L. R. HOLLOWAY.

STOVE AND RANGE.

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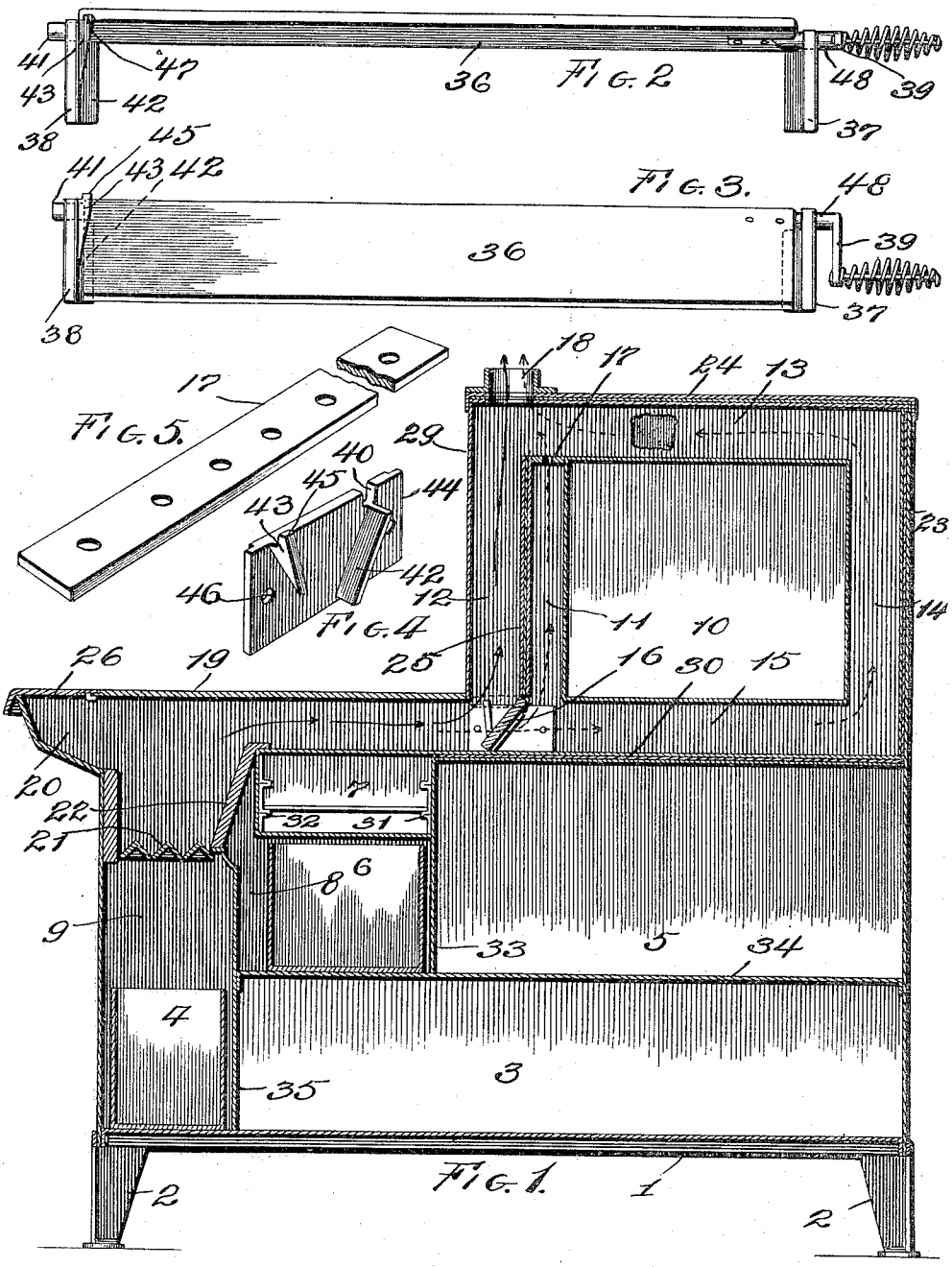


FIG. 2

FIG. 3.

FIG. 5.

FIG. 4

FIG. 1.

ATTEST:

Mildred Stocker

R. B. Owing

INVENTOR

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UNITED STATES PATENT OFFICE.

LOUIS RICHARD HOLLOWAY, OF VICTORIA, TEXAS, ASSIGNOR TO CABIRANGE MANUFACTURING COMPANY, OF BELLEVILLE, ILLINOIS, A CORPORATION OF ILLINOIS.

STOVE AND RANGE.

1,189,818. Specification of Letters Patent. Patented July 4, 1916.

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To all whom it may concern:

Be it known that I, LOUIS RICHARD HOLLOWAY, a citizen of the United States, and resident of Victoria, Texas, have invented certain new and useful Improvements in Stoves and Ranges, of which the following is a specification containing a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

The objects of my invention are, 1, to combine a range or stove of efficient design with a cabinet for culinary utensils in a compact and inexpensive manner, 2, to design a range and cabinet, in which the compartments are thoroughly and evenly heated and in which the compartments are substantially thermally independent of each other, the uniformity in temperature being obtained by a particular flue arrangement and a reticulated baffle plate, the thermal independence being produced by the presence of a two-way damper properly positioned, 3, to design a self locking damper for directing the passage of heated air through a multiplicity of flues.

With the above and other objects in view, my invention has relation to certain novel features of construction and operation, examples of which are described in the following specification and illustrated in the accompanying drawings in which;

Figure 1 is a longitudinal cross-section through the center of the range and, Fig. 2 is a front elevation of my locking damper in an open position and, Fig. 3 is a front elevation of my locking damper in a closed position and, Fig. 4 is a perspective view of the locking plate used in connection with my locking damper and, Fig. 5 is a perspective view of my reticulated baffle plate.

In the drawings numeral 1 designates a horizontal base frame, supported at its corners by the legs 2.

3— designates a rectangular compartment; at its left is the ash pit 4 and immediately above the compartment 3 are the compartments 5, 6, and 7. Immediately at their left the compartments 8 and 9 are situated. Above compartment 5 is compartment 10 which is surrounded by the flues 11, 13, 14 and 15. To the left of flue 11 is located flue 12.

16 designates a two-way stove damper, 17 a reticulated baffle plate and 18 the exhaust flue leading to a conventional smoke flue.

19 designates the stove plates and 20 the coal pouch.

21 designates a conventional shaker grate and 22 a fire back.

The shape and positioning of the compartments as well as the walls and joint structures for the walls are of the accepted type and design. Walls are made of a particular composition of iron and where insulated are made of alternate sheets of asbestos and iron. The walls 23, 24, 25 and 30 and the backs of compartments 6, 7, and 10 are insulated.

Coal is placed in the pouch 20 through the door 26 from which it feeds to the combustion chamber 9 resting on the rocker grate 21. The ashes are precipitated into the ash-pit 4. The products of combustion arise from the combustion chamber 9, and following the arrows along the flue 15 arrive in the vicinity of the damper 16. From this point, by placing the damper 16 in a horizontal position so as to obstruct the passage into flue 12, the gases are compelled to take the circuitous path indicated by arrows through flues 15, 14, and 13 respectively, and thence out the stack 18, or the more direct path through flue 11, through the reticulated baffle plate 17 into the flue 13 and thence into the stack 18. The reticulated baffle plate 17 consists of a rectangular sheet of metal with perforations or reticulations. The positioning of this baffle in the path of the gases coming through flue 11 makes possible the uniformity in temperature in compartment 10 styled the bake oven. The success of a bake oven depends on its uniformity or evenness of temperature. This is brought about by the entire envelopment of the oven by gases at substantially like temperatures. In the absence of the baffle, the products of combustion, taking the line of least resistance, and owing to their lowest specific gravity would all practically rise through the flue 11 and pass out stack 18 via flue 13. This would heat wall 28, and by conduction the air in the left side of the oven 10, thereby producing a condition only too prevalent in the present type of range.

By the proper proportioning of the sizes and distances between the openings in the baffle plate 17, a sufficient resistance can be introduced into the path of circulation

through the flue 11 to cause the required amount of heated gas to take the circuitous path 15, 14, and 13 around the bake oven 10. By an empirical investigation, the design of this baffle can be made to produce an even balance in the amount of gas that travels through flue 11, and through flues 15, 14, and 13.

When it is not desired to heat the oven 10, the damper is brought to a diagonal position and the gases pass directly from flue 15 through 12 and out of the stack 18. Wall 25 is insulated to prevent heating oven 10 by conduction through wall 25 and convection through the air in flue 11. Wall 29 is not insulated, so as to dissipate the heat as rapidly as possible when not to be used. Compartments 6 and 7 are in reality drawers or pans that are slidably secured in the space shown as that occupied by compartments 6 and 7.

6 is a conventional water reservoir with a faucet in its front face.

7 shows a pan in position as held by the two ledges 31 and 32. The space occupied by 6 and 7 is heated by conduction through the metal of the fire back 22 and through the lower surface of the flue 15 and thence by convection through air currents in the compartment 8. Warming closet 5 receives its heat from the walls 30 and 33. Compartment 3 receives its heat through the walls 34 and 35.

Although the construction shown in flue 11 with the reticulated baffle plate 17 is my preferred form, I do not wish to be limited to it.

My locking damper consists of a rectangular plate 36, two end plates 37 and 38 and a conventional handle. Plate 38 has a notched bearing 40 on which the shaft 41 is permitted to rotate, when the damper is in position.

42 is a rectangular projection made integral with plate 38 and at a definite angle with the side 44 of the plate 38; the upper face of projection 42 being horizontal when in position, and flush with the lower edge of the bearing 40.

43 is a substantially triangular projection at a definite angle with projection 42 and also made integral with plate 38.

45 designates a nose extending slightly above the upper face of the plate 38.

46 represent holes by which the plate is fastened securely to a particular stove element.

At one extremity of plate 36 is formed the groove or dish 47 parallel to the edge of the plate 36. Plate 37 is rectangular in shape, has no projections, and a notched bearing 48. The distance between the right edge of plate 38 and plate 37 is sufficient to permit of a lateral motion equal in length to the width of projection 42.

The operation of my damper is as follows: Consider the damper in the position shown in Fig. 3, with the left edge of plate 36 resting on the upper surface of projection 42 and the left end of plate 36 immediately adjacent, the inner surface of plate 38. Upon rotating the damper in its journals 41 and 48, toward the position shown in Fig. 2, the left edge of plate 38 meets the feather edge of projection 43, and then moves up the edge of said projection 43, thereby moving the entire damper laterally to the right. When the edge of plate 36 reaches the nose 45 of projection 43, a slight lateral movement of the damper to the left causes the notch 47 to engage the nose 45, thereby locking the damper in this condition, as shown in Fig. 2. A slight movement upward and thence to the right will disengage the damper and permit of rotation to its normal position shown in Fig. 3. By this means, the damper is locked in one position by the nose and notch engagements, and in the other, shown in Fig. 2, by lying flatly on the projection 42. The weight of the damper produces this effect.

What I claim is:

In a range of the character described, an oven whose walls are spaced from the walls of the range to form thereabout heat ducts, the first of which forms a direct passageway from the source of heat to the heat outlet the second of which envelops said oven, and the third of which is shunted across the second, a damper so positioned at the juncture of the three ducts, as to permit selectively the passage of the heat medium through either duct, a reticulated baffle plate positioned in the second or shunted duct, so as to produce thermal equilibrium in the ducts enveloping said oven.

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

LOUIS RICHARD HOLLOWAY.

Witnesses:
H. R. AMELING,
MILDRED STOCKER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."