

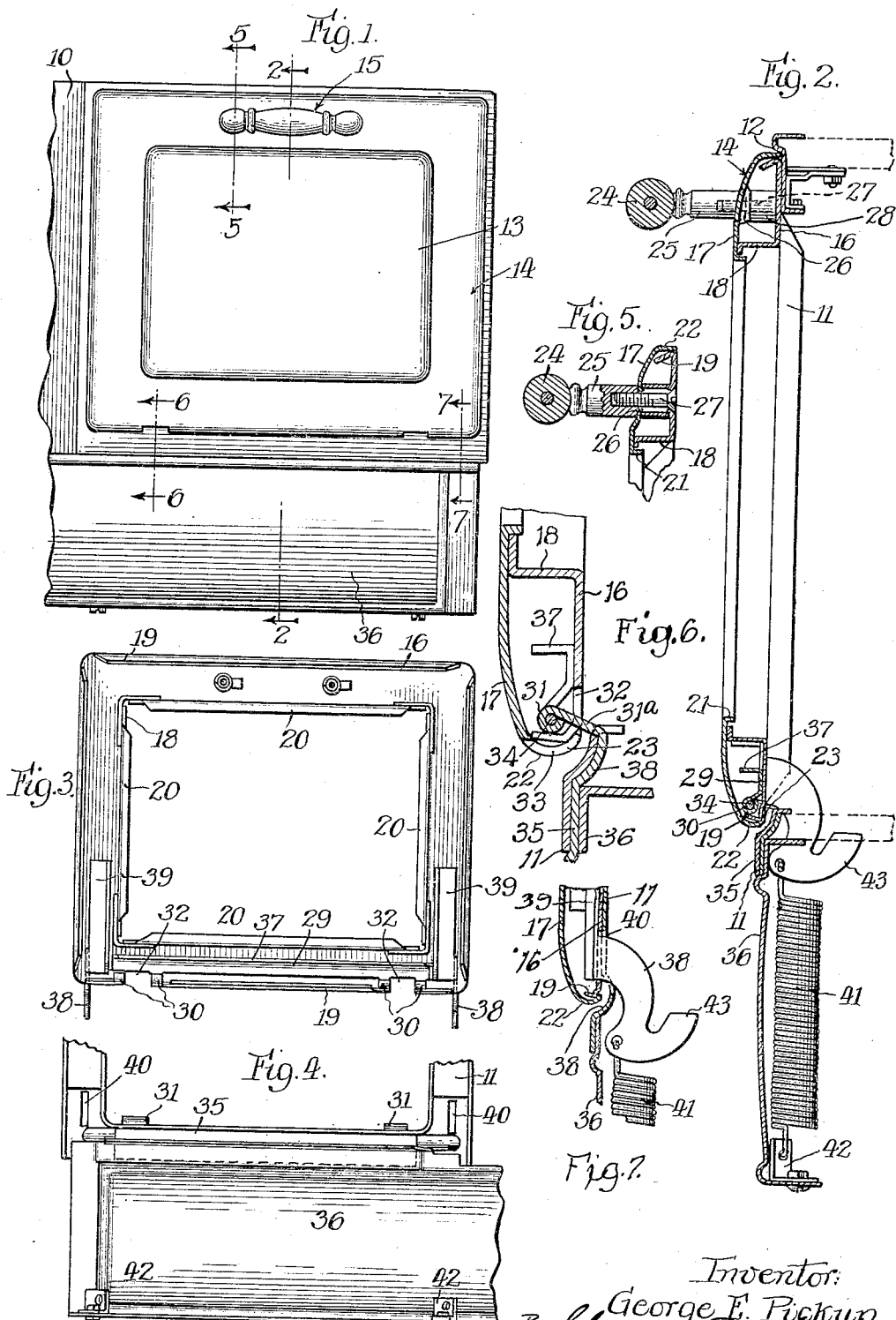
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COOK STOVE

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UNITED STATES PATENT OFFICE

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COOK STOVE

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The invention has general reference to cook stoves and more particularly to the mounting of the door or doors of the oven section. It has for its general aim the provision of a simple and advantageous construction for hinged mounting an oven door in a manner such as to conceal the hinge connections in all positions of the door.

More specifically it is an object of the invention to provide a stove door construction in which the hinge members are positioned and concealed within the body of the door frame.

A further object of the invention is to provide an improved, simplified form of means for counterbalancing the weight of the oven door.

Still another object resides in the provision of exceedingly simple, readily disconnectible means for hinged connecting a door on a stove, which is concealed in all positions of the door and is positioned substantially in the plane of the supporting wall of the stove.

Another object of the invention is to provide a device of this character which is simple and sturdy in construction, is capable of being manufactured cheaply, may be easily assembled and disassembled and in which the mounting means is adequately protected against accidental injury or damage.

Other objects and advantages will become apparent in the following description and from the accompanying drawing in which:

Figure 1 is a front elevation of a preferred embodiment of the invention, the stove being shown fragmentarily.

Fig. 2 is a vertical central section thereof taken approximately on the line 2—2 of Fig. 1, the center panel being omitted.

Fig. 3 is an inner face view of the back section of the door frame.

Fig. 4 is a fragmentary detail view showing the door frame on the stove, and, when considered in connection with Fig. 3, shows the mounting means in disassembled relation.

Fig. 5 is a detail view of the handle assembly taken on the line 5—5 of Fig. 1.

Fig. 6 is an enlarged detail vertical section through one of the mounting means as shown by the lines 6—6 of Fig. 1.

Fig. 7 is a detail view of the counterbalancing means for the door taken on the lines 7—7 of Fig. 1.

While the invention is susceptible of various modifications and alternative constructions, I have shown in the drawing and will herein describe in detail the preferred embodiment, but it is to be understood that I do not thereby intend to limit the invention to the specific form disclosed, but intend to cover all modifications and alternative constructions falling within the spirit and scope of the invention as expressed in the appended claims.

Generally the invention is capable of application to any preferred type of cook stove and is illustrated in connection with an oven door. This door, generally stated, comprises a pair of readily separable interfitting sections constituting the frame thereof. Said sections are spaced apart so that the frame is hollow and the members, by which the door is pivotally supported or hinged on the stove, are located and concealed in the hollow space of the frame. Furthermore, substantially the entire construction may be manufactured from sheet metal, and the arrangement of parts is such that the assembled structure is extremely rigid and sturdy.

More particularly describing the invention, 10 designates one of the side walls of the stove which has therein an opening into the interior defined by a frame 11. The frame generally is of a well recognized construction and, if desired, may embody an outwardly facing recess, shown at 12, around the inner margin thereof which snugly receives the door in the closed position thereof. The door, in its general arrangement of parts, has the usual central panel 13 carried and supported by a door frame, indicated at 14. A handle 15 facilitates opening and closing the door.

Referring particularly to the door frame construction, said frame comprises a pair of interfitting sections, namely, a back or supporting section 16 and a front or shell section 17. These sections, when in assembled relationship, form a rigid, sturdy frame within

which the panel may be mounted in any suitable manner.

In Figs. 2 and 3, the back section 16 is shown as comprising a flat, centrally apertured member having inner and outer peripheral flanges 18 and 19 extending in one direction therefrom to provide a channel shaped structure. The outer edges of the inner flanges 18 may be bent inwardly of the central aperture, as at 20, to form an abutment for use in positioning and mounting the panel 13 in place.

The front section or shell 17 has the same general contour as the back section and is also provided with inner and outer peripheral flanges 21 and 22. The shell, however, is somewhat wider than the back section 16 so that the flanges 21 and 22 thereon fit over flanges 18 and 19 on the back section. As may be seen in Fig. 2, the outer peripheral flange 19 on the back section is somewhat shorter than the inner flange 18, so that the surface contour of the shell 17 may slope correspondingly to enhance the ornamental appearance of the door.

In securing the sections together one side edge, in this instance the lower, of the outer flange 22 on the shell is bent inwardly, as at 23 (see Fig. 6), and is arranged to be received in a slight indentation or recess formed along the corresponding edge of the back section. This provides a positive interengagement therebetween extending entirely along one side of the two sections. The handle 15 is mounted on the opposite, or upper, side of the frame and may be of any suitable type such as a hand piece 24 supported by a pair of posts 25.

The shell is struck inwardly at appropriate points to provide flat seats 26 for the handle posts 25, and screws 27, extending through both the back and the front sections 16 and 17 axially into the legs 25, secure the two sections and the handle in rigid assembly. Preferably spacing members, which may be in the form of sleeves 28 suitably secured to the back section 16 for engagement with the rear surfaces of the indented portions 26, are provided to insure a definite spaced relationship of the front and back sections. The inner flange 18 on the back section may also abut the shell, serving to further insure such relationship. Thus the frame of the door may be assembled by merely effecting the interengagement of the complementary sides of the two sections and then securing the handle in place.

The simplified form of hinge construction utilized in mounting the door upon the stove comprises a pair of elongated members 29 and 35 having thereon integrally formed complementary means which, when connected, form the hinge. The elongated member 29 is welded or otherwise secured within the channel of the back section 16 on the side

thereof opposite the handle and has near either end thereof a pair of spaced, alined curls or loops 30.

The other elongated member 35 is, for the purpose of providing greater rigidity to the assembly, secured along the side of the stove frame 11 intermediate said frame and the upper portion of the adjacent stove wall, which, in this instance, is the skirt 36 (Fig. 6). The member 35 carries near either end thereof a single curl or loop 31 supported at the end of a forwardly projecting arm 31^a (Fig. 6) which extends through a suitable notch in the flanged upper edge of the frame 11. The arrangement of parts is such that each of the loops 31 enters between and is alined axially with a pair of spaced loops 30 on the member 29 when the door is properly positioned on the stove.

Registering apertures 32, 33 in the back section and shell (Figs. 1, 3 and 6) respectively, which form in effect a downwardly opening notch in the hollow frame permit extension of the curls 31 and arms 31^a into the interior of the door frame, such apertures extending away from the edge of the door for a sufficient distance to permit swinging movement of the door. Pins 34, extending through the alined curls 30, 31 complete the hinge members and are preferably removable to facilitate dismounting of the door. To expose the hinges for the purpose of dismounting the door, the outer section 17 of the door is removed by unscrewing the handle 24. The fact that the hinge members 29 are connected to the inner section 16 of the door materially simplifies the initial assembly of the stove, since the parts of the hinge may be connected together while they are in exposed readily accessible positions, after which the outer section 17 of the door may be secured in place. If desired, the member 29 may be reinforced by bending one side thereof at substantially right angles, as shown at 37. It will be seen, therefore, that the hinge construction is exceedingly simple and, since all the permanent units between the parts may be easily accomplished by spot welding, an exceptionally sturdy and rigid structure is attained.

The preferred arrangement and location of the parts of the hinge members is such that the pivotal axis of the hinges lies immediately within the outer edge of the door frame. Consequently, only a small portion of the frame swings inwardly of the stove as the door is opened, and the stove frame adjacent this edge of the door is offset inwardly or recessed, as at 38 (Fig. 6), to provide clearance for this portion of the door frame. For the sake of clearness, the edge of the door is herein shown as having considerable clearance. Furthermore, the arms 31^a are arranged to position the pivotal axis substantially in the plane of the wall of the stove.

Hence, a simple hinge of this character may be employed without impairing the close abutment of the door frame with the stove frame.

In connection with a door construction of this character it becomes possible to provide a simplified means for counterbalancing the weight of the stove door. While a single counterbalancing organization would probably operate effectively, better balance is obtained by using one on either side of the stove door. However, since the organizations in the present embodiment are substantially similar, only one will be described in detail. Referring to Figs. 2, 3, 4, and particularly 7, the counterbalancing means comprises an arm 38 preferably formed as an integral part of a plate 39 secured within one of the side channels of the back section 16 of the frame.

The arm 38, in the mounted position of the door, extends through an appropriately formed elongated slot 40 in the stove frame, and a contractile spring 41 extending between the arm 38 and a bracket 42 on a stationary part of the stove, exerts a downward pull upon the arm to hold the door in closed position. Preferably the arm 38 curves downwardly to permit the spring force to be exerted substantially in the plane of the stove wall. A stop finger 43 formed on the arm 38 for engagement with the stove frame limits the extent of outward swinging movement of the door. The slots 40 in the stove frame are preferably of such size that there is no engagement between the stove frame and the arm 38 in any of the relative positions of the arm to the frame, thus eliminating any possibility of wear on the frame.

It will be apparent that a door construction has been provided in which the operating parts are substantially concealed from view in any position of the door. Moreover, the operating parts are readily accessible for inspection, repair, or replacement of the parts, and the entire construction is exceedingly simple and sturdy.

I claim as my invention:

1. A stove having in combination with a door receiving frame, inner and outer interfitting sections detachably secured together to form a door which is hollow along one edge thereof, means formed from sheet metal and secured to the inner one of said sections within said hollow edge of the door providing coaxial curls at opposite ends of said edge, means formed from sheet metal and secured to said frame providing stationary arms extending outwardly of said frame and having curls formed at the outer ends of said arms, said hollow edge of said door having openings therein through which said arms may project, and means within said hollow edge pivotally connecting the curls on said door and said frame.

2. In a stove, the combination of a door frame, inner and outer interfitting sections

detachably secured together to form a door which is hollow along one edge thereof, a strip of sheet metal secured to said inner section within said hollow edge, said strip having along one edge an integral angular flange to reinforce the strip and distribute the stresses therein, and along its other edge integral portions bent to form coaxial curls adjacent opposite sides of the door, a second sheet metal strip secured along one edge of said frame and having integrally formed stationary arms projecting outwardly of said frame with coaxial curls at their ends, said hollow edge of said door having openings therein through which said arms project, and means within said hollow edge of the door extending through the coaxial curls of the two strips to pivot said door on said frame.

In testimony whereof, I have hereunto affixed my signature.

GEORGE E. PICKUP.