J. M. WILSON.

STEAM COOK STOVE.

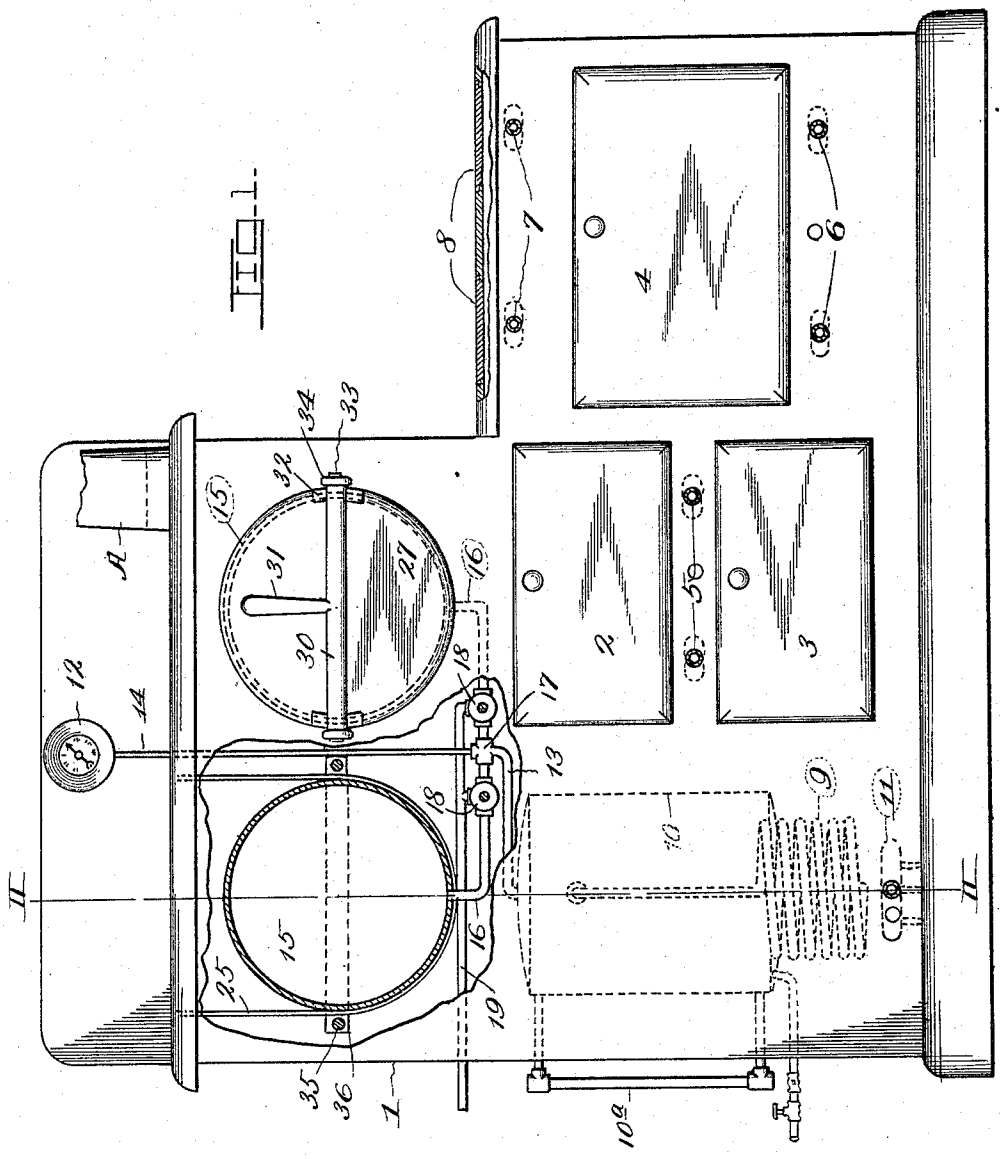
APPLICATION FILED NOV. 19, 1915.

1,226,044.

Patented May 15, 1917.

2 SHEETS—SHEET 1.

FIG. 1.



WITNESSES:

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2 SHEETS—SHEET 2.

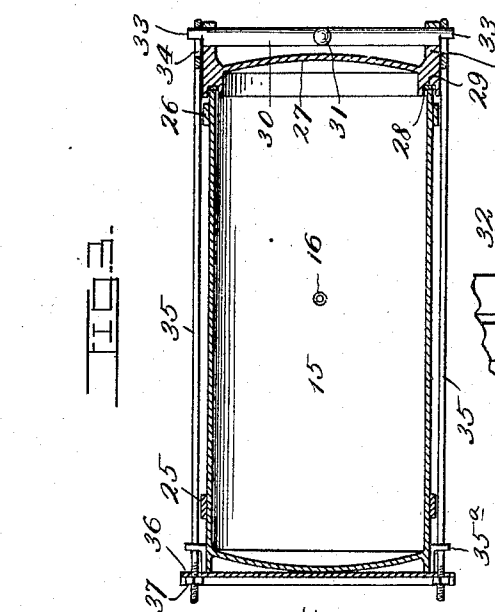

FIG. 3.

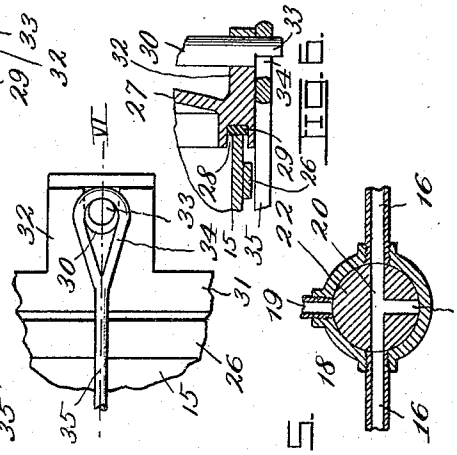

FIG. 6.

FIG. 4.

FIG. 5.

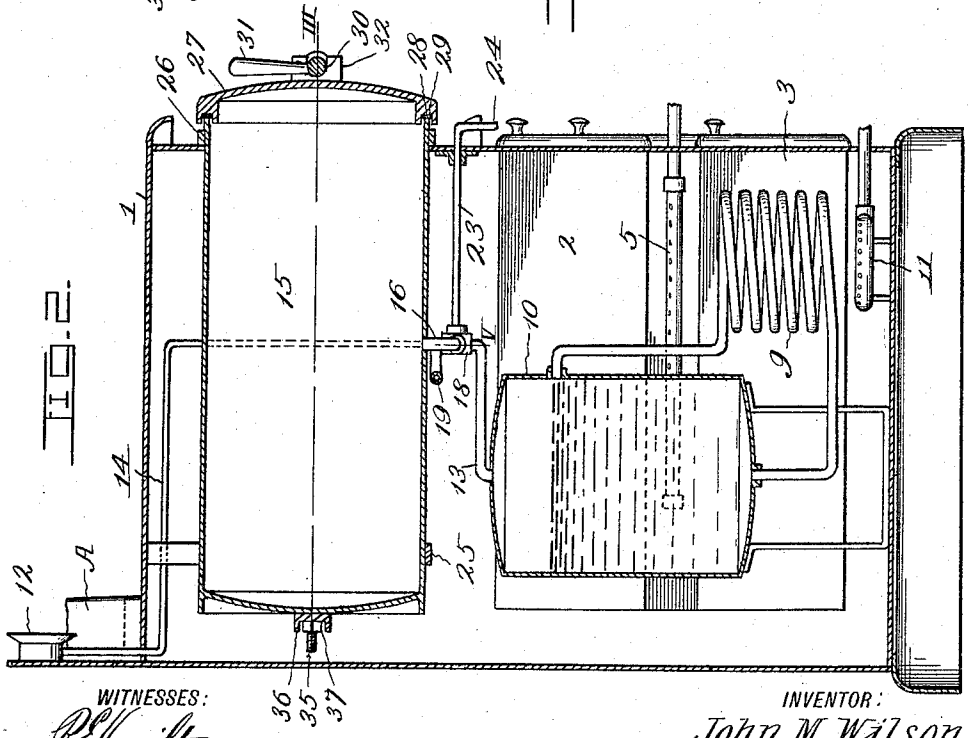

FIG. 2.

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UNITED STATES PATENT OFFICE.

JOHN M. WILSON, OF WICHITA, KANSAS, ASSIGNOR OF ONE-THIRD TO VERNON E. MITCHELL AND ONE-THIRD TO KEITH AND WRIGHT, A FIRM CONSISTING OF WILLIAM KEITH AND MONROE WRIGHT, ALL OF WICHITA, KANSAS.

STEAM COOK-STOVE.

1,226,044. Specification of Letters Patent. Patented May 15, 1917.

Application filed November 19, 1915. Serial No. 62,393.

To all whom it may concern:

Be it known that I, JOHN M. WILSON, a citizen of the United States, residing at Wichita, in the county of Sedgwick and State of Kansas, have invented certain new and useful Improvements in Steam Cook-Stoves, of which the following is a specification.

My invention relates to steam cook stoves, and one object is to provide a stove in which the pressure as well as the temperature of steam is utilized in a steam tight oven for cooking purposes.

By utilizing steam pressure in a tight oven, heat is forced through the meats or other foods being cooked, and hence will prove more efficient and economical than where it is used in the customary way under little or no pressure.

By cooking the food in a steam tight oven its natural flavor is conserved, loss from shrinkage is reduced to a minimum, and close attention on the part of the chef is not required, as all danger of burning the food is obviated.

Other objects of the invention will hereinafter appear, and in order that said invention may be fully understood, reference will now be made to the accompanying drawings, in which:

Figure 1 is a broken front elevation, partly in section, of a stove made in accordance with my invention.

Fig. 2 is a vertical cross section on line II—II of Fig. 1.

Fig. 3 is a longitudinal section of a steam oven and attachments on line III of Fig. 2.

Fig. 4 is an enlarged broken side elevation of the forward portion of a steam oven and attachments.

Fig. 5 is a vertical section on line V of Fig. 2, of a three-way valve employed in carrying out the invention.

Fig. 6 is a section on line VI of Fig. 4.

In carrying out the invention, I employ a case 1 of rectangular or other suitable configuration, which in the present instance, among other features, embodies warming, roasting and baking ovens 2, 3 and 4, respectively. Oil or gas burners 5 are interposed between the ovens 2 and 3, and similar burners 6 are placed under the oven 4 for the purpose of heating said ovens. Burners 7 are placed under removable lids 8 at the top of the stove immediately above the baking oven 4. When desired the stove may be arranged for other than oil or gas fuels.

9 designates a hot water coil arranged in the lower portion of the case 1 adjacent one side of the warming and roasting ovens 2 and 3, respectively. The lower end of said coil 9 communicates with the lower end of a boiler 10, while its upper end communicates with the upper portion of said boiler, a chamber being left between the water line and the dome of the boiler for the accumulation of steam to be utilized for cooking purposes.

The height of the water within the boiler 10 can be readily ascertained at all times by a water gage 10^a, arranged exteriorly of the case 1 and communicating at its upper and lower ends with said boiler. The steam pressure within the boiler is ascertained by a steam gage 12, communicating with said boiler through pipes 13 and 14.

Steam from the boiler is utilized for cooking purposes in steam ovens 15, horizontally arranged in the upper portion of the case 1, so that heat from the burner 11, the hot water coil 9 and the boiler 10, in its passage to a stove-pipe A, at an upper corner of the stove, will circulate around said steam ovens 15 and thus aid the steam from the boiler 10 in the cooking process. A portion of the heat from the burner 11, the hot water coil 9 and the boiler 10, also circulates around the warming, roasting and baking ovens 2, 3 and 4, respectively, and coöperates with the heat from the burners 5 and 6 in keeping said ovens hot.

Returning to the steam ovens 15, it will be noted that they communicate with the dome of the boiler 10 through the pipe 13 and branch pipes 16, which latter communicate with the former through a four-way coupling 17 and are tapped into the undersides of said steam ovens 15. Three-way valves 18 are fitted to the branch pipes 16 between the coupling 17 and the steam ovens 15, so that steam may be admitted to either oven independently of the other when desired. The valves 18 are also connected to an exhaust pipe 19, whereby the condensed steam from

the ovens 15 may be conducted to a dish-washer or otherwise disposed of. Each valve 18 has a transverse port 20 extending therethrough and a branch port 21 communicating with said transverse port and adapted to communicate with a branch pipe 16. The plug 22 of each valve has a stem 23 extending out through the front of the case 1 and provided with a suitable handle 24.

Each steam oven 15 is supported by the front wall of the case 1 and a strap 25 bent in U-form and suspended from the top of said case 1. Said ovens 15 may be of any desired cross sectional configuration. I prefer to make them of cylindrical form as shown, in order to better withstand the steam pressure to which they are subjected. Each is reinforced adjacent its forward open end by a collar 26 and has a steam tight lid 27 with a marginal groove 28 provided with a gasket 29, adapted to bear against the front edge of an oven. Each lid 27 is reliably held in position against the front end of its respective oven 15 by a transverse bar 30, provided with a lever 31 and journaled in diametrically opposed bearings 32 integral or otherwise permanently secured to the lid. The terminals 33 of bar 30 are eccentric to the axis of said bar and project laterally beyond the bearings 32 to engage the looped forward ends 34 of a pair of tension-rods 35, extending rearwardly through a cross bar 36 and provided at their threaded rear terminals with nuts 37, whereby they may be adjusted longitudinally into proper relation to the bar 30. The rear ends of the tension-rods 35 are supported by brackets 35ª, secured to the sides of the respective ovens 15. By employing the bar 30, with its lever 31 and eccentric terminals 33, it is obvious that the lid 27 can be closed so tightly as to render the joint between it and its respective oven steam tight on applying a small amount of power to said lever 31.

In practice, the warming, roasting and baking ovens 2 to 4, inclusive, may be heated independently of the steam ovens 15, but when the latter are to be utilized the burner 11 is lighted, so that the heat ascending therefrom will heat the water coil 9 and generate steam in the boiler 10. While steam is being generated, heat from the burner 11 in its passage to the stove-pipe A, circulates around the ovens 15 and warms the same preliminary to placing meats or other foods therein. After food has been placed in the ovens 15 and the lids 27 have been firmly clamped into position, the valves 18 are opened to admit steam to said ovens. As the steam cannot escape from the ovens the pressure therein soon approximates that in the boiler and forces the heat throughout the food, thereby cooking the same in comparatively short time and effecting a corresponding saving in fuel. A further saving in fuel is effected by the waste heat ascending from the burner 11, the coil 9 and the boiler 10, which circulates around the ovens 15, thereby superheating and drying the steam therein, so that it will prove a very efficient cooking agent. If one or more of the ovens 2 to 4, inclusive, are being used simultaneously with the ovens 15, the waste heat from the burners 5 and 6 circulates around said ovens 15, and thus aids in the cooking process. From the foregoing it will be understood that the ovens 15 are placed in such relation to the burners 5, 6 and 11, the heating coil 9, and the boiler 10, as to utilize all waste heat ascending therefrom in its passage to the stove pipe A.

On completion of the cooking process the valves 18 are adjusted to cut off the steam from the boiler 10 and open communication between the ovens 15 and the exhaust pipe 19, so that any condensed steam within said ovens is drained therefrom. The levers 31 are then pulled down to release the tension on the rods 35, after which the looped ends of the latter are moved laterally out of engagement with the eccentrics 33 to permit the removal of the lids 27.

While I have shown and described the preferred form of my invention, I reserve the right to make such changes in the construction, arrangement and proportion of parts, as properly fall within the spirit and scope of the claims.

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

1. In a cook stove, a casing, a front oven, a pair of superposed ovens arranged to the rear of the front oven and adjacent to but spaced from the latter, heating means for the front oven arranged therebeneath and opposite to the lower of the pair of ovens, heating means for the pair of ovens arranged in the space between the latter and opposite to the rear of the front oven, a boiler arranged to the rear of the pair of ovens and spaced from the latter, a pair of steam ovens connected to the boiler and arranged respectively over the latter and over the upper of the first named pair of ovens, and heating means for the boiler arranged therebeneath and adjacent to the lower oven of the first named pair of ovens.

2. In a cook stove, a case, a pair of steam ovens in the case, a steam boiler, a pipe extending from the boiler and having combined steam supplying and drainage branches connected to each oven, a three-way valve for each oven arranged in each branch of the pipe, a common drain pipe connected to each three-way valve, and means to operate the valves independently whereby to allow steam to enter either oven and to allow drainage of either oven independently or simultaneously.

3. In a cook stove, a casing, a pair of superposed ovens therein, heating means for said ovens arranged in the space between the latter, a boiler at one end of the pair of ovens and extending across the space between the ovens so as to receive heat from said heating means, a pair of steam ovens connected to the boiler and arranged respectively over the latter and over the upper oven of said pair of ovens, and heating means for the boiler arranged therebeneath and adjacent to the lower oven of the said pair of ovens.

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

JOHN M. WILSON.

Witnesses:
VERNON E. MITCHELL,
F. G. FISCHER.