

(No Model.)

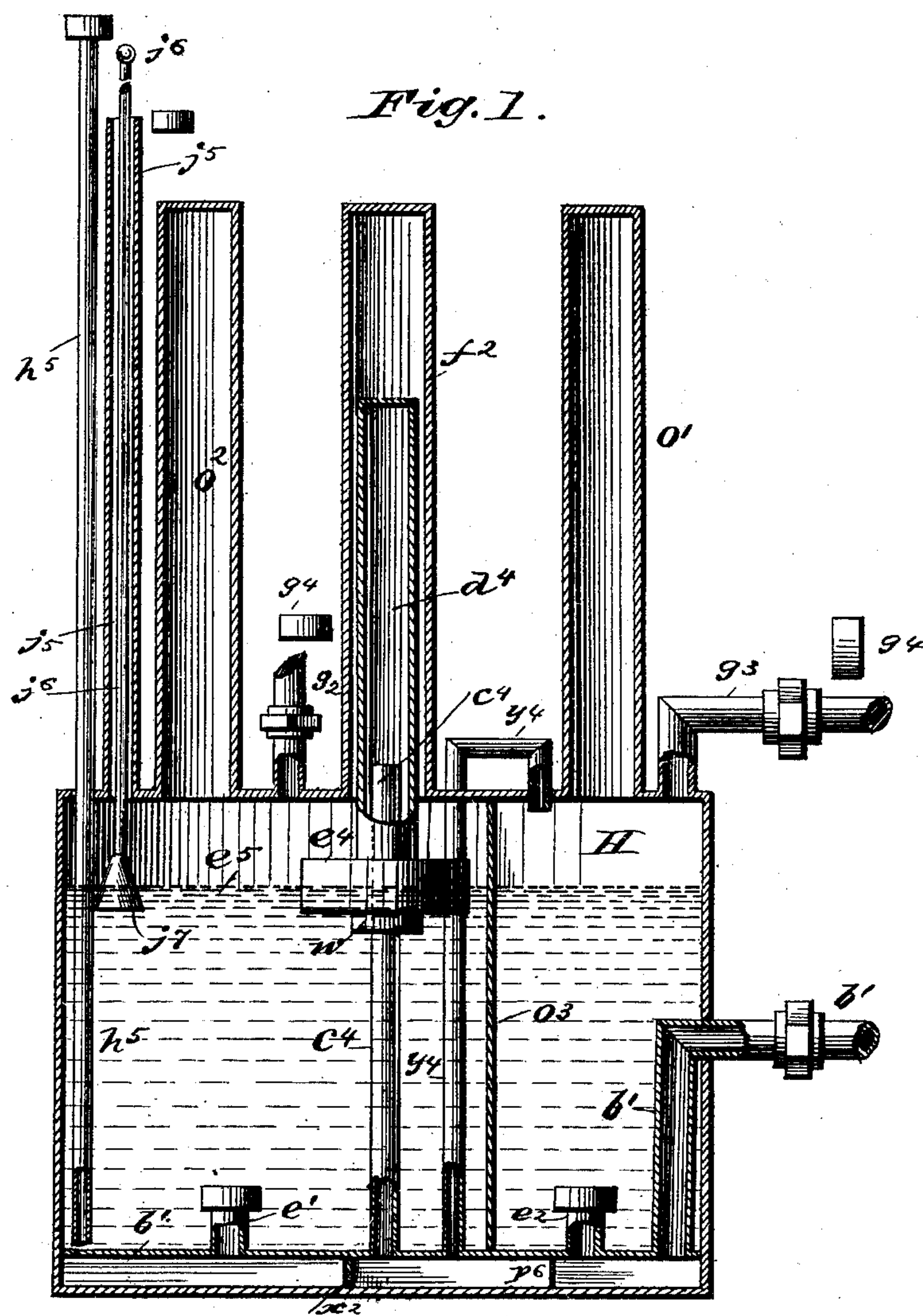
2 Sheets—Sheet 1.

C. R. COLLINS.

## CARBURETOR.

No. 371,034.

Patented Oct. 4, 1887.



*WITNESSES*

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 Phil. Dietrich.  
 F. J. F. Johnson.

INVENTOR

*Charles R. Collins.*

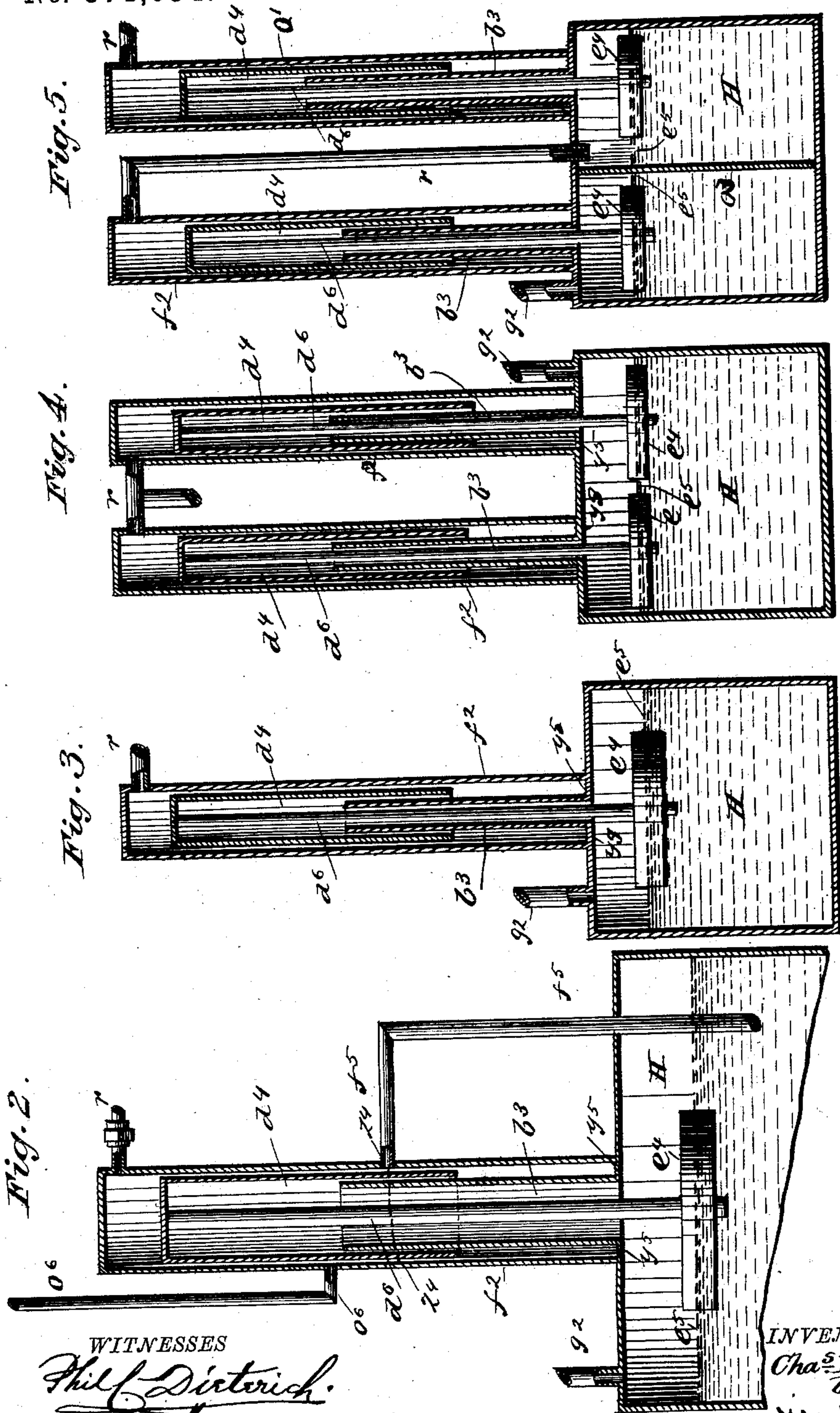
**by:**

*W. Alexander*  
Attorney

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INVENTOR  
*Chas. R. Collins.*  
by:  
*W. Alexander*  
Attorney



# UNITED STATES PATENT OFFICE.

CHARLES R. COLLINS, OF LAFAYETTE, INDIANA, ASSIGNOR TO HIMSELF,  
DARWIN AUGUSTUS COLLINS, WILLIAM TAYLOR, AND WM. WALTER  
TAYLOR, ALL OF SAME PLACE.

## CARBURETOR.

SPECIFICATION forming part of Letters Patent No. 371,034, dated October 4, 1887.

Application filed December 30, 1886. Serial No. 223,013. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES R. COLLINS, of Lafayette, in the county of Tippecanoe and State of Indiana, have invented certain new and useful Improvements in Carburetors; and I 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 part of this specification, in which—

Figure 1 is a vertical sectional view of my improved carburetor. Fig. 2 is a vertical section showing a modified form of the same. Fig. 3 is a transverse sectional view of the same. Fig. 4 shows a vertical section of a modified form of carburetor. Fig. 5 is a similar view showing another modification.

This invention relates to improvements in carburetors for making illuminating-gas by impregnating or saturating air with a hydrocarbon oil, such as petroleum; and it consists in the novel construction and arrangement of parts of a machine for effecting the intermixing of the air and oils, hereinafter described, illustrated in the drawings, and particularly specified in the appended claims.

Referring to the drawings by letters, H designates the body of the carburetor, of cylindrical or other proper form, and  $b'$  designates a tube, which enters the carburetor at one side and then bends downward and passes across the bottom of the carburetor, as shown. The tube  $b'$  conducts air to the carburetor, being connected with any suitable air-forcing engine for supplying air thereto under pressure.

$x^2$  is a movable partition in the lower horizontal part of the tube  $b'$ , and  $e'$   $e^2$  are vertical extensions from said horizontal part, equally distant from each side of the carburetor-casing, and having their ends engaged by screw-caps, as shown.

$o'$ ,  $o^2$ , and  $f^2$  are vertical pipes or hoods closed at top and rising from the roof of the carburetor-casing, the hood  $f^2$  centrally therefrom, and the hoods  $o'$   $o^2$  at equal distances on each side of hood  $f^2$ . The hoods  $o'$   $o^2$  may be detached if it is not desired to use them.

$g^2$  and  $g^3$  are outlet-pipes from the carburetor, having threaded ends adapted to receive the

screw-caps  $g^4$  when not in use. The said pipes are connected by means of suitable tubing with the burners.

$c^4$  is a tube rising vertically from the tube  $b'$ , open at top and passing centrally into the open end  $w$  of the vertical receiver or small gasometer  $d^4$ , the lower end of which passes through and is secured to the float  $e^4$ , which is sustained upon and by the oil  $e^5$  above the water in the carburetor.

The air flowing in through the tube  $b'$  passes up the tube  $c^4$  into the receiver  $d^4$ , and will pass thence downward through the oil and will become saturated thereby. The combined weight of the float and receiver  $d^4$ , together with the pressure in hood  $f^2$ , will keep the mouth of the receiver at about the same distance below the oil-surface. After escaping from the receiver, the enriched air or gas passes out through pipe  $g^2$ , to be conducted to the burners. To pass the air through the oil twice, the detachable partition  $o^3$  is put in place, as shown in Fig. 1, and the pipe  $y^4$  is run, as shown in said figure, from the top of the carburetor-casing to the top of the horizontal part of tube  $b'$ . The partition  $x^2$  is then shifted to the position  $p^6$ , and a tube similar to the tube  $c^4$  extended upward from the branch  $e^2$  through a float similar to the float  $e^4$  into a receiver similar to  $d^4$ , but entering the hood  $o'$ , as shown in Fig. 5. The air will then pass up into the receiver and flow down out of the same through the oil, then up through the pipe or tube  $y^4$  and down into the tube  $b'$  on the opposite side of the partition  $x^2$ . It will then ascend through tube  $c^4$  and down out of receiver  $d^4$ , as before. When the part of the carburetor on the right hand of the partition  $o^3$  is used alone, the gas escapes through pipe  $g^3$ .

$h^5$  is a vertical pipe running to the bottom of the carburetor-tank, and a pump may be attached to said pipe and the contents of the carburetor removed thereby.

$j^5$  is a vertical pipe standing from the roof of the carburetor, and  $j^6$  is a rod within said pipe, having upon its inner lower end a float,  $j^7$ . By means of these devices the fluid-level in the carburetor can be readily ascertained.

Fig. 2 shows a modification of the receiver  $d^4$ ,



in which a tube,  $d^6$ , runs through the same with both ends open, and is secured to the float  $e^4$ . An inner casing,  $b^3$ , stands within the column or standard  $f^2$ , the receiver moving between them, and the joint between them being closed at  $y^5$ .

$o^6$  is a pipe, by means of which water can be poured between the casing  $b^3$  and the casing or column  $f^2$ , so as to make a fluid seal.

$f^5$  is an overflow by means of which the said water seal cannot rise above the level of the mark  $z$ , Fig. 3. The use of these parts of the apparatus is apparent.

Any number of hollow receivers  $d^4$  may be used to pass the air only once through the oil.

Fig. 4 shows two so used, and also a modification in which the air-pipe enters the top of the two standards inclosing the receivers, the pipes having branches to enter the standards. The gas also rises from the roof of the tank.

Fig. 5 shows a modification of the tank, in which the air is passed twice through the oil. In this the air-pipe enters the top of one standard, thence down through the tube running to the float, then up through the oil and through the pipe running to the top of the other standard, then down as before through the oil, and then out of the gas-pipe on the roof of the tank. The standards and receivers in this modification can also be reduplicated.

I am aware that it is not broadly new in carburetors to introduce air into a closed pipe

having a float on its lower end and moving in a vertical hood, so that the air will be forced to pass through the oil in escaping from the pipe, and I do not claim such device, broadly; but,

Having described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination of the tank H, the vertical hood  $f^2$ , rising therefrom, the receiver  $d^4$ , moving in said hood, and the float  $e^4$ , attached to the lower portion of said receiver, with the pipe  $b'$  and tube  $c^4$ , adjustable partition  $x^2$  in said pipe, and suitable means to force air through pipe  $b$  into the tank H, all substantially as and for the purpose specified.

2. The combination, with suitable air-forcing mechanism, of the tank H, tubes  $b'$ ,  $c^4$ , and  $y^4$ , removable partition  $x^2$ , the hoods  $f^2$  and  $o'$ , the receivers moving therein and having floats on their lower ends, substantially as described, and the detachable partition  $o^3$  within the tank, all constructed and arranged substantially as and for the purpose specified.

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

CHARLES R. COLLINS.

Witnesses:

JNO. H. MITCHELL,

ROBERT P. DAVIDSON, Jr.