Sept. 10, 1940. C. J. McNAMARA 2,214,425

WARMING AND STERILIZING APPARATUS

Filed Feb. 6, 1939 2 Sheets-Sheet 1

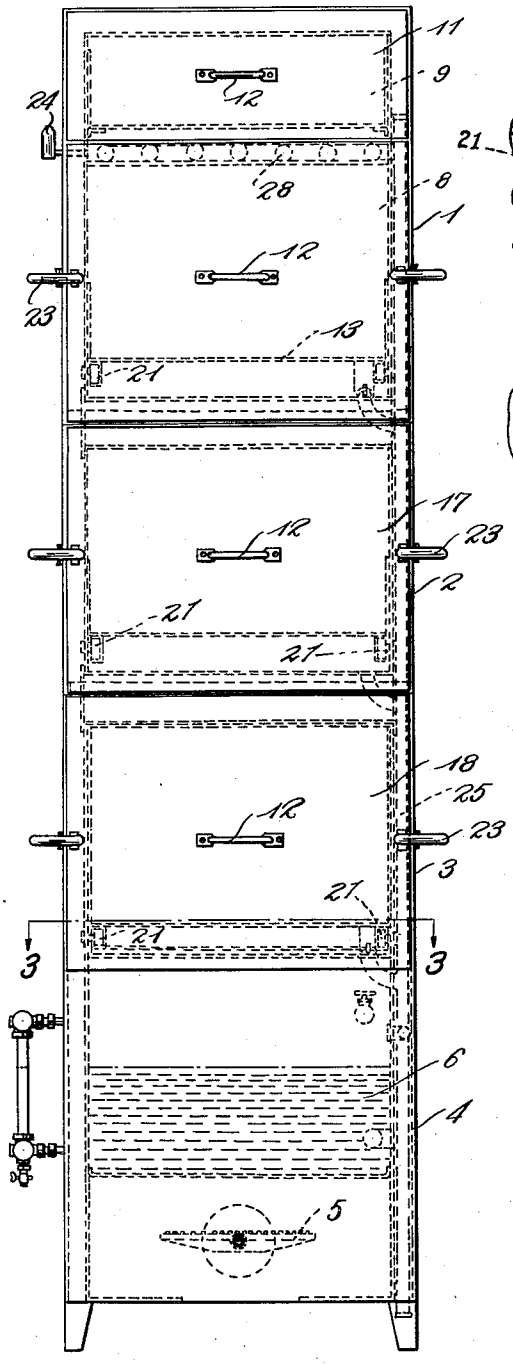
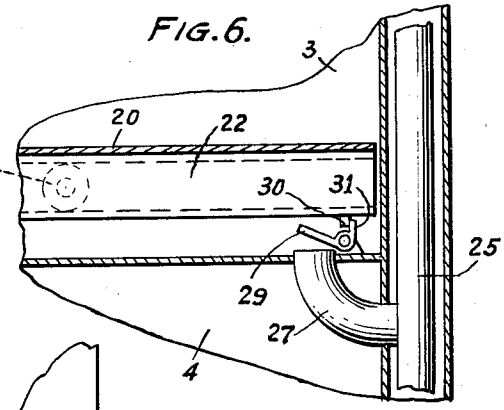


FIG. 1.

FIG. 6.



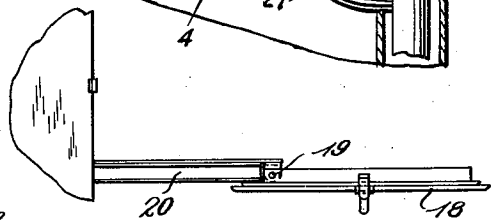


FIG. 5

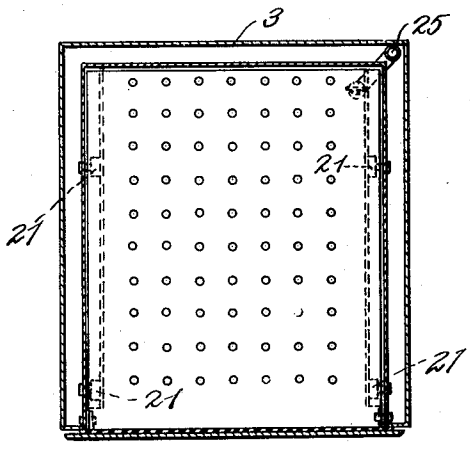


FIG. 3

INVENTOR.
Charles J. McNamara
BY
Robb & Robb
ATTORNEY.

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WARMING AND STERILIZING APPARATUS

Filed Feb. 6, 1939 2 Sheets-Sheet 2

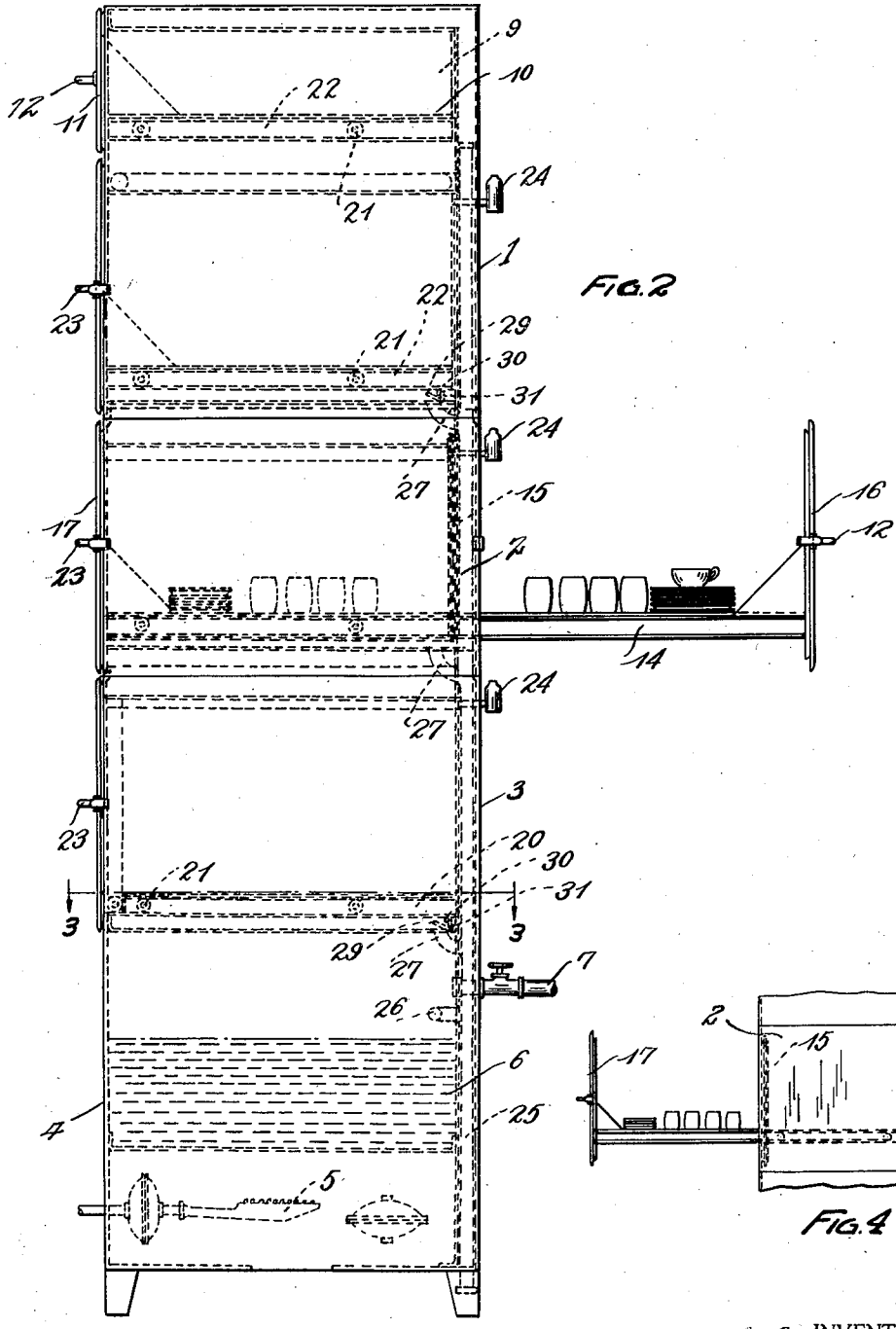


FIG. 2

FIG. 4

INVENTOR.
Charles J. McNamara
BY Robert Robb
ATTORNEYS

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UNITED STATES PATENT OFFICE

2,214,425

WARMING AND STERILIZING APPARATUS

Charles J. McNamara, Pittsburgh, Pa., assignor, by mesne assignments, to Reconstruction Finance Corporation, Washington, D. C.

Application February 6, 1939, Serial No. 254,925

3 Claims. (Cl. 126—20)

This invention appertains to the art of steam cooking or warming equipment and particularly involves a special construction of warming, cooking, or sterilizing cabinet having novel features in relation to the mode of assembling of sections thereof whereby different assemblies of such sections may be made in order to supply a user with different types of constructions of said sections.

The apparatus of the invention is designed for warming food, for sterilizing dishes, or the like, and for such general purposes as warming or cooking equipment of this type is generally used.

The invention further involves special means in relation to a sterilizing unit enabling the said unit to be opened for access to the contents thereof, such as dishes, etc., and when so opened, for providing an auxiliary closure for the compartment of said unit to prevent the passing off of the steam or heating medium when the unit is entirely open, as well as when it is closed.

Still another object of the invention is to provide a special form of hinged door for one of the sliding shelf or drawer units of the cabinet, which door may constitute a supporting member for articles of food or the like, as an extension of the drawer or shelf member, when the latter is in open position.

A further object of the invention is to provide novel valve means for steam supply openings for the various compartments of the cabinet or casing, in which the movable or slidable drawer or shelf members are mounted, whereby as the latter are moved to open position said supply openings will be closed and entry of steam cut off so as to prevent wastage of said heating medium.

The invention involves other detail features of construction the nature of which will appear hereinafter upon reference to accompanying drawings, in which

Figure 1 is a front elevation of a heating cabinet or apparatus involving the invention.

Figure 2 is a side elevation showing the sterilizing drawer or shelf in open position.

Figure 3 is a horizontal sectional view on the line 3—3 of Figure 2.

Figure 4 is a reduced size fragmentary view showing the sterilizing drawer or shelf in a position reverse to that shown in Figure 2.

Figure 5 is a fragmentary detail view showing the hinge type drawer of one of the warming compartments adjusted so as to form an extension shelf member.

Figure 6 is a detail view of one of the steam valves and the means on a drawer for engaging the valve to open it.

Describing the invention specifically, it is noted that the cabinet or apparatus thereof is made up of a top section 1, intermediate sections 2 and 3, and a bottom section 4. These sections, generally speaking, are hollow double-walled structures, double-walled in relation to the back, top, and side formation. Each lower section is formed with an upper flange adapted to fit or nest within the lower end of each upper section, or unit. This permits of an assembly of the sections or units of different types at the factory according to the requirements of an order from the user. The variation in the types of units are usually incident to the provision of those units between the top section 1 and the bottom section 4, since ordinarily the said top section 1 and bottom section 4 will be standard and always provided. The bottom section 4 has a burner 5 therein adapted to be connected with a source of heat, like gas, and is also provided with a water chamber or container 6, the bottom of which will be heated by the flame of said heater for the generation of low pressure steam. Water may be supplied to the water container 6 from a water pipe 7.

The top section 1 of the apparatus preferably comprises a compartment 8 for larger articles and a small compartment 9 for smaller articles, the compartment 9 being usually employed as a warming oven for buns, rolls, or the like. The compartment 9 contains the sliding drawer or shelf 10, having the door 11 at the front thereof and the handle 12 on said door. The compartment 8 contains a sliding drawer or shelf 13 of a construction similar to the parts 10 and 11 and 12, but simply larger to provide a greater area for cooking or heating. Below the compartment or unit 1 is a similar unit designed particularly for sterilizing purposes and previously designated 2. This unit comprises the enclosing section 2 previously mentioned, and the sliding drawer or shelf 14, upon which dishes, or the like, to be sterilized, may be placed. The drawer or shelf 14 is of a length about twice the depth of the cabinet, so that it may slide outwardly from the cabinet both at the rear and at the front. Figure 2 illustrates the said drawer adjusted as when slid to its extreme movement rearwardly, and Figure 4 as when the said drawer is slid to the extreme movement forwardly.

The drawer 14 is provided with a door member 15 intermediate its ends adapted to engage the back portion of the section or unit 2 when the said drawer 14 is slid rearwardly, to close the opening provided at said rear of the cabinet, which opening is adapted to be closed by the rear

door 16 at the outer end of the shelf or drawer 14. The said intermediate or auxiliary door 15 is movable to the front of the cabinet likewise to close the front opening for the section 2 of the cabinet when the drawer or shelf 14 is pulled outwardly and forwardly from the cabinet, at which time the front door 17 will be adjusted to the position shown in Figure 4.

The section 3 of the cabinet provides a suitable warming compartment and is much the same in construction as the section 1 except that the door 18 is of the type shown in Figures 2 and 5, namely, pivoted at 19 near its lower end to the outer end of the shelf or drawer member 20 so that the door 18 may fold downwardly to the horizontal position of Figure 5 after the part 20 is pulled partly toward open position.

In respect to the movable shelf or drawer members 10, 13, 14, and 20, all of these are preferably supported for sliding horizontal movement by rollers 21 which operate in channel members 22 attached to the under-side of each of said members 10, 13, 14, and 20. The rollers 21 are journaled on the sides of the sections of which said drawer or shelf members are parts. Handles 12 may be provided for the doors of all shelf or drawer members mentioned, there being two of such handles for the shelf 14 of the unit 2.

Any suitable type of locking members 23, similar to those used on refrigerator doors may be employed for holding the drawer or shelf members closed against accidental displacement.

Each heating compartment of the cabinet may have an automatic air or vent valve 24.

The steam is supplied to the various warming or sterilizing or cooking compartments described by a steam pipe 25 which leads from the steam chamber above the water in the compartment 4, steam entering said pipe from a small lateral extension 26. In order to admit steam to each of said sections or units of the cabinet, curved branch pipes 27 lead from the steam pipe 25, with the single exception that the upper end of the steam pipe 25 connects with a coil 28 beneath the warming compartment 9. Under these conditions the compartment 9 is always kept warm during use of the apparatus.

In respect to the branch pipes 27, it is noted that small valves 29 are adapted to close the openings of said pipes that enter the compartments of the several sections 1, 2, and 3. These valves are engaged by a projection 30 on each of the shelf or drawer members of each compartment or section so that when said shelf or drawer member is closed the valve will remain open by contact of the projection 30 with another projection 31 carried by the valve.

The valve means just described, including the valve 29, may be omitted in reference to the section or unit 2 of the cabinet.

With the foregoing description in mind, the length of the steam pipe 25 will be determined at the factory when the number of the sections or units of the cabinet required by the prospective user or purchaser is indicated.

It will be understood that the door members for each shelf or drawer of my cabinet will overlap the front portions of the cabinet sections, and in respect to the section 2 the door members 16 and 17 will overlap the surrounding portions of the section at the edges thereof. Gaskets or suitable packing means for making a steam or air tight connection between the doors and the cabinet parts adjacent thereto will be provided as well known in this art.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent of the United States, is:

1. A heating cabinet or apparatus of the class described, comprising, in combination, a series of superposed sections or units, said sections or units adapted to be assembled together in interlocking arrangement one with the other, the bottom section or unit comprising a steam generating chamber, shelf or drawer members mounted to slide to open and closed positions in the respective sections, doors carried by said slide or drawer members for closing the several units at the front ends thereof, a steam pipe for steam or other heating medium leading from the steam chamber of the bottom section and having communication with the superposed sections in relation to the heating chambers of the latter, which contain the drawer or shelf members, and heating means in the lower or bottom section of the cabinet, and branch steam pipes leading from said steam pipe into each of said sections or units, valve means closing at least one of said branch steam pipes when the shelf or drawer member of its said section is in open position, and means on the shelf or drawer member to move said valve means to an open position when the shelf or drawer member is closed.

2. A heating cabinet or apparatus of the class described, comprising, in combination, a series of superposed sections or units, the bottom section or unit comprising a steam generating chamber, shelf or drawer members mounted to slide to open and closed positions in the respective sections, doors carried by said slide or drawer members for closing the several units at the front ends thereof, a steam pipe for steam or other heating medium leading from the steam chamber of the bottom section and having communication with the superposed sections in relation to the heating chambers of the latter, which contain the drawer or shelf members, and heating means in the lower or bottom section of the cabinet, and branch steam pipes leading from said steam pipe into each of said sections or units, valve means closing at least one of said branch steam pipes when the shelf or drawer member of its said section is in open position, and means on the shelf or drawer member to move said valve means to an open position when the shelf or drawer member is closed.

3. A heating unit for apparatus of the class described, comprising in combination, a casing providing a warming chamber having an opening at opposite sides thereof, a shelf or drawer of approximately twice the depth of said casing and mounted for movement therein, said shelf having an auxiliary door intermediate its ends cooperable with said casing interiorly thereof to close either of said openings dependent upon the direction in which said shelf is pulled from said cabinet, and a pair of doors connected with said shelf, one at either of said shelf, to close from the outside the opposite opening of said casing to that closed by the said auxiliary door when the shelf is at the limit of its movement in either direction.

CHARLES J. McNAMARA.