

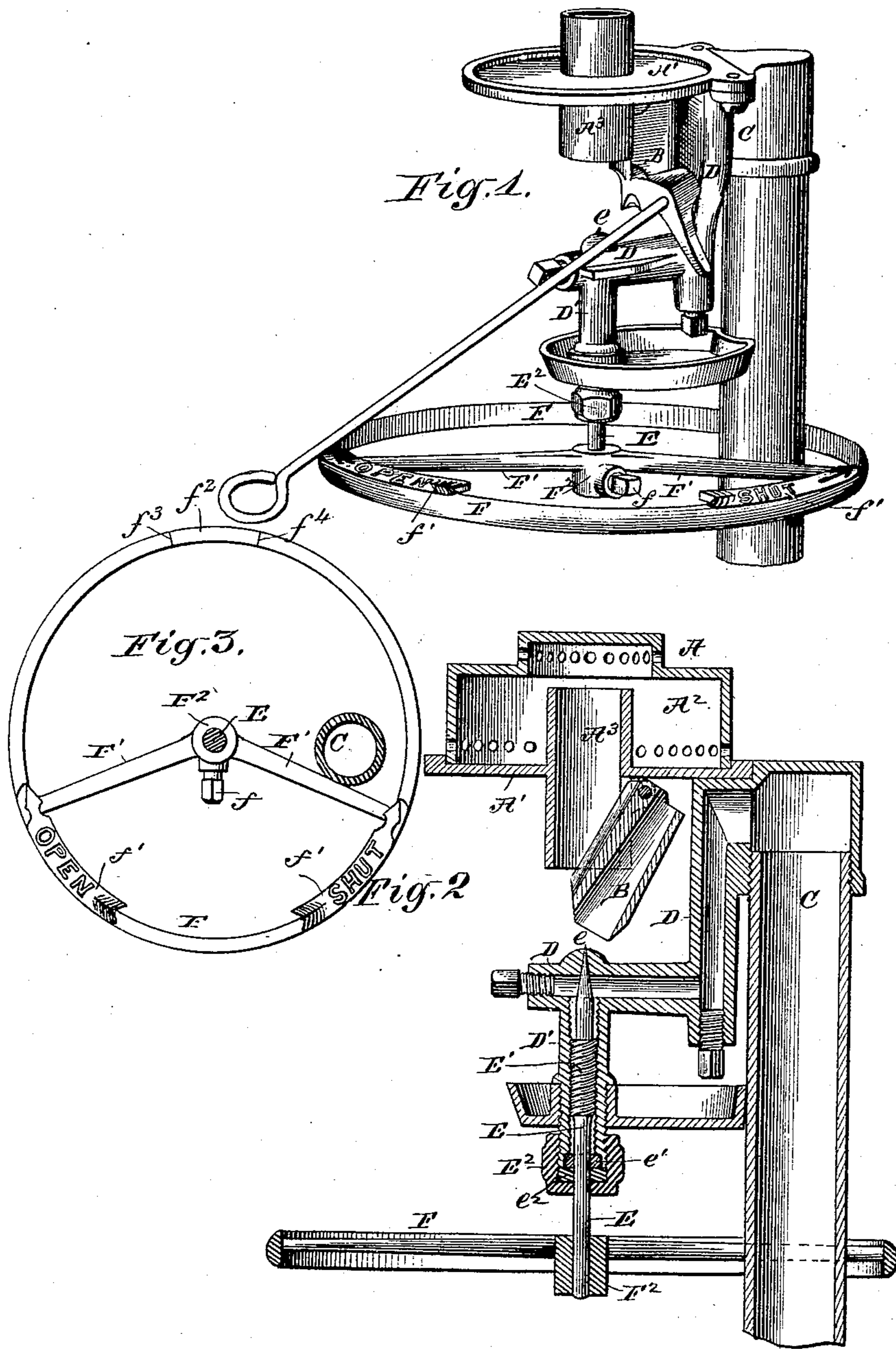
(No Model.)

G. MYERS & J. B. WALLACE.

HYDROCARBON VAPOR BURNER.

No. 316,385.

Patented Apr. 21, 1885.



Witnesses:  
Jas. H. Frockett.  
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# UNITED STATES PATENT OFFICE.

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## HYDROCARBON-VAPOR BURNER.

SPECIFICATION forming part of Letters Patent No. 316,385, dated April 21, 1885.

Application filed May 16, 1884. (No model.)

*To all whom it may concern:*

Be it known that we, GARSON MYERS and J. BENNETT WALLACE, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Hydrocarbon-Vapor Burners; and we do hereby declare that the following is a full, clear, and exact description thereof, 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 means for opening and closing the needle-valve of a hydrocarbon-vapor burner, and has for its objects, first, to provide a construction in which the movements of the said needle-valve are properly limited, and, second, to afford an indication to the eye of the condition of the needle-valve as to whether it is closed or partially or wholly open.

The invention consists in the several matters hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a perspective view of a burner provided with our improvement. Fig. 2 is a central vertical section of the view shown in Fig. 1. Fig. 3 is a plan view of the hand-wheel applied to the valve-shaft.

A represents a perforated burner proper, of which A' is the base-plate; A<sup>2</sup>, the perforated cap, and A<sup>3</sup> the induction-tube by which the vapor is directed into the interior of the burner A.

B is a deflector by which the flame may be directed against the parts giving passage to the liquid or vapor for the purpose of keeping them heated up to generating heat when the burner is not in active use.

C is a liquid and vapor pipe connected with a suitable source of liquid-hydrocarbon supply.

D is a pipe leading downward from the upper end of the pipe C to a point opposite the opening of the induction-tube A<sup>3</sup>. At this point the pipe D is provided with a needle-valve opening arranged to admit the vapor centrally into said tube A<sup>3</sup>.

D' is a tubular projection forming the support of the needle-valve.

E is the needle-valve shaft having its point *e* fitted to the opening in the tube D in the

usual way. Said valve-shaft is provided with a screw-thread of rapid gain or high pitch fitted to a corresponding thread in the tube D', so that only a partial revolution of the said valve-shaft will either sufficiently open or tightly close the opening *e* for all purposes of the burner. The shaft E protrudes duly beyond the tube D', and the passage about the said shaft is closed to prevent the escape of liquid by any suitable cap, E<sup>2</sup>, and packing or other appropriate means. In the present instance a plate, *e'*, surrounds the shaft and is shouldered in the lower or outer end of the tube D', and between said plate and the screw-cap E<sup>2</sup> any suitable packing, *e''*, is inclosed.

To the outer or lower end of the shaft E is adjustably secured a hand-wheel, F, which is much larger than those heretofore commonly attached to the stem or shaft of the needle-valve, and which, as here shown, embraces within its rim the vertical pipe C. This pipe C thus may serve as a stop to arrest or limit the rotation of the hand-wheel and valve-shaft by striking the arms of said hand-wheel. A four-thread screw, twenty-four threads to the inch, is found to be rapid enough to give all necessary movement to the valve with such a partial rotation of the hand-wheel as is easily practicable in the construction described.

The wheel-rim is supported from the hub by arms which, as here shown, are two in number, and are both located on one side of the diameter. The tube C passes through the larger space and, taking the diameter of the said tube into account, the wheel and the valve-shaft have about or little more than one-half of a full rotation.

On the rim of the wheel are preferably cast the words "Open" and "Shut," together with arrows which indicate the direction in which the wheel is to be turned to close or open the valve.

The wheel is secured adjustably to the valve-shaft by means of a set-screw, *f*. To properly apply the wheel F to the valve-shaft, the wheel is detached and the valve is tightly closed by aid of pliers or other means. The shaft E is then inserted in the wheel-hub with the arm adjacent to the word "Shut" in contact with or near the tube C, and the set-screw *f* is tightened. The rotation of the wheel to bring

the other wheel-arm toward or against the tube C therefore opens the valve. When the valve wears, the wheel may be readjusted as may be required.

5 A part of the wheel-rim may be broken away, if desired, (as by the removal of a part,  $f^2$ , Fig. 3, extending, say from  $f^3$  to  $f^4$ ,) to admit the tube C; but we prefer the present construction, which, of course, requires the tube to be  
10 inserted through the wheel before said tube is finally connected.

The novel features in the deflecting devices herein shown form the subject of another application for patent, Serial No. 130,718, filed  
15 May 8, 1884, by J. B. Wallace, one of the present applicants.

We claim as our invention—

1. The combination of the needle-valve having on its shaft a quick or high pitched screw-  
20 thread, a wheel adjustably secured to the valve-shaft, and a neighboring stationary part of the apparatus engaging the wheel, substantially as described.

2. The combination, with the stationary liquid-pipe, and the neighboring needle-valve 25 provided with a high-pitched screw-thread, of a wheel adjustably secured to the valve-shaft and embracing the liquid-tube, substantially as described.

3. The combination, with the stationary 30 liquid-pipe, and neighboring valve-shaft provided with a high-pitched screw-thread, of a wheel, F, having an open space embracing said liquid-pipe and bearing the words "Open" and "Shut," or their equivalents, 35 substantially as and for the purpose set forth.

In testimony that we claim the foregoing as our invention we affix our signatures in presence of two witnesses.

GARSON MYERS.  
JACOB BENNETT WALLACE.

Witnesses:

W. E. DAYTON,  
OLIVER E. PAGIN.