No. 775,425. PATENTED NOV. 22, 1904.

E. JOHNSON.

SIDEWALK DOOR.

APPLICATION FILED OCT. 3, 1903.

NO MODEL.

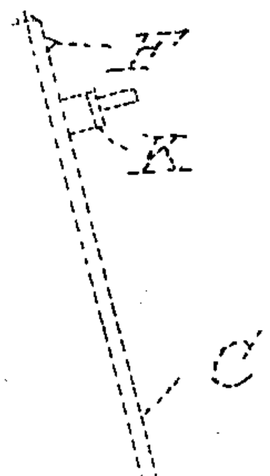


Fig. 1.

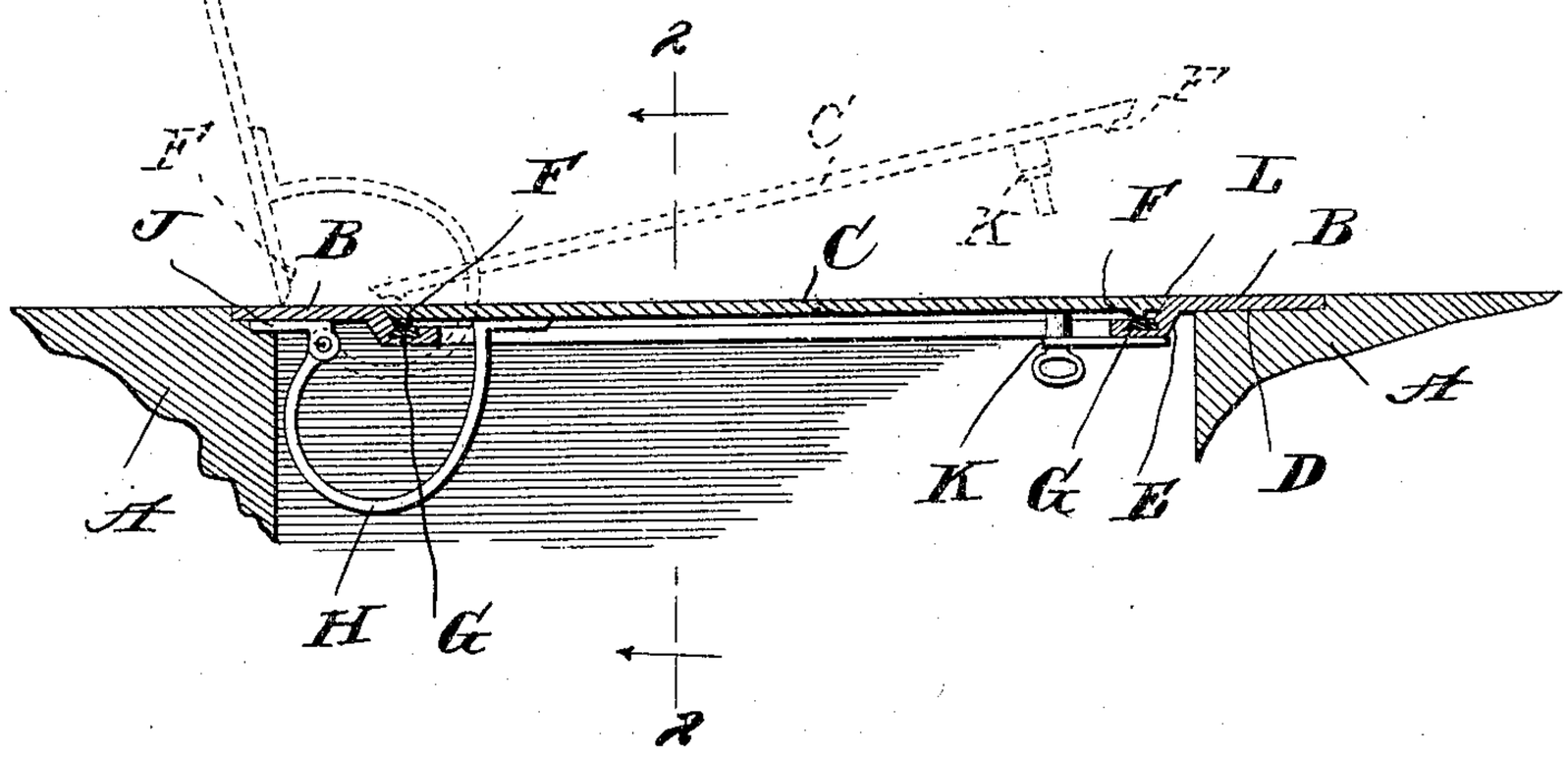
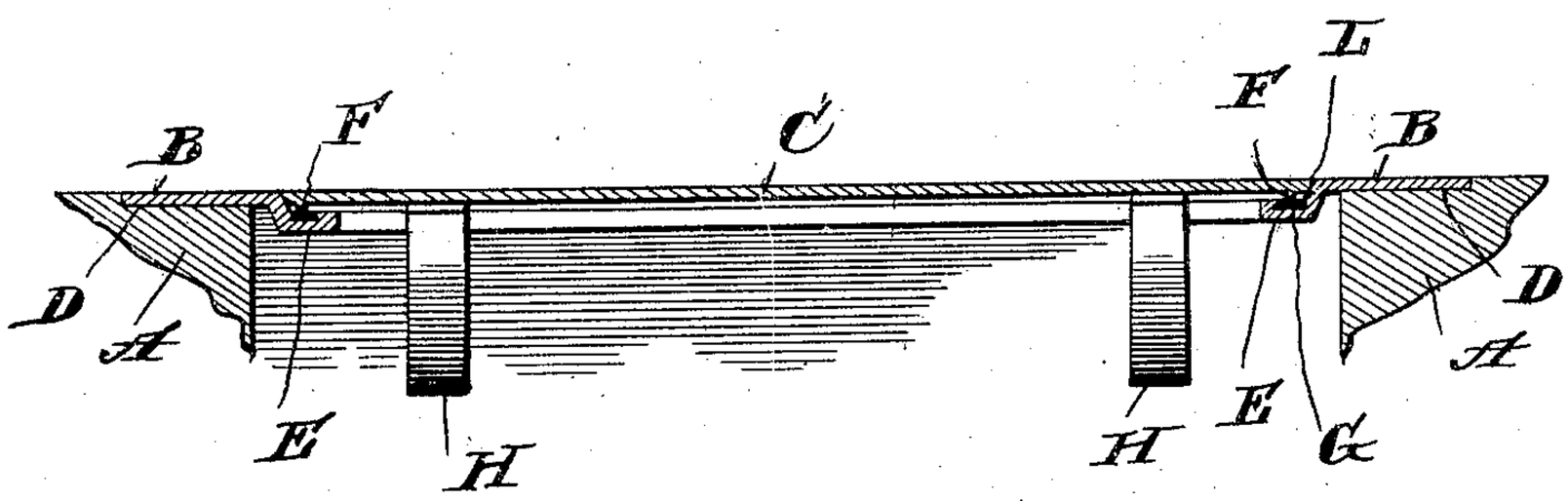


Fig. 2.



Witnesses.

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PHOTO-LITHOGRAPHED BY SACHETT & WILHELMS' LITHO. & PTG. CO. NEW YORK

No. 775,425. Patented November 22, 1904.

UNITED STATES PATENT OFFICE.

EDWARD JOHNSON, OF CHICAGO, ILLINOIS.

SIDEWALK-DOOR.

SPECIFICATION forming part of Letters Patent No. 775,425, dated November 22, 1904.

Application filed October 3, 1903. Serial No. 175,564. (No model.)

To all whom it may concern:

Be it known that I, EDWARD JOHNSON, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Sidewalk-Door, of which the following is a specification.

This invention relates to sidewalk-doors.

The object of the invention is to provide a construction of sidewalk-door which is simple and efficient.

A further object of the invention is to provide a construction of sidewalk-door in which the door lies flush with the surface of the pavement when in closed position, thereby avoiding undue obstructions or raised surfaces in the sidewalk.

A further object of the invention is to provide a construction of sidewalk-door whereby in opening the edges of the door-seating will be automatically freed from any accumulated dirt, snow, or the like.

A further object of the invention is to provide a construction of sidewalk-door wherein provision is made against leakage through the crevices surrounding the door edges.

Other objects of the invention will appear more fully hereinafter.

The invention consists, substantially, in the construction, combination, location, and arrangement of parts, all as will be more fully hereinafter set forth, as shown in the accompanying drawings and finally pointed out in the appended claims.

Referring to the accompanying drawings and to the various views and reference-signs appearing thereon, Figure 1 is a view in longitudinal section of a sidewalk-door construction embodying the principles of my invention. Fig. 2 is a view in transverse section on the line 2 2, Fig. 1, looking in the direction of the arrows.

The same part is designated by the same reference-sign.

In the accompanying drawings, reference-sign A designates a portion of a sidewalk-setting. In accordance with the principles of my invention I employ a frame B, arranged to surround the opening in the sidewalk to be closed by the door C. This frame B is arranged to be received in a seat or depression D, formed in the bounding edges of the opening through the sidewalk in such manner as that the upper surface of said frame lies flush with the top surface of the sidewalk. The frame B along its inner bounding edge is provided with an offset lateral flange E, deflected downwardly into the space to be closed by the door C and forming a supporting-ledge to receive the edges of the door C, the degree of offset of the lateral flanges or ledges E being such that when the door edges are received and rest thereon the upper surface of the door lies flush with the top surface of frame B and of the adjacent sidewalk.

If desired and in order to insure against leakage through the crevices or joints at the surrounding edges of the door when the latter is closed, the door may be provided upon the inner surface thereof adjacent to its edges with a depending lug or rib F, and coöperating therewith is arranged a packing-strip G—such, for instance, as rubber—received within a recess or in any other convenient manner in the door-supporting ledges or flanges E of frame B. It will be observed that the rib F extends along each side or edge of the door, on the under side thereof, thus affording protection around the entire perimeter of the door against leakage through the joint formed thereby when in closed position.

H designates curved arms suitably pivoted, as at J, to the under side of frame B at one side of the opening through the sidewalk. These curved arms are secured at the other end thereof to the under side of the door C, adjacent to one edge thereof, and constitute the hinge connection of the door C to the frame. By reference to the dotted lines in Fig. 1 it will be observed that by reason of the curved arms H the adjacent edge of the door travels in a circle concentric with the hinge-axis J of the curved arms H, and consequently during the initial opening of the door the door rises bodily out of its seat in the door-frame, thereby automatically clearing any accumulated dirt, snow, or the like surrounding the sidewalk-opening. As the door continues to be opened it will gradually assume a vertical position and finally pass beyond a vertical line through the hinge-axis J of the curved arms

H, as indicated in dotted lines in Fig. 1, thereby forming a "lock," so to speak, to hold or maintain the door in open position. Similarly, in closing as the door approaches its closed position it assumes by reason of the curved arms H a position substantially horizontal before it reaches its seat in the door-frame, and consequently is lowered bodily into its seat in the frame.

If desired and in order to afford a lock for the door when in closed position, a latch device K may be provided and secured to the door upon the under side thereof adjacent to the edge farthest removed from the hinge-arms H and arranged to be engaged underneath the depending flange E of the door-frame B, as clearly shown in Fig. 1.

If desired and preferably and in order to afford an efficient seat for the door in the door-frame, the edges of the door may be beveled, as indicated at L, said beveled edges being received on correspondingly beveled or inclined surfaces formed in the door-frame B, as clearly shown.

From the foregoing description it will be seen that I provide an exceedingly simple and efficient construction of sidewalk-door, wherein the upper surface of the door lies flush with the surface of the sidewalk, thereby avoiding any projections or extensions above the surface of the sidewalk, not only of the door-frame or its seating, but also of hinges and the like, over which pedestrians are liable to stumble. It will also be noted that provision is made for efficiently protecting the doorway against leakage of water through the joint around the edges of the door when closed and that in opening the door rises bodily out of its seat in the door-frame, thereby clearing any accumulation of dirt, snow, or the like surrounding the edges of the sidewalk-opening.

Having now set forth the object and nature of my invention and a construction embodying the principles thereof, what I claim as new and useful and of my own invention, and desire to secure by Letters Patent, is—

1. In a sidewalk-door, the combination with a sidewalk-setting, a door-frame supported thereon and lying flush with the upper surface thereof, said door-frame having the bounding edges of the opening therethrough formed with downwardly-inclined surfaces forming a seat, a door having beveled edges arranged to be received in the seat in the door-frame when in closed position, and curved arms pivotally connected at one end to the door-frame and at the other end to said door on the under side thereof and constituting hinge connections between said door and frame, whereby, in opening, the door is raised bodily from its seat in the door-frame, as and for the purpose set forth.

2. In a sidewalk-door, a sidewalk-setting having an opening therethrough, a door-frame surrounding said opening and lying flush with the upper surface of the sidewalk, said frame having depending flanges or ledges on the bounding edges of the opening therethrough, said ledges or flanges arranged to form a supporting-seat, in combination with a door having its edges arranged to be received in said seat, and curved arms pivotally connected at one end to the under surface of the door-frame and pivotally connected at the other end thereof to the under surface of the door, whereby in opening, the door is raised bodily from its seat in the door-frame, as and for the purpose set forth.

3. In a sidewalk-door, and in combination with a sidewalk-setting having an opening therethrough, a door-frame arranged to form a border for said opening, said door-frame lying flush with the upper surface of the sidewalk, and provided on the bounding edges of the opening therethrough with laterally-offset depending flanges, in combination with a door provided with ribs on the under surface thereof adjacent its bounding edges, said ribs arranged to rest upon said ledges or flanges when the door is in closed position, and curved arms pivotally connected at one of the ends thereof to the door-frame and at the other ends thereof to the door on the under surface thereof, whereby, in opening, the door is raised bodily from its seat in the door-frame, as and for the purpose set forth.

4. In a sidewalk-door, a sidewalk-setting having an opening therethrough, a door-frame forming a border for said opening and lying flush with the upper surface of the sidewalk, said frame having offset depending flanges on the bounding edges of the opening therethrough, a depressed seat formed in said flanges, packing material arranged in said seat, in combination with a door fitted to be received in said seat, and having ribs formed on the under surface thereof adjacent its bounding edges arranged to rest upon the packing in said seat when the door is in closed position, and curved arms pivotally connected at one of the ends thereof to the door-frame and at the opposite ends thereof to the under surface of the door, whereby, in opening, the door is raised bodily from its seat in the door-frame, as and for the purpose set forth.

5. In a sidewalk-door, a sidewalk-setting having an opening therethrough, a door-frame forming a border for said opening and lying flush with the top surface of the sidewalk, said frame having an offset depending flange forming a supporting-ledge, in combination with a door having its edges arranged to be received and supported upon said ledge when said door is in closed position, and curved arms pivotally connected at one end to the door-frame and connected at the other end to said door whereby, in opening, the door rises bodily from the seat formed by said ledge, as and for the purpose set forth.

6. In a sidewalk-door, a sidewalk-setting having an opening therethrough, a door-frame forming a border for said opening and having its top surface flush with the surface of the sidewalk, said door-frame having a seat formed on the inner bounding edges thereof, in combination with a door arranged when in closed position to be received in said seat and lying flush with the top surface of the sidewalk door-frame, curved arms connected at one end and on the under surface thereof to the door adjacent to one end and at their opposite ends to the under side of the adjacent portion of the door-frame, said curved arms operating during the opening movement of the door to raise the door bodily from its seat in the door-frame, as and for the purpose set forth.

7. In a sidewalk-door, a sidewalk-setting having an opening therethrough, a door-frame forming a border for said opening and having its top surface flush with the surface of the sidewalk, said door-frame having a seat formed on the inner bounding edges thereof, in combination with a door arranged when in closed position to be received in said seat and lying flush with the top surface of the sidewalk door-frame, curved arms connected at one end and on the under surface thereof to the door adjacent to one end and at their opposite ends to the under side of the adjacent portion of the door-frame, said curved arms operating during the opening movement of the door to raise the door bodily from its seat in the door-frame, and a locking device carried by the door and arranged to engage underneath the door-frame for locking the door in closed position, as and for the purpose set forth.

In witness whereof I have hereunto set my hand, this 29th day of September, 1903, in the presence of the subscribing witnesses.

EDWARD JOHNSON.

Witnesses:

A. W. PROCTOR,

CHARLES H. SEEM.