Oct. 5, 1965 K. E. STEWART ETAL 3,209,743

CHARCOAL GRILL

Filed June 24, 1964 3 Sheets-Sheet 1

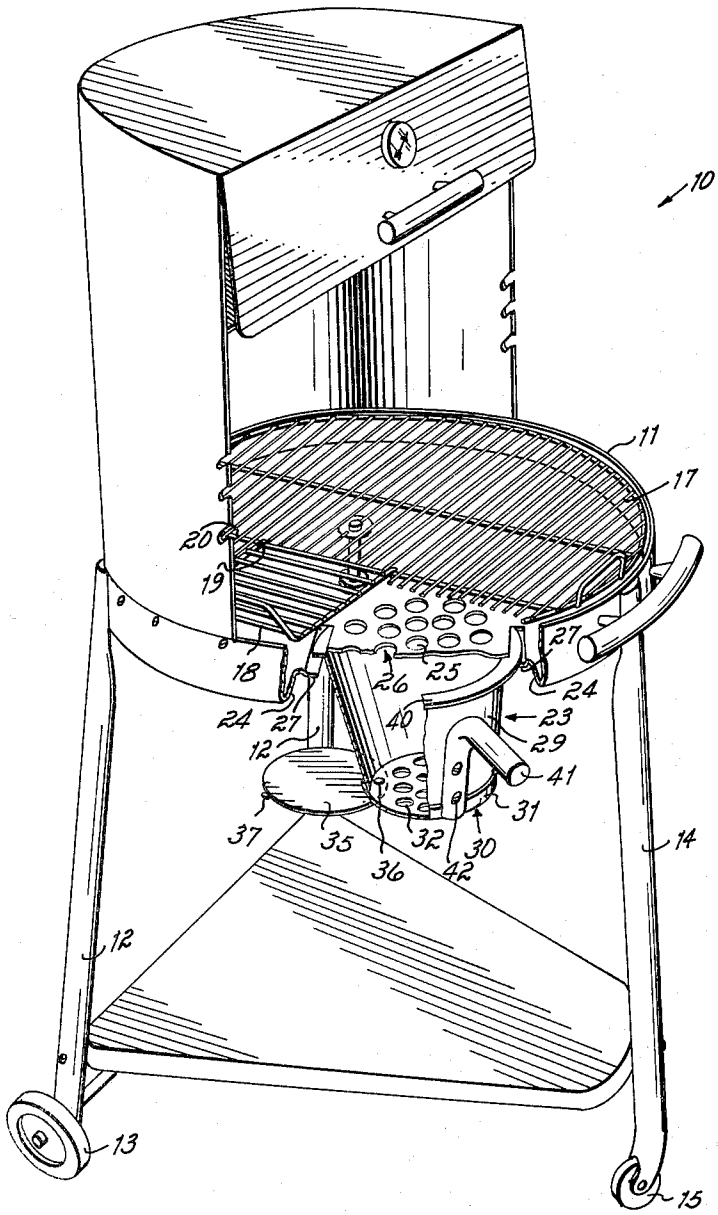

Fig. 1

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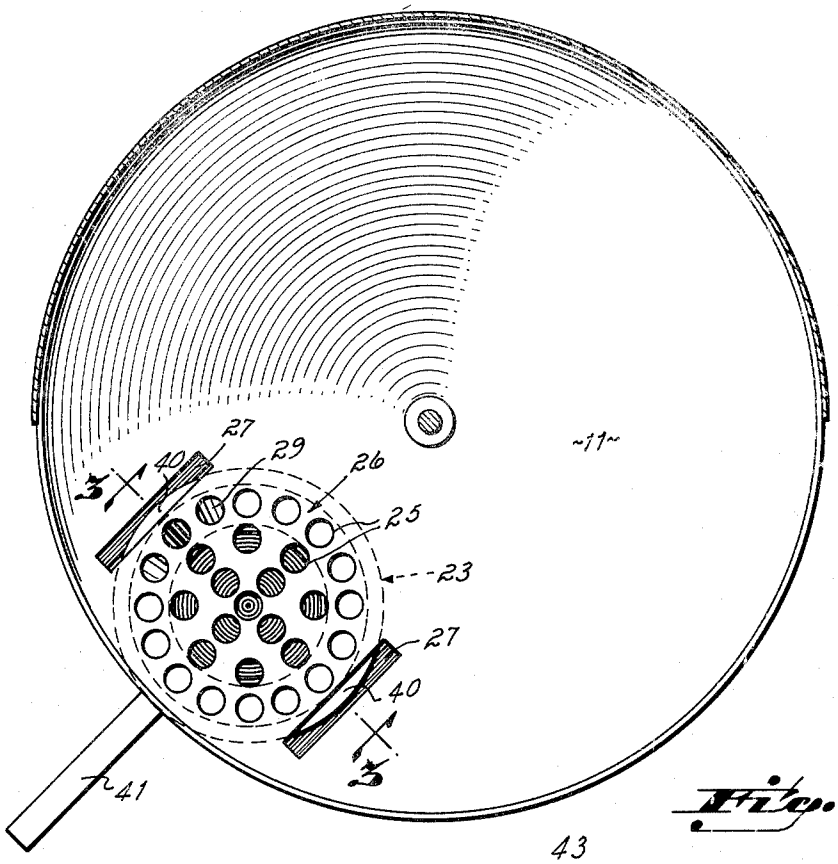

Fig. 2

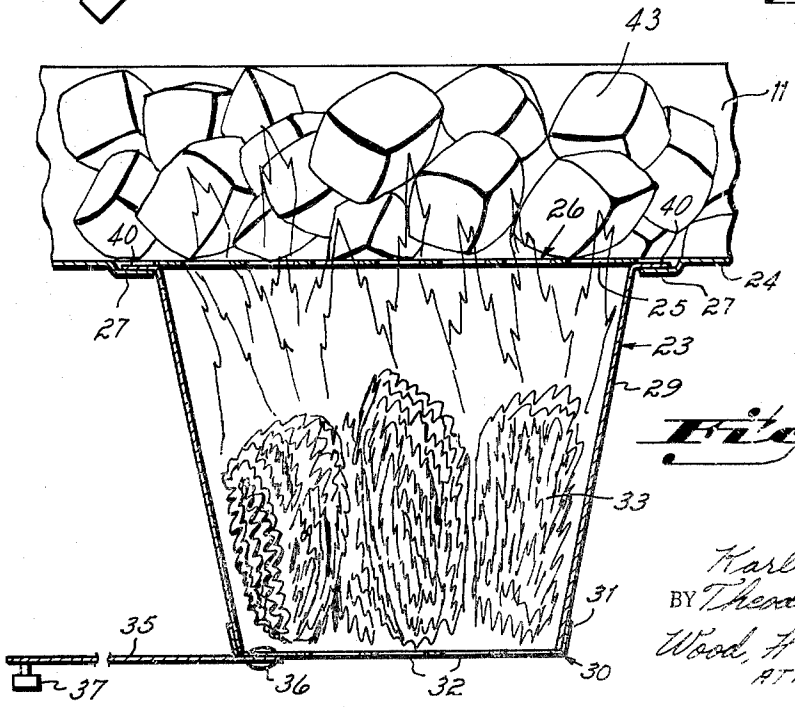

Fig. 3

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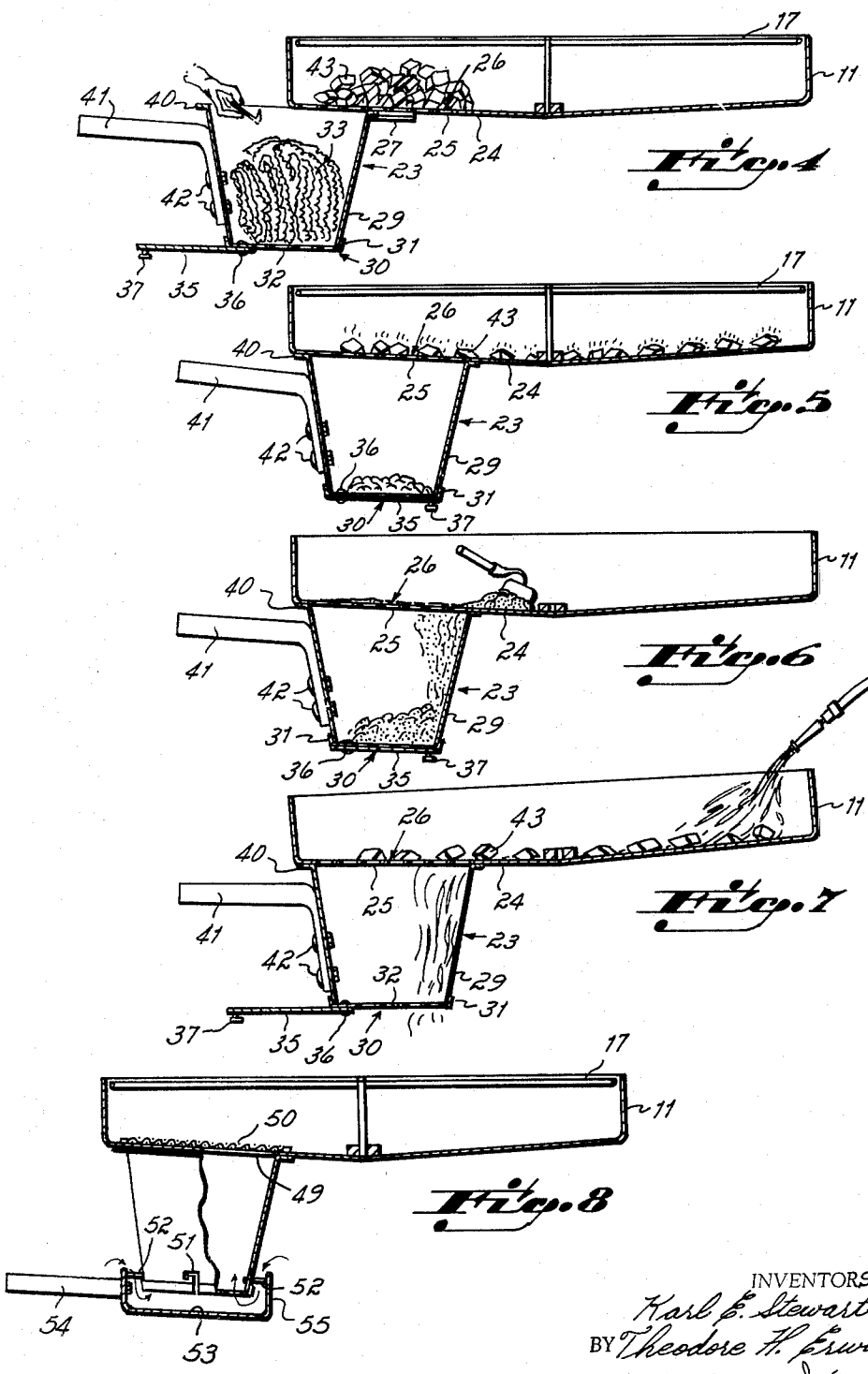

Fig. 4

Fig. 5

Fig. 6

Fig. 7

Fig. 8

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CHARCOAL GRILL

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The invention relates to an outdoor cooking device commonly referred to as a charcoal grill and more particularly the invention is directed to means for igniting charcoal or other combustible material which is used in the grill.

Charcoal is a slow burning material which is somewhat difficult to ignite. In order to ignite a chunk of charcoal it must be subjected to high temperature for a considerable period of time. It has been the practice to ignite charcoal in one of four principal methods. In the first, a base fire of paper and wood is laid and charcoal is placed upon it. The burning of the wood and paper causes the ignition of the charcoal. This is obviously a bother, for the fire is not only difficult to lay but, because of the difficulty of getting a draft under it, it is difficult to keep it going unless considerable care is exercised in the initial laying of it.

In a second method, it has been common practice initially to spray the charcoal with an inflammable fluid and to ignite that fluid. The burning of the fluid subjects the charcoal to flames which ignite the charcoal elements. This is a reasonably satisfactory method of igniting charcoal from an operational standpoint, but it can be extremely dangerous unless carefully performed. The most common hazard arises from the impatience of the operator who feels that his charcoal is not igniting fast enough or who failed to apply a sufficient amount of fluid to ignite the charcoal in the first instance. Many times that person has given the charcoal an extra squirt only to have the supply container for the fluid explode in his hands.

A third method of igniting the charcoal is to contact the charcoal for a period of time with a metallic element which has been electrically heated to a red glow. This element is somewhat safer than the use of fluid, but it is expensive, it requires a source of electricity, and it must have a safe place for its storage for it is red hot when it is taken from the ignited coals. It is not impossible for someone inadvertently to bump against the element and receive a very serious burn.

There is still a fourth method wherein paper and charcoal are laid in a cylindrical can having holes punched in the bottom. The paper is ignited and burns around the charcoal. This method also has its problems for it is possible to smother the fire before it gets started by packing the paper too tightly in the can and covering it with too much charcoal.

It has been the objective of the invention to provide apparatus associated with the charcoal grill which provides a method of igniting charcoal with complete safety and with greater convenience and speed than has been heretofore possible with any of the methods outlined above. More particularly, the invention contemplates providing a hole in the bottom of the charcoal containing bowl, the hole having means for supporting the charcoal on top of the hole. Hanging from the lower surface of the bowl below the hole is a receptacle into which newspapers can be crumpled and ignited to cause a flame to play directly on the charcoal supported above the hole. Means are provided to facilitate the placing of the newspaper in the receptacle and the igniting of the newspaper. When the newspaper is ignited, the walls of the receptacle tend to form a short chimney which encourages the flow of air over the paper and the charcoal to speed the complete ignition of all of the elements of charcoal.

It has been found that this device requires only one to two sheets of newspaper to ignite any number of charcoal briquettes piled above the hole in the bottom of the bowl. To bring the charcoal to a condition ready for cooking requires from about five to ten minutes depending upon the amount of charcoal ignited.

In the elimination of the use of any inflammable fluid, the apparatus and method of the present invention are obviously far safer than the most widely used method of igniting charcoal. Additionally, there is no possibility of running out of fluid and the cost of the fluid is eliminated. The cost and hazards of the electrical heat element are eliminated. The bother of laying a wood base fire is eliminated. There is no necessity of finding a place to store a dirty can and to put up with the uncertainties of it as a means for lighting charcoal.

In addition to the simple fact of providing a much superior method of igniting charcoal in many respects, a number of additional advantages are derived from the use of the present invention. The grill employing the present invention admits of a recommended mode of operation designed to prolong the life of the grill and to eliminate much of the inconvenience of maintaining the grill in a clean usable condition.

The recommended use of the grill is to use the grill without any layer of gravel, aluminum foil, or the like. After the cooking is done, the coals can be permitted to burn out and the ashes raked toward the hole in the grill bottom and into the receptacle below for removal. Alternatively, water can be sprinkled on the coals to douse them, the excess water flowing out of the holes in the bottom of the grill bowl and carrying out the dirty ashes. The grill thereafter quickly dries and is clean and ready for its next use. In this way, the life of the grill is prolonged because no moisture is held in contact with the metal bowl by the ashes, gravel or the like. Rather, a clean dry bowl is maintained. The economy of preserving the unburned portion of the coals is obvious. The convenience of dousing the coals is made possible by having a drain hole through which the water can be drained while straining out the charcoal elements.

The invention admits of hot spot cooking, in that a draft of air can be directed to the area of the hole in the grill bottom so that charcoal disposed over that hole will be burned more rapidly and consequently will be hotter than the charcoal in the remaining area of the bowl. The invention contemplates provision of means for closing the draft for uniform heating.

These and other objectives of the invention will become more readily apparent from the following description taken in conjunction with the accompanying drawings in which:

FIG. 1 is a perspective view partly broken away illustrating the invention,

FIG. 2 is a cross sectional view looking down into the fire bowl,

FIG. 3 is a cross sectional view taken along lines 3—3 of FIG. 2,

FIGS. 4, 5 6, and 7 are diagrammatic views illustrating the manner in which the invention is used, and

FIG. 8 is an elevational view partly in cross section illustrating an alternative form of the invention.

FIG. 1 shows a grill 10 which has been constructed in accordance with the present invention. As is customary with charcoal grills of this type, the grill has a bowl 11 which is supported on two rear legs 12 having wheels 13 on their lower ends and a forward leg 14 having a caster 15 on its lower end, the bowl being adapted to receive charcoal briquettes. A grid 17 is rotatably and removably supported above the bowl and is adjustably positionable by means not shown in any one of a plurality of vertical positions above the bowl depending upon the

heat of the fire and the particular type of food being prepared. Surrounding approximately one-half of the bowl is a hood which is secured to the bowl by means of nuts and screws and is adapted to receive a motor powered spit with which to cook roasts, whole chickens, spareribs and the like. The grid has an access door **18** pivotally mounted at **19** to a main grid rod **20**. The door is pivoted upwardly to permit the manipulation of the charcoal in the bowl.

The bowl has a bottom wall **24** which is substantially flat in order to support charcoal over substantially its entire surface without the charcoal's sliding or rolling toward the center. As viewed in FIG. 1, a receptacle **23** forming a solid fuel combustion chamber is secured to the bottom wall **24** of the bowl **11**. Immediately above the receptacle and surrounded by the receptacle are a plurality of holes **25** which form a grate **26** for the support of the charcoal during its ignition and during cooking. In a preferred embodiment of the invention, these holes are about three-quarters of an inch in diameter and are spaced from each other a distance of about three-eighths of an inch and are uniformly scattered about in a generally circular pattern which is about seven inches in diameter. The holes block the passage of the charcoal which normally is of dimensions greater than three-fourths inch. Only a small portion of the bowl is utilized for charcoal ignition, the area occupied by the group of holes being less than one-fourth the area of the bottom of the bowl. Spaced apart about eight inches and straddling the grate **26** are two downwardly depending L-shaped flanges **27** which are struck from the bowl. These flanges provide ways for slidably receiving and supporting the receptacle **23** as will appear below.

The receptacle has side walls **29** formed from sheet metal which is bent to a frusto conical shape with its edges seamed by rivets or by a screw and nut. A bottom cup **30** is welded to the bottom or smaller diameter end of the receptacle, the cup **30** having an upwardly projecting annular flange **31** which surrounds and is welded to the lower marginal edge portion of the receptacle. The bottom cup has a plurality of holes **32** which form a gridwork enabling the bottom member to support combustible material **33** (FIG. 3) contained in the receptacle but which permits a substantial amount of air to pass up through the combustible material to provide the necessary draft in operation of the invention.

Closure means formed by a plate **35** is pivoted to the bottom member by a rivet **36** so that it can be swung to a position completely covering the bottom member and closing off the air flowing upwardly through the receptacle. The plate may be swung from that closing position through any one of a number of positions to vary the amount of air which is permitted to flow up through the recptacle so as to permit regulation of combustion. Attached to the plate is a knob **37** which facilitates the manipulation of the plate.

The receptacle **23** has at its upper edge an outwardly projecting peripheral flange **40** which is adapted slidably to engage the downwardly depending L-shaped flanges **27** at the bottom of the bowl to support the receptacle on the bottom surface of the bowl with the walls of the receptacle depending in a downward direction and with the walls surrounding the grate **26** in the bowl. The downwardly depending flanges **27** are, as can best be seen in FIG. 2, elongated so that the receptacle can be positioned all the way under the bowl in which all of the small holes **25** of the grate **26** are in the confines of the receptacle or in a position in which the receptacle projects outwardly from the bowl (as seen in FIG. 4) so that a substantial portion of its open top is accessible. This ability of the bowl to project outwardly is valuable from the standpoint of lighting the solid fuel combustible material, such as newspaper, in the receptacle. To facilitate the manipulation of the receptacle with respect to the bowl, a laterally projecting U-shaped handle **41** is fastened by means of screws and nuts **42** to the side of the receptacle.

The operation of the invention is illustrated in FIGS. 4 to 7. In the first step, charcoal **43** is piled up on the grate **26** over the holes **25** in the bottom of the bowl. Almost any amount of charcoal can be piled over the holes and it will be satisfactorily ignited.

The receptacle is then grasped by the handle and removed from the bowl and a wadding of one to two sheets of newspaper **33** is inserted in it. The receptacle is then preferably slid halfway onto the ways **27** and supported there momentarily during the lighting of the newspaper as shown in FIG. 4. A match is applied to the newspaper and as soon as it can be determined that the newspaper it lit, the receptacle is slid fully into its position under the bowl so that it completely surrounds the openings.

In the next step of the invention, which is illustrated in FIG. 3, the newspaper burns and its flame plays directly against the piled charcoal. The charcoal prevents the flame from burning up against the hood and, therefore, there is no need to remove the hood during the igniting of the charcoal. Further, the elimination of the roaring flame above the charcoal eliminates another of the safety hazards attending the use of the charcoal grill.

After a short time, for example about two or three minutes, the paper burns out but by then many of the coals, at least in the lower level, have been ignited and are burning thereby causing a flame to burn upwardly into the second and third layers of the coals. The heat has, of course, created a draft through the chimney-like receptacle which causes the coals which were first ignited to burn brightly and to cause the remaining coals above them to catch fire. In a very short time, for example another five minutes, practically all of the coals are ignited and glowing red and the fire is ready for use. By opening the access door **18** of the grid, a charcoal rake can be used to move the coals in the desired pattern for the cooking, as shown in FIG. 5.

It may be desirable at this point to swing the plate **35** to a completely closed position to eliminate the draft through the receptacle. When the draft plate is closed, all of the coals in the bowl burn normally. However, it may be desirable to have a hot spot on the grill in which some foods are cooked more quickly than others. In this event, the draft can be left opn and a plurality of coals positioned above it, these coals being kept much hotter than the others by the draft of air which continually flows upwardly through the receptacle and through the holes in the bottom of the bowl.

In some cooking operations which go very slowly, it may be desirable from time to time to re-ignite additional coals. In this event, all that is required is to open the trap section in the grid and insert a few additional coals on top of the coals in the bottom of the grid and ignite those coals through the use of the newspaper in the receptacle as described above. Thus, there can be a continuous replenishment of the fire in the grill without having to put cold coals against the hot coals or without having to use any artificial means for the starting of additional coals.

After the cooking has been completed, the coals can be permitted to die out in the usual manner. After the coals have died out, the ashes can be collected and removed, merely by raking them over the holes in the bottom of the bowl until they drop into the receptacle, as illustrated in FIG. 6. Of course, during this operation, the draft plate in the receptacle has been closed so that the ashes will not pass through the receptacle, but will be retained therein. After the ashes have been completely raked into the receptacle, the receptacle is removed and the ashes are dumped into an ash can or the like.

An alternative method of handling the coals following the cooking operation is illustrated in FIG. 7. There the hot coals are sprayed with water until they are doused. The water flows out of the holes in the bottom of the

bowl, the bowl being tilted toward the holes to assure the flowing through the holes. This operation assures the cleaning out of the bowl after completing the cooking operation and preserves some of the partially spent charcoal. Additionally, it provides an assurance that there will not be a substantial amount of material collecting in the bowl which can absorb moisture and contribute to the rusting and short life of the bowl.

An alternative form of the invention is illustrated in FIG. 8. There, the receptacle may be fixed to the grill bowl or may be removed. If the receptacle is fixed, then the bottom of it may be completely open so as to provide a hole through which paper is inserted into the receptacle. Alternatively, and as illustrated in FIG. 8, the grill bowl may have a single large hole **49** and a wire grid **50** may be removably positioned in the bottom of the bowl overlying the hole **49** to form the grate.

The bottom of the receptacle has a plurality of bayonet slots **51** adapted to receive pins **52** which project inwardly from a dish shaped tray **53**. A handle **54** projects laterally from the tray and is fixed to it to permit the tray to be handled conveniently. The tray has a vertical wall **55** to which the pins are attached. A portion of that wall may be broken away in order to permit the use of a draft regulator plate of the type described above which must be pivoted to the side of the receptacle.

In the operation of the embodiment of FIG. 8, the tray is adapted to receive any ashes and the like which drop through the holes in the bottom of the receptacle and prevent them from dirtying a patio or the like on which the grill is used. Additionally, when cleaning out the grill, ashes may be raked into the receptacle and onto the tray and the tray **53** can be removed without requiring the removal of the receptacle.

We claim:

1. A charcoal grill comprising,
a bowl having a substantially flat bottom wall for supporting hot charcoal,
a grid mounted above said bowl for supporting food to be cooked,
said bowl having at least one hole in said bottom wall,
a solid fuel combustion chamber constituted by a receptacle mounted on said bottom wall and having walls surrounding and extending downwardly from said hole to form a chimney,
the lower portion of the receptacle constituting a fuel support,
said receptacle having an air inlet in the lower end portion thereof,
closure means for selectively closing or opening the inlet in the lower end portion of said receptacle, whereby combustion therein may be regulated at will.

2. A charcoal grill comprising,
a bowl having a substantially flat bottom wall for supporting hot charcoal,
a grid mounted above said bowl for supporting food to be cooked,
said bowl having a grate formed by a plurality of holes grouped together in said bottom wall for supporting charcoal for ignition,
a solid fuel combustion chamber constituted by a receptacle mounted on said bottom wall and having walls surrounding and extending downwardly from said grate to form a chimney,
the lower portion of the receptacle constituting a fuel support,
said receptacle having an air inlet in the lower end portion thereof,
closure means for selectively closing or opening the inlet in the lower end portion of said receptacle, whereby combustion therein may be regulated at will.

3. A charcoal grill comprising,
a bowl having a substantially flat bottom wall for supporting hot charcoal,

a grid mounted above said bowl for supporting food to be cooked,
said bowl having at least one hole in said bottom wall,
a solid fuel combustion chamber constituted by a receptacle removably mounted on said bottom wall and having walls surrounding and extending downwardly from said hole to form a chimney, said receptacle having an outwardly projecting flange,
the bottom wall of said bowl presenting flange means adjacent said hole for receiving said receptacle flange to removably suspend said receptacle below said hole,
the lower portion of the receptacle constituting a fuel support,
said receptacle having an air inlet in the lower end portion thereof,
closure means for selectively closing or opening the inlet in the lower end portion of said receptacle, whereby combustion therein may be regulated at will.

4. A charcoal grill comprising,
a bowl having a substantially flat bottom wall for supporting hot charcoal,
a grid mounted above said bowl for supporting food to be cooked,
said bowl having at least one hole in said bottom wall,
a solid fuel combustion chamber constituted by a receptacle removably mounted on said bottom wall and having walls surrounding and extending downwardly from said hole to form a chimney, the upper edge of said walls having an outwardly projecting flange,
a pair of laterally spaced ways projecting from the undersurface of said bottom wall and slidably receiving the flange of said receptacle,
the lower portion of the receptacle constituting a fuel support,
said receptacle having an air inlet in the lower end portion thereof,
closure means for selectively closing or opening the inlet in the lower end portion of said receptacle, whereby combustion therein may be regulated at will.

5. A charcoal grill comprising,
a bowl having a substantially flat bottom wall for supporting hot charcoal,
a grid mounted above said bowl for supporting food to be cooked,
said bowl having means forming a group of approximately three-fourths inch diameter holes in said bottom wall and spaced apart by a network of metal to form a support for charcoal to be ignited,
a solid fuel combustion chamber constituted by a receptacle mounted on said bottom wall and having walls surrounding and extending downwardly from said holes to form a chimney,
the lower portion of the receptacle constituting a fuel support,
said receptacle having an air inlet in the lower end portion thereof,
closure means for selectively closing or opening the inlet in the lower end portion of said receptacle, whereby combustion therein may be regulated at will.

6. A charcoal grill comprising,
a bowl having a substantially flat bottom wall for supporting hot charcoal,
a grid mounted above said bowl for supporting food to be cooked,
said bowl having means forming a group of holes in said bottom wall of a dimension to block passage of charcoal whose dimensions are greater than approximately three-fourths of an inch, said holes being grouped together in an area which is less than one-fourth the area of said bottom wall,
a solid fuel combustion chamber constituted by a re-

ceptacle mounted on said bottom wall and having walls surrounding and extending downwardly from said holes to form a chimney,

the lower portion of the receptacle constituting a fuel support,

said receptacle having an air inlet in the lower end portion thereof,

closure means for selectively closing or opening the inlet in the lower end portion of said receptacle, whereby combustion therein may be regulated at will.

7. A charcoal grill comprising,

a bowl having a substantially flat bottom wall for supporting hot charcoal,

a grid mounted above said bowl for supporting food to be cooked,

said bowl having at least one hole in said bottom wall,

a solid fuel combustion chamber constituted by a receptacle mounted on said bottom wall and having walls surrounding and extending downwardly from said hole to form a chimney,

the lower portion of the receptacle constituting a fuel support,

said receptacle having an air inlet in the lower end portion thereof,

a plate pivotally mounted on the lower end portion of said receptacle adjacent said inlet for selectively closing or opening said inlet, whereby combustion therein may be regulated at will.

8. A charcoal grill comprising,

a bowl having a substantially flat bottom wall for supporting hot charcoal,

a grid mounted above said bowl for supporting food to be cooked,

said bowl having a grate constituted by a group of approximately three-fourths inch holes in said bottom wall and occupying an area less than one-fourth the area of said bottom wall,

a solid fuel combustion chamber constituted by a receptacle removably mounted on said bottom wall and having walls surrounding and extending downwardly from said grate to form a chimney, said receptacle having an outwardly projecting flange,

the bottom wall of said bowl presenting flange means adjacent said grate for receiving said receptacle flange to removably suspend said receptacle below said grate,

the lower portion of the receptacle constituting a fuel support,

said receptacle having an air inlet in the lower end portion thereof,

a plate pivotally mounted on the lower end portion of said receptacle adjacent said inlet for selectively closing or opening the inlet in the lower end portion of said receptacle, whereby combustion therein may be regulated at will.

References Cited by the Examiner

UNITED STATES PATENTS

2,154,165	4/39	Huntington	126—25
2,484,239	10/49	Moon et al.	126—25
3,018,771	1/62	Curtis	126—25
3,126,881	3/64	Blotsky	126—25
3,172,402	3/65	Valiela	126—25

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