

Sept. 13, 1938.

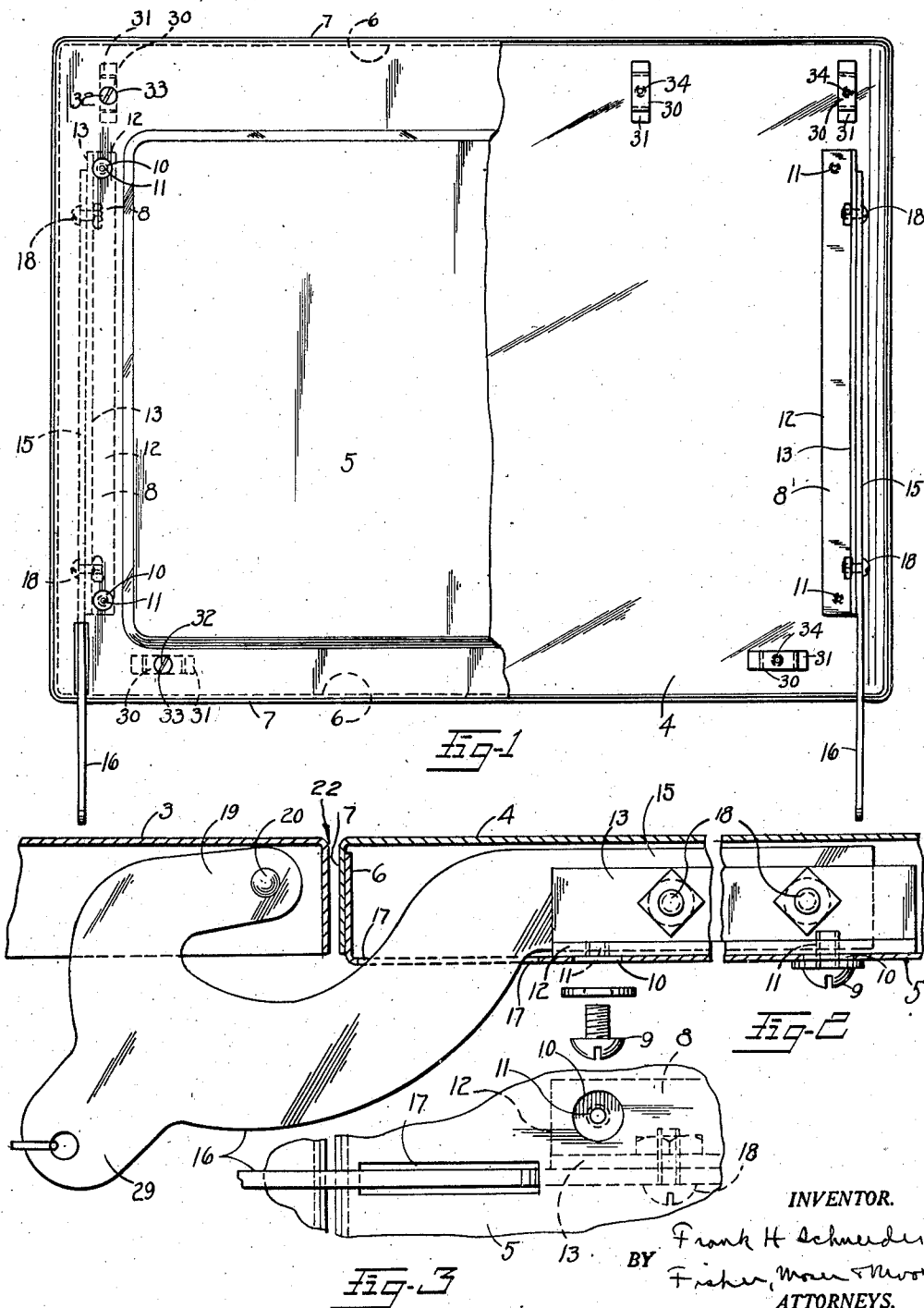
F. H. SCHNEIDER

2,129,750

STOVE DOOR CONSTRUCTION

Filed Nov. 22, 1937

2 Sheets-Sheet 1



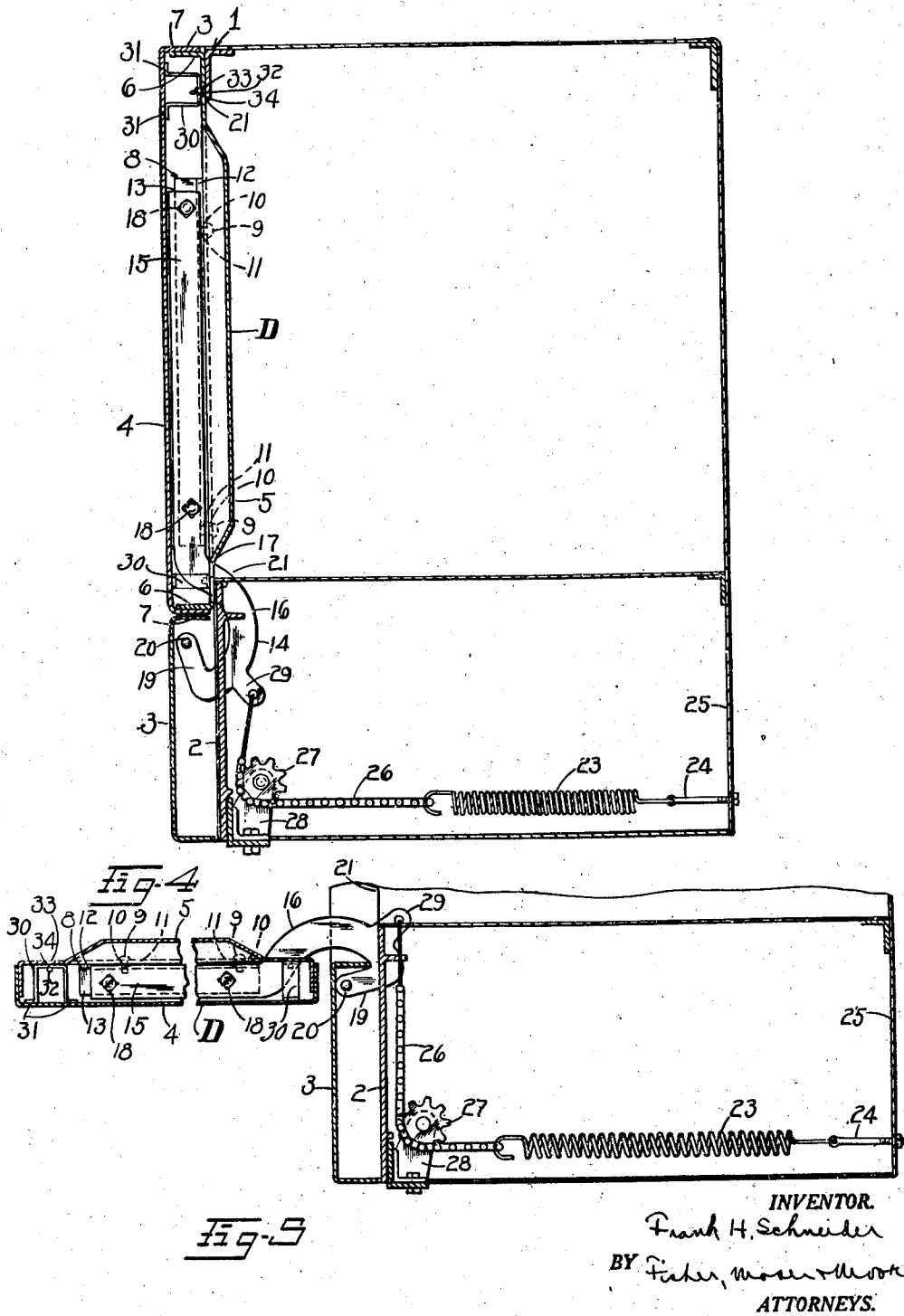
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UNITED STATES PATENT OFFICE

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STOVE DOOR CONSTRUCTION

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7 Claims. (Cl. 126—194)

My invention relates to new and useful improvements in hinge construction for closure members such as oven doors, one of the objects of the invention being the provision of a hinge construction, which efficiently counter-balances the door.

A further object of the invention is to provide a hinge construction of economical manufacture which provides for a minimum clearance between the front panel and the lower end of the door.

A further object of the invention is to provide a hinge construction for the doors of ranges of the flush front construction type, in which hinges and hinge pins will be entirely concealed when the doors are closed.

Another object of the invention is to provide adjustable fastening means for securing the hinge brackets and oven door liner in place.

With the above and other objects in view which will appear as the description proceeds, this invention resides in novel construction, combination and arrangement of parts substantially as hereinafter described and more particularly defined by the appended claims, it being understood that such changes in the precise embodiment of the herein disclosed invention may be made as come within the scope of the claims.

In the accompanying drawings:

Figure 1 is a rear view of the door with the liner member partly broken away to show the hinge connection;

Figure 2 is an enlarged fragmentary section through the door showing the hinge in detail, one of the fastening screws and washers being shown in exploded relation to the other assembled parts;

Figure 3 is a detail fragmentary view of a lower corner of the door;

Figure 4 is a vertical longitudinal section through a range embodying the present invention and showing the door closed; and

Figure 5 is a similar view broken away but showing the door open.

Referring to the drawings for a more detailed description of the invention, 1 denotes the front frame of a stove having a door opening 21 normally closed by a door D, hingedly mounted for forward and downward pivotal rocking movement about its lowermost extremity on a horizontal axis. The bottom part 2 of the stove frame 1, is covered by a decorative false sheet metal panel 3 of a depth corresponding to the depth of the door D so that the false panel 3 and the door will present a flush or unbroken front. The door

D of conventional construction, comprises a flanged body or front member 4 and an inner flanged liner member 5, the latter having forwardly bent flanges 6, preferably seating snugly within rearwardly extending flanges 7, on the front member 4, however these liners occasionally fit rather loosely due to imperfections and faulty manufacture. The means for fastening the two portions to the door together will now be described.

A pair of reinforcing angle members 8, substantially of L-shape cross section and arranged adjacent each side of the door, are secured to the liner member 5 by headed bolts or screws 9 which pass loosely through enlarged openings 10 in the liner and thence threadedly engage openings 11 in the flanges 12 of the angle members. The other or forwardly extending flanges 13 of these reinforcing members engage the inner face of body or front of the door and the liner rests upon flanges 12. Preferably, the usual insulation material, not shown, may cushion the contact between these parts. Substantially U-shaped clips 30, preferably one at each corner of the door, have feet portions 31 welded to the inner face of the body 4 of the door D by means of headed bolts or screws 32, passing loosely through enlarged openings 33, in the liner for threaded engagement with openings 34 in the clips 30. The door is thus additionally braced and the assembly of the liner 5 is greatly facilitated due to the fact that the latter is capable of some slight adjustment, before the screws 9 and 32 have been tightened, and because the screws 32 will readily find the openings 33 and 34 even though the latter are considerably out of true alinement with each other. The reinforcing members 8 also provide means for adjustably attaching a pair of hinges 14 to the door.

The door hinges 14 are formed with straight portions or arms 15 which extend through slots 17 in the liner and are secured to the flanges 13 of the angle member 8, by means of bolts 18. These arms 15 terminate at their outer ends in curved bracket portions 16 which in turn are formed with apertured ears 19 extending toward and substantially in axial alinement with the straight arms 15. The ears 19 are journaled on aligned studs or pivot pins 20 projecting inwardly towards each other from opposite sides of the upper end of the false front decorative panel 3. It is important to note here that the axis of the pins 20 is considerably in advance of the common central longitudinal axis of panel 3 and door D, thus permitting the door to swing outwardly

and downwardly in a wide curve. This permits of the door being mounted in the door opening 21, of the frame 1, with the face thereof flush with the face of false panel 3, and with the lower end of the door very close to the adjacent top edge of the panel, as distinguished from a construction wherein the axis of the pivot pins is aligned with or to the rear of the longitudinal axis of the door D and frame panel 3. By reducing the clearance between the door and false panel the space 22 is practically eliminated and a much better seal is effected as well as greatly enhancing the appearance of the stove.

The door D is normally held closed and its movements counter-balanced by means of a spring 23, connected at one end to a wing nut 24 extending through the back wall 25 of the stove, and at its opposite end connected to the rear extremity of a cable or chain 26. This cable passes around a pulley 27, mounted on a bracket 28, suitably supported by the lower end of front frame 1, and is secured at its forward end to an apertured ear 29 formed on the curved bracket portion 16 of one of the hinge brackets. If desirable this counter-balancing mechanism is provided at both sides of the range.

Having thus described my invention, what I claim is:

1. In a stove having a front frame formed with a door opening, a door for said opening, a false front panel for covering the frame beneath the door, said door and panel being substantially coextensive in thickness and in substantial abutting relation at their respective lower and upper ends, hinge brackets connected to the door at one end and having a curved portion at the other end thereof, said curved part extending into said panel and being concealed thereby, and means for hinging said curved portions to the upper end of said panel forward of the longitudinal axis of said panel, whereby the lower end of said door will be rocked forwardly and downwardly in a wide curve when manually opened.

2. In a stove having a front frame formed with a door opening, a door for said opening, a false front panel for covering a portion of the frame beneath the door, said door and panel being substantially coextensive in thickness and having substantially flush front faces, hinge brackets having straight portions connected to said door and curved portions having hinge connections with the upper end of said panel, the axis of said hinge connections being between the front plane of said panel and door and the longitudinal axis of said door and panel.

3. In a hinged door construction for stoves, a front frame having a door opening, a door for said opening having front and rear panels, a false decorative panel beneath said opening for

covering a portion of said frame, said door being coextensive in thickness with the said panel whereby the door and panel are substantially flush with each other, hinge brackets having straight portions and curved portions, said straight portions being connected to the door intermediate the front and rear panels and the curved portions having apertured ears pivotally connected to said false panel, the axis of said pivots being in advance of the central longitudinal axis of the door and panel.

4. In a hinged door construction for stoves, a front frame having a door opening, a door for said opening, a part beneath and adjacent said door and coextensive with the thickness of the latter, hinge brackets having straight portions and curved portions extending towards and substantially in axial alinement with the straight portions, said straight portions being connected to the door and the curved portions having portions pivotally connected to said part, the axis of said pivots being in advance of the central longitudinal axis of the door whereby a minimum of clearance is required between said part and the lower end of said door.

5. In a hinged door construction for stoves, a front frame having a door opening, a door for said opening, a part beneath and adjacent said door and coextensive with the thickness of the latter, hinge brackets having straight and curved portions, said straight portions being adjustably connected to the door and the curved portions having portions pivotally connected to said part, the axis of said pivots being in advance of the central longitudinal axis of the door whereby a minimum of clearance is required between said part and the lower end of said door.

6. In a stove door construction having inter-fitting flanged front and rear liner members, angle reinforcing members at each side of and between said liner members, means for adjustably securing the reinforcing members to one of the liner members, and hinges for said door and rigidly connected to said reinforcing members whereby the door can be adjusted to properly close.

7. In a stove door construction having inter-fitting flanged front and rear liner members, angle reinforcing members at each side of and between said inner members, means for adjustably securing the reinforcing members to the inner liner members, and hinges for said door having elongated portions at one end rigidly connected to said reinforcing members and their opposite ends adapted to be pivotally connected to the oven frame, whereby the door can be adjusted to properly close.

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