CHIMNEY PIT DOOR

Filed Jan. 24, 1955

Fig. 1

Fig. 2

Fig. 3

Fig. 4

Fig. 5

Fig. 6

Fig. 7

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This invention relates to chimney pit doors, and more particularly to improvements in the details of construction of the chimney pit door of my U. S. Patent No. 2,570,714 which issued on October 9, 1951; such doors being functionally applied to the clean out openings of fireplace chimney pits, or ash pits, as provided for the removal of ashes, and which in some instances are located at the outside of the building.

It is the principal object of this invention to provide a chimney pit door and frame therefor that may be set within the clean out opening of the chimney or ash pit wall, and which, by reason of novel features of construction embodied in the frame and door, and their particular method of assembly, will permit easy opening or closing movements of the door, but will prevent any possible displacement thereof from the frame, once the parts are assembled and properly installed in the pit wall.

It is a further object of this invention to improve upon the device of my above identified patent by the provision of means at the lower opposite corners of the frame for holding the door in its closed position in lieu of the previously employed single and centrally located tongue.

Yet another object is to provide a frame and door combination that may be set well within the wall opening without any interference to the opening or closing movements of the door, and gaining the advantage of there being no parts projecting from the face of the wall.

Further objects and advantages of the invention reside in the details of construction and combination of parts of the device with each other, and in the particular relationship thereto of the top wall surface of the opening in which the frame is mounted whereby the door is prevented from being removed or displaced from the frame after the assembled door and frame have been properly mounted in the wall opening.

In accomplishing the above mentioned and other objects of the invention, I have provided the improved details of construction the preferred forms of which are illustrated in the accompanying drawings, wherein:

Fig. 1 is a perspective view showing the ash pit door and frame combination of this invention, and illustrating their disposition within the clean out opening of an ash pit.

Fig. 2 is a front elevation of the door frame with the door removed therefrom.

Fig. 3 is a horizontal section of the frame taken on the line 3—3 in Fig. 2.

Fig. 4 is a perspective view of the door removed from the frame, and as seen from its front side.

Fig. 5 is an enlarged, fragmentary view, in perspective, showing the specific means provided at a lower corner of the frame for holding the door in a closed position.

Fig. 6 is a vertical section taken through the frame and door as applied to a wall opening, showing the door in open position and illustrating the details of the door and frame construction that characterize this invention.

Fig. 7 is a view, showing in vertical section details of the upper and lower corner portions of the door and frame.

Referring more in detail to the drawings:

The present device comprises two parts, namely, a door which is herein designated in its entirety by reference numeral 10, and a door frame which is designated in its entirety by numeral 11. A feature of the present invention resides in the provision of co-acting means on the frame and door whereby the door, after being applied to the frame 11, and the frame properly set within the wall opening, cannot be displaced from the frame, yet can be freely moved between closed and open positions.

The frame 11 as shown in Fig. 2, is of rectangular form, and is made as a one-piece, metal casting. It comprises substantially flat top and bottom walls 12 and 13, in parallel horizontal planes, and flat opposite sidewalls 14 and 15, in parallel vertical planes. These walls preferably are tapered slightly in thickness from outer to inner edges due to the tapering of similar parts of the mold as required for its easy withdrawal from the sand.

It is shown in Figs. 2 and 4 that a flange 16 is formed integral with the top wall, depending downwardly therefrom, flush with its forward edge. Also, it is seen best by reference to Figs. 2 and 4, that vertical ribs 18—18 are formed on the inner faces of the sidewalls, spaced inwardly from and parallel to their forward edges a distance equal to the thickness of the door 10. Each of these ribs terminates at its upper end a slight distance below the level of the lower edge of the flange 16, thus to leave passages, as designated at 19 in Fig. 2. Likewise, the ribs 18 terminate at their lower ends short distances above the lower wall of the frame, as has been shown in Fig. 6.

Formed integrally with the frame at the opposite lower corners and front thereof are lugs 20—20 of the specific form shown in perspective view in Fig. 5. It is to be noted in that view that each lug extends inwardly from the corresponding sideline somewhat into the frame passage and also that its projects slightly above the level of the bottom wall 13. Also, it is shown that each lug includes at its outside, an upwardly projecting stop flange 22, at the inside of which flange the lug body forms a horizontal, upwardly facing seat 23. The ribs 18—18 as formed on the opposite sidewalls of the frame terminate above and inwardly from the seats 23, as noted in Fig. 6, and it will be also noted in that view that the forward vertical edge of the bottom wall 13 of the frame is flush with the vertical plane of the forward faces of the ribs 18—18.

The door 10, as seen in Figs. 4 and 6, is a substantially flat, one-piece casting of rectangular form of a width designed to be received between the opposite sidewalks 14 and 15 of the frame for sliding movement in the passages 19—19 between an open position, in which it is shown in full lines in Fig. 6 to its closed position, as seen in Fig. 1. The top edge portion of the door plate is inwardly offset by a bend designated at 30, a distance equal to the thickness of the flange 16 that is formed across the front of the frame at the top, and at its opposite side edges, at the top, the door plate is formed with rearwardly extending semi-circularly rounded ears 32—32 which will prevent the door from being pulled forwardly from the frame.

The door is of such height that it will completely close the front opening of the frame when in closed position, and it is to be understood that when it is in its closed position, its rearwardly offset upper edge portion 10r will overlap with the flange 16, at the inside thereof, as shown in dotted lines in Fig. 7, and across its lower edge portion will engage flatly against the front surface of the bottom wall 13 of the frame. Also, when closed, the door will engage along its opposite side edge portions with the front faces of the ribs 18—18.

The means provided for holding the door in its closed
position will now be described; these parts constituting improvements upon the device of my prior patent previously referred to. At its opposite lower corners, the door plate is formed with square cut recesses, as at 40-40 in. Fig. 4, which permit this lower edge portion of the door, upon its closing being received between the lugs, to engage flatly against the front edge surface of the bottom wall 13 of the frame. Also, it is a feature of this construction that the top edge portions of the recesses 40 are inwardly and downwardly beveled, as shown at 44 in Figs. 4 and 10, so that they can be easily received back of the lug flanges 22-22. Centrally of its lower edge portion, the door 10 is formed with a forwardly directed ear or flange 45 which may be used as a finger hold for lifting the closed door to an open position, and which ear incidentally serves as a stop member, engageable with flange 16 as shown in Fig. 6 to prevent the open door from being accidently pushed rearwardly and dropped from the frame into the ash pit.

At its opposite upper corners, and at opposite ends of the front face of flange 16, the frame has lugs 50-50 cast thereon. These project from the face of the frame to the same extent as the flanges 22 of the lugs 20, and serve with the latter when frames of this kind are horizontally stacked for storage or shipping, to retain them from becoming out of stacked alignment.

In the installing of the present device, the frame and door are first properly assembled, as shown in Fig. 1. To do this the door is brought to the inwardly directed and upwardly inclined position in which it is shown in dotted lines in Fig. 6, and is projected through the frame passage from inside to outside, by sliding its side edge portions through the passages 19-19. When the ears 32-32 engage with the inside of the ribs 18, the door can then be swung downwardly to its closed position of Fig. 1. This applying of the door to the frame being done before the masonry has been built across the top of the frame. Usually the brickwork or masonry of the wall is built around the frame 11 to the extent shown in Fig. 1 before the door is applied, and the frame is inset an inch or two from the face of the wall, as has been shown in Fig. 6. When the frame is fully enclosed, it is then impossible to remove the door from the frame due to the fact that it cannot be swung high enough at its inner end, due to the masonry across the top of the opening, to cause the ear 45 to clear the flange 16 for inward withdrawal of the door. When the door is shifted to an open position, its inner end portion will overbalance its outer portion, and it will retain itself at that position, as will be understood by reference to Fig. 6, wherein it is observed that the door rests upon the upper end portions of the ribs 18-18 and against the under edge of the flange 16. To close the door, it is pulled forwardly, and then swung downwardly, and is slightly lifted to cause the beveled edge surfaces 44 at its opposite corners to pass inwardly across the flanges 22. Then the door is lowered to cause the beveled surfaces 41 to engage with and slide down against the inner faces of the lug flanges 22 and come to rest on shoulders 23. Thus the door is supported and held closed tightly against the flanges 18-18, as well as against the front surface of wall 13.

Such devices as this, made in accordance with the details herein shown, provide a practical, ash tight closure, that is easy to apply, easy to use, and satisfactory in all ways tried and used.

Having thus described my invention, what I claim as new therein and desire to secure by Letters Patent is:

1. A chimney pit door structure comprising in combination, a frame having opposite sidewalls, a top wall and a bottom wall; said top wall being formed across its forward edge with a depending flange, door stops extending vertically along and projecting from the inside surfaces of said opposite sidewalls and terminating at their upper ends slightly below the level of the lower edge of said depending flange, a door holding lug formed on the frame at the front edge of the lower wall thereof out from the plane of said stops and projecting slightly above the plane of the bottom wall, and a door fitted between said opposite sidewalls and having its upper edge portion disposed back of said depending flange, and said door being engaged along its side edges against the front sides of said door stops, and having a lower edge corner portion thereof disposed back of said door holding lug to retain the door in its closed position; said door being permitted limited upward movement, when closed, to lift said lower edge portion free of said door holding lug for its outward and upward swinging to an open position, and said door being slidable inwardly or outwardly across said door stops when in its open position.

2. A chimney pit door structure as recited in claim 1 wherein said stops are inset from the vertical plane of said depending flange and said door is formed at opposite ends of its top edge with ears for engaging said door stops to limit the extent of outward sliding movement of said door when in its open position, and said door being formed with a forwardly projecting ear adapted to engage with the depending flange to limit the inward sliding movement of the door when in its open position.

3. A chimney pit door structure as in claim 2 wherein said door is adapted to close along its lower edge against the front of said bottom wall of the frame and said door holding lug extends above the level of the bottom wall of the frame immediately adjacent a sidewalk of the frame; and said door is formed with a corner notch for clearing the lug in opening or closing the door, and said lug is formed at its inside with an upwardly facing seat against which the top edge of said notch engages to support the door when in closed position.

4. A chimney pit door structure comprising in combination, a rectangular door frame having opposite side walls, a top wall and a bottom wall; said top wall being formed across its forward edge with a depending flange, stop rails formed on the inside surfaces of said sidewalls, and terminating at their upper ends below the level of said depending flange, door holding lugs formed on the frame at the front edge of its opposite corner portions, out from the plane of said door stops and extended above the lower wall, a door fitted to the frame between its opposite sidewalls having its upper edge portion inwardly offset and disposed back of said depending flange, and said door being adapted for pivotal and sliding support on the upper ends of said stop rails when its lower edge is swung upwardly and outwardly to open position, and said door having notches formed therein at its lower corner portions permitting the lower edge of the door to swing past said lugs to a position at which its side edges are closed against the stop rails and its lower edge is against the forward edge of said bottom wall; said notches having their top edge defining portions adapted to be received back of the said lugs to hold the door in closed position.

5. A combination as in claim 4 wherein the top edge defining portion of each notch is inwardly and downwardly beveled to effect inward wedging pressure when that edge is lowered to position back of and against the lug.

References Cited in the file of this patent

UNITED STATES PATENTS

2,570,714 Robinson Oct. 9, 1951

FOREIGN PATENTS

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