May 12, 1931. C. H. HOFFSTETTER 1,804,984

DOOR STRUCTURE

Filed May 21, 1930

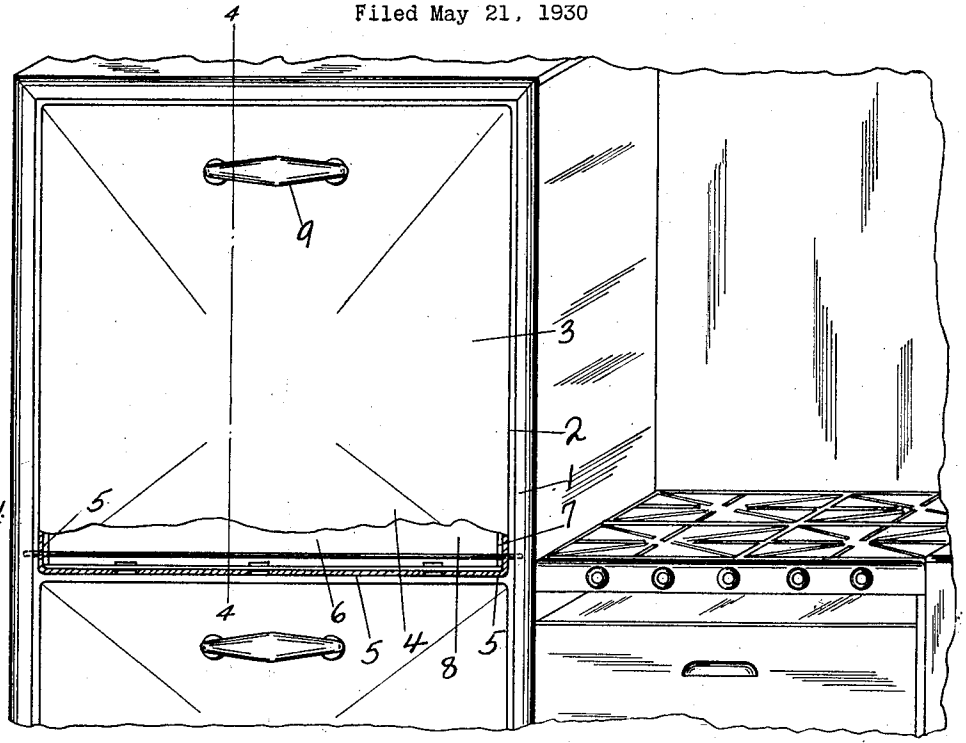


Fig1.

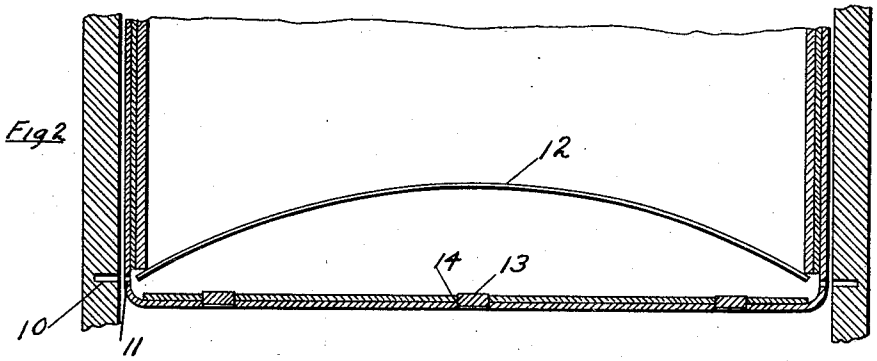


Fig2

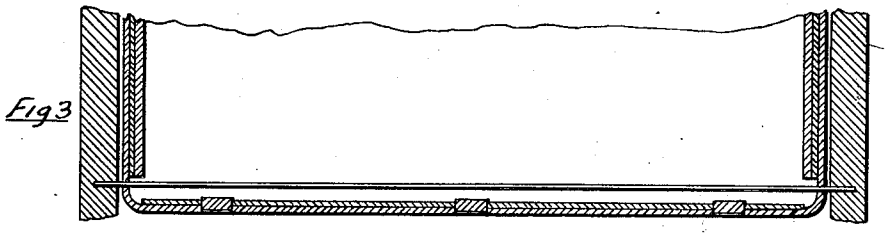


Fig3

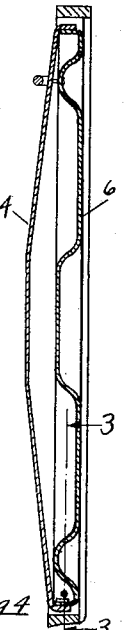


Fig4

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UNITED STATES PATENT OFFICE

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DOOR STRUCTURE

Application filed May 21, 1930. Serial No. 454,484.

The present invention is designed to improve door structures, particularly as to the manner of hinging the same. In many doors it is desirable to close the door into the door frame and conceal the hinge mechanism from the front of the door. This is particularly desirable with relation to stove doors and doors of similar nature which are commonly provided with some finish that is more readily applied to an unbroken surface. In carrying out the present invention, I provide a door, preferably of sheet metal of opposing plates, providing a cavity between the plates, form openings in the edges of one of the plates, form sockets in register therewith, and accomplish the assembly of the pintles by expanding the pintles into place, the most convenient manner of accomplishing this being to use a resilient rod which may be contracted by flexing and expanded through the openings into place, thus affording a very efficient and at the same time a very simple, convenient and cheap structure for the purpose and one that may be readily and entirely concealed from the front. Features and details of the invention will appear more fully from the specification and claims.

A preferred embodiment of the invention is illustrated in the accompanying drawings as follows:—

Fig. 1 shows a front view of a stove with the door in place thereon.

Fig. 2 a section on the line 3—3 in Fig. 4, showing the hinge pintle rod in contracted position.

Fig. 3 is a similar section showing the hinge pintle rod in its final position.

Fig. 4 a section on the line 4—4 in Fig. 1.

1 marks the door frame, 2 the door opening, and 3 the door. The door is preferably formed with an outer plate 4, preferably convex in form and provided with a surrounding inturned flange 5. A rear plate 6 of the door is provided with out-turned flanges 7 telescoping within the flanges 5 and forming a cavity between the plates. A handle 9 is provided for the door and means for securing the plates together are also provided.

The door frame is provided with sockets 10 which extend laterally into the frame adjacent to the lower edge of the opening. Openings 11 are provided in the flange 6 in register with the openings 10. A pintle rod 12 is preferably formed of resilient wire and is assembled in place through the openings 11 into the sockets 10, as indicated in Fig. 3, prior to finally securing the rear plate 7 to the front plate, the front plate being preferably provided with lips 13 which extend into sockets 14 in the rear plate so that the two plates may be closed by swinging the rear plate on these lips and the plates are secured together by bolts 15 which extend through the plates into the handle 9.

It will be noted that the entire front face of the door is relieved of all the hinge structure, that the hinge plates are entirely concealed both with the door open and closed, and that it is securely locked in place through the resilience of the rod, yet affords a means whereby the door may be very quickly assembled, or disassembled from the door frame.

What I claim as new is:—

1. In a door structure, the combination of a frame with pintle openings therein; a door in the frame having a pintle connection at one side of the door and an opening in register with the opening in the frame; a pintle-receiving cavity in the door at its opening; and pintles for the door, one of which is insertable from the cavity into the opening.

2. In a door structure, the combination of a frame with opposing pintle openings therein; a door in the frame having pintle openings in register with the openings in the frame and a pintle-receiving cavity at the openings; and pintles insertable from the cavities into the openings.

3. In a door structure, the combination of a frame with opposing pintle openings therein; a door in the frame having pintle openings in register with the frame openings; and an expansible pintle insertable by extension into the openings.

4. In a door structure, the combination of a frame with opposing pintle openings therein; a door in the frame having pintle openings in register with the frame openings; and an

expansible pintle insertable by extension into the openings, said door having a cavity in which the pintle is arranged.

5. In a door structure, the combination of a frame with opposing pintle openings therein; a door in the frame having pintle openings in register with the frame openings; and a pintle rod contractible by flexing and expansible into the openings by return flexing of the rod.

6. In a door structure, the combination of a frame with opposing pintle openings therein; a door in the frame having pintle openings in register with the frame openings; and a resilient pintle rod contractible endwise by flexing and expansible through its resilience into the openings.

7. In a door structure, the combination of a frame with opposing pintle openings therein; a door in the frame having pintle openings in register with the frame openings; and a resilient pintle rod contractible endwise by flexing and expansible through its resilience into the openings, said door having a cavity for receiving the rod.

8. In a door structure, the combination of a front plate; a rear plate spaced from the front plate and forming a cavity between the plates, said door structure having pintle openings at its edges; a door frame having opposing sockets in register with the openings in the door; and a pintle rod arranged in the cavity between the plates and extending through the opening into the opposing socket.

9. In a door structure, the combination of a front plate; a rear plate spaced from the front plate and forming a cavity between the plates, said door structure having pintle openings at its edges; a door frame having opposing sockets in register with the openings in the door; and a pintle rod arranged in the cavity between the plates and extending through the opening into the opposing socket, said rod being contractible to permit its insertion into the cavity and expansible into the openings.

10. In a door structure, the combination of a front plate; a rear plate spaced from the front plate and forming a cavity between the plates, said door structure having pintle openings at its edges; a door frame having opposing sockets in register with the openings in the door; and a pintle rod arranged in the cavity between the plates and extending through the opening into the opposing socket, said rod being contractible through flexing and expansible by return flexing into the openings and sockets.

In testimony whereof I have hereunto set my hand.

CARL H. HOFFSTETTER.