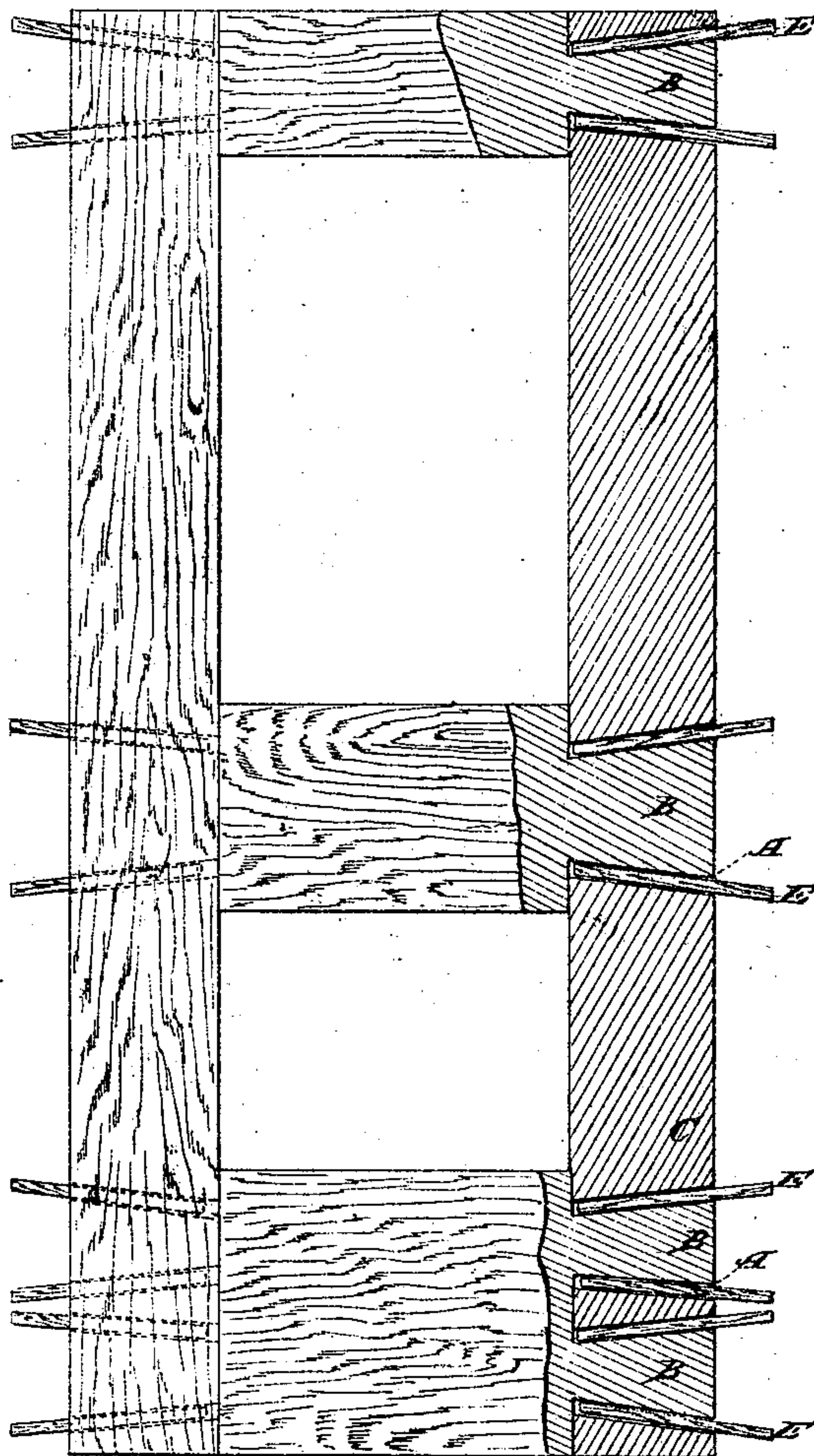


W.C. James. Doors.

117080

PATENTED JUL 18 1871



Witnesses:

P. C. Dietrich.
L. S. Moore

Inventor:

W. C. James

PER

Munn & Co.

Attorneys.

UNITED STATES PATENT OFFICE.

WILLARD C. JAMES, OF FISHERSVILLE, NEW HAMPSHIRE.

IMPROVEMENT IN CONSTRUCTION OF DOORS.

Specification forming part of Letters Patent No. 117,080, dated July 18, 1871.

To all whom it may concern:

Be it known, that I, WILLARD C. JAMES, of Fishersville, in the county of Merrimack and State of New Hampshire, have invented a new and useful Improvement in Doors; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing, forming part of this specification.

My invention relates to a new way of producing a tight joint between the stiles and connecting cross-pieces of doors. My principle of construction or new way of accomplishing this desirable result consists in mortising the stiles with the apertures thereof inclined and increasing outwardly; in constructing the tenons of the cross-pieces of corresponding form, but to fit loosely; and in tightening up by parallel keys inserted and driven up between them so as to fill the intervening space with the densified strips.

In the common and long-known method of having the small end of the tenon and mortise on the outside, and then inserting a wedge from the outside, two wedges were thus placed reversely of each other and the lateral contraction of the cross-pieces simply pulled one over the other in the direction of the downward incline of both.

By my method the lateral contraction of the cross-bars causes an immediate antagonism between the inclines which firmly resists and prevents any withdrawal.

The drawing represents a door-frame, partly in elevation and partly in vertical section, made according to my improvements.

I propose to make the dovetailed mortises A and the tenons B with the widest parts at the outer edges of the stiles C, and to drive the strong parallel keys E in the spaces between the edges of the tenons and the walls of the mortises, which spaces result from the necessity of inserting the widest parts of the tenons through the narrowest parts of the mortises. By this arrangement much more oblique joints between the tenons and ends of the mortises are obtained than can be had by the ordinary process of splitting the tenons and wedging them out by tapered wedges, which are constantly being forced outward by the action of the timber in expanding and contracting, which soon loosens the tenons, and they draw, and the door-frame sags. These keys being parallel will not draw, and the tenons cannot, and if they could they would become tighter. The improvement is also applicable to other frames.

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

The stiles C having their mortises enlarged outwardly, the tenons B correspondingly constructed, and the parallel plates E inserted between them, all combined and applied as and for the purpose specified.

Witnesses: WILLARD C. JAMES.

JOHN A. HOLMES,
CHAS. A. FITCH.