June 28, 1932. F. V. DETWILER 1,864,715

HEAT DISTRIBUTOR PLATE

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Fig. 2

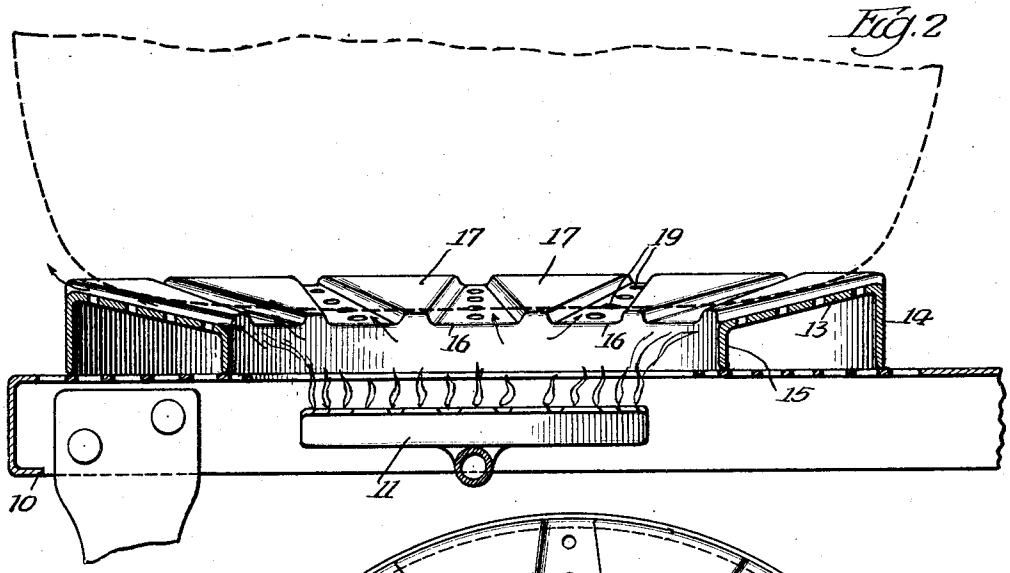


Fig. 1

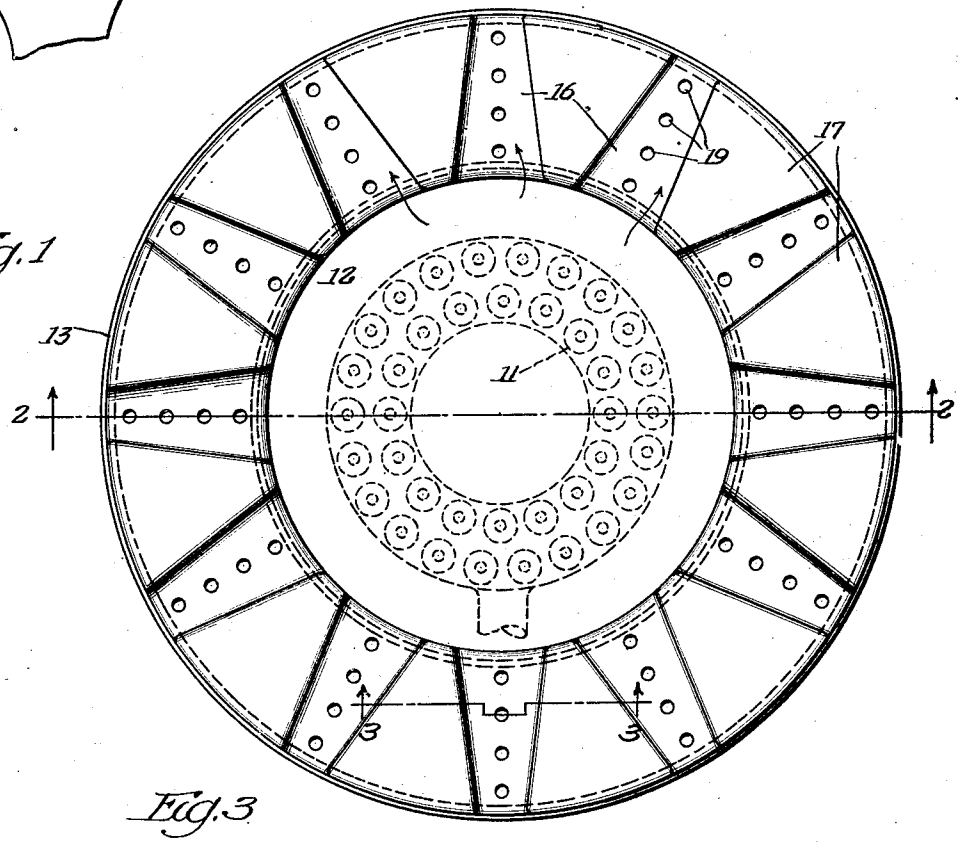
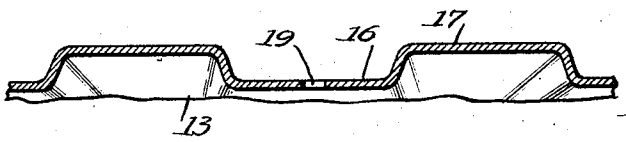


Fig. 3



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Fig. 4

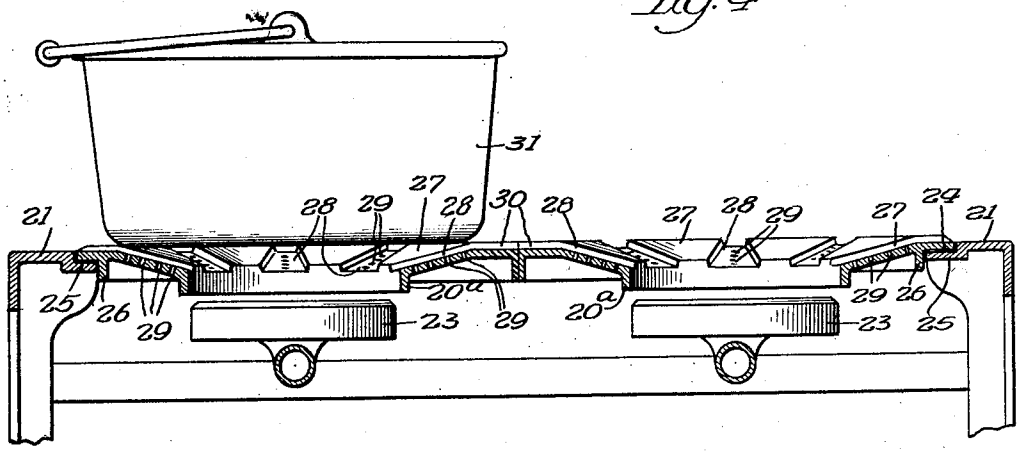
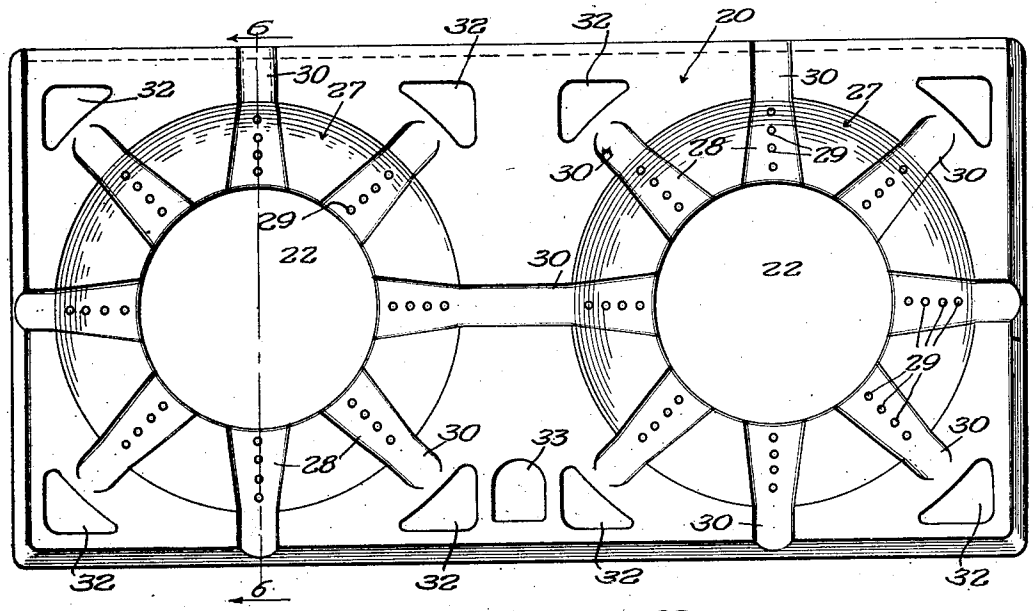


Fig. 5



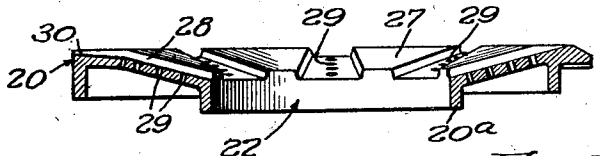


Fig. 6

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Patented June 28, 1932 1,864,715

UNITED STATES PATENT OFFICE

FOREST V. DETWILER, OF CHICAGO, ILLINOIS

HEAT DISTRIBUTOR PLATE

Application filed May 21, 1931. Serial No. 539,042.

This invention relates to improvements in heat distributor plates particularly adapted, though not necessarily limited in its use with cook stoves, and one of the objects of the invention is to provide an improved plate of this character so constructed that the products of combustion or heat from the heating medium will be directed to and confined against substantially the entire area of the bottom of the cooking vessel or container which is placed thereupon, and at the same time cause a current of heated air to flow across the bottom of the vessel without the loss of the benefit of the heat units through the escape beyond the circumference of the vessel or container.

A further object is to provide an improved plate of this character having a central opening therethrough and channels formed in the upper supporting surface and radiating from the central opening to the periphery of the plate, and which channels are spaced from each other and are of sufficient depth that when a utensil or container is placed upon such surface the channels will remain open and the flow of the products of combustion therethrough will not be obstructed.

To the attainment of these ends and the accomplishment of other new and useful objects as will appear, the invention consists in the features of novelty in substantially the construction, combination and arrangement of the several parts hereinafter more fully described and claimed and shown in the accompanying drawings illustrating this invention, and in which—

Figure 1 is a top plan view of a plate of this character constructed in accordance with the principles of this invention.

Figure 2 is a sectional view taken on line 2—2, Figure 1, showing a portion of a stove.

Figure 3 is a detail sectional view taken on line 3—3, Figure 1.

Figure 4 is a longitudinal, sectional view of a stove top constructed in accordance with the principles of this invention.

Figure 5 is a top plan view of the top.

Figure 6 is a detail sectional view on line 6—6, Figure 5.

Referring more particularly to the drawings the numeral 10 designates generally a portion of a stove, and 11 a burner.

The heat distributor plate is preferably of an annular construction having an opening 12 of considerable size at the center thereof adapted to be arranged over the burner 11.

The body portion 13 of the plate preferably inclines upwardly from the opening 12 to the periphery of the plate, and encompassing the outer periphery is a depending flange 14. Encompassing the inner periphery of the plate is a depending flange 15 and the lower edges of these flanges are substantially in the same plane.

The plate may be formed of any suitable material and may be either of cast material or formed of a stamping. Formed in the body of the plate and between the flanges 14 and 15 to extend entirely across the upper surface are channels 16 which may be of any desired depth and of any suitable width, but are of a substantial width and gradually decrease in width from the inner to the outer periphery of the plate.

The channels 16 are spaced from each other for any desired distance so as to form therebetween flat surfaces 17 and these surfaces 17 are also of a substantial width extending entirely across the supporting surface of the plate.

In use the plate is placed upon the top of the stove, as shown in Figure 2, so that the burner 11 will be in alinement with the opening 12 at the center of the plate, and when a vessel or container 18 is placed upon the top of the plate it will be manifest that the channels 16 will not be closed and will form passages entirely across the face of the plate, through which products of combustion and heated air will flow. This will cause a circulation of the heated air across and in contact with the bottom of the receptacle. By reason of the gradual decrease in width of the channels, the flow of the heated air and products of combustion will be retarded slightly so as to obtain therefrom the benefit of all of the heat units before escape beyond the periphery of the plate or the side of the vessel.

In order to utilize any radiated heat from

the plate which may be below the plate, there may be provided in the bottom of the channels 16 a series of openings 19 extending through the plate, any number of which may be employed so that any radiant heat will pass through the openings into the channels 16.

While in the present form of the invention the plate is shown as being of an annular configuration, it may obviously be formed in any other shape, having a central opening of considerable size to be disposed above the burner.

In Figures 4 to 6 there is disclosed a form of the invention comprising a stove top plate 20 which may be of any desired size according to the size of the opening of the stove 21 in connection with which it is to be used. As shown, the plate embodies two openings 22 of substantial size extending therethrough and these openings are arranged to stand above the two burners 23 of the stove. The plate is held in position in any suitable manner preferably by means of the edge 24 thereof resting upon a support or shoulder 25 carried by the stove and the plate is preferably provided with depending flanges 26 to engage and rest against the edge of the supports 25 to hold the plate in position.

The top of the plate is substantially flat and portions of the plate in proximity to the openings 22 are inclined downwardly as at 27 to the openings 22, and the outer periphery of the inclined peripheries 27 are spaced from the edges of the plate and from each other. Arranged within the inclined portions 27 are channels 28 which are radially arranged and extend from the walls of the openings 22 to the outer periphery of the inclined portion 27. These channels 28 preferably decrease in size from the openings 22 outwardly and arranged in the bottom of the channels are openings 29 which extend through the plate. Adjacent the outer extremities of the channels 28 there are provided recesses 30 opening through the top of the plate, and these recesses preferably decrease in depth from the outer periphery of the inclined portions 27 outwardly so that when a vessel 31 is placed upon the inclined portions, and the burners are lighted, the heat or products of combustion from the burners will flow through the channels 28 and will be retarded by the shape of the channels so that the heated air will flow across the bottom of the receptacle. The recesses 30 form escapes for the products of combustion beyond the receptacle 31.

Any number of these channels 28 may be employed and they are open at both ends. The recesses 30 also serve as a means to prevent the choking of the flame of the burner when a receptacle, the bottom of which is of a larger diameter than the inclined portion 27, is placed upon the stove top.

The plate may also be provided with openings 32 therethrough for the admission of air, and an opening 33 may also be provided which is arranged above the pilot flame of the stove.

While the preferred forms of the invention have been herein shown and described, it is to be understood that various changes may be made in the details of construction and in the combination and arrangement of the several parts, within the scope of the claims, without departing from the spirit of this invention.

What is claimed as new is:—

1. An annular heat distributing plate for cooking purposes, spaced downwardly projecting flanges encompassing the inner and outer peripheries of the plate, and channels opening through the top of the plate and extending entirely across the plate between the peripheries thereof.

2. An annular heat distributing plate for cooking purposes, spaced downwardly projecting flanges encompassing the inner and outer peripheries of the plate, and radially arranged channels opening through the top of the plate and extending entirely across the plate between the peripheries thereof.

3. An annular heat distributing plate for cooking purposes, spaced downwardly projecting flanges encompassing the inner and outer peripheries of the plate, and channels opening through the top of the plate and extending entirely across the plate between the peripheries thereof, said channels decreasing in width from the inner to the outer periphery of the plate.

4. An annular heat distributing plate for cooking purposes, spaced downwardly projecting flanges encompassing the inner and outer peripheries of the plate, and channels opening through the tops of the plate and extending entirely across the plate between the peripheries thereof, the upper surface of the plate forming extended flat portions between adjacent channels.

5. An annular heat distributing plate for cooking purposes, spaced downwardly projecting flanges encompassing the inner and outer peripheries of the plate, and channels opening through the top of the plate and extending entirely across the plate between the peripheries thereof, the upper surface of the plate forming extended flat imperforate portions between adjacent channels.

6. An annular heat distributing plate for cooking purposes, spaced downwardly projecting flanges encompassing the inner and outer peripheries of the plate, and channels opening through the top of the plate and extending entirely across the plate between the peripheries thereof, there being openings in the bottoms of the channels extending through the plate.

7. A heat distributing plate having an opening of substantial size therethrough,

downwardly projecting flanges encompassing the outer and inner periperies of the plate, said flanges being of substantial length with their lower edges in substantially the same plane, and channels formed in the plate and opening through the top thereof, said channels extending across the plate between the peripheries thereof.

8. A heat distributing plate having an opening of substantial size therethrough, downwardly projecting flanges encompassing the outer and inner peripheries of the plate, said flanges being of substantial length with their lower edges in substantially the same plane, and channels formed in the plate and opening through the top thereof, said channels extending across the plate between the peripheries thereof, and decreasing in width from the inner to the outer periphery.

9. A heat distributing plate having an opening of substantial size therethrough, downwardly projecting flanges encompassing the outer and inner peripheries of the plate, said flanges being of substantial length with their lower edges in substantially the same plane, and channels formed in the plate and opening through the top thereof, said channels extending across the plate between the peripheries thereof, there being openings through the plate in the bottoms of the channels.

10. A heat distributing plate having an opening of substantial size therethrough, downwardly projecting flanges encompassing the outer and inner peripheries of the plate, said flanges being of substantial length with their lower edges in substantially the same plane, channels formed in the plate and opening through the top thereof, said channels extending across the plate between the peripheries thereof, and flat surfaces of substantial width adjacent the top of and intermediate adjacent channels.

11. A heat distributing plate having an opening of substantial size therethrough, downwardly projecting flanges encompassing the outer and inner peripheries of the plate, said flanges being of substantial length with their lower edges in substantially the same plane, and channels formed in the plate and opening through the top thereof, said channels extending across the plate between the peripheries thereof, the said channels being of substantial width throughout their length.

12. A heat distributing plate having an opening of substantial size therethrough, downwardly projecting flanges encompassing the outer and inner peripheries of the plate, said flanges being of substantial length with their lower edges in substantially the same plane, and channels formed in the plate and opening through the top thereof, said channels extending across the plate between the peripheries thereof, the said plate inclining upwardly from the inner to the outer circumference thereof.

In testimony whereof I have signed my name to this specification, on this 19th day of May, A. D. 1931.

FOREST V. DETWILER.