

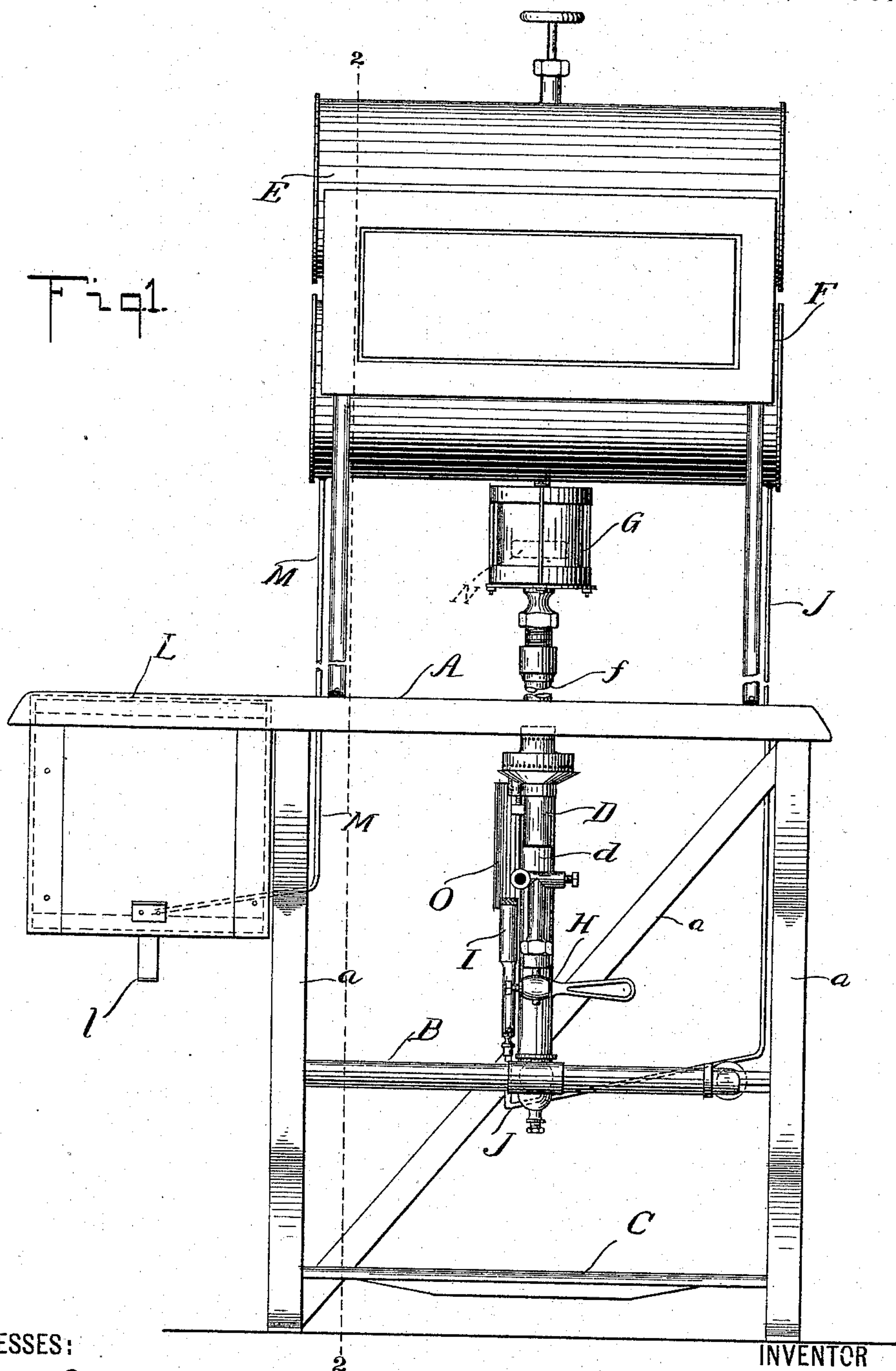
(No Model.)

3 Sheets—Sheet 1.

A. B. HUTCHINS.  
GASOLENE STOVE.

No. 570,482.

Patented Nov. 3, 1896.



WITNESSES:

Edmund H. Frause,  
Geo. O. Morse,

INVENTOR

Abrer B. Hutchins,  
BY *Briesen Thwait*  
his ATTORNEYS.

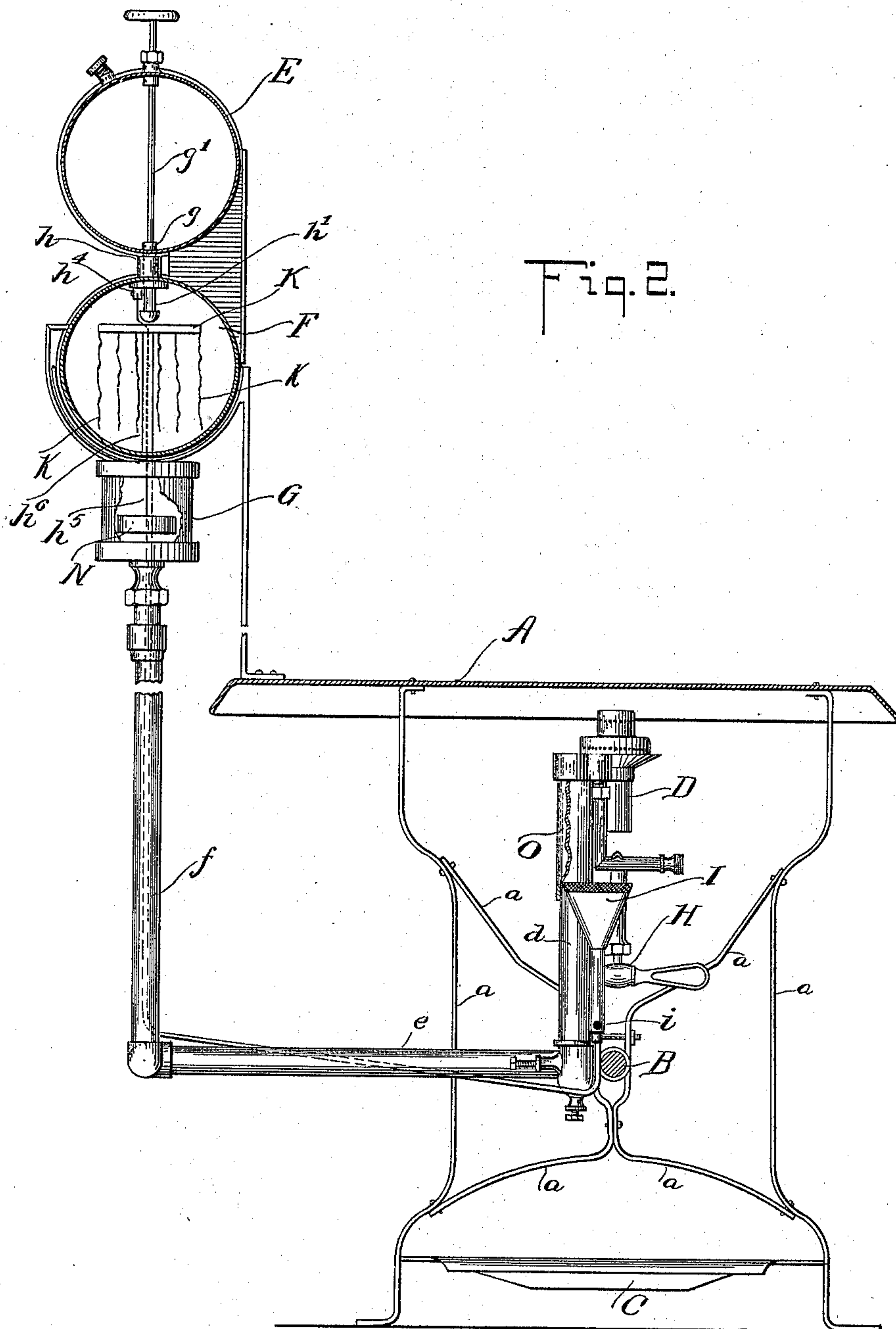
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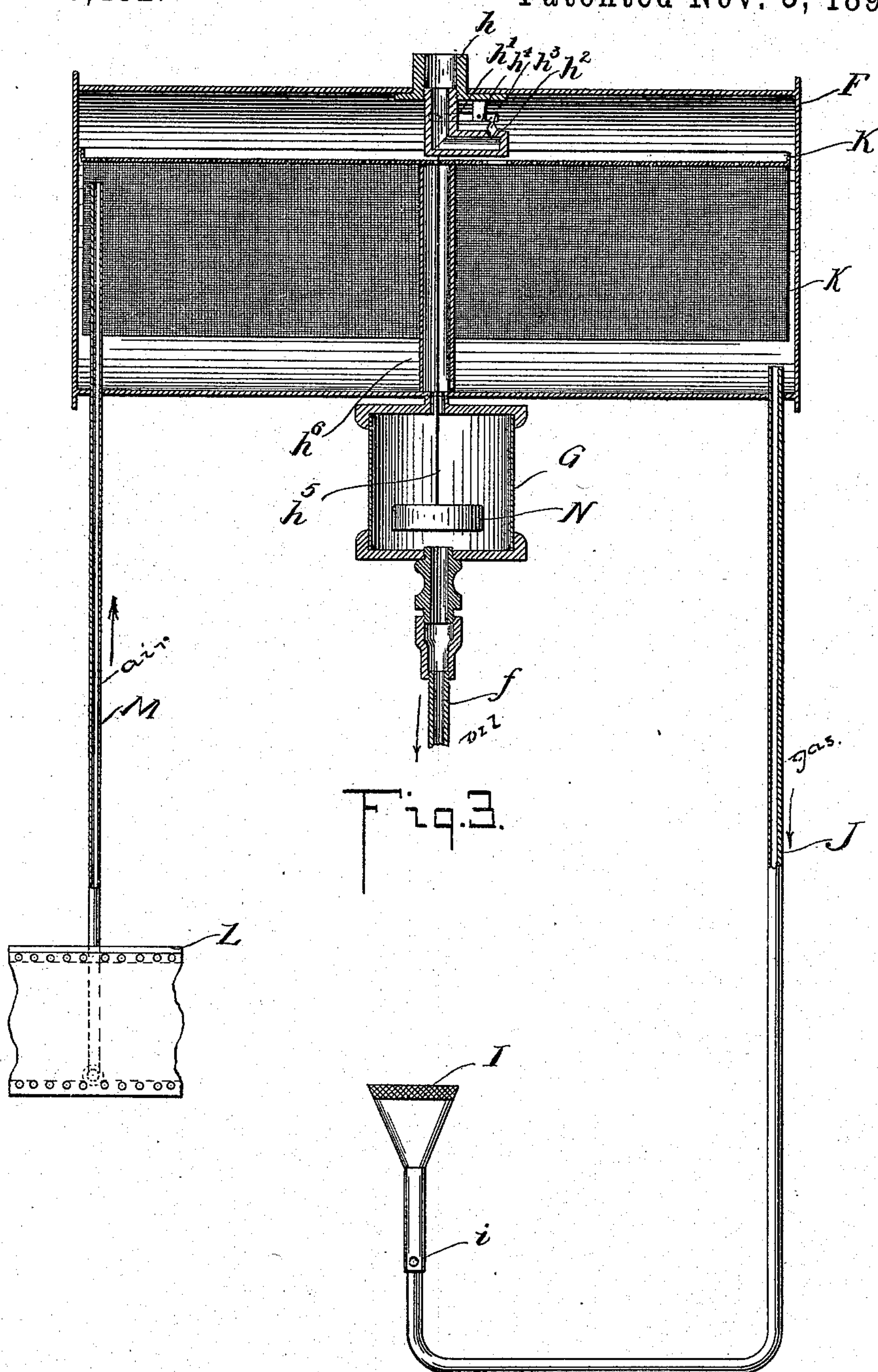
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Geo. O. Morse.

INVENTOR

Abner B. Hutchins

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# UNITED STATES PATENT OFFICE.

ABNER B. HUTCHINS, OF NEW YORK, N. Y., ASSIGNOR TO JAMES D. LUTHER  
AND CHARLES LEDERHOS, OF SAME PLACE.

## GASOLENE-STOVE.

SPECIFICATION forming part of Letters Patent No. 570,482, dated November 3, 1896.

Application filed October 29, 1894. Serial No. 527,233. (No model.)

*To all whom it may concern:*

Be it known that I, ABNER B. HUTCHINS, a resident of the city, county, and State of New York, have invented certain new and useful  
5 Improvements in Gasolene-Stoves, of which the following is a full, clear, and exact description.

My invention relates to gasolene-stoves; and it has for its object to produce a gasolene-stove  
10 wherein the main or vapor burner may be readily and quickly lighted and extinguished without contaminating the atmosphere with noxious vapors, as is the case in gasolene-stoves as heretofore constructed.

15 To this end my invention consists in a gasolene-stove having an auxiliary carbureted-air burner mounted in proximity to the main gasolene-burner and supplied with carbureted air from a suitable source, preferably an elevated  
20 tank, together with an air-forcing apparatus to force the carbureted air to the burner.

My invention further consists in the construction and arrangement of the parts of a gasolene-stove hereinafter fully set forth and  
25 claimed.

My invention will be understood by reference to the accompanying drawings, wherein—

Figure 1 is an elevation partly broken away  
30 of a gasolene-stove embodying my invention. Fig. 2 is a side elevation thereof partly in section; and Fig. 3 is a diagrammatic sectional view of the atmospheric burner, together with the gas-generating apparatus and the air-  
35 forcing device for forcing the carbureted air to the atmospheric burner.

In the drawings, A is the top plate of the stove, which may be of ordinary construction, and is supported upon suitable standards and  
40 braces *a*.

B is a tubular cross-piece for holding the standards rigid and to assist in supporting the burner or burners, at the same time serving as a fluid-supply pipe for the main burner.

45 C is a drip-pan to catch the drippings from the main burner should it accidentally overflow.

D is the main burner, of any ordinary or preferred construction, of carbureting gasolene  
50 or vapor burner, and is supplied with gasolene by means of the pipes *d*, *e*, and *f*, constituting

a conduit extending from an elevated source of gasolene supply, as will be more fully set forth hereinafter.

E is a gasolene-tank provided with a valve  
55 *g* and a valve-rod *g'*, to regulate the efflux of gasolene therefrom. This tank is mounted upon a chamber F, constituting a combined carbureter and holder and communicates therewith by the nipple *h*, (see Fig. 3,) with  
60 which communicates a pipe *h'*, closed at its free end and contained within the chamber F. This gasolene-tank is readily removable from the chamber in order that it may be removed therefrom and filled with gasolene at  
65 some place remote from the stove. The chamber F communicates with a transparent float-chamber G, which in turn communicates with the pipe *f*. It will thus be seen that the gasolene will flow from the tank E into the cham-  
70 ber F through the chamber G and conduit *f* *e d* to the main burner D, the supply of gasolene to the burner being regulated by the cock or valve H. As I have before stated, this main burner D is of any ordinary or preferred  
75 construction of gasolene-carbureting burner (otherwise known as a vapor-burner) and need not here be specifically described.

I is the carbureted-air burner, which may be of an ordinary or preferred construction,  
80 but which is preferably a Bunsen burner, the ports *i* in the sides thereof serving for the admission of a supply of atmospheric air to the burner.

J is a pipe connecting the chamber F with  
85 the carbureted-air burner I. This pipe J extends for some distance into the chamber F and terminates at a point above the level of the floor thereof in order that any small amount of gasolene which may lie upon the  
90 floor may not overflow into the carbureted-air burner I through the pipe J.

K is a perforated trough mounted within the chamber F, and has depending therefrom absorbent material, preferably made into the  
95 form of curtains *k* or filaments.

L is an air-forcing apparatus, (shown in the present instance as bellows worked by the handle *l*,) and right here I desire to have it understood that the particular construction  
100 of this air-forcing apparatus is immaterial, as any suitable air-forcing apparatus, whether



manually or automatically operated, may be used. This air-forcing apparatus L communicates with the chamber, by a pipe M. This pipe M extends into the chamber F and terminates at a point some distance above the floor of the said chamber, in order that whatever liquid may be on the floor of this chamber F will not overflow into the air-forcing apparatus L through the pipe M.

The operation of this portion of my device is as follows: The fluid which is admitted from the tank E into the chamber F falls into the trough K and runs through the perforations thereof onto the absorbent material which depends therefrom. If, now, the air-forcing apparatus be put in operation, air will be forced into the chamber through the pipe M, and will pass through or over the absorbent material containing gasolene, thereby vaporizing the gasolene, which air and vapor will be carried off from the chamber F by the outlet-tube J, and will be conducted to the burner I, where it may be lighted. The pipe  $h'$  is provided with an outlet-port  $h^2$ , which forms the sole means of egress for the gasolene into the chamber F. This outlet-port  $h^2$  is closed by a valve  $h^3$ , which is carried upon a pivoted lever  $h^4$ , to the free end of which is connected a rod  $h^5$ , which extends through a guide-tube  $h^6$  into the chamber G and terminates in a float N, contained within said chamber. This last-mentioned apparatus constitutes a safety device to prevent any further supply of gasolene to the chamber F should the pipe  $f$  become choked up, or by any other accident the gasolene should rise in the pipe  $f$  and chamber G to a greater height than is desired. It being remembered that the port  $h^2$  forms the sole means for supplying the chamber F with gasolene, and that the gasolene flows from this last-mentioned apparatus into the chamber G and pipe  $f$ , it will be quite evident that should the gasolene rise in the pipe  $f$  and chamber G it will carry with it the float N, which, through the medium of the rod  $h^5$ , rocks the lever  $h^4$  on its pivot and depresses the end of the lever  $h^4$  which carries the valve  $h^3$ , thereby seating the valve  $h^3$  in the port  $h^2$ , thus stopping the flow of gasolene from the tank E to the chamber F. When this has happened, the chamber F can receive no further supply of gasolene from the tank E until the valve  $h^3$  has been unseated, which can only be done by lowering the level of the liquid in the pipe  $f$  and chamber G—briefly, by removing the cause of the accident.

The mode of operation of my combined devices is as follows: When it is desired to light the stove, it is necessary that the main burner D be first heated in order that the carbureting action may begin at once, which is signaled by the appearance of the characteristic blue flame. In order to do this I set my air-forcing apparatus into action, forcing air through the chamber F, thereby supplying carbureted air to the burner I. I now light this burner, and

it being in proximity to the main burner, as before stated, will serve to heat this burner to a proper degree of heat, a curtain O being placed about the burners D and I in order to heighten the efficiency of the burner I. When, now, the main burner D has become properly heated, the gasolene supply thereto is opened and gasolene allowed to flow to this burner. The main burner may now be lighted and the auxiliary burner  $i$  allowed to go out by discontinuing the forcing of air to the carbureter contained in the chamber F. When it is desired to extinguish the main burner, this may be accomplished by simply shutting off the supply of gasolene thereto by turning the cock H.

I am aware that stoves of this character have been devised wherein there was an auxiliary burner located in proximity to the main burner, which auxiliary burner was in the form of a pan for receiving and burning gasolene in order to effect the preliminary heating of the main burner. I am also aware that stoves of this character have been devised wherein the gasolene was vaporized in a separate chamber and brought to the burners in this condition. I am also aware that air-forcing apparatus has heretofore been proposed to be employed for forcing oil from a tank to a burner situated at a higher level than the tank. These and other devices of like character are objectionable in that their use is attended with the generation and escape into the atmosphere of vapors which are both noxious and disagreeable; but by my invention I am enabled to construct a gasoline-stove which is inodorous and to thus obviate the most radical defects of existing structures.

Now, while I have in positive terms set forth the various constructions and devices which constitute one form of my invention, I would have it distinctly understood that I do not mean to thereby limit myself to the precise construction and arrangement of parts herein shown and described, as the devices, their construction and arrangement, may be greatly varied without departing from the spirit of my invention.

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

1. In a gasolene-stove, the combination of an oil-burner D, an auxiliary or carbureted-air burner, a carbureter-chamber supplying carbureted air to the auxiliary burner, a supply-tank E communicating with the oil-burner through the carbureter-chamber, a transparent chamber interposed between the carbureter-chamber and the oil-burner and in communication with the carbureter-chamber, a valve controlling the exit of fluid from the tank, a float contained within the transparent chamber, and a connection between the valve and the float, whereby the flow of liquid from the tank may be regulated by the height of the liquid in the transparent chamber, substantially as described.

2. In a gasolene-stove, the combination of



a carbureter-chamber, a perforated trough mounted in the upper portion of said chamber and having depending therefrom curtains of absorbent material, means for supplying oil to said trough, bellows communicating with the carbureter-chamber at the upper portion thereof, a pipe in open communication with the lower portion of the chamber and leading therefrom at a level considerably lower than the air-inlet at the upper portion of said carbureter to conduct carbureted air to the carbureted-air burner, and an independent pipe also leading from said chamber to the main burner for conveying the oil which is passed through the carbureter to the main burner, substantially as described.

3. In a gasolene-stove, the combination of an oil-burner D, a pipe (*f e d*) communicating therewith and serving to bring oil thereto, a carbureter-chamber F communicating with the pipe and having an air-inlet and carbureted-air outlet therefor, a tank E mounted upon and communicating with the chamber F and with the supply-pipe (*f e d*), a valve *h*<sup>2</sup> controlling the supply of oil to the carbureter-chamber F, a transparent chamber G interposed between the carbureter-chamber and the oil-burner D and in communication with

the supply-pipe, and a float N contained within the chamber G and controlling the valve *h*<sup>2</sup>, whereby the flow of fluid to the oil-burner D may be self-regulating, substantially as described.

4. In a gasolene-stove, the combination with an oil-burner and carbureted-air burner, of a chamber F communicating with the oil-burner and carbureted-air burner, means for forcing air to said chamber F, a perforated trough K located therein, curtains *f* of absorbent material depending therefrom, an oil-tank E, a pipe *h'* serving to conduct oil from the oil-tank E into the chamber F, a pivoted valve *h*<sup>3</sup> for controlling the flow of oil from the pipe *h'*, a transparent chamber G communicating with the chamber F, a float contained within the said transparent chamber G, and a connection between the float and pivoted valve, whereby the influx of oil to the chamber F is controlled by the rate of efflux of the liquid from the chamber G, substantially as described.

ABNER B. HUTCHINS.

Witnesses:

HARRY M. TURK,  
GEO. E. MORSE.