Jan. 15, 1952 J. W. GRUSE 2,582,540

SIDEWALK DOOR CONSTRUCTION

Filed Feb. 4, 1947 2 SHEETS—SHEET 1

Fig. 1.

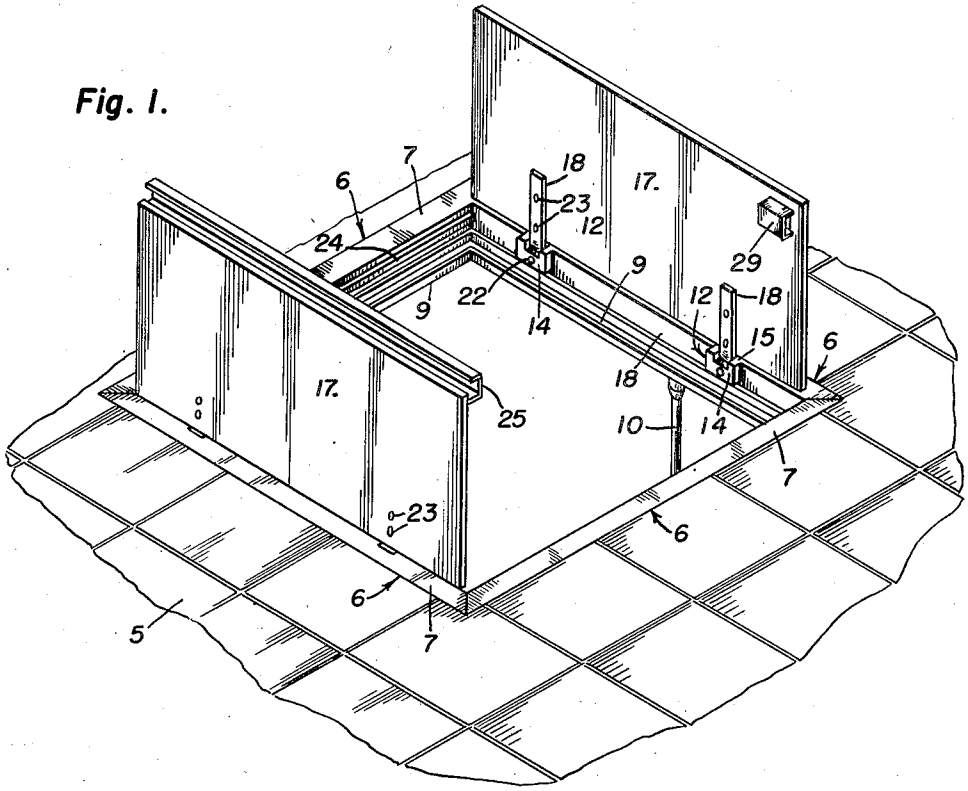

Fig. 2.

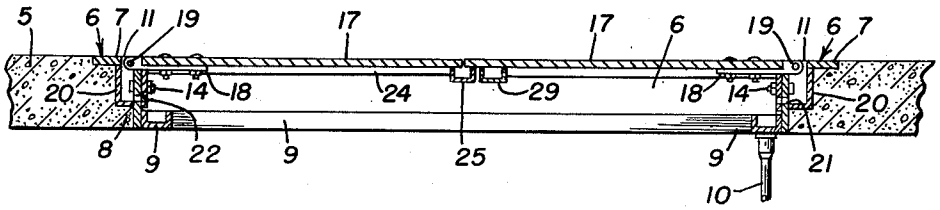

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Fig. 3.

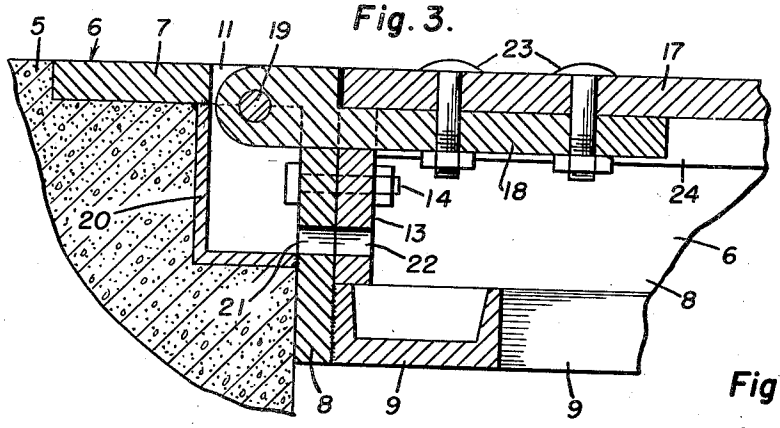


Fig. 4.

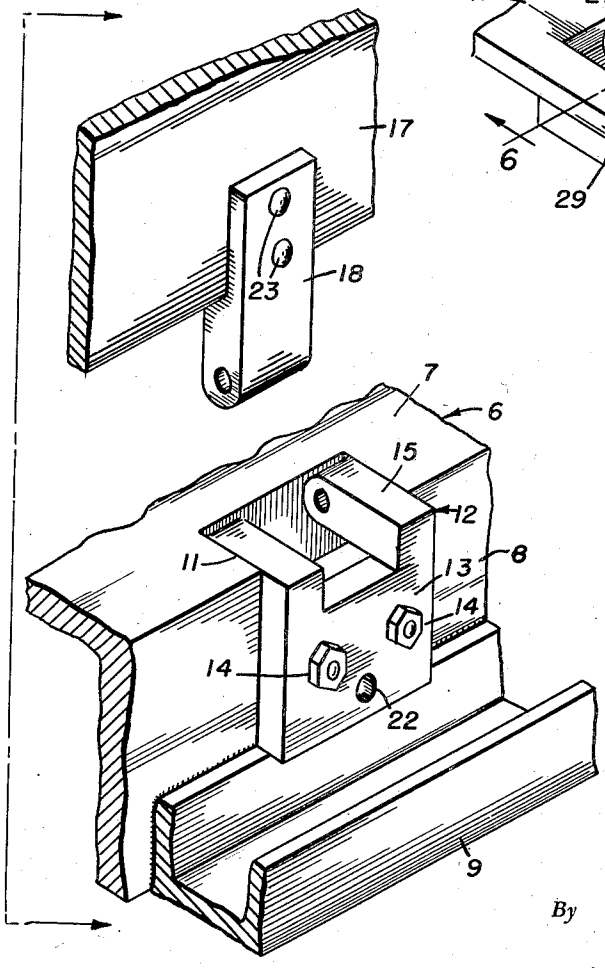


Fig. 5.

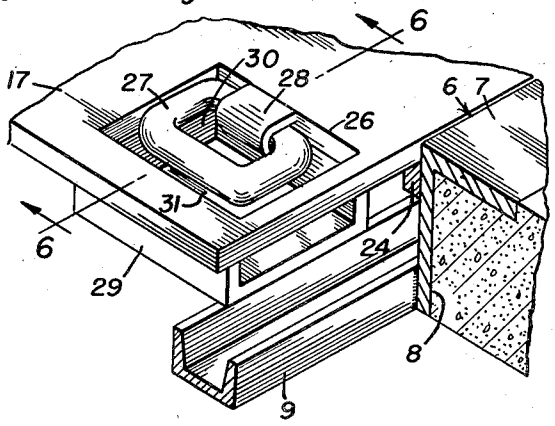
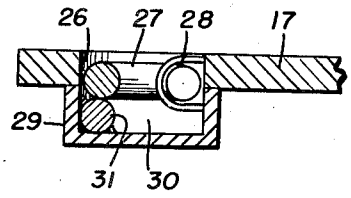


Fig. 6.



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SIDEWALK DOOR CONSTRUCTION

John W. Gruse, Washington, D. C.

Application February 4, 1947, Serial No. 726,311

3 Claims. (Cl. 94—36)

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It has been common practice, heretofore, to construct sidewalk doors so that all parts will be as nearly flush with the sidewalk as possible, and so as to provide means for carrying off water which may leak through the crevices between the meeting edges of the doors and between the doors and the frame. The common method of attaching hinges to the door frame is to cut out recesses in the frame large enough to accomodate the hinges, so that when the doors are closed the tops of the hinges will be flush with the sidewalk. Also, a hole has been cut in one of the doors under the door handle to permit the door handle to drop to sidewalk level when the door is closed. To carry off the water, a trough or gutter has been placed under the meeting edges of the two doors, and a second gutter has been placed around the inside of the door frame to receive water from the first gutter and water leaking between the doors in the frame, the water escaping from the second gutter through a connecting drain pipe.

My observation of such doors shows that water leaking through the door frame where it is cut out to accomodate the hinges will flow down the outside of the door frame and leak into the cellar, or, if the frame is sealed against leakage around the outside of the frame, the water is sealed between the sidewalk and the door frame where it causes corrosion and/or formation of ice and thus shortens the life and interferes with the proper operation of the door. Also, water leaking around the door handle either flows into the cellar or is held in a pan under the handle to cause corrosion or freeze into ice.

It is the primary object of my invention to provide an improved sidewalk door construction that will catch all water that leaks to the inside of the frame and through the hinge openings of the frame to the outside of the latter, and conduct it to the gutter on the inside of the frame.

A further object of the invention is to provide means for carrying off all water that may leak around the door handle.

With the above and other objects in view, the present invention consists in the novel form, combination and arrangement of parts hereinafter more fully described, shown in the accompanying drawings and claimed.

In the drawings:

Figure 1 is a perspective view of a sidewalk door construction embodying the present invention, showing the doors open.

Figure 2 is an enlarged cross-sectional view, showing the doors closed.

Figure 3 is an enlarged fragmentary cross-sectional view more clearly showing details of construction adjacent each hinge.

Figure 4 is a fragmentary exploded perspective view showing the construction adjacent each end.

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Figure 5 is a fragmentary perspective view showing the construction at the handle of one of the doors.

Figure 6 is a fragmentary vertical section taken on line 6—6 of Figure 5.

Referring in detail to the drawings, the illustrated embodiment of the invention includes a rectangular frame set in a recess of a sidewalk 5. The frame is shown as comprising four angle bars 6 which are connected at their ends and which have horizontal flanges 7 and vertical flanges 8 depending from the inner edges of said horizontal flanges.

Shallow horizontal channel bars 9 are secured to the inner faces of the lower portions of the vertical flanges 8 and are connected at their ends to form a continuous gutter around the inside and at the bottom of the frame adapted to have a drain pipe 10 connected thereto which leads to a sewer pipe. Two opposed ones of the frame bars 6 have hinge openings 11 in adjacent portions of the horizontal and vertical flanges thereof, and stationary hinge members 12 are provided which have vertical portions 13 that are secured, as by bolting at 4, to the vertical flanges 8 of said two frame bars. The stationary hinge members 12 also have horizontal bifurcated upper portions 15 which project outwardly within the hinge openings 11 flush with the top of the frame.

A pair of doors 17 are provided for closing the opening of the frame, and movable hinge members 18 are fixed to and extend from corresponding edges of the doors and are pivoted to the stationary hinge members 12 between the bifurcations of the latter as at 19.

Open-top catch basins 20 are secured, as by welding or the like, to the undersides of the horizontal flanges 7 and to the outer sides of the vertical flanges 8 of the said two frame bars in position to catch water leaking through the hinge openings 11. These catch basins may also be open at their inner sides as shown, and the vertical flanges 8 of these two frame bars having openings 21 through which the water may drain inwardly from the bottom portions of the catch basins 20 into the gutter formed by the channel bars 9. If the vertical portions 13 of the stationary hinge members 12 extend below the openings at 21 as shown, they also have openings 22 aligned with the openings 21 so as to conduct the water from the latter to the continuous gutter/or trough. The movable hinge members 18 are shown as bolted to the doors 17 at 23, and it will be understood that the bottoms of the catch basins 20 are slightly above the top of the continuous gutter. Jamb or stop bars 24 are secured on the inside of the vertical

flanges 8 of the other two opposed angle bars 6 to be engaged by the ends of the door 17 for supporting the latter in their horizontal closed positions. By using hinges in which the movable hinge members project from the edges of the doors, said edges of the doors will swing clear of the frame when the doors are opened.

A second gutter 25 is secured to the underside and along the inner edge of one of the doors 17 and projects beyond said edge to extend under the inner edge of the other door when the doors are closed, so as to catch water leaking between the inner edges of the doors. This second gutter is disposed with its bottom in a horizontal plane above and spaced from the top of the continuous gutter composed of the channel bars 9, and it has open ends through which the water may drain into said continuous gutter.

The other door 17 has an opening 26 adjacent an inner corner thereof, and a handle 27, preferably in the form of a ring as shown, is hinged at one side to this door within and at one side of the opening 26 as at 28. A short trough 29 is attached, as by welding or the like, to the underside of this door to catch water which passes through the opening 26. The trough 29 has its inner end closed as at 30, and it is open at its outer end and extended over the continuous gutter formed of the channel bars 9 for discharging the water into the latter. Thus, the handle may be swung into the opening 26 flush with the top of the door when not in use, but water passing through this opening 26 will not collect therein and will be conducted therefrom into the continuous gutter. A stop member 31, preferably in the form of a short rod, is secured by welding or the like on the bottom of the trough 29 in position to be engaged by the free side of the handle 27 for limiting downward movement of the latter to a substantially horizontal position spaced from and above the bottom of the trough 29. This makes the handle easy to grasp and raise to operative position.

It will be noted that all parts of the door construction are substantially flush with the sidewalk when the doors are closed, and that the outer edges of the doors swing clear of the frame when the doors are open. The disposal of rain water is also well provided for by the continuous gutter and the catch basins and by the troughs 25 and 29. It is unnecessary to provide the continuous gutter with a notch or opening for reception of or registry with the ends of the trough 25 because the latter is well above the continuous gutter. The small catch basins 20 at the respective hinges make it unnecessary to provide a frame which forms a continuous gutter, although hinges are used which provide for swinging the outer edges of the doors clear of the frame when the doors are opened. No water will settle and remain in places where the same may cause corrosion of metal parts of the door construction or where the same may form ice to interfere with proper operation of the doors.

From the foregoing description, it is believed that the construction and advantages of the present invention will be readily understood and appreciated by those skilled in the art. Modifications and changes in details of construction are contemplated, such as fall within the scope of the invention as claimed.

What I claim as new is:

1. A sidewalk door construction comprising four frame bars connected at their ends to form a rectangular frame having horizontal flanges and vertical flanges depending from the inner edges of said horizontal flanges, shallow horizontal channel bars secured to the inner faces of the lower portions of said vertical flanges and connected at their ends to form a continuous gutter around the inside and at the bottom of said frame adapted to have a drain pipe connected thereto, two opposed ones of said frame bars having hinge openings in adjacent portions of the horizontal and vertical flanges thereof, stationary hinge members having vertical portions secured to the inner faces of the vertical flanges of said two frame bars and having horizontal bifurcated upper portions projecting outwardly within said hinge openings flush with the top of the frame, a pair of doors for closing the opening of the frame, movable hinge members fixed to and extending from corresponding edges of the doors and pivoted to the stationary hinge members between the bifurcations of the latter, and open-top catch basins secured to the undersides of the horizontal flanges and to the outer sides of the vertical flanges of said two frame bars to catch water leaking through said hinge openings, there being one catch basin for each hinge, the vertical flanges of said two frame bars having openings through which the water may drain inwardly from the bottom portions of said catch basins into said continuous gutter.

2. A sidewalk door construction comprising four frame bars connected at their ends to form a rectangular frame having horizontal flanges and vertical flanges depending from the inner edges of said horizontal flanges, shallow horizontal channel bars secured to the inner faces of the lower portions of said vertical flanges and connected at their ends to form a continuous gutter around the inside and at the bottom of said frame adapted to have a drain pipe connected thereto, two opposed ones of said frame bars having hinge openings in adjacent portions of the horizontal and vertical flanges thereof, stationary hinge members having vertical portions secured to the inner faces of the vertical flanges of said two frame bars and having horizontal bifurcated upper portions projecting outwardly within said hinge openings flush with the top of the frame, a pair of doors for closing the opening of the frame, movable hinge members fixed to and extending from corresponding edges of the doors and pivoted to the stationary hinge members between the bifurcations of the latter, and open-top catch basins secured to the undersides of the horizontal flanges and to the outer sides of the vertical flanges of said two frame bars to catch water leaking through said hinge openings, the vertical flanges of said two frame bars and stationary hinge members having aligned openings through which the water may drain inwardly from the bottom portions of said catch basins into said continuous gutter.

3. A sidewalk door construction comprising four frame bars connected at their ends to form a rectangular frame having horizontal flanges and vertical flanges depending from the inner edges of said horizontal flanges, horizontal channel bars secured to the inner faces of the lower portions of said vertical flanges and connected at their ends to form a continuous gutter around the inside and at the bottom of said frame adapted to have a drain pipe connected thereto, two opposed ones of said frame bars having hinge openings in adjacent portions of the horizontal and vertical flanges thereof, stationary hinge members having vertical portions secured

to the inner faces of the vertical flanges of said two frame bars and having horizontal upper portions projecting outwardly within said hinge openings flush with the top of the frame, a pair of doors for closing the opening of the frame, movable hinge members fixed to and extending from corresponding edges of the doors and pivoted to the stationary hinge members, and open-top catch basins secured to the undersides of the horizontal flanges and to the outer sides of the vertical flanges of said two frame bars to catch water leaking through said hinge openings, the vertical flanges of said two frame bars having openings through which the water may drain inwardly from the bottom portions of said catch basins into said continuous gutter.

JOHN W. GRUSE.

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