No. 620,454. Patented Feb. 28, 1899.

L. C. HILLS.

VAPOR BURNING LAMP.

(Application filed Aug. 24, 1898.)

(No Model.) 2 Sheets—Sheet 1.

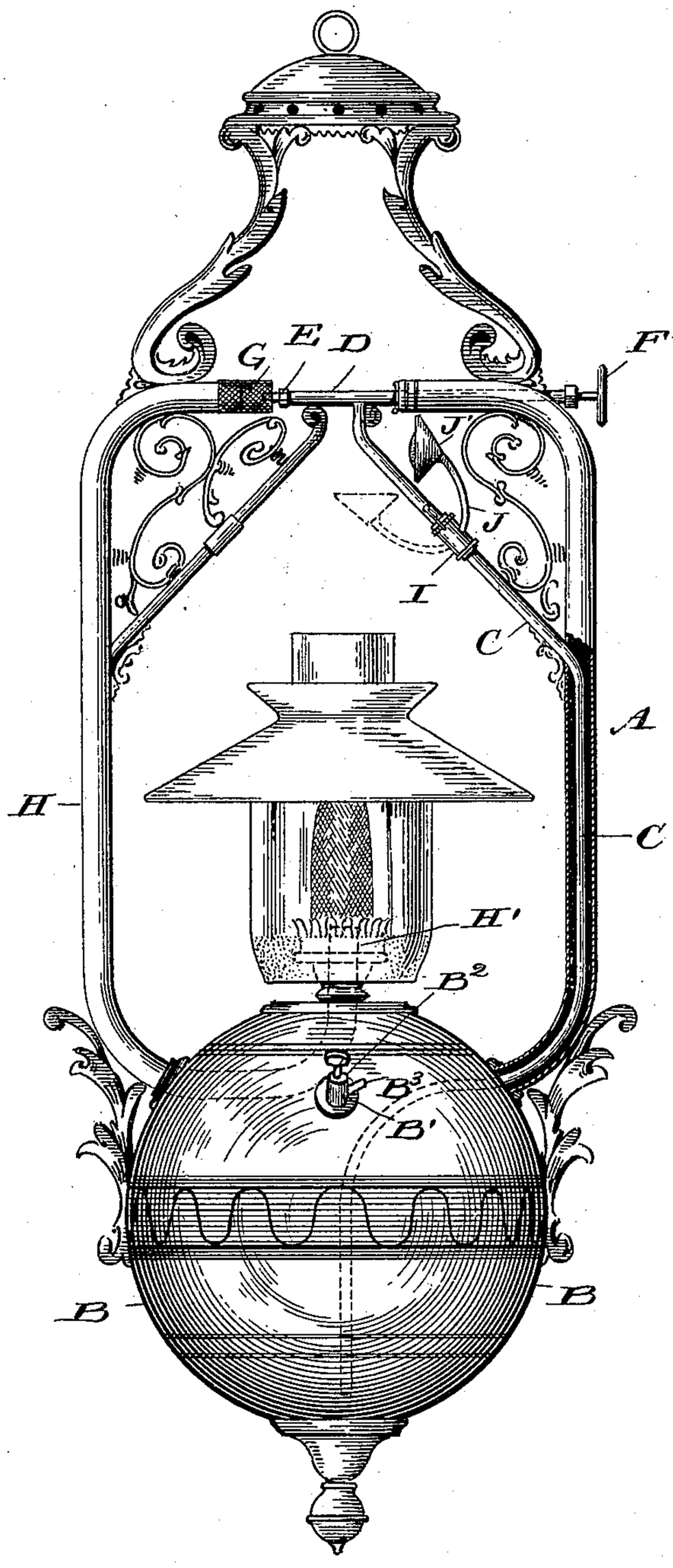

Fig. 1.

Witnesses:
T. J. Bradley
J. M. Pfeiffer.

Inventor:
Louis C. Hills,
By Franklin H. Hough
Atty.

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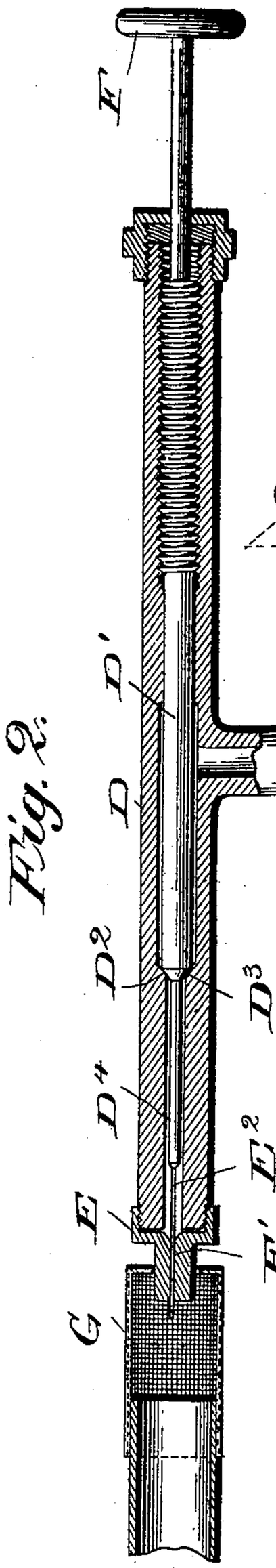

Fig. 2.

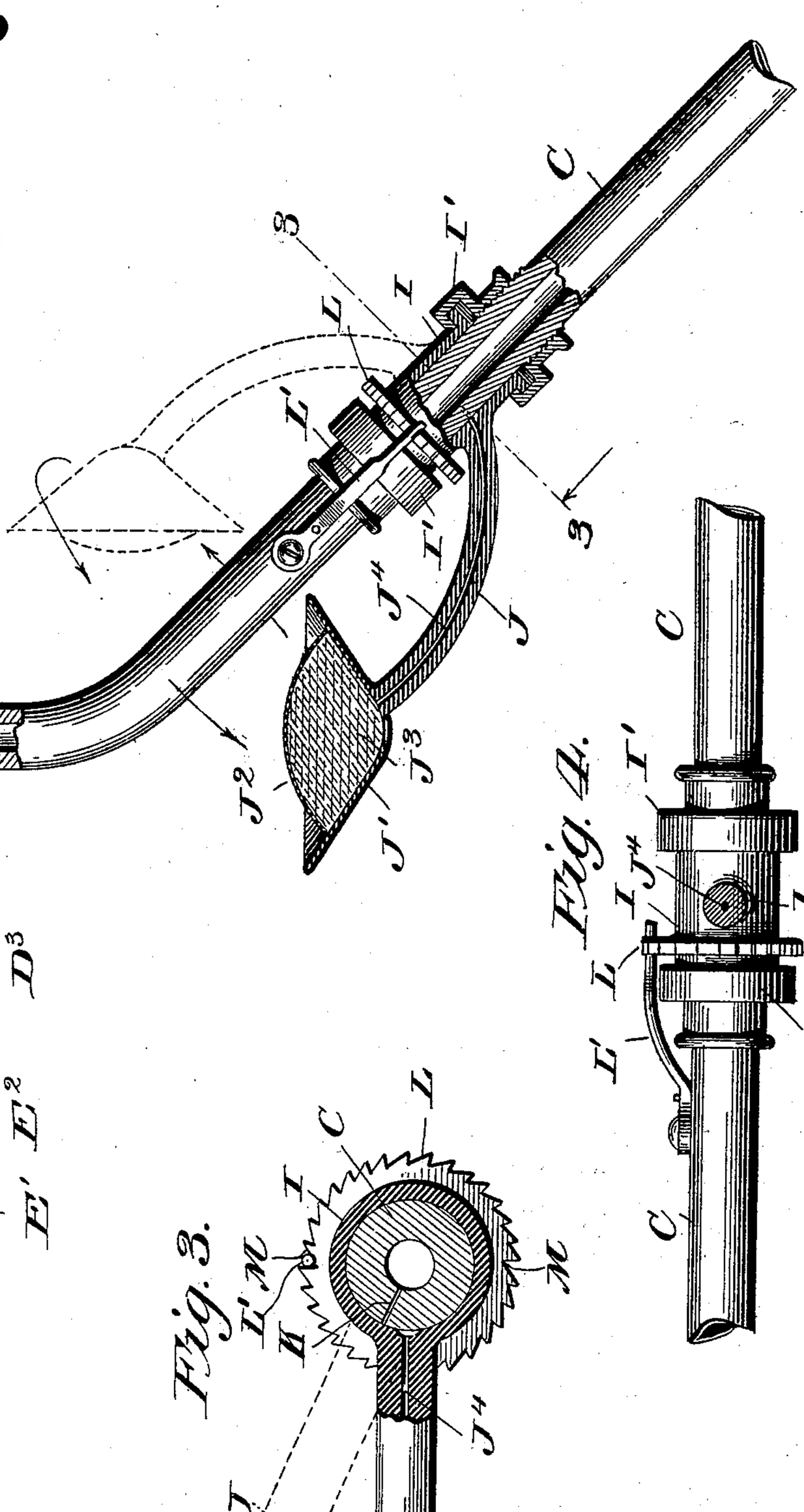

Fig. 3.

Fig. 4.

Witnesses:
T. J. Bradley
J. M. Pfeiffer

Inventor:
Louis C. Hills,
By Franklin N. Howell
Atty.

UNITED STATES PATENT OFFICE.

LOUIS C. HILLS, OF WASHINGTON, DISTRICT OF COLUMBIA, ASSIGNOR TO THOMAS J. BRADLEY, OF MEMPHIS, TENNESSEE.

VAPOR-BURNING LAMP.

SPECIFICATION forming part of Letters Patent No. 620,454, dated February 28, 1899.

Application filed August 24, 1898. Serial No. 689,416. (No model.)

To all whom it may concern:

Be it known that I, LOUIS C. HILLS, a citizen of the United States, residing at Washington, District of Columbia, have invented certain new and useful Improvements in Vapor-Burning Stoves; 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, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to certain new and useful improvements in vapor-burning lamps; and it relates more particularly to the provision of a simple and serviceable attachment for lamps of the character mentioned, said attachment consisting of a fire basket or trough filled with non-combustible absorbent material, said basket being provided with a suitable valve-controlled passage communicating with the interior of the oil-fount of the lamp.

The invention has for a further object the provision of means whereby the fire-basket may be readily thrown into position for use in heating the gas-generator of the lamp and of means whereby the basket may be moved out of the way after the lamp has been lighted; and incidentally the invention relates, further, to the provision of a construction whereby the opening and closing of the valve in the passage connecting the fire-basket with the oil-fount of the lamp will be automatically actuated so as to regulate the supply of gasolene or other material supplied to the basket.

To these ends and to such others as the invention may pertain the same consists in the peculiar construction and in the novel combination, arrangement, and adaptation of parts, all as more fully hereinafter described, shown in the accompanying drawings, and then specifically defined in the appended claims.

The invention is clearly illustrated in the accompanying drawings, which, with the letters of reference marked thereon, form a part of this specification, like letters of reference indicating the same parts throughout the several views, and in which drawings—

Figure 1 is an elevation of a complete vapor-burning lamp provided with my improvement, the fire-basket being shown in full lines in the position which it occupies when not in use, and its position when in use being indicated by dotted lines. Fig. 2 is an enlarged sectional elevation of the operating-valve and the igniting device. Fig. 3 is a cross-section through the valve of the igniter, the same being taken upon the line 3 3 of Fig. 2, looking in the direction indicated by the arrow. Fig. 4 is a side elevation of the same, the fire-basket and connecting-pipe being removed.

Reference now being had to the details of the drawings by letter, A designates a vapor-burning lamp consisting, essentially, of the oil-fount B, which I have shown as substantially spherical in form, but which may be of any desired form or size. The said oil-fount is provided with a filling-aperture B′, within which is fitted a valve-controlled fixture B^2, having a stub-pipe extension B^3, to which extension an air-pump such as is commonly used in inflating the tubes of bicycle-tires may be attached when it is desired to charge the oil-fount with air, as will hereinafter appear.

C is a tube or pipe leading from the interior of the oil-fount at a point near its bottom. The said tube or pipe C is passed through the side wall of the fount at a point near its top, and the said pipe is extended upwardly for a considerable distance, as shown, and is then inclined inwardly to a point directly above the burner of the lamp and at its upper end communicates with the vertical pipe D, which said pipe is provided with a valve-rod D′, the body portion of which valve is of greater diameter than the free end of the same, the end of the enlarged body portion being beveled, as shown at D^2, to engage a valve-seat D^3. The extreme inner end of the tube D is provided with a screw-threaded cap E, which cap is provided with a contracted gas-passage E′, and the portion D^4 of the valve-stem is provided at its end with a needle E^2, adapted to be moved in and out of the said passage E′ by turning the valve handle or wheel F in opening and closing the valve, as will be readily understood.

G is a cylindrical chamber surrounded by wire-meshing, which serves to prevent the flow of gas from being interrupted at this point by air-currents in the apartment, as will be readily understood.

H is the gas-pipe, which leads from the valve-tube D downward into the oil-fount, thence extending upward to the gas-burner H'. At a point upon the tube C near its upper end, but below the line of heat from the lamp-burner, a sleeve I is provided, said sleeve being adapted to be turned by means of a serrated or roughened band I', but fitting gas-tight upon the pipe. A small tube J, carrying at its upper end a suitable fire-basket J', is at its lower end connected with the collar I. This fire basket or receptacle is provided with a conical top J^2, preferably constructed of wire cloth or meshing, and the space within the basket or receptacle beneath the top J^2 is filled with any suitable absorbent and non-combustible material J^3—such, for instance, as asbestos. Connecting the bottom portion of the fire-basket J' with the pipe C is a contracted gas-passage J^4, and a contracted gas-passage K leads through the side wall of the tube C within the rotatable collar or sleeve I, said passage K being adapted to register with the passage J^4 in the tube J when the said collar I has been turned to the proper point to secure such registration, as will be clearly understood upon reference to Fig. 3 of the drawings. In order to provide for the turning of the sleeve I in one direction, I provide, in connection with the said sleeve or collar, a ratchet-wheel L, the teeth of which ratchet are engaged by a pawl L', secured to the pipe C, and in order to insure the stopping of the sleeve in its rotation at points required to secure the registration of the gas-passage K with the gas-passage J^4 when desired and to insure the perfect closing of the valve at other times I provide upon opposite sides of the ratchet-wheel L notches M, which notches are of greater depth than the remaining notches upon the periphery of the wheel.

The operation of the device is simple and in connection with the foregoing description of construction of the lamp will be readily understood.

The valve B^2 is first removed from the inlet-passage of the oil-fount and a quantity of gasolene is supplied to the fount. Preferably the fount should be filled from half to two-thirds with gasolene. The valve B^2 is then replaced in the filling-aperture, and by means of an air-pump attached to the stub-pipe B' the fount is finally charged with air. The air-pressure within the fount will force a quantity of the gasolene upward through the pipe C. In order to provide for the generation of gas or vapor and to supply the same to the burner of the lamp, it is first necessary to heat the valve or gas-generator D. To accomplish this is the office of the fire-basket J' and its connections. The sleeve, I carrying the fire-basket, is turned upon the pipe C until it is brought into a position directly beneath the gas-generator I, this position being indicated by dotted lines in Fig. 1 and in full lines in Fig. 2 of the drawings. When the basket is in this position, it will be seen that there is a direct connection between the interior of the pipe C and the basket through the tube J and its connecting valve, and through this opening a quantity or gasolene will at once pass into the basket, where it will be absorbed by the absorbent material contained in the basket. The material contained in the basket, and which material has been thus charged with gasolene, is ignited, and the heat therefrom will serve to generate gas within the tube D directly above it. When a sufficient quantity of gas has been generated to supply the burner of the lamp, the lamp is lighted and the fire-basket is turned by rotating the collar I until it occupies the position indicated in full lines in Fig. 1 and in dotted lines in Fig. 2 of the drawings, thus occupying the space between the pipe C and the pipe D, where it will be out of the way and where it may be readily thrown into operative position when again required for use.

It will be seen that the supply of gas from the generating-tube D in the lamp-burner is controlled by the wheel F, the turning of which serves to open and close the valve by forcing inward or withdrawing the valve from its seat, as will be readily understood. The needle E' at the end of the valve-stem serves to at all times keep the gas-passage leading from the tube D free from obstruction.

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

1. In a vapor-burning lamp the combination with the lamp its connecting-pipes and gas-generator, of a fire-basket filled with non-combustible absorbent material and provided with an inlet-passage communicating with the gasolene-pipe and means substantially as described whereby the basket may be moved to a point beneath the gas-generator, or to one side of the same, the moving of the basket serving to automatically operate the valve controlling the inlet-passage of the same.

2. The pipe C, the collar I, the fire-basket, the pipe interposed between the fire-basket and the collar, the ratchet-wheel carried by the collar and the locking-dog L' adapted to engage the teeth of the ratchet-wheel and to permit the collar to be turned in one direction only, substantially as described, and for the purpose specified.

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

LOUIS C. HILLS.

Witnesses:

FRANKLIN H. HOUGH,

J. M. PFEIFFER.