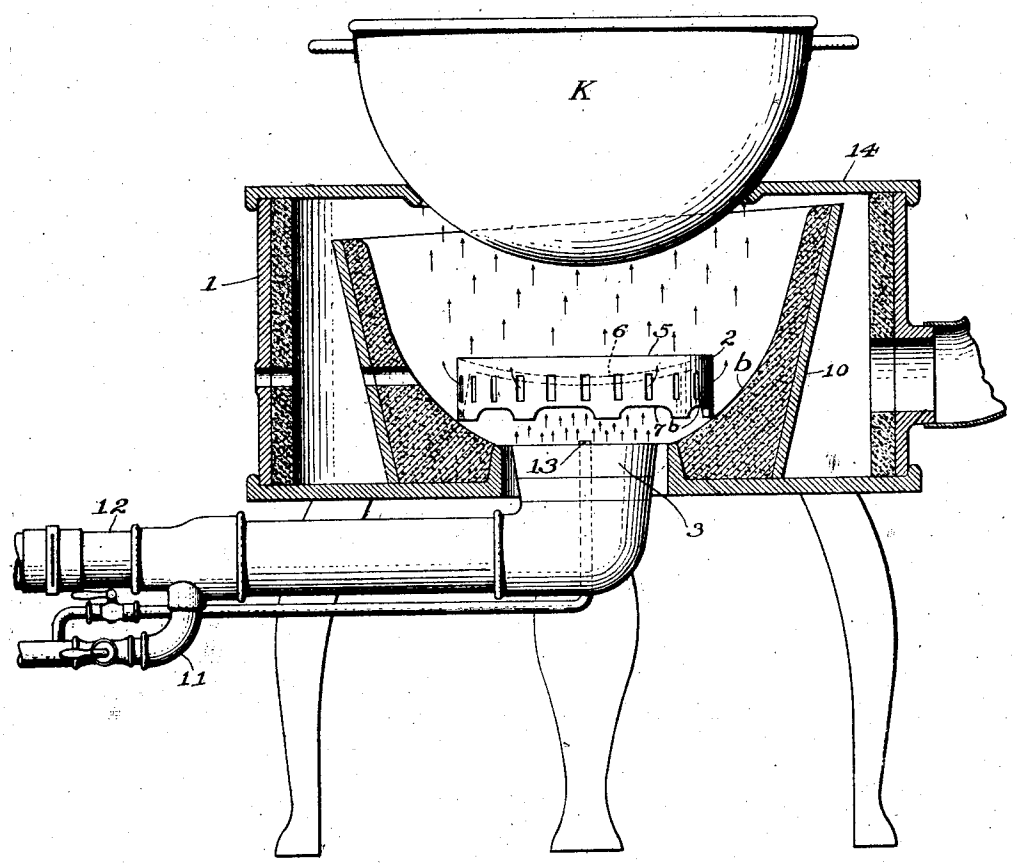
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CARAMEL COOKER

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Fig. 1.



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Fig. 2.

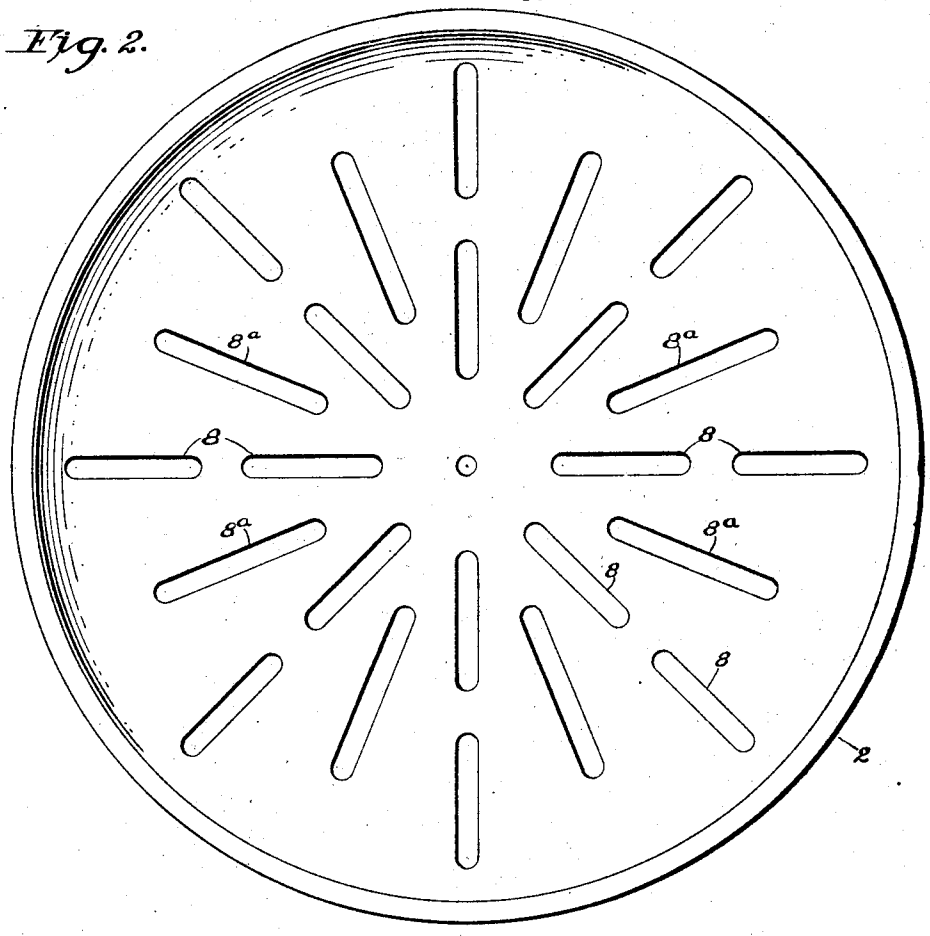
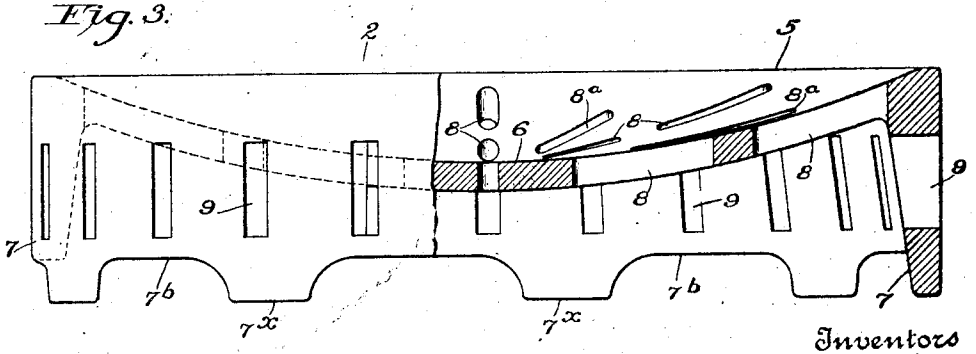


Fig. 3.



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UNITED STATES PATENT OFFICE.

GEORGE E. GARABRANT, OF IRVINGTON, AND EDWARD E. BECK, OF ROSELLE, NEW JERSEY; SAID GARABRANT ASSIGNOR TO SAID BECK.

CARAMEL COOKER.

Application filed January 14, 1924. Serial No. 686,091.

To all whom it may concern:

Be it known that we, GEORGE E. GARABRANT and EDWARD E. BECK, citizens of the United States, and residing, respectively, at Irvington, in the county of Essex and State of New Jersey, and Roselle, in the county of Union and State of New Jersey, have invented a new and Improved Caramel Cooker, of which the following specification is a full disclosure.

This invention relates to confectioner's furnaces and more particularly to that type which uses gas as a fuel to produce the necessary heat for cooking purposes.

In the manufacture of certain kinds of candy either of two approved types of furnaces are usually used. One of these types is designed to use solid fuel, such as coal, and in the other, gaseous fuel is used. It has been found, however, that the gas furnaces as heretofore constructed, are wholly unsuited for cooking certain candies such as caramel and fudge. These candies, due to the nature of their ingredients, are particularly susceptible to heat and great care must be taken during the cooking to prevent the batch from burning.

Gas candy-cooking furnaces, as heretofore constructed, included a relatively small burner which directed the greater portion of the heat to a restricted area of the kettle containing the batch of material to be cooked. This frequently caused burning of the candy which resulted either in a complete loss of the batch or the production of an inferior grade of candy, dependent upon the degree of the burn. This condition has led to the almost universal practice of using coal furnaces for cooking caramel and fudge.

There are many reasons, from a manufacturer's point of view, for favoring the gas furnace over the coal furnace. It will readily be perceived that, in the gas furnace, maximum heat is attained instantaneously and therefore the furnace need be lighted only during the actual cooking of the candy, whereas the coal furnaces must be in operation a considerable time before and after the candy is cooked. Furthermore, the gas furnaces are much cleaner than the coal furnaces due to the nature of the fuel used in each. Also, in the gas furnaces there are substantially no fluctuations in heat, whereas the coal furnaces require great care and attention to maintain an approximately even heat. Many other reasons might be set forth in favor of the gas furnaces, all of which show that the universal adoption of the coal furnaces for the manufacture of caramel and fudge has been only because of the better quality of the candy produced.

Due to the impossibility of consistently making good fudge and caramel on the gas furnaces and the disadvantages, inconveniences, and expense in the installation and operation of coal furnaces, most small manufacturers have discontinued the manufacture of these candies. They are therefore dependent upon the large manufacturers whose production warrant and require an almost constant operation of coal furnaces. With these conditions in view, this invention has for an object so to improve gas furnaces of this nature that, without sacrificing their inherent advantages, their utility and efficency will be greatly increased to include all of the advantages of the coal furnaces, so that a manufacturer equipped with an improved gas furnace may successfully manufacture any and all kinds of candy thereon.

A further object of this invention is to provide simple and effective means which may be embodied in the gas furnaces now in use to increase their adaptability and render them capable of performing work for which they were heretofore unsuited.

These and other objects have been attained by providing means for evenly distributing the heat from the gas burner over substantially the entire bottom of the kettle instead of permitting it to concentrate on a relative small area as it did heretofore. Thus by so distributing the heat the same effect is obtained as by using a coal furnace and any kind of candy may be cooked successfully thereon.

Other objects and advantages will be in part indicated in the following description and in part rendered apparent therefrom in connection with the annexed drawings.

To enable others skilled in the art so fully to apprehend the underlying features hereof that they may embody the same in the various ways contemplated by this invention, drawings depicting a preferred typical construction have been annexed as a part of this disclosure and, in such drawings, like characters of reference denote corresponding parts throughout all the views, of which:—

Fig. 1 is a vertical section of a confectioner's gas furnace embodying the present invention. Fig. 2 is a plan of the heat distributing device and Fig. 3 is a side elevation, partly in section of Fig. 2. The invention consists in combining with the usual gas furnace a heat distributing unit 2 which receives the heat from the relatively small gas burner 3 and distributes it evenly over substantially the entire lower surface of a kettle K supported upon a suitable casing 1, as by means of a ring or plate 14. This breaking up of the heat and the even distribution of it over a relatively great area produces the same effect as is obtained in the coal furnace and therefore any kind of candy may be cooked without the danger of burning.

Candy kettles as commonly constructed are of substantially semi-spherical form; thus, when the kettle is supported centrally above a small burner, the heat from the burner is concentrated on a relatively small area which is at point closest to the center of the burner. With the heat thus concentrated it is almost impossible to properly cook caramel and fudge for the reasons above stated.

To effect a more even distribution of heat, the distributing unit 2 is made the same shape as the burner, that is circular, and its upper wall 5 is preferably concaved as shown at 6. The curvature of this wall is substantially the same as the curvature of the bottom of the kettle whereby all points on the upper surface of the wall are maintained substantially the same distance from the kettle. This curvature also serves to deflect the heat both upwardly and outwardly from the burner. The upper wall 5 is formed with a plurality of elongated apertures by means of which the heat is evenly distributed over substantially the entire bottom of the kettle. These apertures preferably radiate from the center of the unit and constitute two series, of which one series consists of pairs of relatively short apertures 8 located end to end, and another series which consists of single relatively long apertures 8^a located equi-distant between adjacent pairs of smaller apertures. This arrangement has been found very effective in evenly distributing the heat from the burner.

The heat distributing unit is formed with an annular vertical wall 7 which serves as a support for the upper wall 5 and also prevents too great spreading of the heat. This wall is provided with apertures 9 through which a portion of the heat escapes, thereby maintaining the same temperature above the periphery of the unit as above the more centrally located parts thereof. In the lower edge of the wall 7 is a series of openings 7^b which provide spaced feet 7^x for supporting the unit on the curved inner surface of the fire brick *b*. These openings also serve as air passages which aid in combustion and the distribution of heat. The unit 2 is preferably made of heavy cast metal which, during the cooking operation, becomes heated and which, due to the amount of metal contained therein and also to the provision of the substantially closed vertical wall 7 gives off its heat slowly after the gas flame has been extinguished. Therefore with this device the flame may be extinguished a substantial time before the candy is completely cooked and the heat contained in the unit will be given off gradually and will continue to cook the candy in the manner of a so-called "fireless cooker" thereby effecting a substantial saving in fuel. During certain tests the batch of candy has continued to boil fifteen minutes or longer after the flame was extinguished.

The formation and arrangement of the apertures 8 and 8^a have been found to contain decided advantages over a greater number of smaller apertures inasmuch as the former provide ample passages for the even distribution of the heat without providing relatively thin separating walls between the apertures which, being subjected to the heat of the burner, rapidly burn through and thus destroy the unit. The thicker dividing walls as provided between the apertures 8 and 8^a, also serve to retain the heat better than thinner walls and thus the very desirable "fireless cooker" effect is gained.

This heat distributing unit is supported in the usual fire pot 10 sufficiently above the burner to permit complete combustion beneath the same. Fuel may be furnished to the burner 3 by means of the usual gas pipe 11 and air pipe 12. The burner may also be provided with the usual pilot light 13.

From the foregoing it will be perceived that we have combined with the usual gas furnace a device which, although simple in construction, effectively overcomes the inherent defects of such furnaces and provides greater utility by permitting their use for purposes which they were heretofore unsuited.

Without further analysis, the foregoing will so fully reveal the gist of this invention that others can, by applying current knowledge, readily adapt it for various utilizations by retaining one or more of the features that, from the standpoint of the prior art, fairly constitute essential characteristics of either the generic or specific aspects of this invention and, therefore, such adaptations should be, and are intended to be, comprehended within the meaning and range of equivalency of the following claims.

Having thus revealed this invention, we claim as new and desire to secure the following combinations and elements, or equivalents thereof, by Letters Patent of the United States:

A heat distributing unit for confectioner's furnaces comprising an annular vertical wall provided with heat distributing apertures and a dished upper wall formed integral with said annular wall, said upper wall being provided with a plurality of heat distributing apertures of unequal dimensions, the apertures in said upper wall being arranged alternately singly and in pairs with the single apertures spaced equi-distantly between adjacent pairs of apertures.

In witness whereof, we hereunto subscribe our names.

GEORGE E. GARABRANT. [L. S.]
EDWARD E. BECK. [L. S.]