

No. 651,886.

Patented June 19, 1900.

J. E. REBSTOCK.
BAKING OR COOKING OVEN.

(Application filed May 24, 1899.)

(No Model.)

2 Sheets—Sheet 1.

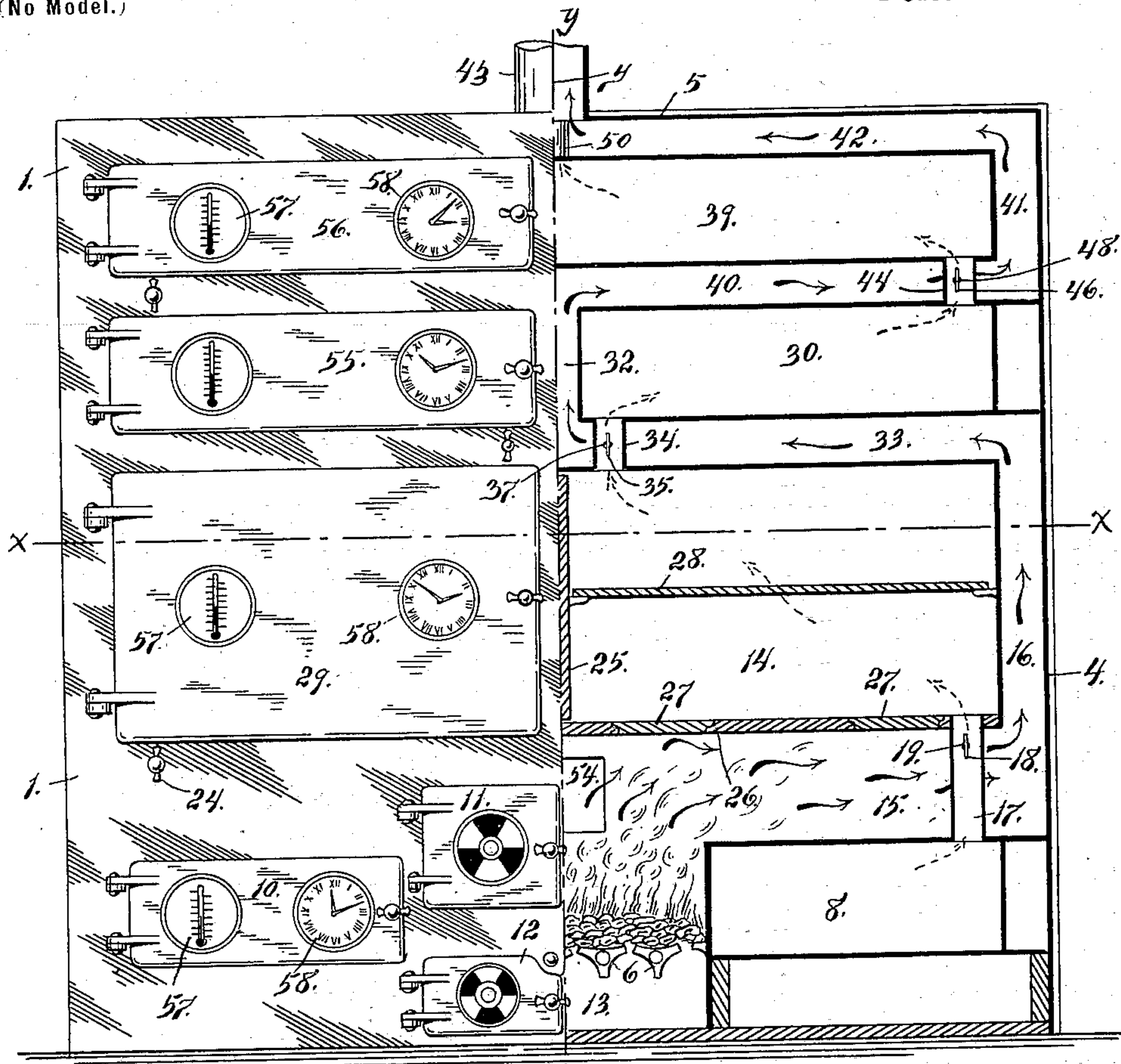


Fig. 1.

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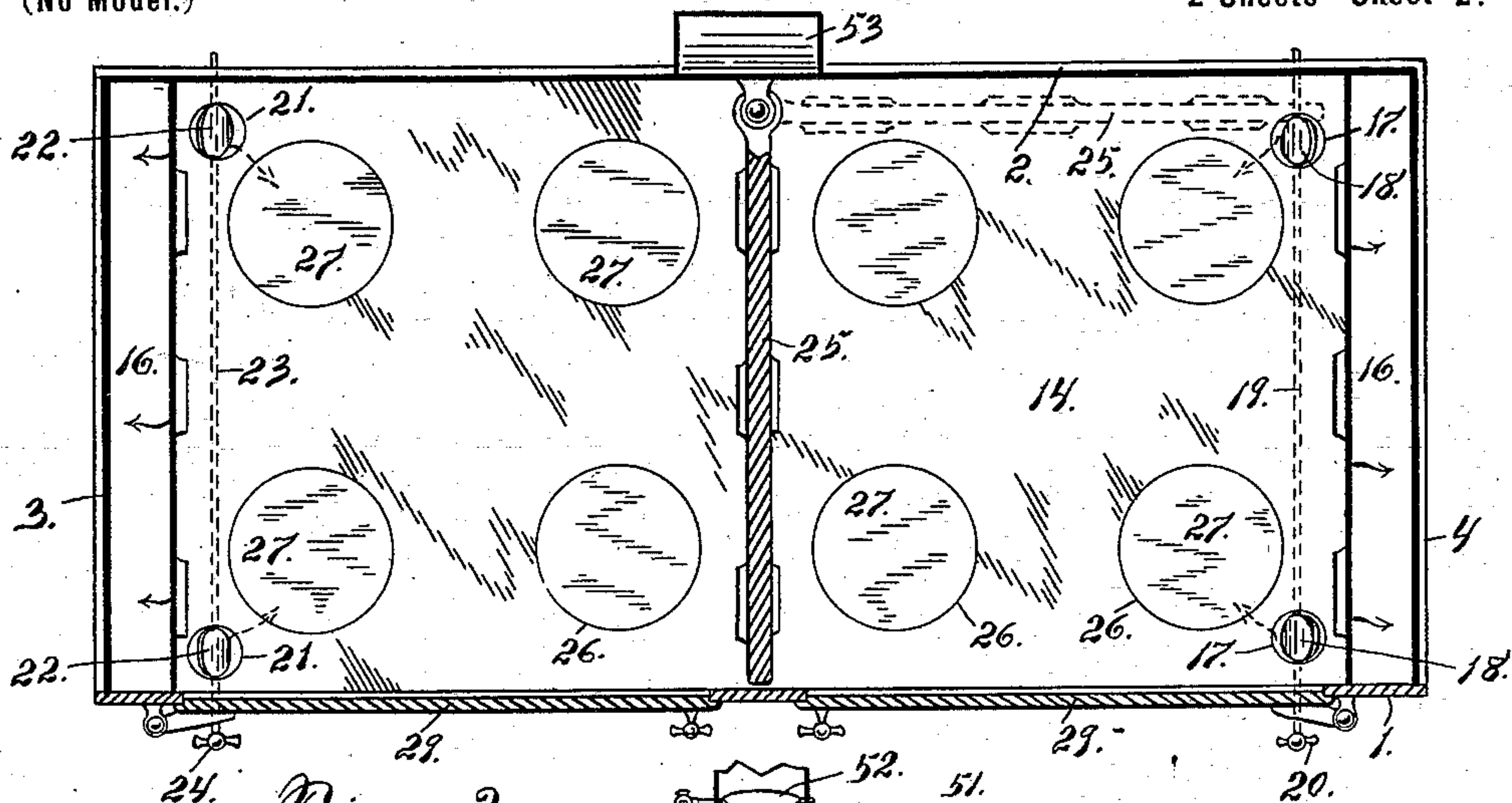


Fig. 2.

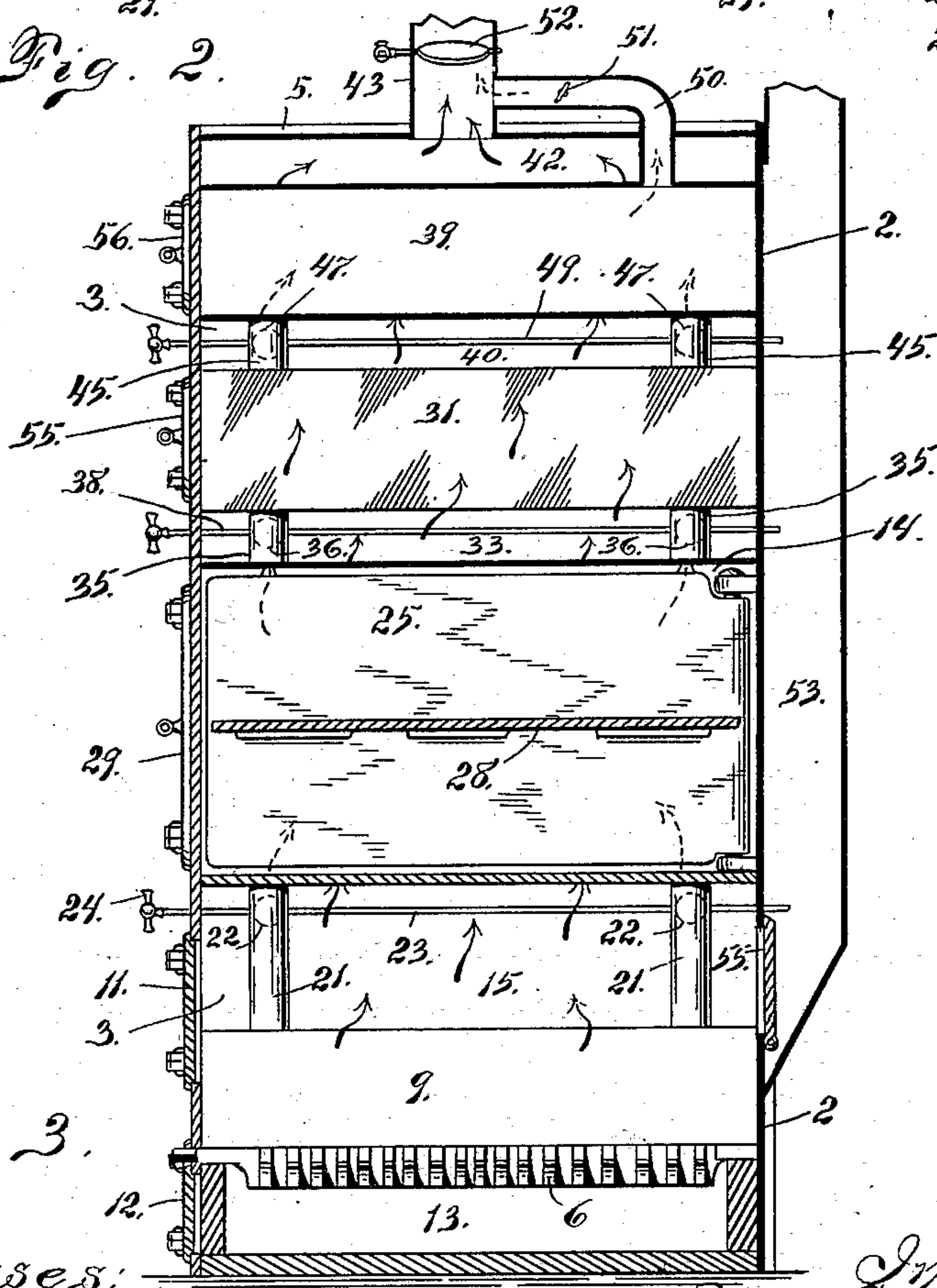


Fig. 3.

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UNITED STATES PATENT OFFICE.

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BAKING OR COOKING OVEN.

SPECIFICATION forming part of Letters Patent No. 651,886, dated June 19, 1900.

Application filed May 24, 1899. Serial No. 718,005. (No model.)

To all whom it may concern:

Be it known that I, JOHN E. REBSTOCK, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements in Baking or Cooking Ovens; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in ovens for baking or cooking or for baking and cooking combined; and it has for its object the complete utilization of the heat generated in the furnace and the thorough and effective circulation of the radiated heat in the several compartments of which my improved oven is formed.

To that end my invention consists of a novel arrangement and combination of parts, which will be fully hereinafter described and claimed.

In the drawings, Figure 1 is a front elevation of my improved oven with one side shown in vertical section. Fig. 2 is a horizontal section taken in the line *xx* of Fig. 1, and Fig. 3 is a central vertical section taken in the line *yy* of Fig. 1.

Referring to the drawings, 1 is the front wall, 2 the rear wall, 3 and 4 the side walls, and 5 the cover, of the outer casing, within which are arranged the operative parts of my improved oven. These walls, with the exception of the front wall, which is of cast metal, are preferably formed of sheet-steel and may be lined with asbestos or other packing which will serve to prevent undue radiation and consequent loss of heat.

Centrally arranged within the casing and in its lower portion are the grate-bars 6 of the furnace 7. On each side of the furnace and raised above the floor to the level of the grate-bars are the rectangular compartments 8 and 9, (see Figs. 1 and 3,) which extend from front to rear of the casing. Access to these compartments is had through doors 10 in the front wall 1 of the casing.

11 is one of the furnace-doors, and 12 is one of the doors to the ash-pit 13. 14 is the main compartment of the oven, of about twice the depth of the compartments 8 and 9, and is raised above such compartments to form the horizontal draft-passages 15. This compartment 14 occupies nearly the entire width of the casing, spaces being left at the sides to form the vertical draft-passages 16, communicating with the horizontal draft-passages 15. The outer end of compartment 8 communicates with the outer end of compartment 14 through the two tubular passages 17, (see Fig. 2,) which are opened or closed, as desired, by the dampers 18, mounted on the common rod 19, provided with the outside handle 20 for manipulating the dampers. In like manner the outer end of compartment 9 communicates with compartment 14 at its opposite outer end through the tubular passages 21, in which are arranged the dampers 22, mounted on the common rod 23, with outside handle 24. The compartment 14 is provided with the central hinged partition 25 for dividing the compartment into two equal sections, as shown in Fig. 2. When desired, this partition 25 may be swung back, as shown in dotted lines in Fig. 2. To specially adapt the compartment 14 for cooking purposes, I have provided its floor with openings 26 and removable lids 27. I have also provided the removable shelves 28 in this compartment 14 to increase its capacity, if desired. 29 29 are the doors of compartment 14. Slightly raised above the compartment 14 are the two separate compartments 30 and 31, which extend from the side walls 3 and 4 of the casing to a central point near each other, leaving between them the vertical draft-passage 32, which communicates with the horizontal draft-passages 33 between compartment 14 and the separate compartments 30 and 31, and these horizontal draft-passages 33 in turn communicate with the side vertical draft-passages 16. The inner ends of the separate compartments 30 and 31 communicate with the compartment 14 through the tubular passages 34 34 and 35 35, provided with the dampers 36 and 36 on the common rods 37 and 38.

Raised above the compartments 30 and 31

is the compartment 39, similar in arrangement to the compartment 14, in order to provide the horizontal draft-passages 40, communicating with the central vertical draft-passage 32 and the side vertical draft-passage 41, communicating with the horizontal draft-passages 40. There is a space left between the compartment 39 and the cover 5 of the casing, which provides the horizontal draft-passages 42, communicating with the side vertical draft-passages 41. The smoke-pipe 43 communicates with the upper horizontal draft-passages 42 and carries off the products of combustion which pass up through the connecting series of horizontal and vertical draft-passages hereinbefore described. The outer ends of the compartments 30 and 31 communicate with the outer ends of the upper compartment 39 through the passages 44 and 45, provided, like other similar passages, with the dampers 46 and 47, mounted on the common rods 48 and 49. A passage 50, centrally arranged in the rear portion of compartment 39 and extending into the smoke-pipe 43, effects a communication of compartment 39 with the smoke-pipe, and 51 is a damper in such passage. The smoke-pipe 43 is also provided with damper 52, with which to regulate the draft from the furnace.

The direct draft for use in starting the fire is provided for by means of the flue 53, which communicates with the fire-box through opening 54. The upper end of the direct flue 53 is connected with the smoke-pipe 43 in the usual manner. (Not shown in the drawings.)

The compartments 30 and 31 and the compartment 39 are provided with doors 55 and 56, and each of the several doors have secured to their outer faces thermometers 57 and clocks 58 to indicate the temperature of the several compartments and to regulate the time required to bake or cook the contents of the oven.

My improved oven just described operates substantially as follows: The direct draft being closed, the generated heat passes under, alongside of, and over each of the several compartments in its alternately horizontal and vertical path to the smoke-pipe. In this manner each compartment receives a maximum degree of the heat in its passage from the furnace to the smoke-pipe, the degree of temperature being properly regulated with the assistance of the attached thermometers. The heat radiated through the walls of the compartments from the draft-passages is caused to circulate in a constant upward direction from one compartment to the next higher by means of the connecting-passages, and their location at opposite ends of the compartment causes the heat to take a diagonal upward direction, as indicated by the dotted arrows, across such compartment, thereby greatly increasing its baking or cooking efficiency. This circulation can be accurately

regulated by a proper manipulation of the dampers in the passages, and the upward circulation of heat can be shut off from any one or all of the compartments, as occasion demands. As already explained, my improved oven can be used for cooking alone, as in compartment 14, or the entire oven can be used for baking alone, and with my improved and novel arrangement of connecting-passages and their dampers compartment 14 can be employed for cooking dishes of all descriptions, and at the same time any or all of the other compartments may be utilized for baking purposes.

I claim—

1. A baking and cooking oven consisting essentially of an outer casing a furnace within the lower portion of the casing, a series of compartments within the casing consisting of two separate compartments arranged on opposite sides of the casing in the same horizontal plane, a single compartment arranged over the two separate compartments, another set of separate compartments arranged over the single compartment, the separate and single compartments alternating as shown, horizontal draft-passages between the separate and single compartments inner central vertical draft-passages between the separate compartments and outer vertical draft-passages between the single compartments and the side walls of the casing, the horizontal and vertical draft-passages communicating to form continuous passages between and around the bottoms, tops and sides of the compartments substantially as for the purpose stated.

2. A baking and cooking oven consisting essentially of an outer casing, a furnace within the lower portion of the casing, a series of compartments within the casing consisting of two separate compartments arranged on opposite sides of the casing in the same horizontal plane, a single compartment arranged over the two separate compartments, another set of separate compartments arranged over the single compartment, the separate and single compartments alternating as shown, passages connecting the adjacent compartments for providing an upward circulation of the radiated heat in the several compartments, dampers in the connecting-passages for the purpose stated and connecting horizontal and outer and inner vertical draft-passages between and around the bottoms, tops and sides of the compartments substantially as and for the purpose stated.

3. A baking and cooking oven consisting essentially of an outer casing, a furnace within the lower portion of the casing, a series of compartments within the casing consisting of two separate compartments arranged on opposite sides of the casing in the same horizontal plane, a single compartment arranged over the two separate compartments, another set of separate compartments arranged over

the single compartment, the separate and single compartments alternating as shown, passages connecting the opposite ends of each compartment with the adjacent compartments for providing an upward diagonal circulation across each compartment, of the radiated heat, dampers in the connecting-passages for the purpose stated and connecting horizontal and outer and inner vertical draft-passages between and around the bottoms,

tops and sides of the compartments substantially as and for the purpose stated.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOHN E. REBSTOCK.

Witnesses:

DAYTON A. MINARD,
W. L. HILL.