

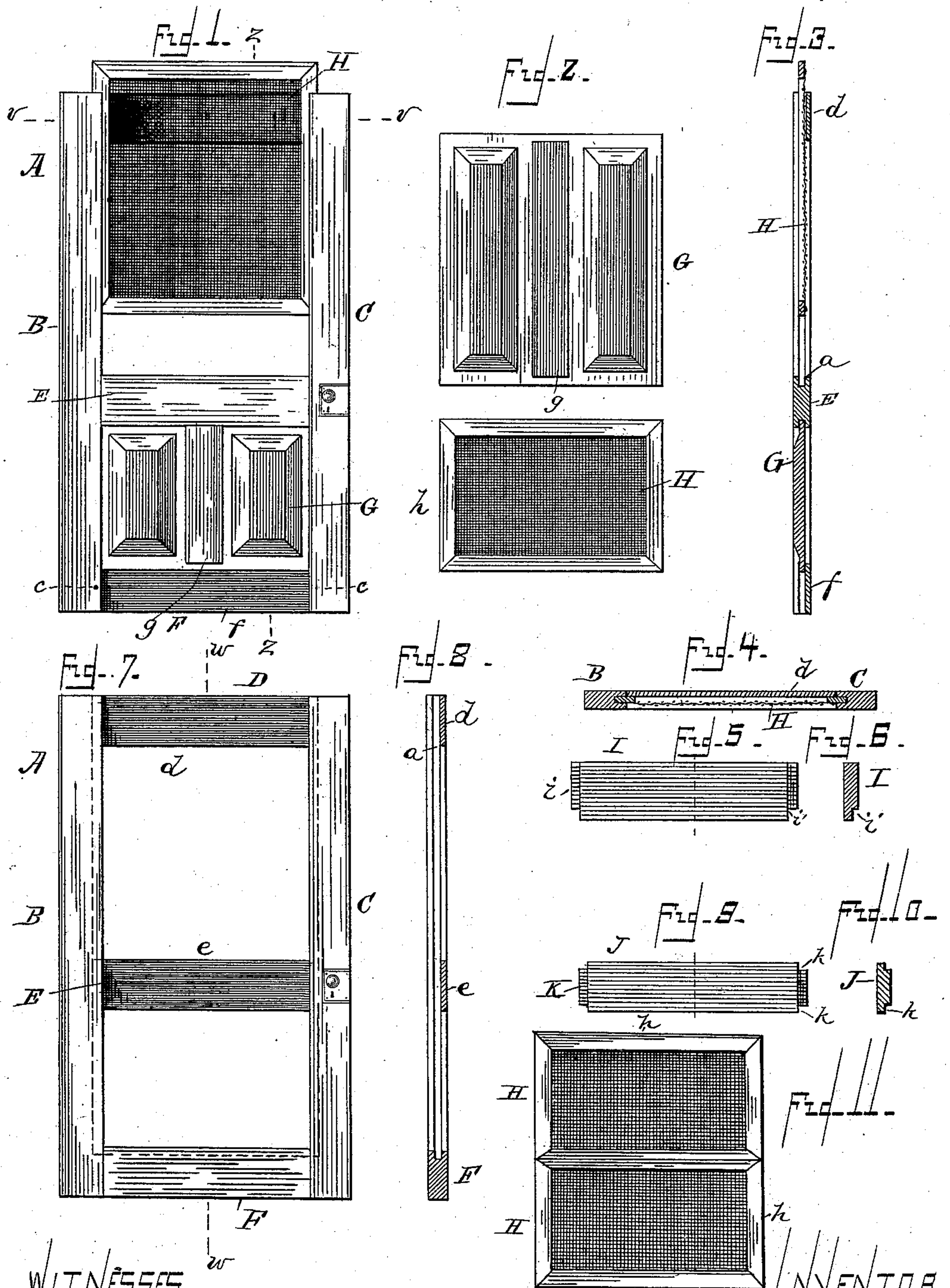
(No Model.)

H. H. GREENMAN.

DOOR.

No. 372,066.

Patented Oct. 25, 1887.



WITNESSES.  
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# UNITED STATES PATENT OFFICE.

HARVEY H. GREENMAN, OF CORTLAND, NEW YORK.

## DOOR.

SPECIFICATION forming part of Letters Patent No. 372,066, dated October 25, 1887.

Application filed March 16, 1887. Serial No. 231,134. (No model.)

*To all whom it may concern:*

Be it known that I, HARVEY H. GREENMAN, a citizen of the United States, residing at Cortland, in the county of Cortland and State of New York, have invented certain new and useful Improvements in Doors; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to improvements in doors that are adapted to be converted from air-tight to screen doors; and the object is more particularly to provide means whereby the panels and screens may be made interchangeable by removing a portion of the door-frame, thereby locking them in and avoiding the liability of their being manipulated and removed from either side while the door is in a closed position; and it consists in the construction hereinafter described, and more particularly pointed out in the claims.

Referring to the drawings, Figure 1 is a plan view of the door with part of the upper and lower rails removed and the lower panels in the frame, with a screen in the upper part of the frame partially withdrawn. Fig. 2 is a plan view of the removed interchangeable panels and screens adapted to fit the door. Fig. 3 is a vertical section on the line  $z z$  of Fig. 1, showing the screen partially removed from the top of the door. Fig. 4 is a cross-section on the line  $v v$  of Fig. 1, showing the screen and rear section of rail in the door. Fig. 5 is a plan view of the front section of rail of top and bottom door. Fig. 6 is a cross-section of Fig. 5. Fig. 7 is a plan view of a door, showing the interchangeable panels and screens removed and inserted from the top of the door. Fig. 8 is a vertical section on the line  $w w$  of Fig. 7. Fig. 9 is a plan view of the front section of the center or lock rail. Fig. 10 is a cross-section of the same. Fig. 11 shows the screen for a single opening made in cross-section.

Like letters of reference refer to corresponding parts in each figure of the drawings.

A represents the door-frame, consisting of the hanging stile B and lock-stile C, with the

upper rail, D, the lower rail, F, and the intermediate or lock rail, E, constituting a rectangular or four-sided frame, all the pieces of which are grooved at  $a$  on their inner edges for the reception of panels and screens and fitted together in the usual manner.

The upper and lower rails, D F, are each divided in thickness into two sections. The rear sections,  $d$  and  $f$ , comprising a little more than one-third of the thickness of the rails, are rigidly secured to the stiles by being mortised or dovetailed therein and glued, or fastened in any other desirable way, so that their rear faces shall be flush with the rear face of the stiles B C, while their front surface is on a line with the rear edge of the groove  $a$ , thus providing a rigid door-frame permanently secured together on each of its four sides. The front sections, I, are the same for both the top and bottom rails, D F, of the door, and comprise the remaining thickness of these rails, and are of the same width as the rear sections,  $d$  and  $f$ , and are formed with a tongue,  $i$ , at each end to fit the grooves or cuts  $a$  in the frame, the rear side of which comes flush with the rear side of the groove.

Below the line of the tongue  $i$  of the sections I there is left a notch,  $i'$ , which, with the front side of the rear section,  $d$ , forms the groove or cut for the panel or screen when the front sections are inserted in the door-frame.

The panels G of the door are preferably made double or secured to one piece with the muntin  $g$ , though the piece may be divided so as to form a panel on two separate pieces for each opening.

The screens H are formed of wire-cloth or cords, or it may be of gauze or perforated sheet metal secured to a frame,  $h$ , of a size adapted to fit within the panel-opening of the door.

When it is desired to convert the air-tight door containing panels into one through which the air can freely circulate, the door is opened and removed from its hinges, and the pins or bolts are taken out, and the front sections, I, of the rails are readily removed, when the panels G can be withdrawn and the screens H inserted and the sections replaced and secured.

In this construction of my door it is necessary to remove the door from its hinges in ex-



changing the lower panel or screen, as the upper panels are more frequently required to be exchanged for the screen than the lower ones, to get greater ventilation or to close the draft. It is not likely it would be necessary to exchange the lower panels more than once or twice in a season, thereby causing but little labor in removing the door from its hinges. I can, however, construct my door, as shown in Fig. 7, so that exchange of both upper and lower panels and screens may be made, if preferred, from the top of the door, by using the same means in part as heretofore described for removing the upper screens or panels. In this construction the middle or lock rail, E, is divided into a front and back section, the same as the upper rail, D, and the lower rail, F, is formed in one piece. The back section, *e*, of the lock-rail is secured in the stiles B C the same as the sections *d* and *f*, before described. The front section, J, of the rail E is formed in the same way as the sections I, with the single exception that there are notches *k*, both above and below the line of the tongue K, which together with the rear section, *e*, form grooves for the seat of the upper and lower screen or panel.

In removing the panels and inserting the screens the section I is taken out, when the upper panel is removed through the top of the door, after which the section J is raised in the grooves, followed by the lower panel, both of which are taken out at the top, and the screens are inserted by reversing this operation.

Where the ceiling of the room is comparatively low, the panel and screen may be made in two or more cross-sections, as shown in Fig.

11, fitting closely upon each other, to enable them to be removed through the top of the door without coming in contact with the ceiling.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. A door-frame having grooves and being divided on one or more of its sides into front and back sections, one of the sections being removable for the withdrawal and insertion of panels and screens, and having tongues to fit the grooves in the frame, as set forth.

2. A panel door-frame having grooves and being divided on one of its sides into front and back sections, one section being rigidly secured in the frame between the face of the frame and grooves, and the other section being removable for the withdrawal and insertion of panels and screens, and having a tongue at each end to fit the grooves, and being constructed to come flush with the other face of the frame, as set forth.

3. A door-frame having grooves, with its upper and middle rails divided into front and back sections, the back sections being rigidly secured in the frame outside the grooves, and the front sections having tongues at their ends, with notches on their sides, and being removable for the withdrawal and insertion of panels and screens from the upper side of the frame, as set forth.

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

HARVEY H. GREENMAN.

Witnesses:

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