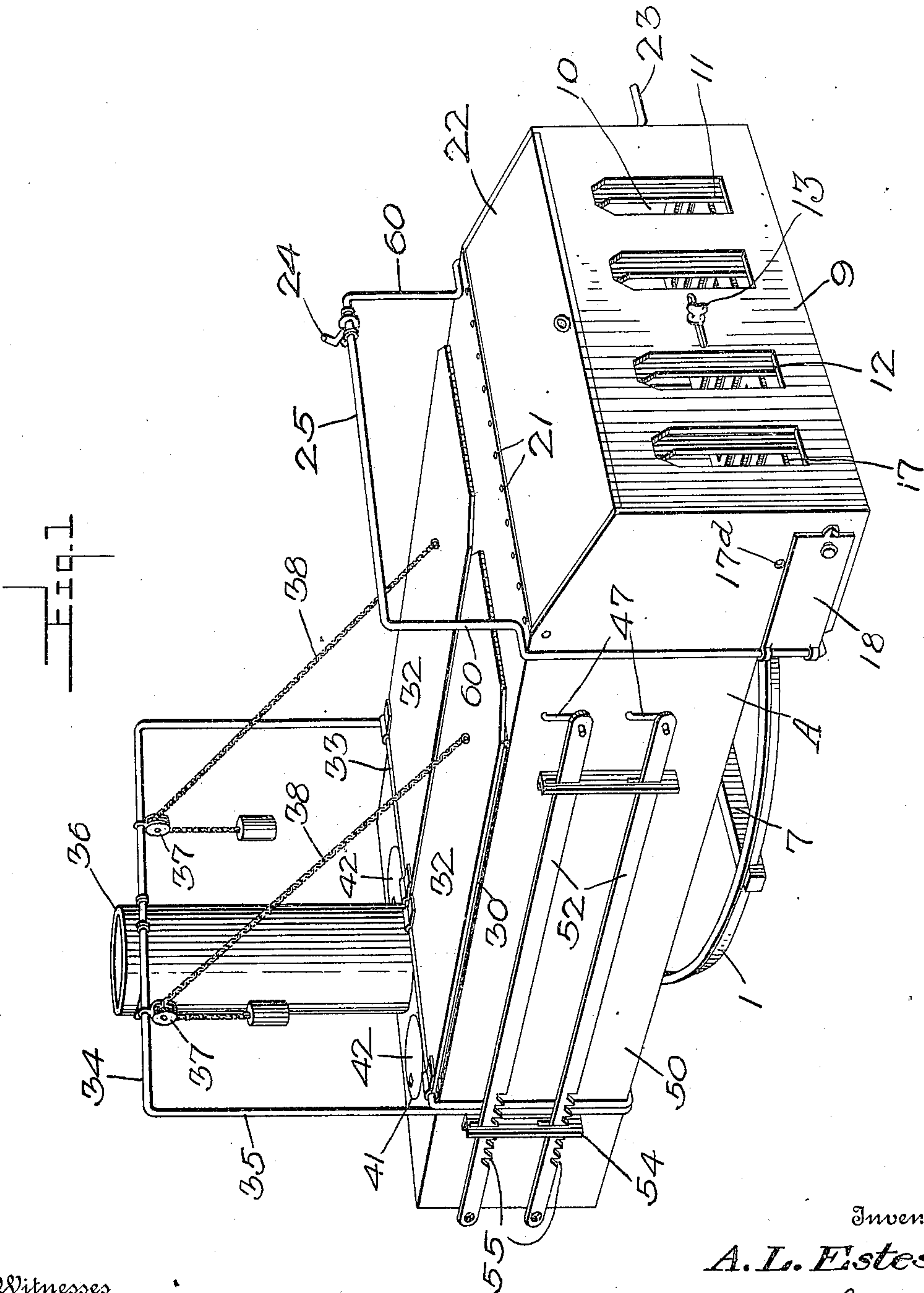


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 REVOLVING WATER HEATER AND CLOTHES BOILER.
 APPLICATION FILED AUG. 21, 1909.

953,324.

Patented Mar. 29, 1910.

4 SHEETS—SHEET 1.



Witnesses
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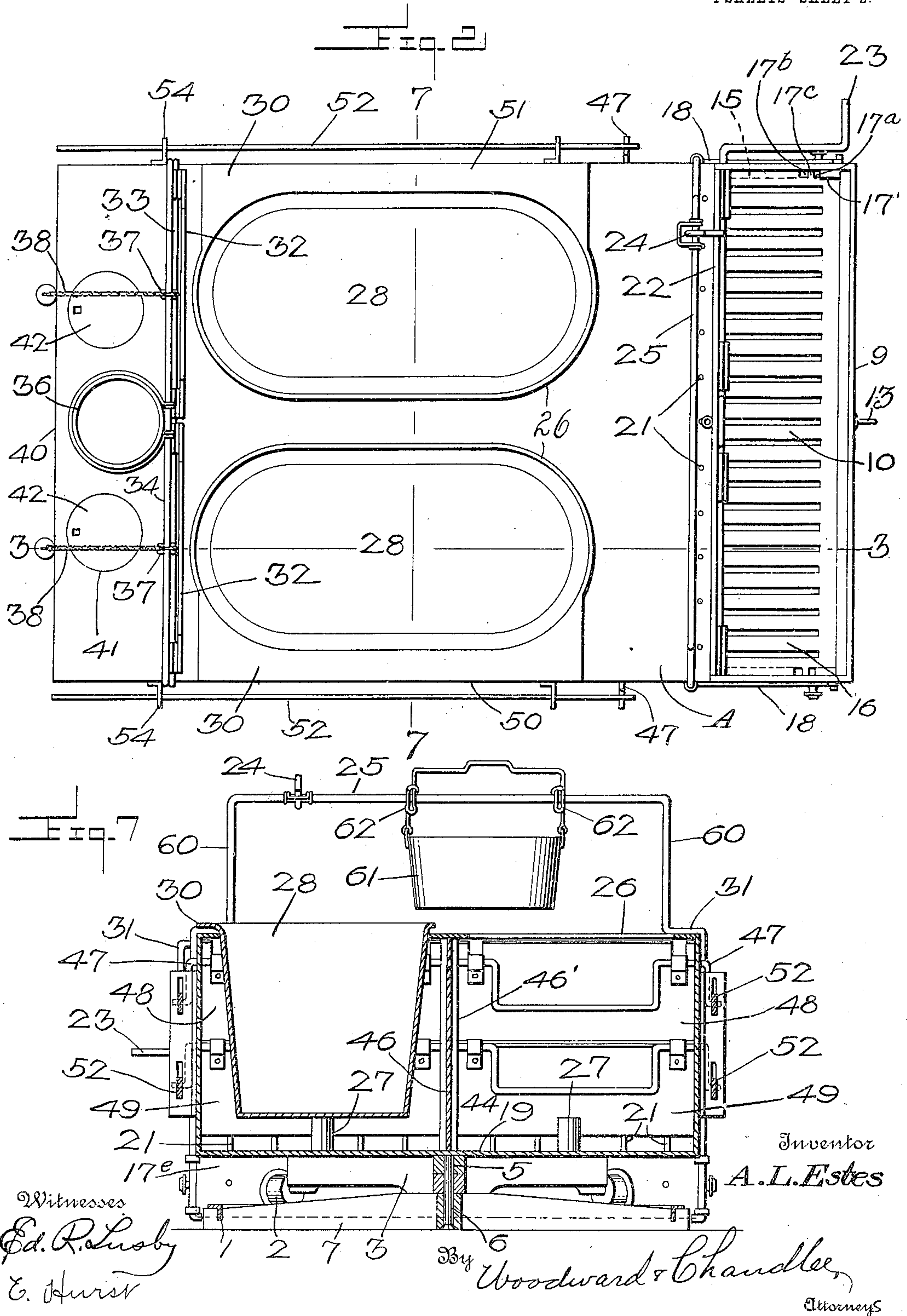
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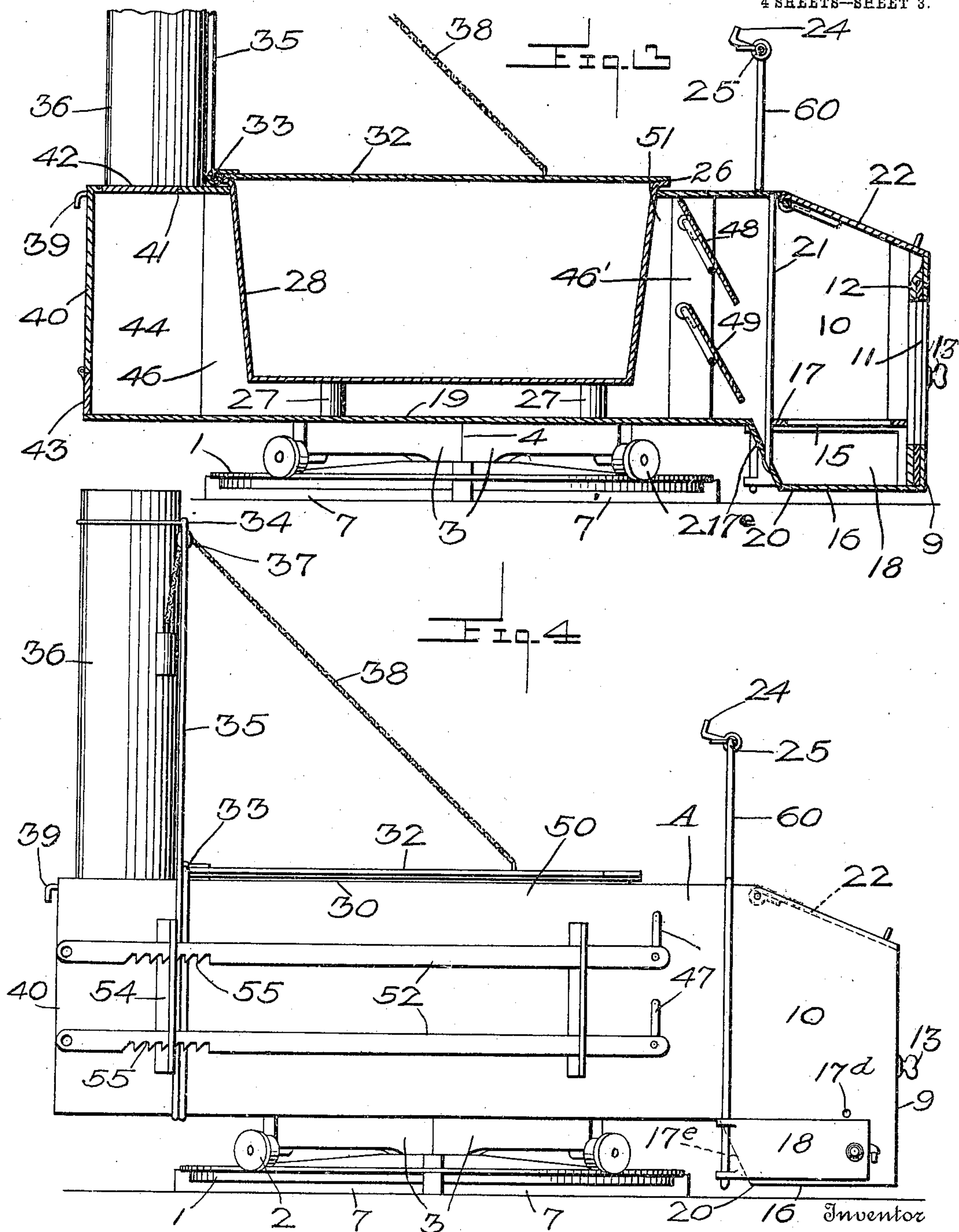
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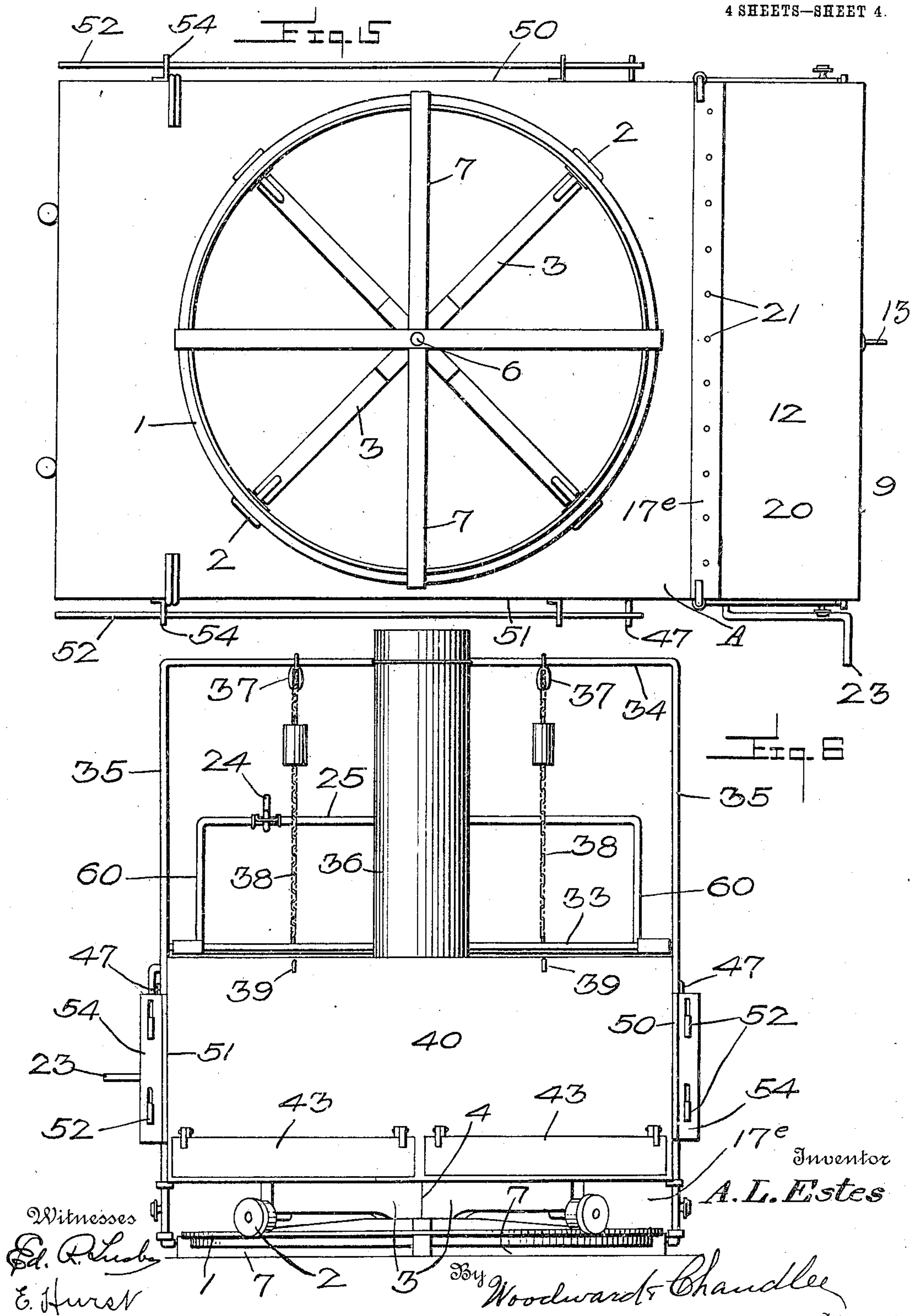
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UNITED STATES PATENT OFFICE.

ALLEN L. ESTES, OF HARRIS, TEXAS, ASSIGNOR OF ONE-FOURTH TO CHARLES N. HUTTO, OF TAHOKA, TEXAS.

REVOLVING WATER-HEATER AND CLOTHES-BOILER.

953,324.

Specification of Letters Patent.

Patented Mar. 29, 1910.

Application filed August 21, 1909. Serial No. 513,996.

To all whom it may concern:

Be it known that I, ALLEN L. ESTES, a citizen of the United States, residing at Harris, in the county of Terry and State of Texas, have invented certain new and useful Improvements in Revolving Water-Heaters and Clothes-Boilers, of which the following is a specification.

My invention relates to hot water heaters and clothes boilers, and more particularly to the class of these boilers which are adapted for use in the open.

It is not my intention to limit my construction to hot water heaters and clothes boilers, but to provide a furnace that may be used for washing, lard rendering, refining of sugar and syrups and in fact all industries in which an exterior furnace and boiler are required.

The objects of this invention are to provide an open-air furnace, the fire box of which may be conveniently turned toward the wind, thus obtaining a strong draft, without any trouble or danger of being burned during the operation thereof, and which may have a series of compartments any one of which may be used without interfering with the operation of the other should it be necessary for them to be idle.

Other objects and advantages will be apparent from the following description, and it will be understood that changes in the specific structure shown and described may be made within the scope of the claims without departing from the spirit of the invention.

In the drawings forming a portion of this specification, and in which like characters of reference indicate similar parts in the several views, Figure 1 is a perspective view of my invention showing the fire-box, the drafts in front of the same, and the heat regulators on the sides thereof, Fig. 2 is a top plan view of my invention, showing the lids off of the vats and fire box, Fig. 3 is a longitudinal section taken along the line 3—3 of Fig. 2, Fig. 4 is a side elevation of the device, Fig. 5 is a bottom plan view of the same, Fig. 6 is a rear elevation of my device, Fig. 7 is a cross section taken on the line 7—7 of Fig. 2.

Referring more particularly to the drawings, A indicates a furnace of the type referred to, supported revolvably on the circular track 1, by means of the rollers 2 on

trunnions at the ends of the cross braces 3 on the bottom of the furnace, said braces having the junction 4 at which is located the vertical passage 5 adapted to receive the pin 6 situated at the junction of like braces 7 strengthening the track. This construction makes it possible to turn the furnace in any direction and in this way have the front end 9 facing the wind.

At the front end of the furnace is the fire box 10, formed practically like that of any other furnace. The front 9 of this box is provided with draft openings 11, the size of which can be regulated by the draft gate 12 operated by the handle 13. Resting on the ledges 15 projecting from the sides of the box in order to form the ash pit 16 therebelow, is the grate 17 and said ash pit is provided with a rear inclined portion or wall 17^e. It will be noted that the corners of the grate are cut away as at 17' whereby shoulders 17^a are formed immediately of the width of the grate. Inwardly of the shoulders a notch 17^b is formed leaving a square stub shaft 17^c adapted to be engaged by a suitable socketed crank presented through either of the openings 17^d formed in the ends of the fire-box over the doors 18. The grate may thus be readily tilted to clear it completely. At each end of the ash pit is a door 18 placed so as to facilitate the removal of ashes and the complete cleaning of the fire-box without disturbing the fire. The grate 17 is on the level of the main floor of the furnace 19, thus giving free access of the heat to the heating compartments and likewise placing the floor of the ash-pit some distance below the same. Forming a back to the fire-box, are the spaced bars 21, so placed that the heat may freely pass through the same and the fire still remain in its proper position in the box. The ash-pit is provided with a sloping wall 17^e centrally of which the bars 21 are suitably secured. The wall 17^e thus extends inwardly of the grate and bars so that cinders falling through the bars will not pass into the heating compartment but will roll into the pit. This fire-box is provided with the hinged lid or covering 22, sloping forwardly at an angle to the top of the furnace and the front of the fire-box and is provided with the crank arm 23 adapted to raise and lower the same. The lid may be fastened by the hook 24 attached to the cross beam

25, in a raised position, thus permitting the putting of the necessary fuel into the fire-box.

Resting in the orifices 26, in the top of the furnace and on the studs 27 on the bottom thereof, are the vats or boilers 28. These have their sides inclined outwardly so that they may be readily presented in the openings being narrower at the bottom than at the top. They thus fit very firmly in the openings 26 and allow no shifting of position. The studs 27 support the vats above the bottom of the furnace allowing thorough circulation of heated gases therearound and taking all the weight of the vats from the top of the furnace obviating the liability to sag. The upper edge portions at one side of the vats are turned outwardly to form the lips 30, extending over the space 31 of the top of the furnace between the orifices 26 and the sides, thus preventing water or like substances from being spilled upon this surface during removal from or disposed in the vats. Lids or covers 32, preferably of oblong shape, are pivotally secured to a transversely disposed bar 33 at the rear end of the furnace and are adapted to be moved pivotally upon said bar. When the lids are swung to a horizontal position they rest upon the top of the furnace directly over the orifices 26, and as they are considerably larger than the orifices, they serve either to cover the vats or to close the openings 26.

Directly above the bar 33 is a similar bar 34 held in position by the standards 35. This bar 34 is attached to, and acts as a brace for the smoke-stack 36 situated at the center of the rear end of the furnace. In order to raise and lower the lids 32 there is furnished on this bar at each side of the stack 36, a pulley 37 over which passes the weighted chain 38, which when the lids are at the required height can be fastened to the hook 39 on the rear face 40 of the furnace. There is also at each side of this stack and located in the top of the furnace an opening 41 provided with the lids 42, thus facilitating the cooking of meals without interfering with any process that may be going on in the main body of the furnace. Directly under the stack and at the base of the rear face 40 are two doors 43 extending entirely across said face. These doors make it possible to clean the entire bottom of the heating chambers 44 of ashes, soot and other refuse that may collect therein.

The lower portions of the vats 28 rest in the heat chambers 44 separated from one another by the partition 46. These heat chambers are each separated from the fire by two superposed draft plates or doors 48 and 49. These doors are supported on shafts extending revolvably through either side of the furnace, their inner ends being supported by a standard 46' at the forward end of the

partition. Cranks 47 are formed at their outer ends, and for the purpose of raising and lowering said draft plates the furnace carries on its sides 50 and 51 the levers or slides 52, attached to the operating cranks 47 carried by the plates. The slides extend rearwardly to the hasps 54 in which they are slidable, being retained adjustably against yielding to the weight of the plates when in open position, by the teeth 55 formed in the lower edges thereof.

From the foregoing it can be seen that should heat not be desired in one chamber as would be the case when removing the contents of the respective vat, the draft plates on that side are closed thus preventing any admission of heat to the same. The degree of heat entering the chambers may be also regulated by means of the slides 52.

It will be noted that the partition 46 stops short of the rear end of the furnace, so that the full draft of the stack will be allowed to pass through either of the chambers, when the passage of heat therethrough through one of them is interrupted. The cross piece 25 comprises a single bar of metal having the vertical standard portion 60 extending downwardly below the level of the floor of the furnace and having the doors to the ash-pit pivoted thereon. The standard is bent inwardly against the top of the stove, and then continued upwardly and across the stove a spaced distance thereabove. Suspended upon the cross portion is the pin basket 61, the handle of which is formed of wire, as shown and is provided with integral hook portions 62 at opposite sides arranged to engage the cross bar. By this means the basket may be carried in the hand as an ordinary receptacle having a bail, or may be suspended upon the cross bar by means of the hooks mentioned.

It will be noted that the supporting studs for the vat are disposed respectively directly over the supporting beam for the stove, so that the weight of the vats will not be sustained by the bottom of the furnace itself.

By the construction presented, the stove may be readily built of sheet material, with the use of a minimum amount of material and labor.

The device as here presented is designed for use as a wood furnace, though it will be understood that suitable changes may be made to adapt it for use with coal.

What is claimed is:

1. A device of the class described comprising a rotatably held furnace having a longitudinal centrally divided heating chamber, a fire-box at one end of the said heating chamber, and a draft exit at the opposite end of the said chamber, said furnace having a top adapted to support articles to receive heat separately from either

side of the heating chamber, and means for shutting off heat from either or both sides of the chamber.

2. A device of the class described comprising a rotatably held furnace having a longitudinal chamber the full width and height thereof, a longitudinal dividing partition within the said chamber, said partition extending rearwardly to within a spaced distance of the rear wall of the said chamber, a draft and smoke exit in the top of the furnace centrally above the undivided rear portion, a transversely positioned fire-box at the front end of the furnace forming a continuation of the heating chamber, an inclined floor portion between the chamber and fire box, a grate in the fire-box having an inner vertical portion intermediately over the inclined floor, means for regulating the entrance of draft into the said fire-box, a cover for said fire-box, and means for regulating the amount of heated gases entering each side of the heating chamber, independently.

3. A furnace of the class described comprising a bottom, sides and top portion, a fire-box extending transversely thereof at one end, the bottom being inclined downwardly adjacent the inner edge of the fire-box to form an ash pit therebeneath, a grate disposed within the fire-box and having a vertical portion located intermediately of the breadth of the inclined portion and thereabove to allow passage of heated gases directly through the furnace, said inclined portion being adapted to engage particles of fuel falling from the grate to prevent passage thereof into the furnace.

4. In a furnace, the combination with a divided heating chamber, and a fire-box extending across one end thereof, and adapted to communicate heat to each section of the chamber, transversely disposed horizontally pivoted damper plates interposed between the fire box and the heating chamber, and means for holding the damper plates adjustably in various positions to govern the passage of heat into respective sections of the heating chamber independently.

5. In a furnace, the combination with a

divided heating chamber, and a fire-box extending across one end thereof, and adapted to communicate heat to each section of the chamber, transversely disposed horizontally pivoted damper plates interposed between the fire box and the heating chamber, crank members carried by the damper members and disposed outwardly of the furnace, slidable rods connected to the cranks, guide members carried upon the side of the furnace and receiving the rods slidably there-through, said rods having serrated under edges adapted to engage the guide portions to hold the rods adjustably at various points in their movement, and a draft flue member opening from the furnace.

6. A furnace comprising a bottom, sides and top portions, a fire-box extending transversely of the furnace at one end, the bottom being inclined downwardly at the inner edge of the fire-box to form an ash pit therebeneath, a grate disposed within the fire-box and stopping intermediately of the breadth of the inclined portion, a partition disposed longitudinally between the top and bottom at right angles to the fire-box, said partition stopping a spaced distance from the fire-box and the rear end of the furnace, transversely disposed horizontally pivoted superposed damper plates extending transversely of the furnace between the fire-box and the heating chambers, crank members carried by the damper members and disposed outwardly of the furnace, slidable rods connected to the cranks, guide members carried upon the side of the furnace and receiving the rods slidably therethrough, said rods having serrated under edges adapted to engage the guide portions to hold the rods adjustably at various points in their movement, and a draft flue member opening centrally from the furnace adjacent the rear end of the partition.

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

ALLEN L. ESTES.

Witnesses:

J. C. WHISMANT,
W. W. PRICE.