F. E. WHITE.

OVEN.

APPLICATION FILED JAN. 30, 1920.

1,381,527.

Patented June 14, 1921.

2 SHEETS—SHEET 1.

Fig. 1.

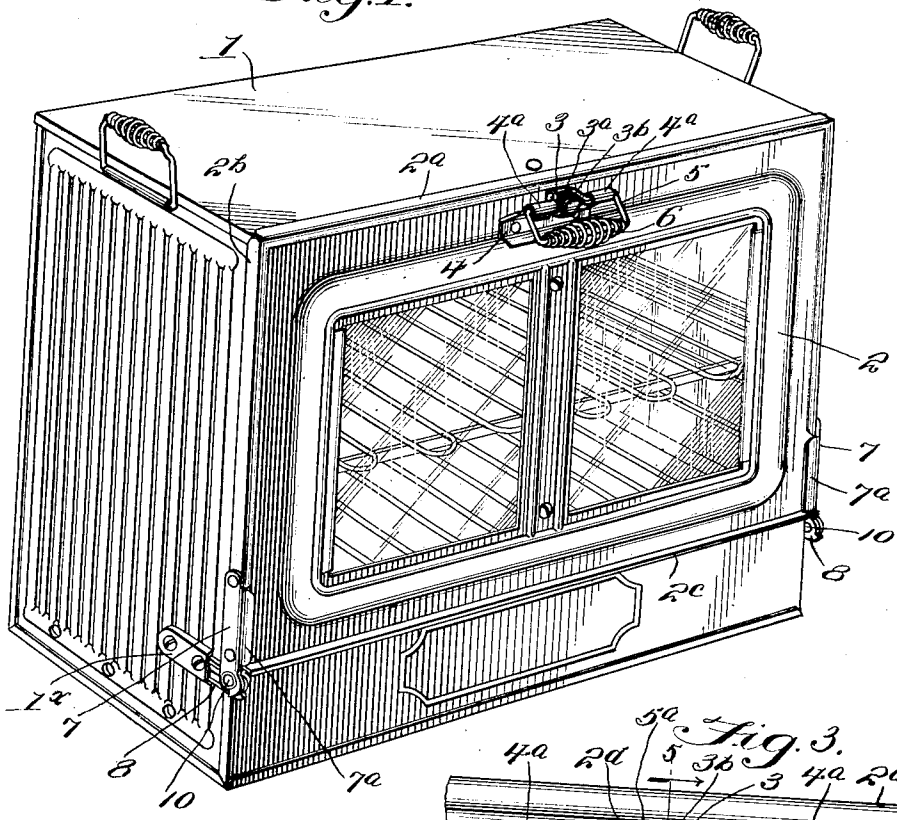


Fig. 3.

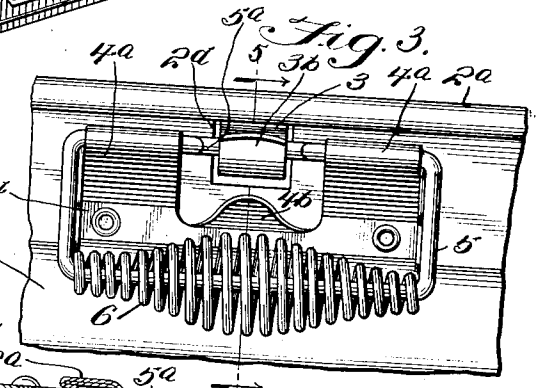


Fig. 4.

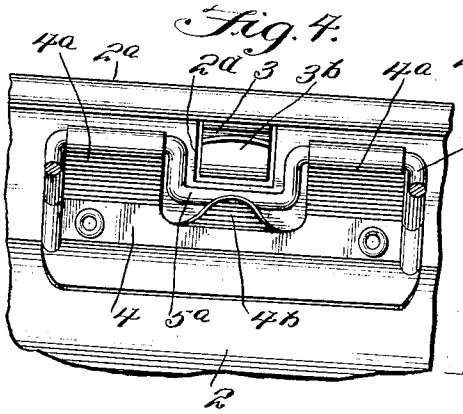
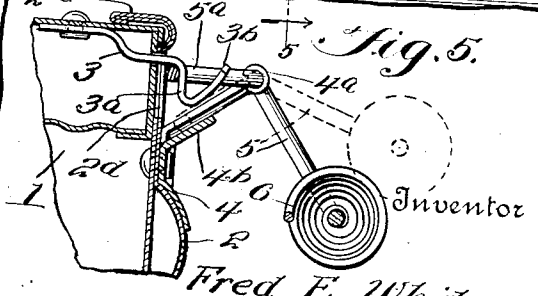


Fig. 5.



Inventor

Fred E. White

By Spear Middleton Donaldson & Hall

Attorney

F. E. WHITE.

OVEN.

APPLICATION FILED JAN. 30, 1920.

1,381,527.

Patented June 14, 1921.

2 SHEETS—SHEET 2.

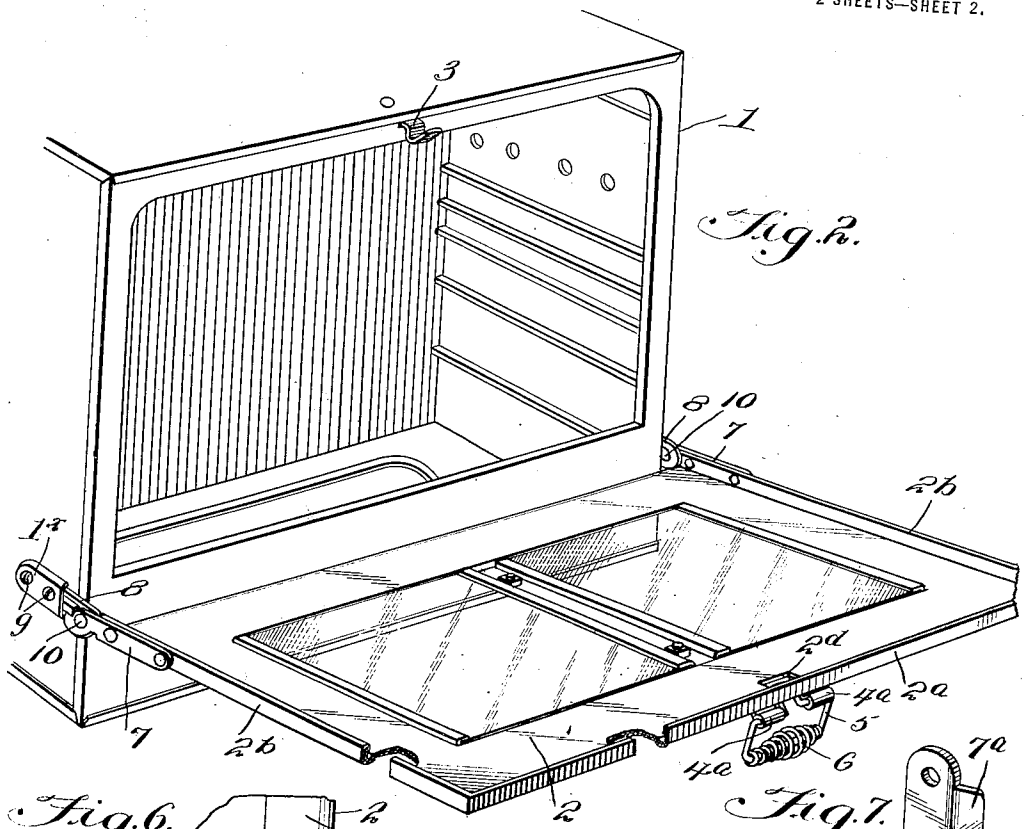


Fig. 2.

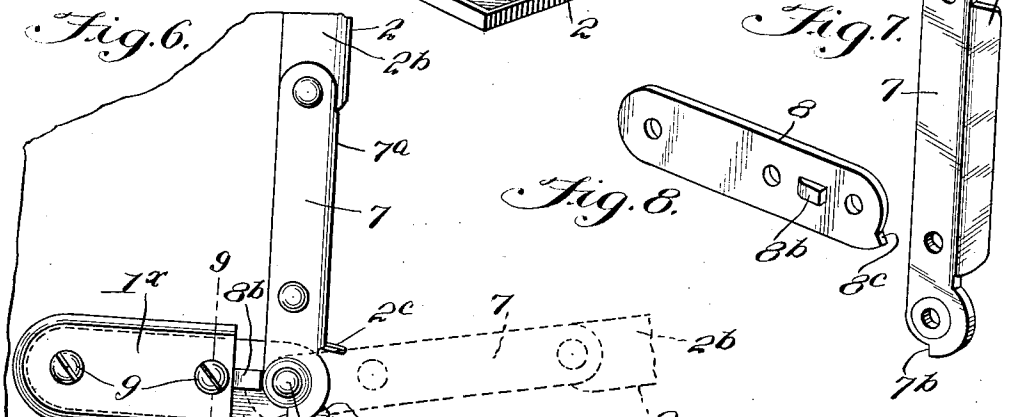


Fig. 6.

Fig. 7.

Fig. 8.

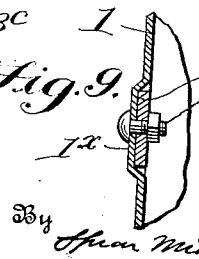


Fig. 9.

Inventor

Fred E. White

By Spear Middleton Donaldson & Hall

Attorney

UNITED STATES PATENT OFFICE.

FRED E. WHITE, OF GARDNER, MASSACHUSETTS, ASSIGNOR TO CENTRAL OIL AND GAS STOVE COMPANY, OF GARDNER, MASSACHUSETTS, A CORPORATION OF MAINE.

OVEN.

1,381,527. Specification of Letters Patent. Patented June 14, 1921.

Application filed January 30, 1920. Serial No. 355,036.

To all whom it may concern:

Be it known that I, FRED E. WHITE, a citizen of the United States, and a resident of Gardner, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Ovens, of which the following is a specification.

My present invention relates to improvements in ovens and particularly to portable ovens of sheet metal of the type designed to be used on oil and gas stoves.

The invention aims to provide an oven with a door which will effect a tight closure of the oven and reduce troubles due to the warping of the door to a minimum.

The invention aims further to provide means by which the door may be easily manipulated by one hand in opening and closing, and when closed securely fastened.

Another object is to provide a door which will be connected by a simple, strong and durable hinge connection adapted to hold the door in horizontal position when open.

The invention includes the novel features of construction and arrangement and combination of parts hereinafter described and particularly defined by the appended claims.

An embodiment of my invention is illustrated in the accompanying drawings in which:

Figure 1 is a perspective view of my improved oven with the door closed.

Fig. 2 is a similar view of the front portion with the door open.

Fig. 3 is an enlarged detail view in front elevation of the door fastening device with the door closed and fastened.

Fig. 4 is a view similar to Fig. 3 with the handle in unlocking position.

Fig. 5 is a section on the line 5—5 of Fig. 3, looking in the direction of the arrows.

Fig. 6 is an enlarged fragmentary side elevation showing the hinge connection.

Figs. 7 and 8 detail views of the hinge members, and

Fig. 9 is a section on line 9—9 of Fig. 6.

Referring by reference characters to these drawings the numeral 1 designates the oven proper which may be of the ordinary or any desired construction and 2 the door thereof having its lower edge hinged to the oven at a suitable distance above the bottom thereof.

These ovens, and the doors thereof, are customarily made of sheet metal and a great deal of trouble has been experienced with leakage of air around the edges of the door due to inability to secure a tight fit, especially when the door becomes warped, as frequently happens. This leakage of air interferes with the proper operation of the oven.

In order to avoid this I provide the door with a marginal flange or flanges extending perpendicular to the plane of the door, which braces the door and prevents warping. The marginal flanges at the upper and side edges of the door are formed by turning the metal of the door over at right angles toward the oven, and the dimensions of the door relative to the oven are such that when the door is closed these flanges indicated at 2^a and 2^b overlap the sides and top walls of the oven and effect a tight closure.

The lower or hinged edge of the door I brace by a flange 2^c which is turned outwardly so as not to interfere with the opening of the door.

To enable the door to be held securely fastened when closed, and easily unfastened and opened, and closed and fastened by the use of one hand only, I provide the following mechanism: A catch or hook member 3, preferably of spring sheet metal, is secured to the top of the oven in a suitable manner and is adapted to project through an opening 2^d in the adjacent part of the oven door. This catch has a downwardly projecting portion 3^a designed to form a retaining or locking shoulder, and an upwardly curved or inclined outer portion.

A sheet metal clip 4 is riveted to the front wall of the door and has an outwardly inclined bifurcated portion forming two ears 4^a which are turned over upon themselves to form eyes located upon opposite sides of the opening 2^d.

A handle member 5, preferably in the form of a closed loop, has portions pivotally held in said eyes and an intermediate offset or cranked portion 5^a which is designed to ride upon the inclined portion 3^b in closing, and engage behind the shoulder 3^a. The side bars of the handle are preferably inclined downwardly as shown in Fig. 5, and the cross bar connecting them preferably carries an insulated or self-cooling handle as indicated at 6.

The arrangement of parts is such that when the door is closed and fastened as

shown in Fig. 5 the outward pull of one hand upon the handle in the natural act of opening the door first swings the handle up into the position shown in dotted lines to disengage the cranked portion from the shoulder of the catch, and the continued outward pull opens the door. This enables the operator to easily open the door with one hand while holding in the other hand an article to be placed in the oven.

Similarly, in closing the door the upward pull upon the handle in raising the door from the horizontal holds the crank portion out of catch engaging position but when the door contacts with the oven the natural shove upon the handle to effect a tight closure causes the cranked portion to be thrown up between the shoulder 3^a and the face of the door to fasten the latter in position. It will be seen that owing to the arc on which this crank portion swings it bears with a cam action on the front face of the door.

In order to limit the outward swing of the handle a stop lug or projection is provided as indicated at 4^b.

So far as we are aware, as heretofore constructed oven doors of this character have been provided with a catch to engage the edge of the upper marginal flange of the door opening which does not furnish a rigid and dependable hold for the catch on the door, there being nothing to prevent the spring of the sheet metal from allowing the front or marginal portion to spring, thus permitting the door to fall away from its contact with the oven front. In our construction the catch is secured to the top wall of the oven and thereby secures a rigid and dependable fastening.

The specific arrangement of the catch and latch members takes all weight and strain from the cut away front wall of the oven and when the oven is heated, this prevents warping.

My improved hinge connection comprises a pair of bars for each side of the oven which are shown in detail at 7 and 8 in the correspondingly numbered figures.

The bars 7 are riveted or otherwise suitably secured to the marginal flanges at the inner or lower corners of the doors, and are provided preferably with overturned flanges 7^a which overlie the front face of the door as clearly shown in Fig. 1.

The bars 8 are riveted or otherwise suitably secured to the sides of the oven, but I prefer to strike the sheet metal walls of the oven outwardly as shown at 1^x to form pockets or channels in which the bars are seated, being held therein by screw bolts or rivets as indicated at 9, Figs. 6 and 9.

The ends of the bars 7 and 8 overlap and are pivotally connected by hinge pins 10.

Bars 9 are provided with shoulders 7^b designed when the door is opened, to abut against the lugs 8^b carried by the bars 8, and the bars 8 are provided with shoulders 8^c adapted to abut against the lower or inner end of the flange 7^a. By this arrangement a double set of stops is provided for each set of bars on opposite sides of the hinge pins, thus forming a strong support for the door when in full open and horizontal position as shown in Fig. 2, this arrangement relieving the hinge pins of strain.

Having thus described my invention, what I claim is:

1. A sheet metal oven having an open front and an oven door closing said front and hinged at its lower edge, said door having an inwardly turned marginal flange on its side and top edges overlapping the oven walls when closed and having an outwardly turned flange at its lower edge.

2. In an oven having an open front, a door pivoted at its lower edge, a latch carried in proximity to its upper end, a flange extending along the upper edge of the door, said door having an opening below the flange, a catch carried by the top of the oven and extending to the front of the same and adapted to pass through the opening in the door and be engaged by the latch.

In testimony whereof, I affix my signature.

FRED E. WHITE.