

(No Model.)

2 Sheets—Sheet 1.

M. W. PALMER & C. S. MUNRO.  
GASOLINE STOVE.

No. 528,795.

Patented Nov. 6, 1894.

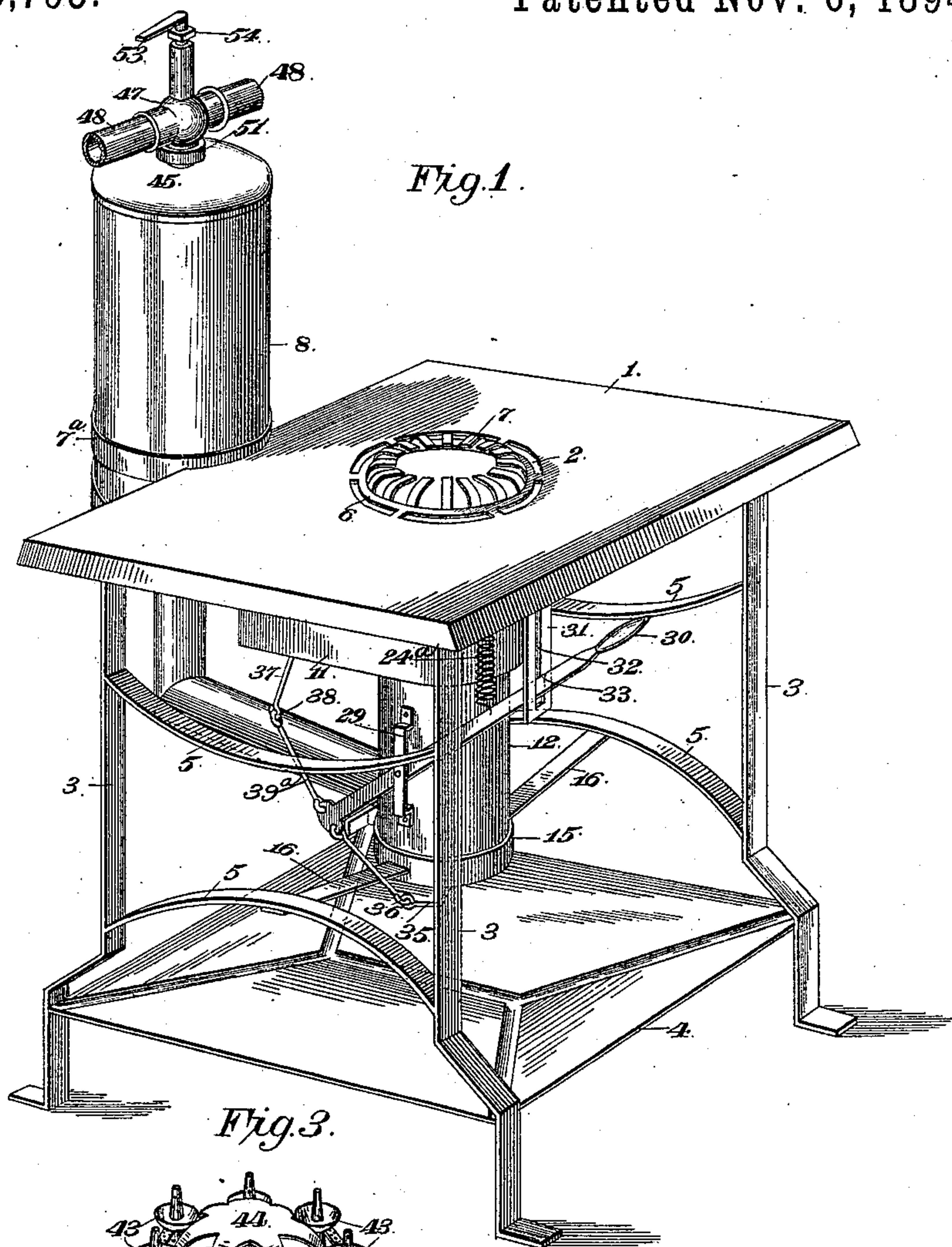


Fig. 1.

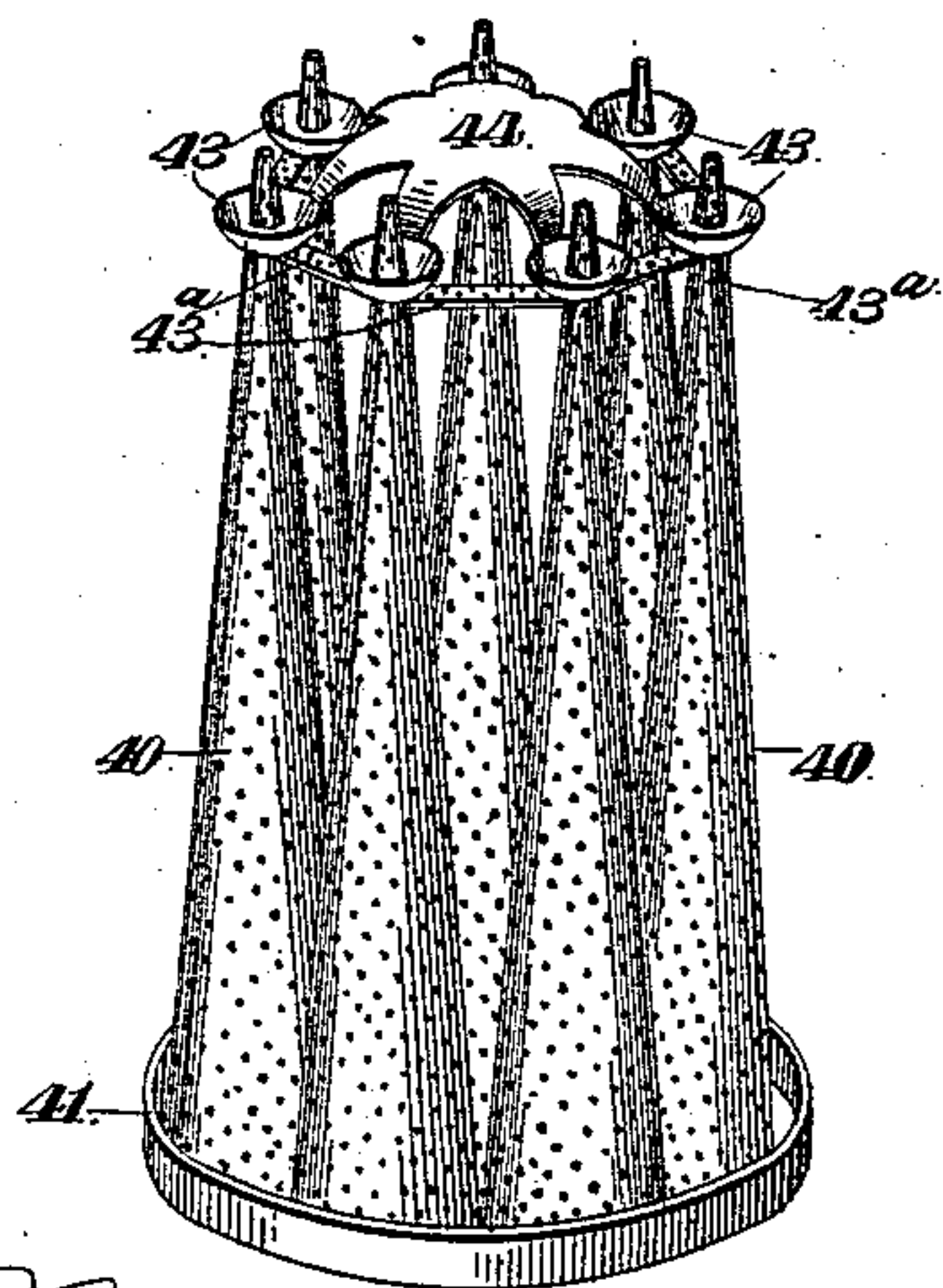


Fig. 3.

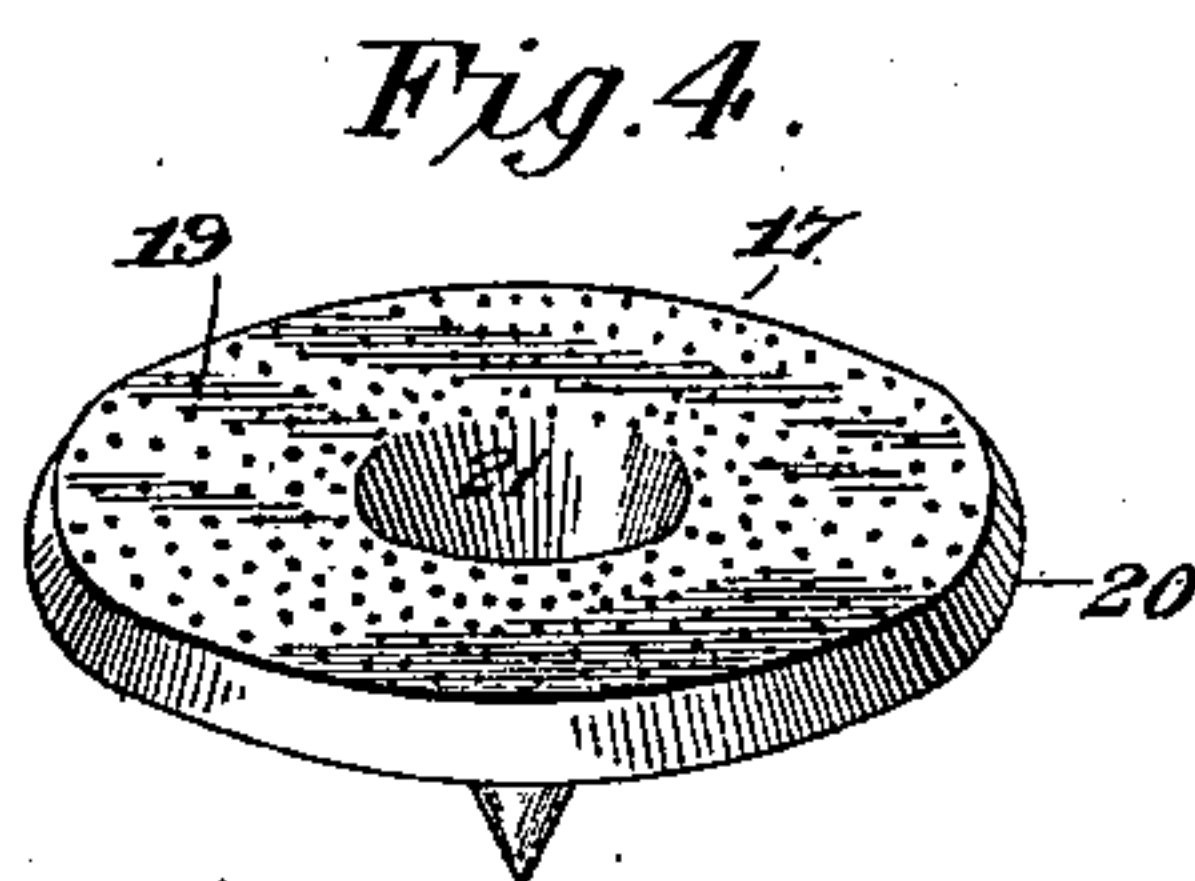


Fig. 4.

Witnesses:

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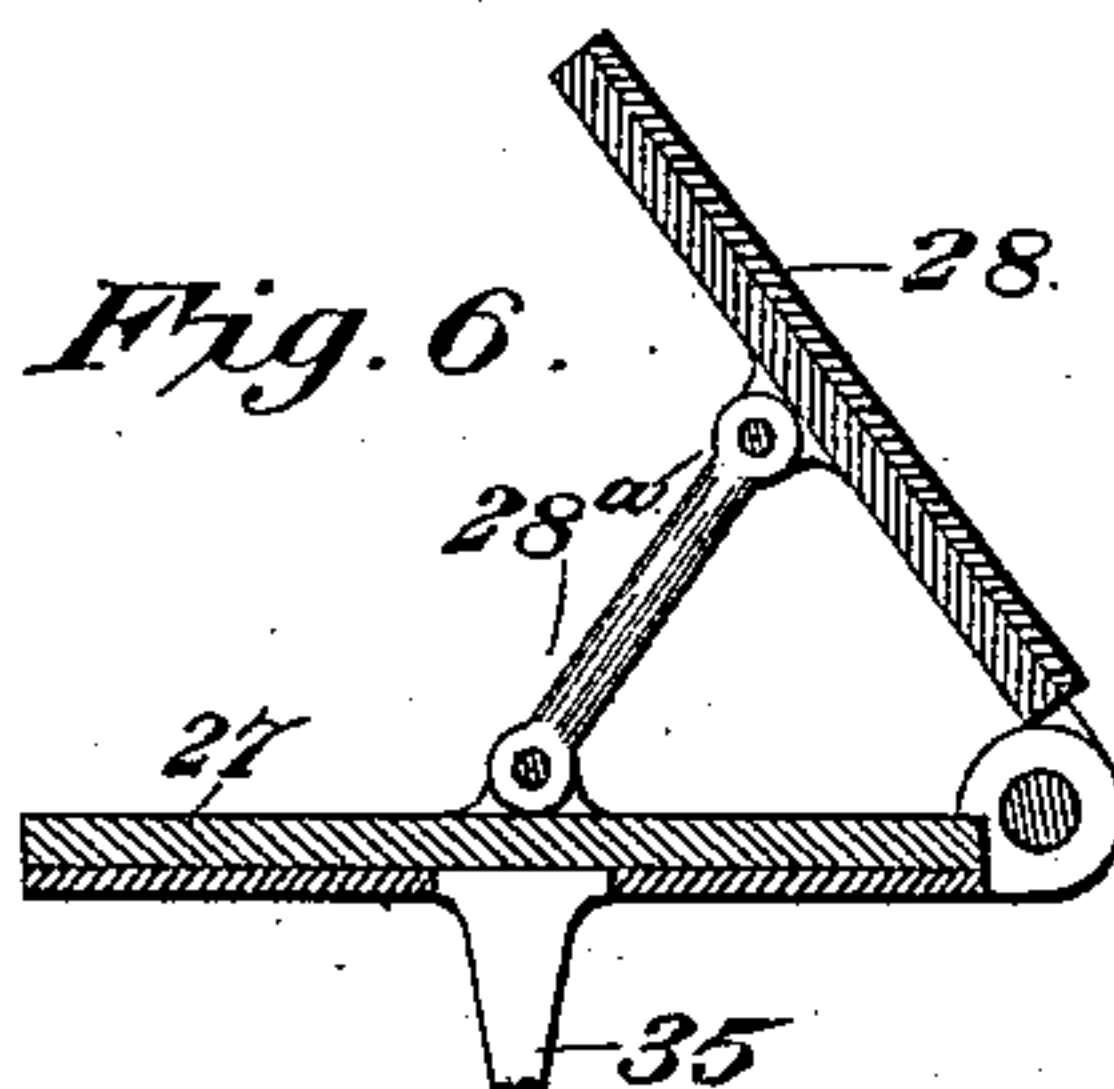
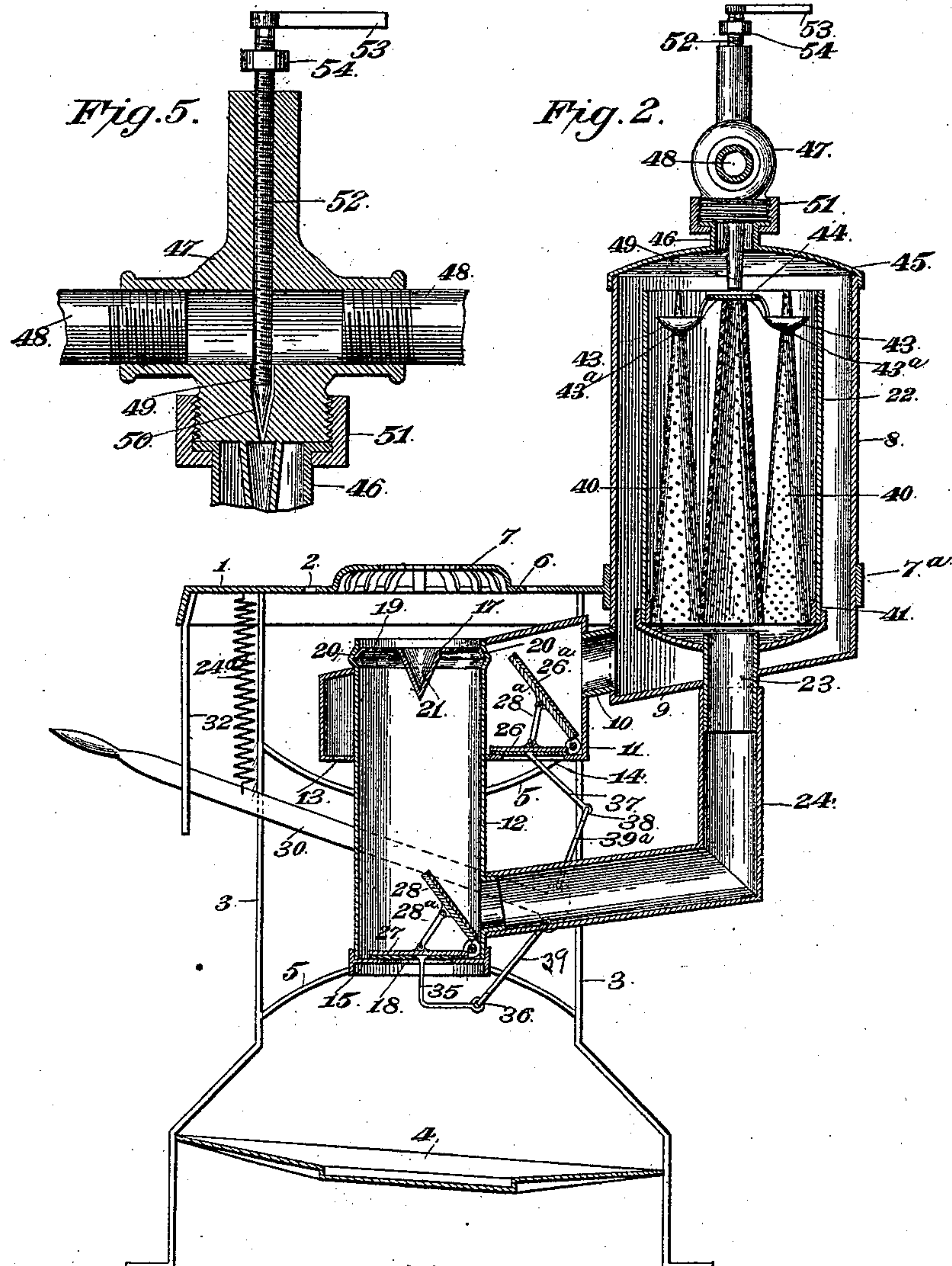
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# UNITED STATES PATENT OFFICE.

MERRITT WESLEY PALMER, OF RAYMOND, ILLINOIS, AND CHARLES SEIGLE  
MUNRO, OF FAIRBURY, NEBRASKA.

## GASOLINE-STOVE.

SPECIFICATION forming part of Letters Patent No. 528,795, dated November 6, 1894.

Application filed July 15, 1891. Serial No. 399,555 (No model.)

*To all whom it may concern:*

Be it known that we, MERRITT WESLEY PALMER, residing at Raymond, Montgomery county, Illinois, and CHARLES SEIGLE MUNRO, residing at Fairbury, in the county of Jefferson and State of Nebraska, citizens of the United States, have invented a new and useful Gasoline-Stove, of which the following is a specification.

10 This invention relates to improvements in gasoline stoves; the objects in view being to provide a stove of cheap and simple construction; that will be safe and odorless; that will be economical in its operation and will thor-  
15 oughly vaporize the gasoline before its approach to the burner pipe.

Other objects and advantages of the invention will appear in the following description, and the novel features thereof will be particularly pointed out in the claims.

Referring to the drawings:--Figure 1 is a perspective of a gasoline stove constructed in accordance with our invention. Fig. 2 is a vertical longitudinal section. Fig. 3 is a detail in perspective of the evaporator. Fig. 4  
25 is a detail in perspective of the burner. Fig. 5 is a vertical longitudinal section of the needle valve. Fig. 6 is a detail in section of the valve 27.

30 Like numerals of reference indicate like parts in all the figures of the drawings.

1 denotes the stove-top, which is provided with the usual central opening 2, or several openings may be employed in accordance  
35 with the number of burners with which the stove is to be provided. The top is supported by the usual standards 3, and the latter near their lower ends support the protector 4 and are braced in any suitable manner as at 5,  
40 said standards below the protector terminating in suitable feet. A ring 6, having an annular series of prongs or fingers 7, is secured in the opening 2, as is usual.

7<sup>a</sup> designates a collar or bracket, which is  
45 secured to the rear side of the stove-top, and in the same is supported the cylindrical outer evaporating case, 8, provided with the inclined bottom 9, disposed toward the stove. A hot-air pipe 10 leads from the lower end of  
50 the casing 8 and communicates with the rear

side of the hot-air chamber 11, which extends forwardly under the burner opening and is provided at its top and bottom with vertically opposite openings, in which is seated the vertical burner-pipe, 12. The bottom of the hot-  
55 air chamber in front of the burner pipe 12 is provided with a series of air-inlets 13, and in rear of the same with a large or main inlet-opening 14. The lower end of the burner-pipe is seated in a supporting ring, 15, from  
60 which at diametrically opposite sides extend supporting arms 16, which latter at their outer ends are bolted to a convenient brace 5. The upper end of the burner-pipe is opened, and has swaged therein the burner 17. At its  
65 lower end the burner-pipe is provided with a contracted opening 18.

The burner consists of the annular perforated ring 19, which at its edge is turned to permit of the swaging 20, and at its center  
70 there is located in the ring the inverted conical portion 21.

In the outer casing 8 of the evaporator is seated an inner casing 22, the latter being of less diameter and height than the outer  
75 casing, so as to combine therewith to form an air space. From a point slightly above the bottom of the inner casing 22, which is cup-shaped, there depends a collar 23, which is connected by the vapor-pipe 24, with the lower  
80 end of the burner pipe 12, said collar thus preventing the escape of oil into the burner pipe should the valve accidentally open when stove is not in use.

A valve 26 is hinged over the opening 14  
85 of the hot-air chamber, and has connected thereto a valve 26<sup>a</sup> adapted to close the pipe 10 when the valve 26 opens, and a twin-valve 27 and 28 is hinged over the opening 18 and in front of the pipe 24 respectively, the valve  
90 28 being designed to close the end of the pipe 24, while the valve 27 is designed to close the opening 18 of the burner-pipe. A bracket 29 is mounted at one side of the burner-pipe, and in the same is pivoted the lever 30. The front  
95 end of the lever extends through a vertical slot 31, formed in a depending standard 32, secured to the front end of the stove-top, which slot at its lower end is at one side provided with a notch or offset 33. The front  
100



end of the lever is designed to move in this slot, and to be locked in a lowered position by being thrown laterally into the offset. When not engaging the offset, the lever is normally elevated through the medium of a coiled spring 24<sup>a</sup>, connected to the under side of the stove-top, and to the lever. A bell-cranked arm 35 extends rigidly from the under side of the valve 27 with which moves in unison the valve 28, and a connecting-rod 39 is hinged as at 36 to the lower end of the arm and at its upper end hinged to the rear end of the lever 30. A rigid arm 37 depends from the valve 26 of the hot-air chamber and is hinged as at 38 to the upper end of a connecting rod 39<sup>a</sup>, extending to and loosely connected with the lever 30.

The evaporator consists of a series of conical perforated evaporating-pipes 40, the same being arranged in an annular series as shown, around a central pipe, and the bases of the entire series being inclosed by a band 41. The apices of the cones each has mounted thereon a distributing cup 43, and the series of cones are connected immediately below the cups by perforated strips 43<sup>a</sup>. The series of pipes is surmounted by a star-shaped spreading-plate 44, the points of the star agreeing with the number of cups and terminating each in a cup, as shown, to which the points are secured. The evaporator as thus constructed is removably mounted upon the cup-shaped bottom of the inner evaporator casing, the spreading plate 44 of the evaporator being directly under the center of the removable lid 45, of the casing.

The lid is centrally perforated and provided with a collar 46, rising therefrom, and surrounding the perforation, and above the same is mounted on the collar the valve-body 47, having the two inlets 48 and the central discharge 49, having the seat 50, said body being connected with the collar 46 by the coupling 51. In the bore of the valve is threaded the needle 52, the upper end of which terminates in a handle 53, below which is located the adjustable stop-nut 54.

To operate the stove the needle-valve is rotated so that a supply of oil is permitted to flow through the inlets 48, down through the valve-seat, from which it is delivered upon the distributing-plate 44, from which the gasoline flows in thin streams and is conducted by the points of the plate to the series of cups 43, and from the cups is uniformly spread over the surfaces of the minutely perforated vaporizing pipes, said gasoline being thoroughly vaporized before reaching the bottom of the vaporizer or evaporator. The burner is lighted and the hot air generated thereby flows from the hot-air chamber through the pipe 10, up into the space between the inner and outer evaporator casing, and down through the evaporators to the vapor-supply pipe 24, to the burner-pipe, and up through the burner. To accomplish this the lever is drawn down and thrown into the notch or off-

set, whereby it is locked, so that the valves 26<sup>a</sup> and 28 are opened and the valves 26 and 27 are closed. When it is desired to shut off the vapor and cease the operation of cooking, the lever is released from the notch or offset, and elevated by the spring so that the valves 26 and 27 are opened and the valves 28 and 26<sup>a</sup> closed, thus shutting off the supply of hot air and vapor and extinguishing the fire. In this manner the air is permitted to pass up through the burner pipe and hot air chamber thoroughly cooling the burner, the pipe and the adjacent parts, and cutting off all communication with the evaporator, hence avoiding all unpleasant odors.

The valves 26<sup>a</sup> and 28 are pivoted loosely to the stem connecting them with their companions 26 and 27 respectively as indicated at 28<sup>a</sup>, and when closed are cushioned in position, thus confining the vapor in the vapor-pipe ready for instant relighting, and preventing the escape of any odors.

From the foregoing description it will be seen that we provide a stove adapted to economically and thoroughly burn gasoline oils, and this in a safe manner, devoid of any danger whatever, in that a thorough evaporation of the oils takes place previous to the arrival thereof adjacent to the burning point, or point of combustion; also that the stove will immediately cool after the fire is extinguished, whereby it is especially adapted for use in warm weather and climates. It will also be apparent that the stove may be readily cleaned and prevented from becoming foul, in that all of the parts are readily accessible, and the evaporator may be removed and cleaned by inexperienced persons.

Having described our invention, what we claim is—

1. In a gasoline stove, the combination with the burner-pipe, provided with a burner, and an inner evaporating chamber and an outer inclosing casing, the inner casing communicating with the outer, of an evaporator in the inner casing, a vapor-pipe leading from the inner casing to the burner-pipe, a hot-air chamber surrounding the burner-pipe and provided with air-inlets, and a pipe leading from the hot air chamber to the space between the outer and inner casing, substantially as specified.

2. In a gasoline stove, the combination with the burner-pipe provided with the burner, the inner evaporator casing open at its top, the outer casing inclosing the same and communicating therewith through said open top, and the evaporating device located in the inner casing, of the vapor-pipe leading from the inner casing to the burner-pipe, a hot-air chamber provided with air-inlets surrounding the burner-pipe, a pipe leading from the same to the space between the two casings, valves mounted over the air-inlets and the lower end of the vapor-pipe, substantially as specified.

3. In a gasoline-stove, the combination with the top having the burner-opening, the burner-



pipe located below the same and provided near its upper end with the burner, the inner and outer evaporator-casing located at one side of the stove, the evaporator located in the inner casing and the vapor-pipe extending from the inner casing and communicating with the burner-pipe, of a hot-air chamber surrounding the burner-pipe, a pipe leading from the same to the space between the two casings, said hot-air chamber being provided with an opening, valves for closing said opening and the vapor-pipe, and means for simultaneously opening one and closing the other, substantially as specified.

4. In a gasoline stove, the combination with the burner-pipe, open at its lower end, the evaporator-casing and its evaporator, and the vapor-pipe leading from the evaporator to a point within the burner-pipe, of a twin-valve for closing the pipe and opening, and means for simultaneously opening one valve and closing the other, substantially as specified.

5. In a gasoline-stove, the combination with the stove top having the opening, the burner-pipe located below the same and having an opening at its bottom, and provided above the opening with a burner, the inner and outer evaporator casings, the evaporator mounted in the inner casing, the vapor-pipe leading from the inner casing to the burner-pipe, the hot-air chamber having perforations and an opening, and surrounding the burner-pipe and communicating with the space between the two casings, of the valve located over the opening in the hot-air chamber and having a depending arm, the twin-valve located in the burner-pipe, one adapted to cover the vapor-pipe and the other the opening in the burner pipe and having a depending arm, the valve-operating lever pivoted at one side of the burner-pipe, loose connections between the arms and the inner end of the lever, a spring for raising the arms, and means for locking the arms in a lowered position, substantially as specified.

6. An evaporator for gasoline stoves, consisting of a base, a series of perforated conical pipes on end upon the base, and a distributing-plate located above the pipes and provided with radial branches or conductors leading to the upper ends of the pipes, substantially as specified.

7. An evaporator for gasoline stoves, consisting of a series of perforated conical pipes, on end, cups mounted on the upper or smaller end of the pipes, perforated strips connecting the upper ends of the pipes, and a superimposed distributing-plate having radial branches leading therefrom to the cups, substantially as specified.

8. An evaporator for gasoline stoves, consisting of a series of conical minutely perforated pipes, arranged in an annular series, a band embracing the bases of the same, strips connecting the pipes near their upper ends, cups mounted on the upper ends of the pipes, and a distributing-plate of star-shape,

mounted above the evaporator and having its points resting in the cups, substantially as specified.

9. In a gasoline stove, the combination with the evaporator, the hot-air chamber having an opening in its top and bottom the burner-pipe located in said opening and projected above and below the hot-air chamber, and provided at one side below the chamber with an opening, a vapor pipe leading from the evaporator to the opening in the burner-pipe and a hot air pipe leading from the hot-air chamber to the evaporator, valves mounted over an opening in the bottom of the chamber and at the bottom of the burner-pipe, valves located over the vapor and hot-air pipes, stems leading from the valve of the hot air chamber to the hot-air valve, and from the burner-pipe valve to the vapor-pipe valve and loosely connected with said hot-air and vapor pipe valve and devices for simultaneously closing or opening the valve of the burner-pipe and the valve of the hot-air chamber, and for producing a contrary operation upon the valves of the hot-air and vapor pipes, substantially as specified.

10. In a gasoline burner, the combination with the table having the depending slotted bracket 32 at its front edge, the hot-air chamber 11, the burner-pipe 12 passing vertically through the same, the evaporator supported at one side of the table, the hot-air pipe 10 connecting the chamber with the evaporator, and the vapor pipe 24 connecting the burner-pipe with the evaporator, of the valves 26 and 26<sup>a</sup> hinged over an opening 14 in the hot-air chamber and end of the hot-air pipe respectively, a link 28<sup>a</sup> pivotally-connected to the valves, the valves 27 and 28 hinged at the bottom-opening in the burner-pipe and vapor-pipe respectively, the link 28<sup>a</sup> pivoted at its ends to the valves 27 and 28, the stems 35 and 37 depending from the valves 27 and 26 respectively, the lever 30 fulcrumed at one side of the burner-pipe and terminating at its front end in a handle extending through the slotted bracket 32 and constructed to engage a notch 33 formed in the lower edge of the slot, the links 39 connecting the stems 35 and 37 with the rear end of the lever, and the spring 24 for normally raising the free end of the lever, substantially as specified.

11. In a gasoline stove, the combination with a cooking burner-pipe provided with a burner, and a hot-air chamber surrounding the burner-pipe and provided with air-inlets, one of the inlets having a valve, of an evaporating device, a vapor pipe leading therefrom to the burner-pipe, a hot-air receiver communicating with the evaporating device, a pipe between the hot-air chamber and the hot-air receiver, a valve for closing communication between the hot-air chamber and the evaporating device, and devices connecting the last mentioned valve with the valve for the inlet, whereby the opening of one valve causes the simultaneous closing of the other, substantially as specified.



12. In a gasoline stove, the combination  
with a cooking burner-pipe provided with a  
burner and having an opening at its lower  
end, which opening is supplied with a valve,  
5 and a hot-air chamber surrounding the burn-  
er-pipe and provided with air-inlets, one of  
the inlets being provided with a valve, of an  
evaporating device, a vapor pipe leading  
therefrom to the burner-pipe and provided  
10 with a valve for establishing communication  
between the burner-pipe and the evaporator,  
a hot-air pipe leading from the hot-air cham-  
ber to the evaporating device, said hot-air  
pipe being also provided with a valve, and

devices connecting the four valves together 15  
so as to move them in unison, whereby the  
hot-air pipe valve and the vapor pipe valve  
are opened simultaneously with the closing  
of the burner-pipe valve and the inlet valve,  
substantially as specified. 20

In testimony that we claim the foregoing as  
our own we have hereto affixed our signatures  
in presence of two witnesses.

MERRITT WESLEY PALMER.  
CHARLES SEIGLE MUNRO.

Witnesses:

C. B. LETTON,  
E. H. HINSHAW.