April 8, 1930. G. EATON 1,753,601

ELECTRIC HEATER

Filed July 6, 1927

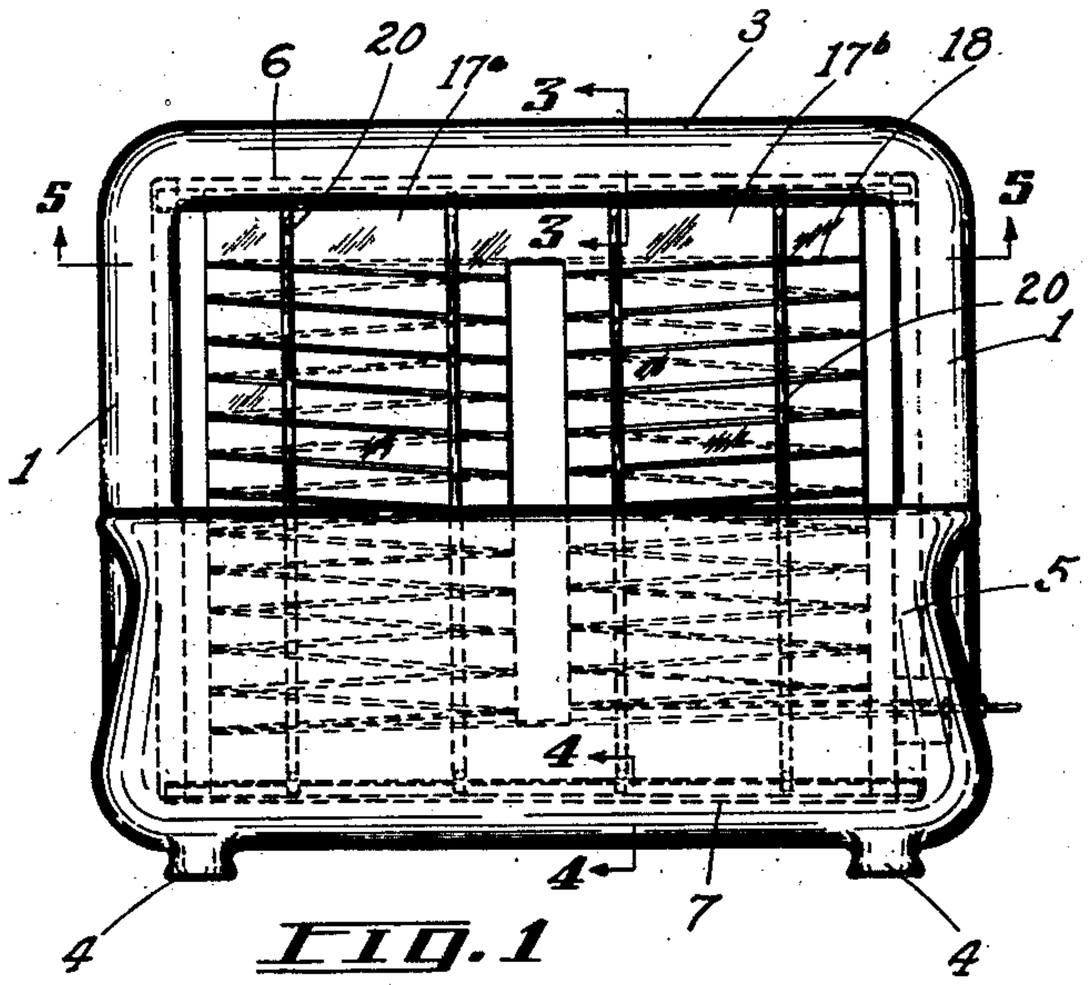


FIG. 1

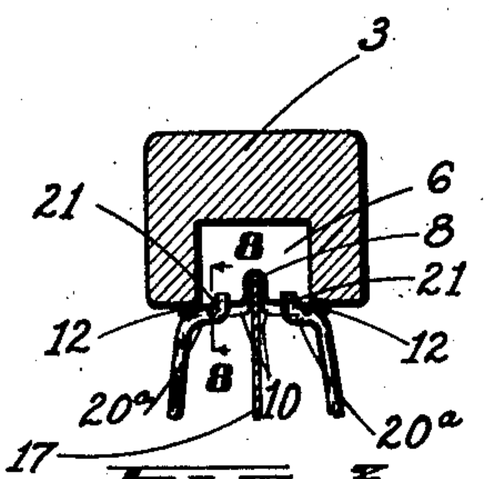


FIG. 3

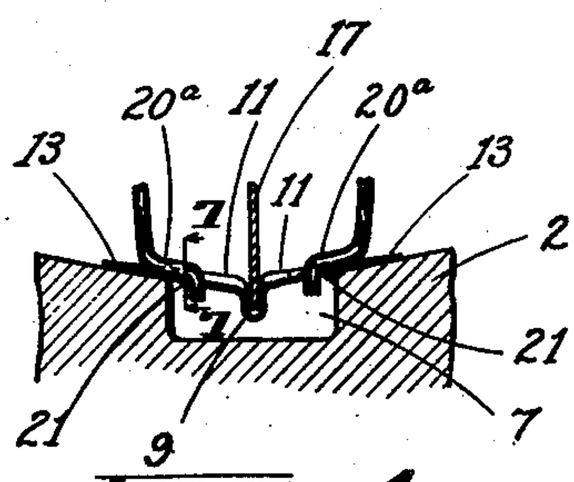


FIG. 4

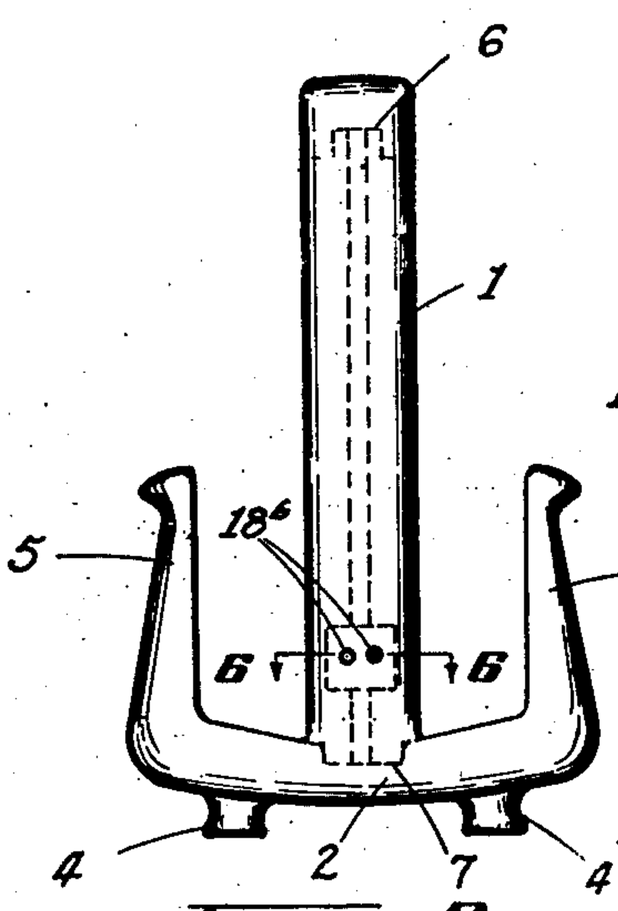


FIG. 2

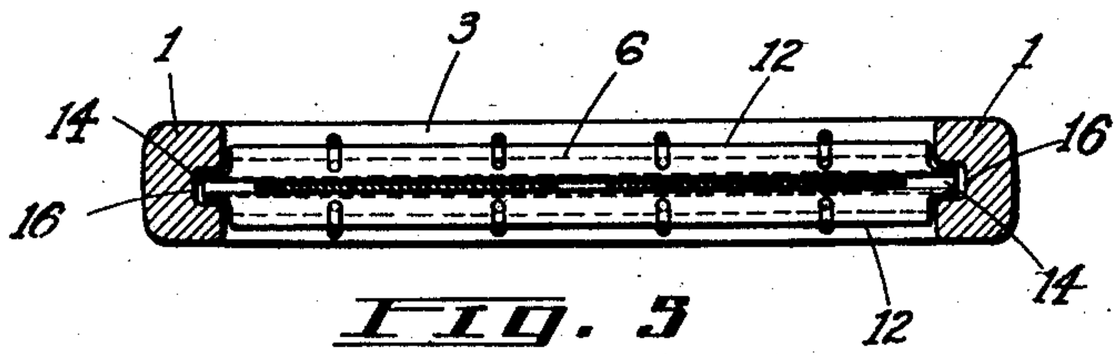


FIG. 5

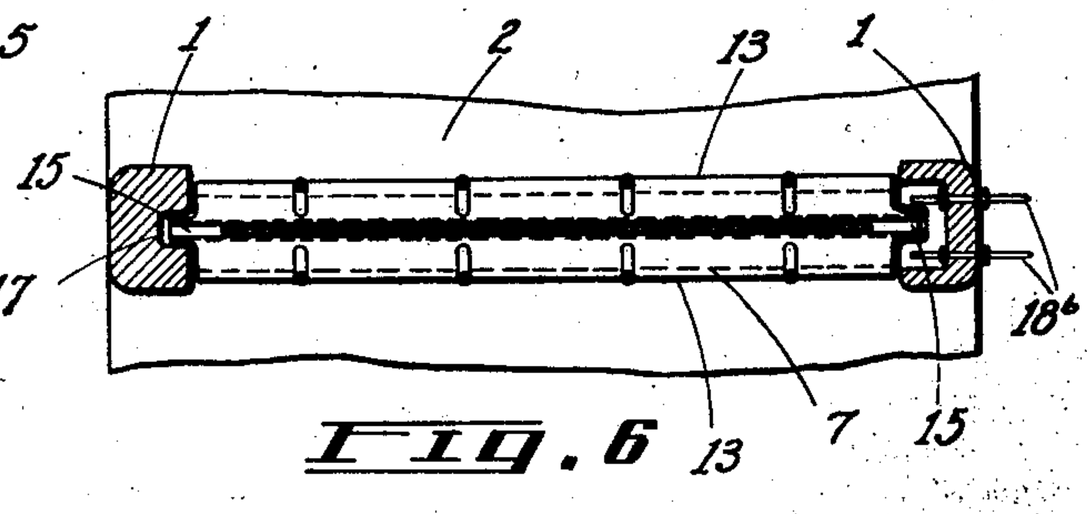


FIG. 6

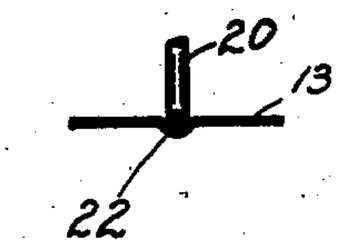


FIG. 7

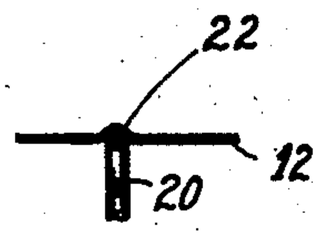


FIG. 8

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UNITED STATES PATENT OFFICE

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ELECTRIC HEATER

Application filed July 6, 1927. Serial No. 203,771.

This invention relates to improvements in electric heaters and more particularly to that type known as toasters, designed for use upon the dining table.

The object of this invention is to provide such a device in which the structure is extremely simple and in which the parts are readily assembled or disassembled without the use of any screws, bolts or other such securing means.

Another object is to provide such a device in which the supporting frame is a single integral part, preferably in the form of a casting of glazed porcelain or the like.

Another object is to provide such a device in which the heating element includes a resilient member which may be readily placed in assembled position in the frame in such a manner that there will be effected a spring engagement between said parts.

Another object is to provide such a device in which the main supporting frame has means for automatically inclining the bread or other such material towards the heating element.

Another object is to provide an improved grid means against which the bread or other such material may rest, such means having spring engagement with the frame, and serving at the same time to maintain the several parts in assembled relation.

Another object is to provide such a device which possesses an extremely artistic appearance and is also completely insulated by virtue of the particular composition of the frame.

Other objects will appear from the following description and claims when considered together with the accompanying drawing.

Fig. 1 is a side view of my improved toaster; Fig. 2 is an end view of the same; Fig. 3 is a sectional view taken on line 3—3 of Fig. 1; Fig. 4 is a sectional view taken on line 4—4 of Fig. 1; Fig. 5 is a detail view taken on line 5—5 of Fig. 1; Fig. 6 is a view corresponding to Fig. 5 but showing the bottom part; and Figs. 7 and 8 are detail views of the engagement of the lower and upper ends, respectively, of the grid wires with the bottom and top plates or strips.

The frame, as here shown, consists of a one-piece casting of glazed porcelain or the like and has the end portions 1 extending up from the base or bottom 2, and the top portion 3. The frame has the integral legs 4 and its bottom is slightly curved, as indicated in the drawing. The sides 5 are also integral with the base and extend upwardly therefrom in spaced relation to the main part of the frame so as to provide side channels on opposite sides of the main part of the frame. These channels are adapted to receive and support the sliced bread or other such material for toasting, the bottom of each channel being slightly inclined downwardly towards the main part of the frame so as to always tilt the bread towards the heating element which is supported in the main part of the frame.

The top and bottom grooves 6 and 7 are formed in the top and bottom parts of the frame and are adapted to receive the grooved middle portions 8 and 9 of the top and bottom retaining plates or strips 10 and 11 which may be of metal or other suitable material. These strips have side flanges 12 and 13 which engage the top and bottom parts of the frame on the opposite sides of the grooves 6 and 7. The narrowed end portions 14 and 15 of these strips engage in the grooves 16 and 17 provided in the inner sides of the upright end portions 1, although this feature may be omitted if desired, the several parts being otherwise sufficiently maintained in position.

The grooves in the strips 10 and 11 are adapted to receive the top and bottom edges of the sheets of mica 17 or other similar electric insulating material, so as to maintain the same in position. The mica sheet is here shown as having two parts 17^a and 17^b about which the electric resistance 18 is wound, the two ends of which are connected to the binding post 18^b extending through the frame. The mica sheet is of more or less a resilient nature and is sprung into engagement with the top and bottom grooves 8 and 9. The resilient wires 20 are also sprung into engagement with the holes 21 in the flanges 12 and 13 of the metal strips, the extreme end portions of these wires being bent up and

down so as to project through the holes while the intermediate portions 20ª extend in a substantial lateral direction and seat in the depressions or seats 22 which are formed in the flanges 12 and 13 and extend from the holes 21 in a direction substantially at right angles to the general length of the strips. In this way, the rods or wires are prevented from accidental turning. These grid wires 20 serve also to maintain the several parts in assembly since they extend and exert a certain spring engagement between the top and bottom strips 10 and 11. Thus the wires 20 have a dual function, namely to support the bread or other such material in toasting relation to the heating element, and also to maintain the parts in assembly. The spring nature of the sheet of mica might be considered also as serving to maintain itself in assembly with the other parts.

The following are a few of the advantages which result from my improved structure. In the first place, the main frame is formed of a material which is capable of very artistic appearance but at the same time is of a very durable nature and is extremely well adapted for this particular use because of its property as an electric insulator. The porcelain will also withstand a very high degree of heat without danger or depreciation. Then, too, the parts, comparatively few in number, are capable of being very readily assembled and are maintained firmly in assembled position without the use of screws, bolts or other such securing means. Furthermore, the channels with their sides 5 not only serve to maintain the bread or other such material in proper position, but serve also to conserve the heat by deflecting and radiating a certain part which would otherwise be lost. And, too, because of the porcelain frame, my toaster can be recognized as a part of the china set of dishes, and can be given the same pattern of decoration as a means of furthering this idea of harmony.

What I claim as new is:

1. An electric heater comprising a preliminarily and completely formed integral, one-piece, main frame unit, an electric resistance, and a holder upon which said resistance is mounted, said holder having resilient means adapted for spring engagement with said frame for assembly of the same in said complete frame unit.

2. An electric heater comprising a preliminarily and completely formed integral, one-piece, main frame unit, an electric resistance, and a holder upon which said resistance is mounted, said frame and holder having resilient means adapted for spring engagement therebetween for assembly of the same in said complete frame unit.

3. An electric heater including a preliminarily and completely formed integral, one-piece, main frame unit, said frame having oppositely disposed grooves, a holder having resilient means adapted for spring engagement in said grooves for assembly of the same in said complete frame unit, and an electric resistance element mounted upon said holder.

4. An electric heater including a preliminarily and completely formed, integral, one-piece, main frame of ceramic material, said frame having oppositely disposed grooves, a holder having spring engagement in said grooves, and an electric resistance element mounted upon said holder.

5. In an electric heater, a frame comprising a preliminarily and completely formed integral, one-piece casting of porcelain or the like, said frame having top, bottom and end portions and adapted to receive and support an electric resistance element and being otherwise open.

6. An electric heater comprising a preliminarily and completely formed, integral, one-piece, main frame unit having oppositely disposed grooves, a holder of electric-insulating material in sheet form and of a resilient nature, said holder being adapted for direct spring engagement in said grooves for assembly of the same in the said complete frame unit, an electric resistance element carried by said holder, and means integral with said frame for supporting bread or the like adjacent said resistance element.

7. An electric heater comprising a preliminarily and completely formed, integral, one-piece, main frame, oppositely disposed grooved members seated in said frame, and a heating element having resilient means adapted for spring engagement with the grooves of said members to hold the same in position.

8. An electric heater comprising a preliminarily and completely formed frame, oppositely disposed members removably seated in said frame, a heating element mounted in said members, grid members also mounted in said oppositely disposed members, and means whereby said heating element and grid members may be attached to or removed from said frame in its complete form.

9. An electric heater comprising a preliminarily and completely formed frame, oppositely disposed members removably seated in said frame, a heating element mounted in said members, and grid members having means adapted for spring engagement with said oppositely disposed members.

10. An electric heater comprising a one-piece open frame casting, a heating element removably mounted in said frame, and said frame having an integral base portion inclined downwardly towards the frame.

11. An electric heater comprising a one-piece open frame casting, the base portion of said frame having stationary side upright walls spaced from said open frame, bottom portions inclined downwardly from the side walls toward the open frame, said side walls

and bottom portions being integral with said frame, and a heating element in said frame.

12. An electric heater comprising a frame, oppositely disposed members seated in said frame, an electric resistance element engaging and extending between said members, and resilient grid means extending between and having bracing engagement with said members so as to maintain the same in position.

13. In an electric heater, a one-piece frame casting of porcelain or the like, said frame having an integral base portion with integral side channel portions to support bread or the like, and having also integral end and top portions, oppositely disposed portions thereof being adapted to support the heating element.

14. In an electric heater, a frame comprising a preliminary and completely formed integral, one-piece, casting of ceramic material, said frame having top, bottom, and end portions and adapted to receive and support an electric resistance element, and being open on the sides to permit radiation of heat from the resistance element.

15. In an electric heater, a one-piece frame casting of ceramic material, said frame having an integral base portion with integral side portions to support bread or the like, and having also an integral top portion for cooperation with the base portion to support a heating element.

16. In an electric heater, a one-piece frame casting, said frame having an integral base portion with integral side portions to support bread or the like, and having also an integral top portion for cooperation with the base portion to support a heating element.

17. An electric heater comprising a one-piece open frame casting, the base portion of said frame having integral stationary side portions for supporting bread or the like, said side portions extending outwardly and upwardly from opposite sides of said frame, and a heating element in said frame.

18. An electric heater comprising a preliminarily and completely formed integral one-piece frame, a heating element in said frame, and resilient grid members having spring engagement in said frame.

19. An electric heater comprising a complete frame, oppositely disposed members removably seated in said complete frame, said members being provided each with a groove extending substantially along the middle thereof and each of said members having openings along the two sides of said groove, an electric resistance element removably engaging in said grooves, and grid members removably engaging in said openings and having bracing engagement with said members so as to maintain the same in position.

20. An electric heater comprising a one-piece open, substantially rectangular frame casting of porcelain or the like, said frame having grooves in opposite parts thereof, members seated in said grooves, said members having each a groove extending substantially along the middle thereof and each of said members having openings along the two sides of its groove, an electric resistance element having spring engagement in the grooves of said members, grid members engaging in said openings and having bracing engagement with said members so as to maintain the same in position, and the bottom of said frame having integral side extensions for supporting bread or the like.

21. An electric heater comprising a preliminarily and completely formed integral, one-piece main frame unit, an electric resistance, a holder upon which said resistance is mounted, said holder having means of engagement with said frame for assembly of the same in said complete frame unit, and means integral with said frame unit for supporting bread or the like in the region of said resistance.

In testimony whereof I affix my signature.

GEORGE EATON.