

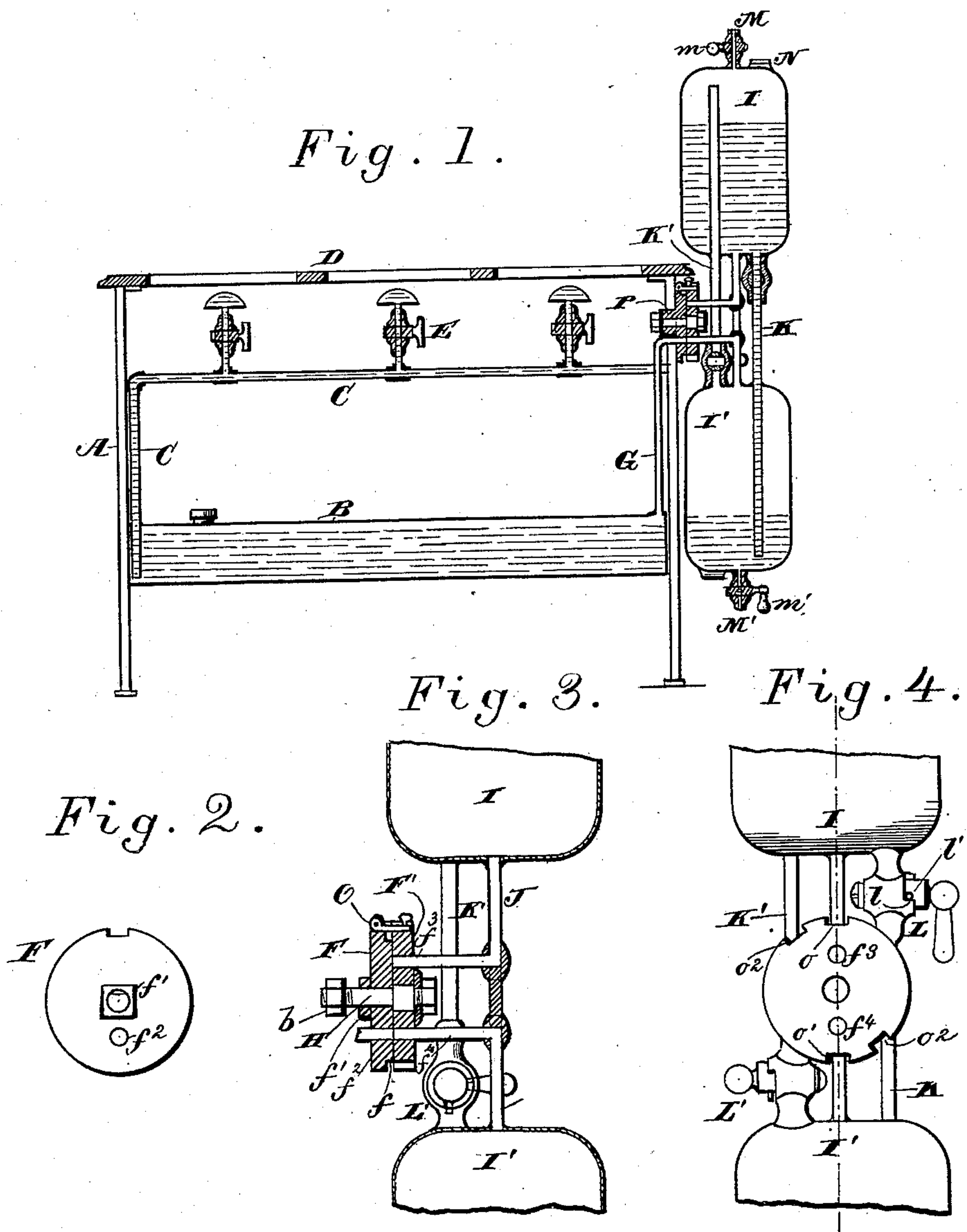
(No Model.)

W. E. KAUKA.

VAPOR STOVE.

No. 308,563.

Patented Nov. 25, 1884.



Witnesses :

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UNITED STATES PATENT OFFICE.

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HORACE A. WILLETT, OF SAME PLACE.

VAPOR-STOVE.

SPECIFICATION forming part of Letters Patent No. 308,563, dated November 25, 1884.

Application filed November 10, 1883. (No model.)

To all whom it may concern:

Be it known that I, WALTER E. KAUKÉ, a citizen of the United States, residing at Bryan, in the county of Williams and State of Ohio, have invented certain new and useful Improvements in Vapor-Stoves; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

Figure 1 is a vertical longitudinal section through the improved stove. Fig. 2 is a rear end view of the valve-seat. Fig. 3 is a side view, with parts broken away, of the reservoirs and valve, the latter being in section. Fig. 4 is an end view, with parts broken away, of the reservoirs and valve, the latter detached from its seat.

My invention has reference to that class of gasoline or vapor stoves in which the burning-fluid is forced to the burners by compressed air acting on the surface of the fluid in the fluid-holding chamber, and my improvements relate to the means for supplying the air to said fluid-holding chamber; and they consist in combining with the chamber two rotating reservoirs communicating with each other and alternately with the fluid-holding chamber, and adapted to serve alternately as a liquid and then as an air vessel, so that liquid in the upper reservoir may pass therefrom into the lower reservoir and compress the air in said reservoir, so as to force it therefrom into the fluid-holding chamber, and after the air in the lower reservoir has been displaced by the liquid said reservoir may be rotated to the top and the other reservoir to the bottom and into communication with the fluid-holding chamber, and the supply of air continue as at the beginning.

The improvements further consist in the construction and the combination of parts hereinafter particularly described, and then sought to be specifically defined by the claims.

In the accompanying drawings, the letter A indicates the stove-frame, which supports in its lower portion the fluid-holding chamber B, which is provided with a screw-capped opening for the introduction of the oil, and has a pipe, C, leading upward therefrom and across the frame under the top plate, D, of the stove,

along which it is provided with any desired number of valve-controlled burners, E.

There is nothing novel in the construction of the parts just referred to.

To one end of the frame, near its top, there is secured a valve with registering ports. The valve is composed of two parts, one of which (indicated by the letter F) I will designate as the seat and the other (indicated by the letter F') as the valve. The seat is preferably formed with a raised face, f , and may be provided on its rear or back with an angular stud, f' , to fit into a recess or opening formed in the end of the stove-frame, so as to prevent the seat from turning. Any other means than that used may be employed to prevent the seat from turning, and the face may be omitted without departing from the spirit of my invention. The seat and its face are provided with a port, f^2 , which registers with the mouth of the pipe G, which leads to the fluid-holding chamber, and the valve is provided with two ports, f^3 f^4 , which may be diametrically opposite to each other, and made to register with the port f^2 when brought opposite thereto. The valve is held to its seat so as to be permitted to turn thereon by a bolt, H, which also passes through the seat and the face and the end of the stove-frame, and holds the several parts together when the nut h is screwed onto its end. That portion of the bolt which fits in the seat is preferably square, so that the bolt will not turn when the valve is revolved or turned on the rounded portion thereof; but any other means for effecting the same result may be adopted. Two vessels or reservoirs, I and I', are made to communicate with the ports f^3 and f^4 , respectively, by means of pipes J and J', and with each other by means of pipes K and K', which extend from the adjacent end of one reservoir into the opposite reservoir, and preferably nearly to the farthest removed end thereof. The pipes K and K' are provided between the reservoirs with cocks L and L', respectively, the spigots of which are weighted, so as to drop by gravity, and thus automatically operate the cocks, one being applied so as to open communication between the two reservoirs through its pipe, while the other at the same time closes communication through

its pipe, and thus communication is had through only one pipe at a time. The chamber of each cock is formed with a shoulder, *l*, and the spigot provided with a pin, *l'*, to strike against the said shoulder, and thus limit the movement of the spigot, so that it will not swing beyond the point of closing the cock.

In the outer ends of the reservoirs I and I' there are placed cocks M M', which are provided with weighted spigots *m m'*, operating by gravity to close one cock when its reservoir is lowermost and to open the other when its reservoir is uppermost. These cocks are also provided with shoulders and pins like the others, for the same purpose. The reservoir I is provided with a screw-capped nozzle, N, through which liquid may be introduced into the same, and, if preferred, the other reservoir may be provided with a similar nozzle.

For the purpose of holding the reservoirs in a perpendicular position, notches *o o'* may be formed in the periphery of the valve, and a tongue or latch, O, may be hinged to the seat, so as to fall into either notch when the latter is brought under the same. These notches will be so located that when the tongue enters either, one of the ports in the valve will be registering with the port in the seat, and communication will be open between the lowermost reservoir and fluid-holding chamber. A third notch, *o''*, may be formed in the valve, so that when the tongue fits therein neither port will register with that in the seat, and hence communication between the reservoirs and fluid-holding chamber will be closed, and there will be no pressure on the oil to force it up to the burners, and hence there will be less evaporation of the same.

A set-screw passed through the valve so as to bear against the seat might be used, instead of the hinged tongue, to lock the valve to its seat; but the tongue is preferred, as it will drop into the notch and lock the parts, and thus avoid liability of the parts being left unlocked.

The operation is as follows: The uppermost reservoir is filled or partially filled with water or other suitable liquid, and all the cocks being closed except that in the upper end of the uppermost reservoir and that in the pipe K, the water runs from the uppermost reservoir into the lowermost one through the pipe K and gradually displaces the air therein, forcing it upward through pipe J' and the registering ports of the valve into the pipe G, and thence down onto the top of the oil in the fluid-holding chamber, thereby displacing the oil and forcing it up through the pipe to the burners. The relative size of the reservoirs and oil-chamber and connecting-pipes may be such that the pressure of the air will not be more than sufficient to raise oil enough to supply the demand of the burners; or the flow of the oil may be controlled by the valves to the burners. As the water runs out of the reservoir I it draws air into said chamber through the

open cock at the top thereof, and after all the water, or so much thereof as is deemed necessary, has run off into the lowermost reservoir the valve is unlocked and the lowermost reservoir raised to the top. The pipe J and its port have now been brought to register with the port of the seat, and communication established between reservoir I and the fluid-holding chamber. While raising the lowermost reservoir the weighted cocks have turned so as to close communication by way of pipe K and cock M and open it between pipe K' and cock M', so that the operation will be the same as before, only the parts will be reversed in position. It will be seen that by such a construction and combination as described air will be supplied to the fluid-holding chamber to force the oil to the burners without the necessity of pumping by hand or other laborious means to obtain the required pressure therefor. One reservoir has only to be filled, and the operation then proceeds without further labor until the reservoir is emptied, and then you have only to reverse the position of the parts and the operation continues without cessation. The pressure of air on the oil in the chamber might be said to be continuous, for before the pressure of air supplied to the chamber from the reservoir has exhausted itself the reservoirs have been reversed and the supply of air renewed.

The device is simple in construction, cheap of production, durable, and not easily put out of working order.

Having described my invention, what I claim is—

1. The combination, with the oil-chamber of a vapor-stove, of two reservoirs adapted to be brought alternately into communication with the oil-chamber, to supply a pressure of air thereto first from one reservoir and then from the other, substantially as and for the purpose set forth.

2. The combination, with the oil-chamber of a vapor-stove, of the two reservoirs communicating with each other, a valve provided with ports registering alternately with a port in its seat, a pipe leading from each reservoir to the ports in the valve, and a pipe leading from the port in the seat to the oil-chamber, substantially as and for the purpose set forth.

3. The combination, with the oil-chamber of a vapor-stove, of the two reservoirs, the pipes connecting the same, provided with self-operating stop-cocks, the rotating valve provided with ports registering alternately with a port in its seat, the pipes connecting the reservoirs with the ports in the valve, and the pipe connecting the port in the seat with the oil-chamber, substantially as and for the purpose set forth.

4. The combination, with the oil-chamber of a vapor-stove, of a valve provided with ports registering alternately with a port in its seat, two reservoirs communicating with each other, and connected with the ports in the valve, and provided with self-operating stop-

cocks for the admission of air thereto, and a pipe connecting the port in the valve-seat with the oil-chamber, substantially as and for the purpose set forth.

5 5. The combination of the two reservoirs, the self-operating cocks for admitting air thereto, a pipe connecting one reservoir with the other for the passage of a liquid from one to the other, and provided with a self-operating stop-cock, and a pipe for the escape of air from one of the chambers, substantially as and for the purpose set forth.

10 6. The combination of the two reservoirs communicating with each other, a valve provided with ports registering alternately with a port in its seat, a pipe leading from each reservoir to the ports in the valve, and means for locking the reservoirs to their positions, substantially as and for the purpose set forth.

20 7. The combination, with the oil-chamber of a vapor-stove, of the two reservoirs, the pipes connecting the same, provided with self-operating cocks, the self-operating air-cocks in the reservoirs, the valve provided with

ports alternately registering with a port in its seat, the pipes connecting the reservoirs with the ports in the valve, the pipe connecting the port in the valve-seat with the oil-chamber, and means for locking the reservoirs to their positions, substantially as and for the purpose set forth. 25 30

8. The combination of the oil-chamber, the liquid and the air pressure chambers, a system of pipes and ports connecting said chambers and the oil-chamber, and means for shutting off communication between the pressure-chamber and oil-chamber and locking the parts in such shut-off position, whereby pressure is applied when the stove is burning and cut off at other times, substantially as and for the purpose set forth. 35 40

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

WALTER ELAM KAUKÉ.

Witnesses:

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EZRA G. BECHTEL.