G. J. RYMAL.

COMBINED COOKING RANGE AND WATER HEATER.

APPLICATION FILED JUNE 7, 1921.

1,412,633. Patented Apr. 11, 1922.

2 SHEETS—SHEET 1.

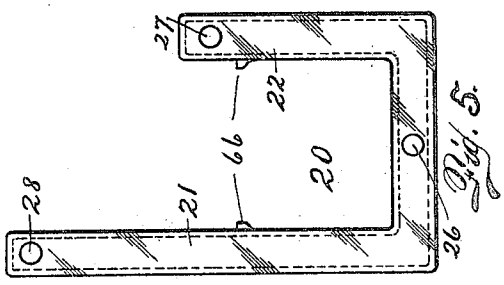


Fig. 5.

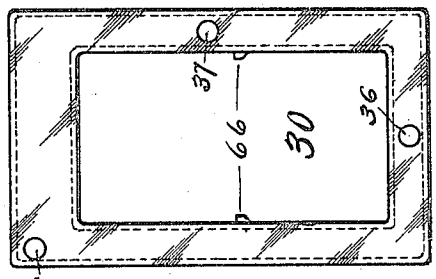


Fig. 6.

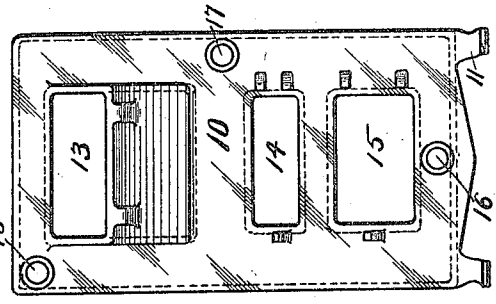


Fig. 4.

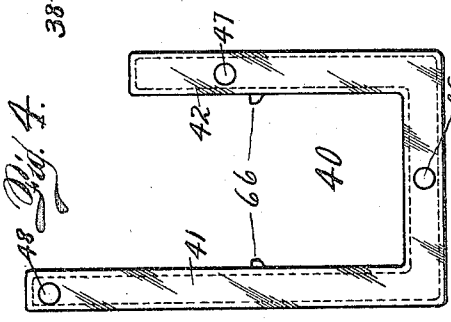


Fig. 7.

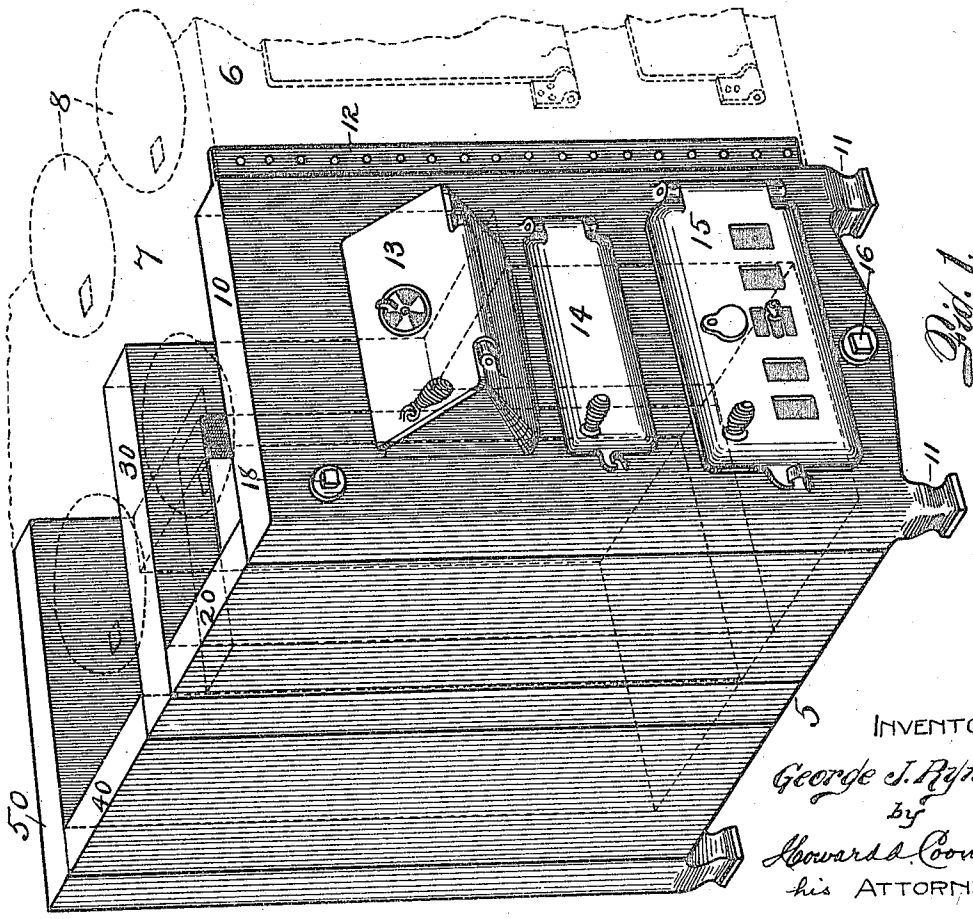


Fig. 1.

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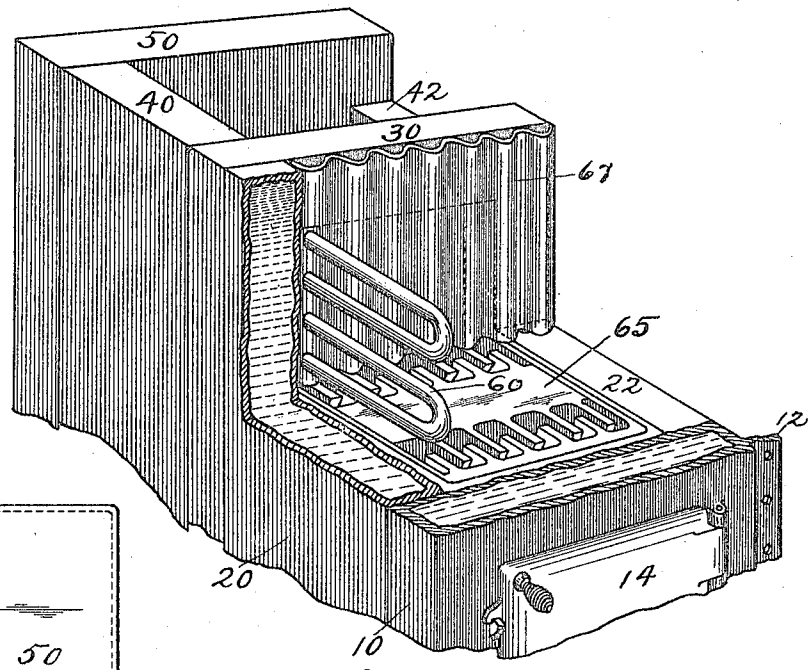


Fig. 2.

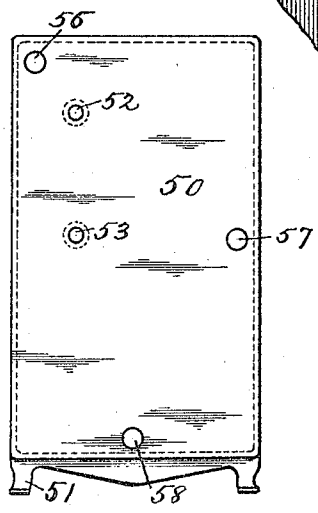


Fig. 8.

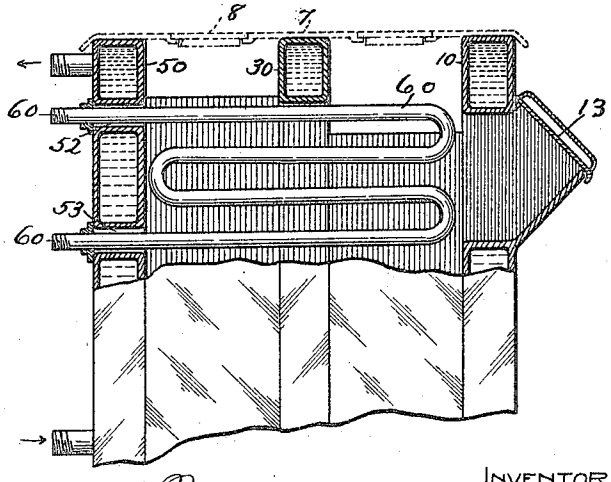


Fig. 3.

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GEORGE J. RYMAL, OF DENVER, COLORADO.

COMBINED COOKING RANGE AND WATER HEATER.

1,412,633. Specification of Letters Patent. Patented Apr. 11, 1922.

Application filed June 7, 1921. Serial No. 475,594.

To all whom it may concern:

Be it known that I, GEORGE J. RYMAL, a citizen of the United States, residing at Denver, in the county of Denver and State of Colorado, have invented new and useful Improvements in Combined Cooking Ranges and Water Heaters, of which the following is a specification.

This invention relates to combined cooking stoves and water heaters of the type disclosed in my prior Patent No. 1,319,969, dated October 28, 1919, and consists in certain improvements I have made in the construction of the stove of said patent, the nature of which will appear from the following detailed description, taken in connection with the accompanying two sheets of drawings, in which,

Fig. 1 is a perspective view of the fire box portion of a kitchen range constructed in accordance with my present invention, other parts of the range being partly shown in dotted lines.

Fig. 2 is a similar view with parts broken away.

Fig. 3 is a vertical section through the upper part of the fire box portion of the range.

Fig. 4 is a front elevation of the front section of the fire box portion of the stove.

Fig. 5 is a similar view of the next section.

Fig. 6 is a similar view of the third section.

Fig. 7 is a similar view of the fourth section, and

Fig. 8 is a similar view of the back section.

It will be understood that the object of the invention is the same as that of the stove covered by my said patent, that is, the utilization of the same heat for cooking purposes and for heating water for use in a hot water heating system. In the said patent this was accomplished by the provision of a water circulating unit which formed the walls of the fire box and which rested upon the grate. One of the present improvements consists in extending the walls of this unit down below the grate to the bottom of the ash pit and across the floor of the latter, whereby a much greater extent of heat-transmitting surface is provided and the capacity and efficiency of the water heating system are much increased. Another improvement in the present construction consists in building up the water circulating unit of separate sections, which are much easier to cast without flaws and which facilitate the assemblage of the stove.

In these views, 5 represents the fire box portion of a range as a whole, while 6 is the oven portion, 7 the top and 8 the covers for the cooking openings in the top.

The fire box portion is built up of sections, as stated, each consisting of a hollow casting enclosing a space or spaces for the circulation of the water and connected together in the manner of steam or hot water radiators by screw nipples, whereby circulation takes place throughout the entire fire box structure. These sections are not identical in conformation but comprise, broadly speaking, three plane rectangular sections, constituting extensions of the oven portion 6, and two intermediate, U-shaped sections, interposed at right angles to said plane sections and constituting, with the ends of said plane sections, the end of the stove remote from the oven portion.

Taking up the description of these sections individually, the front section, shown in Fig. 4, consists of a rectangular casting 10, provided with feet 11, flange 12 by which it is riveted to the oven portion 6, fuel feed door 13, clinker door 14 and ash pit door 15. It also has inlet and outlet connections 16, 17 and 18, by which its water space communicates with the first intermediate section 20, shown in Fig. 5. This is a U-shaped casting with one of the upright legs 21 longer than the other 22, said leg 21 forming part of the end wall of the stove. The legs, as well as the horizontal bottom of this section, are hollow and have communicating openings 26, 27 and 28, corresponding to and connected to the openings 16, 17 and 18 in the front section.

The third section 30, shown in Fig. 6, is a hollow rectangular casting, similar to an open frame, and has similar communicating openings 36, 37 and 38 to those of the second section. The fourth section 40, shown in Fig. 7, resembles the second section 20 in every respect except that its inner leg 42 is somewhat longer than the leg 22 of said second section, while its outer leg 41 is similar in every respect to the leg 21 of said second section and constitutes, like it, a part of the end wall of the stove.

The fifth or rear section 50, shown in Fig. 8, is similar to the front section 10, except that it is not, of course, provided with the doors. It has the feet 51 and, in its front side, the communicating openings 56, 57 and 58. It also has, or may have, openings 52 and 53 for the passage of the ends of a coil

60, which supplies hot water to the bath tubs and sinks, etc., of the dwelling, and which is connected to a high pressure tank or to the city mains, where such are available. The rear side of the back section 50 has openings in alinement with the openings 56 and 58, respectively, the upper one being the outlet to the radiator system and the lower one the return therefrom.

As in the stove of my said prior Patent, No. 1,319,969, I may provide a "summer slide," intended for use when the hot water system is not needed. Referring to Fig. 2, 65 is the main grate, which rests on lugs 66, within the sections and shown in Figs. 5, 6 and 7. This grate is a triplex, or three-part grate, actuated by the usual rocking lever, not shown, and 67 represents the "summer slide," which rests upon the grate when in use, in which case the grate cannot be dumped.

Having thus described my invention, what I claim is:

1. A water heating firebox construction for kitchen ranges, consisting of five independent hollow sections adapted to be connected together and to the water circulating pipes, the front middle and rear sections being of the full height and width of the firebox portion of the range and the second and fourth sections being U-shaped with their inner legs shorter than the height of the firebox portion and said middle section being open in its center.

2. A firebox construction for kitchen ranges, the same being composed of plane rectangular hollow front and rear sections, an open rectangular hollow middle section, and intermediate U-shaped hollow sections, all connected together and to the water system.

3. A kitchen range comprising a firebox end composed of a plane rectangular hollow section provided with the usual fire doors, a U-shaped section with a shortened inner leg immediately behind said plane section, an open frame rectangular hollow section immediately behind said U-shaped section, another U-shaped section with a shortened inner leg immediately behind said open section, and a plane rectangular hollow section immediately behind said last mentioned U-shaped section, all said sections being adapted to be connected together and to the water system, said U-shaped sections and open section having means to support the grate, and a removable partition adapted to be placed adjacent to said open section to restrict the area of the grate.

In testimony whereof I have hereunto set my hand.

GEORGE J. RYMAL.