No. 780,610. PATENTED JAN. 24, 1905.

C. G. JANSON.

SIDEWALK ELEVATOR DOOR.

APPLICATION FILED NOV. 5, 1904.

Fig. 1.

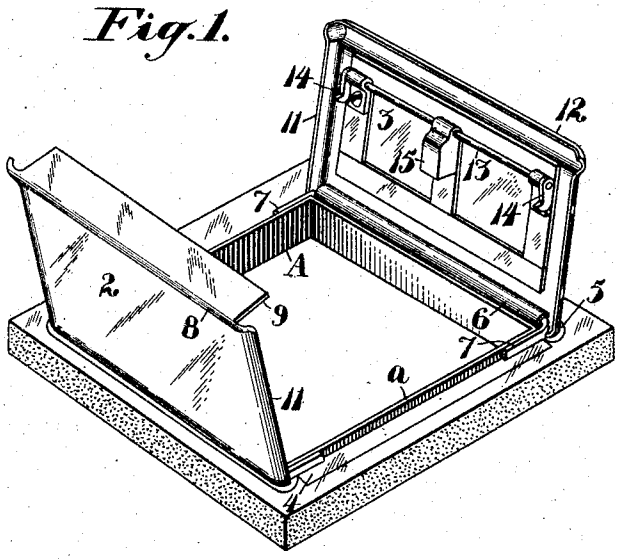


Fig. 2.

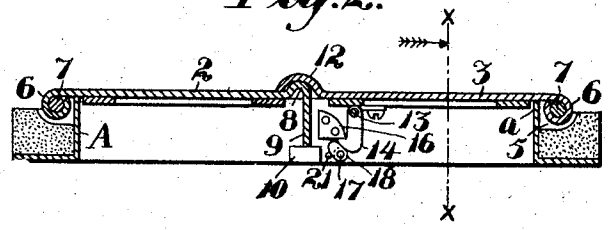


Fig. 3.

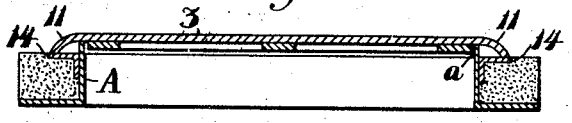


Fig. 4.

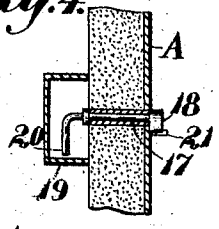


Fig. 5.

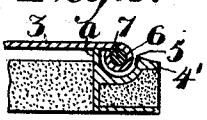
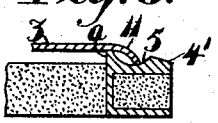


Fig. 6.



Witnesses:

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By Geo. H. Strong, Atty

No. 780,610. Patented January 24, 1905.

UNITED STATES PATENT OFFICE.

CARL G. JANSON, OF BERKELEY, CALIFORNIA.

SIDEWALK ELEVATOR-DOOR.

SPECIFICATION forming part of Letters Patent No. 780,610, dated January 24, 1905.

Application filed November 5, 1904. Serial No. 231,591.

To all whom it may concern:

Be it known that I, CARL G. JANSON, a citizen of the United States, residing at Berkeley, in the county of Alameda and State of California, have invented new and useful Improvements in Sidewalk Elevator-Doors, of which the following is a specification.

My invention relates to improvements in hatchway-closures, and especially in so-called "sidewalk elevator-doors."

The object of my invention is to provide a strong, durable, simple, practical closure of this sort which shall possess certain economic and structural features and advantages not possessed by the doors of ordinary construction.

The invention consists of the parts and the construction and combination of parts, as hereinafter more fully described and claimed, having reference to the accompanying drawings, in which—

Figure 1 is a perspective view showing doors in open position. Fig. 2 is a transverse section of same, showing door in closed position. Fig. 3 is a section on line *x x*, Fig. 2. Fig. 4 shows a device for releasing hook members. Figs. 5 and 6 are modifications of the framework.

A represents a hatchway-frame of rectangular shape set into the side walk or floor so as to be flush or substantially flush therewith and forming the crown of the elevator-opening and affording a suitable support for the hinge-doors 2 3. This frame may be made of wrought iron or steel, as shown in Fig. 1, and composed of separate pieces suitably bolted together and provided with the angle-iron projections 4 on its outer side arranged a trifle below the upper edge of the frame and on a level with the surrounding cement, thus leaving a portion *a* of the walls of the frame projecting a half-inch or so above the general level of the sidewalk and designed as a barrier against the entry of water into the basement through the elevator-openings. The doors, which are hinged to the opposite sides of the frame, are adapted to open upwardly and outwardly and when closed to lie in substantially the same horizontal plane. When in closed position, they should rest on and overlap this upward-projecting ledge *a* of the frame with their outer edges bearing on or contiguous to the lateral projections 4, these latter forming a coping with which a perfectly-tight joint can be made with the surrounding cement.

As shown in Figs. 5 and 6, the frame A may be cast in a single piece with the integral lateral projections 4′ and the end flanges concaved to form the gutters 5, in which the doors are adapted to turn on their hinges.

The doors are each preferably made from a piece of sheet metal, and their construction forms an important feature of the present invention. The rear or hinge edge of each sheet is curled under to constitute a tube-like underneath projection 6, extending nearly or quite across the full length of the door.

The doors are hung on the frame A by means of the parts or angles 7, which are bolted or otherwise secured one to each side of the frame adjacent to each end thereof. These parts have each an inturned portion extending beyond an end of the frame and fitting in the ends of the tubular parts 6 on the doors, which latter turn about these inturned portions as on pivots. The gutters 5 on the frame A are sufficient only to accommodate the door-hinges. At the same time the adjacent walls *a* are high enough to prevent the ingress of water into the elevator-opening. When the frame is not provided with a metal trough portion 5, a suitable depression may be made in the surrounding cement.

The construction of the two doors is somewhat different. While both doors have their longer hinge edges curved under, as shown at 6, the door 2 has its opposite edge, or that adjacent to the door 3 when the two are in closed position, crimped to form an upwardly-extending ridge 8 clear across the door and a broad downwardly-projecting flange 9 just fitting the frame-opening and adapted when the door is closed to rest on the stops 10 on the inside of the frame. The sides of the door and the ends of the ridge 8 project somewhat beyond the projecting portion *a* of the frame and are rolled or otherwise curved or bent downward to form the flange-like projections 11, which completely cover and protect the frame-opening. The opposite door 3 is so

constructed as to have its front edge bent upwardly and then downwardly again, as shown at 12, to fit close over the transverse ridge 8 on the door 2 when the two doors are closed, while its sides are curved similarly to the sides of door 2 in order to extend beyond and protect its projecting portion *a* of the frame. Thus it will be seen that with the doors closed in horizontal position the door 3 will slightly overlap the adjacent edge of the door 2 and that both doors will rest like an inverted dish over the hatchway-frame, the transverse ridge 8 on the door 2 interlocking with the corresponding female portion 12 on the door 3 to form a neat snug water-tight joint along the meeting edges of the two doors and the ledge *a* on the frame acting to exclude the ingress of any water beneath the doors and effectually preventing leak to the basement. This construction not only results in the forming of a water-tight closure, but provides a door structure of great strength, for the reason that the curved-under portions 6 besides serving as hinges form a transverse support or truss for the rear edge of each door and prevent the latter from being bent at that point, as frequently occurs with sidewalk elevator-doors of ordinary construction. Besides the flange 9 constitutes a rigid angular brace central of the hatchway-opening, and the doors are strengthened in the direction of their width by reason of the extension of the ends of the doors beyond the frame and providing the curved flanged portions 11.

A rod or rotatable bar 13 is journaled on the under side of the door 3 adjacent to its front edge and is of a length approximately equal to the width of the frame-opening. The rod is provided with the rigid hook members 14 at its ends and with the weight 15 at some suitable point intermediate of its ends. When the door lies flat, the hooks and weight hang vertical; but when the door is opened they swing to lie substantially flat with the under side of the door.

16 represents cam-stops secured to the inside of the frame in the path of the hooks, so that when the door 3 is closed down on door 2 the hooks engaging the stops are pressed back to ride around the stops and then to engage automatically beneath the latter to lock the doors. The weight insures the proper and unfailing action of the hooks.

In order to allow of the opening of the doors from above before the ascent of the elevator, I may employ the following simple means: A rock-shaft 17 extends through a side of the hatchway-frame adjacent to and a little below a stop 16 and has a finger, plate, or cam 18 fixed to its inner end and adapted to swing against a hook 14 to carry both hooks out of engagement with the parts 16. The other end of the shaft 17 projects into a small covered box or casing 19, set flush with the sidewalk and alongside the frame A. This outer end of the shaft is provided with suitable handhold means, as an arm 20. The oscillating movement of the lateral projection 18 is limited by a stop 21.

When it is desired to open the doors without having first to descend to the basement to release the lock, the cover of box 19 can be lifted, and by turning arm 20 the cam or finger 18 will contact with a hook 14 to rotate rod 13 and release the doors.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination with a hatchway-frame of oppositely-hinged closures thereon, said closures consisting of metal plates adapted to overlap when closed and having their edges which correspond to the hinge ends of the closures turned over to form tubular underneath projections and pivotal members carried by the frame fitting the ends of said tubular projections.

2. The combination with a hatchway-frame of a door made from a plate of sheet metal and having one end turned over to form a tubular underneath projection and support extending approximately the full width of the door, pivotal members carried by the frame fitting the ends of said tubular portion about which the door hinges.

3. The combination with a hatchway-frame of oppositely-hinged doors thereon, said doors consisting of metal plates with their hinged ends bent under to form tubular portions extending approximately the full width of the door and affording a transverse lateral support therefor, hinge members on the frame fitting the ends of these tubular parts, said doors provided with respective male and female interlocking members on their meeting edges.

4. The combination with a hatchway-frame of oppositely-hinged doors thereon, said doors consisting of metal plates with their hinged ends bent under to form tubular portions extending approximately the full width of the door and affording a transverse lateral support therefor, hinge members on the frame fitting the ends of these tubular parts, said doors provided with respective male and female interlocking members on their meeting edges, one of said doors provided with a transversely-extending rod journaled to the under side of the door adjacent to its outer edge, said rod provided with counterweighted pendent hook members, and stops on the frame with which said hook members automatically engage when the doors are closed to prevent the opening of the same.

5. The combination of a hatchway-opening and oppositely-hinged overlapping doors thereon, the uppermost of said doors adjacent to its outer edge being provided on its under side with a transversely-rotatable rod extending substantially from side to side of the door

and having rigid hook members on its ends, stop members on the frame in the path of said hook members and a counterweight device on the rod intermediate of the hook members to cause said hook members automatically to engage said stops when the door is closed.

6. The combination with a hatchway-frame of oppositely-hinged closures thereon, said closures comprising metal plates, each having one edge turned over and under to form a tubular part extending approximately across the width of the door and forming a lateral reinforce for the same, hinge members on the frame fitting the ends of said tubular portions, one of said doors having its outer edge provided with a transversely and outwardly extending male portion, and the other door having a corresponding female portion adapted to receive or overlap said male portion when the doors are closed into horizontal position, said door with the male portion having a downwardly-extending reinforcing-flange, and stop means on the frame to support the end of said flange when the doors are closed.

7. The combination with a hatchway-frame of two oppositely-hinged doors thereon and locking mechanism carried by one of said doors, said locking mechanism comprising a rock-shaft journaled on the under side of the door and having hook members to engage parts rigid with the frame, and an oscillating part supported on the frame and arranged to swing across the path of the hooks to release them, and operated from a point exterior to the frame.

8. The combination with a hinged door arranged to open outward in a vertical plane, of a hook member pivoted on said door, stop means in the path of the hook member to engage the same when the door is closed to lock the latter, and means to release said hook from said stop, means comprising a rock-shaft having a lateral projection to engage said hook member and means to operate the rock-shaft.

9. The combination with a hatchway-frame, of oppositely-hinged doors thereon, a locking device on one of said doors comprising a hook member pivoted on the under side of the door a stop on the frame with which said hook member is adapted automatically to engage when the door is closed, and means to release said hook member, comprising a rock-shaft journaled in the frame and having a projection at one end to swing into the path of the said hook member and means at the other end by which it may be operated.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

CARL G. JANSON.

Witnesses:
S. H. NOURSE,
HENRY P. TRICOU.