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BEZEL MOUNTING

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Fig. 1

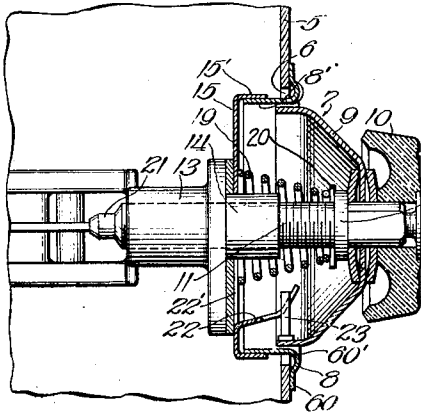


Fig. 2

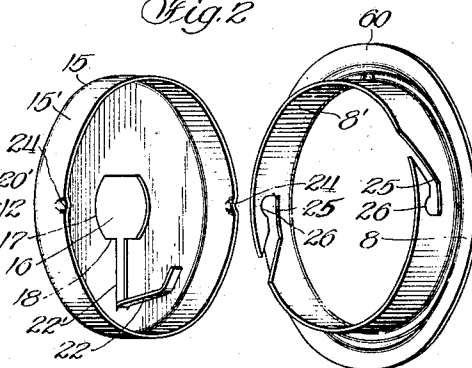


Fig. 3

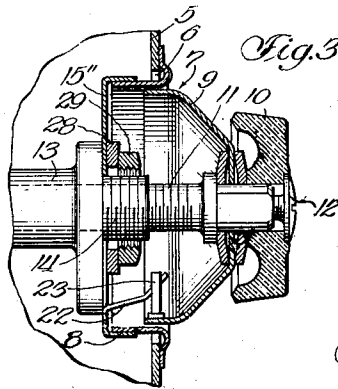


Fig. 4

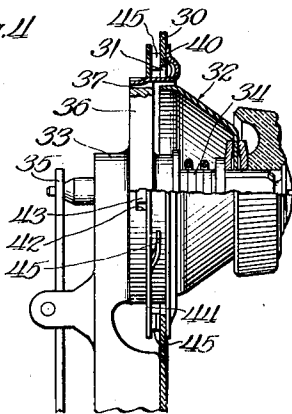
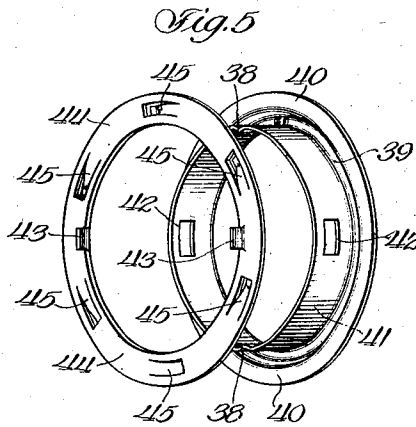


Fig. 5



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## UNITED STATES PATENT OFFICE

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## BEZEL MOUNTING

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14 Claims. (Cl. 126—39)

This invention relates to bezel mountings, and provides particularly a bezel mounting of floating character adapted for arrangement at an opening in a wall, and which will permit discrepancies in the opening.

The preferred form of the present invention is adapted to be mounted on an ordinary type of domestic gas range or oven. The bezel is secured to the wall or panel of the oven, and defines a mounting, or opening, through which the selecting mechanism of an oven heat regulator or thermostat is adapted to extend for manipulation by the operator.

I preferably provide the bezel or mounting ring with an internal diameter slightly larger than the external overall diameter of the selecting mechanism. This facilitates removal of the panel or oven wall to permit access to certain parts of the heat regulator or internal oven chamber, without removing any of the parts of the selecting mechanism. Also, the difference in diameters of the mounting ring and the selecting mechanism insures that the selecting mechanism will be properly positioned regardless of variations in range manufacture.

Another feature of the present invention resides in providing the mounting ring with an inwardly extending cylindrical portion of less external diameter than the diameter of the cutout aperture in the oven wall or panel, thus permitting accommodation of the mounting ring in a plurality of positions with respect to the panel, and allowing for discrepancies in the form and positioning of the opening. The necessity of accurately or precisely forming and positioning the aperture in the panel or oven wall is eliminated and a mounting of what I term a floating character is provided, namely, a mounting that is adapted to be positioned concentrically with the selecting mechanism or other device regardless of the precision with which the hole in the oven wall or panel is formed. It is thus apparent that the bezel has a relatively floating engagement with the panel, and can be accurately aligned with respect to the selecting mechanism.

The inwardly extending portion of the bezel may be provided with slots adapted to receive inwardly extending ears of a cup-shaped retaining ring, or may be provided with depressions, which cooperate with suitable grooves formed in the housing of the oven heat regulator to prevent rotation of the bezel about the selecting mechanism.

In connection with this feature, the floating bezel of the present invention is adapted to be

used either with a housing which has a flanged portion of substantially the same diameter as the mounting ring, or may be used with an oven heat regulator housing having only a projecting stud portion for mounting the retaining ring. In the first instance, the retaining ring is provided with spring means which resiliently engages the inner surface of the panel, and, when snapped into a locked position with respect to the bezel, frictionally holds the bezel mounting from rotating with respect to the panel. In the other embodiment, the bezel retaining ring is of cup formation, and is locked against rotation upon the oven heat regulation housing, and the mounting ring is snapped into engagement therewith and securely held in position with respect thereto.

Further features and advantages of my invention will appear more fully in the following detailed description, which, taken in connection with the accompanying drawing, will disclose to those skilled in the art the particular construction and operation of certain preferred embodiments of my present invention.

In the drawing:

Fig. 1 is a sectional elevational view showing a preferred form of my mounting secured upon an oven wall;

Fig. 2 is an exploded perspective view of the retaining member and the bezel member disclosed in Fig. 1;

Fig. 3 is a partial sectional view of a modified form of mounting;

Fig. 4 is a partial sectional elevational view showing another form of my bezel mounting; and

Fig. 5 is a perspective elevational view of the bezel and mounting ring disclosed in Fig. 4.

Referring now in more detail to the drawing, in the embodiment disclosed in Figs. 1 and 2, the oven wall or panel is indicated by the reference numeral 5. This oven wall or panel may be the front wall of the oven, or may be a side wall of the oven, or any other wall upon which it is desired to mount the selecting mechanism for controlling the oven heat regulator.

The wall 5 is provided with a cut-out aperture or opening 6, through which the selecting mechanism, indicated by the reference numeral 7, is adapted to extend. This aperture 6 is of generally circular configuration, and is slightly larger than the diameter of the inwardly extending cylindrical part of the bezel or mounting member 8. Since the member 8 does not have to be rigidly fixed with respect to the aperture 6, less precision and therefore less time will be required in forming this aperture, and it may be

formed by merely stamping the desired opening in the oven wall 5.

The selecting mechanism, indicated at 7, comprises the dial member 9, and the control knob 10 which are concentrically mounted upon the control spindle 11. A pair of friction washers engage the dial member for securing it in non-rotating engagement with respect to the spindle 11, and a screw 12 secures the control knob 10 upon the spindle in abutting relationship with respect to the washers and the dial member so as to form a compact construction in which the parts are bound together to rotate as a unit. The control spindle 11 threads into a suitable housing 13, which housing has a projecting hub portion 14 for receiving the retaining member 15 of the bezel mounting.

This retaining member 15 is of cup-shaped form, and is provided with a central opening 16 having the slatted edges 17 and 18 cooperating with similar surfaces formed on the projecting hub portion 14 to secure this member in non-rotative engagement with the housing. A suitable spring 19 is provided between the base of the cup-shaped retaining member 15 and the washer 20 which washer 20 bears against the collar 20' of the control spindle. The spring 19 biases the member 15 about the projecting portion 14 of the housing. This serves to position the member 15 resiliently upon the housing.

The control spindle 11 extends through the housing and has the projecting stud portion 21 which is adapted to contact with suitable control transmitting mechanism for transmitting the setting of the control spindle and selecting mechanism to a suitable fuel control valve or the like, not shown. A thermally sensitive element mounted within the oven may be provided for automatically maintaining preselected temperatures for which the selecting mechanism is set.

The cup-shaped member 15 is provided with a tongue 22 struck out from the base of the cup-shaped member 15 at 22'. This tongue 22 is adapted to extend outwardly into the plane of the dial member 9, which dial member is provided with an inwardly extending pin 23 adapted to contact against the tongue 22 for limiting the rotation of the dial member.

Referring now in more detail to the bezel mounting, the retaining member 15 is provided with a pair of inwardly projecting diametrically opposite protuberances or ear members 24 which may be pressed out of the cylindrical upstanding flange 15' of the cup-shaped member. These ears or lugs are adapted to engage in suitable bayonet slots 25 formed in the inwardly extending cylindrical flange portion 8' of the bezel or mounting member 8. It will be noted that each of the slots is provided with a recessed portion 26 in which the ears 24 are adapted to engage when the bezel mounting is properly positioned.

In assembling the selecting mechanism and associated bezel mounting, the housing 13 is first placed in position, and the member 15 secured thereon. The mounting member 8 is then positioned upon the oven wall 5 with the cylindrical flange part 8' extending through the opening 6 and in position to telescope into the cylindrical flange 15' of the member 15. Thus, by pressing the mounting member 8 inwardly, the ears 24 being first registered with the open ends of the slots 25, these ears 24 are engaged in the slots 25 and by rotating the mounting member 8 the ears 24 are brought into engagement with the recessed portions 26 of the slots with the flange

8' telescoped into and held in the flange 15'. The selecting spindle 11 is then threaded into the housing 21, the spring 19, the dial member 9 and the control knob 10 positioned thereon, and the device is adapted for operation. It will be noted that the spring 19 forces the member 15 rearwardly and serves to tension this member with respect to the mounting ring 8, thus holding the mounting ring in firm, non-rotative engagement.

The radial flange 60 is held yieldingly and firmly against the outer side of the oven wall 5 and covers the adjacent margin of the opening 6, and an annular outwardly bulged connecting part 60' connects the radial flange 60 with the cylindrical flange 8' of the mounting member.

Referring to the modified form shown in Figure 3, this differs from the embodiment of Figures 1 and 2 in that the member 15'', corresponding to the member 15 of Figure 1, is mounted rigidly upon the projecting portion 14 of the housing 13. It is secured thereon by means of the washer 28 and the lock nut 29, which threads upon the stud portion 14 for firmly pressing the member 15 into abutting engagement with the flange of the housing 13. The remaining details are the same as in the previous embodiment. The oven wall 5, which is of sheet metal or the like, possesses sufficient resiliency so that it may be slightly pressed inwardly when the member 8 is engaged with the member 15'' and released therefrom. In the previous embodiment this yield may likewise be in the oven wall although in that case the spring 19 permits the member 15 to be pressed toward the member 8 for this purpose. In each case this facilitates the locking of these two members together, and also assures that they will be maintained yieldingly yet firmly in relative position.

If desired, the oven wall 5 may be removed without removing the selecting mechanism 7, by merely disengaging the slots 25 from the ears 24, and removing the wall outwardly past the selecting mechanism. This facilitates access to the interior of the oven without interfering with the setting of the control selecting mechanism.

Referring now in more detail to Figures 4 and 5, the embodiment disclosed therein is adapted to be used with heat regulators of the type having the housing into which the control spindle threads positioned adjacent the oven wall, and which are so constructed that the inner retaining member cannot be positively secured to the projecting portion of the housing, inasmuch as this portion lies beyond or outside of the plane of the oven wall. In devices of this type, the mounting member is so constructed as to fit around the housing and is keyed thereto in such manner as to prevent rotation of the bezel mounting.

Considering the structure in more detail, I have disclosed the oven wall 30, which is apertured, as at 31, to provide for the disposition of the selecting mechanism indicated generally by the reference numeral 32 at the upper portion of the heat regulator housing 33. This selecting mechanism 32 is substantially the same as disclosed in connection with Figure 1, and needs no detailed description. Suffice it to say that the control spindle 34 threads into the housing 33 and has abutting engagement at its inner end with a thermally sensitive member 35. Rotation of the spindle 34 serves to control the position of the member 35 for regulating the valve or other control mechanism supplying fuel to the oven burner. The housing 33 has the extending flanged

portion 36, which is disposed substantially in the plane of the oven wall 30, and which is provided at its upper and lower edges with suitable diametrically opposite grooves 37 which are adapted to receive the depending ear portions 38 of the bezel mounting ring 39.

This bezel mounting ring 39 is substantially of the same form as the ring or bezel member 8 of Figures 1 and 2, and is provided with the radially flanged portion 40 adapted to have abutting engagement with the outer surface of the oven wall 30. The inner extending cylindrical portion 41 extends within the oven and is secured about the flange 36 to dispose the member 39 in nonrotating engagement therewith. The internal diameter of the cylindrical flange of the member 40 is slightly larger than the external diameter of the selecting mechanism 32, and the oven wall may be removed without disturbing the setting of the selecting mechanism.

The cylindrical flange portion 41 of the member 39 is provided with a pair of rectangular slots 42, which engage with suitable ears 43 struck inwardly from the inner periphery of the retaining ring member 44. This retaining ring member 44 is of substantially annular shape, and is provided with a plurality of spring tongues 45 struck out of the radial surface thereof, these spring tongues 45 bearing against the inner surface of the oven wall 30, and serving to resiliently engage therewith for the purpose of permitting the member 44 to be pressed over the extending portion 41 of the bezel member 39 until the ears 43 thereof engage in the slots 42 in this member. This engagement serves to lock the retaining ring 44 to the member 39, and thus serves to position positively the member 39 with respect to the oven wall 30. This snap engagement provides a resilient contact between the members 44 and 39 and the oven wall 30, and securely positions the members with respect to the wall.

It is thus apparent that I have provided a bezel mounting ring which is applicable to a variety of uses, and which is particularly adapted for engagement so that it may be secured in a plurality of positions with respect to the oven wall, effecting what might be termed a "floating mounting", so that inaccuracies in the manufacture of the oven wall, and in the stamping of the aperture for receiving the selecting mechanism, may be permitted and accommodated.

I do not intend to be limited to the exact details shown and described, but only in so far as defined by the scope and spirit of the appended claims.

I claim:

1. In a domestic gas range having an oven, an oven wall, and a heat regulator in said oven provided with selecting mechanism extending through an opening in said wall, a mounting ring defining said opening, said ring having a cylindrical portion extending inwardly through said oven wall, and means carried by said heat regulator securing said mounting ring in fixed position with respect to said selecting mechanism and independently of said wall.

2. In a domestic gas range having an oven, an oven wall, and a heat regulator provided with selecting mechanism extending through an opening in said wall, a mounting ring defining said opening and having an internal diameter larger than the external diameter of said selecting mechanism, said ring having a radial portion engaging one side of the oven wall and a cylindrical portion extending inwardly through said oven wall, said

cylindrical portion being provided with slotted apertures, and means cooperable with the cylindrical slotted portion of the mounting ring on the opposite side of the wall and securing said ring in position in the opening in the oven wall.

3. In a domestic gas range having an oven and an oven wall provided with an opening, a heat regulator in said oven, selecting mechanism therefor extending through the opening in said wall, a mounting ring defining said opening, said ring having a radially flanged portion abutting the outer surface of said wall, said ring having a cylindrical portion extending inwardly through said wall and provided with a pair of slotted apertures, a resilient retaining member engaging said cylindrical portion and provided with ears engaging in said apertures, and means carried by said selecting mechanism for securing said retaining member in non-rotative position with respect thereto.

4. In an oven, an oven wall, a heat regulator in said oven, selecting mechanism therefor projecting through said wall, a mounting member engaging said wall, and retaining means resiliently and non-rotatably mounted on said selecting mechanism and having locking engagement with said mounting member.

5. In an oven, an oven wall, a heat regulator in said oven, selecting means therefor projecting through said wall and including a dial member, a pin carried by said dial member, a mounting member engaging said wall, retaining means resiliently mounted on said selecting mechanism and engaging said mounting member, and means carried by said retaining means for engaging said pin for limiting movement of said dial member.

6. In an oven, an oven wall, a heat regulator in said oven, selecting mechanism therefor projecting through said wall, a mounting member engaging the outer surface of said wall, a retaining member resiliently engaging the inner surface of said wall, and means carried by said retaining member for non-rotatably locking said retaining member to said mounting member.

7. In combination, in an oven, an oven wall, a heat regulator in said oven selecting mechanism therefor projecting through said wall, a mounting member extending through said wall and non-rotatably secured to said selecting mechanism, a retaining member means carried by said retaining member locking said mounting member in fixed position thereto, and spring means on said retaining member engaging one surface of said wall for positively positioning said mounting member with respect to the opposite surface of said oven wall.

8. In combination, an oven, an oven wall therefor having an opening, a device for controlling the temperature in said oven extending through said opening, a retaining member, and a bezel member permitting discrepancies in said opening and having snap engagement with said retaining member, said members being disposed upon and bearing against opposite sides of said wall.

9. In an oven, a heat regulator, an exterior oven wall having an opening adapted to receive a projecting portion of said heat regulator, and a mounting member surrounding said projecting portion and having floating engagement within said opening, said member having a radially extending flange bearing against the outer surface of said wall.

10. The combination with an oven having an oven wall, a heat regulator in said oven disposed adjacent said wall, and selecting means for said

regulator projecting through an opening in said wall, of a bezel mounting comprising a radially flanged member having floating engagement within the opening of said wall, and a retaining member adapted to lock said flanged member in position with respect to said selecting means.

11. A bezel mounting for a wall opening comprising a radially flanged member having floating engagement in said opening and having a cylindrical portion extending through said opening provided with apertures therein, the radially flanged portion of said member engaging one face of said wall about said opening, and an annular planar retaining ring telescoping over said cylindrical portion and having inwardly extending tongues providing locking engagement within said apertures, said ring having spaced spring means offset outwardly of the plane thereof and engaging the opposite face of the wall about said opening, said ring being resiliently spaced rearwardly away from said wall by said spring means.

12. In combination, an oven wall having an opening therethrough, a temperature controlling device extending through said opening, a bezel member engaging one side of said wall and having floating movement within said opening, and means on the other side of said wall resiliently mounted on said device for supporting said

member in non-rotatable position independently of said wall.

13. In combination, a planar surface having an opening therethrough, a mounting ring having a cylindrical portion extending through said opening and a radially flanged portion bearing against one side of said surface, and a retaining member having individual integrally formed spaced spring tongues extending laterally thereof into engagement with the opposite side of said surface, and means projecting inwardly of said retaining member and having locking engagement with the cylindrical portion of said mounting ring.

14. In combination, an oven having an oven wall with a wall opening therein, a temperature controlling device within said oven having rotatable projecting actuating means extending through said opening, a retaining member supported on said actuating means independently of said opening and within said oven, a mounting member having a radially flanged portion bearing against the exterior surface of said wall and having a cylindrical portion telescoping with said retaining member, means for locking said members in non-rotatable engagement independently of the wall, and integral means struck out of one of said members for limiting rotation of said actuating means.

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