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2 SHEETS—SHEET 1.

1,023,768.



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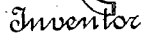
Witnesses
J. Adolph Bishop
C. S. Brown.

OIL AND GAS COOKER.

Patented Apr. 16, 1912.

2 SHEETS--SHEET 2.

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UNITED STATES PATENT OFFICE.

NEWTON C. SPRAGUE, OF MINNEAPOLIS, MINNESOTA.

OIL AND GAS COOKER.

1,023,768.

Specification of Letters Patent.

Patented Apr. 16, 1912.

Application filed October 10, 1910. Serial No. 586,369.

To all whom it may concern:

Be it known that I, NEWTON C. SPRAGUE, a citizen of the United States, and resident of Minneapolis, county of Hennepin, and State of Minnesota, have invented certain new and useful Improvements in Oil and Gas Cookers, of which the following is a specification.

The present application relates to improvements in cook stoves adapted to be heated by either a gas or oil burner.

In the accompanying drawings, Figure 1 is a front elevation of a stove constructed in accordance with the present invention; Fig. 2 is a vertical sectional view substantially on the line 2—2 of Fig. 3; Fig. 3 is a vertical sectional view substantially on the line 3—3 of Fig. 2; and Fig. 4 is a plan view of the casting by which the bottom plate of the oven is supported.

Referring to the drawings it will be seen that the stove comprises an exterior casing including a front wall 1, a rear wall 2, side walls and a top 3. All of such walls are formed of sheet metal and as shown the meeting edges of adjacent walls are connected together and the top is secured to the side and end walls by laterally extending flanges bent to interlock as shown at 4. Said casing is mounted on suitable legs 5 which may be connected by a base plate 6 having its edges flanged and secured by bolts or rivets 7 to said legs and the adjacent vertical wall of the casing.

In the front wall or plate 1 are formed two openings, the lower one 8 permitting easy access to the heater hereinafter referred to, and the upper one communicating with the oven of the stove and being closed by a door 9 shown as having its lower end connected by hinges 10 with the plate 1. The oven comprises sheet metal side walls 11, 12, a rear wall 13 and top 14. Said walls of the oven are connected by lap joints 15 formed by bending the edges to interlock as shown in Fig. 3, and at their forward edges said side walls and top are provided with flanges which are bolted or riveted as at 16 to the plate or wall 1 of the outer casing about the opening closed by the door 9. The oven is additionally supported by having flanges 17 at the lower ends of its side walls 11, 12, secured to a horizontal partition plate 18 which in turn is bolted or otherwise suitably secured to vertical walls of the outer casing. The

bottom of the oven is formed by a steel plate 19 which has no permanent connection with the side and rear walls of the oven but is supported by a casting comprising a base plate 20, an upwardly extending marginal flange or rim 21, and a series of upwardly extending ribs 22. As shown more clearly in Fig. 4, the ribs 22 on the plate 20 are of such form and so related that they provide a passage 23 which extends along opposite sides and across the rear end of said casting and communicates at its forward ends with a downwardly extending inlet tube 24 into which the heater hereinafter referred to extends. The ribs 22 between the ends of the passage 23 and said tube 24 are so arranged that the products of combustion from the heater are caused to travel in a circuitous path beneath the bottom plate 19 of the oven, so as to exert a maximum heating effect upon such plate. Said plate 19 is provided with an opening that communicates with the rear portion of the passage 23 and is surrounded by an upwardly extending collar over which is fitted the lower end of an escape flue 25 that extends through the top of the oven and surrounding casing.

Preferably the opposite edges of the bottom plate 19 of the oven are bent upon themselves to extend upwardly and laterally to form within the oven supports 26 on which a shelf or similar article may rest. Other supports 27 may be secured by rivets or other fastening means to the walls 11, 12 as shown in Figs. 2 and 3.

Referring to Fig. 3, it will be seen that the support for the plate constituting the bottom of the oven does not extend forward as far as the front wall of the outer casing, and the space separating the forward edge of the support for said plate 19 and the wall 1 is covered by a plate 28. Preferably this plate 28 is interlocked with the wall 1 and plate 19 as shown in Fig. 3. That is the forward edge of the plate 19 is bent upon itself to form a groove or recess into which extends the downwardly bent flange on the rear edge of the plate 28, and the edge of the plate 1 adjacent the upper opening therein is similarly bent to provide a recess for a corresponding flange at the forward edge of said plate 28. The spaces separating the several walls of the oven and the adjacent walls of the outer casing are filled with asbestos or other non-heat conducting substance 30.

In the accompanying drawings, a gas burner 31 is shown, the gas being supplied thereto through a pipe 32 suitably supported by the outer casing and having on the outside thereof a valve or cut off 33. It will be evident however that an oil heater may be readily substituted for the particular heater shown, and to enable such a heater to be readily inserted in and removed from the tube 24, the lower end of such tube is made in the form shown in Figs. 1 and 3.

The operation and advantages of such a heater as herein shown and described, will be readily understood. It will be seen that the products of combustion rising through the inlet tube 24 into the chamber formed below the oven will be divided into two streams or currents and caused to pass alternately forward and backward beneath the oven, finally escaping through the passage 23 and outlet pipe 25. As before stated the separately formed bottom plate 19 of the oven is preferably made of steel, while the support therefor may be of cast iron and the other parts of the oven and body of the outer casing are made of sheet metal.

Having thus described the invention, what is claimed is:

1. In an apparatus of the character described, the combination with a suitable frame or exterior casing, of an oven therein having its side walls connected with said frame and having its bottom formed separately from said side walls, opposite edges of the bottom being bent to extend upward and laterally into the oven to form supports for an oven shelf or similar article, means for supporting said oven bottom and providing a heating chamber beneath it, and a burner adapted to heat said chamber.

2. In an apparatus of the character described, the combination of a sheet metal frame or casing having its interior divided by a horizontal partition and having an opening in its front wall above said partition, an oven attached to the metal frame and extending about said opening, the top and side walls of the oven being permanently connected and the bottom thereof being formed separately therefrom, a non-heat conducting packing in the spaces separating the oven and casing walls, a support for the bottom of the oven separated from said partition by non-heat conducting material and providing beneath the oven a circuitous passage for products of combustion, a burner communicating with said passage, and an escape flue leading from the passage beneath the oven to the exterior of the outer casing.

3. In an apparatus of the character described, the combination of an exterior sheet metal frame having an opening in its front wall and providing a suitable chamber in rear of said opening, an oven supported in said chamber and communicating with said

opening in the front thereof, a door adapted to close said opening, non-heat conducting material separating the top, bottom and side walls of the oven from the adjacent walls of the exterior casing, the bottom of the oven being shorter than the top, a plate engaging the forward edge of the bottom and the front plate of the exterior casing at the lower edge of the opening for the oven door and forming the lower jamb for such door, a burner, and means for conducting products of combustion from the burner against the oven.

4. In an apparatus of the character described, the combination of an exterior sheet metal casing comprising front, rear and side walls and a top, the vertical walls being connected together and to the top by interlocking flanges and the front wall having an opening therein, a horizontal partition secured to opposite walls of said casing below the opening formed in the front wall, an oven having its top, side and rear walls permanently connected and suitably secured to the front wall of the casing and said partition, a frame supported by said partition within the side walls of the oven in rear of the front plate of the exterior casing and open at the top, inlet and discharge ducts communicating with the space inclosed by said frame, a plate supported by said frame and forming the bottom of the oven, opposite edges of said plate being bent to provide within the oven supports for a shelf, a burner communicating with said inlet duct, and a door adapted to close the opening to the oven.

5. In an apparatus of the character described, the combination of an exterior casing having an opening in its front wall, an oven supported within said casing in rear of said opening, the front edge of the bottom of the oven being separated from the front wall of the outer casing, the said bottom and front walls being bent to form grooves, a plate covering the space separating the front casing wall from the bottom and having its opposite edges extending into the grooves formed by bending said bottom and front wall, and a door for closing the opening in the front of the outer casing.

6. In a device of the class described, the combination with an oven of an open topped heating section mounted in the bottom of said oven, a plate resting on and closing said section constituting the bottom of the oven, the side edges of said plate being bent downwardly upon themselves to fit over the edges of said section and having upward extensions to form supports within the oven.

7. In a device of the class described, the combination with an oven having double vertical walls and a door, of insulating material between said walls, a removable bot-

tom plate for said oven, the front edge of said plate being bent to form an upwardly facing U-shaped groove, an inwardly bent U-shaped extension on the outer wall at the
5 bottom of said door opening, a plate having downwardly bent edges resting in said U-shaped grooves, and means for supporting said bottom plate.

13 8. In a device of the class described, the combination with the walls forming a chamber of a hollow removable heating section with an open top partially filling said chamber at the bottom, a removable plate for

said heating section having a reverse head fitting over the edge of said heating section, 15 a reverse head forming a groove in the adjacent side wall, and a removable plate fitting in said grooves and filling the space between said section and side wall.

In testimony whereof I affix my signature 20 in presence of two witnesses.

NEWTON C. SPRAGUE.

Witnesses:

L. M. WEBLEMAR,
E. F. SPRAGUE.