

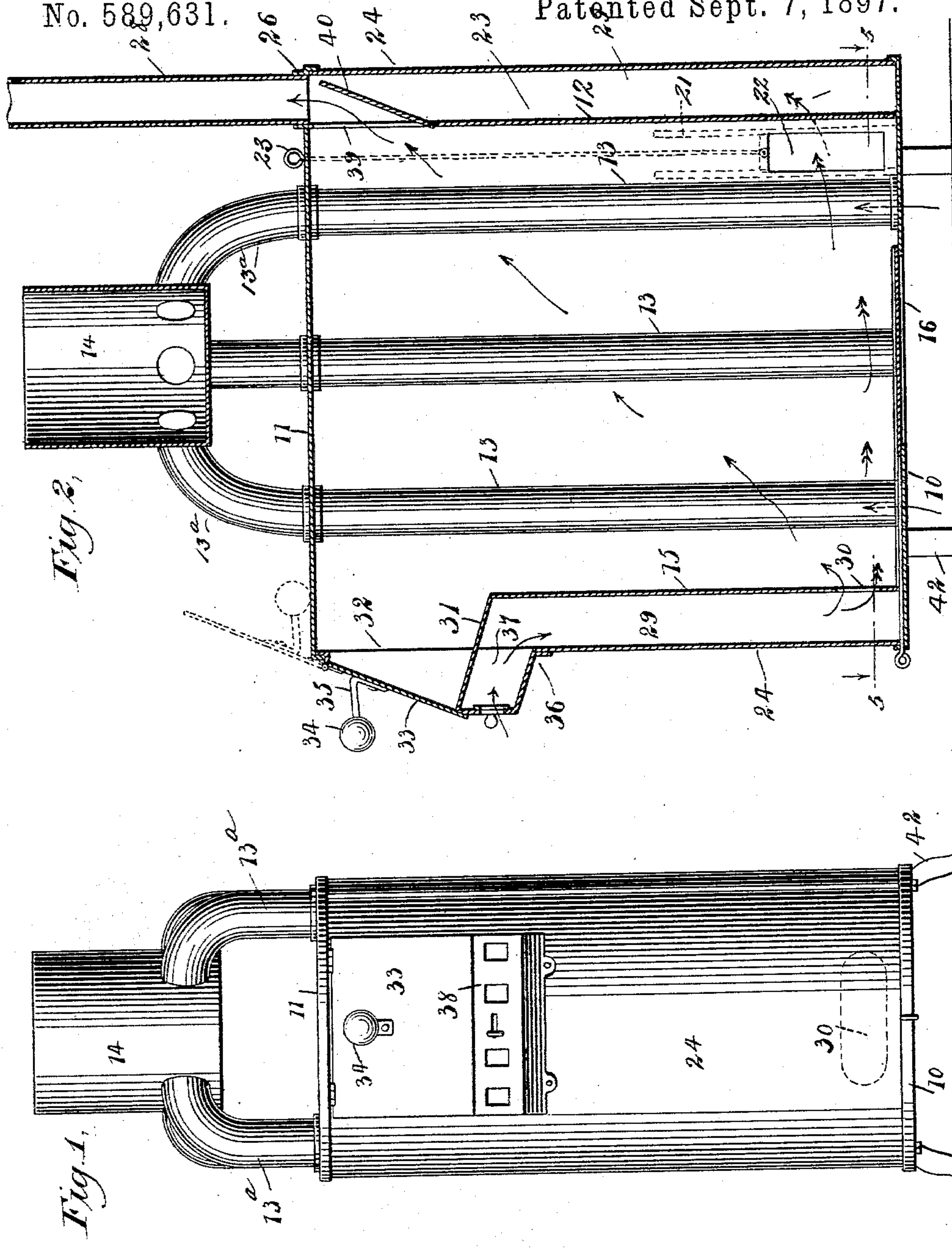
(No Model.)

2 Sheets—Sheet 1.

C. T. ANDREAS.
STOVE.

No. 589,631.

Patented Sept. 7, 1897.



WITNESSES:

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J. M. Stokes

INVENTOR

C. T. Andreas

BY

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(No Model.)

2 Sheets—Sheet 2.

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Fig. 4.

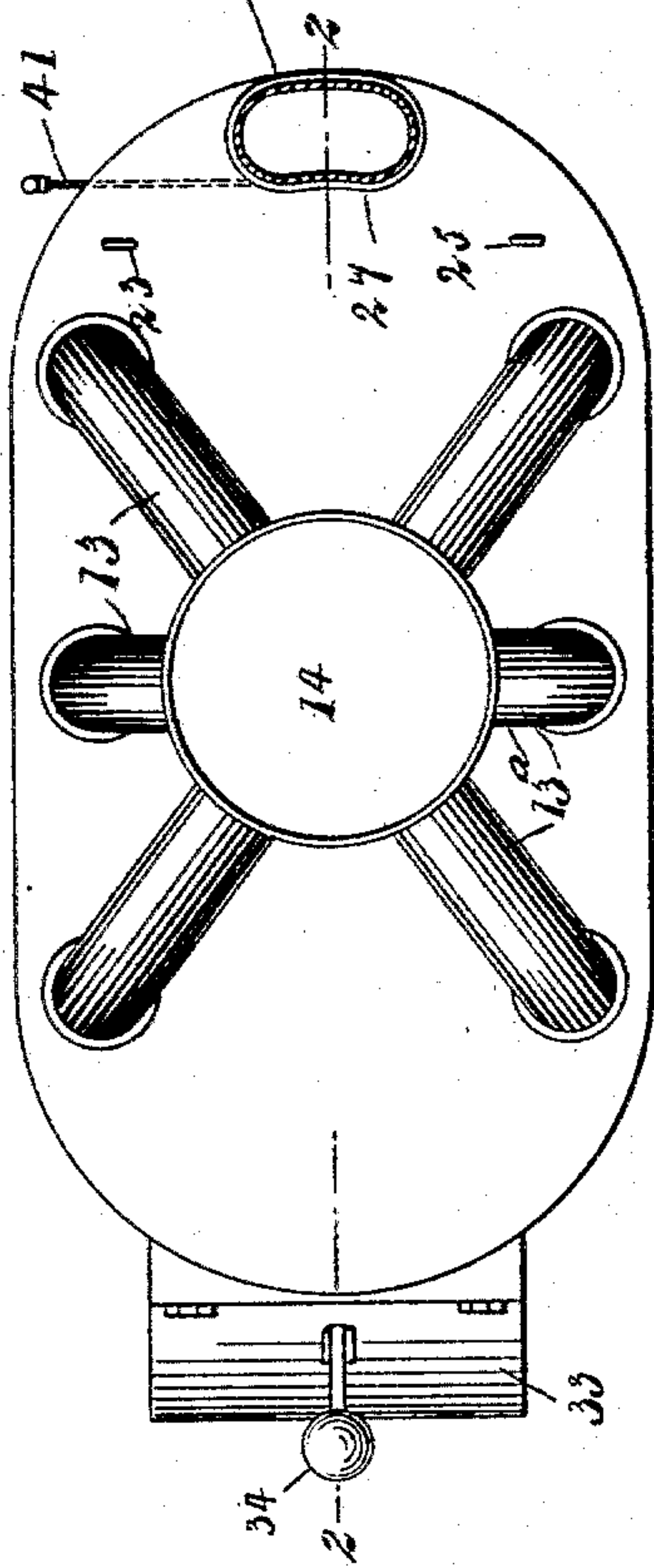
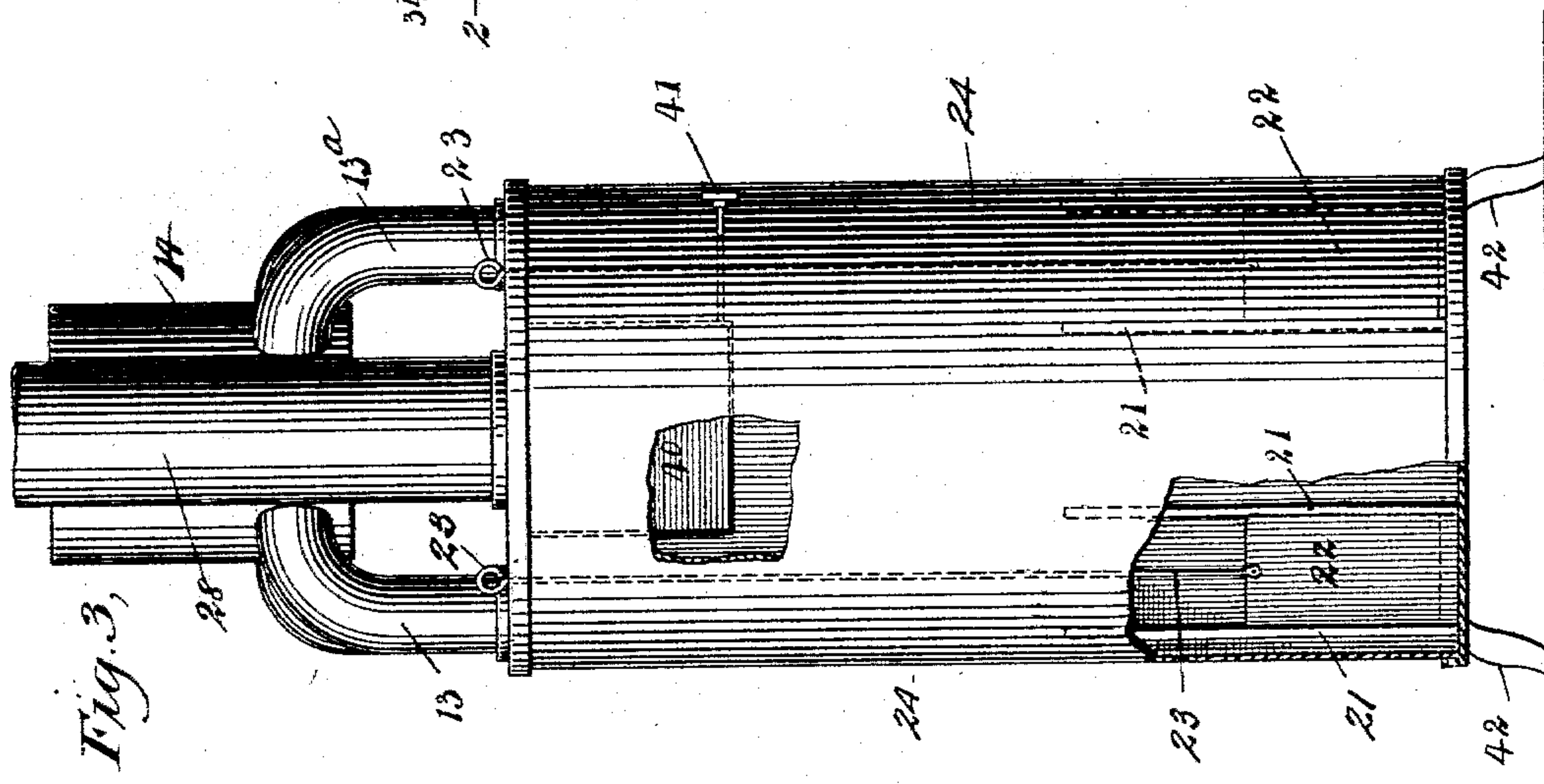
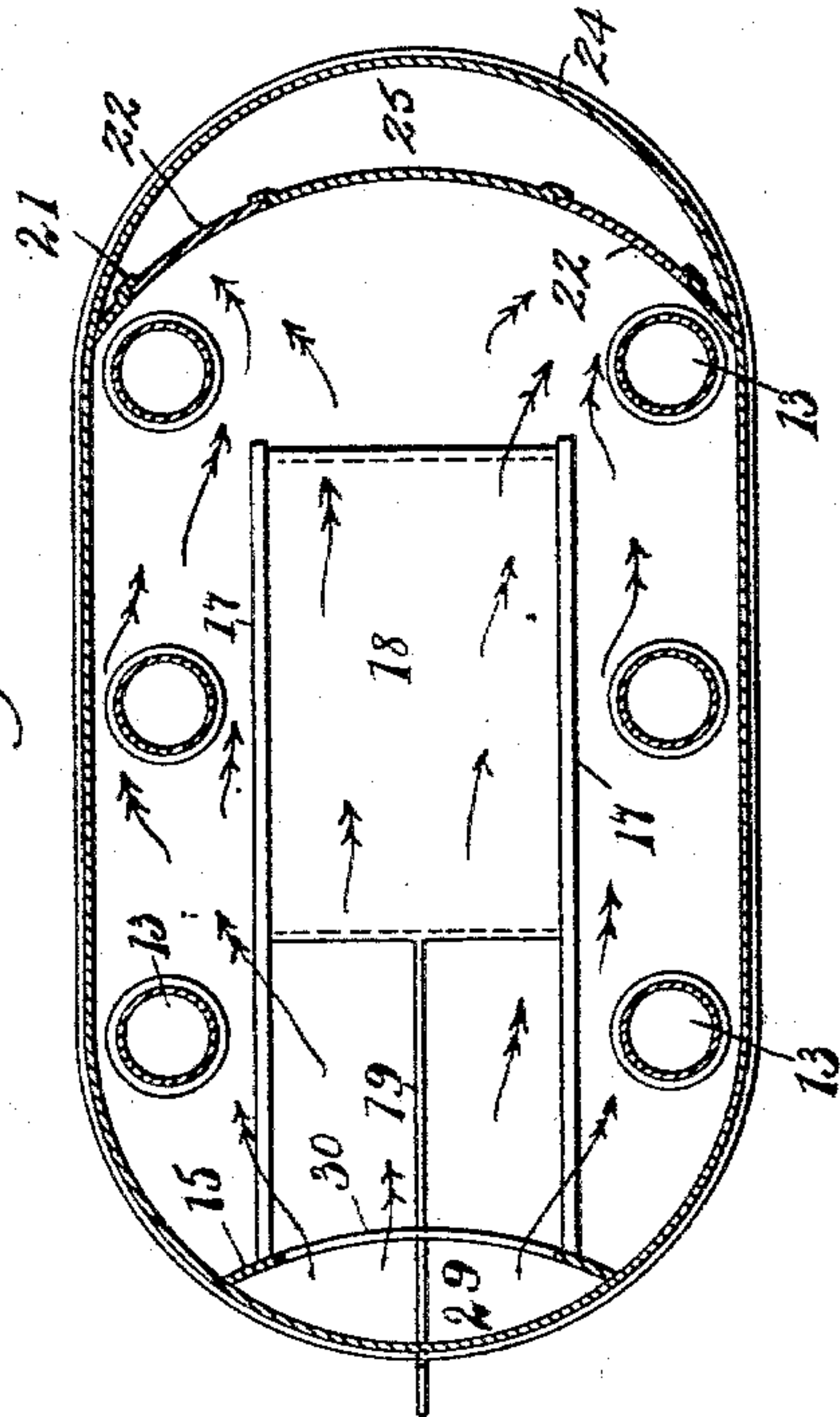


Fig. 5.



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UNITED STATES PATENT OFFICE.

CHAUNCEY T. ANDREAS, OF BAYFIELD, WISCONSIN.

STOVE.

SPECIFICATION forming part of Letters Patent No. 589,631, dated September 7, 1897.

Application filed March 9, 1896. Serial No. 582,349. (No model.)

To all whom it may concern:

Be it known that I, CHAUNCEY T. ANDREAS, of Bayfield, in the county of Bayfield and State of Wisconsin, have invented a new and useful Improvement in Heating-Stoves, of which the following is a full, clear, and exact description.

My invention is an improvement in the class of heating-stoves having air-heating tubes or flues arranged in the combustion-chamber.

The invention consists in the novel construction and combination of certain parts, as will be hereinafter fully set forth, and pointed out in the claim.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a front elevation of the stove, portions being broken out to show interior construction. Fig. 2 is a slightly-irregular vertical longitudinal section taken practically on the line 2 2 of Fig. 4. Fig. 3 is a rear elevation of the stove. Fig. 4 is a plan view of the same; and Fig. 5 is a horizontal section taken near the bottom of the stove, practically on the line 5 5 of Fig. 2.

In carrying out the invention what may be termed the "framework" or "skeleton" of the stove consists of a base 10, a top 11, and a back plate 12, which extends from the top to the bottom, the outer face of the said back plate being preferably convexed, as shown in Fig. 5, and the inner face of the plate being concaved.

The top and the bottom, together with the back plate 12, may be of cast-iron or an equivalent material, and the top and the bottom, in addition to being connected by the back plate 12, are also connected by means of tubes 13, which tubes extend from the bottom to the top.

Any desired number of tubes may be employed at each side of the framework of the stove. Ordinarily, however, three tubes on each side are sufficient, and the said tubes at their upper ends are made to connect with a drum 14 through the medium of elbows 13^a, and the said drum is opened at the top when the heat from the drum is to be delivered into the room where the stove is located; otherwise the top of the drum may be closed, and

a pipe may be connected therewith to lead to an upper story or to an adjoining room.

The stove-tubes 13 are usually made of cast-iron and fit around collars in the stove-bottom and also around collars formed upon the under face of the top of the stove. All the collars surround openings, and the openings in the top are further surrounded by collars upon the upper face of the top plate, adapted to receive the bottom portions of the elbows 13^a, which are made of planished or Russia iron.

At the front of the stove a plate 15 is located, which may be of cast-iron, and the said plate extends from the bottom or base of the stove to a point near the top; and the said front plate, as shown in Fig. 5, is concaved upon its front face, and preferably its rear face is convexed.

In the bottom or base of the stove an opening 16 is made near the center, through which opening the ashes that may be contained within the stove may be withdrawn or may escape. At each side of this opening a slide-way 17 is made, and the opening is normally closed by a sliding cover 18, having movement in the aforesaid ways 17, and the said cover has a handle 19 secured to it, which extends, preferably, outwardly at the front of the stove, as shown in Fig. 2. The back vertical partition or plate 12 is provided at each side of its lower portion with an opening 20, and slideways 21 are produced at each side of each opening to accommodate slides 22, and each slide is provided with a handle 23, which is carried upward and outward through the top of the stove, so that the slides at the back, together with the slide in the bottom of the stove, may be manipulated from the outside.

A jacket or casing 24 is made to surround the frame or skeleton of the stove, being properly secured to the bottom and to the top of the same. This casing or jacket is preferably made of Russia or planished iron and may be and ordinarily is provided with a steel lining. When the casing or jacket is in place, a chamber 25 is formed at the back of the stove between the casing or jacket and the back partition 12, and the said chamber 25 is virtually a flue. At the top of the stove over the said flue 25 an opening 26 is made, surrounded by

a suitable collar 27, as shown in Fig. 4, the said collar being adapted to receive a smoke-pipe 28, which may lead to any offtake-flue or to any point outside of the room. A second
 5 flue 29 is formed at the front of the stove between the jacket or casing and the front partition 15, and at the bottom of the said front partition 15 an opening 30 is made, which communicates directly with the interior of
 10 the stove near the bottom portion of the fire.

A substantially horizontal partition 31 is formed at the upper front portion of the stove, connecting at its inner end with the front partition 15 and constituting a top or cover for
 15 the upper portion of the front flue 29. This upper partition 31 is carried outward through an opening 32, made in the front portion of the stove, and the said opening is normally closed by a door 33, which has a hinged connection
 20 at its upper edge with the top of the stove-casting and has a bearing at its lower edge upon the aforesaid horizontal partition 31, and when this door is open the fuel may be introduced through the opening 32 into the interior of the stove. The door is held closed
 25 through the medium of a weight 34, which is ordinarily attached to the upper portion of the door at its outer face by means of a shank 35, and when the door is opened it may be
 30 carried over upon the top of the stove and the said weight will engage with the top portion of the stove and will hold the door in its normal position.

A throat-plate 36 is secured to the front of
 35 the stove below the outer projecting end of the horizontal partition 31, and an opening 37 is made in the casing or jacket between the throat-plate and the said partition, communicating directly with the front flue 29,
 40 and the space between the said throat-plate and the partition 31 at the front or outer ends of these parts is closed by a draft-slide 38. When the said slide is opened, as shown in
 45 Fig. 2, the air passing through the openings in the slide will enter the front flue 29 and will gain access to the bottom portion of the fire through the lower openings 30 in the inner wall of the said front flue.

The most direct course for escape of the
 50 light products of combustion is through the opening 39, Fig. 2, which is located in the central upper portion of the rear partition 12, and thence the products of combustion pass into the smoke-pipe 28. Said opening 39 is
 55 provided with a hinged valve or damper 40,

operated by a horizontal rod 41, Figs. 3 and 4. It will be seen that the draft may thus be direct through the middle to the central upper opening 39, as shown by single-head arrows. Fig. 2, or it may be less direct, as shown by
 60 double-head arrows, Fig. 5, the products being in such case spread or diverted laterally, so as to come into contact with the opposite series of side flues 13, and hence, the latter being more highly heated, the air entering
 65 them is heated correspondingly before it enters the drum 14. Thus when the fuel is fully ignited a comparatively low fire may be made effective for heating the air passing through the flues 13. When the door 33 is
 70 open, as shown by dotted lines, Fig. 2, air may be allowed to pass direct through the central upper portion of the casing to the rear opening 39.

The cold air from the floor will pass up
 75 through the tubes 13 and in passing through these tubes will become heated, and the air in its heated state will be delivered to the drum 14 and from thence will escape into the room or wherever it is desired to be directed.
 80 The tubes 13 in addition to conducting air to the upper portion of the stove will also serve to prevent the fuel coming in close contact with the sides of the casing or jacket, and thereby prevent the said sides of the jacket
 85 from becoming burned out. When the ashes or the fire is to be dumped, all that is necessary is to draw the slide 18 in a forward direction, uncovering the opening 16 in the bottom of the stove, through which the contents
 90 of the stove will escape. The base of the stove is provided with suitable legs 42.

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

The improved heating-stove, comprising a casing, two series of vertical air-flues arranged opposite each other within said casing, the rear vertical outlet-flue 25, having the two lateral openings 22, at the bottom, and the
 100 central opening 26, at the top, the central air-inlet, or flue, 29, arranged at the front, within the casing, and extending down to the bottom of the combustion-chamber, as shown and described, to operate as specified.

CHAUNCEY T. ANDREAS.

Witnesses:

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 WILLIAM F. SARGENT.