

Nov. 21, 1939.

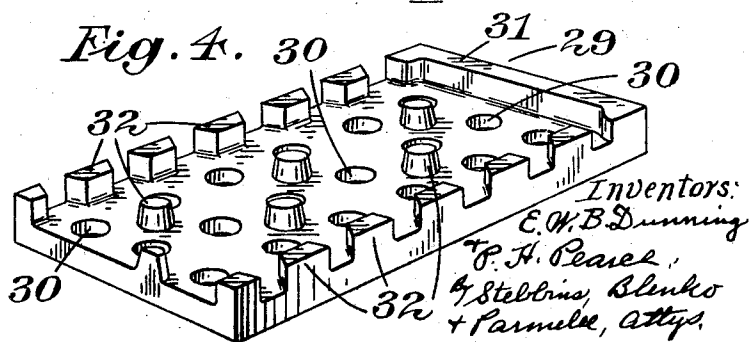
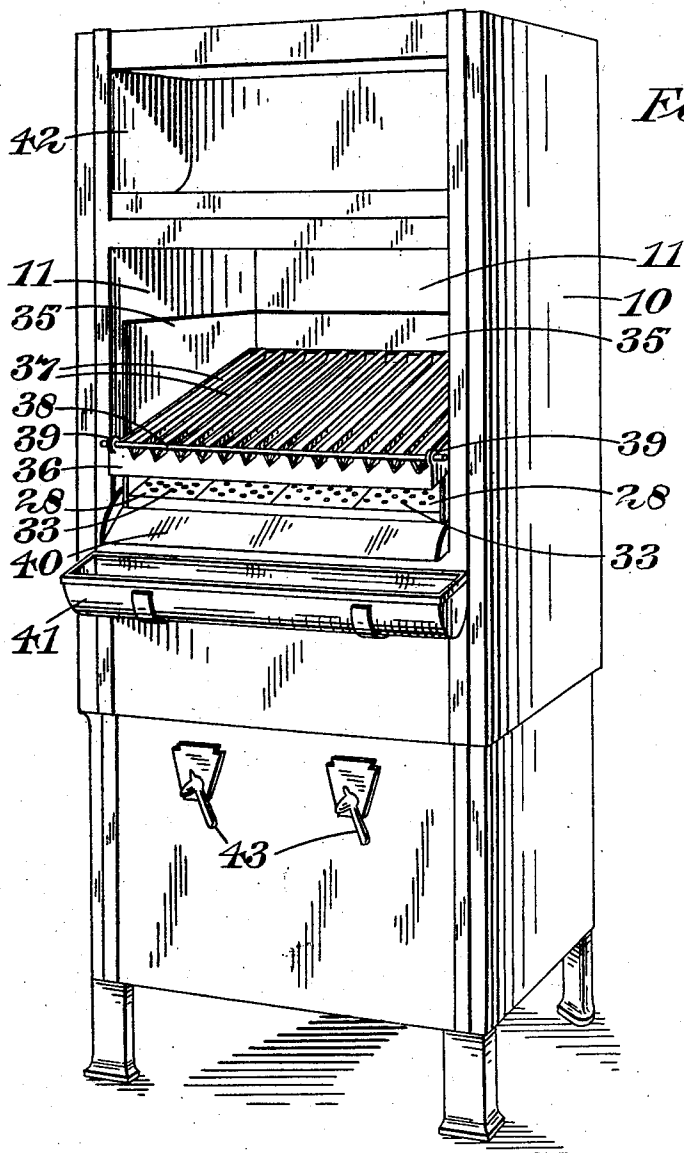
E. W. B. DUNNING ET AL

2,180,868

GRILLER

Filed March 22, 1938

2 Sheets-Sheet 1



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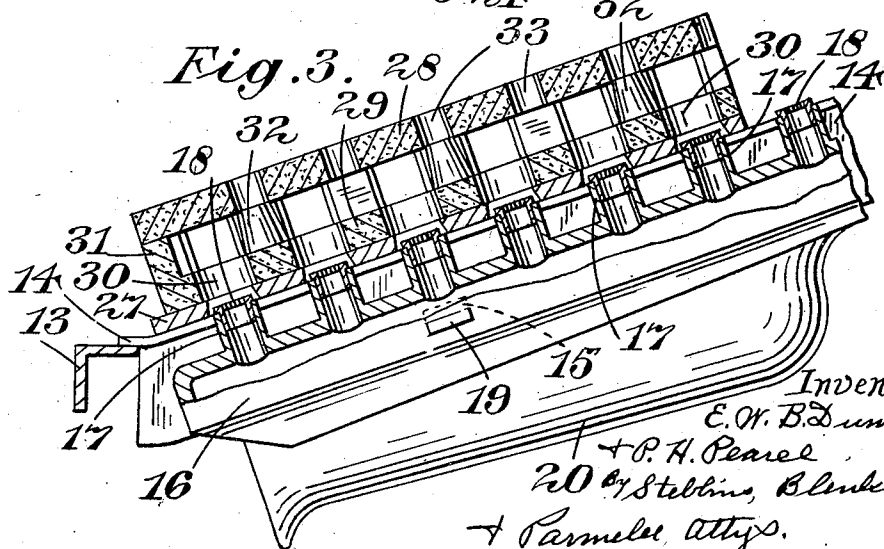
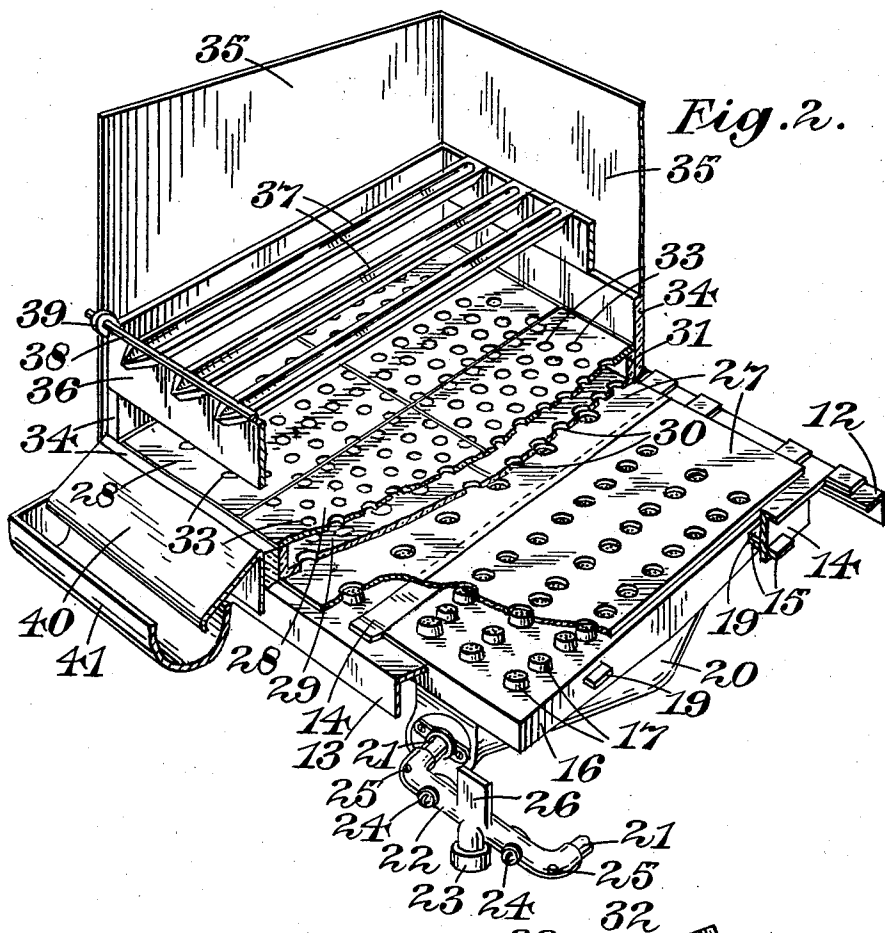
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UNITED STATES PATENT OFFICE

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GRILLER

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3 Claims. (Cl. 126—41)

This invention is for improvements in or relating to gas-heated grilling apparatus.

According to this invention, a grill comprises two apertured slabs formed from fireclay or other refractory material spaced apart and arranged one over the other above a multi-teat gas burner, the apertures in which lower slab are arranged to register with the teats of the burner but are arranged out of line with the apertures in the upper slab. The food to be grilled is disposed above the slabs. The upper slab is rendered incandescent and provides a most satisfactory radiant surface for grilling. Any drippings from the food falling upon it are vaporised. Should any fat fall through the apertures it does not fall on to the burner owing to the staggered relationship of the apertures. The lower slab is also rendered hot enough to vaporise the fat.

The lower slab may be disposed close to the burner and the apertures therein need be no larger than is necessary to permit free passage of the flames. The apertures in the upper slab are larger than the effective area of those in the lower slab and are of such a size as to avoid smothering of the flames arising from the lower slab. The circuitous path taken by the flames ensures efficient scrubbing of heat from the gas.

In one constructional form of the invention, one of the two adjacent faces of the slabs is flat and the other is provided with spacing members for locating said faces apart. The space between any or all of the edges of the slabs may be closed by refractory strips, thereby preventing the flames from emerging from between the slabs.

In the case where a comparatively large grilling surface is required, a number of multi-teat burners are arranged side by side beneath the slabs. In such an arrangement, a number of pairs of slabs may be arranged side by side above said burners so as to provide a continuous grilling surface.

The slabs may be carried by an apertured sheet-metal plate.

A grid for supporting the material to be grilled may be disposed above said slabs at the most effective distance for grilling.

The burner or burners, said slabs and the grid may be inclined to the horizontal. This arrangement is particularly suitable for a construction in which the above-mentioned parts are enclosed within a cabinet having an opening in the front thereof. In such an arrangement, said multi-teat burners are arranged to extend rearwardly from said opening.

The grid may comprise a number of inclined

bars spaced apart side by side and each having a groove in the upper face thereof and a trough may be provided beneath the lower ends of said bars. With this arrangement, some of the fat and juice from the material being grilled flows down the bars and drips into the trough. Preferably said bars are detachably mounted in a framework so that they may be readily removed for cleaning.

The following is one form of construction according to this invention, reference being made to the accompanying drawings, in which:

Figure 1 is a perspective view of the griller as a whole,

Figure 2 is a perspective sectional view of the main parts of the griller,

Figure 3 is a vertical section through the refractory slabs and burner, and

Figure 4 is a perspective view of one of the lower slabs.

The griller comprises a cabinet 10 having sheet-metal walls secured to a suitable angle-iron frame-work. An opening 11 is formed in the front wall of the cabinet through which the material to be grilled may be inserted and withdrawn. The aforesaid framework comprises a horizontal rear angle-iron 12 and a forward horizontal angle-iron 13 between which extend a number of T-section supporting bars 14. Two lugs 15 are arranged to extend from each side of the vertical flange of each T-section bar. Each burner comprises a rectangular-shaped burner chamber 16 having a number of burner teats 17.

As will be seen from Figure 2, each burner teat is provided with a perforated disc 18 which provides a number of burner orifices. Each side of the rectangular burner chamber is provided with two laterally-projecting lugs 19, whereby the burners may be supported on the lugs 15 of the supporting bars 14. Formed beneath each burner chamber is a mixing chamber 20 with which is associated a suitable injector 21 disposed in an open end of the mixing chamber. The injectors of two adjacent burners are supplied with gas through a distributor pipe 22 having a branch 23 for connection with the main supply pipe. The distributor pipe is provided on each side of the branch pipe with a pressure-regulating screw 24 and with a removable plug 25 which may be replaced by a pressure gauge. The distributor pipe may be secured to a wall of the cabinet by securing studs (not shown) which engage with the lug 26. The T-shaped supporting bars 14 carry a number of apertured steel plates 27, the apertures in which steel plates are arranged to

register with the burner teats 17. As will be seen from Figure 2, the apertures are conical in shape and the perforated plugs in the burner teats extend partly up into the apertures. Supported on said steel plates are a number of pairs of firebrick slabs, each pair comprising an upper and lower slab 28 and 29, respectively. Both slabs are about half-an-inch thick. The lower slab is provided with a number of circular holes 30 which are three-quarters of an inch in diameter and which register with the apertures in the steel plate. The apertures in the steel plate are of a size to permit sufficient air to flow in past the teats for completing the combustion of the gas. One edge of each lower slab is provided with an upstanding flange 31 and with a number of spacing members 32 which are of the same height as the upstanding flange 31. These flanges and distance pieces serve to support the upper slabs 28. Each upper slab is provided with a number of circular holes 33 which are arranged in staggered relationship in respect of the holes 30 in the lower slabs. The holes 33 are a half-inch in diameter and their effective area is larger than the effective area of the space between the burner teats and the holes in the plate 27. The upper and lower slabs are spaced apart by about half-an-inch by the aforesaid spacing members and flanges. The assemblage of said slabs is encircled by firebrick side members 34.

The angle-irons 12 and 13 are so located that the burners, steel plates and firebrick slabs are inclined to the horizontal at an angle of about 20°. The cabinet is provided with mild steel lining plates 35 which extend round three sides of the firebrick slab assemblage and also extend a substantial distance above and below it. Mounted on said lining plates above the slabs is a rectangular sheet-metal frame 36, the front and rear members of which are V-notched to receive a number of grid bars 37. The grid bars are retained in position by cross-bars 38 which engage eyes 39 on said rectangular frame. The grid bars are V-shaped in cross-section and a groove extends along the upper face of each of them. The frame is inclined at the same angle as the firebrick slabs and the forward end of each grid bar extends beyond the forward frame member. A drip sill 40 is arranged in the lower

part of the opening 11 and in front of the forward firebrick side member 34. The drip sill is arranged immediately beneath the forward ends of the grid bars and beneath it is provided a collecting-trough 41. A compartment 42 is provided in the cabinet above the opening 11 for reception of dishes to be heated. A vent opening (not shown) is provided in the top of the cabinet. The front wall of the cabinet beneath the opening carries a suitable control cock 43 associated with the gas supply pipe.

We claim:

1. A grill comprising a gas burner having a plurality of teats, a pair of firebrick slabs having a number of apertures formed therein, means for spacing said slabs apart one over the other, means for locating the pair of slabs over said burner, which apertures are so formed in the lower slab as to register with the burner teats and which apertures in the upper slab are so formed as to be in staggered relationship to the first said apertures and means for supporting the material to be grilled above said slabs.

2. A grill comprising a gas burner having a plurality of teats, a pair of refractory slabs having a number of apertures formed therein, means for spacing said slabs apart one over the other, an apertured metal sheet arranged to support said slabs over the burner, which apertures in said sheet and the lower slab are so formed as to register with the burner teats, and which apertures in the upper slab are so formed as to be in staggered relationship to the other apertures.

3. The combination with a gas burner and a grid for supporting a material to be grilled, of means interposed between the burner and the grid for radiating heat, said means comprising a pair of refractory slabs having a number of apertures formed therein, means for spacing said slabs apart one over the other, an apertured metal sheet arranged to support said slabs over the burner, which apertures in said sheet and the lower slab are so formed as to register with the burner teats, and which apertures in the upper slab are so formed as to be in staggered relationship to the other apertures.

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