

(No Model.)

P. H. JACKSON.
SIDEWALK HATCHWAY AND DOOR MECHANISM.

No. 587,210.

Patented July 27, 1897.

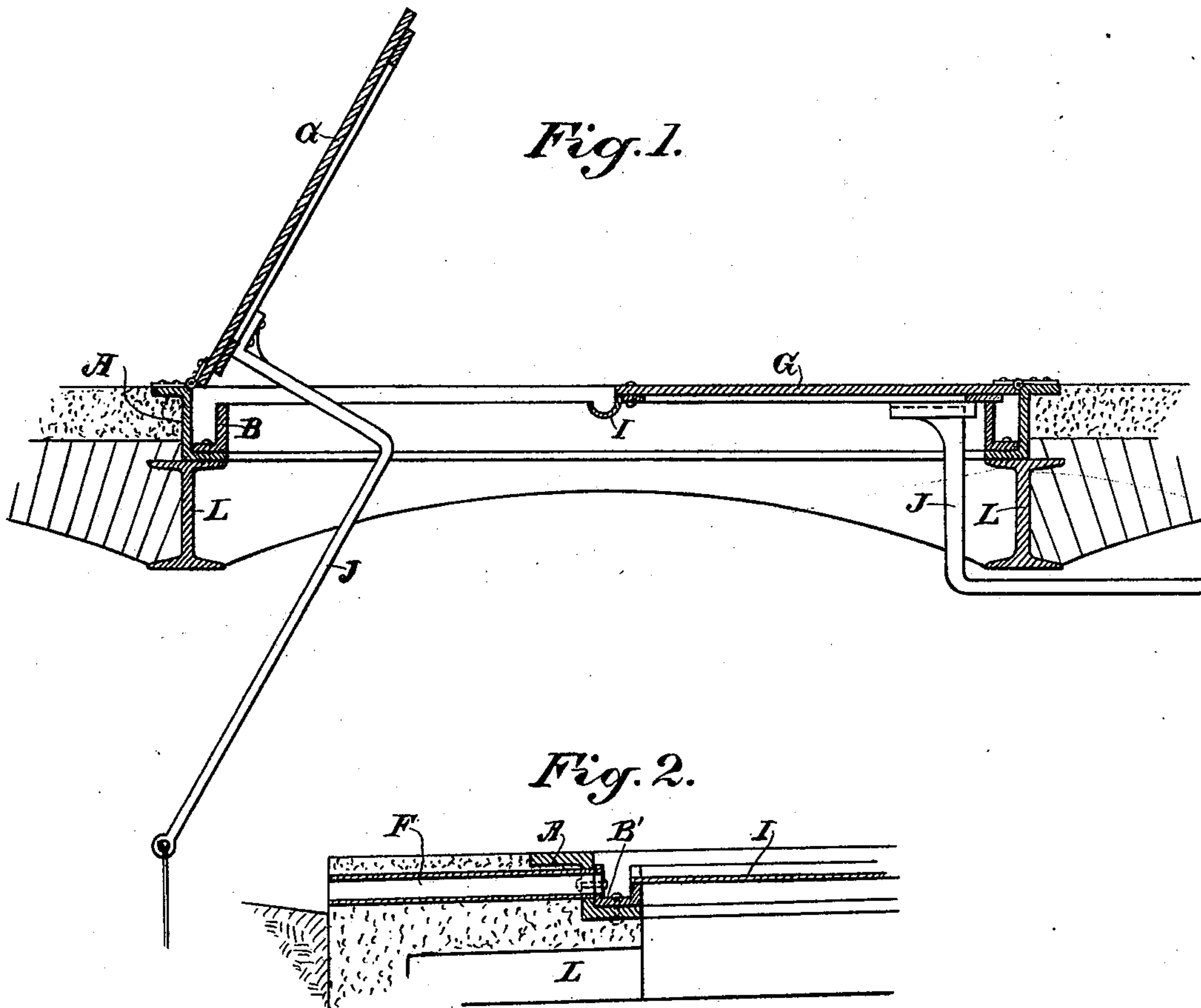


Fig. 3.

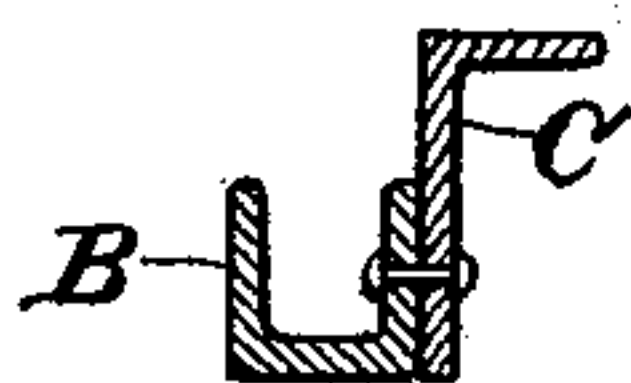
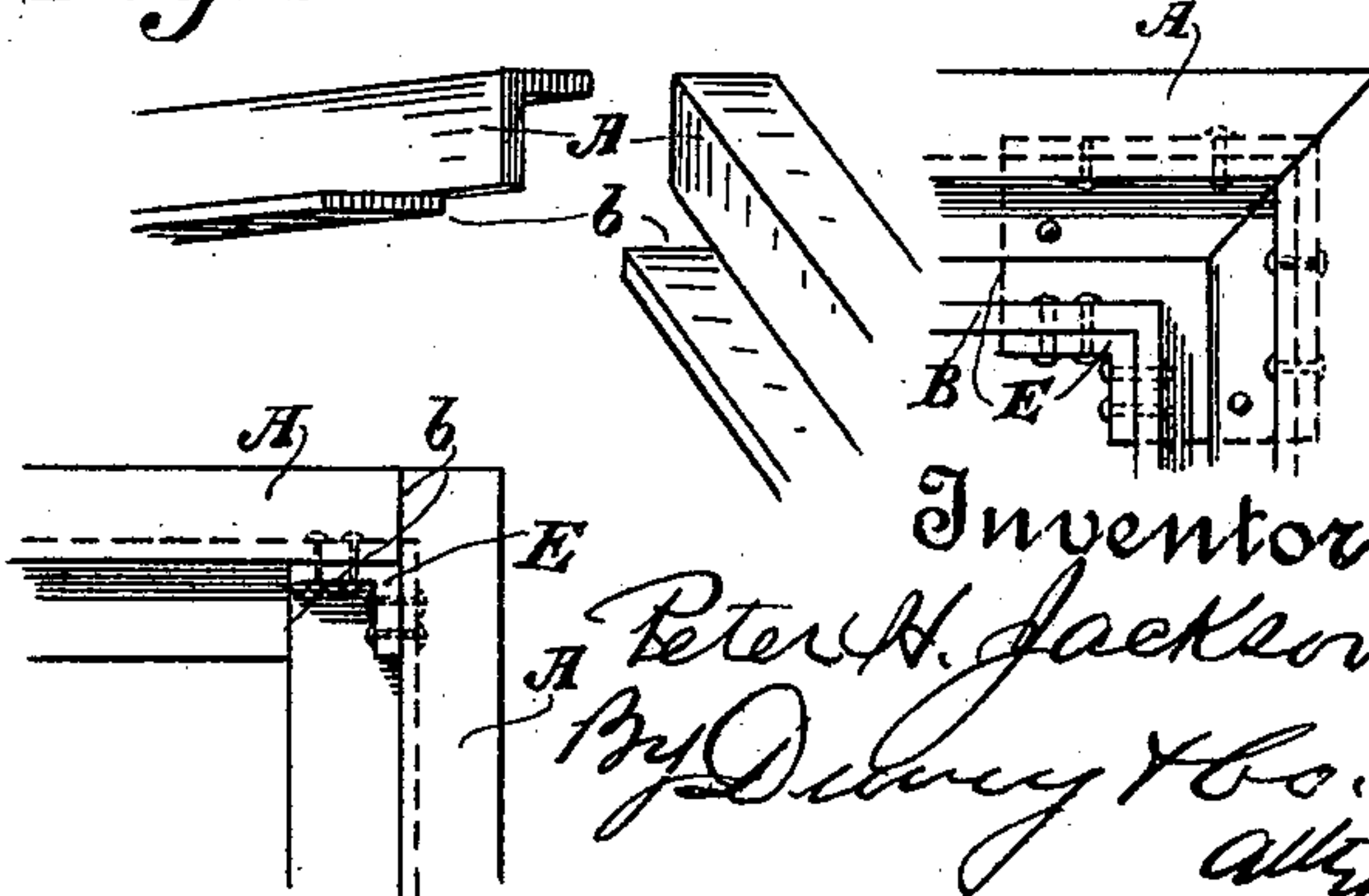
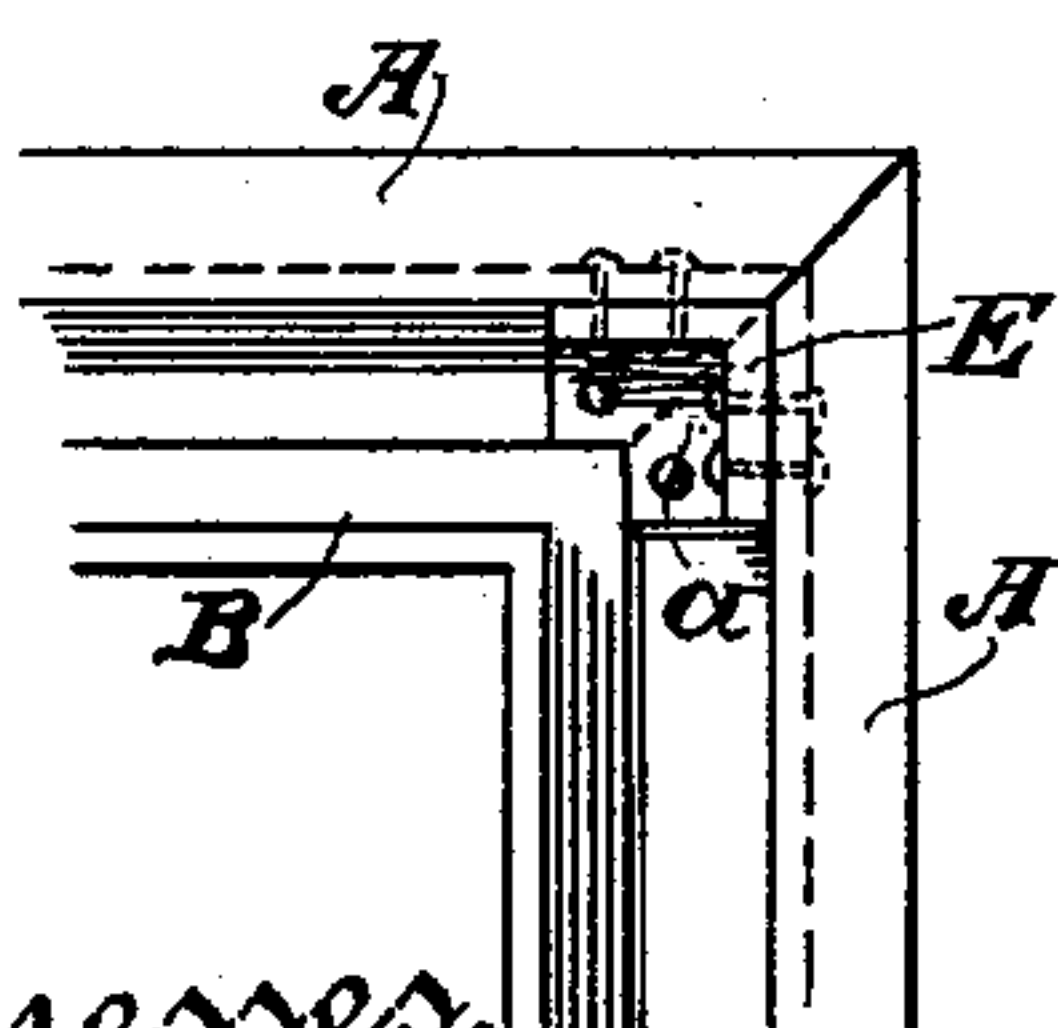


Fig. 4.



Witnesses,
J. H. Morse
J. F. Aschbeck

Inventor
Peter H. Jackson
By Quincy & Co.
attys

UNITED STATES PATENT OFFICE.

PETER H. JACKSON, OF SAN FRANCISCO, CALIFORNIA.

SIDEWALK HATCHWAY AND DOOR MECHANISM.

SPECIFICATION forming part of Letters Patent No. 587,210, dated July 27, 1897.

Application filed June 24, 1896. Serial No. 596,763. (No model.)

To all whom it may concern:

Be it known that I, PETER H. JACKSON, a citizen of the United States, residing in the city and county of San Francisco, State of California, have invented an Improvement in Sidewalk Hatchway and Door Mechanism; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to certain improvements in horizontally-placed door-frames and the doors which are adapted to close the openings of said frames and which are employed for the purpose of obtaining access through sidewalks and other places where it is desired to have a door or pair of doors which shall be waterproof against leakage when the door is closed and at the same time to render such doors easily operated and controlled from the basement or chamber beneath them.

My invention consists of the parts and the construction and combination of parts which I shall hereinafter describe and claim.

Referring to the accompanying drawings, Figures 1, 2, and 3 show different forms of my door-frame and gutter. Fig. 4 shows methods of uniting the frame at the angles when made in separate sections. Fig. 1 also illustrates the device for opening and closing the doors.

Sidewalk-hatchways and openings through which goods are transferred to and from the basement and all similar horizontal door-openings are subjected to great strains and violent shocks from the movement of heavy merchandise across them and by the turning over and dropping of boxes upon the edges of the openings. It is therefore necessary to make a very strong structure, and as cast-iron is easily broken by such shocks I have found it necessary to employ wrought-iron or steel in the construction of this door frame or casing. The wrought-iron or steel bars are rolled into the form of Z, angle, or channel bars, and any two of this class of bars may be combined to form my door-frame and gutter.

For larger door-frames and those which may be subjected to the severest usage I prefer to construct the frame, as shown in Fig. 1, with a combination of the bar A, which is made Z-shaped in transverse section, and the bar B, which is made of angle-iron.

These two bars are riveted together, as shown in Fig. 1, so as to form a tight joint at their meeting surfaces, the lower flange of the Z-bar extending beneath and overlapping the lower flange of the angle-iron bar, the other flange of which extends upwardly on the inside, and in conjunction with the vertical flange of the Z-bar forms the channel for the reception of water.

The upper horizontal flange of the Z-shaped bar is set into the material of the sidewalk, so as to make a perfectly tight joint around the periphery of the door. The vertical portion of the angle-bar is sufficiently lower than the top flange of the Z-bar so that the doors may close inwardly above these interior flanges, and when closed their outer surfaces will lie approximately flush with the sidewalk and the top flanges of the Z-bars.

If it is desired to make the frame extra strong and large, it is done by bolting a channel-bar B' upon the lower interior flange of the Z-bar A, thus reinforcing the vertical side of the Z-bar and giving the whole structure the additional strength produced by the use of the channel-bar.

If the door-frames are small and require but little strength, they may be made by combining the angle-iron bar C with the channel iron or steel bar B', as shown in Fig. 3. In this case one side of the channel-bar is riveted or bolted to a vertical side of the angle-iron bar, and the horizontal side of the angle-bar forms the top flange, which is set into the masonry or substance of the sidewalk or floor in the same manner as previously described for the similar flange of the Z-bar. It will be understood that in all these constructions the bars may be made of iron, steel, or combinations of metals which will produce the most satisfactory results for the purpose to which they are to be applied. In uniting these various bars together I prefer to rivet them hot, so as to make tight joints. As these door-openings are rectangular the frames may be made either by bending the bars at the angles or cutting out a certain portion of the interior flanges; but I unite them in some cases by sawing the bars at an angle of forty-five degrees, so as to make a miter-joint, and then uniting these joints by angle-pieces E, which are riveted in at these points, so as to hold

these parts together and to make tight joints, as shown at *a*, Fig. 4.

Another method is to cut out a portion of the flanges at the meeting angles, as shown at *b*, so as to allow the angles to meet properly, and then secure them by angle-pieces, as above described, these pieces being fitted either inside or outside, as may be preferred.

From any suitable point in the continuous channel thus formed a pipe or passage *F* leads to the sewer or to the outside gutter or other point into which the water may be conveniently discharged.

The doors *G* are suitably hinged to the flanges upon one side if a single door is to be used or upon opposite sides when double doors are employed, as is usually the custom.

In order to prevent the entrance of water at the meeting edge of the double doors, I have shown a metallic gutter *I*, which may be made of any suitable form or combination of bars riveted or secured to one of the doors, so as to be movable with it, and over this channel *I* the edge of the other door closes. This channel is made to connect with the surrounding door-frame channels at its opposite end, so that any water received into it will flow into the main surrounding channel and thence be carried away.

In some cases it may be found more convenient to make this central gutter and bearer separate from the door edges, with its ends resting upon or in proximity to the surrounding channels, in which case this bearer would have to be removed whenever the doors were opened and replaced when they are to be closed. I have found it therefore more convenient in most cases to fasten it to the edge of one of the doors, so as to be movable therewith. These doors when of large size are heavy and require great power to lift and open them, and when it has to be done from below it is a somewhat difficult operation. In order to overcome this difficulty and open the doors conveniently, I have shown the levers *J*, secured to the doors near the hinged edges. In order to keep these levers out of the way and at the same time to avoid the deep beams *L*, upon which the arches of the basement and structure above are supported, I have bent the levers at right angles, as shown, so that when the doors are closed the long arms extend, essentially, parallel with the side-

walk-surface above and close to the ceiling of the basement of the room below the doors. From the angle the vertical portion extends up to the door, to which it may be riveted, or it may be attached by means of a tongue formed on the lever and a grooved channel-piece, into which the lever may be slipped to connect it with the door. From the end of the lever a rope or chain enables the operator from below to pull upon the lever, and this acts, as shown in Fig. 1, to tilt and open the door.

The levers may be situated close to the ends of the doors, so that they will not be in line with the space through which the goods must be moved when the doors are opened, or, if connected with the groove and socket, as previously described, they may be removed after the doors are opened and again introduced to close them.

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

1. In a sidewalk hatchway and door-frame and in combination with the beams upon which the arches of the basement and the sidewalk are supported, the bars, angular in cross-section and having overlapping flanges supported by the said beams and riveted or bolted together.

2. In a sidewalk-hatchway construction and in combination with the beams upon which the arches of the basement and the sidewalk are supported, the door construction consisting of a **Z**-bar and an angle-bar, or channel-bar, supported upon the beam and having flanges adapted to overlap and to be riveted or bolted together.

3. A sidewalk-hatchway set horizontally in the sidewalk or floor and provided with a door or doors attached to the frame, and an angular lever secured to the door, said lever being bent down to the bottom of the supporting-beam and thence bent to one side so as to lie on the line of ceiling beneath the sidewalk or floor when the door is closed, substantially as herein described.

In witness whereof I have hereunto set my hand.

PETER H. JACKSON.

Witnesses:

S. H. NOURSE,
JESSIE C. BRODIE.