

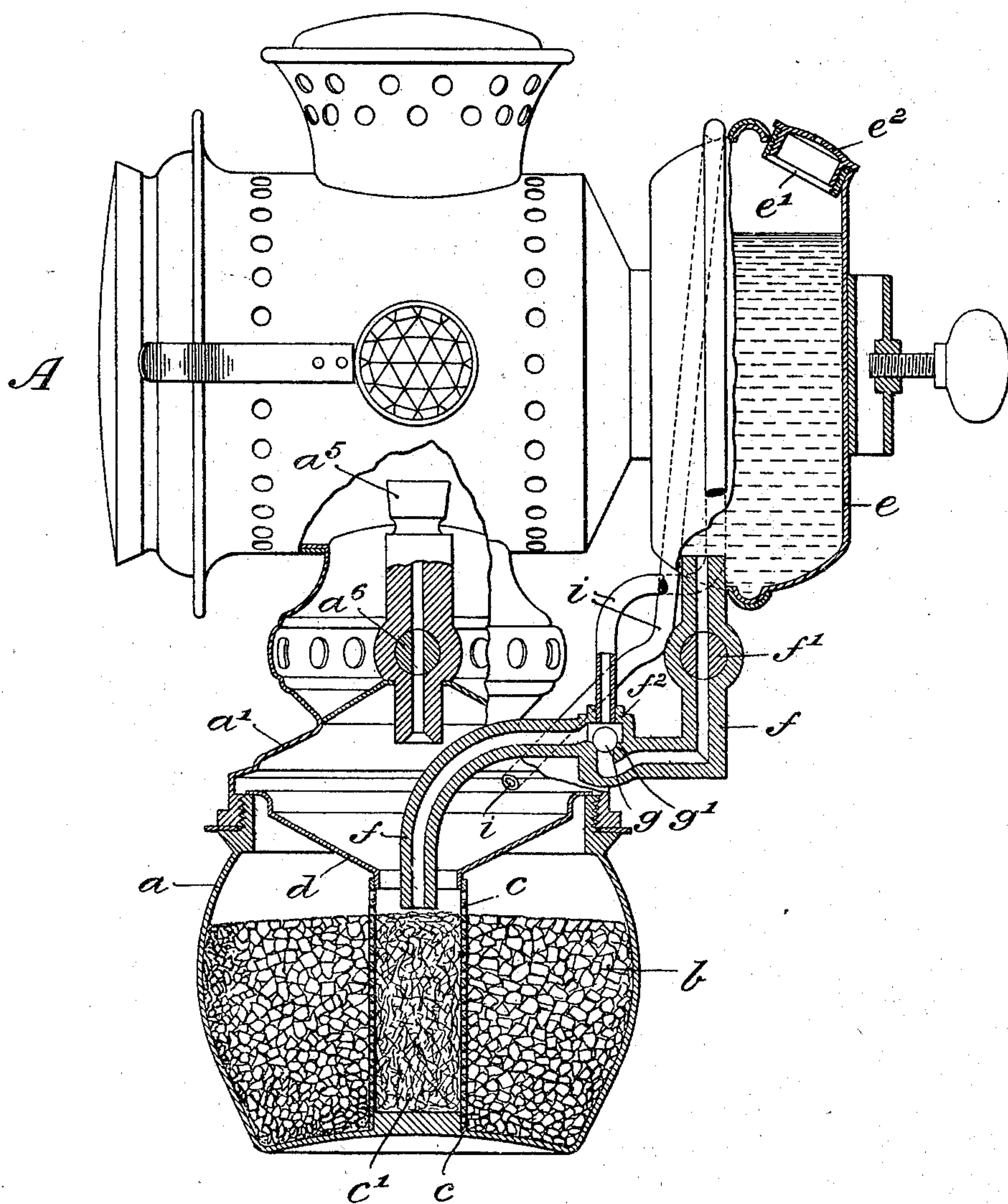
No. 610,210.

Patented Sept. 6, 1898.

H. W. WELLS.
ACETYLENE GAS GENERATOR LAMP.

(Application filed May 6, 1898.)

(No Model.)



Witnesses:
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UNITED STATES PATENT OFFICE.

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ACETYLENE-GAS-GENERATOR LAMP.

SPECIFICATION forming part of Letters Patent No. 610,210, dated September 6, 1898.

Application filed May 6, 1898. Serial No. 679,891. (No model.)

To all whom it may concern:

Be it known that I, HENRY W. WELLS, a citizen of the United States, residing at the city of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Acetylene-Gas Bicycle-Lamps, of which the following is a specification.

My invention has relation to an acetylene-gas lamp, and in such connection it relates particularly to the construction and arrangement of the generator of the gas adapted to be burned in the lamp and to means for automatically controlling by the generated gas the flow of the fluid to the calcic carbid adapted to generate the resultant gas and to prevent undue generation of the gas.

The principal object of my invention is to provide a simple, reliable, or effective gas-generating appliance for burning the gas resulting therefrom in the lamp of a bicycle or other similar appliance and an appliance in which the gas generated controls the supply of fluid to matter adapted to develop the gas, and, further, in which the appliance is provided with means whereby the supply of fluid is regulated so as to prevent undue generation of gas, and an acetylene-gas lamp for bicycles or similar purposes being provided which can be used with safety.

My invention, stated in general terms, consists of an acetylene-gas lamp when constructed and arranged substantially as hereinafter described and claimed.

In the accompanying drawing is illustrated, in side elevation and in section, a lamp embodying the particular features of my invention.

Referring to the drawing, A represents a headlight or suitable bicycle-lamp.

a is a generator-chamber adapted to contain a charge *b*, of calcic carbid or similar matter, removably secured to the base *a'* of the headlight or lamp A. Within said chamber *a* is provided a vertically-perforated tube *c*, in which is mounted a sponge or other absorbent material *c'*, for a purpose to be presently more fully explained.

d is a funnel-shaped circular deflector-plate

loosely fitting into the tube *c* and the outer edge of the same resting upon the upper edge of the wall of the generator-chamber *a*.

e is a fluid-reservoir located in the rear of the lamp A, provided with an opening *e'* at the top, closed by a perforated threaded cap *e*².

f is a pipe connected with the reservoir *e* for supplying fluid therefrom onto the absorbent material *c'* in the perforated tube *c* and which by the capillary attraction of the carbid in the chamber *a* for the absorbed water by the material *c'* is brought into the presence of the carbid, resulting in a burning-gas being generated from the same. The pipe *f* is provided with a manual key *f'* and with a ball check-valve *g*, as shown. Above the ball check-valve is provided an extension *f*², into which is secured a branch pipe *i*, preferably encircling the wall of the reservoir *e* and extending therefrom into the upper part of the generator-chamber *a*, and through which the gas is adapted to freely circulate. The generation of gas from the calcic carbid in the generator-chamber *a* is afforded by the supply of fluid from the reservoir through the pipe *f* when the ball check-valve *g* is raised from its seat *g'* onto the absorbent material *c'* and then through the perforations of the tube *c* into the carbid. If the generation of the gas becomes excessive, the pressure of gas generated and passing through the branch pipe *i* will cause the ball check-valve *g* to be forced against its seat *g'*, and thereby to prevent further flow of the fluid to the carbid until the excessive generation of gas has been relieved through the consumption or blow-off of the same through the burner *a*⁵ when the key *a*⁶ of the lamp is in its open position, as illustrated.

The operation of a lamp provided with an acetylene-gas generator of my invention, as hereinbefore described, is as follows: The manual key *f'* in the supply-pipe *f* from the reservoir *e* is turned to an open position, as illustrated, and the fluid will thereby flow through the said pipe *f*, raising the ball of the check-valve *g* from its seat *g'*, and pass then downward onto the absorbent material *c'*, and by capillary attraction of the calcic

carbid or similar matter in the chamber a , for the absorbed water in the tube c is the water absorbed by the carbid to generate a gas which rises therefrom and passes to the burner a^5 in the headlight of the lamp and burned from the same when the key a^6 is in its open position, as illustrated. Should the supply of fluid to the carbid become excessive or greater than is required, this undue generation can be relieved by the gas generated in the chamber a rising through the branch pipe i and pressing down upon the ball of the check-valve g to cause the same to be firmly seated, thereby preventing further supply of fluid to the carbid until the quantity of generated gas is reduced to the point to permit the volume or weight of the water from the reservoir flowing through the pipe f to raise the ball of the valve g , when further generation will again proceed and furnish a requisite supply of gas for being consumed by the burner a^5 of the lamp A.

Having thus described the nature and object of my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. An acetylene-gas generator, comprising a lamp provided with a burner, two chambers, one for fluid secured in rear of said lamp and the other for carbid located below said lamp and detachably connected therewith, a pipe connection from said fluid-chamber with said carbid-chamber, a ball check-valve seated in said pipe connection and elevated by the flow of fluid from said fluid-chamber, and a branch gas-pipe from the upper part of said ball check-valve, encircling said fluid-chamber and connected with said

carbid-chamber and adapted to depress or seat the ball of said valve in said pipe connection to cut off the supply of fluid to the carbid in its chamber by the pressure of the generated gas therefrom against said ball, substantially as shown and for the purposes specified.

2. An acetylene-gas generator, comprising a lamp provided with a burner, two chambers, one for fluid secured in rear of said lamp and the other for carbid located below said lamp and detachably connected therewith, a perforated tube in said carbid-chamber adapted to contain an absorbent material, a deflector-plate interposed between the lamp-base and carbid-chamber and extending into the same and the throat of said plate fitting into said perforated tube, a pipe connection from said fluid-chamber with said carbid-chamber, means in said pipe connection actuated by the fluid of said fluid-chamber to permit of the flow of the fluid to the carbid in its chamber and a branch gas-pipe from said pipe connection about said means and connected with said carbid-chamber to cut off the supply of fluid to the carbid in its chamber by the pressure of the generated gas therefrom, substantially as shown and for the purposes specified.

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

HENRY W. WELLS.

Witnesses:

J. WALTER DOUGLASS,
THOMAS M. SMITH.