Jan. 9, 1945. H. E. COSSIN 2,367,007

RANGE APPARATUS

Filed Aug. 10, 1942 2 Sheets-Sheet 1

Fig. 1.

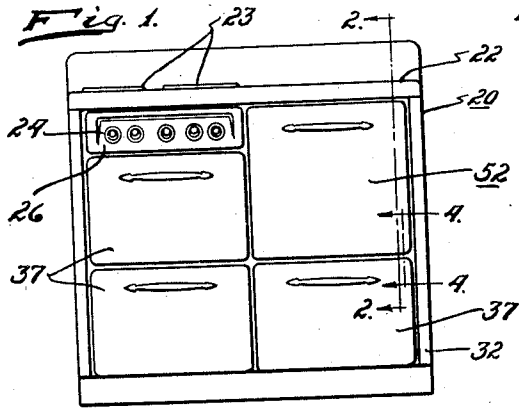


Fig. 6.

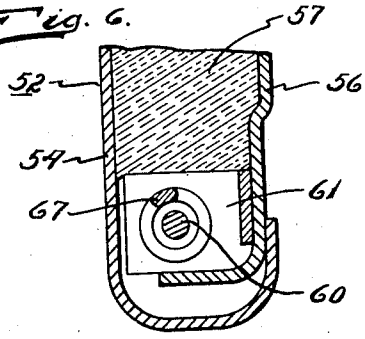
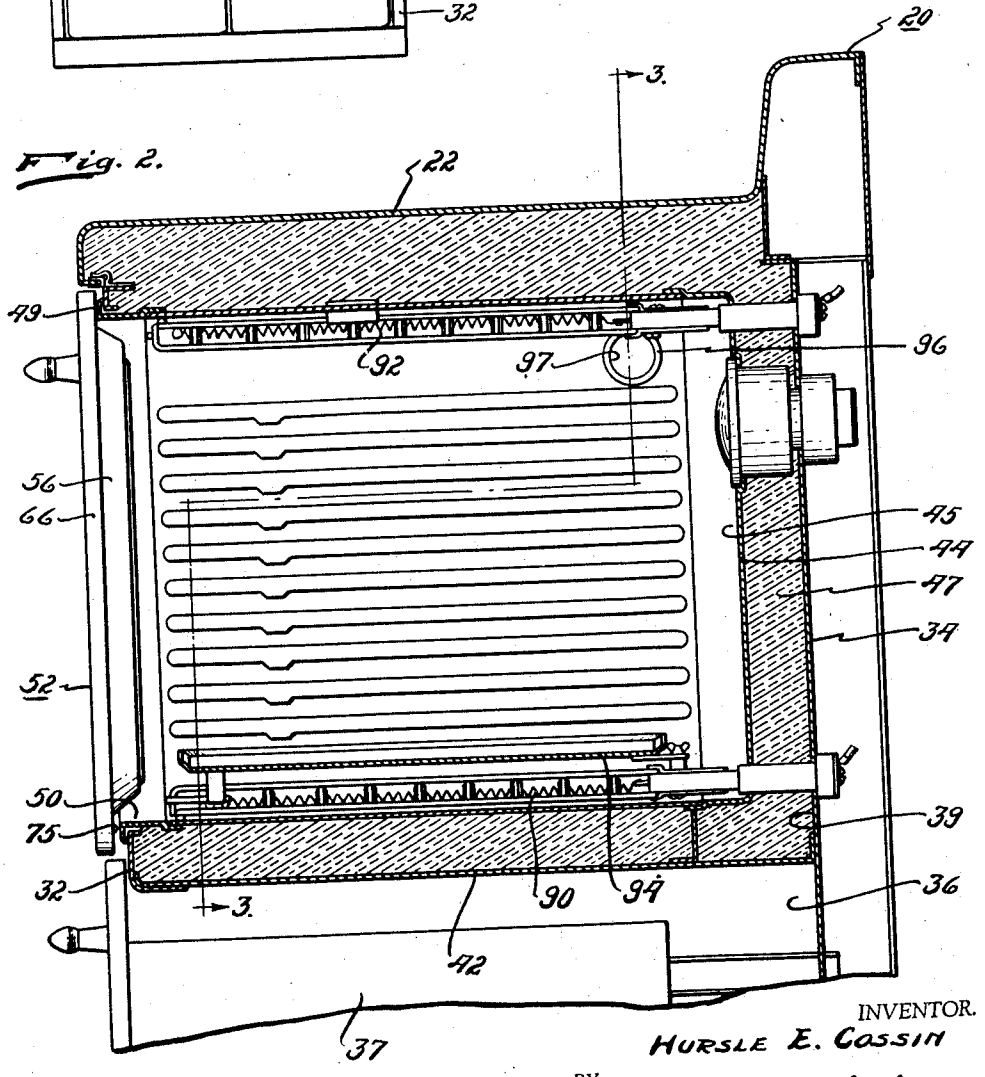


Fig. 2.



INVENTOR.
HURSLE E. COSSIN

BY Ralph E. Baker
ATTORNEY

Jan. 9, 1945. H. E. COSSIN 2,367,007

RANGE APPARATUS

Filed Aug. 10, 1942 2 Sheets-Sheet 2

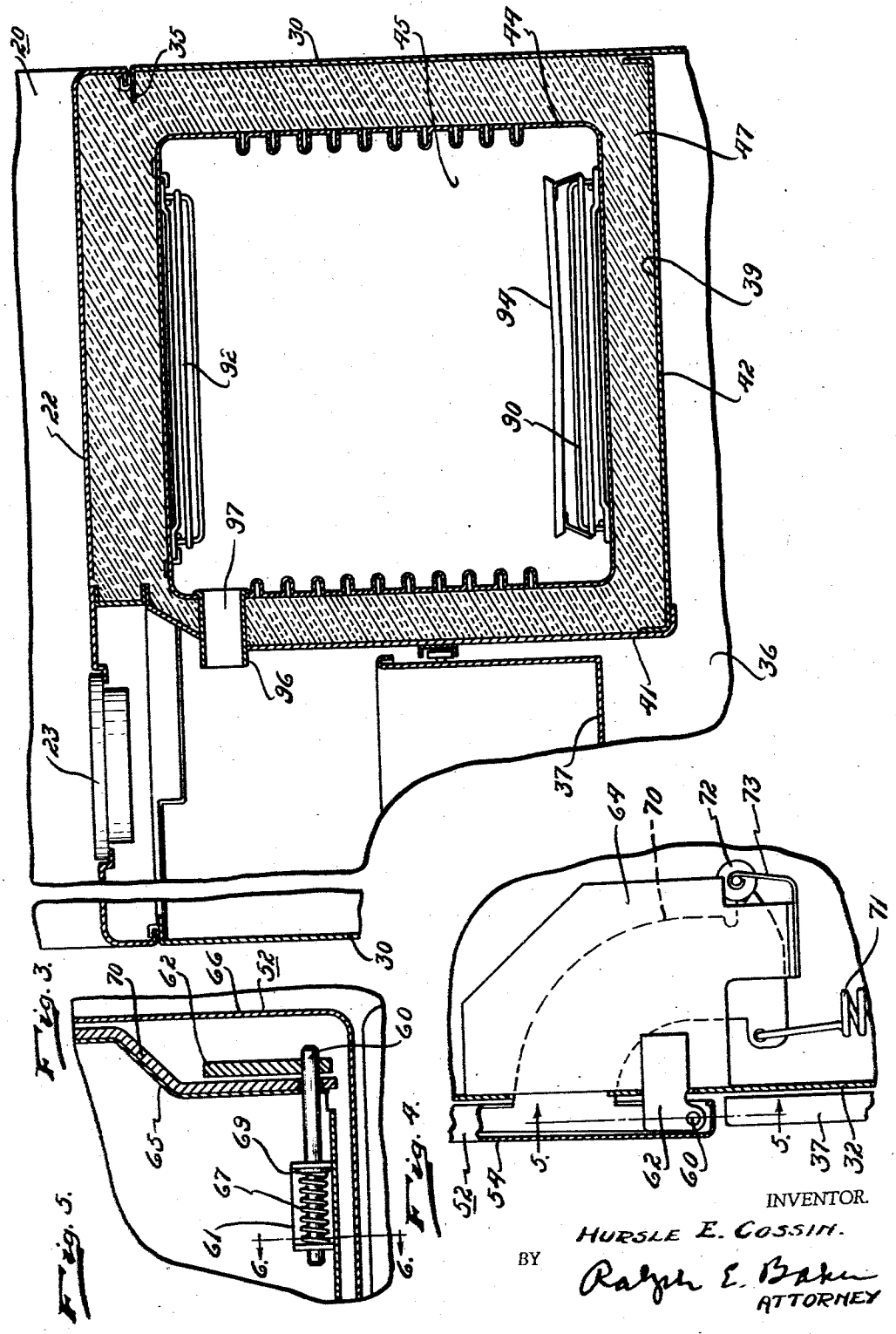


Fig. 3.

Fig. 4.

Fig. 5.

INVENTOR.

HURSLE E. COSSIN.

BY Ralph E. Baker

ATTORNEY

Patented Jan. 9, 1945

2,367,007

UNITED STATES PATENT OFFICE

2,367,007

RANGE APPARATUS

Hursle E. Cossin, Detroit, Mich., assignor to Nash-Kelvinator Corporation, Detroit, Mich., a corporation of Maryland

Application August 10, 1942, Serial No. 454,264

1 Claim. (Cl. 219—35)

The present invention pertains to stoves, ranges and the like, and more particularly to an improved construction of the oven thereof.

It is an object of the present invention to provide an air vent arrangement for an oven chamber whereby cooking vapors of relatively high temperature are vented into a second compartment to be slowly dissipated to the atmosphere through various openings of the compartment which are not sealed in air tight relation.

It is another object of the present invention to provide a vent arrangement for an oven chamber which is simple in construction, economical of manufacture and highly efficient in use.

The invention itself, however, both as to its organization and its method of operation, together with additional objects and advantages thereof, will best be understood from the following description of specific embodiments when read in conjunction with the accompanying drawings, in which,

In the drawings:

Fig. 1 is a front view of a range embodying features of the present invention;

Fig. 2 is a cross sectional view taken along line 2—2 of Fig. 1;

Fig. 3 is a fragmentary cross sectional view taken along line 3—3 of Fig. 2;

Fig. 4 is a fragmentary cross sectional view taken along line 4—4 of Fig. 1;

Fig. 5 is a fragmentary cross sectional view taken along line 5—5 of Fig. 4; and

Fig. 6 is a cross sectional view taken along line 6—6 of Fig. 5.

Shown in the drawings is a range comprising a cabinet 20 having a table top 22. Recesses are formed in the top 22 for surface heating units 23 each of which is operatively controlled by an electrical switch (not shown) operated by a respective knob 24 extending from the panel 26.

The cabinet 20 is constructed with side walls 30, front wall 32 and rear wall 34. The top edge of the side and front walls are marginally bent inwardly to provide a rest 35 for the table top 22. The walls 30, 32 and 34 form an enclosure for a compartment 36 in which are slidably mounted a number of drawers 37, and a compartment 39 which is enclosed and divided from the compartment 36 by a vertical partitioned wall 41 and a horizontally partitioned wall 42. Secured within the chamber 39 is a liner 44 forming an oven chamber 45. The liner 44 is formed with sides, top, bottom and rear walls which are spaced from the sides of compartment 39 for the interposition of heat insulation material 47 therebetween.

The sides, top and bottom walls of the liner 44 extend forwardly through an opening in the front wall of the range and is marginally flanged, as at 49, to overlie the edge of the front panel forming an access opening 50 to the chamber 45.

The opening 50 is closed by a suitable door 52 comprising an outer pan 54 and an inner pan 56 held in spaced apart relation with heat insulation material 57 therebetween. The door is hingedly mounted to the cabinet at its lower corners so as to swing downwardly into a horizontal plane. The hinges are of the concealed type and comprise an axially movable hinge pin 60 slidably mounted in a U-shaped member 61 which is secured to the outer pan 54 to lie between the outer and inner pan of the door. The pin 60 extends through an opening in the side wall 65 of the outer pan to be journaled in a lug member 62 which is secured to a supporting plate member 64. The plate member 66 is secured by weld or the like to the rear side of the front wall 32, with the lug member projecting outwardly through an opening in the front wall into the door between the side walls of the inner and outer pan. The side wall 65 of the inner pan is bent to extend a spatial distance from the side wall 66 of the outer pan to permit the reception therebetween of the lug member. The hinge pin 60 is held journaled in the lug member by spring 67, one end of which is tensioned against a leg of the member 61 and the other end presses against a collar 69 fixed upon the pin 60. An arcuate arm 70 affixed to door 52 projects through opening in front wall of the cabinet into the compartment 36. A spring 71 is provided for urging the door to closed position, one end being affixed to an arcuate arm 70, and its opposite end (not shown) is secured to a wall of the cabinet 20. A roller 72 secured by a resilient member 73 to plate member 64 engages the arcuate arm 71 when the door is in closed position. The frictional tension of the roller 72 upon the arm 71 serves to hold the door in closed position. A similar hinge construction (not shown) is provided in the opposite lower corner of the door in alignment and cooperating with the above described construction.

The hinging of the door 52 is so arranged that the top is swung past the vertical center line of the hinge pin so that the top of the door rests against the edge of the door opening in sealing relationship therewith to prevent entrance of air therethrough into the oven chamber. The bottom portion of the door is spaced from the edge of the opening to provide a restricted

opening 75 to permit air passage into the oven chamber.

An electrical heating coil or element 90 is secured adjacent to the bottom wall of the oven chamber 45 adapted for heating the circulating air therein. A second heating element 92 is secured adjacent to the top wall of the oven chamber adapted to serve in pre-heating the chamber, and for broiling. A baffle member 94 is supportingly secured to and over the heating element 90 adapted to direct the circulation of air over the heating element 90. The baffle member 94 and heating element 90 are arranged relative to the opening 75 so as to direct the entering cold air over the heating element to be heated prior to circulation in the oven chamber. An outlet vent is provided for venting vapor from the oven chamber comprising a tubular member 96 extending from the oven chamber into compartment 36 forming a communicating passageway 97 therebetween.

By the present arrangement cold air is drawn into the oven chamber through the restricted passage 75, directed by the baffle member towards and heated by the heating element 90 prior to its circulation in the oven chamber. Cooking vapors and steam arising from the use or baking operation in the oven chamber is vented through the passageway 97 directly into the compartment 36 where it is cooled and diffused to the atmosphere. Atmospherical air circulates freely through the compartment as no seal is provided by the drawers around the drawer openings, or the surface units, and an opening 100 is provided in the rear wall of the cabinet. It will be noted that the vent is positioned to discharge the stream of vapors from the oven chamber adjacent to the rear portion of the compartment 36. As the temperature of the discharging vapors is relatively high it is highly desirable to so locate the vent outlet that the user does not come into bodily contact with the discharge and by so positioning the vent the discharge is readily diffused in the compartment with little likelihood that the user will come accidentally near the outlet to suffer physical burns or scalds from the discharge during the use or operation of the oven.

By venting into an adjacent compartment there is permitted a short direct passage which allows an unimpeded flow therethrough and eliminates the need of precooling the vapors in the passageway as would be necessary where it is directly discharged externally of the cabinet so as to prevent burning or scalding the user working about the range.

While I have shown and described the preferred forms of my invention, I do not wish to limit myself to the precise details as shown but wish to avail myself of such variations and modifications as may come within the scope of the appended claim.

I claim:

Range apparatus comprising an outer casing, an inner casing forming a chamber and being arranged so that it is in spaced apart relation to the outer casing, heat insulation between said casings, said inner casing forming an access opening to said chamber, a door for closing said opening and having a portion set away at the lower part thereof from the lower part of said opening to form a restricted air inlet passage to said chamber, a heating element in said chamber extending from adjacent said restricted opening to the rear of said chamber, a baffle over said heating element for directing the flow of incoming air over said heating element, and venting means in the upper rear portion of said inner casing above said baffle for venting said air into the interior of said outer casing.

HURSLE E. COSSIN.