Feb. 18, 1941. A. P. SCHULZ 2,232,482

COOKING RANGE

Filed April 30, 1938 2 Sheets-Sheet 1

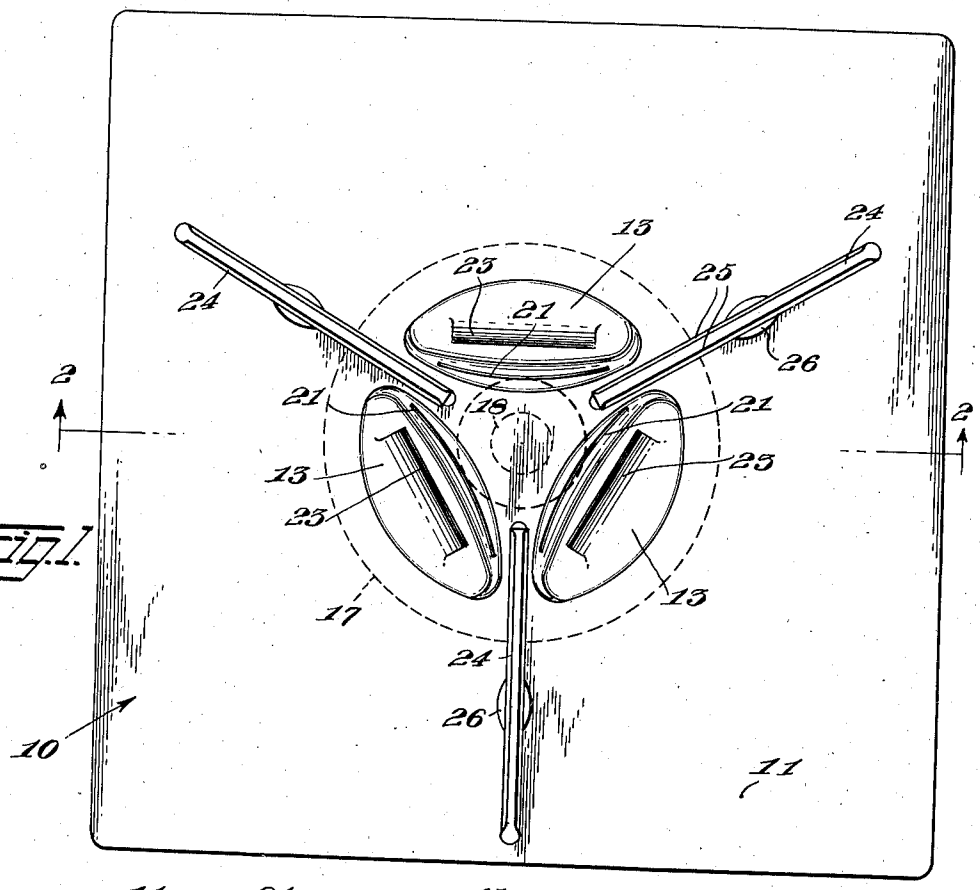


Fig. 1.

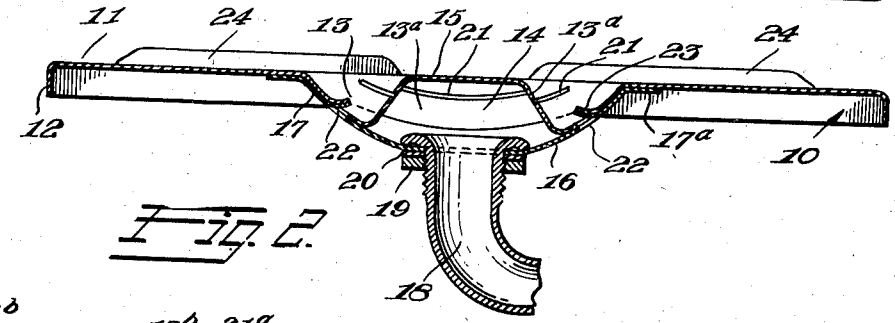


Fig. 2.

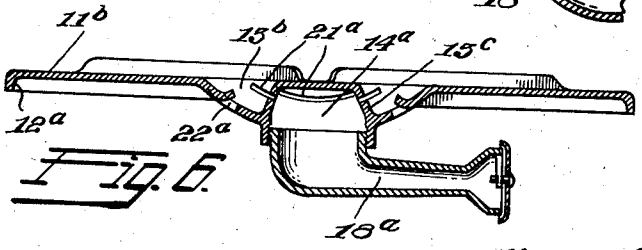


Fig. 6.

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COOKING RANGE

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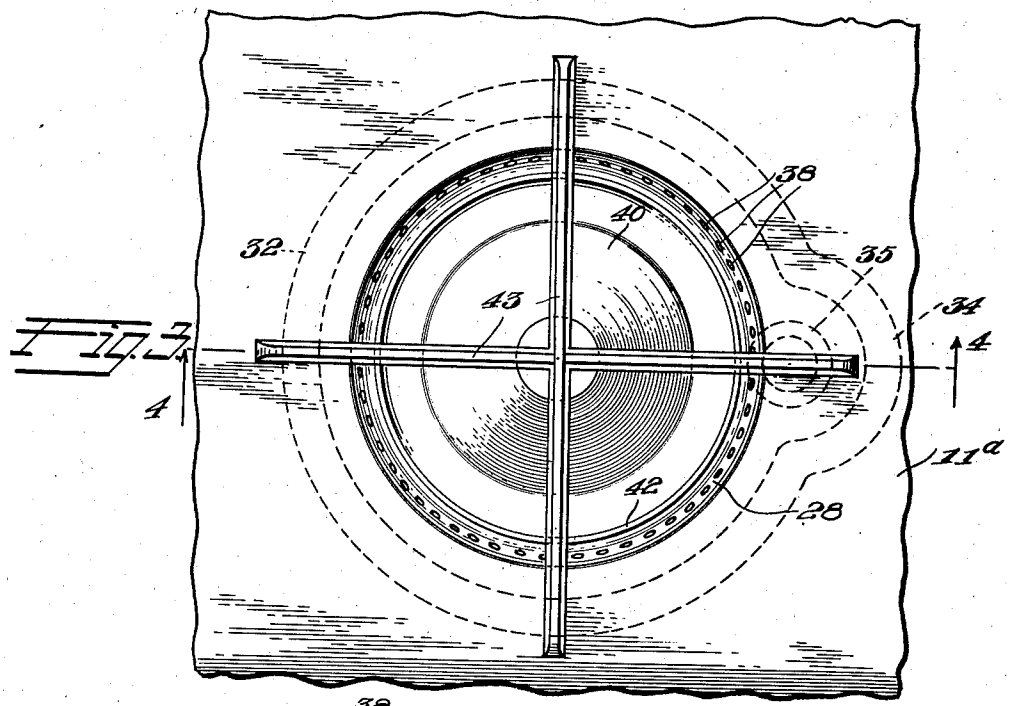


Fig. 3.

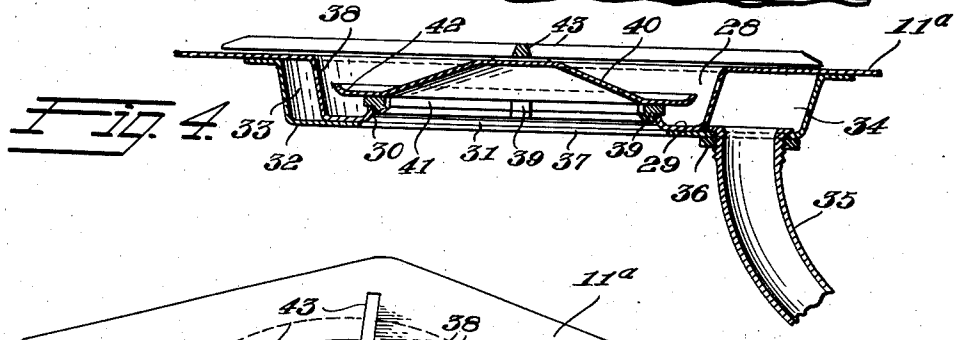


Fig. 4.

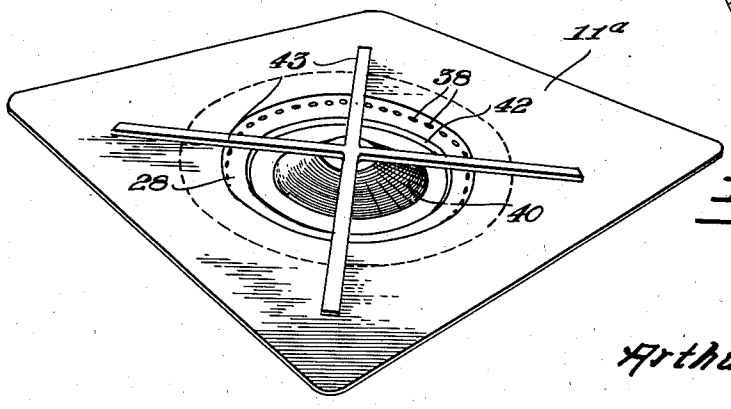


Fig. 5.

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UNITED STATES PATENT OFFICE

2,232,482

COOKING RANGE

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Application April 30, 1938, Serial No. 205,311

4 Claims. (Cl. 126—39)

This invention relates to cooking ranges.

A primary object of the invention is the provision of a unitary construction for ranges comprising a gas burner, utensil support, and drip pan, thereby promoting cleanliness as well as positive maintenance of the operative relations of these parts.

A further object of the invention is the provision of a unitary gas range construction comprising a cooking top, grid, and depressed portion which functions as a drip pan, the walls of the depressed portion being provided with gas ports and secondary air openings.

A still further object of the invention is the provision of a unitary gas range construction comprising a cooking top, grid, and gas burner, the construction readily adapting itself to manufacture from sheet steel stamping suitably welded together, or from iron or aluminum casting, the construction in either form of manufacture possessing plane and uniformly curved surfaces whereby it is substantially immune to the collection of dirt and is capable of being easily cleaned.

A still further object of the invention is the provision of a structure of the general character above referred to which is relatively simple in construction, highly efficient in operation, and which is capable of manufacture at relatively low cost.

For a more complete understanding of the nature and objects of the invention, reference should be had to the following detailed description taken in connection with the accompanying drawings, wherein—

Fig. 1 is a top plan view of a gas burner constructed in accordance with one physical embodiment of the invention.

Fig. 2 is a transverse sectional view in a plane substantially as represented by the line 2—2 in Fig. 1.

Fig. 3 is a top plan view of a gas burner constructed in accordance with another embodiment of the invention.

Fig. 4 is a transverse sectional view in a plane substantially as represented by the line 4—4 in Fig. 3.

Fig. 5 is a perspective view of a burner substantially of the character indicated in Figs. 3 and 4.

Fig. 6 is a transverse sectional view depicting a still further embodiment of the invention.

Referring now in detail to the drawings, by reference characters, and wherein like characters designate like parts 10 (Figs. 1 and 2) designate a former unit in its entirety:

The burner unit 10 is preferably constructed from stainless sheet steel and comprises a flat sheet metal top plate 11 preferably provided with a continuous marginal flange 12. The top plate 11 is provided with a plurality (preferably three) of indentations, depressions or wells 13 in surrounding relation and symmetrical to a central chamber 14, which chamber is defined by the inner walls 13a of the indentations 13, a top wall 15 co-planar with plate 11 and a bottom wall 16 provided by the central portion of a domed disk 17 having a marginal flange 17a and suitably connected with plate 11 by spot or hydrogen welding.

A mixer tube 18 is connected with the wall 16 of disk 17 by means of a spanner nut 19 and gasket 20, the mixer tube being thus in communication with the chamber 14 to which gas is delivered through the mixer tube 18.

Each of the walls 13a is provided with a gas port preferably in the form of an elongated slit 21 substantially of a length equal to the width of the wall whereby gas will enter the depressions 13 and when ignited will produce flames of substantially fan shape.

In order to provide adequate secondary air supply for the flames, each depression is provided with an elongated air opening or louvre 22 immediately below the respective gas port 21 for admitting air substantially in a direction normal to the flow of the gas.

The air openings are preferably provided by slitting and pushing upwardly the combined material of sheet 11 and disk 17 adjacent the slits as is clearly indicated, the arcuate deflected portions 23 acting to direct the air toward the gas emitting ports 21 for most efficient combustion.

The burner unit is completed by the provision of utensil supports 24 which are preferably formed from elongated strips of sheet steel whose opposite edges are upturned as indicated at 25 and which are secured to the plate 11 by spot or hydrogen welding as indicated at 26.

The supports 24 radiate from the axis of the mixer tube 18 and are disposed with their inner ends between adjacent depressions 13.

It will be appreciated from the foregoing disclosure that a burner is provided in accordance with this invention which is unitary, light in weight, readily adapted for construction from high grade material as stainless steel and which, due to the novel arrangement of cooperating gas and air ports is highly efficient in operation.

While a single burner is disclosed, it will be readily understood that the top plate 11 may be

of any desired dimensions and provided with a plurality of gas burner constructions similar to the single one herein disclosed.

In Figs. 3, 4 and 5 is disclosed a modified arrangement of gas burner and which comprises a flat sheet metal top plate 11*a* having a depression 28.

The bottom of the depression 28 comprises an annular ring-like portion 29 having a marginal out-turned flange 30 surrounding a central air opening 31.

Surrounding the depressed portion 28 is a depressed sheet metal ring 32 which is suitably secured to plate 11*a* as by spot or hydrogen welding and which in cooperation with depression 28 provides a circumferential gas chamber 33 having an enlarged portion 34 to the base of which is secured a mixer tube 35 by means of a spanner nut 36 and suitable gasket.

The ring 32 is provided with a central air opening 37 in registration with the aforesaid air opening 31.

The circumferential wall 28*a* of the depression 28 is provided with a series of relatively close apertures providing gas ports 38 which communicate with the gas chamber 33.

Removably seated on the flange 30 are a plurality of spacer blocks 39 which are suitably secured to and support a combined sheet metal baffle and drip pan member 40.

The blocks 39 provide a secondary air admissionary opening 41 and the upwardly curved marginal flange 42 on member 40 directs the air into proper mixing position with the gas passing through the ports 38 whereby a highly efficient flame is provided.

The burner is completed by securing, as by welding, a plurality of cooking utensil supports 43 to the top plate 11*a*. Also, in accordance with this form of the invention, the plate 11*a* may be of any desired dimensions and provided with a plurality of the burner constructions.

While the burner or range construction is hereinbefore disclosed as being formed of sheet metal stampings, the invention is not limited thereto, as same is readily capable of manufacture by casting as is represented in Fig. 6. The burner unit represented in Fig. 6 is similar to that represented in Fig. 2 and possesses the same desirable characteristics.

The construction according to Fig. 6 may readily be provided by an aluminum alloy die casting or some other form of casting from various other materials.

The cast form in accordance with Fig. 6 comprises a flat cooking top 11*b* having a depending marginal flange 12*a*.

The plate 11*b* merges into a plurality of depressions or wells 13*b* in surrounding relation to a central chamber 14*a*.

A mixer tube 18*a* is detachably connected with the chamber 14*a*.

The walls 13*c* are each provided with an elongated gas port 21*a* and secondary air openings 22*a* are formed in the bottom walls of the wells 13*b*.

Thus it will be seen that this form of construction will function in the same manner as that disclosed in Fig. 2, the prerequisite being, whether the burner units are formed from sheet metal or castings, that a unitary construction be provided for effecting the desirable characteristics hereinbefore set forth.

While there is herein disclosed only certain specific embodiments of the invention, such are to be considered as illustrative only, and not restrictive, the scope of the invention being defined in the sub-joined claims.

What is claimed and desired to secure by U. S. Letters Patent is:

1. A gas burner construction comprising a flat cooking top plate, a plurality of depressions in the plate in circumscribing relation to a portion of the flat top plate, a second plate rigidly secured to the first plate and providing in conjunction with adjacent walls of the depressions and said portion of the flat top plate a gas chamber, gas ports in said walls of the depressions, and air openings in the bottom walls of said depressions.

2. The structure defined in claim 1 wherein said depressions are elongated and wherein said gas ports and air openings are in the form of elongated slits, and with the air openings substantially parallel with the respective gas ports.

3. A gas burner construction comprising a flat top plate, a plurality of depressions in the plate in circumscribing relation to a portion of the flat top plate, a second plate rigidly secured to the first plate and having a dome shaped portion providing with the adjacent walls of said depressions and said portion of the top plate a gas chamber centrally of said depressions, a mixer tube detachably connected with said second plate for conveying gas to said chamber, gas ports in the said walls of said depressions, and air openings in the bottom walls of said depressions and said second plate.

4. The structure defined in claim 3 wherein arcuate deflecting portions are provided adjacent said air openings for directing air toward the gas ports.

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