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R. B. LARKIN
OVEN DOOR WINDOW UNIT
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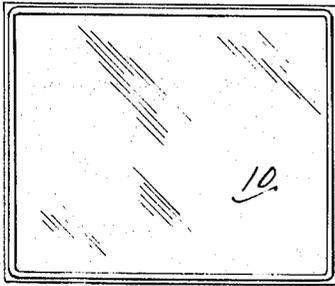


FIG. 1.

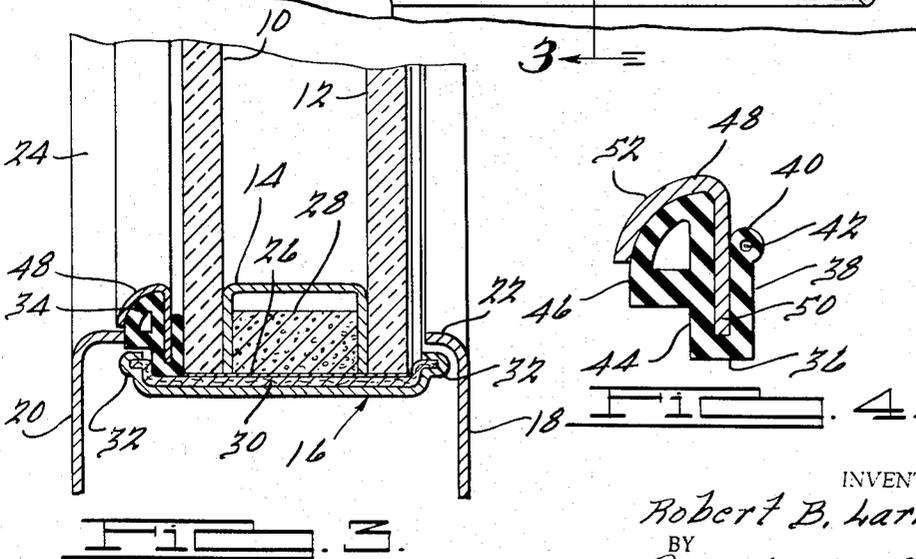
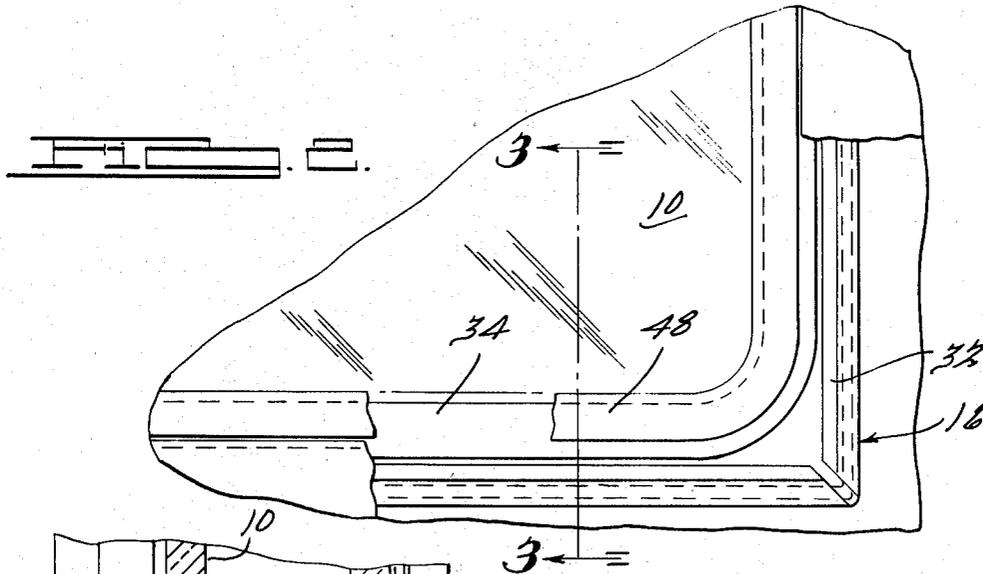


FIG. 3.

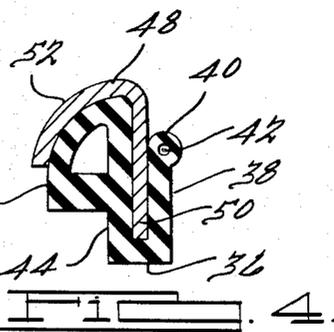


FIG. 4.

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3,219,026

OVEN DOOR WINDOW UNIT

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 Filed Feb. 15, 1965, Ser. No. 432,629
 4 Claims. (Cl. 126—200)

This application is a continuation-in-part of my prior copending application Serial No. 311,071, filed September 24, 1963, for "Oven Door Window Unit."

This invention relates to window units for oven doors and has particular reference to a new and improved sealing means for a double glazed window unit of this type. The improved seal of this invention provides a moisture-proof seal between the oven and the space between the two glass panels and between the oven and the interior of the oven door.

A principal object of the invention is to provide a double glazed window unit for oven doors having improved sealing means to prevent condensation on the inner surfaces of the glass panels.

Another object of the invention is to provide a novel seal ring for a window unit of the type described which provides an effective seal between the interior of the oven and the space between the glass panels and between the oven and the interior of the oven door.

Other and further objects of the invention will be apparent from the following description and claims and may be understood by reference to the accompanying drawings, which by way of illustration show a preferred embodiment of the invention and what I now consider to be the best mode of applying the principles thereof. Other embodiments of the invention may be used without departing from the scope of the present invention as set forth in the appended claims.

In the drawings:

FIG. 1 is an elevational view of a window unit embodying the invention;

FIG. 2 is an enlarged fragmentary view of one corner of the window unit;

FIG. 3 is a sectional view taken on line 3—3 of FIG. 2; and

FIG. 4 is an enlarged sectional view of a seal ring employed in the window unit and showing the same before its assembly into the window unit.

A window unit according to the present invention comprises a pair of spaced glass panels 10 and 12 separated by a continuous spacer 14 and a frame member 16 which is wrapped around the peripheral edges of the glass panels 10 and 12 and the spacer 14. The window unit is mounted within an oven door which includes front and back door panels 18 and 20 respectively having inwardly turned flanges 22 and 24 defining a window opening.

A flexible moisture-proof tape 26 is wrapped around and adhesively secured to the peripheries of the glass panels 10 and 12 so as to seal the space therebetween. As described in the aforesaid copending application, the tape 26 consists of aluminum foil having a pressure sensitive adhesive thereon capable of withstanding temperatures up to at least 550° F. The space between the tape 26 and the spacer 14 may be filled with a desiccant 28, such as silica gel.

The frame member 16 may be of the kind shown in Mills Patent No. 3,021,832 and may include a strip of asbestos 30 lining its inner side with the edges thereof clamped between rolled over edges 32 of the frame member 16.

In order to provide an effective moisture-proof seal between the oven and the window unit, I provide a seal ring 34 which is made of silicone rubber and capable

of withstanding the highest temperatures normally encountered in use of the oven. The seal ring 34 is extruded in the configuration shown in FIG. 4 and includes an outer U-shaped portion 36 having a leg 38 extending inwardly therefrom and provided with a bead 40 at its inner end. The bead 40 may be solid or may have a small hole 42 therein as shown. The seal ring is provided with a second leg 44 which is parallel to and spaced from the leg 38 and is provided with an enlarged hollow bead 46 at its inner end. A trim ring 48 has a portion 50 adapted to be inserted and clamped between the legs 38 and 44 of the seal ring 34 and a portion 52 overlying the bead 46 on the seal ring.

The U-shaped portion 36 of the seal ring 34 is clamped between the inner glass panel 10 and the adjacent side 32 of the frame member 16 with the trim ring 48 assembled to the seal ring as shown. When the window unit is assembled into the oven door, the flange 24 on the inner door panel 20 sealingly engages the bead 46 on the seal ring and presses the latter against the glass panel 10. The bead 40 on the seal ring is flattened against the glass panel 10 to insure an effective moisture-proof seal against the glass.

The seal ring 34 performs two very important functions in an oven door and window assembly of this type. It provides a moisture-proof seal between the interior of the oven and the inner glass panel 10 which not only prevents vapors from within the oven from reaching the space between the glass panels, but also prevents any spillovers that might occur in the oven from flowing down along the glass panel 10 and eventually reaching the bottom of the frame member 16 and the space between the glass panels or even from reaching the outer surface of the outer glass panel 12. By its sealing engagement with the flange 24 on the inner door panel 20, the seal ring 34 also prevents vapors or liquids from within the oven from passing into the interior of the oven door and from reaching the asbestos liner 30 on the frame member 16 where such liquids or vapors therefrom might eventually reach the space between the glass panels or the outer panel 12. The bead 40 on the seal ring seals against the inner glass panel 10 inwardly of the adhesive sealing tape 26 and thus prevents any liquid from reaching the tape 26 with possible eventual deterioration thereof. The seal ring 34 may be used in window units which are not provided with an adhesive tape such as the tape 26, in which case the seal provided by the bead 40 on the seal ring is extremely important in preventing the passage of liquids or vapors into the space between the glass panels and in preventing vapors from passing to the outside of the oven.

While I have illustrated and described a preferred embodiment of my invention, it is understood that this is capable of modification, and I therefore do not wish to be limited to the precise details set forth but desire to avail myself of such changes and alterations as fall within the purview of the following claims.

I claim:

1. A window unit for an oven door comprising a pair of spaced glass panels, a continuous spacer between said panels at the edges thereof and a channel shaped frame member in which said panels and spacer are mounted, said window unit being adapted to be mounted within an opening in an oven door having a door panel exposed to the oven and provided with a lateral flange defining said opening and projecting toward said window unit, a seal ring made of silicone rubber and having a U-shaped outer portion clamped between one of said glass panels and said frame member, said seal ring having one leg extending inwardly from said U-shaped portion and disposed parallel to said one glass panel, said seal ring having a second leg extending inwardly from said U-shaped

3

4

portion in parallel relation to said one leg and having an enlarged hollow bead on its inner end overlapping said frame member and adapted to be engaged by said lateral flange on said door panel to provide a seal between said door panel and said window unit and to press said one leg into sealing engagement with said one glass panel.

2. A window unit according to claim 1 wherein said one leg of said seal ring is provided with a bead on its inner end sealingly engaging said one glass panel.

3. A window unit according to claim 1 including a trim ring disposed and clamped between said legs of said seal ring and surrounding said enlarged bead on said second leg.

4. A window unit for an oven door comprising a pair of spaced glass panels, a continuous spacer between said panels at the edges thereof and a channel shaped frame member in which said panels and spacer are mounted, a sealing tape wrapped around and adhered to the peripheral edges of said glass panels, said window unit being adapted to be mounted within an opening in an oven door having a door panel exposed to the oven and provided with a lateral flange defining said opening and projecting toward said window unit, a seal ring made of silicone rubber and having a U-shaped outer portion clamped between

one of said glass panels and said frame member, said seal ring having one leg extending inwardly from said U-shaped portion and disposed parallel to said one glass panel and provided with a bead on its inner end sealingly engaging said one glass panel inwardly of said sealing tape, said seal ring having a second leg extending inwardly from said U-shaped portion in parallel spaced relation to said one leg and having an enlarged hollow bead on its inner end adapted to be engaged by said lateral flange on said door panel to provide a seal between said door panel and said window unit and to press said bead on said one leg into sealing engagement with said one glass panel, and a trim ring clamped between said legs of said seal ring and overlying said enlarged bead on said second leg.

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