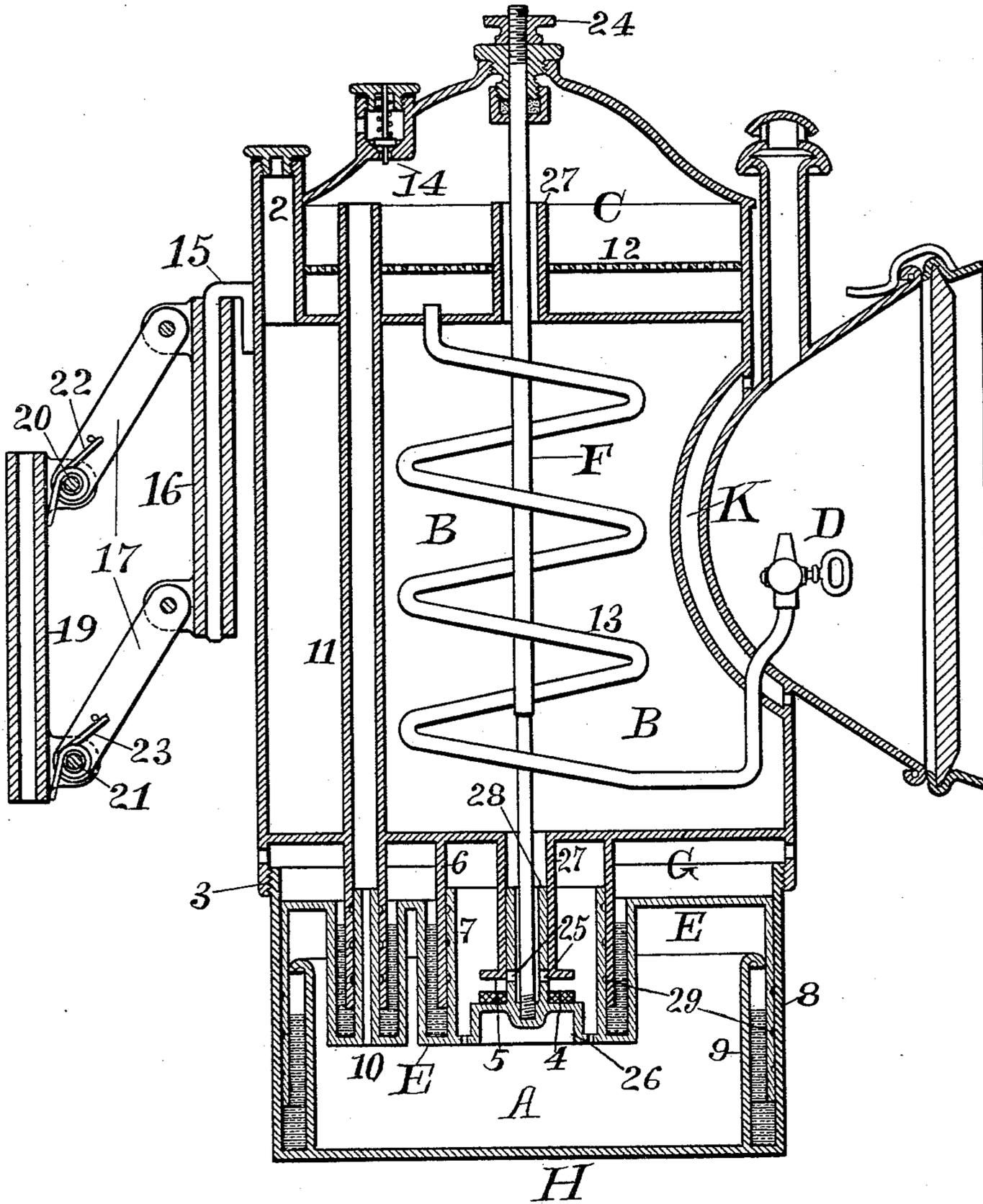


No. 616,547.

Patented Dec. 27, 1898.

C. N. LIPPITT.
ACETYLENE GAS LAMP.
(Application filed Mar. 22, 1897.)

(No Model.)



WITNESSES:

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CHARLES N. LIPPITT, OF BELOIT, WISCONSIN.

ACETYLENE-GAS LAMP.

SPECIFICATION forming part of Letters Patent No. 616,547, dated December 27, 1898.

Application filed March 22, 1897. Serial No. 628,661. (No model.)

To all whom it may concern:

Be it known that I, CHARLES N. LIPPITT, a citizen of the United States, residing at Beloit, in the county of Rock and State of Wisconsin, have invented certain new and useful Improvements in Acetylene-Gas Lamps, of which the following is a specification.

My invention relates to the generation, purifying, and burning of acetylene or similar gas, and has for one of its objects the combination of said functions in a single piece of apparatus wherein the solid and liquid gas-making ingredients are brought into contact and the resultant gas is purified and burned.

Referring to the accompanying drawing, the cylindrical chamber A contains the calcium carbide or other solid ingredient, chamber B the liquid ingredients necessary for the generation of the gas, and chamber C the purifying compound.

D designates the burner, here shown with a parabolic reflector. The liquid is introduced through the filling-hole 2, which is tightly closed by a screw-cap.

The solids are placed in chamber A by unscrewing the bottom or body of said chamber at the screw-joint 3. Cover E, with rod F attached, is movable vertically, and by such movement controls the admission of liquid to the chamber A. Space G is in communication with the atmosphere. Valve-seat 4, preferably made of leather, comes in contact with the stationary annular flange 5 when E is in its uppermost position and stops the further upward movement of E. The stationary cylinder 6, closed on its upper end, is in sliding contact with the cylindrical piston 7 of the movable part E, and the escape of gas into space G is thereby prevented. The annular cup about this joint may be filled with some liquid, as shown, to further guard against the escape of gas. The outside cylindrical wall 8 of piece E is in sliding telescopic contact with the cylindrical wall of chamber A. A cylindrical portion 9 of the bottom piece H forms an annular cup, in which a liquid may be held for the purpose of sealing the sliding joint between cover E and the walls of chamber A. Circular grooves 29 are cut in the cylindrical sliding surfaces of E to aid in preventing the escape of gas through these joints.

At 10 an opening is provided for the exit of the gas into a tube having telescopic connection with stationary tube 11 and working in a liquid seal, as before. Tube 11 leads to purifying-chamber C, where a perforated plate 12 supports a purifying compound consisting, preferably, of alternate layers of asbestos fiber, cotton, animal charcoal, and lime. Below plate 12 is a chamber separated from the liquid-chamber B for the collection of the purified gas and from which the coiled tube 13 leads to the burner. A safety-valve 14 prevents an undue accumulation of pressure. A hollow space K is provided between the liquid-chamber B and the burner, which may be filled with substances which are non-conductors of heat or left empty as a dead-air space.

The apparatus is shown as a carriage or bicycle lamp, and when so used may be carried by a spring connection for the purpose of relieving the lamp from the jar and shock of the vehicle. This connection consists of a projection 15, solidly attached to the body of the lamp and pointing downward. A tube or socket 16 fits over said projection. Pivotaly attached to 16 are links 17. Plate 19 is solidly attached to the vehicle and is provided with lugs at top and bottom, to which are pivotaly attached the aforesaid links 17. Springs 22 and 23 are interposed between said plate 19 and links 17 in such manner as to support the weight of the lamp when hung in said socket.

In operation the solid gas-making ingredient is placed in chamber A, as heretofore described, and the liquid in chamber B, the valve-faces 4 and 5 having been brought tightly in contact by tightening thumb-screw 24. No liquid will now pass into chamber A. On loosening screw 24 the movable cover E will be lowered by its weight, thereby separating the valve-faces 4 and 5 and then partially uncovering openings 25. This will allow liquid to pass over the valve-face 4 through holes 26 into chamber A and in contact with the solids aforesaid, thereby causing an immediate generation of gas. The gas passes through the exit 10 and tube 11 into purifying-chamber C. If not relieved, pressure will now accumulate in chambers A and

C and above the liquid in B, which space is in communication with chamber C through tube 27. This pressure, acting upward against movable cover E, will tend to raise it, and thus shut off the flow of liquid and the generation of gas. When the pressure falls, E will drop, admitting more liquid, and thus the gas-pressure is automatically maintained. Safety-valve 14 prevents the possibility of a dangerous accumulation of pressure. Having started the generation of gas, burner D may now be lighted in the usual manner, when the purified gas is forced by the pressure through coiled tube 13 and to the burner. This coil is kept cool by immersion in the liquid, thereby cooling the gas and improving its illuminating qualities.

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

1. In an acetylene-gas generator, in combination, a gas-generating chamber, a telescoping cover for the generating-chamber, a liquid-receptacle above said generating-chamber, a tube leading from the bottom of said receptacle, a similar tube attached to said cover having telescopic contact with the aforesaid tube, one or both of said tubes having an opening in the walls thereof so located as to be covered or exposed by the telescopic movement of one tube within the other, substantially as described.

2. In an acetylene-gas generator, in combination, a gas-generating chamber, a telescoping cover therefor, a liquid-receptacle, a tube extending downward from the liquid-receptacle and communicating with the interior thereof, a tube extending upward from the telescoping cover into the first-mentioned tube, which latter tube has an opening through its walls, a rod for holding the telescoping cover elevated, and a purifying-chamber having communication with the generating-chamber, substantially as and for the purpose specified.

3. In an acetylene-gas generator, in combination, a gas-generating chamber, a telescoping cover therefor, a liquid-receptacle, a tube extending from the liquid-receptacle, a tube secured to the telescoping cover, sliding within the first-mentioned tube, which latter tube

has an opening through its walls, substantially as and for the purpose specified.

4. In an acetylene-gas generator, in combination, a gas-generating chamber, a telescoping cover therefor, a liquid-receptacle secured to the generating-chamber, a tube extending downward from the liquid-receptacle and communicating with the interior thereof, which tube has an annular valve-face at its lower end, a tube fixed to the telescoping cover lying within the first-mentioned tube, having an opening through its walls and a valve-face about its lower end corresponding with the valve-face on the other tube, a purifying-chamber having communication with the generating-chamber and a conduit for delivering the gas from the purifying-chamber, substantially as and for the purpose specified.

5. In an acetylene-gas generator, in combination, a liquid-receptacle, a gas-generating chamber, a telescoping cover therefor, a tube affixed to said cover, a tube extending from and communicating with the interior of the liquid-receptacle, which latter tube telescopes with the tube before mentioned, one of which tubes has an opening through the walls thereof, substantially as and for the purpose specified.

6. In an acetylene-gas generator, a gas-generating chamber A, closed above by a movable cover E, a liquid-receptacle B, above said chamber, a tube 27, leading downward from said receptacle said tube having an outwardly-projecting flange 5, at its lower extremity, a corresponding tube 28, attached to said movable cover E, and having telescopic connection with 27, an annular surface or valve-seat 4, at the base of said tube adapted to come into close contact with the aforesaid flange 5, when cover E, is in its uppermost position for the purpose of preventing the flow of liquid into said chamber A, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two witnesses.

CHARLES N. LIPPITT.

Witnesses:

FRANK G. HOBART,
F. F. LIVERMORE.