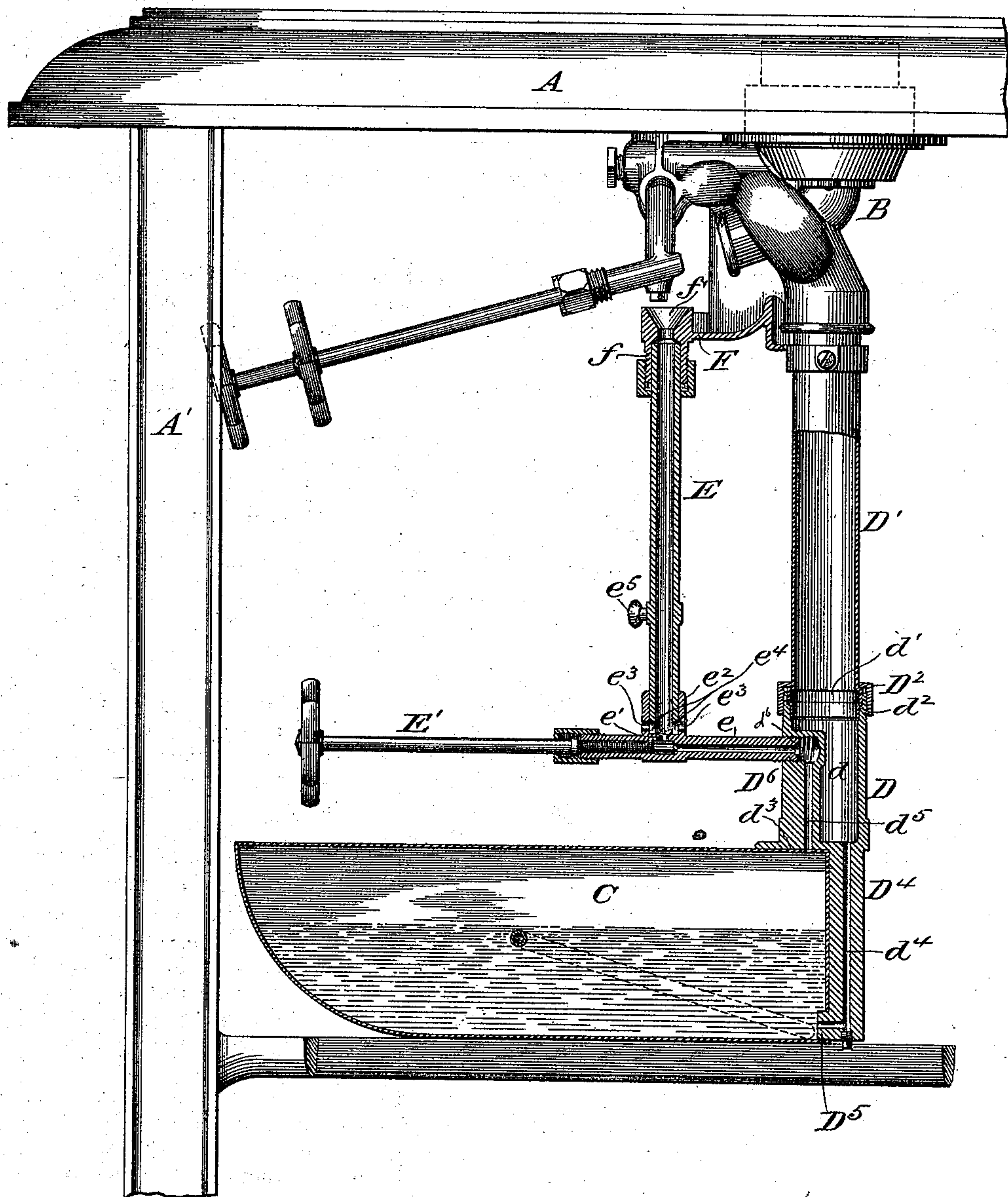


(No Model.)

**S. DANIELS.**  
**VAPOR STOVE.**

No. 402,409.

Patented Apr. 30, 1889.

Witnesses

Wm J. Henning.  
Louis M. J. Whitehead.

Inventor

Samuel Daniels

by Dayton, Poole & Brown  
Attorneys.



# UNITED STATES PATENT OFFICE.

SAMUEL DANIELS, OF CHICAGO, ILLINOIS, ASSIGNOR TO J. MCGREGOR  
ADAMS, OF SAME PLACE.

## VAPOR-STOVE.

SPECIFICATION forming part of Letters Patent No. 402,409, dated April 30, 1889.

Application filed November 17, 1888. Serial No. 291,120. (No model.)

*To all whom it may concern:*

Be it known that I, SAMUEL DANIELS, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful  
5 Improvements in Vapor-Stoves; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing, and to the letters of reference marked thereon,  
10 which form a part of this specification.

This invention relates to that class of vapor-stoves in which the gasoline-tank is located below the vapor-generator or generating-burner, and in which the gasoline is elevated  
15 to the generator by means of air-pressure within the tank. In this class of devices it has been found practicable to initially heat the generating-burner or generator by a flame derived from the combustion of carbureted  
20 air; and to this end a separate pipe or passage has been provided leading from the air-space of the gasoline-tank to a point beneath or adjacent to the vapor-generator.

The present invention has reference to two  
25 features of improvement in this class of stoves. One relates to a fitting containing passages for both the liquid and the carbureted air and the other to a device by means of which external air may, when required, be admitted  
30 into the pipe which conveys the carbureted air from the tank to the point where it is ignited to initially heat the generator.

The accompanying drawing is a fragmentary view of a vapor-stove, in which the portion  
35 of the frame shown and a generating-burner are seen principally in side elevation, but in which the gasoline-tank, the novel fitting referred to, a part of the liquid-pipe, and all of the carbureted-air pipe are shown in vertical  
40 section.

A represents the top plate of a stove-frame, and A' one of the standards.

B is a generating-burner.

C is a gasoline-tank located below the  
45 burner.

D is the novel fitting for giving both air and liquid passages from the tank C.

D' is the stand-pipe for liquid, leading from the tank to the generating-chamber of the  
50 burner, and E is the upright portion of the carbureted-air pipe.

The fitting D consists of a casting having an interior chamber,  $d$ , which is circular at its upper end to receive the lower extremity of the tube or stand-pipe D' in any suitable  
55 manner. As shown, the latter is provided with a collar,  $d'$ , which rests on a shoulder,  $d^2$ , within the chamber  $d$ , and on its upper edge affords a bearing for the nut D<sup>2</sup>, which is screwed upon the top of the fitting D. Said  
60 fitting has a shoulder or flange at  $d^3$ , which rests upon the tank C, and is soldered thereto. It is also provided with a leg, D<sup>4</sup>, having a passage,  $d^4$ , through it, terminating in the chamber  $d$ . This leg D<sup>4</sup> is here shown as  
65 passing down to the bottom of the tank C externally to the latter, and in this construction said leg is provided with a foot, D<sup>5</sup>, which laterally enters the tank near the bottom thereof, and is provided with a passage giving com-  
70 munication from the interior of the tank to the vertical passage  $d^4$ .

Within the thick wall D<sup>6</sup> of the fitting D is provided a vertical passage,  $d^5$ , which communicates through the top of the tank with  
75 the upper portion of the interior of said tank, or with what may be termed the "air-space" thereof. The passage  $d^5$  has a lateral opening,  $d^6$ , into which is screwed a horizontal pipe,  $e$ , which is provided with a valve, E'.  
80 Beyond the valve the pipe  $e$  has an opening or passage,  $e'$ , on its upper side.

Surrounding the opening  $e'$  is a vertical circular flange or thimble,  $e^2$ , having one or more lateral openings,  $e^3$ . This flange  $e^2$  forms a  
85 socket, in which rests the lower end of the vertical pipe E. The upper end of the pipe E is laterally supported in a corresponding socket,  $f$ , in a bracket, F, which, as here shown, belongs to the burner B, and has an opening,  
90  $f'$ , which forms the outlet of the pipe E, at which the carbureted air emitted through said pipe is ignited for the purpose of initially heating the generator of the burner B. The pipe E is sufficiently loose in the end  
95 sockets,  $e^2$  and  $f$ , which support it, to allow of its easy rotation, which is facilitated, desirably, by means of a projection, say as  $e^5$ , on the pipe. The lower end of the pipe E is notched or perforated, as shown clearly in the draw-  
100 ing at  $e^4$ , so as to register with the hole or holes  $e^3$  in the socket  $e^2$ . By this means the



outer air may be admitted into the interior of the pipe E through said holes when the pipe E is turned in the desired position for this purpose, and, on the other hand, when the pipe E is rotated one way or the other, so as to throw the passages out of register, the outer air will be excluded. The utility of this last part of the invention is found in the fact that at some seasons of the year the flame produced by ignition of the carbureted air is more effective if mixed with an added quantity of external air, while at other seasons of the year it is more effective if burned alone—that is to say, in summer or warm weather the outer air may be commingled with the carbureted air with advantages to the heating-flame, and in the winter it is preferably excluded.

Manifestly, any other form of valved inlet for the external air may be employed in place of that here shown, the device illustrated being preferred principally on account of its simplicity and the cheapness with which it can be constructed. I wish, therefore, to be understood as not being restricted to the par-

ticular form of the contrivance here shown for the admission of external air to a carbureted-air pipe.

I claim as my invention—

1. The combination, with a gasoline-tank, a generating-burner, and liquid and air pipes, respectively, for supplying and initially heating the generator, of a fitting, D, having a passage extending to the lower portion of the liquid-tank and a passage extending from the upper portion of said tank, and having said passages connected, respectively, with the liquid and air pipes.

2. In combination with a gasoline-tank and a vapor-generator, an air-pipe leading from the air-space of the gasoline-tank and provided with a valved inlet for the admission of external air, substantially as described.

In testimony that I claim the foregoing as my invention I affix my signature in presence of two witnesses.

SAMUEL DANIELS.

Witnesses:

M. E. DAYTON,

C. CLARENCE POOLE.