

W. E. SNAMAN.

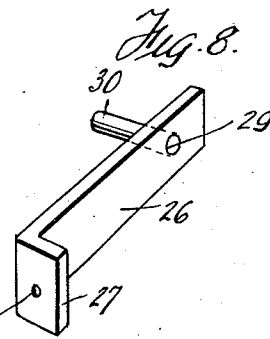
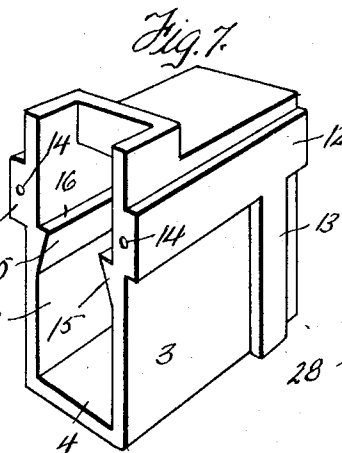
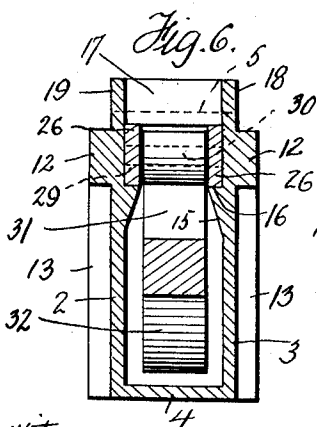
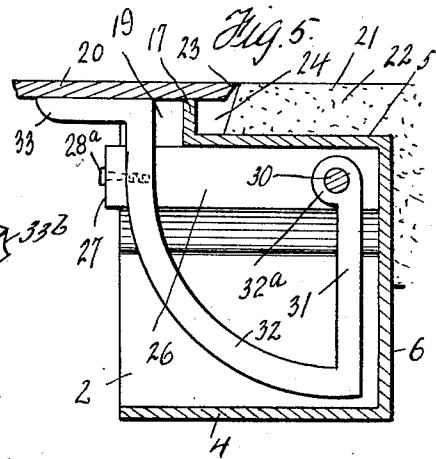
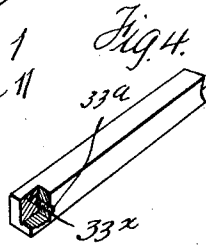
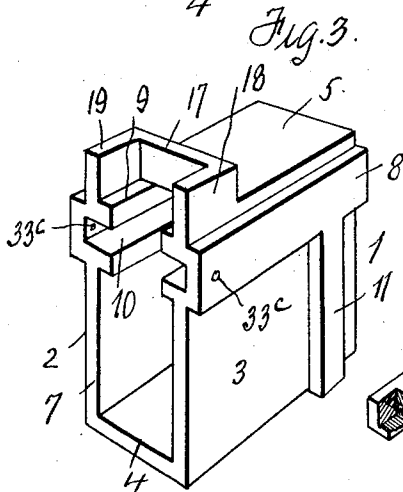
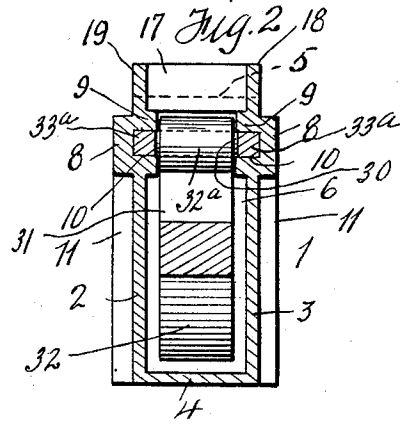
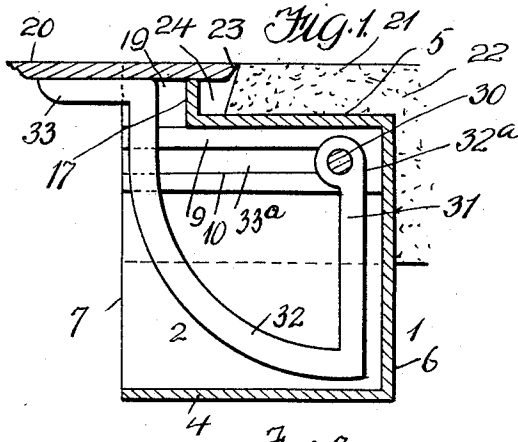
DOOR CONSTRUCTION.

APPLICATION FILED NOV. 15, 1909.

997,099.

Patented July 4, 1911.

2 SHEETS—SHEET 1.



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2 SHEETS—SHEET 2.

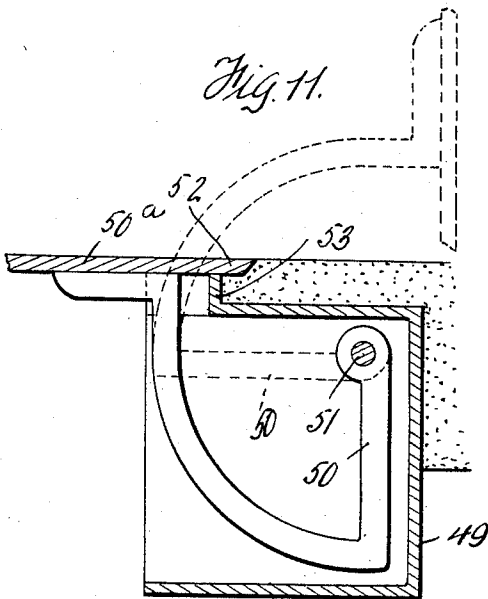
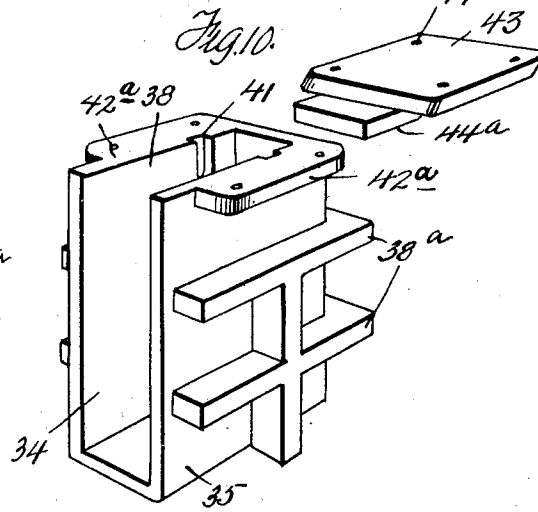
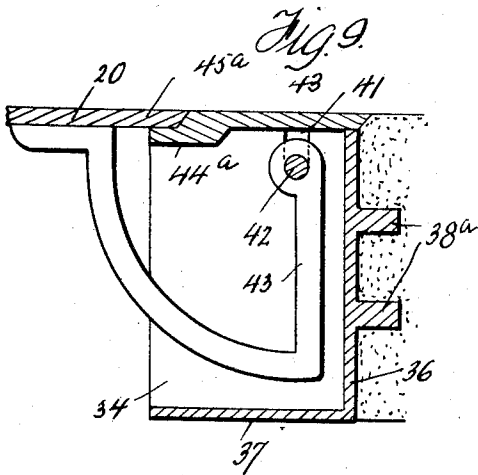


Fig. 12.

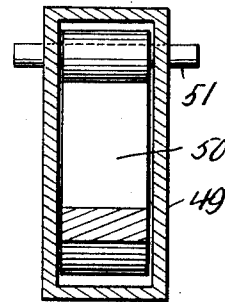
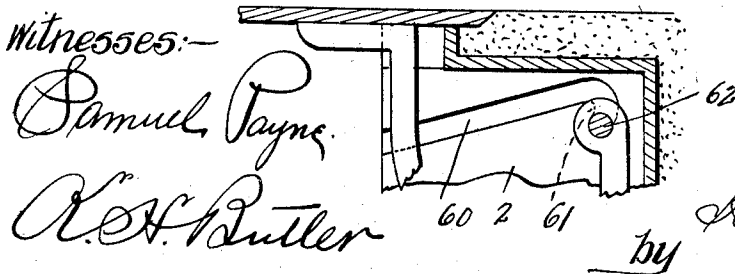


Fig. 13.



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UNITED STATES PATENT OFFICE.

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DOOR CONSTRUCTION.

997,099.

Specification of Letters Patent.

Patented July 4, 1911.

Application filed November 15, 1909. Serial No. 528,069.

To all whom it may concern:

Be it known that I, WILLIAM E. SNAMAN, a citizen of the United States of America, residing at N. S. Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Door Construction, of which the following is a specification, reference being had therein to the accompanying drawing.

10 This invention relates to door construction, such as side-walk, cellar or hatch-way doors, more particularly to the manner of hinging the doors and the object thereof is to provide a door or door section of either 15 of the foregoing classes of doors with means in a manner as hereinafter set forth whereby when the door or door sections is or are in a closed position, it or they will be flush or level with the surface of the side-walk, 20 and at the same time dispensing with the metallic frame or stone coping to which doors are ordinarily hinged or connected.

A further object of the invention is to provide in door construction means in a manner as hereinafter set forth whereby the hinging means for the doors are protected from injury by the passage of any object 25 through the door opening, the hinging means being so inclosed as to prevent the same from being damaged by the object when the doors are in open position. 30

A further object of the invention is to inclose the hinging means for the doors in a manner as hereinafter set forth and 35 claimed whereby water, dirt or foreign bodies are prevented from entering around the hinging means and furthermore the latter is also prevented from being bound by ice or dirt so as not to retard the opening 40 movement of the doors when occasion so requires.

A further object of the invention is to provide in door construction in a manner as hereinafter set forth and claimed, pockets 45 for the reception of the door hinges, said pockets being so designed that they can be positioned before the doors are delivered, or the doors and pockets may be set at the same time; said pockets being furthermore 50 so designed and set up as to enable the doors

and hinges to be removed from the pockets or replaced conveniently without disconnecting the hinges from the doors.

A further object of the invention is to provide in door construction a hinging 55 means in a manner as hereinafter set forth which will enable the doors to be shifted to and stand in vertical position without the use of chains or bars to maintain the doors in such position. 60

Further objects of the invention are to provide in door construction a hinging means and pocket therefor which shall be comparatively simple in construction and 65 arrangement, strong, durable, positioned below the level of the side-walk, efficient in use and conveniently set up in operative position with respect to the doors.

With the foregoing and other objects in view, the invention consists of the novel 70 construction, combination and arrangement of parts as hereinafter more specifically described and illustrated in the accompanying drawings wherein is shown the preferred 75 embodiment of the invention, but it is to be understood that changes, variations and modifications can be resorted to which come within the scope of the claims hereunto appended.

In the drawings wherein like reference 80 characters denote corresponding parts throughout the several views: Figure 1 is a sectional elevation showing the adaptation of a hinging means and pocket therefor, in accordance with this invention in connection 85 with a flush door. Fig. 2 is a cross-sectional view of the casing which constitutes a pocket showing the hinge mounted therein. Fig. 3 is a perspective view of the casing which constitutes the pocket for the 90 hinge. Fig. 4 is a perspective view of a plug adapted to form part of the casing. Fig. 5 is a sectional elevation of a modified form of casing. Fig. 6 is a cross sectional 95 view of the same. Fig. 7 is a perspective view of a modified form of casing which constitutes the pocket for the hinge. Fig. 8 is a detail illustrating a pivot supporting bar. Fig. 9 is a sectional elevation of still 100 another modified form. Fig. 10 is a per-

spective view of the casing and the lid of the form shown in Fig. 9. Fig. 11 is a sectional elevation of still another modified form, showing in dotted lines the door in an open position. Fig. 12 is a cross section on the line $x-x$ of Fig. 11, and Fig. 13 is a still further modified form of casing.

Referring to Figs. 1 to 4, the reference character 1 denotes a rectangular casing comprising side walls 2, 3, a bottom 4, a top 5, an end 6 and an open front 7. The side walls 2 and 3 at its top are enlarged so as to provide a longitudinally-extending and outwardly projecting off-set 8 and a longitudinally-extending and inwardly projecting off-set 9. The enlarged portion of the top of wall 2 is formed on its inner face with a longitudinal groove 10 which extends from the open front to a point removed from the rear walls 6. The off-set 8 is formed integral with a vertically-disposed off-set 11 which is also formed integral with the outer face of the wall 2 and the said off-sets 8 and 11 constitute anchoring means in a manner as hereinafter referred to. The top wall 5 is of less length than the bottom 4 and terminates at a point removed from the front of the casing. The forward end of the front wall is formed integral with a vertically disposed flange 17, which is formed integral with the vertically disposed extensions 18 and 19, carried by the side walls 2, 3 at the front of the casing and the said flange 17 and extensions 18 and 19 form a support for the door 20 when the latter is closed, as clearly shown in Fig. 1, and the height of the flange 17 and extensions 18 and 19 is such that when the door is closed, the outer face of the door will be flush with the surface 21 of the side-walk 22, the latter being formed of concrete and is so laid as to terminate in proximity to the outer side edge 23 of the door 20, whereby a gutter 24 will be provided owing to the fact that the door 20 projects beyond the flange 17. The casing is embedded in the material which forms the side-walk and the off-set portions 8 and 11 when the casing is embedded constitute anchoring means as is obvious and which will prevent longitudinal and lateral vertical displacement of the casing when it is mounted in position. The material which constitutes the side-walk is laid so that it will be flush with the front edges of the side walls 2 and 3, and as will hereinafter appear the material constituting the side wall is laid between the casings.

The door 20 is provided with a hinge, consisting of a vertically disposed portion 31 enlarged at its upper end, as at 32^a, and to said enlarged portion is connected a pivot 30. The lower end of the vertically disposed portion 31 of the hinge terminates in

an upwardly extending quadrant-shaped portion 32 which is of such a length that the free end of said portion will be flush with the top of the flange 17 and said free end of the portion is formed with a right-angul-
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When positioning the hinge the pivot 30 is shoved into the confronting grooves 10 of the side walls 2 and 3 until the pivot reaches the ends of the grooves, and then plugs 33^a are mounted in the grooves, these plugs having the inner ends thereof recessed, as at 33^b, to provide clearance for the pivot 30. The outer sides of the plugs adjacent to the outer ends are provided with threaded sockets 33^x to receive screws (not shown) adapted to be mounted in threaded openings 33^o provided therefor in the forward ends of the off-sets 8.

In the construction shown in Figs. 5 to 8 inclusive, the side walls 2 and 3 are provided with oppositely disposed longitudinally-extending and outwardly projecting off-sets 12 which are formed integral with vertically disposed off-sets 13, the latter being formed integral with the outer faces of the walls. The off-sets 12 at the front ends are provided with threaded sockets 14 for a purpose to be hereinafter referred to. The walls have their inner faces provided with inwardly-extending off-sets 15 providing shoulders 16.

Supported upon the shoulder 16 is a longitudinally-extending portion 26 of an L-shaped bar, the laterally-extending portion 27 abuts against the forward end of the off-set portion 12 and is provided with an opening 28 registering with the screw-threaded socket 14 and through the opening 28 is adapted to extend a hold-fast device 28^a for securing the L-shaped bar in position. The longitudinally-extending portion of the L-shaped bar at its inner terminus is formed with an opening 29 for the reception of one end of the pivot 30 of the hinge.

In the construction shown in Figs. 1 and 5, the casing is positioned below the surface of the side-walk, that is to say, the material which forms the side-walk extends over the top of the casing to a position in proximity to the projecting portion of the door 20, as clearly shown.

Referring to Figs. 9 and 10, the casing which constitutes a pocket for the hinge comprises side walls 34, 35, end walls 36, a bottom 37, and an open top 38. The casing

is open at its front but the sides and end walls have formed integral with their outer faces laterally-extending ribs 38^a which constitute anchors to prevent shifting of the casing when the latter is secured in the side walls. The top is open so that the hinge can be positioned. The side walls 34 and 35 at their top are formed with recesses 41, the lower walls of which constitute a support for the pivot 42 of the hinge 43, the latter being of the same contour as the hinge shown in Fig. 1 with this exception, that the quadrant-shaped portion projects from the open front of the casing. The opening at the top of the casing allows for the entrance of the projecting ends of the pivots into the recesses or slots 41. The top of the side walls of the casing at opposite sides of the opening are provided with laterally-extending apertured lugs 42^a upon which is mounted a cover plate 43 for closing the opening 40. The cover plate 43 projects upon the top wall 38 and it is formed with openings 44 which register with openings 45 in the lugs 42. The cover plate 43 is provided with a depending and forwardly extending seat 44^a for that portion 45^a of the door 20 which projects over the hinge of the casing. It is preferable to bevel the edge of the door and the edge of the cover plate 43.

Referring to Figs. 11 and 12, the casing which constitutes the pocket for the hinge is of a construction somewhat similar to that shown in Fig. 1 with the exception that the off-set portions 9 are dispensed with and the said casing is indicated by the reference character 49. The hinge is indicated by reference character 50 and the pivot for the hinge by the reference character 51. The pivot extends through the side walls of the casing 49 and into the material which forms the side-walk. The material which forms the concrete extends in and under the projecting portion 52 of the door 50^a and in proximity to the flange 53 at the top of the casing.

In the construction shown in Figs. 9 and 10, the cover plate 43 is not only flush with the surface of the side-walk but also flush with the upper surface of the door. In the construction shown in Figs. 1 and 11, the door is arranged above the casing and projects over either the flange 17 or 53 and is flush with the side-walk. In the construction shown in Figs. 9 and 10, the pivot 42 is connected to the hinge 43 and then dropped into the recesses or slots 41 after which the cover plate 43 is detachably secured in position. In the construction shown in Fig. 11, the pivot with the hinge is positioned within the casing so that the pivot will project from each of the sides of the casing after which the casing is embedded in the sidewalk at the side of the hatch-way or door opening. In

the construction shown in Fig. 11, the material which forms the side-walk is flush with the front edges of the box and the same is true in connection with the construction shown in Fig. 9.

In all of the constructions shown, with the exception of that in Fig. 9, the casings or pockets are so set up with respect to the side-walk that the hinges are prevented from being struck by any object passing through the hatch-ways when the doors are opened and furthermore the walls of the pockets prevent the hinges from being bound by ice, dirt or foreign matter so as not to retard their operation when opening and closing the doors.

In the construction shown in Fig. 13 of the drawings, the side walls 2 and 3 of the box are provided with angularly disposed grooves 60, the forward ends of said grooves being open, while the rear ends of said grooves terminate in pockets 61 provided for the pivot, which is indicated by the reference numeral 62. It will be observed that the angularity of the grooves 60 is such that the pivot can be easily placed within the pocket 61 and retained therein without the door becoming displaced during an opening and closing movement.

What I claim is:

1. In door construction for sidewalks, cellars and the like, a casing adapted to be embedded below the surface of the side walk and constituting a pocket for the reception of a hinge, said casing having its outer end open permanently and each of its side walls on the inner face thereof provided with a longitudinally extending groove, the walls at the inner ends of each of the grooves constituting a pivot bearing, a hinge detachably mounted within said pocket and including a vertically-extending inner leg and an upwardly and outwardly-extending quadrant-shaped leg adapted to have its upper end connected to a door, said vertically extending leg having its lower end terminating in the lower end of said outer leg, and means projecting laterally from both sides of the upper end of said inner leg and detachably engaging said pivot bearings, said means constituting a pivot for the hinge.

2. The combination with one of the walls of an upwardly-extending passage having an outlet, of a casing embedded in said wall below the outlet of the passage and having its outer end permanently opening into the passage, said casing having the inner faces of the side walls thereof provided with grooves, the walls at the inner ends of said groove constituting a pair of pivot bearings, a door closing the outlet of said passage, a hinge comprising an inner and an outer leg, the former being vertically disposed and the latter being quadrant-shaped and having its upper end secured to the lower face of the

door and its lower end integral with the lower end of the inner leg, said outer leg capable of swinging out of the casing when the door is raised and further maintaining
5 said door at an angle with respect to the outlet of the passage, and a pivot pin projecting laterally from both sides of the upper end of the inner leg and detachably-mounted against said bearings to permit of the bodily removal of the hinge from the casing when the hinge is secured to the door. 10

In testimony whereof I affix my signature in the presence of two witnesses.

WILLIAM E. SNAMAN.

Witnesses:

A. H. RABSAG,

KARL H. BUTLER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."
