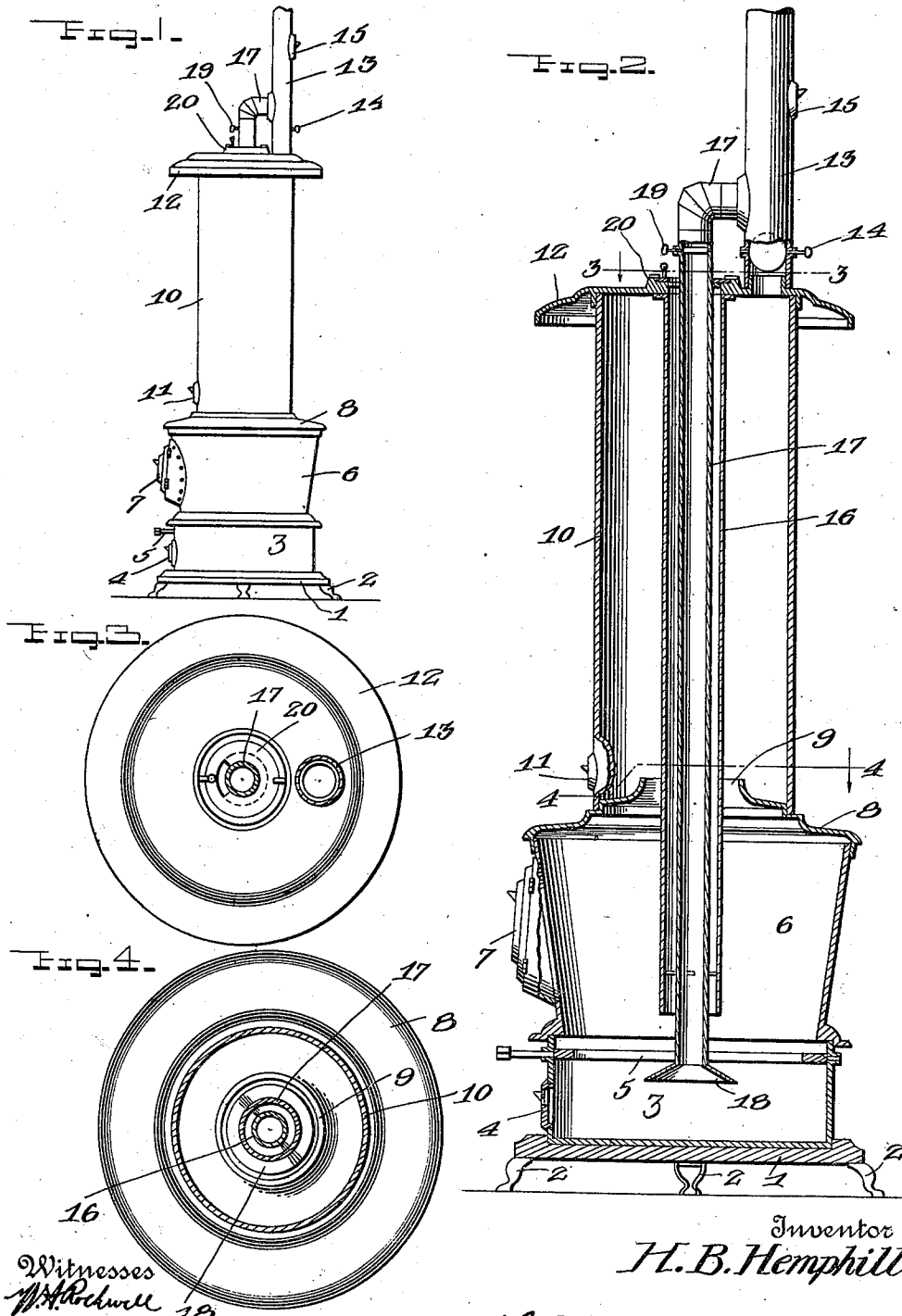


H. B. HEMPHILL.
HEATING STOVE.
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989,358.

Patented Apr. 11, 1911.



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UNITED STATES PATENT OFFICE.

HENRY B. HEMPHILL, OF ELDORADO, ILLINOIS.

HEATING-STOVE.

989,358.

Specification of Letters Patent.

Patented Apr. 11, 1911.

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To all whom it may concern:

Be it known that I, HENRY B. HEMPHILL, a citizen of the United States, residing at Eldorado, in the county of Eldorado and State of Illinois, have invented certain new and useful Improvements in Heating-Stoves; and I do 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.

This invention relates to an improved heating stove.

The object of the invention is to construct a simple and efficient heating stove which may be so regulated as to provide a wide range in heating capacity, and to provide draft flues and dampers which are operable to produce a double combustion simultaneously, and which may be regulated to obtain economical results or otherwise as desired.

With these and other objects in view, the invention consists of certain novel features of construction, combination and arrangement of parts as will be more fully described and particularly pointed out in the appended claims.

In the accompanying drawings, Figure 1 is a side elevation of a stove constructed in accordance with this invention; Fig. 2 is a vertical sectional view thereof on a larger scale; Fig. 3 is a horizontal section taken on line 3—3 of Fig. 2, looking in the direction of the arrow; Fig. 4 is a similar view taken on line 4—4 of Fig. 2.

In the embodiment illustrated an upright stove is shown comprising a supporting base 1 mounted on suitable legs 2, of any desired construction. Mounted on this base 1 is an ash pit 3 having the usual door 4 provided with an air valve. Grate bars as 5 are arranged at its upper end and on which is mounted a fire box 6 which is preferably constructed as shown, in the form of an inverted truncated cone, provided at one side with the usual fuel door 7. The upper end of this fire box or dome 6 is closed by a cap 8 having a central opening 9 therein. This cap 8 is preferably made of cast iron as is also the dome or box 6, and tapers upwardly toward the opening 9 forming a substantially truncated cone-shaped member, which causes the heat and flame from the fire in the box to be drawn to the center and passed out through said opening 9 into a heating drum 10 mounted on said dome. This drum 10 is

preferably made in the form of a cylinder of a diameter less than the diameter of the dome but larger than the opening 9 therein, as is clearly shown in Figs. 1 and 2, and it is secured to the cap of the dome by any suitable means. An air valve 11 is arranged in one side wall near the lower end of said drum 10. The upper end of this drum 10 is closed by the usual overhanging top plate 12 with which is connected an ordinary upright stove pipe 13 for conveying away the smoke and other gases and having a damper 14 arranged adjacent its connection with the stove top. This pipe 13 is also provided with an air valve 15 arranged above the damper 14. A downdraft air flue 16 extends through the top plate 12 through the drum 10 and through the opening 9 in the cap 8 and terminates near the lower end of the fire box 6 for a purpose to be described. A retarding draft flue 17 in the form of a pipe of less diameter than the flue 16 extends through said flue 16 to a point below the grate and opens into the ash pit 3, the free end thereof being provided with a bell-shaped member 18 which serves to equalize the suction in the ash pit. The upper end of this pipe 17 is connected with the pipe 13 at a point between the damper 14 and air valve 15, preferably by means of an elbow, and is provided with a damper 19 for a purpose hereinafter described. The upper end of the air flue 16 is provided with a flue cap 20, operable to turn on or cut off the draft passing downward through said flue 16.

In the operation of this improved stove, when it is wished to obtain the results of a common stove, the damper 19 and air cap 20 are closed and the damper 14 and air valve 4 are opened, and the stove then burns and produces the ordinary effect of a common heating stove.

To produce a double combustion in the stove the damper 14 is closed and the damper 19 and air cap 20 are opened, and the air valve 4 is also opened. After these drafts remain in this position for about five minutes more or less the damper 14 is slightly opened, which causes the gases which have gradually collected in the drum 10 to ignite, and in a very short time the entire drum will be red hot. It is, of course, understood that not enough gases are allowed to collect to cause an explosion when ignited. The opening of the damper 14 also tends to prevent such an explosion. To diminish the heat

the valve 19 is closed and the damper 14 is opened.

When a slow fire is desired, the valve 4 is opened and air cap 20 and damper 14 are closed, which produces a very slow but sure fire, as all the air admitted through valve 4 must pass up through the bell-shaped member 18 and retarding flue 17 which cools the stove and reduces the temperature, and also prevents the formation of a flame within the stove.

The peculiar construction of the cap of the dome 6 compels the gases to rise to the center of the fire box and pass out through the opening 9 in said cap into the drum 10, whereby a three fold heat is produced on the air supply coming down through the air flue 16. Another advantage derived from this construction is that in removing the ashes, when damper 19 has been opened the flying ashes and dust will be drawn into the bell-shaped member 18 and carried off through the pipe 13.

From the foregoing description taken in connection with the accompanying drawings, the construction and operation of the invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of the invention, as defined in the appended claims.

I claim as my invention:

1. A stove comprising a fire box with an ash pit below it, a heating drum mounted on said fire box and connected at its lower end therewith, a top plate for said drum, a smoke pipe arranged on said plate, a down draft flue extending through said top plate and opening near the bottom of said fire box, a retarding flue extending through said down draft flue with the walls thereof spaced from the walls of said downdraft flue, said retarding flue being connected at its upper end with said smoke pipe and terminating at its lower end below said fire box in the ash pit, and dampers arranged in said retarding flue and smoke pipe.

2. A stove comprising a fire box with an ash pit below it, a heating drum mounted on said fire box and connected at its lower end therewith, a top plate for said drum, a smoke pipe arranged on said plate, a down draft flue extending through said top plate and opening near the bottom of said fire box, a retarding flue extending through said down draft flue with the walls thereof spaced from the walls of said downdraft

flue, said retarding flue being connected at its upper end with said smoke pipe and terminating at its lower end below said fire box in the ash-pit, dampers arranged in said retarding flue and smoke pipe, said retarding flue having a bell-shaped member at its lower end opening below said fire box.

3. A heating stove comprising a supporting base, an ash pit mounted thereon, a fire box or dome arranged over said ash pit and having a substantially truncated cone-shaped upper end with an opening in the center thereof, a drum mounted on said fire dome and surrounding the opening in the top thereof and spaced laterally therefrom, an air valve arranged in the lower end of said drum, a smoke pipe connected with the upper end of said drum, a retarding flue connected at one end with said smoke pipe and extending downwardly through said drum and fire dome and terminating in said ash pit, valves arranged in said smoke pipe and retarding flue, a down draft air flue surrounding said retarding flue with the side walls thereof spaced laterally therefrom, a valve cap for closing the upper end of said draft flue, and the lower end thereof terminating near the lower end of said fire dome.

4. A heating stove comprising a supporting base, an ash pit mounted thereon, a fire box or dome arranged over said ash pit and having a substantially truncated cone-shaped upper end with an opening in the center thereof, a drum mounted on said fire dome and surrounding the opening in the top thereof and spaced laterally therefrom, an air valve arranged in the lower end of said drum, a smoke pipe connected with the upper end of said drum, a retarding flue connected at one end with said smoke pipe and extending downwardly through said drum and fire dome and terminating in said ash-pit, valves arranged in said smoke pipe and retarding flue, a down draft air flue surrounding said retarding flue with the side walls thereof spaced laterally therefrom, a valve cap for closing the upper end of said draft flue, the lower end thereof terminating near the lower end of said fire dome, said retarding flue and draft flue extending through the central opening in said fire box.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

HENRY B. HEMPHILL.

Witnesses:

GEORGE HEREFORD,
MEM HEREFORD.