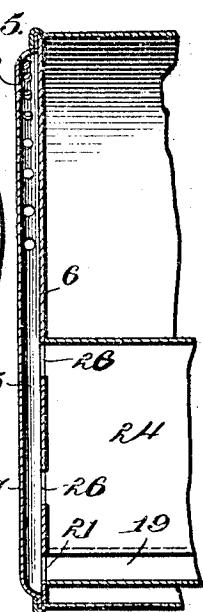
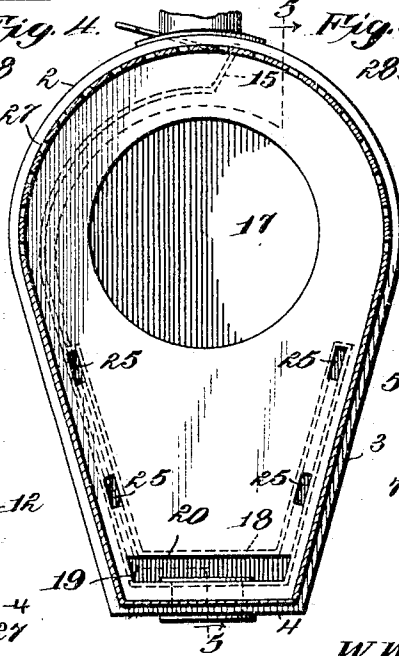
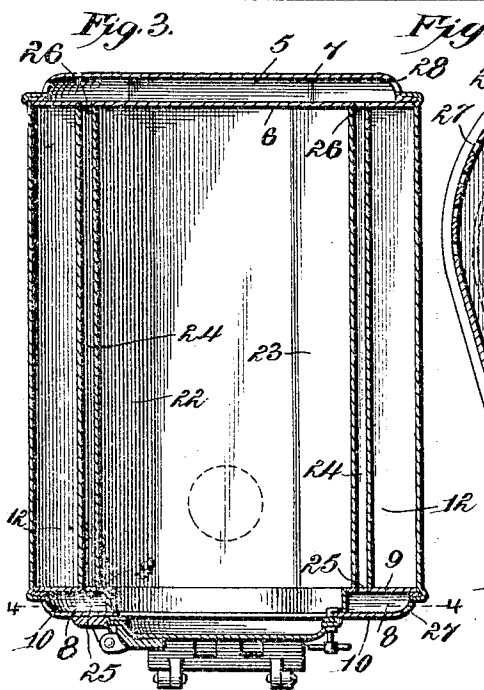
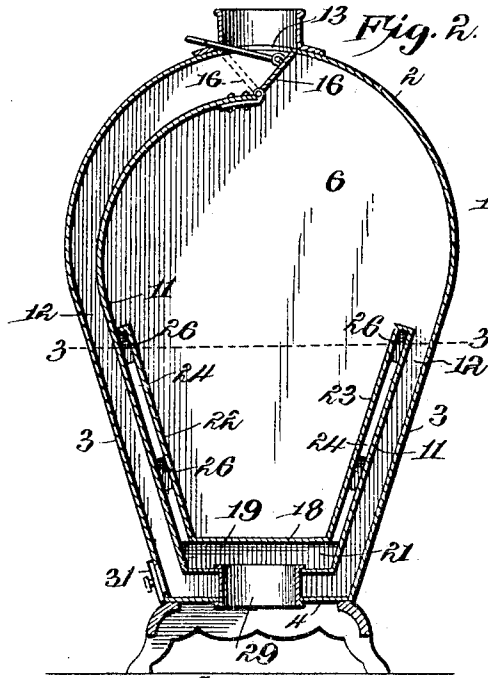
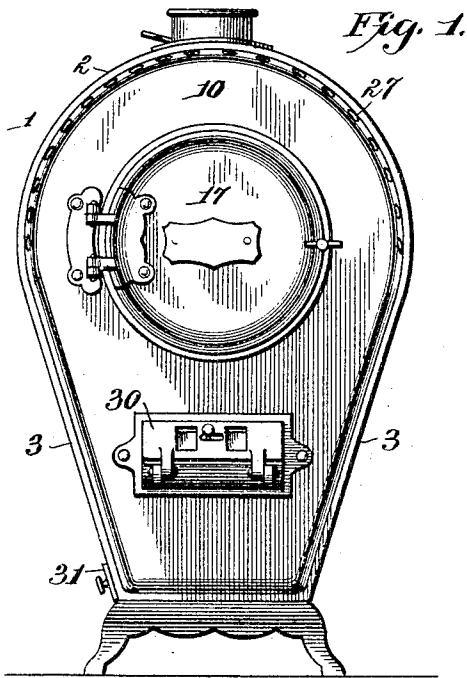


W. W. WOODS.  
HEATER.

APPLICATION FILED DEC. 17, 1903.



Witnesses  
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# UNITED STATES PATENT OFFICE.

WILLIAM W. WOODS, OF SPRINGFIELD, MISSOURI.

## HEATER.

SPECIFICATION forming part of Letters Patent No. 781,705, dated February 7, 1905.

Application filed December 17, 1903. Serial No. 185,532.

*To all whom it may concern:*

Be it known that I, WILLIAM W. WOODS, a citizen of the United States, residing at Springfield, in the county of Greene and State of Missouri, have invented a new and useful Heater, of which the following is a specification.

The invention relates to improvements in stoves.

The object of the present invention is to improve the construction of stoves and to provide a simple, inexpensive, and efficient sheet-metal heater having an increased heating capacity and capable of affording a maximum amount of heat from a given quantity of fuel.

A further object of the invention is to increase the heating capacity and durability of such stoves by passing air through the same at the bottom and walls of the fire-pot, whereby such air is highly heated and the walls or linings prevented from burning out.

Furthermore, the invention has for its object to enable this operation to be effected in connection with a downdraft, whereby the products of combustion are caused to encircle the fire-pot, and thereby heat the outer walls of such air-passages or flues.

With these and other objects in view the present invention consists in the combination and arrangement of parts, as will be hereinafter more fully described, illustrated in the accompanying drawings, and particularly pointed out in the appended claim, it being understood that changes in the form, proportion, size, and minor details of construction may be made within the scope of the claim without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings, Figure 1 is an elevation of a heater constructed in accordance with this invention. Fig. 2 is a vertical sectional view of the same. Fig. 3 is a horizontal sectional view on the line 3 3 of Fig. 2. Fig. 4 is a vertical sectional view on the line 4 4 of Fig. 3. Fig. 5 is a vertical sectional view of the rear end of the heater on the line 5 5 of Fig. 4.

1 designates a heater constructed of sheet metal or other suitable material and designed for burning wood or coal and having an upper rounded or approximately semicylindrical

portion and a lower tapered portion. The upper rounded portion forms the top of the stove or heater, and the lower portion has straight converging sides, as clearly illustrated in Figs. 1, 2, and 4 of the drawings.

The body of the stove consists of an outer shell having a rounded or semicylindrical top portion 2, which merges into and is formed integral with downwardly-converging sides 3, and the latter are connected by the bottom 4, which is straight and which extends horizontally from one side of the stove to the other, as clearly shown in Fig. 2 of the drawings. The rear wall or back of the stove is provided with a vertical flue 5 and is composed of inner and outer walls 6 and 7, constructed of sheet metal or other suitable material and conforming to the configuration of the sides, top, and bottom of the stove and suitably secured to the same. The front of the stove is also provided with a vertical flue 8 and is composed of inner and outer plates or walls 9 and 10, constructed of sheet metal or other suitable material and suitably secured to the top, sides, and bottom of the body.

Within the body is an inner shell 11, forming a transverse flue 12 and extending from the center of one side of the body downward to the bottom and across the same and upward at the opposite side of the bottom to the center of the top or at a point approximately at the center. The inner shell is spaced from the sides, top, and bottom of the stove to form the said transverse flue 12 for the products of combustion to cause a revertible draft, the said products of combustion to pass downward from one side of the stove across the bottom and upward at the opposite side of the stove to a stovepipe-opening 13, located at the top of the heater or stove, near the back thereof, and provided with a suitable upwardly-extending flange to enable a stovepipe to be applied in the ordinary manner. The inner shell extends the entire length of the stove from front to rear, and its lower portion forms the fire-pot or combustion-chamber. The upper edge of the inner shell is connected to the top of the stove by an upwardly-extending flange or portion 15, forming the upper end wall of the transverse flue.

This end wall is cut away at the stovepipe hole or opening for the reception of a pivoted or hinged damper 16, adapted to be swung to the position illustrated in dotted lines in Fig. 2 of the drawings to provide a direct draft to the chimney when starting a fire or when opening the door 17. After a fire has been started the damper is swung to the position illustrated in full lines of Fig. 2 for causing the products of combustion to pass around the stove through the transverse flue 12, whereby a maximum heating effect will be obtained.

A horizontal partition or lining 18 is mounted within the inner shell, near the bottom thereof, and is spaced from the same to provide a horizontal air-flue 19, which extends the entire length of the combustion-chamber or fire-pot and which communicates at its end with the upright flues of the front and back of the heater. The inner walls of the front and back of the heater are provided with slots or openings 20 and 21, which establish communication between the bottom flue 19 and the flues of the upright back and front of the heater. The horizontal partition or lining 18 is preferably formed integral with side walls or linings 22 and 23, which are spaced from the adjacent side portions of the inner shell 11 to form side flues 24. The side flues 24 communicate at the bottom with the flue 19 and at their ends with the upright flues of the front and back of the heater by means of slots 25 and 26. The wall or lining 22 is connected at its top with the adjacent portion of the inner shell 11 and may be formed integral with the same, as shown, or be constructed in any other desired manner, as will be readily understood. The other wall or lining is connected at its top with the adjacent side of the inner shell, as indicated in Fig. 2. The slots 25 and 26 are located at the upper and lower portions of the fire-pot, as shown; but any other arrangement may be employed. The outer plates or walls of the front and back of the heater are provided at their upper portions with perforations 27 and 28, extending around the top of the stove, as shown in Figs. 1, 4, and 5, for the escape of hot air. The inner shell 11 and the bottom of the heater are provided with registering openings for the reception of a thimble or sleeve 29, forming an inlet or opening and extending through the bottom of the stove to the horizontal flue or passage 19. The cold air from the floor passes through the thimble or sleeve 29 into

the horizontal flue or passage 19, where it is heated by the fire in the combustion-chamber or fire-box and the products of combustion in the transverse flue 12. Air from the horizontal passage 19 passes upward into the side flues 24 and also into the upright flues of the front and back of the heater. Air passing through the side flues is not only subjected to the action of the heat of the combustion-chamber or fire-pot and the products of combustion of the transverse flue, but it also operates to prevent the walls or linings of the bottom and side flues from burning out. By this construction the heating capacity of the stove or heater is greatly increased, and the intensely-heated air is discharged at both the front and back of the stove.

The front of the stove is provided with a door 17 for the introduction of fuel, and a lower hinged door 30 is provided for the removal of ashes. This door 30 has a slidable damper, as shown, to afford a draft and to assist in controlling the same. Also a small door 31 is provided at one side of the stove for the removal of soot from the bottom of the heater.

It will be seen that by providing the flues within the walls of the fire-box or combustion-chamber the air is intensely heated, thereby increasing the heating capacity of the stove or heater and at the same time preventing the walls or linings of the flues of the fire-box or combustion-chamber from burning out.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

A heater, comprising an outer shell provided at its ends with upright flues having outlet-apertures at the top of the heater communicating with the exterior, an inner shell forming a transverse flue, side and bottom linings spaced from the sides and bottom of the inner shell to form side and bottom flues, said side and bottom flues communicating at their ends with the upright flues, and an inlet communicating with the bottom flue and with the exterior of the stove at the bottom thereof.

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

WILLIAM W. WOODS.

Witnesses:

PEARL SKELTON,  
JOHN SCHMOOK.