No. 675,843. Patented June 4, 1901.

S. F. SHAFER.

STOVE.

(Application filed Oct. 16, 1900.)

(No Model.)

Fig. 2.

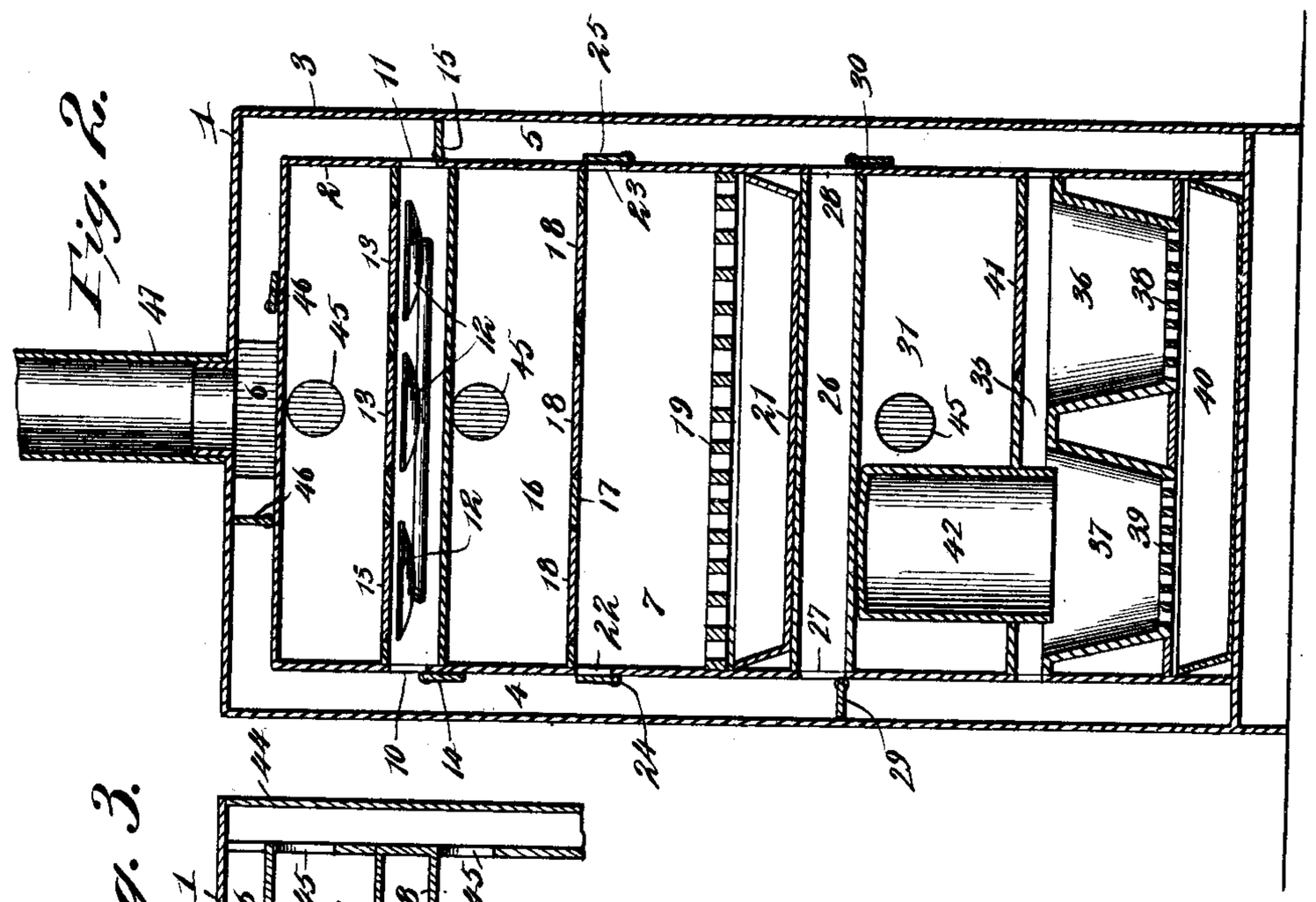


Fig. 3.

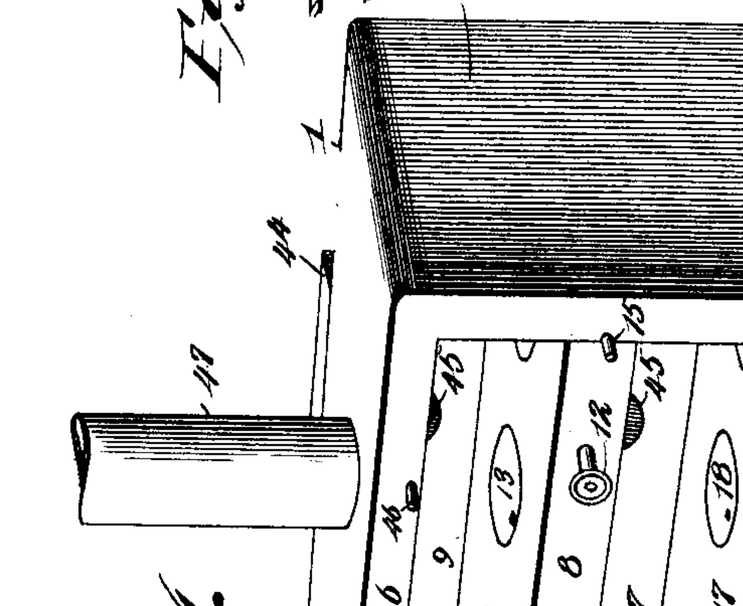
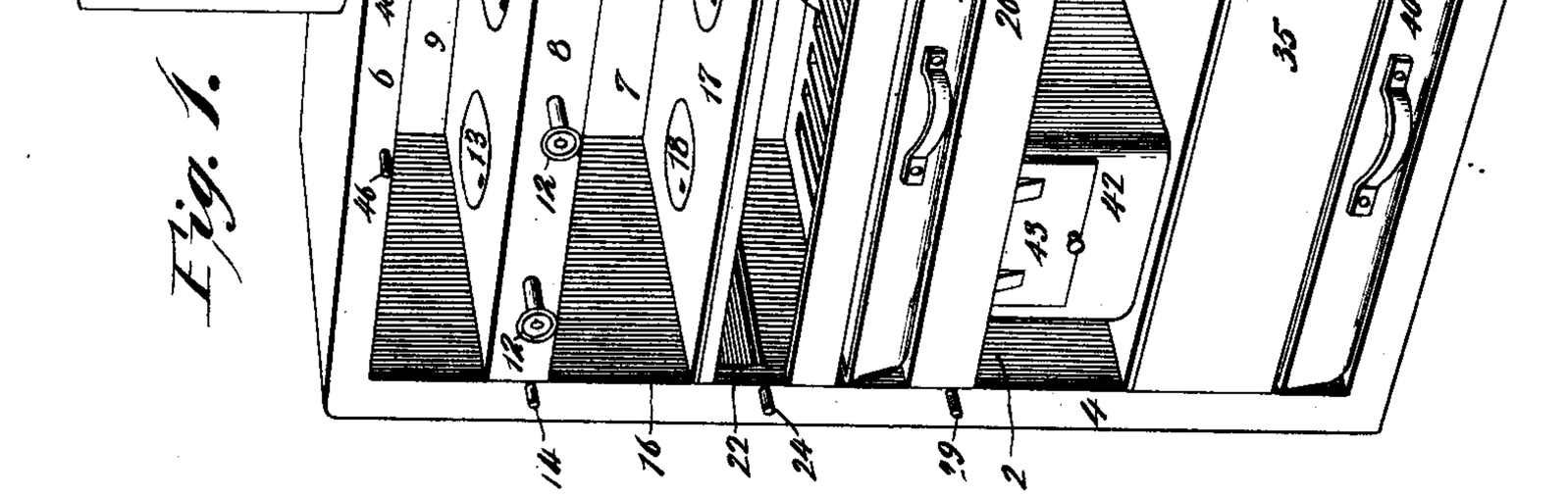


Fig. 1.



Witnesses
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UNITED STATES PATENT OFFICE.

SAMUEL F. SHAFER, OF FINDLAY, OHIO, ASSIGNOR OF ONE-HALF TO JOHN SCHAFER AND HENRY C. SCHAFER, OF SAME PLACE.

STOVE.

SPECIFICATION forming part of Letters Patent No. 675,843, dated June 4, 1901.

Application filed October 16, 1900. Serial No. 33,230. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL F. SHAFER, a citizen of the United States, residing at Findlay, in the county of Hancock and State of Ohio, have invented a new and useful Stove, of which the following is a specification.

The invention relates to improvements in stoves.

One object of the present invention is to improve the construction of stoves and to provide a simple and comparatively inexpensive one adapted to be employed for heating or cooking and capable of using a variety of kinds of fuel.

Furthermore, the invention has for its object to provide a stove of this character adapted to be used in both winter and summer and capable of affording a direct draft and of causing the products of combustion to take a tortuous course through it, whereby the heat is utilized to the fullest extent before the products of combustion are permitted to escape into the chimney.

The invention also has for its object to provide means for carrying off the odors of cooking, so that they will not be permitted to escape into the room in which the stove is situated.

The invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended.

In the drawings, Figure 1 is a perspective view of a combined cooking and heating stove constructed in accordance with this invention. Fig. 2 is a vertical sectional view of the same. Fig. 3 is a detail sectional view illustrating the construction of the ventilator.

Like numerals of reference designate corresponding parts in all the figures of the drawings.

1 designates an approximately rectangular casing composed of inner and outer oblong shells 2 and 3, spaced apart to provide intervening flues and suitably connected at the front and back of the stove to close the flues at those points. The shells 2 and 3 form side flues 4 and 5 and a top flue 6, the side flues being vertical and the top flue being disposed horizontally. The casing is preferably constructed of sheet metal or other suitable material, and it is preferably provided with a rear wall 7, closing the space within the inner shell at the back of the stove; but the rear wall may be provided with suitable doors, and the oven-spaces, hereinafter explained, may also be closed at the front of the stove by suitable doors.

Within the upper portion of the casing 1 is arranged a horizontal sheet-metal box or burner-casing 8, spaced from the top of the stove-casing to provide an upper oven-space 9 and communicating with the vertical side flues by openings 10 and 11. Within the horizontal burner-casing are arranged a series of burners 12, located beneath the stove-holes, which receive removable lids 13. The burners are adapted to consume gas; but a liquid hydrocarbon fuel may be employed, if desired. The stove is provided at the openings 10 and 11 with dampers 14 and 15, adapted to control the passage of the products of combustion, as hereinafter explained.

Beneath the burner-casing is arranged an intermediate oven-space 16, located above a horizontal plate 17, having a series of stove holes and lids 18 and located above a grate 19, which is adapted to receive wood to enable the latter to be employed as a fuel when desired. A flange 20 is arranged at the front of the grate to form a top or receptacle for the fire, and a removable ash-pan 21 is arranged beneath the grate. The inner shell is provided with openings 22 and 23, located beneath the horizontal plate 17 and communicating with the vertical side flues and with the fire-receiving space between the grate and the said plate 17. The stove is also provided at the openings 22 and 23 with dampers 24 and 25, adapted to close one flue at that point and open the other flue to form a tortuous passage; but both flues may be opened to provide a direct draft.

The ash-pan is supported upon a horizontal flue 26, connecting the vertical flues and communicating with the same through openings 27 and 28 of the inner shell, and dampers 29 and 30 are arranged at the said openings for controlling the passage of the products of combustion. The horizontal intermediate flue 26 is located above a lower oven-space 31, at

the bottom of which is located a horizontal fire-chamber 35, receiving a pair of fire-pots 36 and 37. The fire-pots 36 and 37 are provided with suitable grates 38 and 39, which are located above an ash-pan 40, arranged in a space between the bottom of the stove and the fire-compartment 35. The fire-pot 36 is adapted for burning soft coal, and the top of the fire-chamber 35 is provided over the fire-pot 36 with a removable lid 41, arranged in a stove-hole. The other fire-pot 37 is designed for burning hard coal and is located beneath a magazine 42, extending upward into the bottom oven-space and provided with a suitable door or lid 43. The stove is adapted for burning gas, wood, and hard and soft coal, and these may be used simultaneously or separately, and the stove is especially adapted for both summer and winter use, and the fuel which is the most economical at any particular season of the year is designed to be used at that time. The burner-casing and horizontal flues may be duplicated to increase the capacity of the stove, and the dampers may be arranged as illustrated in Fig. 2 of the accompanying drawings to provide a tortuous passage to expose more or less surface of the stove to the heating action of the products of combustion.

The stove is provided at its back with a vertical ventilator 44, communicating with each of the oven-spaces and adapted to carry off the odors resulting from cooking to prevent such odors from escaping into the room. The ventilator, which is preferably rectangular in cross-section, communicates with the top flue 6 and is provided with entrance-openings 45, preferably formed in the rear wall of the stove-casing. The stove is provided at the horizontal top flue with dampers 46, located at opposite sides of the stovepipe 47. The dampers are provided with extended pivots or pintles projecting in advance of the stove, and any suitable means may be provided for operating them. The stove may be provided at the openings 45 with sliding dampers or any other form of damper or cut-off for closing the said openings when desired.

It will be seen that the combined cooking and heating stove is simple and comparatively inexpensive in construction, that it is adapted for using a variety of fuels, and that the parts are so arranged that the coal, the fuel which requires the most draft, is burned at the bottom of the stove, where there is a direct upward draft. It will also be apparent that the fumes and odors resulting from cooking are carried off at the back of the stove and are delivered directly to the stovepipe to prevent such odors or fumes from escaping into the room.

What I claim is—

1. A stove designed for using a variety of fuels and comprising a casing composed of inner and outer shells spaced apart to provide vertical side flues and a horizontal top flue, the horizontal burner-casing extending across the stove-casing and communicating with the vertical flues and designed to be provided with suitable gas-burners, the intermediate grate designed for burning wood, the horizontal plate located above the said grate and forming a space communicating with the said vertical flues, the bottom fire-chamber 35 located beneath and spaced from the said grate and provided with fire-pots designed for burning hard and soft coal, a coal-magazine arranged over one of the fire-pots, and dampers arranged in the said flues and adapted to provide a straight draft, and capable of causing the products of combustion to pass back and forth across the stove, substantially as described.

2. A stove designed for burning a variety of fuels and comprising a casing composed of inner and outer shells spaced apart to form top and side flues, the horizontal burner-casing extending across the stove-casing and communicating with the side flues and designed to be provided with gas-burners, the intermediate grate arranged for burning wood and located at a point between the top and bottom of the stove-casing, the bottom fire-chamber 35 located beneath and spaced from the grate, and provided with fire-pots 36 and 37, designed respectively for burning soft and hard coal, a coal-magazine arranged over the fire-pot 37, and dampers arranged in the said flues for controlling the draft, substantially as described.

3. A stove designed for burning a variety of fuels and comprising a casing composed of inner and outer shells spaced apart to form side and top flues, the horizontal burner-casing extending across the stove-casing and communicating with the side flues and designed to be provided with gas-burners, the intermediate grate designed for burning wood, the horizontal plate located above the grate and forming a space communicating with the side flues, the intermediate horizontal flue 26, the fire-chamber located between the flue 26 and the bottom of the casing and provided with fire-pots having grates and adapted for burning hard and soft coal and removable ash-pans located beneath the grates, substantially as described.

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

SAMUEL F. SHAFER.

Witnesses:
H. WALTER DOTY,
J. Q. CODDING.