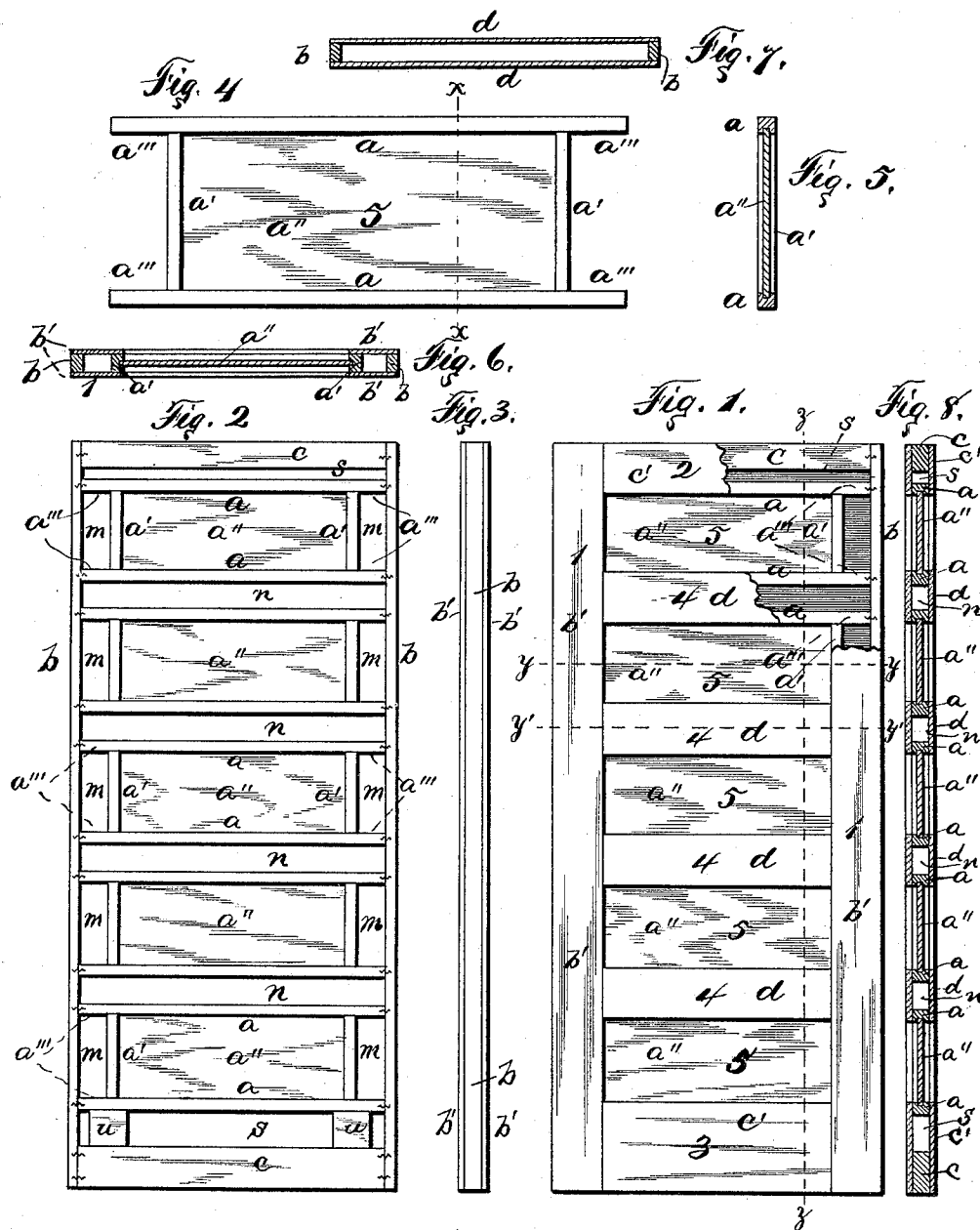


(No Model.)

S. V. MERRIMAN.
DOOR.

No. 460,323.

Patented Sept. 29, 1891.



Witnesses
E. V. Mack,
H. A. Carhart.

Seymour V. Merriman Inventor

By his Attorney
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UNITED STATES PATENT OFFICE.

SEYMOUR V. MERRIMAN, OF SYRACUSE, NEW YORK.

DOOR.

SPECIFICATION forming part of Letters Patent No. 460,323, dated September 29, 1891.

Application filed October 20, 1890. Serial No. 368,650. (No model.)

To all whom it may concern:

Be it known that I, SEYMOUR V. MERRIMAN, of Syracuse, in the county of Onondaga, in the State of New York, have invented new and useful Improvements in Doors, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

My invention relates to improvements in doors and sashes, as well as also furniture and panel-work generally, and has for its object the production of a door which is economical in manufacture by reduction of the quantity of lumber, which will not be liable to shrink, cannot warp out of shape, and will be lighter to lift and handle and easier to hang; and to this end my invention consists in making the stiles and cross-rails hollow, creating air-chambers therein, and in the several other novel features of construction, hereinafter described, and specifically set forth in the claims annexed. It is constructed as follows, reference being had to the accompanying drawings, in which—

Figure 1 is a front elevation of a panel-door, with part of the outer faces of the rail and stile covers being broken away. Fig. 2 is a plan view of a panel-door, with all of the stile and rail covers removed. Fig. 3 is a plan of the edge of the door. Fig. 4 is a plan view of a panel-frame detached and on a larger scale than in Figs. 1 and 2. Fig. 5 is a transverse section thereof on line X X. Fig. 6 is a transverse section on line Y Y in Fig. 1. Fig. 7 is a like section on line Y' Y' in Fig. 1. Fig. 8 is a longitudinal section on line Z Z in Fig. 1.

The door shown consists of stiles 1, top rail 2, bottom rail 3, intermediate rails 4, and panels 5. The panels consist of a frame composed of side bars *a* and end bars *a'*, secured together and all grooved in their inner edge to receive the edges of the panel-piece *a''*, the ends *a'''* of the side bars projecting beyond the end bars, substantially as shown. The stiles are composed of an outer edge strip *b*, the ends *a'''* of the panel-frames, and the end bars *a'* of said frames, and the stile-covers *b'*, consisting of strips of wood of the desired width and thickness. The top and bottom

rails 2 and 3 are composed of the outer edge strip *c* and an adjoining bar *a* of the adjacent panel-frame and its projecting ends and the rail-covers *c'*. The intermediate rails 4 are composed of the bars *a* of the panel-frames and the covers *d*. The projecting ends of the panel-frames constitute skeleton tenons fitting between the cover-strips and create in the stiles air-chambers *m*. The panel-frames are so arranged as to create between their side bars and their ends in the intermediate panels the air-chambers *n*, and the air-chambers *s* are in like manner created in the top and bottom rails. The cover-strips applied to the skeleton stiles and rails so created by the panel-frame bars themselves and in conjunction with the edge strips in the stiles and in the top and bottom rails inclose the air-chambers, and also cover the front and rear faces of said strips and panel-frames. These several component parts are secured together securely by any desired means, and are preferably squeezed together by pressure applied to the front and back of the door.

On account of the greater width of the bottom rail stiffening-blocks *u* are interposed between the bottom edge strip and the side bar of the adjacent panel-frame, though the same result can be attained by making that side bar wider.

It will be seen that I use the minimum amount of lumber; that I make the door of light weight, so that it is easier to handle and there is less weight upon the hinges; that the air-chambers operate to protect the door from warping and twisting out of shape; that I dispense with all filling in the stiles and rails and can work up my lumber very close. It will also be seen that when I bore through an outer edge strip of a stile the air-chamber at that point constitutes the back of the mortise for a lock, so that I can put on a mortise-lock very easily and quickly, saving boring and chiseling out of the back part of the mortise.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. A door comprising stiles and top and bottom rails and panel-frames provided with skeleton tenons entering the stiles.

2. A door-panel comprising side and end rails grooved to receive the panel-piece and having end tenons of skeleton construction.

5 3. The combination, with the edge strips of a door and the covering-strips of the stiles and rails, of panel-frames detached from each other and having skeleton tenons entering the stiles.

In witness whereof I have hereunto set my hand this 17th day of October, 1890.

SEYMOUR V. MERRIMAN.

In presence of—

H. P. DENISON,
C. W. SMITH.