Nov. 14, 1939. H. W. MILLER 2,180,161

ELEVATABLE STOVE OVEN

Filed Nov. 29, 1937 3 Sheets-Sheet 1

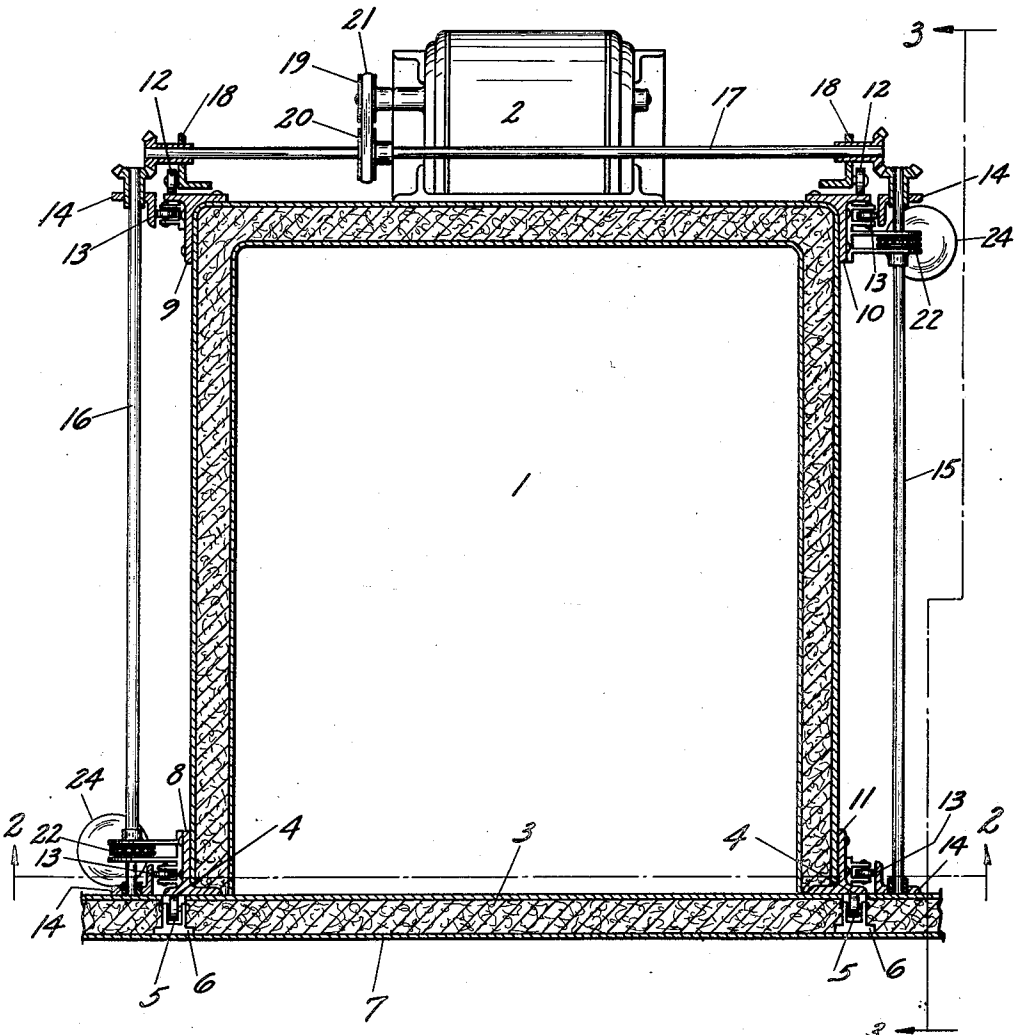


FIG-1

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Nov. 14, 1939. H. W. MILLER 2,180,161

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Filed Nov. 29, 1937 3 Sheets-Sheet 2

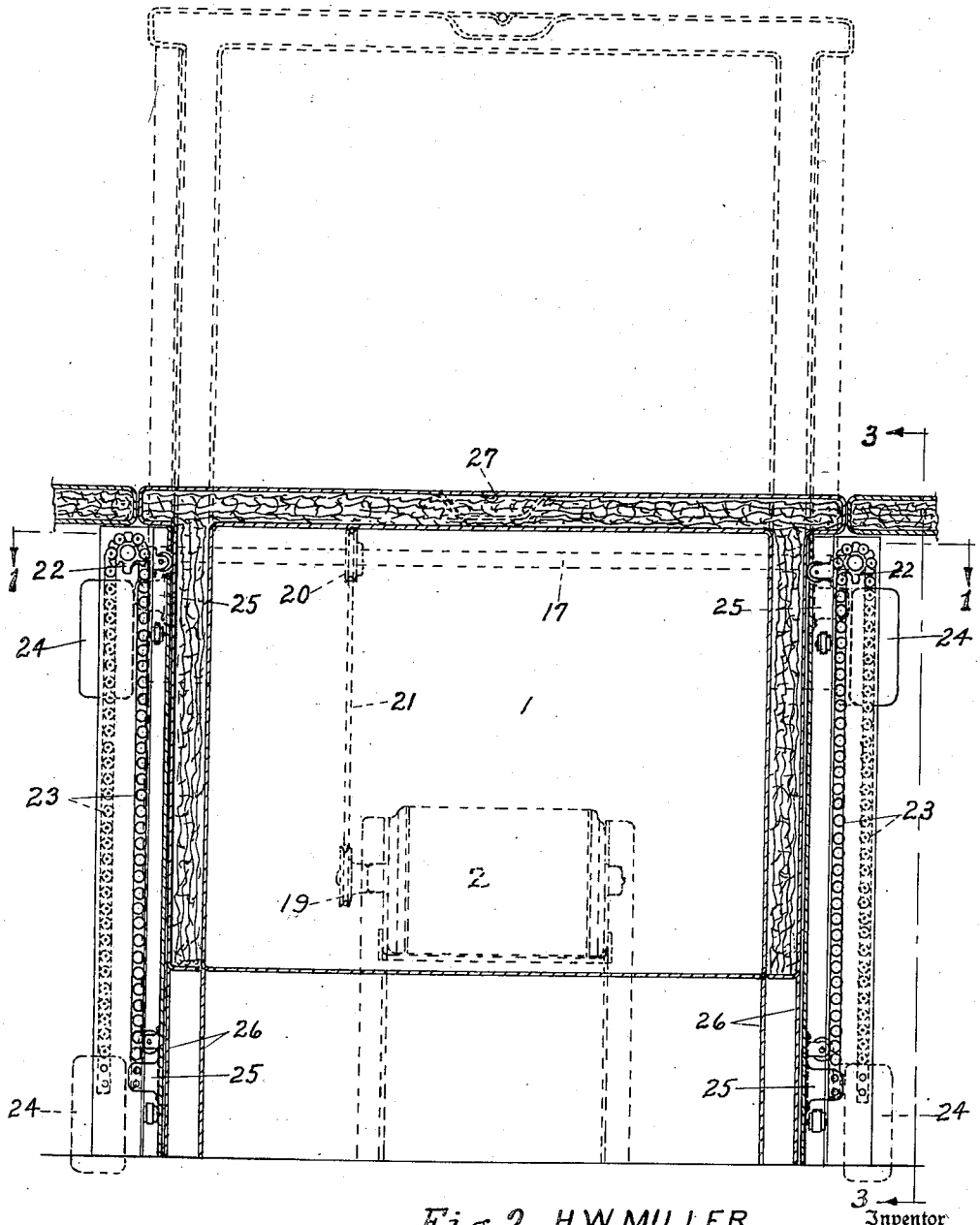


Fig. 2 H.W.MILLER.

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Nov. 14, 1939. H. W. MILLER 2,180,161

ELEVATABLE STOVE OVEN

Filed Nov. 29, 1937 3 Sheets-Sheet 3

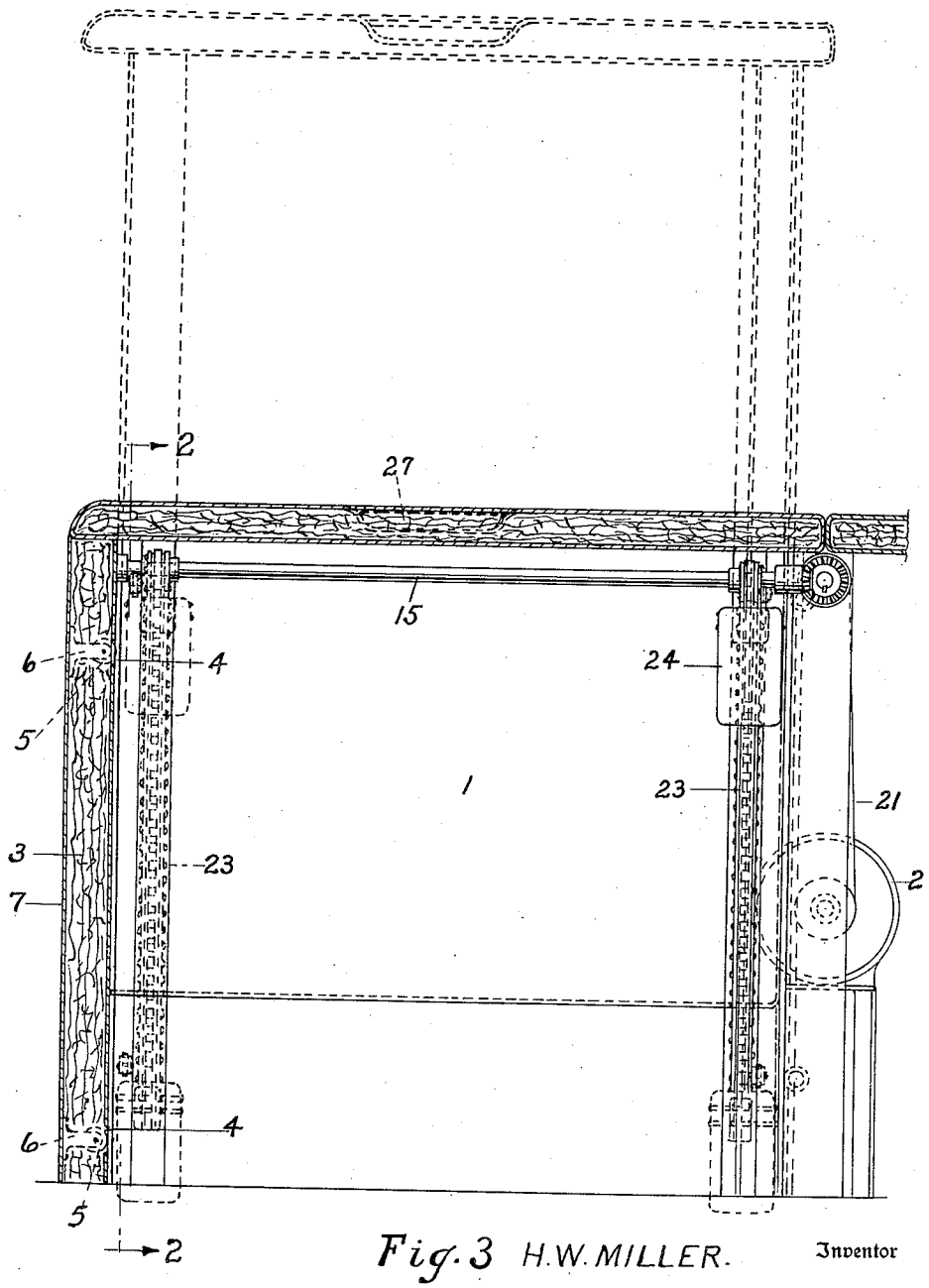


Fig. 3 H.W. MILLER.

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UNITED STATES PATENT OFFICE

2,180,161

ELEVATABLE STOVE OVEN

Herchael Wood Miller, Davenport, Iowa

Application November 29, 1937. Serial No. 177,089

8 Claims. (Cl. 126—19)

My present invention relates to stoves and more particularly to ovens which are not provided with doors and must therefore be moved in order to enable the user to get at the space within the oven for the purpose of inserting and removing whatever is to be heated in the oven. Among the objects of this invention are to provide a stove, heated by any suitable means, which is small enough to be used in narrow kitchenettes and yet has an oven of ample size; to provide a stove in which the oven may be raised substantially directly upwards to permit the insertion and removal of the articles being heated; to provide a stove having an oven which is devoid of any door but yet is so arranged and operated that access to the interior of the oven is easy and convenient; and such further objects, advantages, and capabilities as will hereafter appear and as are inherent in the construction disclosed herein. My invention further resides in the combination, construction, and arrangement of parts illustrated in the accompanying drawings and, while I have shown therein what is now regarded as the preferred embodiment of this invention, I desire the same to be understood as illustrative only and not to be interpreted in a limiting sense.

In the drawings annexed hereto and forming a part hereof,

Fig. 1 represents a horizontal section of an oven and its associated mechanism, the section being taken approximately along the plane indicated by the line 1—1, Fig. 2;

Fig. 2 represents a vertical transverse section of the structure shown in Fig. 1, the same being taken approximately along the plane indicated by the line 2—2, Figs. 1 and 3;

Fig. 3 represents a vertical section through a stove embodying my invention, the same being taken approximately along the plane indicated by the line 3—3, Figs. 1 and 2.

Reference will now be made in greater detail to the annexed drawings for a more complete disclosure of this invention. The oven is denoted broadly by the numeral 1 and an oven-lifting means by the numeral 2. In the present instance, this lifting means is illustrated as an electric motor but it will of course be understood that this may be other means, such, for example, as a crank connected to a shaft and located at some convenient part of the stove. For example, one of the shafts shown as extending through the stove might extend through the front wall thereof and have a crank attached thereto so that by turning the crank the shafts might be rotated to cause elevation of the oven. It is obvious that any other suitable means for accomplishing this purpose may be provided, and my invention is therefore not to be understood as limited to the specific means shown.

The front of the stove is represented as being formed from a pair of metal plates having the space therebetween filled with suitable heat-insulating material, such as asbestos wool. This front 3 of the stove is fixedly connected to the immovable body portion of the stove, constitutes a part thereof, and serves as the front of the oven. Openings 4 are formed in the front of the stove and through these project rollers 5 mounted in brackets 6 secured to the inside of the outside plate 7 of the stove front.

Secured to the corners of the oven, proper, are angle-bars 8, 9, 10, and 11, T-shaped in cross section. The bars 8 and 11 engage the rollers 5, causing the rollers to turn as the oven rises. This reduces to a minimum the friction between the front wall 3 and the moving parts. Rollers 12, comparable to the rollers 5, bear against the angle-bars 9 and 10 and hold the oven close to the front wall 3, the rollers 5 and 12 serving to hold the oven against movement in a forward and backward direction. The oven is held against lateral movement by means of the rollers 13 bearing against the angle-bars 14, secured to the framework of the stove and having the end portions of the shafts 15 and 16 mounted therein. Each end of shafts 15 and 16, as well as of shaft 17, is mounted in a roller bearing in order to reduce the amount of friction between the rotating shafts and the brackets by which they are carried. The shaft 17 is carried by brackets 18 connected to the stove frame. It will probably be desirable to have more guide-rollers 5, 12, and 13 at the corners than I have illustrated but these have been shown as sufficiently illustrating the mode of construction and the principle of operation.

Belt pulleys 19 on the shaft of motor 2 and 20 on shaft 17 are connected by a belt 21. The motor 2 is a reversible motor and is controlled by a suitable switch located in any convenient position upon the stove. Naturally, there should be an automatic cut-off to stop the motor when the oven reaches a predetermined height. Sprocket wheels 22 are secured to the shafts 15 and 16 and sprocket chains 23 pass over these sprockets and each is connected to a weight 24 at one end and to a bracket 25 at its other end, these brackets being secured to downward extensions 26 of the side walls of the oven 1.

Therefore, as the motor 2 runs in one direction, the shaft 17 is turned and this turns shafts 15 and 16, thus moving the chains 23 connecting the counterbalance weights 24 to the oven. Since the two counterbalance weights and the oven weigh approximately the same amount, it will take very little effort on the part of the motor to raise and lower the oven when the latter is not loaded. As a matter of fact, it will probably be desirable to have the two weights slightly heavier than the oven so that when the oven is loaded its weight will not be so much in excess of that of the counterweights as to require a considerable effort on the part of the motor. In order to support suitable trays 28 in the oven, any desired tray supports 29 may be formed on or secured to the oven walls to serve as means for holding the supported trays in position. A suitable handle 27 may be provided in the top of the oven for the lifting thereof in case of necessity. However, this handle is not elevated above the top of the oven and therefore leaves the top without obstruction.

It is of course understood that the specific description of structure set forth above may be departed from without departing from the spirit of my invention as set forth in this specification and the appended claims.

Having now described my invention, I claim:

1. In a stove, a fixed body and a relatively movable oven, the stove having a closed front and the oven having an open front fitting closely against the back side of the stove front, said oven being approximately vertically movable to bring said open side thereof above the stationary part of the stove top, and cooperating guiding elements on the fixed body and the oven to guide the latter in its vertical movements.

2. A stove having a fixed body and a vertically movable oven, the oven having guiding trackways at the corners thereof for guiding the oven in its vertical movements, and rollers cooperating with the trackways in guiding the movements of the oven.

3. A structure as defined by claim 2 having operating means connected to the oven for moving the oven up and down.

4. A structure as defined by claim 2 having counterbalance weights for supporting the weight of the oven and operating means for causing vertical movements of the oven.

5. In a stove having a stationary body provided internally with an upwardly opening cavity, an oven comprising a vertical wall forming a part of the stove body and constituting one wall of the cavity, an oven compartment open at one of its vertical sides, the open side of the compartment facing said wall, and cooperating members on the compartment and in fixed relation to the stove body to guide the compartment for vertical movement thereof, said compartment being movable vertically from a position in which said open side is closed by said wall to a position in which said side is above the wall.

6. In a stove having a stationary body, an oven comprising a wall fixed to the stove body in vertical position, an oven compartment open at one of its vertical sides, the open side of the compartment facing said wall which forms a closure for the open side of said compartment, and cooperating members on the compartment and in fixed relation to the stove body to guide the compartment for vertical movement thereof within the stove body, said compartment being movable vertically from a position in which said open side is closed by said wall to a position in which said side is above the wall, said compartment carrying supporting means therein for movement therewith.

7. In a stove having a stationary body, an oven comprising a vertical wall forming a part of the stove body and a part of the oven, an oven compartment open at one of its vertical sides, the open side of the compartment facing said wall, cooperating members on the compartment and in fixed relation to the stove body to guide the compartment for vertical movement thereof, said compartment being movable vertically from a position in which said open side is closed by said wall to a position in which said side is above the wall, and means for moving said compartment vertically.

8. In a stove having a stationary body, an oven comprising an internal vertical wall constituting a part of the stove body and a part of the oven, an oven compartment open at one of its vertical sides, the open side of the compartment facing said wall, and cooperating members on the compartment and in fixed relation to the stove body to guide the compartment for vertical movement thereof, said compartment being movable vertically from a position in which said open side is closed by said wall to a position in which said side is above the wall, the top of said compartment being substantially in the same plane as the remainder of the stove top when the compartment is in lowered position.

H. WOOD MILLER.