

No. 860,388.

PATENTED JULY 16, 1907.

M. KELLY.

STOVE.

APPLICATION FILED APR. 25, 1906.

Fig. 1.

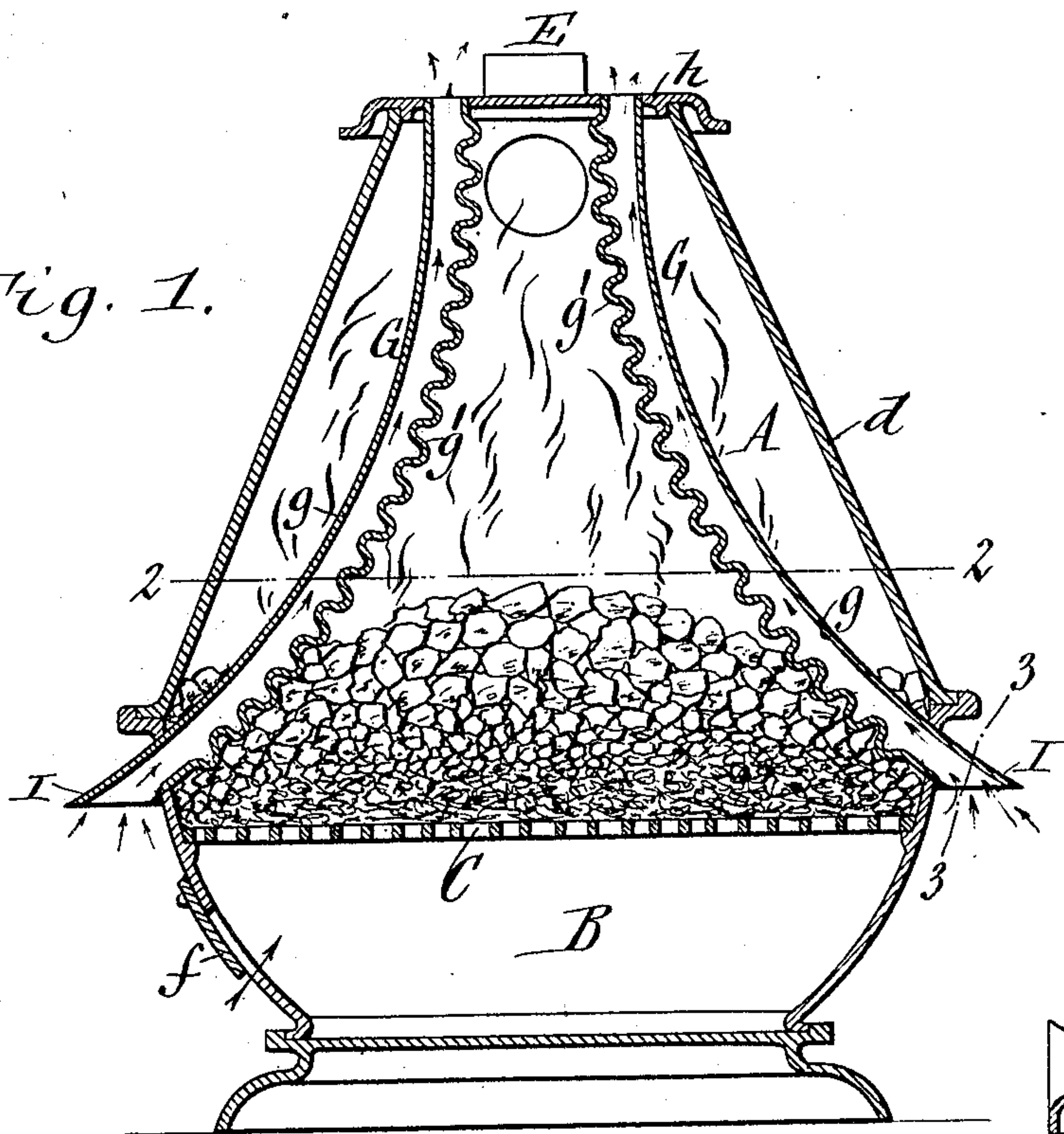


Fig. 3.

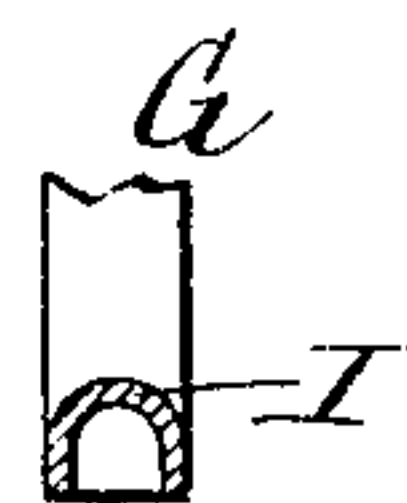
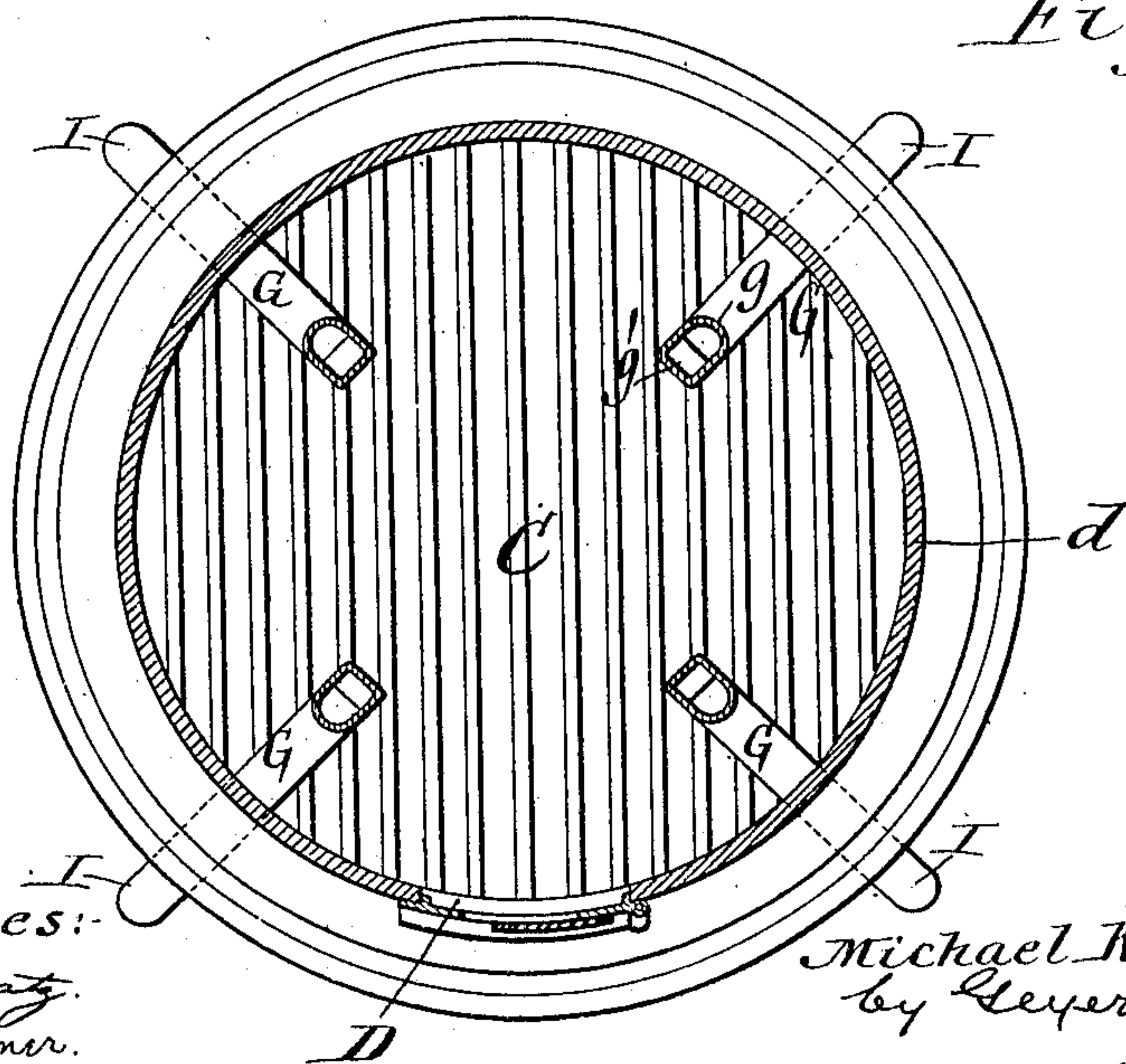


Fig. 2.



Witnesses:
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UNITED STATES PATENT OFFICE.

MICHAEL KELLY, OF BUFFALO, NEW YORK.

STOVE.

No. 860,388.

Specification of Letters Patent.

Patented July 16, 1907.

Application filed April 25, 1906. Serial No. 313,531.

To all whom it may concern:

Be it known that I, MICHAEL KELLY, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented a new and useful Improvement in Stoves, of which the following is a specification.

This invention relates to stoves for heating and has the object to provide a stove of this character in which a greater volume of air is heated in proportion to the amount of fuel consumed than has been possible in heating stoves as heretofore constructed.

In the accompanying drawings: Figure 1 is a vertical section of a heating stove embodying my invention. Fig. 2 is a horizontal section thereof in line 2—2, Fig. 1. Fig. 3 is a fragmentary vertical section in line 3—3 Fig. 1.

Similar letters of reference indicate corresponding parts throughout the several views.

My invention is applicable to various forms of heating stoves that shown in the drawings being suitable for the purpose and consisting of a combustion chamber A, an ash pit B, arranged below the combustion chamber and separated therefrom by the intervening grate C, a feed opening D arranged in the side wall *d* of the combustion chamber near the lower end thereof and a smoke pipe E opening through the side wall at the upper end of the combustion chamber. Air may be admitted into the ash pit and underneath the grate in any suitable and well known manner, the means for this purpose shown in the drawings consisting of an opening in the side of the ash pit which is controlled by a damper *f*, as shown in Fig. 1.

The essence of my invention consists in the introduction within the combustion chamber of one or more air conduits or flues G of peculiar construction whereby air is taken from the outside of the stove and conducted directly over the hottest part of the fire or the central part of the combustion chamber thereby increasing the heating capacity of the stove considerably over one in which the air is heated only by the outer surface of the combustion chamber. In the drawings four of such auxiliary air heating conduits or flues are shown arranged equidistant around the combustion chamber but this number may be reduced or increased as may be desired or to suit the construction of the stove with which they are combined. As shown in the drawings each of these conduits opens at its upper and lower

ends into the atmosphere outside of the combustion chamber and extends from the side wall of the combustion chamber near the lower end thereof inwardly and upwardly in a curve to the top *h* of the combustion chamber. At its lower inner end each air conduit is provided with a laterally extending deflector, hood or canopy I which is arch shaped in cross section. As the air rises adjacent to the stove the same is caught by these deflectors and directed into the inlet ends of the conduits G through which latter it passes upwardly and finally escapes at the outlet at the upper ends thereof. In thus passing through these conduits the air is heated to a very high degree by the bed of incandescent fuel surrounding the lower parts of the conduits and the flame or burning gases which envelop the upper parts thereof. The outer or upper sides of these conduits are made smooth, plane or continuous throughout their entire length, as shown at *g*, but their inner sides are corrugated, as shown at *g*¹. By this means the air which rises through the conduits and follows the continuous outer side thereof is permitted to flow with perfect freedom while the corrugated inner side of the conduits furnishes an increased heating area. By this means it is possible for a large volume of air to pass through the flues in a short time which air becomes thoroughly heated during its passage through the conduits. In addition to increasing the heating area of the conduits these corrugations permit the requisite expansion and contraction of the conduits due to changes of temperature in the combustion chamber.

I claim as my invention:

1. A stove comprising a combustion chamber and an upright air conduit extending through said chamber and having its back continuous or plane while its front is corrugated transversely, substantially as set forth.

2. A stove comprising a combustion chamber having a side wall and a top, and an upright air conduit extending inwardly and upwardly through said chamber and opening with its lower inlet end and its upper outlet end through said wall and top of the chamber, respectively, and the outer side of said conduit being continuous, plane while its inner side is corrugated transversely, substantially as set forth.

Witness my hand this 20th day of April, 1906.

MICHAEL KELLY.

Witnesses:

THEO. L. POPP,
E. M. GRAHAM.