Dec. 22, 1931. E. F. REINHARDT 1,837,232

HINGE FOR ELECTRIC GRIDS

Filed Oct. 21, 1929

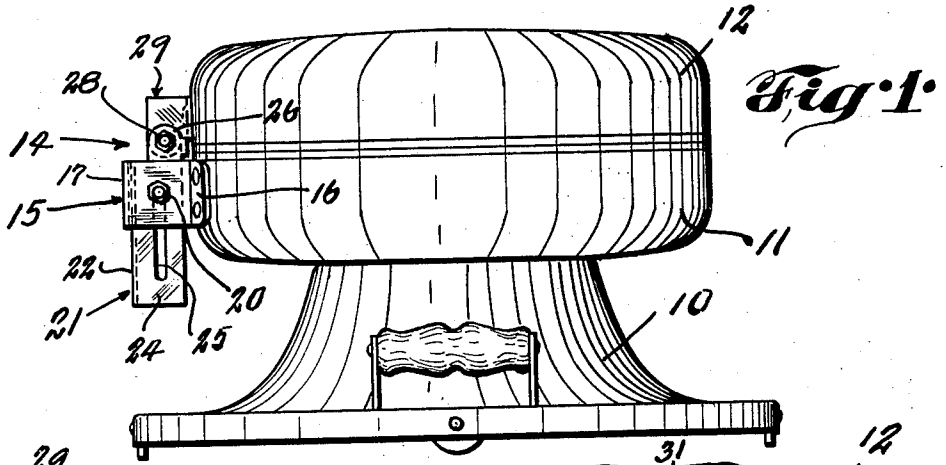


Fig. 1.

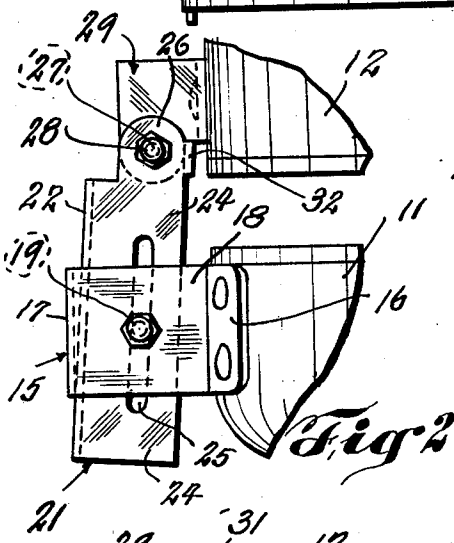


Fig. 2.

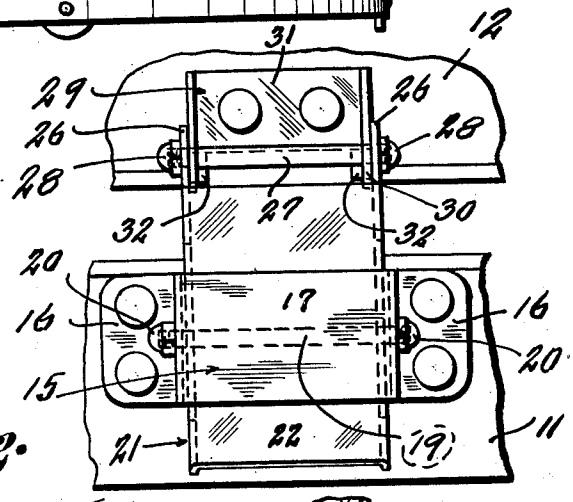


Fig. 3.

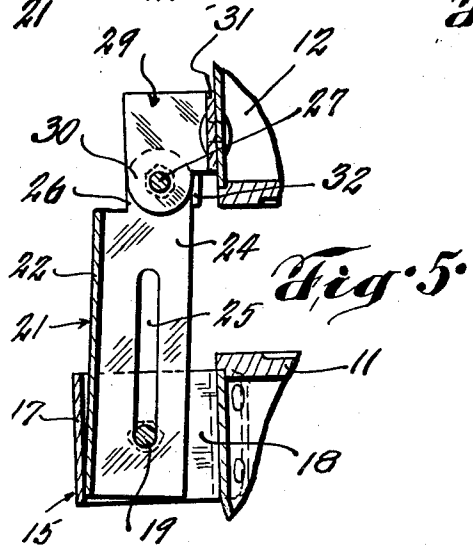


Fig. 5.

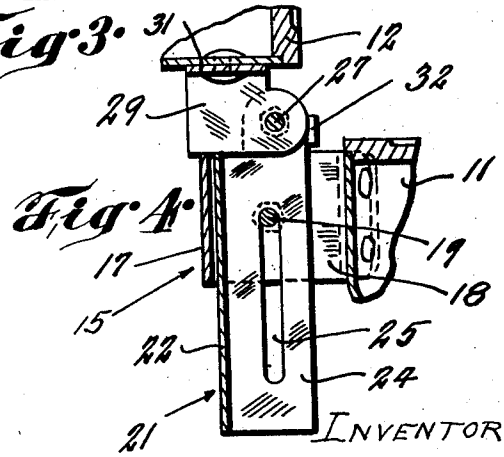


Fig. 4.

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UNITED STATES PATENT OFFICE

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HINGE FOR ELECTRIC GRIDS

Application filed October 21, 1929. Serial No. 401,225.

This invention relates to new and useful improvements in hinges for electric grids and other electrical cooking apparatus.

The objects of the invention are to provide a hinge which is self-adjustable in accordance with the thickness of material interposed between the cooperating heating members or grids and which is of simple and compact construction and can be economically manufactured.

Further objects of the invention are to provide a hinge of the class described which is adapted to support the movable heating member or grid in raised or adjusted position without the use of extraneous locking means.

Other objects of the invention are to provide an adjustable hinge for electric cooking apparatus having a stationary hinge member and a movable hinge member, said members having a slot and pin engagement with each other whereby the movable hinge member can be adjusted in a vertical plane relatively to said stationary member, said movable hinge member being adapted to be locked against movement in vertical plane by the locking action produced between said hinge members by overbalancing said movable hinge member.

Still further objects of the invention are to provide an adjustable hinge of the class described having a stationary hinge member fixed to the stationary or lower heating grid and having a movable hinge member fixed to the upper or movable grid, there being a sliding member provided hingedly connected to said movable hinge member and having a sliding slot and pin connection with said stationary hinge member whereby the movable hinge member and the grid carried thereby can be adjusted in vertical plane relatively to said stationary hinge member and grid member, said sliding member being adapted to be tilted by the overbalancing produced when said movable grid member is raised from said stationary grid member, thereby producing a binding action between said sliding member and said stationary hinge member.

With these and other objects in view, my invention consists in certain novel features of construction and arrangement of parts, hereinafter more fully described and claimed and illustrated in the accompanying drawings, in which—

Figure 1 is a side elevational view of an electric grid equipped with my adjustable hinge.

Figure 2 is an enlarged side elevational view of the hinge with the grid members broken away and showing the hinge in adjusted position.

Figure 3 is an elevational view of the hinge shown in Figure 2.

Figure 4 is a vertical cross section taken through the hinge and showing the movable parts thereof occupying depressed or lowermost position.

Figure 5 is a similar view and showing the movable parts in raised or locked position.

The present invention is disclosed herein as applied to an electric grid or toaster having a base 10, a stationary heating member or grid 11, and a top or movable grid 12. Grid 11 is fixed to the base and grid 12 is hingedly mounted on said stationary grid by means of a hinge 14.

In the construction of this type of devices, it is desirable to permit adjustment of the movable grid 12 relatively to stationary grid 11 in order to take care of varying thicknesses of material inserted between said grids. It is also desirable that said grids retain parallel relation with each other at all times so as to insure uniform toasting or baking operation over the entire areas of the material inserted between said grids. To this end, I make said hinge 14 adjustable whereby the movable grid automatically adjusts itself to the thickness of the material to be toasted or heated, and thereby preserves parallel relation with said stationary grid.

The hinge 14 comprises a strap 15 formed into U-shape and having its ends 16 secured in any suitable manner to the peripheral surface of the stationary grid 11. This strap is disposed horizontally with the end wall 17 arranged in spaced relation with the ends 16. The side walls 18 are formed with

aligned apertures through which extend outwardly the threaded ends of a pin 19. This pin extends horizontally between walls 18 and is held in position by means of caps 20 which are screw-seated on the ends of said pin. These caps bear against the outer sides of walls 18 and serve to retain the pin 19 in position.

A sliding member 21 is vertically disposed within the U-shape strap 15. The length of this member 21 is considerably greater than the width of strap 15 so that said sliding member projects at either end a suitable distance beyond the upper and lower edges of said strap. Member 21 is U-shape in cross section with the transverse wall 22 disposed adjacent to wall 17 of strap 15 and with the parallel or side walls 24 arranged adjacent to the inner sides of side walls 18 of strap 15.

Each side wall 24 is provided with a vertically disposed slot 25 and extending through said slot is said pin 19. The length of each slot 25 is sufficient to allow the desired upward movement of member 21. When said sliding member occupies depressed position with the upper end of the slot engaging pin 19, the upper end of member 21 is substantially on the same horizontal plane with the upper edge of strap 15 as shown in Figure 4. When the member 21 occupies its extreme raised position the lower end of the slot engages pin 19 and the lower end of member 21 is substantially flush with the lower edge of strap 15 as shown in Figure 5. The distance between the center lines of slots 25 and the outer face of transverse wall 22 is less than the distance between the axis of pin 19 and the inner face of wall 17 so that member 21 has a certain amount of play and is adapted to be tilted forwardly on pin 19 as shown in Figures 2 and 5.

The upper ends of walls 24 are provided with upward extensions or ears 26 which are formed with aligned apertures. Carried by these apertures is a pin or pintle 27 held in position by caps 28. A movable hinge member 29 is provided with apertured ears 30 which are disposed adjacent to extensions 26 and receive pin 27. This member 29 which may be of U-shape has its transverse wall 31 secured to the peripheral wall of the upper or movable grid member 12 and forms a mounting therefor. The forward edge of each wall 24 is provided at its upper end with an extension bent at right angles to said wall and inwardly to form a lug 32. This lug is spaced from pin 27 and the upper end thereof is adapted to be engaged by the lower edge of the corresponding wall 29 when the grid 12 occupies horizontal position.

When said grid is in this position, the weight is applied to the sliding member 21 to one side of pin 19, thereby causing tilting movement of said member and bringing the lower half of wall 22 against the lower edge of wall 17. This produces binding action between the parts and prevents downward movement of the sliding member 21 so that the grid 12 is held in the raised position to which it has been adjusted. This engagement, or binding action, between the lower edge of wall 17 of stationary member 15, and wall 22 of sliding member 21 permits the latter to be retained in any position. As the upper grid member 12 is hingedly carried by member 21 it is obvious that said grid can be adjusted to any elevation relatively to grid 11.

When member 12 is raised upwardly on the hinge or pintle 27, the weight is removed from lugs 32, thereby relieving member 21 of pressure at these points and consequently removing the force causing binding engagement between walls 17 and 22, so that member 21 is free to slide vertically in member 15.

The construction of my improved hinge is simple and economical. The hinge is positive in operation, requiring no extraneous operating handles, and is highly efficient in performing its intended function.

While I have shown and described the preferred form of my invention, it is obvious that various changes can be made in the construction and arrangement of parts without departing from the spirit of my invention.

I claim:

1. A hinge for electric cooking apparatus comprising in combination with a pair of cooperating grids, one of which is stationary and the other movable relatively thereto, of a stationary U-shaped member fixed to said stationary grid, a horizontally disposed pin carried by the parallel walls of said U-shaped member, a sliding member movably mounted within said U-shaped member and having a vertically disposed slot engaging said pin, and a movable hinge member fixed to said movable grid and pivotally mounted on the upper end of said sliding member whereby said movable grid and hinge member fixed thereto can be adjusted in a vertical plane relatively to said stationary grid and said U-shaped member.

2. A hinge for electric cooking devices comprising a stationary support having a vertically disposed opening, a sliding member loosely disposed in said opening and movable in a vertical plane, a slot and pin connection between said stationary member and said sliding member for guiding the latter, a movable hinge member, and a pintle for mounting said hinge member upon the upper end of said sliding member, said sliding member being adapted to occupy an oblique position within the opening of said stationary member to produce binding action and retain said sliding member in adjusted position when said hinge member occupies a horizontal position.

3. A hinge for electric cooking devices comprising a stationary member, a horizontally

disposed pin fixed to and projecting laterally therefrom, a sliding member loosely arranged in said stationary member and having a vertically disposed slot for receiving said pin, and a movable hinge member hingedly mounted upon the upper end of said sliding member and adapted to bear on said sliding member at a point spaced to one side of the axis of the hinge, thereby over-balancing said sliding member and causing binding action between it and said support and retaining said sliding member in adjusted position.

4. In an electric cooking apparatus, the combination with a stationary grid and a hingedly mounted grid, of a support fixed to said stationary grid and having a transversely and horizontally disposed lower edge, a sliding member mounted within said support and adjustable vertically relatively thereto, said sliding member having oblique movement to engage said transverse lower edge and produce binding action for locking said sliding member in adjusted position, and a hinge member fixed to said movable grid and hingedly connected to the upper end of said sliding member for supporting said movable grid in spaced parallel relation with said stationary grid.

5. In an electric cooking apparatus having a pair of hinged cooperating grids, of a horizontally disposed U-shaped member having its ends fixed to one of said grids, a sliding member U-shaped in cross section loosely mounted within said U-shaped support for movement in a vertical plane, a slot and pin connection between the parallel side walls of said support and said sliding member, and a hinge member fixed to the other of said grids and hingedly mounted upon the upper end of said sliding member, said hinge member being limited in its downward movement by said sliding member whereby said hinge member is held in horizontal position and said sliding member is adapted to be overbalanced thereby and occupy an oblique position relatively to said U-shaped member so as to engage frictionally said U-shaped member and retain said sliding member in adjusted position.

6. In an electric cooking apparatus, the combination with a pair of hinged cooperating grids, of a horizontally disposed U-shaped member having its ends secured to one of said grids, thereby forming a vertically disposed open-ended opening, a sliding member U-shaped in cross section and loosely arranged in the opening formed by said U-shaped member, a slot and pin connection between said members for limiting the vertical movement of said sliding member, a hinge member secured to the other one of said grids and hingedly mounted upon the upper end of said sliding member, and lateral projections formed on said sliding member and forming supports for said hinge member when the latter occupies a horizontal position whereby the weight of the corresponding grid is applied to said sliding member at a point spaced to one side of said hinge axis, thereby causing angular disposition of said sliding member so as to engage frictionally the lower edge of one of the walls of said U-shaped member for retaining said sliding member and the corresponding grid in adjusted spaced relation with respect to the other grid.

In testimony whereof I hereunto affix my signature this 17th day of September, 1929.

EUGENE F. REINHARDT.