C. W. PRENTISS.

CABINET BROILER.

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1,088,178. Patented Feb. 24, 1914.

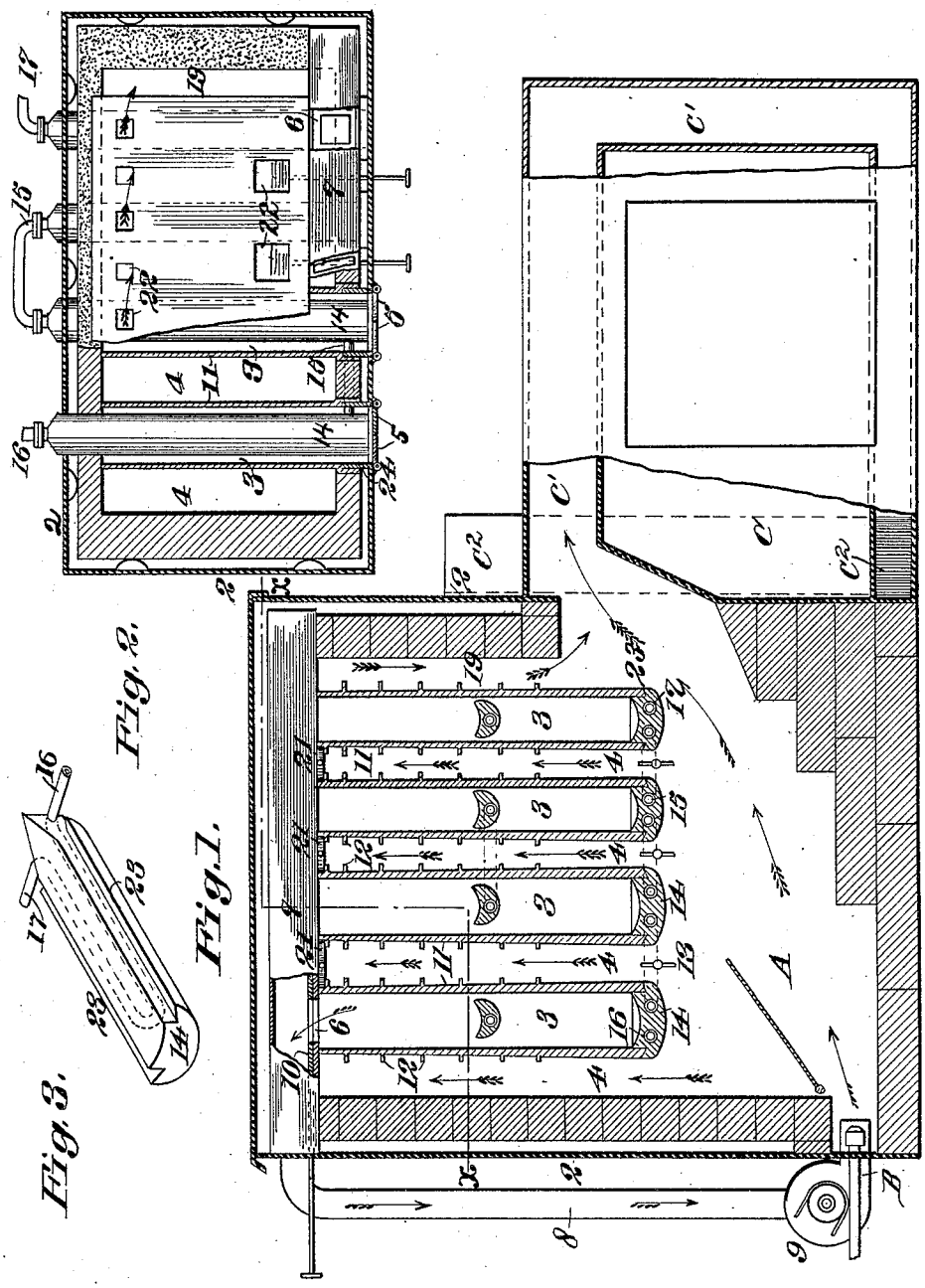


Fig. 2.

Fig. 3.

Fig. 1.

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CABINET-BROILER.

1,088,178. Specification of Letters Patent. Patented Feb. 24, 1914.

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To all whom it may concern:

Be it known that I, CHARLES W. PRENTISS, a citizen of the United States, residing in the city and county of San Francisco and State of California, have invented new and useful Improvements in Cabinet-Broilers, of which the following is a specification.

My invention relates to a device especially designed for broiling meats and the like.

Its object is to provide a combined cabinet broiler, water heater, and baking oven, all heated from a suitable combustion chamber; the apparatus to be simple, cheap and practical, occupy but little room, be economical of operation, and adjustable, so that one or more broiling compartments in the same cabinet may be used as needed to avoid combustion of and save the fats; the use of one broiling compartment requiring less fuel than the use of several.

It has other objects and advantages which will be apparent hereinafter.

The invention consists of the parts and the construction and combination of parts as hereinafter more fully described and claimed, having reference to the accompanying drawings, in which—

Figure 1 is a vertical longitudinal section of the apparatus, partly in elevation. Fig. 2 is a horizontal section on line X—X, Fig. 1, some parts being in plan. Fig. 3 is a perspective of a water-back section.

A represents a suitable combustion chamber or fire-box, which may be similar to that of the fire-box on an ordinary stove, or range, or larger, if desired, and suitably lined with fire brick and heated preferably by oil or gas issuing from the burner B.

About the fire-box is a sheet-metal casing or cabinet 2 spaced from the fire brick, and in which is arranged a series of vertically arranged broilers 3, with suitable flue spaces 4 between them. The broiler spaces are walled on all sides, except for the doors 5, Fig. 2, at one end of the broiler compartment to allow access to the interior of each broiler and except for the flue spaces 6 at the top of each broiling compartment and which flue spaces open into a box 7, connected by a pipe 8 to a blower 9 discharging into the fire-box A. A damper 10 controls communication from chambers 3 into box 7.

The walls 11 of the broilers are tapered upwardly, being thicker at the bottom, as shown, so that as the heat in the flues 4 diminishes near the top of the broiler, the gradually thinning walls of the broiler will allow for a compensation of the diminution of heat up through the flues, so that all portions of the article being broiled in a compartment will be acted on equally by the heat. If desired, the upper half of the outside of each broiler may be provided with horizontal baffles 12 to help retard the heat.

Dampers 21 and 13, respectively are at the top and bottom of each flue space 4 for properly controlling the heat passing therethrough; the top dampers retarding, but not entirely cutting off the heat but retaining it between the broilers, while the lower dampers allow any one or more of the broilers to be cut out if they are not needed.

The bottom of each broiler 3 is provided with a concaved, laterally grooved water-back 14 inclosing water pipes 15 which may be connected in series for furnishing hot water; and also, at the same time the water-jackets at the base of the broilers keep the lower portions of each broiler from becoming too hot at the bottom. The pipes 15 may be arranged in the form of a coil, with an inlet at 16 and an outlet at 17.

C is a baking oven and range around which the heat passing through the flues 4 circulates through the flue passages C′ and escapes finally into the pipe C^2, thence to be conducted to any point of discharge.

In practice, the article or articles to be broiled are placed in suitable holders which are inserted into the broiling spaces and between the vertical plates 11 forming the walls of the broiling chamber or chambers. The broiling spaces are of such size and number as may be required. Any kind of fuel may be used, such as gas, oil, or other suitable hydrocarbon. If all the broilers are to be used at once, the various lower dampers 13 are opened, and damper 10 may be regulated according to the heat in the fire-box. The broiler plates 3 becoming heated, radiate the heat for broiling or cooking any article placed between them, cooking the article from both sides at once, thereby causing it to retain all its juices and flavors, and to cook more quickly and evenly than when cooked on one side at a time only. Also, the broiling chamber being entirely housed in, keeps the article which is being cooked from coming into direct contact with the flames, or smoke or fumes rising from the fuel used. The odors or smoke rising from the article being cooked are taken off

through the box 7 by the blower and delivered to the fire-box. Furthermore, the vapors generated within the broilers themselves are made available for fuel purposes by directing them through the box 7 and pipe 8 back to the burner B to assist combustion.

If only one broiler is needed, all the lower dampers 13, except two flanking the broiler to be used, would be closed; the heat in the combustion chamber being regulated accordingly. The heat and vapors passing through the top plate openings 22 when the dampers 21 are open returns across the top space and thence into the flue 19. The top plate may also have other vent openings 22 communicating with the broiling chambers.

Any drippings from articles being cooked will collect on and drain from the concave gutter-like surface of the water-backs which extend through the rear of the casing 2. The sides or walls 11 are loosely deposited in the grooves 23 of the water-back and held up by the brick work adjacent and also by inwardly projecting lugs 24 on the front casing 2.

The removable water-backs are connected in series in such a manner that if one should get out of order in any way the one out of order may be disconnected and put out of service temporarily and the remainder of water-backs and broiling chambers may be used.

The ascending high temperature gases of combustion naturally circulate up the flues 4, through the vents 22, and are drawn across the top plate and down through flue 19 thence issuing into the escape or draft flue over the oven C, finally escaping at a stack or chimney of the structure.

Having thus described my invention, what I claim and desire to secure by Letters Patent is—

1. In a cooking apparatus, a cabinet having a series of vertically arranged inclosed broiling chambers therein with vertical flue spaces between the broiling chambers, said chambers each having a water-jacketed bottom, said cooking apparatus having a combustion chamber arranged below said broiling chambers, and means for controlling the passage of the heat through the several flues, whereby one or more of said broiling chambers may be used, as desired.

2. In a cooking apparatus, a cabinet having a series of vertically arranged inclosed broiling chambers therein with vertical flue spaces between the broiling chambers, said cooking apparatus having a combustion chamber arranged below said broiling chambers, and said broiling chambers each having a water-jacketed bottom.

3. In a cooking apparatus, a cabinet having a series of vertically arranged inclosed broiling chambers therein with vertical flue spaces between the broiling chambers, said cooking apparatus having a combustion chamber arranged below said broiling chambers, said broiling chambers each having a water-jacketed bottom, and a baking oven around which the heat and products of combustion passing through said flues circulate.

4. In a cooking apparatus, a cabinet having a series of vertically arranged inclosed broiling chambers therein with vertical flue spaces between the broiling chambers, said cooking apparatus having a combustion chamber arranged below said broiling chambers, said broiling chambers each having a water-jacketed bottom, and a baking oven adjacent said broiling chambers, and about which oven the heat and products of combustion passing through said flues circulate, said broiling compartments having a flue outlet back into the combustion chamber.

5. A cooking apparatus comprising the combination of a casing, with a combustion chamber and a heating chamber, a broiler having vertical side walls which gradually decrease in thickness from the bottom to the top, said broiler open at one end for the insertion of the viand to be cooked, and said apparatus inclosing flue passages on each side of the broiler.

6. A cooking apparatus comprising the combination of a casing, with a combustion chamber and a heating chamber, a broiler having vertical side walls which gradually decrease in thickness from the bottom to the top, said broiler open at one end for the insertion of the viand to be cooked, said apparatus inclosing flue passages on each side of the broiler, and a baking oven around which the heat from said flue passages travel.

7. A cooking apparatus comprising the combination of a casing, with a combustion chamber and a heating chamber, a broiler having vertical side walls which gradually decrease in thickness from the bottom to the top, said broiler open at one end for the insertion of the viand to be cooked, said apparatus inclosing flue passages on each side of the broiler, dampers controlling said flue passages and said broiler having a vapor outlet into the combustion chamber.

8. In a cooking apparatus, a cabinet having a series of vertically arranged inclosed broiling chambers with vertical flue spaces between the broiling chambers, a combustion chamber arranged below said broiling chambers, and dampers controlling said flues, said broiling chambers having flue connections back into the combustion chamber by which the heated air and vapors arising from said broiling chambers may be returned into the combustion chamber.

9. In a cooking apparatus, a cabinet having a vertically disposed broiler chamber

closed at the sides and bottom, the bottom of said chamber provided with a water-jacketed drip pan, said broiling chamber being open at one end for the entry of viands to be cooked, and a vapor outlet from said chamber.

10. In a cooking apparatus, a cabinet having a vertically disposed broiler closed at the sides and bottom, and inclosing a broiling chamber, the bottom of said chamber provided with a water-jacketed drip pan, said broiling chamber open at one end for the entry of viands to be cooked, a vapor outlet from said chamber, a combustion chamber beneath said broiler, flues for conducting the heat from the chamber around the sides of the broiler, and means for conducting the vapors of said vapor outlet from the broiling chamber back into the combustion chamber and independent of said flues.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

CHARLES W. PRENTISS.

Witnesses:
JOHN H. HERRING,
A. K. DAGGETT.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."