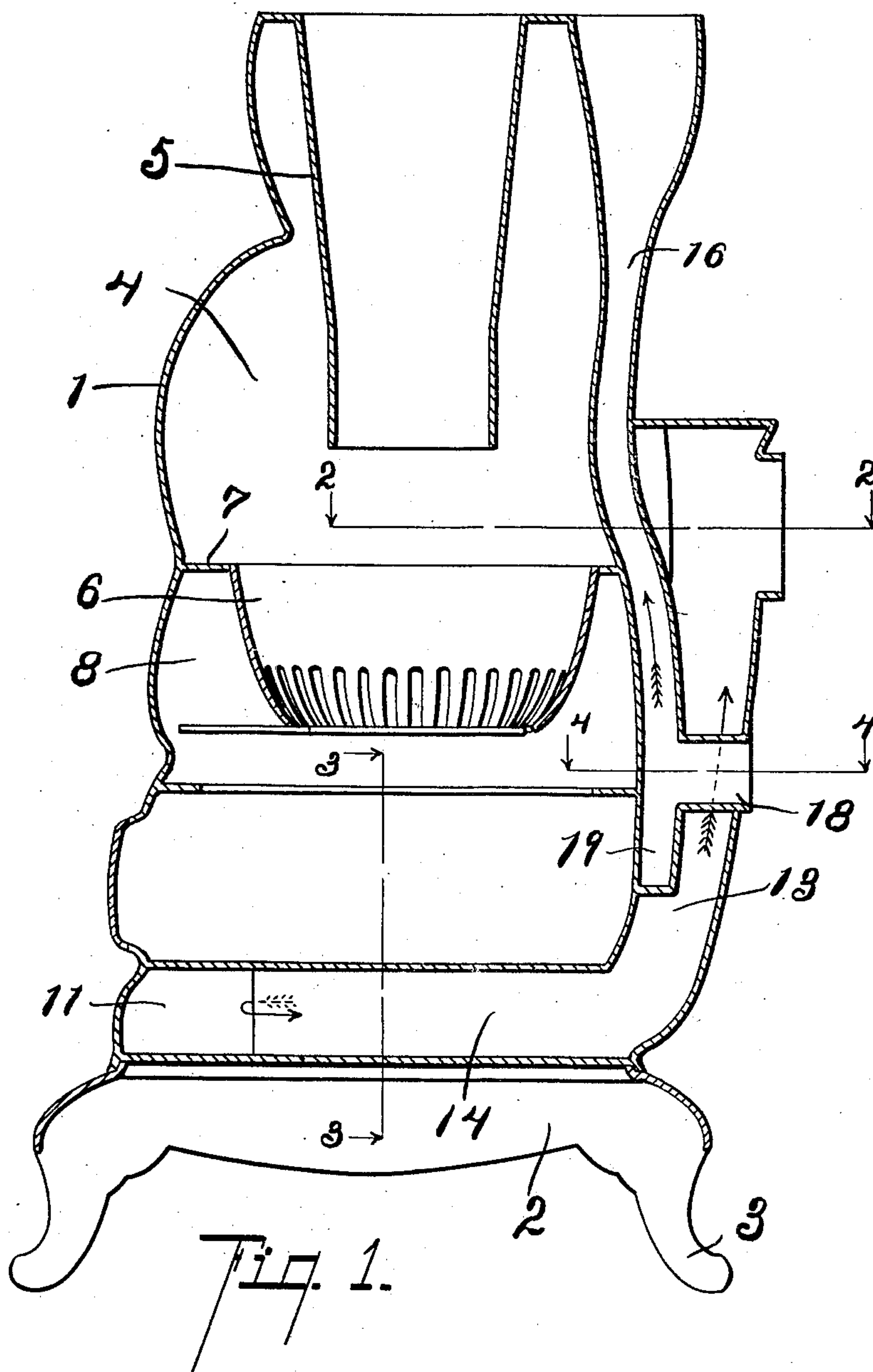


A. K. BECKWITH.
HEATING STOVE.
APPLICATION FILED AUG. 26, 1907.

931,374.

Patented Aug. 17, 1909.
2 SHEETS—SHEET 1.



Witnesses
G. L. E. Braden
F. L. T. T. Tallman.

Inventor
Arthur K. Beckwith
By Chappell & Co.
Attorneys

A. K. BECKWITH.
HEATING STOVE.
APPLICATION FILED AUG. 28, 1907.

931,374.

Patented Aug. 17, 1909.

2 SHEETS—SHEET 2.

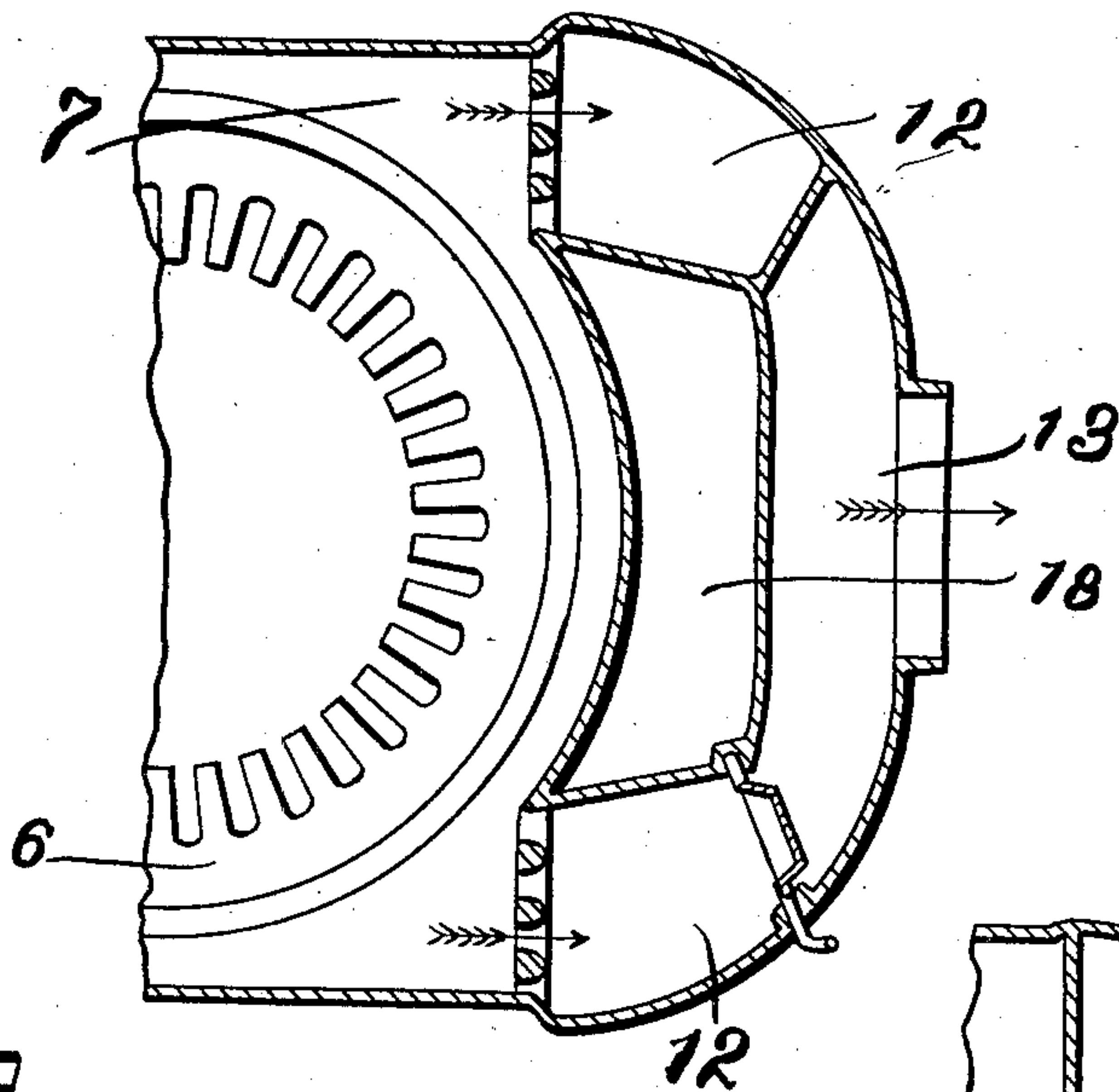


Fig. 2.

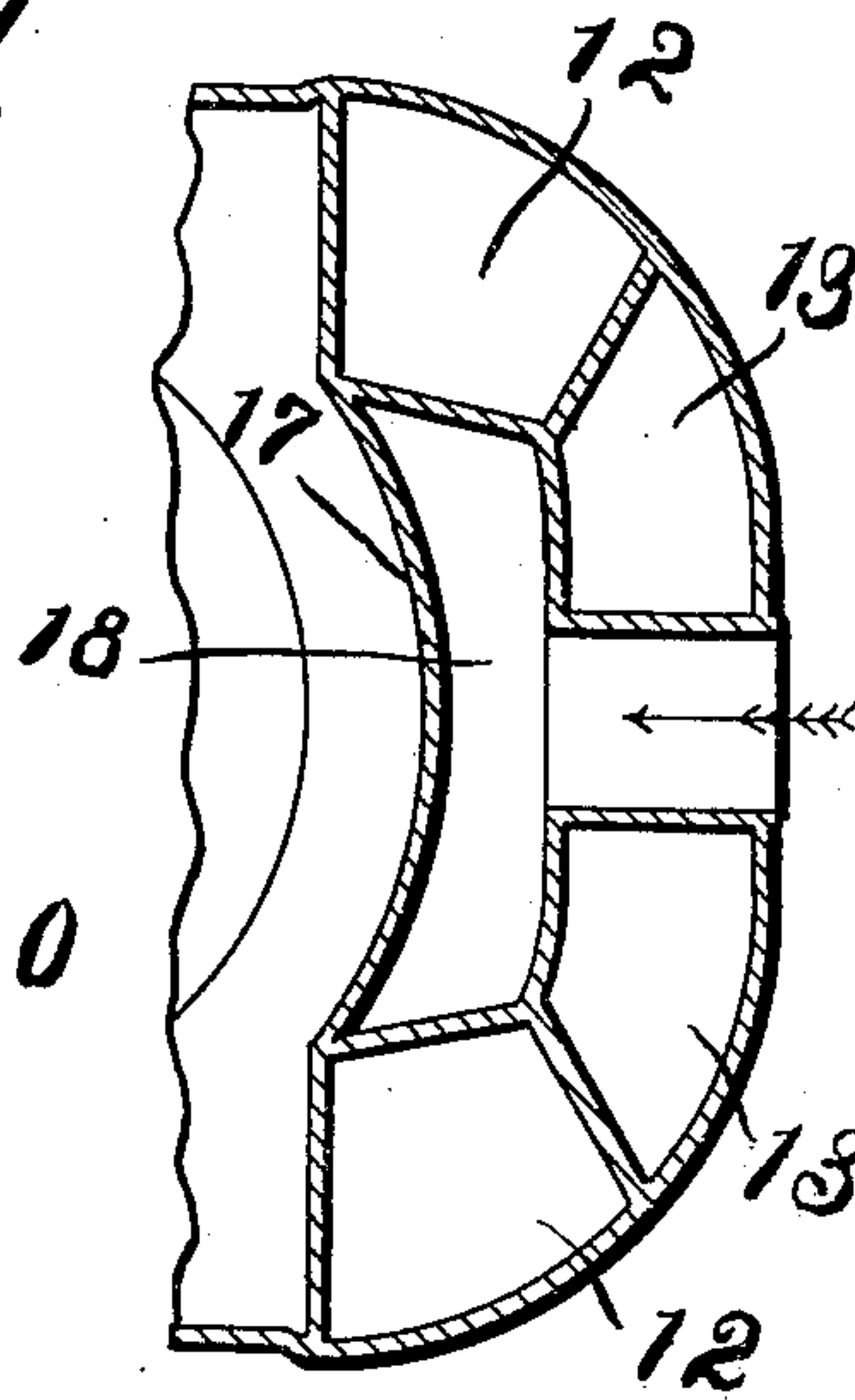


Fig. 4.

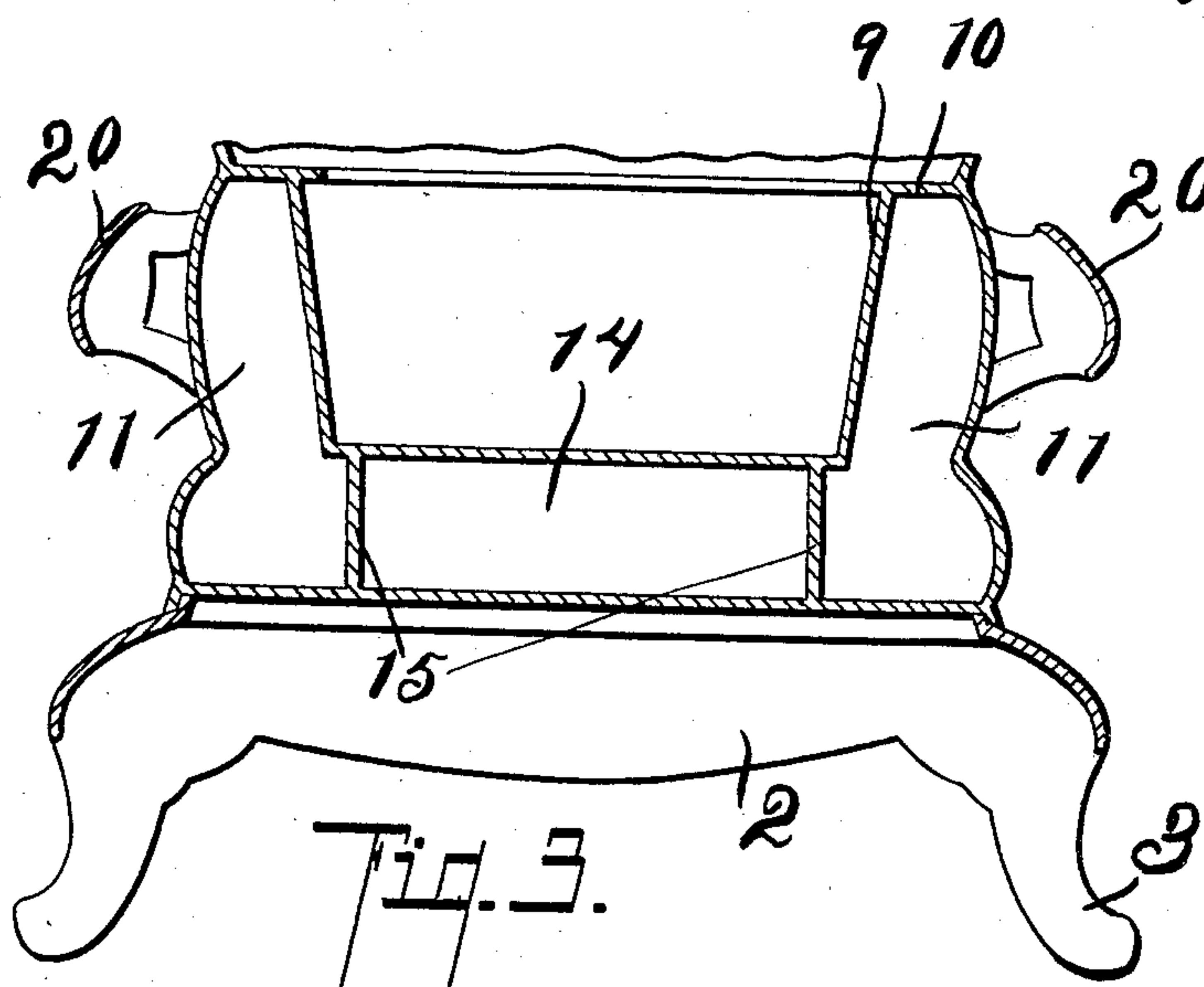


Fig. 3.

Witnesses
Clara E. Braden
F. Gertrude Tallman

Inventor
Arthur K. Beckwith
By Chappell & Earl
Attorneys

UNITED STATES PATENT OFFICE.

ARTHUR K. BECKWITH, OF DOWAGIAC, MICHIGAN.

HEATING-STOVE.

No. 931,374.

Specification of Letters Patent.

Patented Aug. 17, 1909.

Application filed August 26, 1907. Serial No, 390,170.

To all whom it may concern:

Be it known that I, ARTHUR K. BECKWITH, a citizen of the United States, residing at the city of Dowagiac, county of Cass, State of Michigan, have invented certain new and useful Improvements in Heating-Stoves, of which the following is a specification.

This invention relates to improvements in heating stoves.

The main objects of this invention are,—first, to provide an improved heating stove which utilizes or saves a considerable proportion of the heat units, which is in the construction of stoves now in common use carried off by the smoke flue; second, to provide an improved heating stove in which practically all of the metal wall surface of the stove is utilized in the radiation of the heat.

Further objects, and objects relating to details of construction, will definitely appear from the detailed description to follow.

I accomplish the objects of my invention by the devices and means described in the following specification.

The invention is clearly defined and pointed out in the claims.

A structure embodying the features of my invention is clearly illustrated in the accompanying drawing, forming a part of this specification, in which—

Figure 1 is a vertical central section from front to rear through a structure embodying the features of my invention, the parts being shown in conventional form; Fig. 2 is a detail horizontal section taken on a line corresponding to line 2—2 of Fig. 1; Fig. 3 is a detail vertical section taken on a line corresponding to line 3—3 of Fig. 1; and Fig. 4 is a detail horizontal section taken on a line corresponding to line 4—4 of Fig. 1, showing the structural details of the air flue.

In the drawings, the sectional views are taken looking in the direction of the little arrows at the ends of the section lines, and similar reference characters refer to similar parts throughout the several views.

Referring to the drawings, the outer walls or body 1 of the stove may be of any suitable design, provided with doors and suitable open-work, which are not here illustrated. The body of the stove is supported by a suitable base 2 having legs as 3. In the upper part of the combustion chamber 4 is a magazine 5. Below the magazine is the

fire pot 6. At the top of the fire pot is a flange 7 coacting therewith to form a partition across the stove, separating the combustion chamber 4 from the fire pot chamber 8. Below the fire pot is an ash pit at the top of which is a flange 10 coacting with the ash pit to form a partition across the stove. The walls of the ash pit are spaced from the walls of the stove on all sides excepting the front, forming flue chambers 11 on each side of the ash pit. The down-draft flues 12, which are arranged to open into the combustion chamber 4 and adapted to carry away the gases of combustion therefrom, open into these flue chambers 11 at their rear ends.

Extending up at the rear of the ash pit and fire pot chambers is a smoke delivery flue 13. This smoke delivery flue is connected to the flue chambers 11 by means of the flue 14 which is centrally located under the ash pit, it being preferably formed by the vertically-arranged partitions 15 on which the ash pit rests. The flue chambers 11 deliver into the flue 14 at its forward end, the flue being connected to the smoke delivery flue 13 at its rear end, as clearly appears in Fig. 1. By this arrangement, the walls of the stove about the ash pit, which are in the ordinary construction isolated from the products of combustion, being separated from the bottom part of the flue 11 by the ash pit bottom, are heated and serve as effective radiating surfaces.

The flue chambers 11 are of considerable capacity, so that an opportunity is given for the radiation of the heat from the gases of combustion on their passage to the smoke delivery flue.

To add to the heating capacity of the stove I provide an air circulation flue 16. This flue is arranged between the down-draft flues 12 and between the rear fire chamber wall 17, which forms the front or inner wall of the air flue, and the inner wall of the smoke delivery flue, which forms the outer or rear wall of the air flue. The circulation flue 16 is open at its upper end and is provided with an air inlet 18 at its lower end, the air inlet being arranged through the smoke flue somewhat like a thimble. The lower end of the air circulation flue preferably extends down below the air inlet as at 19. By this arrangement, I greatly add to the radiating surface of the stove, the air circulation flue 16 being so arranged as to

assist in carrying off the heat from the smoke delivery flue and to carry off the heat radiated from the rear wall of the fire chamber. As the air flue 16 becomes considerably
5 heated when in use, the circulation there-through is insured and is quite rapid, so that it is very effective for the purpose. The flue chambers at this point being of quite large capacity serve to a considerable extent
10 as drums to radiate the heat at this point. The fenders or foot rests 20 are also located at this point.

I have illustrated in the accompanying drawing my invention in conventional form
15 only, the structural details of the walls, other than as I have mentioned, being well understood and forming no part of this invention.

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

1. In a heating stove, the combination with the outer walls, of a fire pot arranged therein, there being a flange at the top of the said
25 fire pot coacting therewith to form a partition across the stove; an ash pit arranged below the fire pot with all excepting its front wall spaced from the said outer walls, the space between the walls of said body and
30 ash pit being adapted to serve as flue chambers, there being a flange at the top of said ash pit coacting therewith to form a partition across the stove; a smoke delivery flue arranged at the rear of said ash pit; a pair
35 of vertical partition walls arranged below said ash pit forming a flue below said ash pit, opening at its rear end into said smoke delivery flue and at its forward end into said flue chambers; a pair of down-draft flues
40 opening above said fire pot and delivering into the said flue chambers at their rear ends; and an air flue arranged between said

down-draft flues and said smoke delivery flue and the rear fire chamber wall, said air flue being open at its upper end and having
45 an air inlet at its lower end arranged through said smoke delivery flue.

2. In a heating stove, the combination with a fire pot, of an ash pit arranged below the fire pot; a smoke delivery flue arranged
50 at the rear of said ash pit; flue chambers at the sides of said ash pit; a flue below said ash pit, opening at its rear end into said smoke delivery flue and at its forward end into said flue chambers; a pair of down-
55 draft flue opening above said fire pot and delivering into the said flue chambers at their rear ends; and an air flue arranged between said down-draft flues and said smoke delivery flue and the rear fire cham-
60 ber wall, said air flue being open at its upper end and having an air inlet at its lower end arranged through said smoke delivery flue.

3. In a heating stove, the combination
65 with a fire chamber; a pair of down-draft smoke flues therefor; a smoke delivery flue, said flues being arranged at the rear of the stove, and said down-draft flues having delivery connections to said delivery flue; and
70 an air circulating flue arranged between said down-draft flues and said smoke delivery flue and the rear fire chamber wall, said air flue being open at its upper end and having an air inlet at its lower end arranged
75 through said smoke delivery flue.

In witness whereof, I have hereunto set my hand and seal in the presence of two witnesses.

ARTHUR K. BECKWITH. [L. s.]

Witnesses:

J. O. BECRAFT,
FRANK DAWES.