

Oct. 14 , 1924.

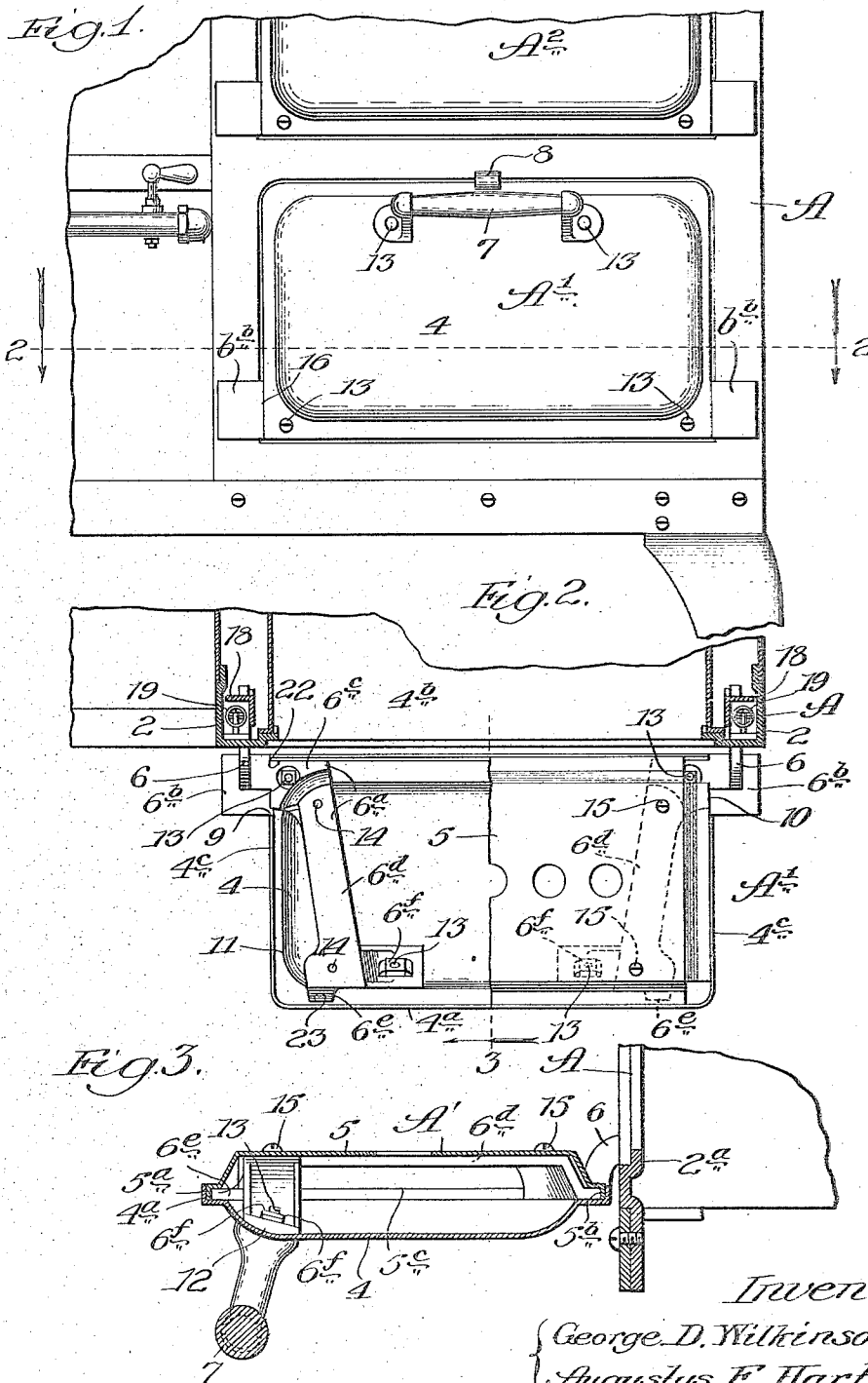
1,511,700

G. D. WILKINSON ET AL

OVEN DOOR

Filed April 7, 1924

2 Sheets-Sheet 1



Inventors:
{ George D. Wilkinson
Augustus F. Harter,
By *Dyckinboth, Lee, Chittenden & Wiles,*
Attys.

Oct. 14, 1924.

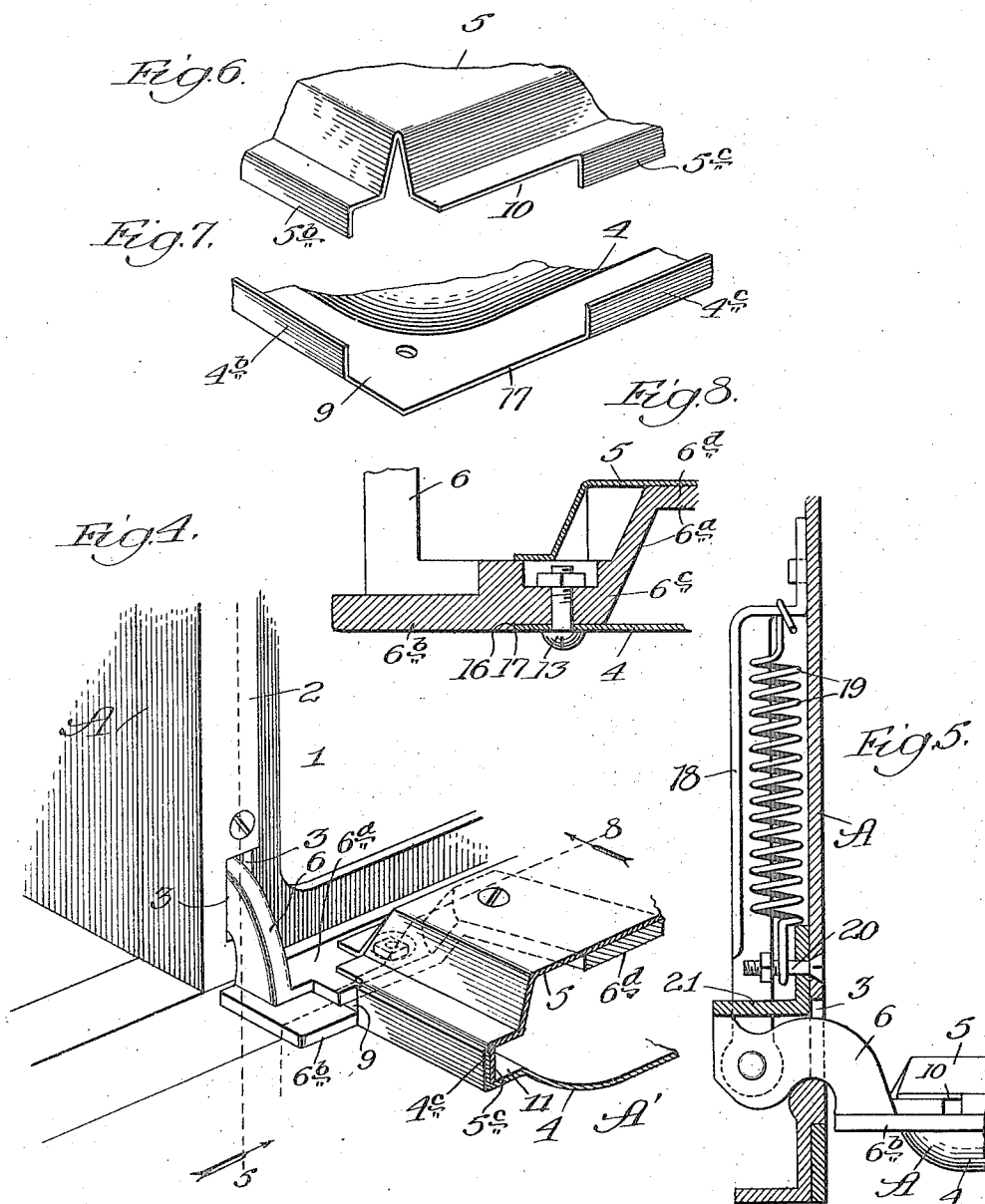
G. D. WILKINSON ET AL

1,511,700

OVEN DOOR

Filed April 7, 1924

2 Sheets-Sheet 2



Inventors:
 { George D. Wilkinson &
 Augustus F. Harter
 By *Dyrenforth, Sec. Patton & Wells*
 Attys

UNITED STATES PATENT OFFICE.

GEORGE D. WILKINSON AND AUGUSTUS F. HARTER, OF OAK PARK, ILLINOIS, ASSIGNORS TO CRIBBEN & SEXTON COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

OVEN DOOR.

Application filed April 7, 1924. Serial No. 704,672.

To all whom it may concern:

Be it known that we, GEORGE D. WILKINSON and AUGUSTUS F. HARTER, citizens of the United States, residing at Oak Park, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Oven Doors, of which the following is a specification.

This invention relates particularly to oven doors; and the primary object is to provide an improved construction involving the use of an outer sheet metal panel constituting the main body of the door, an inner sheet metal lining, and a pair of trunnions having reenforcing shanks housed between the main panel and the lining. Such a construction provides for the supporting of the door and any load which may be imposed upon it when the door is in open condition by the trunnions and the shank-extension thereof, which suitably may be made of cast iron and of sufficient strength to readily support the door and any superimposed weight which may be imposed upon it in use.

The present application constitutes a continuation in part of our pending application No. 675,113, filed November 16, 1923.

The invention is illustrated in its preferred embodiment in the accompanying drawings, in which—

Fig. 1 represents a broken elevational view of a gas range equipped with the improved door; Fig. 2, a horizontal sectional view taken as indicated at line 2 of Fig. 1, but showing the door in open position and a portion of the lining of the door broken away; Fig. 3, a broken vertical section taken as indicated at line 3 of Fig. 2; Fig. 4, a broken perspective view, partly in section, illustrating the manner in which the door is hinged; Fig. 5, a broken vertical sectional view taken as indicated at line 5 of Fig. 4; Fig. 6, a broken perspective view of the inner plate, or lining of the door; Fig. 7, a broken perspective view of an outer sheet metal member, or main panel, of the door; and Fig. 8, a broken sectional view taken as indicated at line 8 of Fig. 4, this view being on an enlarged scale, however.

In the illustration given, A represents a frame of a range which is provided with ovens equipped with doors A' and A". A

description of the door A' and the manner of mounting it will suffice for an understanding of the invention.

The door opening 1 is bounded by a peripheral frame-member 2 whose side members are of angular cross-section, as shown in Fig. 2. These angles have their flanges which extend parallel with the front of the oven provided at their lower portions with slots 3 which are adapted to accommodate the concealed hinges.

The door A' comprises a main outer sheet metal panel 4 which is bowed outwardly and is provided at its periphery with a top flange 4^a, a bottom flange 4^b, and end flanges 4^c; an inner sheet metal panel, or lining 5 which is provided at its margins with a top flange 5^a, a bottom flange 5^b, and end flanges 5^c; curved or arcuate hinge-members 6 adapted to extend through the slots 3, said members 6 having their outer ends equipped with laterally extending shanks 6^a which are housed between and serve to support the panels of the door, the junction portions of the member 6 and shank 6^a, in each case, being equipped with a plate 6^b which is adapted to cover the slot 3 and conceal the hinge when the door is closed; and a handle 7 secured to the upper portion of the door.

The door is adapted to be engaged, when in the closed position, by a latch 8 carried by the frame A and disposed above the door. This latch may be of any suitable construction, and it is not shown in detail.

The flanges of the main panel 4 are notched at the lower corners of the door, as indicated at 9, to accommodate the shanks of the trunnions or hinge-members 6. Also, the flanges of the lining panel 5 are notched at the lower corners of the door, as indicated at 10. The flanges of the outer and inner panels of the door have a telescopic relation, that is, the flanges of the lining member fit inside the flanges of the main panel. The notches, therefore, are complementary and afford passages for the shanks of the trunnions. The shank 6^a of each trunnion preferably comprises a base portion 6^c which extends through the notches at the corner of the door, and an arm 6^d rising from the portion 6^c and extending obliquely and terminating at the upper portion of the door.

It will be noted that the main panel 4 of the door is so pressed as to provide a peripheral marginal shelf, or bearing, 11 adjacent the flanges of the member, the intermediate or main portion of the body of the sheet being pressed or dished outwardly so as to lie in a different plane. The portions 6^c of the shanks of the trunnions bear upon the shell portion 11 at the lower portion of the door. The portions or arms 6^d of the shanks are offset inwardly or toward the lining, as will be clearly understood from Figs. 4 and 8, and thus afford reinforcements or supports for the lining. At the upper ends of the arms 6^d are small extensions 6^e which bear upon the marginal bearing 11. The arms 6^d are also equipped at their upper ends with grooves or feet 6^f which bear upon the depressed portion of the panel 4 at the points where the handle 7 is connected, the metal at these points being struck inwardly slightly, however, as indicated at 12. The shank-portions 6^c and 6^f are secured to the outer panel by means of stove bolts 13, the upper ones of which serve to secure the handle 7 to the door.

The offset arms 6^d of the shanks, against which the lining bears, are provided with tapped perforations 14 which receives screws 15 that serve to secure the lining in position, so that the housing of the shanks of the trunnions is thus completed.

As will be understood from Figs. 4 and 8, the arcuate member 6, the shank 6^a, and the concealing plate 6^b are formed integrally with each other. The whole member may suitably comprise a casting. The plate portions 6^b preferably are provided with shallow rabbets 16 against which bear the edges 17 of the outer panel, which edges are formed by cutting away the flange 4^a in the manner shown in Fig. 7. Thus, practically a flush joint is provided.

As appears from Fig. 5, each hinge-member 6 is of suitable form to co-operate with the slot 3 to obtain a suitable hinge action. Preferably, the inner end of each member 6 has connected therewith a counterbalancing device. In the illustration given, each member 6 has connected with its inner end, a link 18 which extends upwardly and has attached to its upper end a coil-spring 19, whose lower end is secured to a stove bolt 20 carried by the frame A. In this manner, the door is counterbalanced.

When the door is in the open position, shown in Fig. 3, the trunnions will support it in that position, the member 21 serving as a stop to limit the downward swing of the door.

As appears from Fig. 2, the base portions of the shanks 6^a are separated from the lower flange 4^b of the main panel of the door by spaces 22; also the lugs 6^e are separated from the flange 4^a of the outer panel by spaces 23.

Thus, when the lining is applied, the flanges of the lining are accommodated by these spaces.

From the description given, it will be understood that the door is carried wholly by the trunnions and their shanks, and that the shanks of the trunnions afford a very substantial reinforcement for the door. Moreover, the shanks of the trunnions are mainly housed in the space between the outer and inner panels of the door. Thus it is possible to give to the door adequate strength and stanchness, while still employing comparatively light gauge metal for forming the panels. This is accomplished without marring the appearance of the door, since the strong castings which are employed are well housed within the door. The outer panel of the door may thus be made an integral member, and may be suitably enameled, and its appearance will not be marred in any way. The only exposed screws are the screws 13, which may have nickel plated heads. The construction is strong, sanitary, and thoroughly adapted to its purpose.

By reference to Fig. 3, it will be seen that the body of the inner panel 5 of the door lies in a plane substantially flush with the upper edge of the lower member 2^a of the oven door frame, so that baking pans, or the like, may be drawn out of the oven and rest upon the upper surface of the door, and then shoved again into the oven if desired, with great facility. The hinge-members 6, it will be noted, permit a certain drop of the door in the action of opening the door. This is compensated for by striking the body of the panel 5 upwardly (assuming the door to be open). The raised body-portion of the panel 5 is of small enough dimensions to enable it to move into the door-opening when the door is closed.

The foregoing detailed description has been given for clearness of understanding only, and no unnecessary limitations should be understood therefrom.

What we regard as new, and desire to secure by Letters Patent, is:

1. The combination with an oven door frame provided near the lower corners with slots, of a door comprising a sheet metal panel having an intumed marginal flange which is notched at its lower corners, and a pair of hinge-members, said hinge-members having curved portions working through the corresponding slots in said frame and having laterally extending shank-portions extending through said notches and secured to said panel.

2. The combination with an oven door frame provided near the lower corners with slots, of a door comprising a sheet metal panel having an intumed marginal flange which is notched at its lower corners, and

- a pair of hinge-members having curved portions extending through said slots and having shanks provided with laterally projecting portions extending through said notches, means securing said shanks to said panel, and plates at the junctions between the shanks and curved hinge-portions which are adapted to conceal the hinge when the door is closed.
3. The combination with an oven door frame provided near the lower corners with slots, of a door comprising a sheet metal panel having an intumed marginal flange which is notched at its lower corners, a pair of hinge-members by which said panel is carried, each hinge-member comprising, in integral formation, an arcuate portion extending through the corresponding slot in said frame, a laterally projecting shank-portion extending through the corresponding notch of the door flange, a hinge-concealing plate at the junction of said portions, an arm extending from the laterally projecting portion of the shank to near the upper edge of the door, means securing said shanks to said panel, and a lining panel covering said shanks.
4. The combination with an oven door frame provided near the lower corners with slots, of a door comprising an outer main panel and a lining panel, said panels having telescopically related flanges with notches at the lower corners of the door, and hinge-members carrying said door, each hinge-member having a curved portion extending through the corresponding slot in said frame and having a laterally offset shank extending through the corresponding notch of the door and from thence to a point near the upper edge of the door, a handle mounted on the outer panel near the upper edge of the door, and means securing said handle and the shanks of said hinge-members to said panels.
5. The combination with an oven door frame provided near the lower corners with slots, of a door comprising an outer main panel which has its body-portion dished outwardly and an inner lining panel which has its body-portion dished inwardly, said panels having telescopically related flanges with notches at the lower corners of the door, and hinge-members supporting said door, each hinge-member comprising a curved portion extending through a corresponding slot in said frame and a shank-portion extending through a notch of the door and housed between said panels, each hinge-member having also a slot-covering plate, and means securing said panels to said shanks.

GEORGE D. WILKINSON.
AUGUSTUS F. HARTER.