

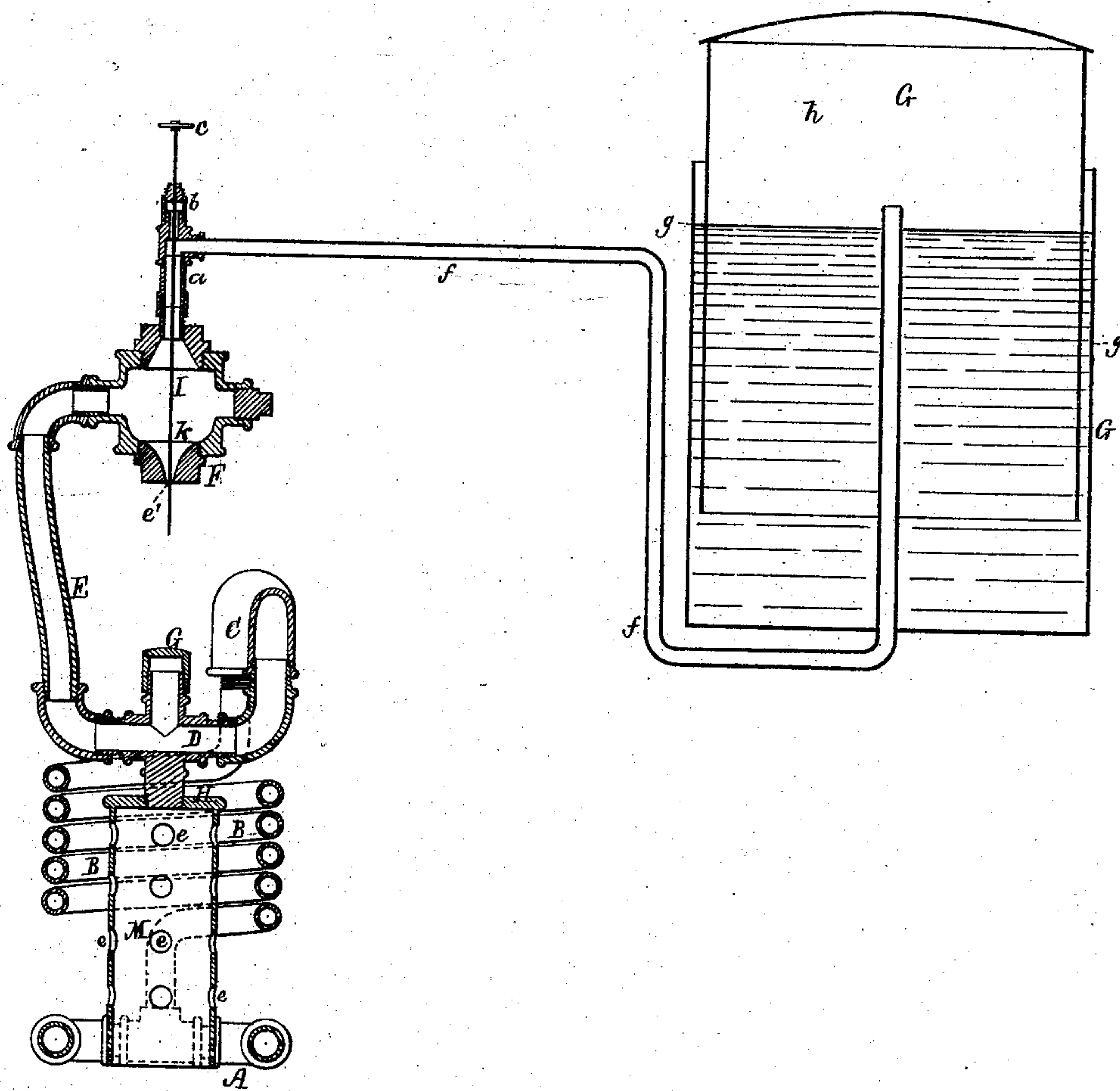
(No Model.)

G. W. McALLISTER.

APPARATUS FOR VAPORIZING AND BURNING PETROLEUM.

No. 272,287.

Patented Feb. 13, 1883.



Witnesses.

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# UNITED STATES PATENT OFFICE.

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## APPARATUS FOR VAPORIZING AND BURNING PETROLEUM.

SPECIFICATION forming part of Letters Patent No. 272,287, dated February 13, 1883.

Application filed June 26, 1882. (No model.)

### *To all whom it may concern:*

Be it known that I, GUY W. McALLISTER, of Boston, in the county of Suffolk, of the State of Massachusetts, have invented a new and useful Improvement in Apparatus for Vaporizing and Burning Petroleum or other Hydrocarbon; and I do hereby declare the same to be described in the following specification and represented in the accompanying drawing, which is a vertical section of apparatus relating to and containing my invention, the nature of which is defined in the claims hereinafter presented.

The improvement has reference to apparatus invented by Daniel M. Graham, and described in the United States Patent No. 260,476, dated July 4, 1882, and granted to him. The material parts of such apparatus on which my improvement is made may be thus described.

In the drawing, A is the tubular base or fluid-divider; B, the spiral coil or tube, communicating at its lower end with such base and at its upper end with a branch pipe, C, which in turn supports and opens into a horizontal conduit, D, at one end thereof. From the other end of the conduit D a pipe, E, rises, and has connected with it a vertical jet, F, arranged with its axis in that end of the coil B produced upward. The jet has its discharge-nozzle shaped inside like a funnel, as shown at *k*. Immediately below the said jet, and supported by the conduit D, is a deflector, G, which extends upward therefrom. Below the pipe D is a deflector, H, from which a tube, M, having holes *e* in its sides, projects, as shown. Within the jet F is a clearer or rod, I, which is arranged concentrically in a tube, *a*, that is extended upward from the jet, and at its upper part is provided with a stuffing-box, *b*, through which the rod I is carried, and terminates in a button or handle, *c*. The packing of such box is usually asbestos. With the stuffing-box to the jet and rod the latter can be raised upward and moved downward or revolved, as occasion may require, to clear the educt *e'* of the jet of carbonaceous deposits, and this without the necessity of manipulating the clearer from its lower end, and by a poker. The internal funnel shape given to the nozzle materially assists in this clearance of the jet. When worked by a poker

the clearer is apt to become bent, so as to render it difficult, if not impossible, to operate it to advantage. From the tube *a* of the jet a pipe, *f*, is led to and up within the cistern or tank *g* of a small gasometer, G, whose bell is shown at *h*, it being open at its lower end and arranged, as shown, in the tank charged with water. The clearer extending the whole length of the jet, can be used to cleanse the former its entire length, and any accumulation will be forced into the bottom of the jet, and by the funnel shape of the nozzle it will be pushed out at *e'*, thus keeping the entire jet clean.

The operation of the apparatus may be thus explained. A combustible liquid—as petroleum, for instance—is by a pipe from a tank, arranged at a suitable altitude, to be conducted into the tubular base A, from whence it will pass upward into the coil, wherein, by the heat of the flame impinging on such coil from the jet and on the deflector or deflectors, such fluid will be vaporized or reduced to a gaseous state, and in such condition it will be driven with great force out of the jet and down upon the upper deflector, or upon both deflectors, it being, on its escape from the jet, inflamed, whereby it will be caused to heat the coil. In case of a surplus of gas forming and producing too great pressure in the heat-generator or coil and the burner, such surplus, instead of interrupting the flow of petroleum to the generator, will pass into the gasometer, which will thereby operate to equalize the pressure in and the discharge of the gas from the burner downward toward the upper deflector.

I claim—

1. The jet F, having its nozzle made funnel-shaped, as shown, at *k*, in combination with the clearer I, extending the whole length of the jet, as and for the purpose set forth.

2. The jet F, having the extension *a* and the nozzle funnel-shaped at *k*, in combination with the clearer I, extending the whole length of the jet, the pipe *f*, and the gasometer G, all constructed and arranged as and for the purpose set forth.

GUY W. McALLISTER.

Witnesses:

R. H. EDDY,  
E. B. PRATT.