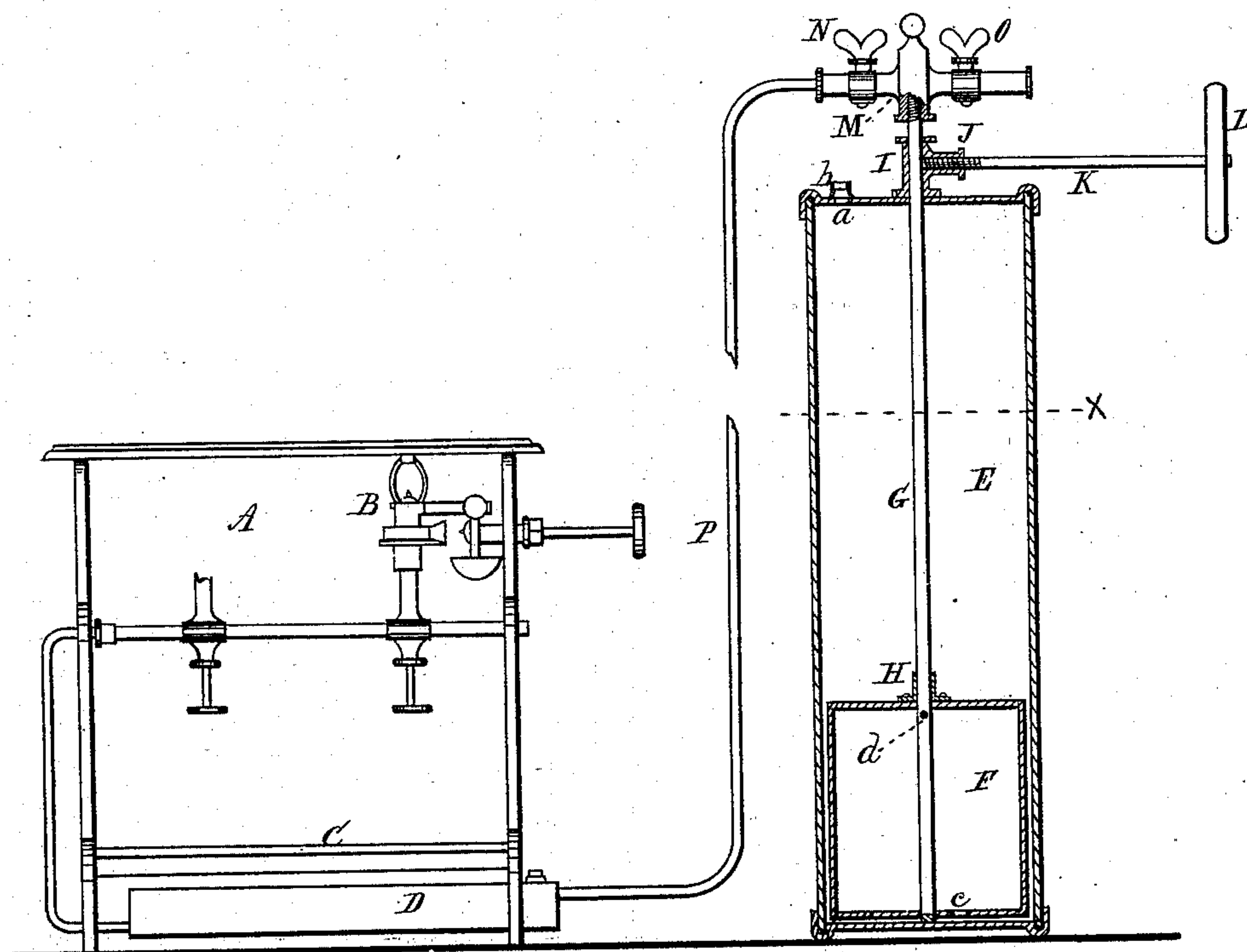


(No Model.)

F. A. LYMAN.  
Gasoline Stove.

No. 237,192.

Patented Feb. 1, 1881.



Witnesses.

*J. H. Burridge,*  
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# UNITED STATES PATENT OFFICE.

FORDYCE A. LYMAN, OF CLEVELAND, OHIO.

## GASOLINE-STOVE.

SPECIFICATION forming part of Letters Patent No. 237,192, dated February 1, 1881.

Application filed December 13, 1880. (No model.)

*To all whom it may concern:*

Be it known that I, FORDYCE A. LYMAN, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented a certain new and Improved Gasoline-Stove; and I do hereby declare that the following is a full, clear, and complete description thereof.

The invention above alluded to relates to a certain apparatus for supplying the burners of a gasoline-stove with oil from an oil fount or reservoir placed below the burners thereof. Said apparatus consists of a cylindrical water-vessel having a close top and bottom. Within said chamber is fitted so as to move freely therein an air-chamber with a perforated bottom and a close top. To said chamber is secured the lower end of a tube which passes down through the chamber to the bottom thereof, thence through the top, then upward through the water vessel or cylinder, through the top of which it projects, and terminates in a cross-pipe provided with stop-cocks, all of which and the practical operation of the same are more fully described in the following specification, and illustrated by the accompanying drawing, making a part of the same.

In the said drawing, A represents a side view of a gasoline-stove, of which B is a burner, C the catch-pan, and D the oil fount or reservoir placed below the catch-pan. Said stove, excepting the location of the reservoir, is substantially like this class of stoves (or may be) in ordinary use; hence a detailed description thereof is not deemed necessary in this place, it being introduced in the drawing simply to illustrate the application of the apparatus to a gasoline-stove.

The water vessel or cylinder above alluded to is represented at E, and is made of sheet metal, with a water-tight bottom and top. For an ordinary three-burner stove the cylinder may be about thirty-six inches high and from seven to eight inches in diameter. The diameter of the cylinder, however, may be more or less, according to the number of burners. In the top of the cylinder is an opening, *a*, through which to charge it with water. Said opening is provided with a cap, *b*. In said cylinder is loosely fitted an air-chamber, F, in the bottom of which is an aperture, *c*; otherwise the bottom of the chamber is air-tight; so, also, is the top.

G is a tube passing centrally through the cylinder and through the air-chamber. To the latter the tube is secured in an air-tight manner by a flanged thimble, H, or by any other suitable means. In said tube, near the top of the air-chamber, is an aperture, *d*, the use of which will presently be shown.

To the head of the cylinder is secured a sleeve, I, through which the tube G freely passes, and is retained thereby steadily in position.

In the arm J of the sleeve is fitted a set-screw, K, operated by a hand-wheel, L.

The upper end of the tube G terminates in a cross-pipe, M, into which it is screwed, and is in open communication therewith. The arms of the cross-pipe are provided respectively with stop-cocks N and O, and one of them is put in communication with the reservoir D of the stove by a flexible tube, P, sufficiently long to allow the air-chamber to ascend to the top of the cylinder.

Having described the construction of the improvement, the practical operation of the same is as follows: In view of placing the oil fount or reservoir below the burners, as shown in the drawing, the oil must be raised therefrom to said burners. To this end pressure needs to be applied to the oil in the fount to force it upward. This needful pressure is obtained in the following manner: Let it be supposed that the cylinder is filled with water up to about the line X, and that the air-chamber is also full of water, it having found its way therein through the perforations *c*, and that the stop-cock O is open. Now, on raising the air-chamber upward (which is done by pulling it up by the cross-pipe) until the bottom of the chamber is above the water in the cylinder, the water in the air-chamber will now run out through the perforations *c*. At the same time the chamber is being filled with air passing therein through the open cock O down the pipe G, thence into the chamber through the hole *d*. The air-chamber now filled with air and supposed to be at the top of the cylinder instead of at the bottom, as seen in the drawing, the cock O is to be closed and the cock N opened. The air-chamber is now pushed downward, displacing the water below it, which finds its way above by passing upward around the air-chamber, filling the empty space above



the water-line X, but being prevented from entering the air-chamber through the perforations *c* in consequence of the air in the chamber, which cannot escape therefrom except through the hole *d* in the air-pipe G, which is also filled with air and in communication with the oil-reservoir D by means of the hose P; hence the pressure exerted upon the air in the chamber is transmitted to the oil in the reservoir, which will be forced therefrom to the burners. The air-chamber, when forced down to the bottom of the cylinder, as seen in the drawing, is retained there by the set-screw K, which for that purpose is screwed in hard against the pipe G. The weight of the column of water now above the air-chamber (which column will be very near the top of the cylinder in consequence of the water that was in the chamber being displaced by the air) will be sufficient to compress the air in the chamber and its connections with the reservoir to force the oil therefrom to the burners, which is regulated by the ordinary valve mechanism in connection therewith.

From the above it will be obvious that a steady and uniform flow of oil will pass to the burners, and in the event the pressure is weakened by any cause it is easily and readily removed by pulling up the air-chamber, as above described.

The air apparatus may be placed near the stove or distant therefrom in any convenient place; and should it be desirable to leave the

stove safe, so that children cannot play with or light it, the pressure can be taken off from the oil by either loosening the set-screw K, so that the air-chamber will float upward in the cylinder, or exhaust the air-pressure therefrom by opening the cock O. In either event the burners will go immediately out for want of a supply of oil.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The cylinder E and air-chamber therein, provided with a perforated bottom and close-top pipe, G, having an aperture, *d*, cross-pipe M, with its respective stop-cocks, and set-screw K, constructed and arranged to operate substantially as described, in combination with an oil fount or reservoir of a gasoline cooking-stove, for the purpose specified.

2. In an apparatus for producing a pressure of air, the combination of the cylinder E, having therein an air-chamber provided with a perforated bottom and close-top air-pipe and aperture *d*, cross-pipe M, and its respective stop-cocks and set-screws, constructed and combined to operate in the manner substantially as described.

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

FORDYCE A. LYMAN.

Witnesses:

J. H. BURRIDGE,  
L. M. THOMPSON.