

(No Model.)

E. A. HILL.
DOOR.

No. 552,578.

Patented Jan. 7, 1896.

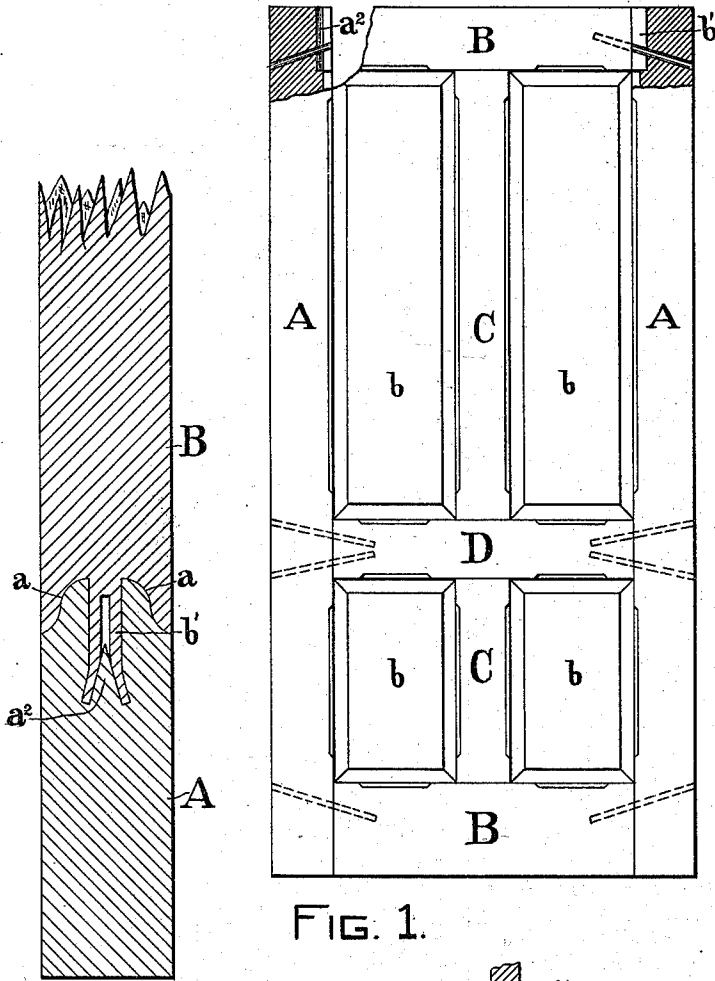


FIG. 1.

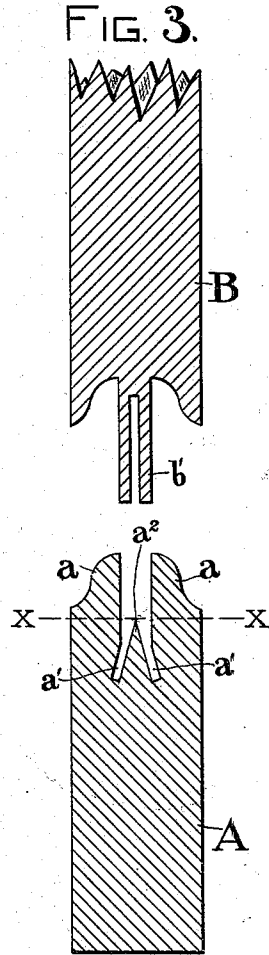


FIG. 4.

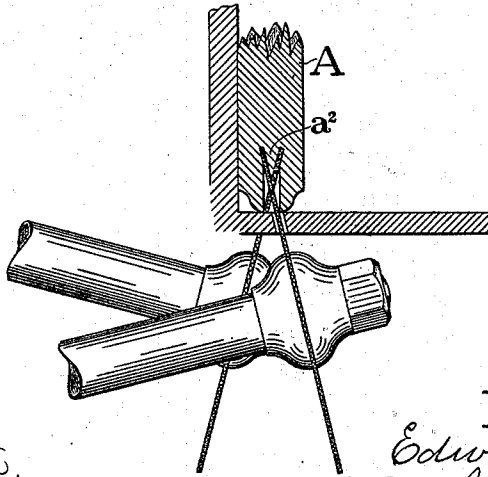


FIG. 5.

WITNESSES.
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EDWIN A. HILL, OF JACKSON, MISSISSIPPI.

DOOR.

SPECIFICATION forming part of Letters Patent No. 552,578, dated January 7, 1896.

Application filed April 17, 1895. Serial No. 546,030. (No model.)

To all whom it may concern:

Be it known that I, EDWIN A. HILL, a citizen of the United States, and a resident of Jackson, in the county of Hinds and State of Mississippi, have invented certain new and useful Improvements in Doors, of which the following is a specification.

The object of my invention is to make a strong durable door at a great saving in cost of labor and material. This object I attain by the means illustrated in the accompanying drawings, hereinafter described in connection therewith, and particularly pointed out in the annexed claims.

Referring to the drawings, in which like parts are indicated by similar reference-letters wherever they occur throughout the various views, Figure 1 is a face elevation of my improved door, the upper end of the stile on the right-hand side being broken away in front of the tenon, and upon the opposite side the upper end of the stile and cross-rail is broken away to expose the grooves which receive the locking devices. Fig. 2 is a transverse section taken through the stile and rail, upon a greatly-enlarged scale, showing the joint when formed. Fig. 3 is a view of the rail, and Fig. 4 a view of the stile, prepared to be framed together. Fig. 5 is a transverse section through the table and back guide of the ordinary woodworking-machine, with a portion of the mandrels and saws in position which form the grooves for spreading the separated tenons apart.

The stiles A are grooved their full length to a depth to receive the panels *b*, the depth of the groove being indicated by dotted line *x x*, Fig. 4, and the edge moldings *a*, formed at the same operation, after which the stiles are passed over the table of a wood-molding machine or sticker having saws arranged at an angle to each other, as seen in Fig. 5, forming the diverging grooves *a'*, leaving the central wedge *a''*. The rails B, muntins C, and mullions D have their edges similarly formed. The tenons *b'* of the rails and mullions are slotted simultaneously by a saw in advance of the coping-bit. After the parts are so formed, and the panels formed in the usual manner, the door is framed together, and

while held in the framing-clamps dowel-holes are bored and dowels inserted through the side stiles and into the cross-rails and mullions D, which completes the door. The dowels are at an angle, the ones at the top of the door inclining from the edge upward, and the others in the opposite direction, thus forming a lock, which is an additional security in holding the frame together.

It will be seen that by my method of forming doors all mortising is avoided and, of course, the necessary time saved in laying off the mortise, as it is only necessary that the cross-rails and mullions be of a uniform length between the tenons for doors of any given width. There is a saving in the material, also, as the tenons do not need to extend through stiles, as in the well-known form of framing doors together. By placing the dowels at an angle to the stile, the door is made stronger, but a good door would be made with my separated tenon and wedge to force their ends in the diverging slots with dowels placed at a right angle to the stiles, or even omitted entirely, and the dowels placed at an angle, as shown, would form a good strong door even without the slotted tenon and diverging slots in the stiles.

What I claim as new is—

1. The hereinbefore described door, having its stiles grooved to receive the panels, and diverging grooves extending outward from the base of the panel groove, forming a central wedge, and the cross rails having slotted tenons to enter the grooved edge of the stiles, substantially as shown and described.

2. A door, having its upright stiles grooved on their inner edges, the grooves diverging outwardly at the bottom forming an integral central wedge within the groove, the cross rails having their tenons slotted to enter the grooves, and spread apart upon each side of the central wedge, and dowel pins passed through the stiles and into the cross rails at an angle to the edges of the side rails, substantially as and for the purpose set forth.

E. A. HILL.

Witnesses:

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