S. F. PALMER.

STOVE.

APPLICATION FILED FEB. 13, 1907.

907,867.

Patented Dec. 29, 1908.

Fig. 1.

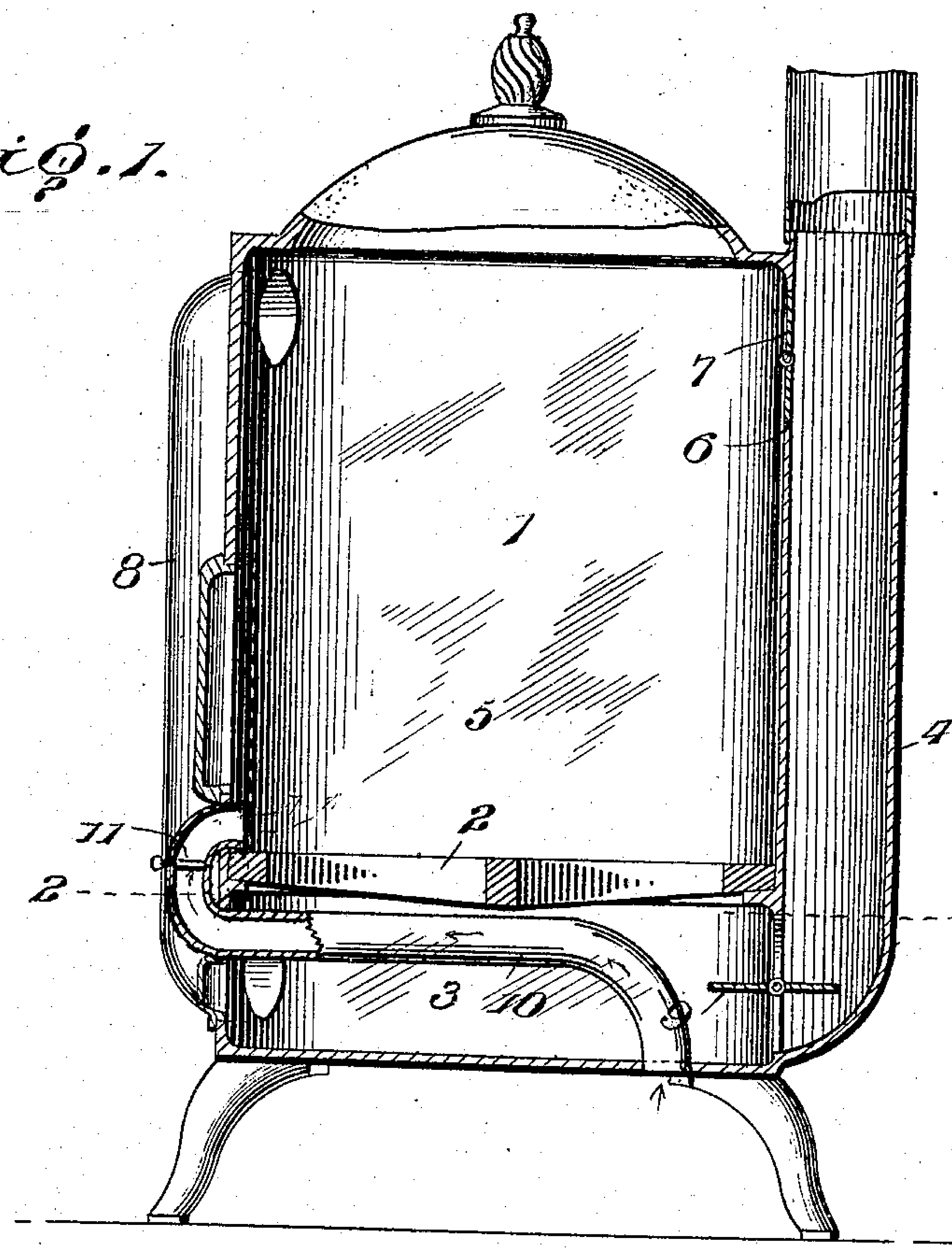
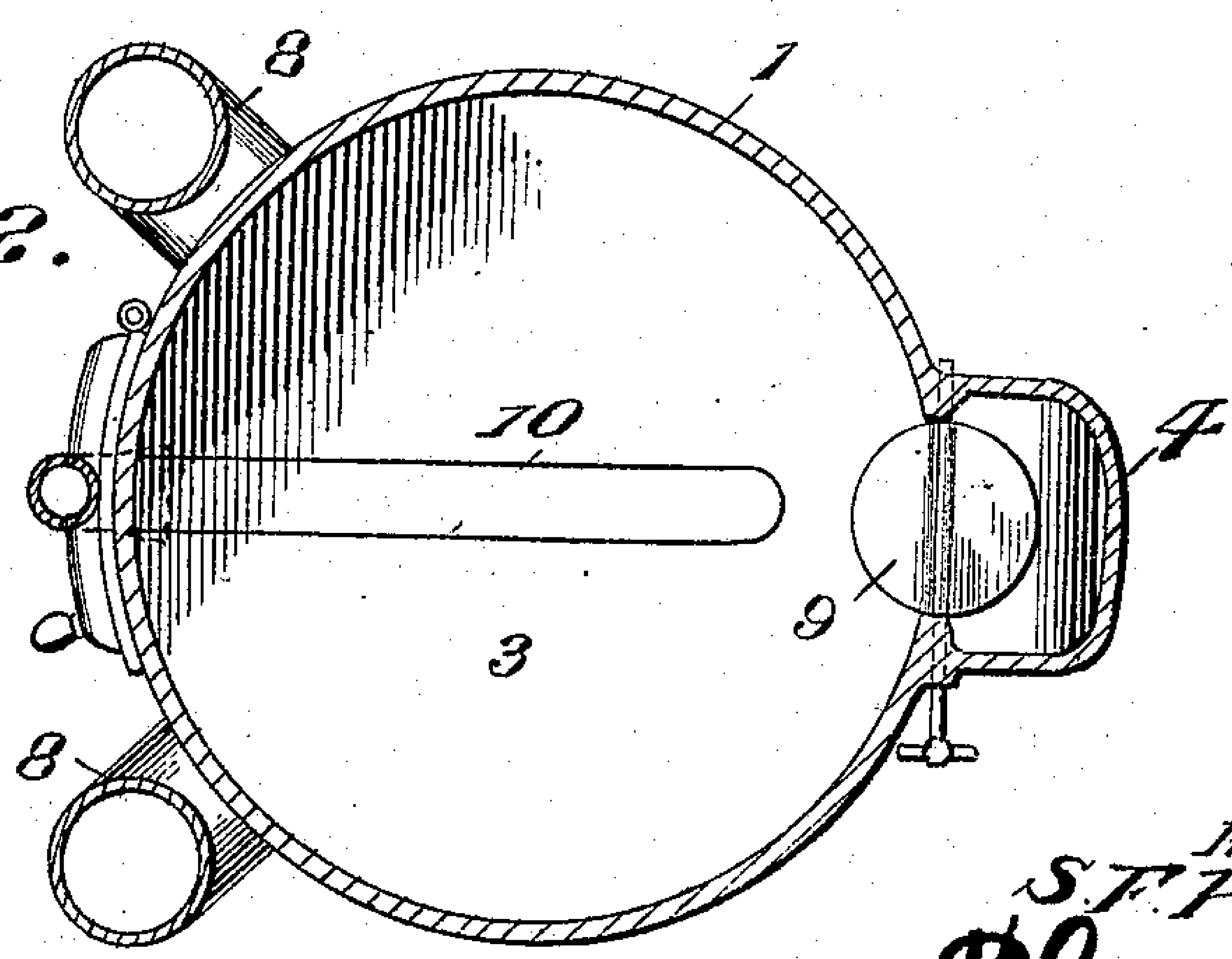


Fig. 2.



Witnesses

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STOVE.

No. 907,867. Specification of Letters Patent. Patented Dec. 29, 1908.

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To all whom it may concern:

Be it known that I, SYLVESTER F. PALMER, citizen of the United States, residing at Springfield, in the county of Greene and State of Missouri, have invented certain new and useful Improvements in Stoves, of which the following is a specification.

This invention has for its object an improved construction of stove which provides a direct draft from the combustion chamber to the main flue leading to the chimney, and in addition to such direct draft, one or more pipes are located on the outside of the main body of the stove and adapted, when the direct draft is closed, to produce one or more down-drafts leading from the upper end of the fire chamber downwardly on the outside of the stove and thence back into the stove underneath the fire chamber, or through the ash pit and thence finally back into the main up-draft flue, thereby passing the heated products of combustion downwardly on the outside of the stove and increasing the thermal efficiency of the latter.

With this and other objects in view as will more fully appear as the description proceeds, the invention consists in certain constructions and arrangements of the parts which I shall now first describe and particularly point out the novel features in the appended claim.

For a full understanding of the invention and the merits thereof and also to acquire a knowledge of the details of construction of the means for effecting the result, reference is to be had to the following description and accompanying drawings, in which:

Figure 1 is a vertical sectional view of my improved stove; and, Fig. 2 is a horizontal sectional view thereof on the line 2—2 of Fig. 1.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

Referring to the drawing, the numeral 1 designates the body of my improved stove which is provided with a bottom 2, the bottom flue 3 underneath the grate, the back flue 4 leading outwardly and upwardly from the bottom flue 3 and adapted to be secured to the chimney and connected directly with the upper end of the fire chamber 5 by means of the direct draft flue 6 controlled by any desired form of damper 7. In addition to these well known features, my improved stove embodies one or more down-draft flues which are formed by means of pipes secured to the body 1 of the stove and located on the outside of the latter. In the preferred arrangement, I provide two of these flues, designated 8, located at opposite sides of the front of the stove as clearly illustrated in the drawing. These flues 8 open out of the fire chamber 5 at the outer end of the latter and also communicate at their lower ends with the bottom flue 3 underneath the fire chamber, so as to establish a down-draft from the upper end of the fire chamber and a draft across the bottom flue into the lower end of the back flue 4. The back flue 4 may also be provided with a damper 9 where it communicates with the rear end of the bottom flue.

From the foregoing description in connection with the accompanying drawing, it will be evident that when the direct draft 6 is open and the damper 9 closed, the products of combustion from the fire chamber 5 will pass directly up through the direct flue 6 and thence to the chimney. Whenever the damper 7 is closed to shut off the direct flue 6, the said products of combustion will pass from the upper end of the fire chamber 5 out into the pipe or flues 8, and thence downwardly on the outside of the stove body and back again through the bottom flue so as to finally escape into the lower end of the back flue 4 and thence to the chimney. By this means the products of combustion are not permitted to escape directly to the back flue 4, but are caused to pass downwardly and it is manifest that the outside arrangement of the pipes 8 will cause the same to serve as heating drums or radiators so as to increase the efficiency of the stove.

10 designates a pipe which leads upwardly through the bottom flue 3 through the bottom of the stove and extends forwardly from the front wall of the stove with a returned end which extends between the two pipes 8 and back into the stove body at the bottom of the fire chamber. In that portion of the pipe 10 which is located outside of the stove, is a damper 11 so as to regulate said pipe. By this means, a hot blast draft may be established whenever desired.

Having thus described the invention, what is claimed as new is:

The herein described stove, comprising a body provided in its lower portion with a grate forming a combustion chamber and an

ash pit, an exit flue having communication at its lower end with the ash pit and near its upper end with the upper portion of the combustion chamber, a damper controlling communication between the lower end of the exit flue and the ash pit, a second damper controlling communication between the upper portion of the combustion chamber and said exit flue, an air pipe located within the ash pit adjacent to the grate and having its rear end curved downwardly and opening through the bottom of the stove near the lower end of the exit flue and having its front end extended through the stove body and recurved and in communication with the combustion chamber at a point immediately above the grate and opposite the exit flue, a damper arranged in the recurved portion of said air pipe, and two down-draft flues arranged exterior to the stove body opposite the exit flue and upon opposite sides of the front portion of the aforesaid air pipe, said draft flues having their upper ends in communication with the upper portion of the combustion chamber and their lower ends in communication with the front portion of the ash pit.

In testimony whereof I affix my signature in presence of two witnesses.

SYLVESTER F. PALMER. [L. S.]

Witnesses:
W. A. BANKS,
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