

No. 614,592.

Patented Nov. 22, 1898.

D. S. WILLIAMS.
ACETYLENE GAS LAMP.
(Application filed Dec. 24, 1896.)

(No Model.)

FIG. 1.

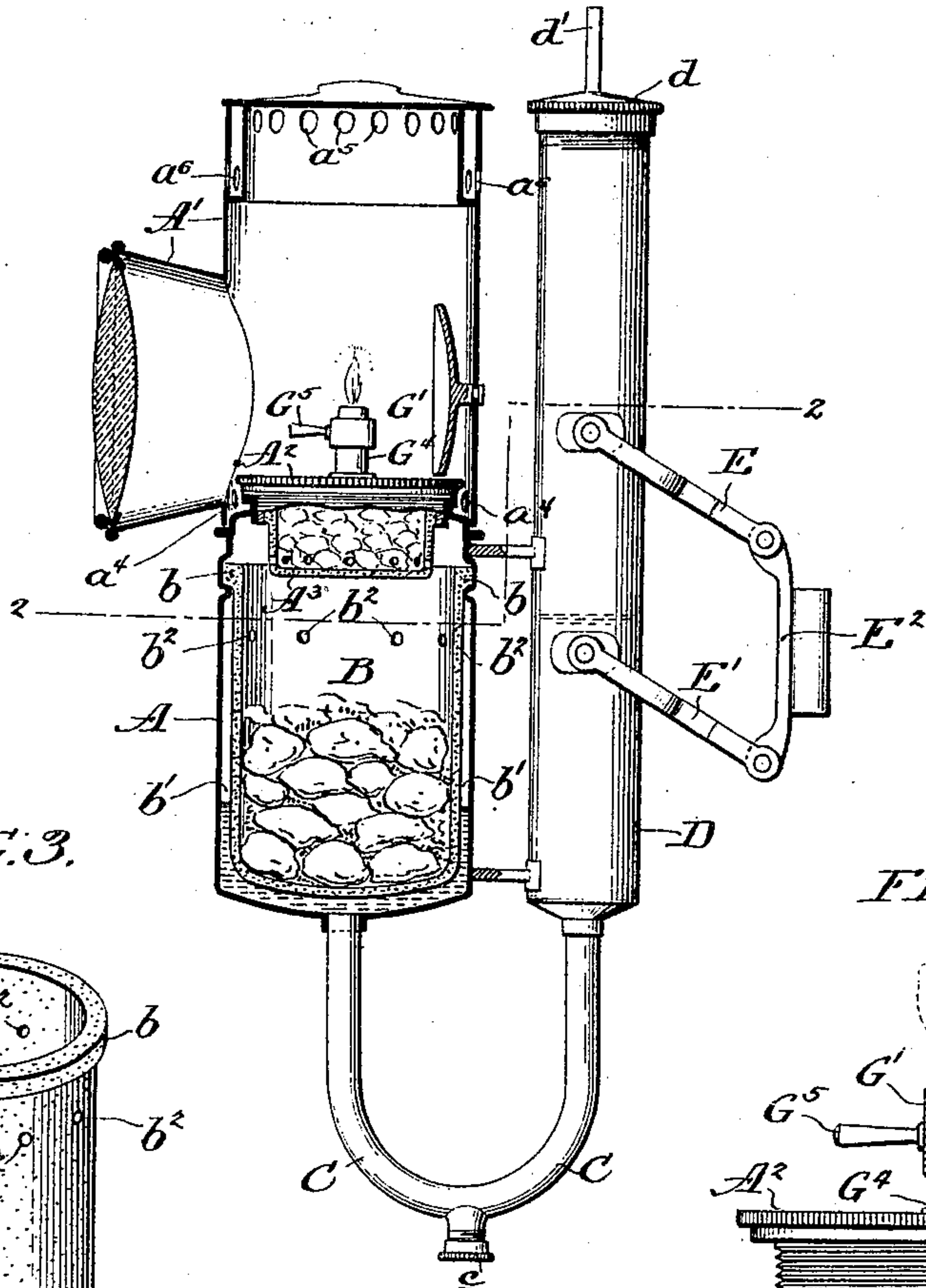


FIG. 3.

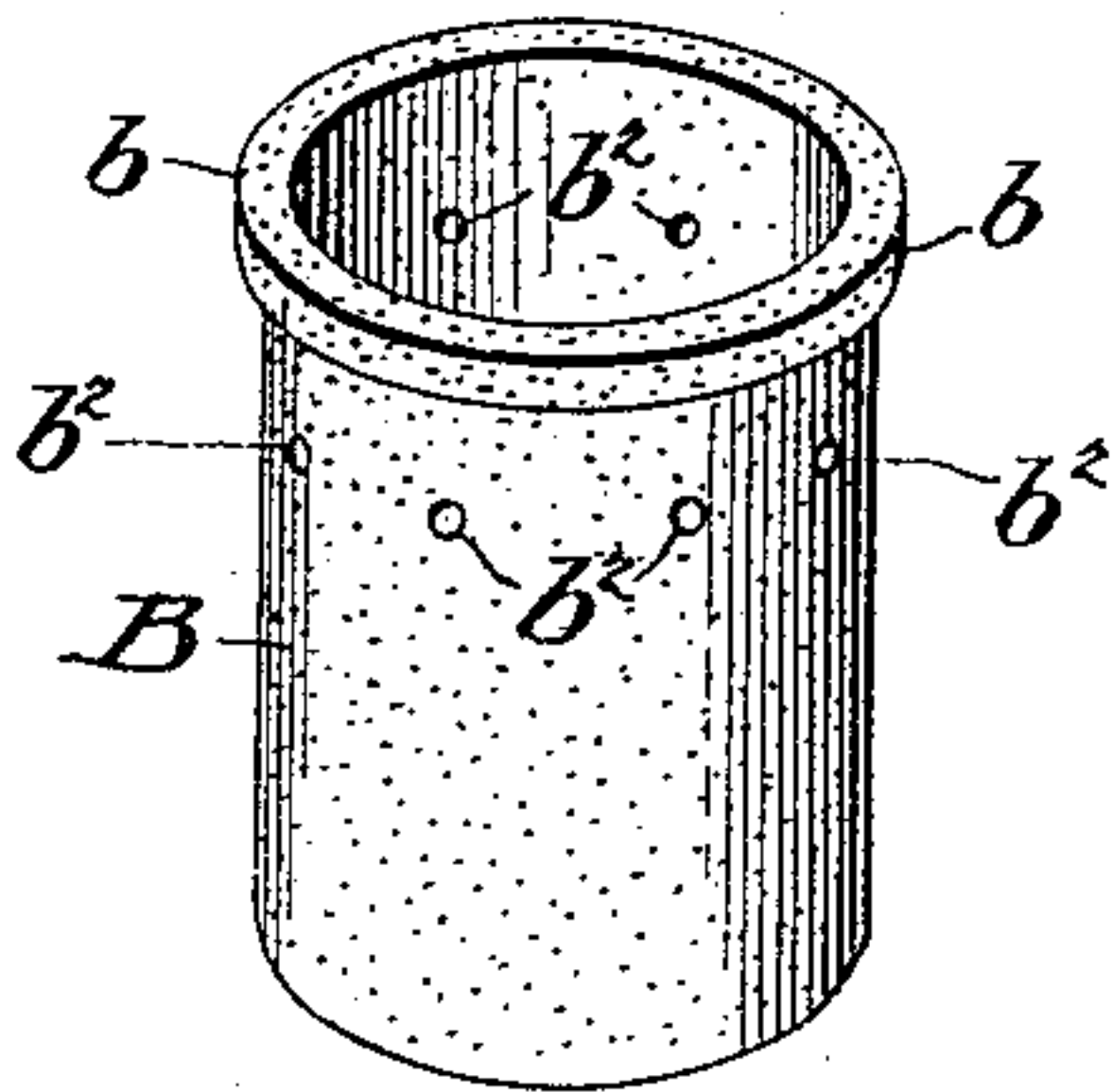


FIG. 4.

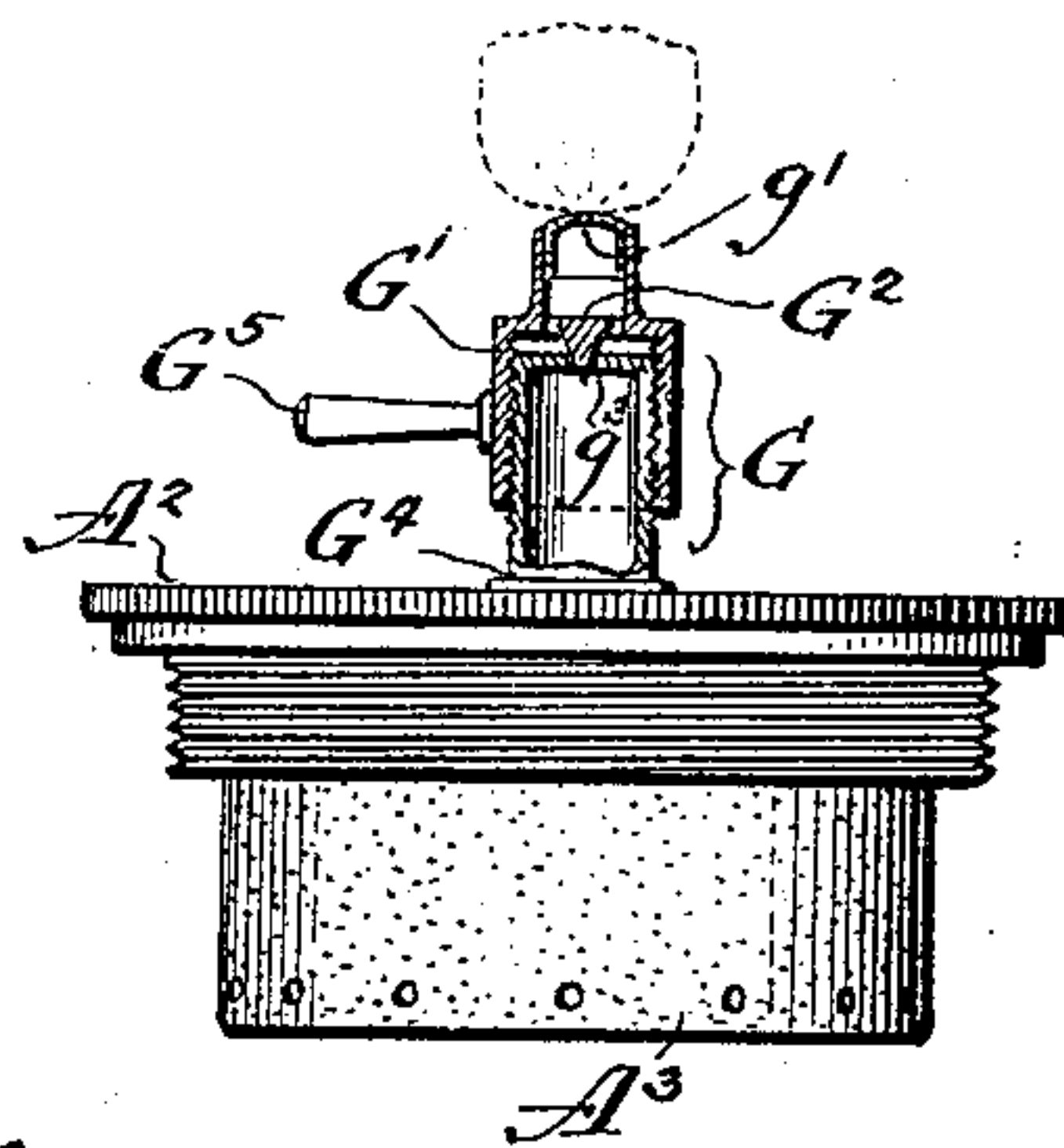
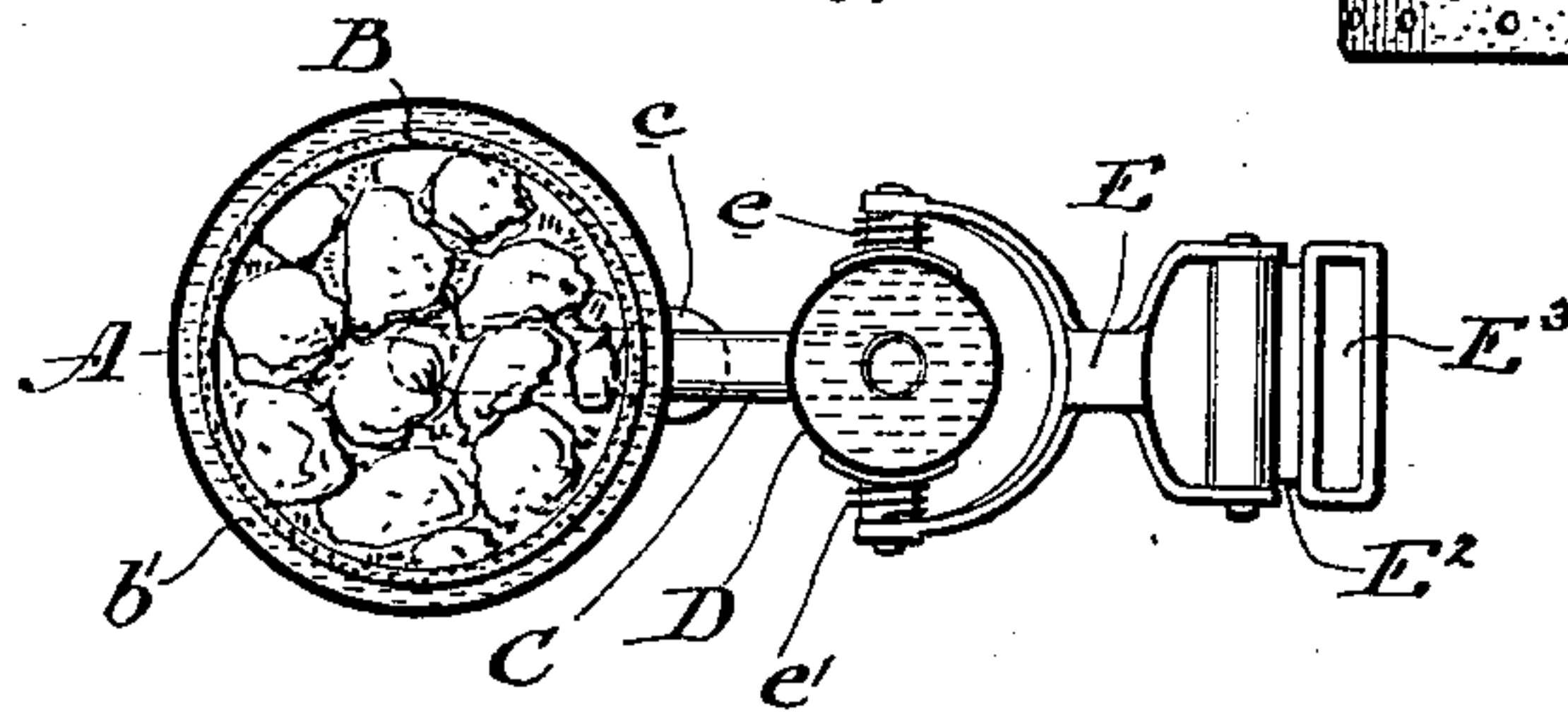


FIG. 2.



WITNESSES:

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ACETYLENE-GAS LAMP.

SPECIFICATION forming part of Letters Patent No. 614,592, dated November 22, 1898.

Application filed December 24, 1896. Serial No. 616,851. (No model.)

To all whom it may concern:

Be it known that I, DAVID S. WILLIAMS, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Acetylene-Gas Lamps; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention consists in improvements in lamps for use in connection with vehicles, such as bicycles, carriages, &c.

The main feature of my invention consists in the employment of simple devices for generating and utilizing acetylene gas, as clearly shown in the accompanying drawings, in which—

Figure 1 illustrates a side elevation, partly in section, of a device embodying my improvements, the same being more particularly designed as a lamp for bicycles. Fig. 2 is a transverse section on the line 2 2 of Fig. 1.

Fig. 3 is a detached perspective view of the porous porcelain cup comprising the generator; and Fig. 4 is an enlarged side elevation, partly in section, of the lid or cover of the generator, with a burner of special construction mounted thereon and a device depending from the cover through which the gas passes before entering the burner.

Referring now to the letters of reference upon the drawings, A represents a spun-metal cylinder which forms the outer wall of the generator, and A' is the hood and chimney of the lamp, which are preferably movable from the portion A. The generator B, containing calcium carbide, comprises a cylinder formed of baked clay, made exceedingly porous, provided with a series of holes b^2 near the top and having a flanged portion b , by means of which the generator is suspended in the cylinder A. Thus there is formed an annular space b' between the portions A and B.

At the bottom of the cylinder A is attached a pipe C, communicating with a reservoir D, containing water. A screw-cap d covers the top of the reservoir and is provided with a vent-pipe d' , and at the lowest point upon the pipe C, I place a screw-cap c , which serves to discharge the water from the generator

and reservoir while cleaning the device of waste material left from the exhausted carbide.

Upon the reservoir D are pivoted arms E and E', acted upon by springs e and e' , and a connecting-plate E², provided with a socket E³, all of which parts are substantially similar to hangers commonly employed on bicycle-lamps now in use. The cover A² of the generator comprises a screw-cap having a depending receptacle A³ of porous clay similar to that used in the generator. Said receptacle may be secured to the cover A² by lugs depending therefrom or any other desirable means, so as to be readily removable for the purpose of inserting or removing the absorbent medium contained therein. At the bottom of the receptacle are arranged a series of holes through which the gas which has been generated may more freely pass. Within the said receptacle I prefer to place a small quantity of calcium carbide, although any absorbent may suffice for the purpose of taking up the moisture contained in the gas passing from the generator.

The burner G comprises a cap G', into which is inserted a tip g' . A tapered plug G², forming part of the cap, constitutes the valve which rests in the seat g^3 in the pipe G⁴. The cap G' is provided with a handle G⁵, by which the flow of gas to the burner may be regulated.

The operation of my device is as follows: The calcium carbide is placed in the receptacle B, which I term the "generator," and the cover, with the depending receptacle containing carbide, is screwed down, a rubber ring being placed between the same and the top of cylinder A. The cap d is removed from the reservoir D, and the latter is filled with water, which passes through the pipe C and enters the annular space between the inner and outer portions of the generator. As the water rises it percolates through the porous material and acts upon the carbide; but if the supply of water is not sufficient to generate the proper quantity of gas in starting the water rises and flows through the holes b^2 near the top of the generator and a generation of gas immediately follows. As the gas accumulates it displaces the water, forcing it out of the annular space into the reservoir D, the air in the reservoir passing to and from the

same through the vent-pipe d' . A current of air to the gas-jet is supplied through openings a^4 at the bottom of the hood, the products of combustion passing out at the top through openings a^5 and a^6 ; but as this portion of the device may be constructed after any of the well-known ventilating-hoods it is not thought necessary to go into further detail with regard to its construction.

10 Having now described my invention, what I claim, and desire to secure by Letters Patent, is—

1. An acetylene lamp or lantern comprising an outer receptacle and an inner receptacle, 15 the latter formed of porous earthen material, a flange formed upon the top of the inner receptacle, by which the same is suspended from the outer receptacle, a series of holes arranged near the top of the inner receptacle, a reservoir, a pipe connecting the same with the 20 outer reservoir of the generator and a discharge-opening arranged in said pipe, substantially as specified.

2. An acetylene lamp or lantern comprising 25 an outer receptacle and an inner receptacle, the latter formed of porous earthen material, a cap or cover adapted to the outer receptacle, a depending receptacle formed of porous earthen material suspended from said cap 30 and being interposed between the generator and discharge-pipe mounted upon the top of said cap, a reservoir and a pipe connecting said reservoir with the outer receptacle of the generator, substantially as specified.

35 3. An acetylene lamp or lantern comprising an outer receptacle and an inner receptacle, the latter being formed of porous earthenware material adapted to receive the material for generating the gas, and having a flanged 40 top by means of which it is suspended from the outer receptacle, a series of holes formed on the inner receptacle near the top, a screw-

cap or cover adapted to a threaded portion of the outer receptacle, a porous receptacle depending from said cap or cover, a burner 45 mounted thereon, provided with a screw-cap and valve for regulating the flow of gas, a reservoir for containing water and a pipe leading therefrom to the outer receptacle of the generator, substantially as specified. 50

4. An acetylene lamp or lantern comprising an outer receptacle for containing water and an inner receptacle adapted to receive the material for generating the gas, the latter being 55 formed of porous earthen material and provided with a flanged top by which means it is suspended from the outer receptacle of the generator, a screw-cap or cover threaded to the top outer receptacle, a depending receptacle carried thereby, the same being formed 60 of porous earthen material, a pipe leading from said cap or cover, a burner threaded to said pipe and provided with a valve for regulating the discharge of gas, a handle secured to said burner, a chimney inclosing said 65 burner, detachably secured to the generator, a hood formed upon said chimney and provided with a lens for deflection of the rays of light, a reflector secured to the chimney in line with the burner and hood, a reservoir for contain- 70 ing water, a screw-cap mounted upon the top thereof and provided with a vent-pipe, a pipe leading from the reservoir to the generator provided with a discharge-opening, a screw-cap adapted to said opening, and a hanger 75 provided with arms pivoted to the reservoir and adapted to support the lamp, substantially as specified.

In testimony whereof I affix my signature in presence of two witnesses.

DAVID S. WILLIAMS.

Witnesses:

WALTER PINCUS,
ROBERT W. LLOYD.