No. 803,183. PATENTED OCT. 31, 1905.

R. W. MENKE.

FURNACE.

APPLICATION FILED MAR. 1, 1905.

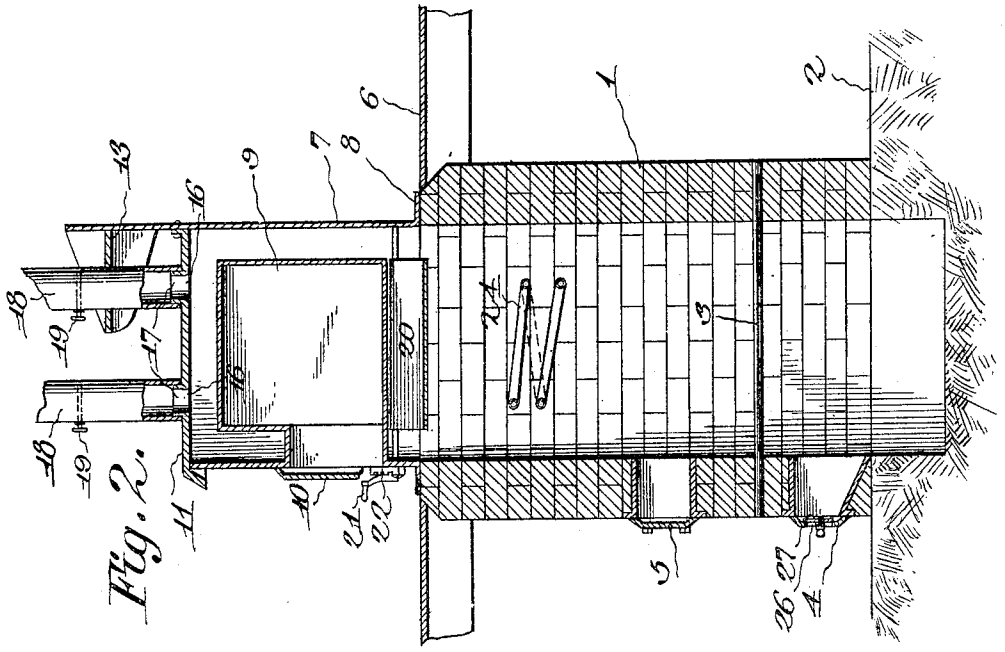


Fig. 2.

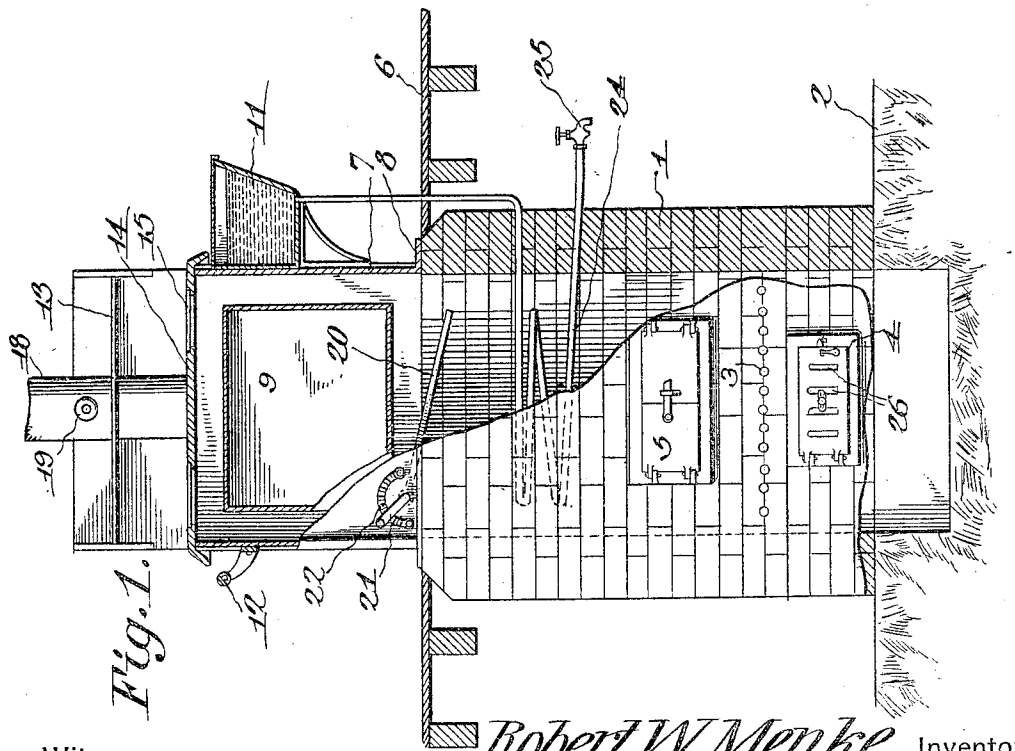


Fig. 1.

Witnesses

E. F. Allenat

Wm. Bagger

Robert W. Menke, Inventor

by C. A. Snow & Co

Attorneys

UNITED STATES PATENT OFFICE.

ROBERT W. MENKE, OF SANBORN, NORTH DAKOTA.

FURNACE.

No. 803,183. Specification of Letters Patent. Patented Oct. 31, 1905.

Application filed March 1, 1905. Serial No. 247,938.

To all whom it may concern:

Be it known that I, ROBERT W. MENKE, a citizen of the United States, residing at Sanborn, in the county of Barnes and State of North Dakota, have invented a new and useful Furnace, of which the following is a specification.

This invention relates to furnaces, and especially to furnaces adapted for the consumption of straw in regions where straw is abundant and other fuel is scarce.

The invention has for its object to present a structure adapted to be erected and maintained in dwelling-houses not only for the purpose of heating the same, but also to furnish heat for cooking, water-heating, and other purposes in a simple and economic manner.

With these and other ends in view, which will readily appear as the nature of the invention is better understood, the same consists in the improved construction and novel arrangement and combination of parts, which will be hereinafter fully described and particularly pointed out in the claims.

In the accompanying drawings has been illustrated a simple and preferred form of embodiment of the invention, it being, however, understood that no limitation is necessarily made to the precise structural details therein exhibited, but that the right is reserved to any changes and alterations to which recourse may be had within the scope of the invention and without departing from the spirit or sacrificing the efficiency of the same.

In said drawings, Figure 1 is a front elevation, partly in vertical section, of a device constructed in accordance with the principles of the invention. Fig. 2 is a vertical sectional view taken at right angles to Fig. 1.

Corresponding parts in the several figures are indicated throughout by similar characters of reference.

This invention in its preferred form includes a furnace-section including an ash-pit and a combustion-chamber, the same being constructed in the basement of the house where it is to be utilized, and an oven-section supported upon said furnace-section and located upon the first floor of the house. In the drawings the furnace-section 1 has been shown supported upon the basement-floor 2, where a foundation may be provided, if desired, although no such foundation has been shown. The furnace structure may be of brick, stone, or other suitable material, although no limitation is made in this respect. The furnace structure is provided with a grate 3 and with doors 4 and 5, through which access may be had to the ash-pit and the fire-box, respectively.

The walls of the furnace structure extend to the level of the first floor, which is shown at 6, and an oven-casing 7 is supported directly upon said furnace-walls, said oven-casing being provided at its lower edge with a wide supporting-flange 8. Within the oven-casing is supported an oven 9, access to which may be had through a door 10, the body of said oven-casing being spaced from the oven to permit the latter to be entirely enveloped by the products of combustion rising from the fire-box. The oven-casing may be constructed either of cast or of sheet metal and may be made to present the general appearance of an ordinary range, supporting upon one side a hot-water reservoir 11, upon the other side a towel-rack 12, and upon the back thereof a hot closet or a shelf, as 13, upon which dishes may be kept warm. It is of importance that the construction of the oven-casing should be as tight as possible in order to prevent the leakage of smoke. It may therefore be found preferable to construct the top 14 of said casing without griddle-openings, especially inasmuch as experience has proven that cooking may be done directly upon the said flat top. In Fig. 1 of the drawings, however, griddles 15 have been shown, and the right is reserved to use the same, if preferred.

The top plate 14 is provided at the front and rear thereof with openings 16, surrounded by pipe-collars 17, with which pipes 18 may be connected for conducting the products of combustion to a place of final exit. These pipes may be provided with dampers 19 for the purpose of regulating the draft, and by having two exits, as described, the course of the products of combustion may be readily regulated, which is very desirable, especially for the purpose of regulating the temperature of the oven in baking. Pivotally mounted in the oven-casing below the oven is a deflector 20, the same being provided with a handle 21, whereby it may be adjusted, said handle being adapted to engage a segment-rack 22 upon the front side of the oven-casing, whereby it and the damper may be retained at any desired adjustment. The damper or deflector 20 is not intended to obstruct the upward passage of products of

combustion as much as to prevent the flames from impacting upon the bottom of the oven. It is obvious that when the deflector is disposed in horizontal position—that is, parallel to the bottom of the oven—the latter will be entirely protected from the flames, while by more or less tilting the deflector the bottom of the oven may be more or less exposed to the direct action of the flames.

Suitably supported within the combustion-chamber is a pipe-coil 24, one end of which is connected with the water-reservoir 11 and the other end of which has a cock 25, through which water may be drawn for laundry and other purposes.

Air to support combustion may be admitted through openings 26 in the ash-pit door 4, said openings being controlled by the valve or damper 27. The feed-door 5 should be made tightly fitting.

When the house in which the device is located has more than one story, the smoke pipes or conductors 19 may be led through the rooms of the upper story for the purpose of radiating heat in the said rooms. A water-tank may also be located in such upper story and be connected by a pipe with the pipe-coil in the combustion-chamber, a return-pipe being used to establish circulation, if desired.

This device, as will be seen, is of extremely simple construction, and it has been practically demonstrated to be effective in operation. The fire does not require to be fed with unusual frequency, and a very intense degree of heat may be developed by the straw consumed in the furnace, the heat being radiated from the oven-casing, which latter is also available for cooking and baking purposes, as described.

Having thus described the invention, what is claimed is—

1. A furnace structure including an ash-pit and a combustion-chamber, an oven-casing supported upon the walls of the furnace structure, an oven supported within and spaced from said casing, and a deflector supported pivotally and adjustably beneath the oven.

2. A furnace structure including a fire-box, an oven-casing supported above the fire-box, an oven supported within and spaced from said casing, a deflector supported pivotally in the casing beneath the oven, and means for tilting said deflector and for retaining it in adjusted position.

3. A furnace structure including a fire-box and an ash-pit, an oven-casing supported upon the walls of said furnace structure, an oven supported within and spaced from said casing, a deflector supported pivotally beneath the oven to protect the bottom of the latter from direct impact of the flames, and a plurality of valved smoke-exits connected with the oven-casing.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

ROBERT W. MENKE.

Witnesses:

WILHELM G. MORK,

HUBERT LOENDORF.