March 25, 1958 E. M. BEVILACQUA 2,827,673

OVEN DOOR SEAL

Filed Feb. 17, 1955

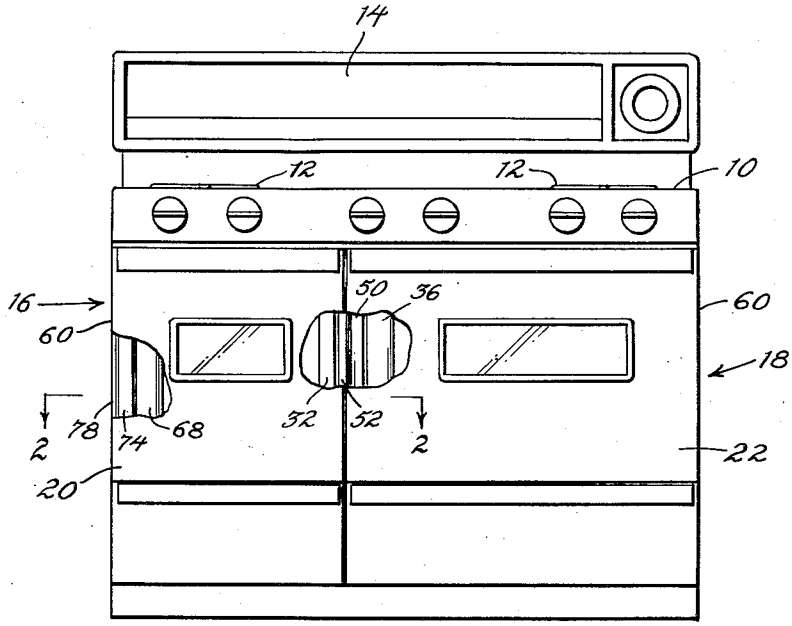


Fig. 1.

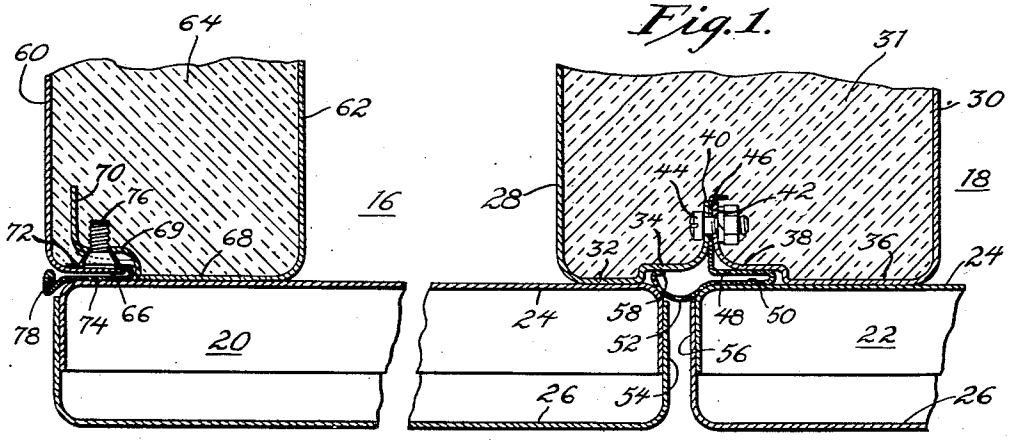


Fig. 2.

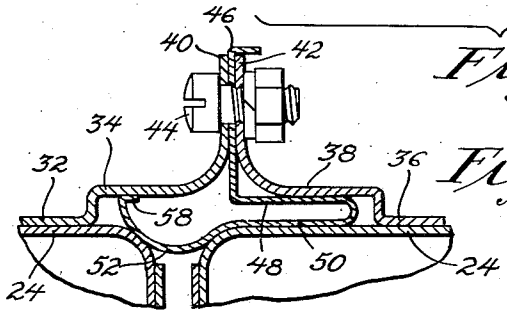


Fig. 3.

INVENTOR.
ERNEST M. BEVILACQUA
BY Louis Necho
ATTORNEY.

United States Patent Office 2,827,673 Patented Mar. 25, 1958

2,827,673

OVEN DOOR SEAL

Ernest M. Bevilacqua, Allentown, Pa., assignor to Caloric Appliance Corporation, Philadelphia, Pa., a corporation of Pennsylvania

Application February 17, 1955, Serial No. 488,925

2 Claims. (Cl. 20—69)

Cooking stoves are provided with one or more ovens and a door for closing the oven opening.

The oven doors should have a tight engagement with the frame defining the oven opening so as to minimize loss of heat when the oven is in use. The oven doors should also close easily, with minimum impact and with minimum pressure, and should also open easily.

The object of this invention is to produce an improved oven door seal which will satisfy the requirements enumerated.

A further object is to provide an oven door seal which is inexpensive, which is inconspicuous and can be applied without any material alteration of the structure of the chassis of the stove.

These and other objects are attained by the invention as set forth in the following specification and as shown in the accompanying drawings in which:

Fig. 1 is a diagrammatic front elevational view of a stove embodying the invention, certain parts being broken away to show details of construction.

Fig. 2 is an enlarged horizontal sectional view looking in the direction of line 2—2 on Fig. 1.

Fig. 3 is a fragmentary enlargement better to show certain details of construction.

The stove shown in the drawings includes a cooking top 10 provided with heating elements 12 and a back splash 14. Below the cooking top 10 are two ovens 16 and 18, which are provided with heating elements not shown and one of which may optionally be smaller than the other. The openings of the ovens are closed by doors 20 and 22 which are hinged to the chassis along their bottom edges and are movable to a horizontal non-obstructing position and to a vertical closing position in which the oven openings are closed. Each door is formed of an inner wall 24 and an outer wall 26 with insulation, not shown in the space between said walls.

The ovens 20 and 22 are spaced by a partition which extends from the top to the bottom and from the front to the back of the ovens, and as shown, this partition is formed of two spaced walls 28 and 30 with insulation 31 therebetween. The front marginal portion of wall 28 is bent to form an abutment or bearing surface 32 and an inwardly recessed portion 34 and the front portion of wall 30 is bent to form an abutment or bearing surface 36 and an inwardly recessed portion 38. The marginal portions 40 and 42 of walls 34 and 38 are bent inwardly and are secured together by vertically spaced bolts 44 one of which is shown.

Carried by the front end of the partition is a seal strip which includes an inner marginal portion 46, an intermediate wall 48 and an outer wall 50. The inner marginal portion 46 is located between marginal portions 40 and 42 and is secured in position by bolts 44. The outer wall 50 is bent to form a bead-like member 52 which projects outwardly and into the space between the inner end walls 54 and 56 of the oven doors. The free margin of bead-like member 52 is bent as at 58

and abuts inwardly recessed wall 34. From Fig. 2 it will be seen that, when oven doors are closed, their inner, juxtaposed corner abut against bead-like member 52 and that walls 48 and 50 of the seal strip form a resilient bellows arrangement which tends to bias the bead-like member 52 outwardly against the corners of the oven doors. It will also be seen that the abutment of marginal portion 58 against inwardly recessed wall 34 provides a resilient stop to limit the inward movement of member 52 when the doors are closed. By this arrangement bead-like member 52 has a following yielding contact with the inner vertical corners of both doors so as to insure an adequate seal without any interference with the operation of the doors.

In order to seal the outer ends of the stoves I provide a seal strip carried by the front of the outer end panel of stove 16 and a similar strip carried by the front of the outer end panel of stove 18. Since the structure is identical, only the structure of the outer end panel and sealing strip of oven 16 will be described.

As will be seen from the left hand portion of Fig. 2, each outer end panel is formed of an outer wall 60, and an inner wall 62 with insulation 64 therebetween. Walls 60 and 62, like walls 28 and 30, extend from top to bottom and from front to back of the stove. The front marginal portion of wall 60 is bent to form a front wall 66 and the front marginal portion of wall 62 is bent to form an abutment or bearing surface 68 and is further bent to form an inwardly recessed wall 69 and an inwardly extending wall 70. It will be noted that the vertical edge of front wall 66 is spaced from the adjacent edge of abutment wall 68 to allow the sealing strip to pass freely therebetween. The sealing strip includes an inner wall 72 which is bent to form an outer wall 74, which normally tends to project beyond the plane of abutment wall 68. But, because of its resiliency, outer wall 74 will yield when the doors are closed so as to form a continuation of abutment wall 68. It is to be noted that while wall 68 may be considered as fixed, wall 74 is movable and has a following-yielding engagement with the outer end of the wall as clearly shown in Fig. 1. Inner wall 72 of the sealing strip is suitably secured to inwardly recessed wall 69 by a bolt 76.

It will be noted that walls 48 and 50 of the center seal strip are the same, structurally and functionally, as walls 72 and 74 of the end seal strip and that inwardly recessed walls 34, 38 and 69 provide pockets for the positioning of the center and end seal strips.

In order to dress up the appearance of the stove wall 74 is extended outwardly and bent to form a flange 78 which substantially closes the gap between the outer corner of outer wall 60 and the outer corner of the door. Preferably, flange 78, or the entire end sealing strip is chrome plated, or otherwise decorated so as to match whatever trim may be employed along the edges of the frame, or doors etc.

What I claim is:

1. A seal structure adapted to minimize the flow of air between a pair of adjacent swinging closures and a frame defining a pair of adjacent openings adapted to be closed by engagement of the faces of said closures with corresponding portions of the face of said frame, said seal structure including a spring metal strip which is of U-shape in cross section, there being a recess in the face of a central portion of the frame which is common to and separates said adjacent openings, means securing one limb of said strip in said recess in parallel relation to the front face of said frame, whereby the other limb, when not compressed, will project beyond the face of said frame and will form an angle with the

front face of said frame and whereby, when either of said closures is moved into abutment with said frame to close either of said openings, the other limb of said strip will be compressed into parallel relation with said one limb.

2. A seal structure adapted to minimize the flow of air between a pair of adjacent swinging closures and a frame defining a pair of adjacent openings adapted to be closed by engagement of the faces of said closures with corresponding portions of the face of said frame, said seal structure including a spring metal strip which is of U-shape in cross section, there being a recess in the face of a central portion of the frame which is common to and separates said adjacent openings, means securing one limb of said strip in said recess in parallel relation to the front face of said frame, whereby the other limb, when not compressed, will project beyond the face of said frame and will form an angle with the front face of said frame and whereby, when either of said closures is moved into abutment with said frame

to close either of said openings, the other limb of said strip will be compressed into parallel relation with said one limb, and an outwardly projecting portion at the end of said other limb, and so disposed between the adjacent edges of said closures and the central portion of the frame that the edge of either of said closures will abut the outwardly projecting portion.

References Cited in the file of this patent

UNITED STATES PATENTS

1,586,736	Foote	June 1, 1926
2,077,845	Madsen	Apr. 20, 1937
2,275,730	Casse	Mar. 10, 1942
2,339,398	Hennessey et al.	Jan. 18, 1944
2,405,305	Hennessey et al.	Aug. 6, 1946
2,580,927	Kahn et al.	Jan. 1, 1952

FOREIGN PATENTS

602,629	Great Britain	May 31, 1948