

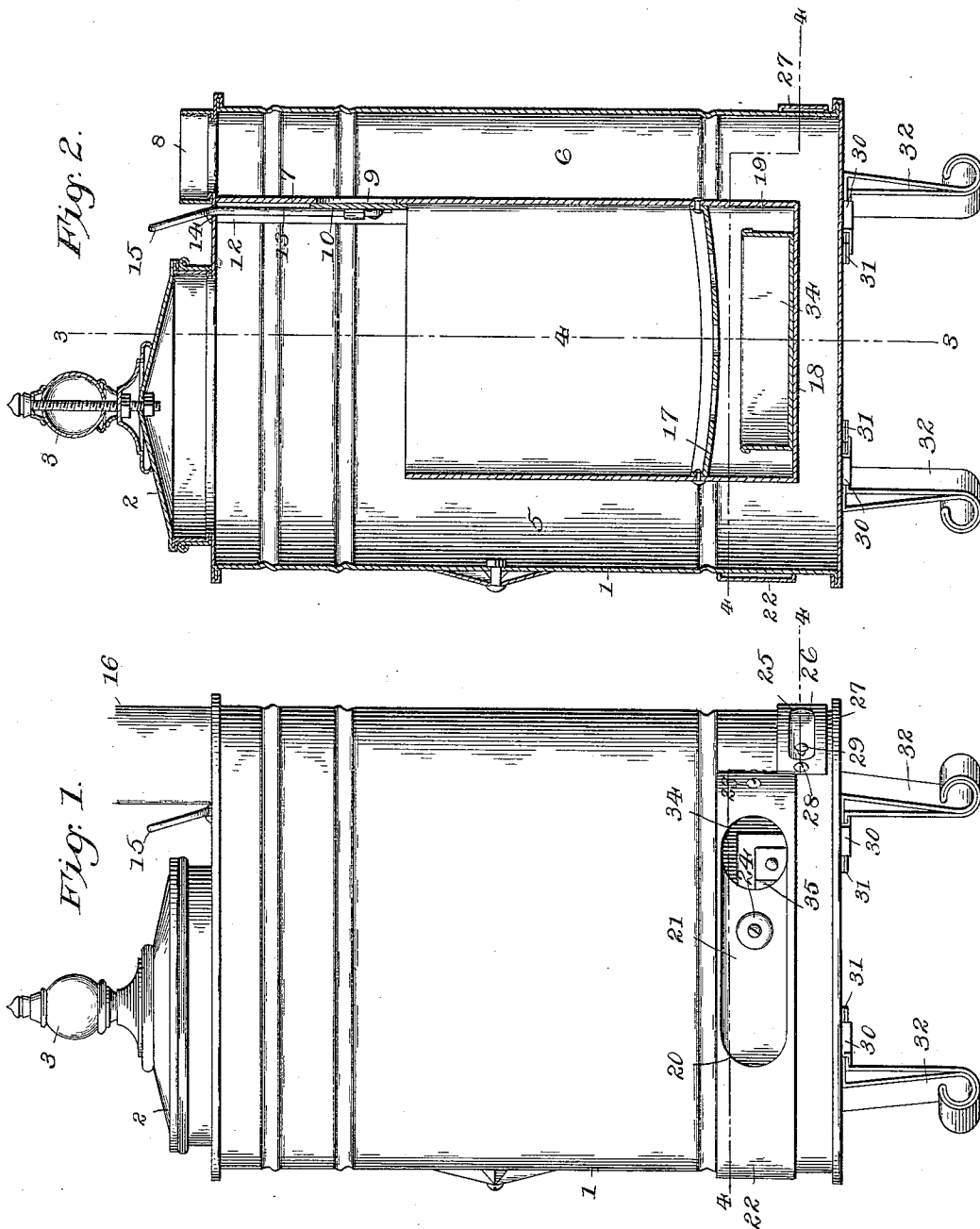
(No Model.)

2 Sheets—Sheet 1.

J. A. KENDALL.  
HEATING STOVE.

No. 546,926.

Patented Sept. 24, 1895.



Witnesses  
Charles Ford.  
*[Signature]*

By his Attorneys,

*Chas. Snow & Co.*

Inventor  
John A. Kendall,

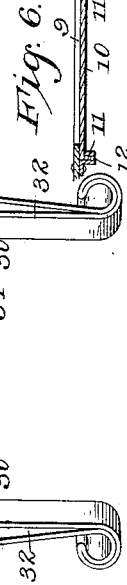
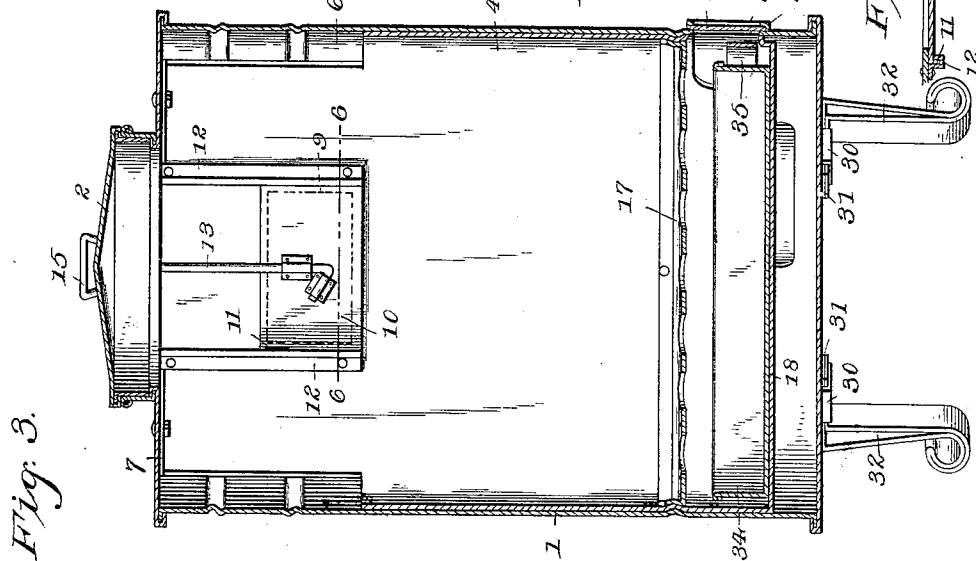
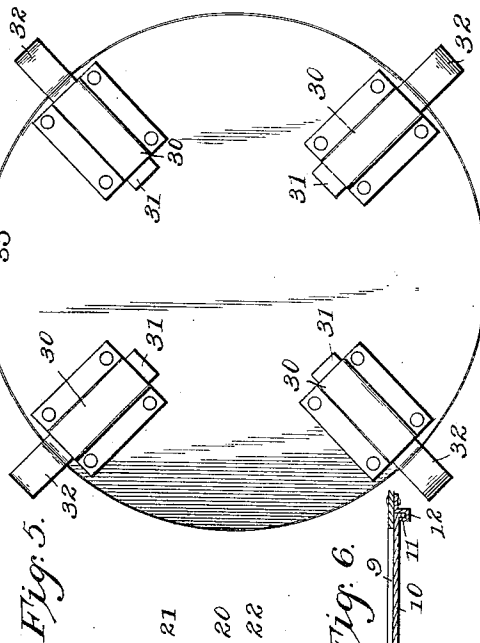
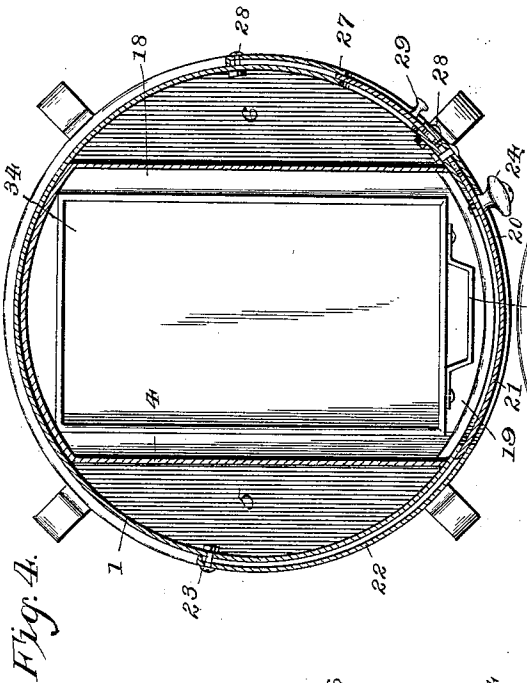
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2 Sheets—Sheet 2.

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# UNITED STATES PATENT OFFICE.

JOHN A. KENDALL, OF MAYSVILLE, MISSOURI.

## HEATING-STOVE.

SPECIFICATION forming part of Letters Patent No. 546,926, dated September 24, 1895.

Application filed January 24, 1895. Serial No. 536,109. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN A. KENDALL, a citizen of the United States, residing at Maysville, in the county of De Kalb and State of Missouri, have invented a new and useful Heating-Stove, of which the following is a specification.

My invention relates to heating-stoves; and it has for its object to provide a simple, inexpensive, and efficient heater provided with means whereby the major or a considerable portion of the heat is radiated from the bottom or close to the floor, thus heating the lowermost and hence the coldest stratum of air in the room; and, furthermore, to provide simple and efficient means for controlling the draft, whereby the maximum amount of heat is derived from a given quantity of fuel, and whereby when it is required to bank the fire to prevent rapid burning an inlet to the exhaust or smoke flue may be opened to prevent what is known as "pipe-sweating."

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

In the drawings, Figure 1 is a side view of a stove constructed in accordance with my invention. Fig. 2 is a vertical central section of the same. Fig. 3 is a vertical central section at right angles to the plane and on the line 3 3 of Fig. 2. Fig. 4 is a horizontal section on the line 4 4 of Figs. 1 and 2. Fig. 5 is a bottom plan view. Fig. 6 is a detail transverse section on the line 6 6 of Fig. 3.

Similar numerals of reference indicate corresponding parts in all the figures of the drawings.

1 designates the drum or casing provided at its top with a removable lid or cover 2, provided with any suitable ornamental handle 3, and within this drum or casing is arranged the fire-box 4, secured at its ends to the sides of the casing and having flattened front and rear sides, which are spaced from the corresponding portions of the casing to form front and rear vertical flues 5 and 6. The rear wall 7 of the fire-box extends to the plane of the top of the casing and is provided at a point contiguous to the pipe-collar 8 with an open-

ing 9, adapted to be covered by a slide 10. This slide is flanged, as shown at 11, at its lateral edges to fit in vertical guides 12, secured to the rear wall of the fire-box, and the handle 13 of the said slide or valve is extended through an opening 14 in the top of the drum and terminates in a handle 15. This slide-valve provides for a direct draft from the fire-box into the smoke-pipe 16, which is adapted to be attached to said pipe-collar, and hence communicates with the outlet-flue in rear of the fire-box. The front wall of the fire-box terminates below the plane of the top of the drum or casing to provide for the communication of the products of combustion from the fire-box into the vertical front flue.

The sides of the fire-box are extended downward below the plane of the grate 17, and the lower edges thereof are connected by a horizontal floor 18 to form an ash-pit 19, with which communicates an opening 20, formed in the outer casing and provided with a sliding door 21, the said door being fitted in a guide formed by a plate 22, which is secured to the outer surfaces of the drum or casing and is spaced from the same sufficiently to receive the door. This plate is secured to the drum or casing by means of screws or bolts 23, whereby it may be detached to provide for the removal of ashes or other dirt which may work thereinto. Obviously the door corresponds in curvature with the wall of the drum or casing when the latter is of the cylindrical shape illustrated in the drawings; but as the cross-sectional shape of this drum or casing may be varied to suit different requirements and conditions of use it will be understood that I do not limit myself to the form shown. A knob or handle 24 is attached to the end of the sliding door, and the contiguous extremity of the latter is concaved, as shown, to provide a symmetrical opening in any position of the door.

The ash-pit is equal in cross-sectional area with the fire-box, and the floor thereof is spaced from the bottom of the drum or casing to form a horizontal heat-passage connecting the lower ends of the front and rear flues, said heat-passage being equal in area to the cross-section of the drum, whereby when the slide-valve or damper in the rear wall of the

fire-box is closed to cause the products of combustion to descend through the front flue, and thence pass by way of the horizontal passage to the rear or outlet flue, the bottom of the drum or casing is heated and radiates vertically downward or toward the floor of the room in which the stove is located, thereby heating the surrounding air near the floor. Inasmuch as the coldest stratum of air is found contiguous to the floor, the application of heat at this point insures a more effective circulation of air and a more rapid heating of the room.

Formed in the drum or casing in communication with the rear or outlet flue is an inlet-opening 25 to admit air to such flue when the main draft is cut off by closing the sliding door of the ash-pit, the admission of air to said flue being designed to promote a circulation of air therein, and thereby prevent the evil known as "pipe-sweating." This inlet-opening is provided with a slide or closure 26, fitted in a guide formed by the removable plate 27, which is held in place by screws 28. Said slide or closure is provided with a knob 29. Stirrups or keepers 30 are attached to the under side of the bottom of the drum or casing for the reception of the horizontal tongues 31 of the supporting feet or legs 32, whereby said feet or legs are detachable.

This being the construction of the improved stove it will be understood that in order to promote a rapid combustion of fuel and prevent smoking, as when starting a fire, the slide-valve or damper in the rear wall of the fire-box should be opened; but after such necessity has passed the valve or damper should be closed to cause the products of combustion to seek an outlet by passing down the front flue through the horizontal connecting-passage and into the outlet or rear flue, for the reasons hereinbefore explained. Draft is supplied to the fuel to support combustion by opening the sliding door which communicates with the ash-pit, whereby the draft passes vertically upward through the grate, and hence through the fuel, the grate being preferably depressed at its center or concavo-convex in cross-section, with its convex surface downward, in order to insure a uniform distribution of the air admitted to the ash-pit. When it is desired to maintain the fire without rapid combustion, as in banking for the night or when the necessity for heat is less than under ordinary circumstances, the sliding door should be closed and the slide covering the inlet-opening displaced to admit air to the rear or outlet flue, as described. An ash-pan 34, having a handle 35, is arranged in the ash-pit, whereby the ashes may be removed with facility, said pan also serving to protect the floor of the ash-pit, which forms the upper wall of the horizontal connecting-passage.

Various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the spirit

or sacrificing any of the advantages of this invention.

Having described my invention, I claim—

1. A stove having an exterior drum or casing provided in its top with a fuel-opening, a cover for said opening, a fire-box arranged in the drum or casing with its front and rear walls spaced from the corresponding walls of the drum or casing to form vertical front and rear flues, the former of which communicates at its upper end with the top of the fire-box, a grate arranged at the bottom of the fire-box, an ash-pit corresponding in cross-sectional area with the fire-box and having its floor spaced from the bottom of the drum or casing to form a transverse connecting passage between the lower ends of said vertical front and rear flues, this transverse passage being equal in cross-sectional area with the drum or casing and having for its floor the bottom of said drum or casing, an opening formed in the rear wall of the fire-box to communicate with the rear vertical flue, a closure for said opening provided with means for operating the same from the exterior of the drum or casing, a pipe-opening communicating with the upper end of the rear vertical flue, and a draft opening provided with a closure and communicating with the ash-pit, substantially as specified.

2. A stove having an exterior drum or casing provided with means for introducing fuel, a fire-box arranged within the drum or casing with its front and rear walls spaced from the corresponding walls of the drum or casing to form vertical front and rear flues, the former of which communicates at its upper end with the fire-box and the latter of which is separated therefrom by an upward extension of the rear wall of the fire-box, a direct draft valve or damper arranged in operative relation with an opening in said extension of the rear wall of the fire-box, a pipe-opening communicating with the rear vertical flue at its upper end, a grate arranged at the bottom of the fire-box, an ash-pit equal in cross-sectional area with the fire-box and having its floor spaced from the bottom of the drum or casing to form a horizontal passage connecting the vertical flues at their lower ends, the floor of said connecting passage being formed by the bottom of the drum or casing, a draft opening arranged in the drum or casing in communication with the ash-pit and provided with a suitable closure, and an inlet opening in communication with the rear vertical flue at its lower end to promote a circulation of air in said flue when the draft opening is closed, said inlet opening being provided with a suitable closure, substantially as specified.

3. A stove having a drum or casing provided with means for introducing fuel, a fire-box suspended in the drum or casing with its front and rear walls out of contact with the corresponding walls thereof and secured at its sides to the drum or casing, the spaces between the front and rear walls of the fire-box and the

contiguous portions of the drum or casing forming vertical front and rear flues which are connected at their lower ends below the plane of the bottom of the fire-box by a horizontal passage, the floor of which is formed by the bottom of the casing, a grate arranged at the bottom of the fire-box and depressed at its center, the same being concavo-convex in cross-section, an ash-pit constructed of downward extensions of the walls of the fire-box connected at their lower ends by a floor which forms the top of said horizontal connecting passage, a draft opening arranged in the drum or casing at the end of the ash-pit and pro-

vided with a suitable closure, a direct draft damper arranged to close an opening in the rear wall of the fire-box, said opening being in communication with the rear vertical flue, and a pipe opening in communication with said rear flue at its upper end, substantially as specified.

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

JOHN A. KENDALL.

Witnesses:

B. F. CHANNELL,  
G. K. GWATHMEY.