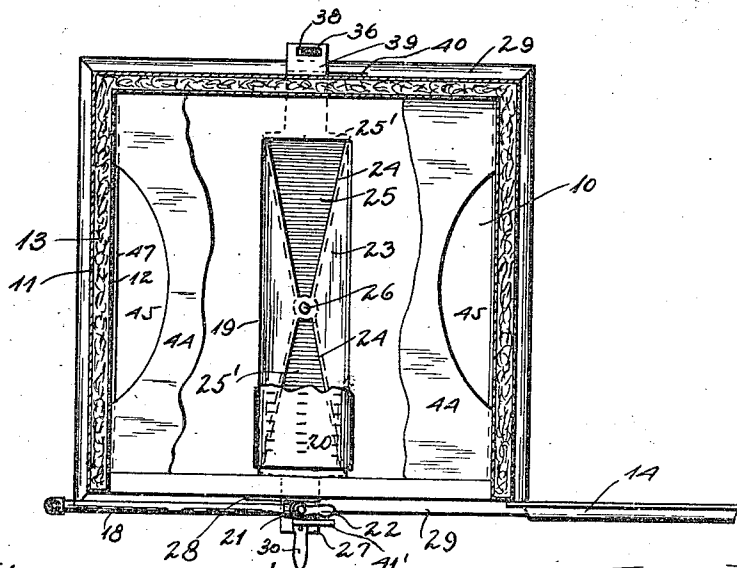
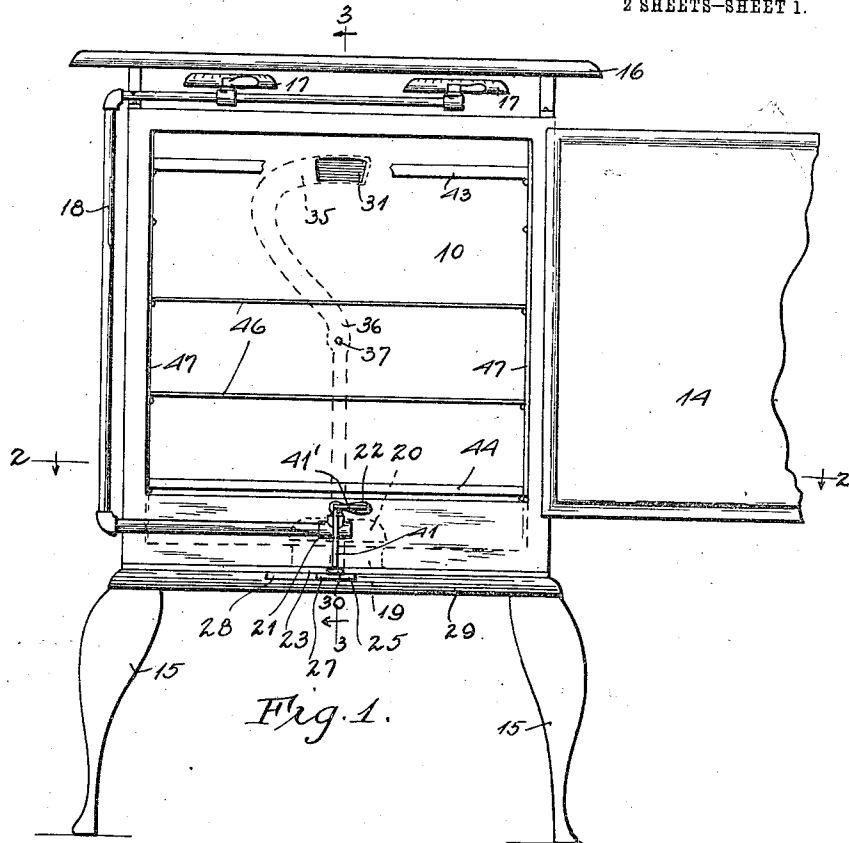


T. P. MURRAY.
STOVE.
APPLICATION FILED MAY 31, 1911.

1,043,341.

Patented Nov. 5, 1912.

2 SHEETS—SHEET 1.



Witnesses:
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Helle B. Dearborn

Inventor:
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2 SHEETS—SHEET 2.

Fig. 3.

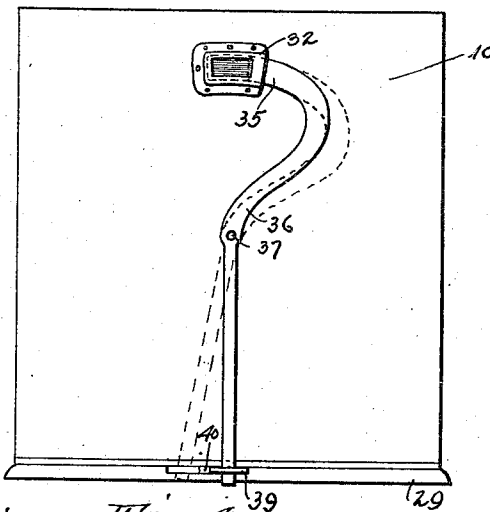
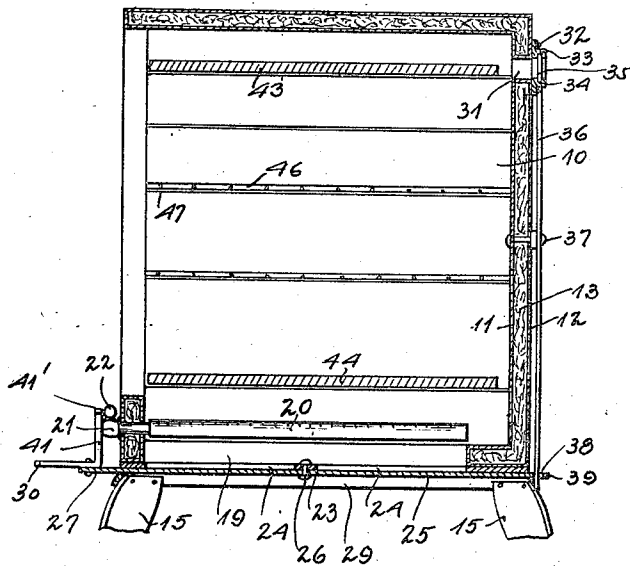


Fig. 4.
Witnesses:
Charles J. Schmidt,
Willie B. Dearborn.

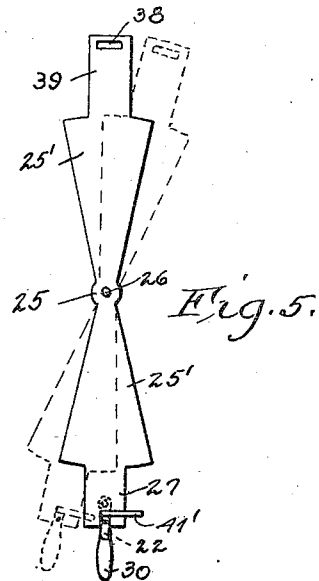


Fig. 5.
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UNITED STATES PATENT OFFICE.

THOMAS P. MURRAY, OF CHICAGO, ILLINOIS, ASSIGNOR TO ALEXANDER H. REVELL,
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STOVE.

1,043,341.

Specification of Letters Patent.

Patented Nov. 5, 1912.

Application filed May 31, 1911. Serial No. 630,420.

To all whom it may concern:

Be it known that I, THOMAS P. MURRAY, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Stoves, of which the following is a specification.

My invention relates to stoves, and contemplates improved construction and arrangement whereby a stove may be used in the ordinary capacity or as a fireless stove, and the invention is more particularly concerned with improved means for controlling the fuel supply and air flow.

In the stove of my invention gas, oil, or electricity may be used as the heating medium, and where flame burners are used it is very important that provision be made for properly ventilating the stove to supply sufficient air to the burners when they are ignited. Provision must also be made to close the vent openings when the flame is extinguished and the stove is to operate on the fireless principle. Again, where flame burners are used provision must be made for safety to assure opening of the vents when the burners are ignited so as to prevent choking of the flame and the filling of the stove with gases which might explode.

The main object of my invention is, therefore, to provide improved construction and arrangement which will prevent opening of the fuel supply valves before the vents are opened and to prevent closure of the vent openings before the fuel supply valves are closed. The ventilation arrangement comprises an air opening at the lower part of the stove and a vent opening near the top of the stove, and the invention contemplates further improved means for simultaneously controlling these vent openings.

By reference to the accompanying drawings my invention will be clearly understood.

In these drawings Figure 1 is a front elevational view of a stove with the door open, Fig. 2 is a sectional view taken on plane 2—2, Fig. 1, the part of the door shown being, however, shown in full, Fig. 3 is a sectional view taken on plane 3—3, Fig. 1, the top plate and burner and the lower ends of the supporting legs being removed, Fig. 4 is a view of the rear wall of the stove body, showing the damper mechanism for controlling the outlet vent, and Fig. 5 is a plan view of the air inlet controlling damper plate.

The stove body 10 may be of any suitable

shape with heat insulating walls preferably formed by outer and inner metal sheeting 11 and 12 filled between with some heat insulating material or compound 13. The front of the stove body is open and provided with a suitable door 14. The body part of the stove can be mounted on suitable supports, such as legs 15, and on top of the body part may be the grid plate 16, below which are burners 17 fed from pipe 18 in the usual manner.

In the floor of the stove I provide a longitudinal opening 19 over which the burner 20 is suitably mounted, this burner being connected by means of a valve 21 with the piping 18, the valve having the controlling lever 22. Below the stove floor is a metallic plate 23 having the segmental inlet openings 24 below the inlet 19. The passageways through these segmental openings are controllable by a damper plate 25 having the segmental ends 26 and pivoted at its center 26 to the plate 23 between the segmental openings 24 therethrough. By rotation of the damper plate about its pivot the openings 24 can be entirely closed or opened to any extent to allow the inflow of air to supply the burner 20 when ignited. The front end 27 of the damper plate extends forwardly beyond the stove body and through a slot 28 through the base frame 29, and secured to the front of the damper plate is a handle 30, by means of which the plate can be readily manipulated.

Through the top of the rear wall of the stove an outlet opening 31 is provided, and over this opening and secured to the back of this rear wall is a valve frame 32 having the upper and lower guide slots 33 and 34 cut in its upper and lower walls. In these slots the arcuate upper end 35 of a damper blade 36 is adapted to slide to open and close the outlet vent 31. This blade is pivoted at an intermediate point 37 to the back of the stove, and its lower end extends downwardly and a short distance through a slot 38 in the extension 39 from the rear end of the damper plate 25, this extension projecting through the slot 40 in the base flange 29. With this arrangement rotation of the damper plate will cause simultaneous rotation of the blade 36. If the damper plate is swung in clockwise direction (Fig. 2) to open the inlet vents 24, the blade 36 will be rotated counterclockwise and its arcuate end 35 moved outwardly of the valve frame 32 to open the

upper vent 31 so that both inlet and outlet vents are simultaneously opened. If the damper plate is moved in counterclockwise direction the blade 36 will be moved in clockwise direction, and both inlet and outlet vents will be simultaneously closed.

In order to assure the opening of the vents when the fuel supply valve 21 is opened I provide means which will prevent opening of the fuel supply valve until the vents have been opened and to prevent closing of the vents before the valve is closed. As shown, a locking arm 41 extends upwardly from the front end of the damper plate and its upper end 41' extends laterally parallel with and in front of the valve lever 22. In the full line position shown the vents are closed, and the end 41' of the locking arm is in front of the lever 22 to prevent rotation of this lever to open the valve. Before the valve can be opened to admit gas to the burner the damper plate 25 must be rotated in clockwise direction to open the vents and to carry the end 41' of the locking arm to the left of the valve lever 22, (see dotted lines Figs. 4 and 5) whereupon this valve lever can be rotated to open the valve and the burner then ignited. Thus, opening of the vents is absolutely assured before the fuel supply valve can be opened. If it is now desired to extinguish the burner the valve can be readily closed independently of the vents, but the vents can not be closed without at the same time causing closure of the burner valve, for as soon as the damper plate is rotated toward closed position the end 41' of the locking arm will strike the valve lever 22 and will automatically effect closure of the valve. It is therefore also impossible to close the vents without at the same time effecting closure of the valve to extinguish the burner. It is therefore impossible at any time for the burner to be ignited unless the vents are open, and the accumulation of gas and explosions are therefore entirely prevented, and the stove rendered safe.

If it is desired to use the stove in the ordinary capacity the damper plate is swung to open the vents and the burner within the stove can then be ignited, and cooking, baking, etc., accomplished. If, after preliminary heating of the stove contents by the ignited burner, it is desired to complete the cooking, baking or other operation on the fireless principle, the valve can be turned to extinguish the burner and the damper plate then moved to close the vents, or the damper plate can be swung to closed position to close the vents and to simultaneously effect closure of the fuel supply valve. Upper and lower hot plates 43 and 44 can be provided for storing heat when the burner is ignited and for giving off the heat when the burner is extinguished, and the lower hot plate 44 preferably has openings 45 for

allowing the heat from the burner to pass upwardly to the stove and contents and to the upper hot plate. For supporting the cooking utensils ordinary grids 46 may be provided and supported on side racks 47.

I thus provide simple yet very efficient means for adapting a stove for ordinary operation or for fireless operation and for effectively controlling the relative fuel and air supply in the stove to render its use absolutely safe. The damper plate and the outlet controlling blade 36 can be readily stamped from sheet metal, or these parts may be in the form of castings.

I do not of course desire to be limited to the precise construction and arrangement shown, as changes are possible which would still come within the scope of the invention, and I therefore claim the following:

1. In a stove, the combination of insulating retaining walls forming a compartment, a burner within said compartment, the floor of said compartment having air inlet openings below said burner, a damper plate pivoted to be rotated to open or close said air inlet openings, said compartment having an outlet opening near its upper end, a valve blade pivoted at an intermediate point to a retaining wall of said compartment, the upper end of said valve blade cooperating with said outlet opening upon rotation of said blade to control the opening and closure of said outlet opening, the rear end of said damper plate having a slot and the lower end of said valve blade extending through said slot whereby said damper plate and valve blade are pivoted together to rotate simultaneously to simultaneously open or close the inlet and outlet openings, a valve for controlling the fuel supply to said burner and having a controlling lever, and a locking arm extending upwardly from said damper plate and having its upper end adjacent said valve controlling lever to lock said lever against opening movement when the damper plate and the valve blade are in position to close the inlet and outlet openings.

2. In a stove, the combination of insulating retaining walls forming a compartment, a burner within said compartment, the floor of said compartment having air inlet openings below said burner, a damper plate pivoted to be rotated to open or close said inlet openings, said compartment having an outlet opening near its upper end, a valve blade pivoted at an intermediate point to a retaining wall of said compartment, the upper end of said valve blade cooperating with said outlet opening upon rotation of said blade to control the opening and closure of said outlet opening, the rear end of said damper plate having a slot, and the lower end of said valve blade extending through said slot whereby said damper plate and

valve blade are pivoted together to rotate simultaneously to simultaneously open and close the inlet and outlet openings.

3. In a stove, the combination of insulating retaining walls forming a compartment, a burner within said compartment, the floor of said compartment having air inlet openings below said burner, a damper plate formed entirely of sheet metal and pivoted to said floor to be rotated to open or close said inlet openings, said compartment having an outlet opening near its upper end, a valve blade stamped integral of sheet metal and pivoted at an intermediate point to the outside of the rear wall of said compartment and adapted to be rotated to control the opening and closure of said outlet opening, the rear end of said damper plate having a slot and the lower end of said valve blade extending into said slot whereby movement of said damper plate to control the inlet openings will cause simultaneous movement of the valve blade to control said outlet opening.

4. In a stove, the combination of insulating retaining walls forming a compartment, a burner within said compartment, the floor

of said compartment having air inlet openings below said burner, a damper plate pivoted to the floor and extending longitudinally a distance beyond the front and rear walls of said compartment, rotation of said plate serving to control said inlet openings, said compartment having an outlet opening through the rear wall at the upper end thereof, a valve blade pivoted at an intermediate point to said rear wall and having a segmental end for cooperating with said outlet opening to control the opening and closure thereof, the rear extended end of said damper plate having a slot and the lower end of said valve blade extending into said slot whereby rotation of said damper plate to control the inlet openings will cause simultaneous swing of the valve blade to control said outlet opening, and a handle secured to the forwardly extended end of said damper plate.

In witness hereof, I hereunto subscribe my name this 29th day of May, A. D., 1911.
THOMAS P. MURRAY.

Witnesses:

JOHN A. THOMPSON,
CHARLES J. SCHMIDT.