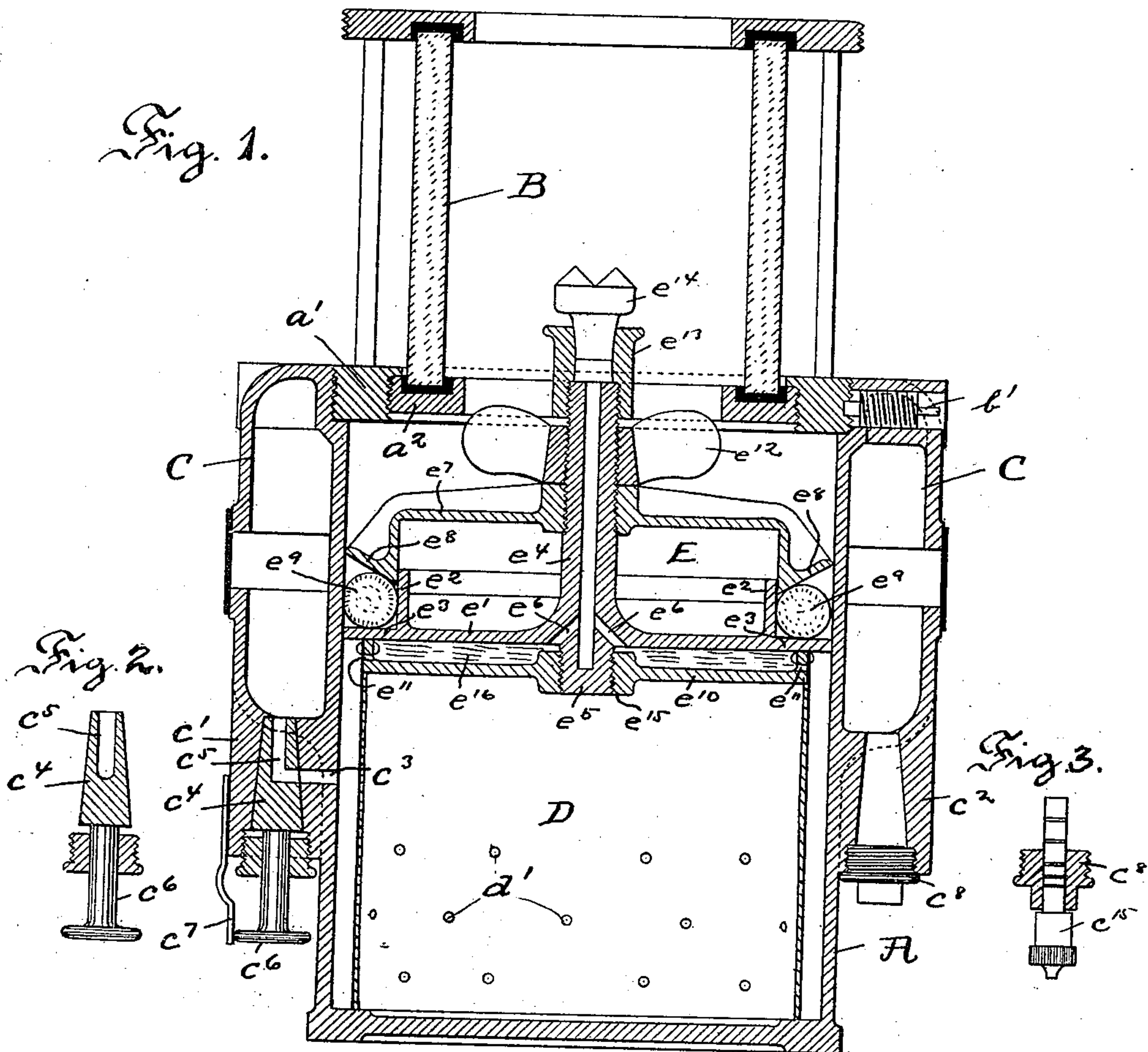
No. 659,680.

Patented Oct. 16, 1900.

J. H. LANCASTER.
ACETYLENE GAS GENERATOR.

(Application filed Oct. 9, 1899.)

(No Model.)



WITNESSES

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ACETYLENE-GAS GENERATOR.

SPECIFICATION forming part of Letters Patent No. 659,680, dated October 16, 1900.

Application filed October 9, 1899. Serial No. 732,984. (No model.)

To all whom it may concern:

Be it known that I, JAMES H. LANCASTER, a citizen of the United States, and a resident of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Acetylene-Gas Generators, of which the following is a specification.

My invention relates generally to portable lamps in which the illuminant used is generated in the lamp itself, and more particularly to lamps in which acetylene gas is the illuminant.

The object of my invention is to construct a safe, inexpensive, and efficient portable lamp; and to this end the invention consists, first, in a generating-compartment surrounded by a water tank or jacket, said tank having an inverse water-sealed fluid-inlet and a passage having a hand-regulated means for feeding the water from the jacket to the generating-compartment, the same passage serving to conduct gas from the generating-chamber to the water-compartment; second, in auxiliary means whereby the water-supply may be replenished without disturbing the operation of the lamp; third, in an improved gas and water tight cover embodying gas-purifying and gas-inlet means; fourth, in the general arrangement and combination of the different elements, all tending to produce a greater harmony of coöperation and regulation between said elements.

In the accompanying drawings I have shown my invention applied to a miner's lamp; but it will of course be understood that by so doing I do not confine myself to the exact construction shown, said construction only facilitating the explanation of my invention.

In said drawings, Figure 1 is a sectional view of a miner's lamp embodying my invention. Fig. 2 is a detail view of the grooved plug regulating the water-supply to the carbide. Fig. 3 is a modification of the water-inlet plug.

Similar letters of reference indicate corresponding parts in the different views.

I shall describe a miner's lamp adapted to the use of acetylene gas embodying my invention and afterward point out the novel features in the claims.

A indicates a shell forming the main body of the lamp provided with an internally screw-cut portion a' , into which the cover a^2 , supporting the upper ventilating portion B of the lamp, is screwed. The shell is further provided with a water tank or jacket C, surrounding said shell, in which the water used in the generation of the gas is stored.

The tank C is formed with two or more downwardly-projecting hollow bosses c' and c^2 , communicating with said tank, one of which, c' , is conically formed inside and has a passage c^3 leading into the shell A. Into this conical portion is fitted a corresponding plug c^4 , having an L-shaped passage c^5 and provided with a knob c^6 , so that communication between the water-tank C and the shell A may be had at the will of the operator simply by bringing the passage c^5 into alinement with the passage c^3 . A detention-spring c^7 is provided for retaining the knob in any desired position. The other boss c^2 has a tight-fitting threaded cover c^8 .

D is an inside shell provided with perforations d' and in which the carbide is contained.

E is a gas and water tight cover composed of a lower part e' , having a vertical guiding-flange e^2 and a horizontal annular flange e^3 , and having also a screw-cut hollow spindle e^4 and a screw-cut projection e^5 , serving as a continuation of the spindle. This projection, however, is not tubular throughout, but two or more passages e^6 branch off from this tubular portion at an angle to same, said passages being perforated throughout. It is further composed of an upper part e^7 , mounted on the spindle e^4 and provided with a conical flange e^8 , between which and the flange e^3 a rubber gasket or ring e^9 has been inserted. It further consists of a lowermost part e^{10} in the shape of a shallow dish having perforations e^{11} and having a central screw-cut bushing e^{15} fitting into the extension e^5 . In this shallow dish is placed suitable filtering material for the gas to pass through. A thumb-screw e^{12} , tightening the parts together as they rest upon the shell D, is also provided, and an additional screw-cut extension e^{13} , carrying a suitable burner e^{14} , is attached to the uppermost part of the spindle e^4 , said hollow spindle communicating with said burner.

The superstructure of the lamp is of a well-known construction provided with a locking device *b'* and need not be described here.

In the use of my lamp the superstructure
5 B is first removed, then the gas and water
tight cover E and the inside shell D. The
shell A is now turned upside down and water
introduced into the water-tank by removing
the cap *c*⁸, care being taken that the passage
10 leading from the water-jacket to the shell A is
closed. When the tank has been partially
filled with water, the cap *c*⁸ is replaced and the
receptacle turned right side up, thus water
sealing the passage through which the water
15 was introduced. The inside shell D is now in-
serted and partially filled with carbid and the
tight-fitting cover E placed and tightened in
position. Water is now introduced into the
shell A by opening the plug *e*⁴, the water pass-
20 ing from thence through the perforation *d'* into
the shell D. The gas produced passes out into
the shell A again and enters the lowermost part
*e*¹⁰ through perforations *e*¹¹ and passes through
the filtering material up through the inclined
25 passage *e*⁶ into the hollow spindle *e* and from
thence to the burner *e*¹⁴. The gas is then
lighted and the superstructure B added and
locked over the flame. Should the gas-pres-
sure in the carbid-holder become too great,
30 the gas will seek a second outlet and will pass
through the passage leading from the water-
tank to the carbid-holder and bubble up
through the water in the tank until the pres-
sure in the two compartments is equal.

35 In Fig. 3 I have shown a modification of
the plug *c*⁸. It simply consists in perforating
the plug with a non-return fluid check-valve
*c*¹⁵, so that the water-supply may be replen-
ished without disturbing the operation of
40 the lamp or the water seal, the fluid passing
through said valve into the hollow boss *c*², com-
municating with the water-tank. If for any
reason difficulty should be experienced in
feeding the water to the carbid, compressed
45 air may be introduced through this same
valve *c*¹⁵, likewise without disturbing the op-
eration of the lamp.

From the above it will thus be seen that I
have provided a safe, inexpensive, and effi-
50 cient portable lamp requiring but little at-
tention and admirably adapted to all uses
where portable lights are utilized, and par-
ticularly to miners' lamps.

Having thus described my invention, what
55 I claim is—

1. In an acetylene-gas generator the com-
bination of a main body forming the generat-
ing-chamber, a water-tank surrounding said
main body and formed integrally with same,
60 a downwardly-projecting hollow extension

from said tank adjacent to the wall of the
main body, a passage-way formed in the wall
separating the main body and the extension
of the water-tank, a rotatable plug inserted
in said extension, a passage-way formed in 65
said plug for admitting water to the main
body from the water-tank when in alinement
with the passage-way of the wall of the main
body, and a second downwardly-projecting
extension from said water-tank provided with 70
a removable plug forming an inverse water-
sealed inlet for said water-tank, substantially
as described.

2. A removable cover, comprising three su-
perposed parts, mounted on a common hollow 75
spindle closed at its lower end, substantially
as described.

3. A removable cover comprising three su-
perposed parts, a hollow spindle closed at its
lower end formed integrally with the lower 80
part, annular flanges on the upper and lower
parts and a rubber gasket introduced between
said flanges, substantially as described.

4. In a removable cover comprising three
superposed parts, a hollow spindle closed at 85
the bottom formed integrally with the lower
part, a lowermost part containing filtering
material, perforations in said lower part, and
a plurality of passage-ways leading from said
lower part to the tubular portion of the spin- 90
dle, substantially as described.

5. In an acetylene-gas lamp a combined re-
movable gas and water tight cover and filter,
comprising three superposed parts, a hollow 95
spindle closed at the bottom, and having a
screw-cut extension, formed integrally with
the lower part, a lowermost part comprising
a shallow dish with a screw-cut bushing fit-
ting into the screw-cut extension of the spin-
dle, and having a perforation, and a plurality 100
of passage-ways leading from the tubular por-
tion of the spindle to the lowermost part, sub-
stantially as described.

6. In an acetylene-gas lamp comprising a
main body, a water-tank surrounding said 105
main body and an inverted water-sealed water-
inlet, inverted water-sealed fluid-introducing
means adapted to be actuated without dis-
turbance the operation of the lamp, substan-
tially as described. 110

7. In an acetylene-gas lamp, a removable
threaded plug, having a fluid-valve inserted,
substantially as described.

Signed at New York, in the county of New
York and State of New York.

JAMES H. LANCASTER.

Witnesses:

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WILLIAM G. LOWRIE.