B. C. ROCKWELL.

MORTISE AND TENON JOINT.

APPLICATION FILED JUNE 8, 1916.

1,263,116. Patented Apr. 16, 1918.

Fig. 1.

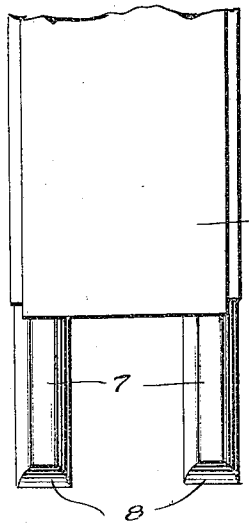


Fig. 4.

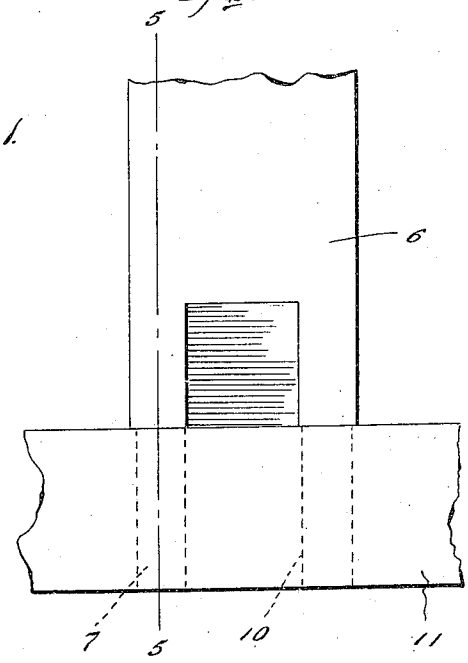


Fig. 3.

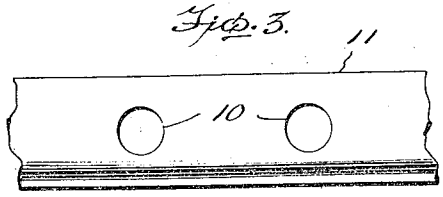


Fig. 5.

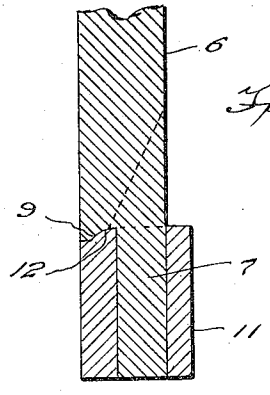
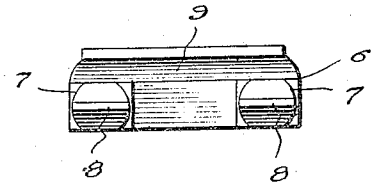


Fig. 2.



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MORTISE-AND-TENON JOINT.

1,263,116. Specification of Letters Patent. Patented Apr. 16, 1918.

Application filed June 8, 1916. Serial No. 102,425.

To all whom it may concern:

Be it known that I, BYRD C. ROCKWELL, a citizen of the United States, residing at Camden, in the county of Ouachita and State of Arkansas, have invented certain new and useful Improvements in Mortise-and-Tenon Joints, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to improvements in mortise and tenon joints, one object of the invention being the provision of a joint in which the dowel members are integral and in which the grain of the wood is longitudinal thereof, such dowel pins or members being preferably oval in cross section and adapted to be driven in circular bores which are transversely of the stock and of such a size that the squeeze or compression will not cause splitting strains but will be longitudinally of the bored stock, or, in other words, will be seated against the walls of the bore that offer the greatest resistance.

A further object of this invention is the provision of a joint of this character in which the cost of producing the dowel and the dowel receiving bore is greatly lessened in that the same may be formed by the usual bit or auger instead of the usual form of hollow chisel and bit.

A still further object of this invention is the provision of a mortise and tenon joint which will hold together without the use of glue or other adhesives, but which may employ glue or other adhesives if desired.

In the accompanying drawings:—

Figure 1 is a plan view of the rail stock provided with the dowel pins.

Fig. 2 is an end view thereof.

Fig. 3 is an end view of the stile member taken from the inner face thereof.

Fig. 4 is a plan view of the stile and rail stock assembled.

Fig. 5 is a cross section taken on line 5—5 of Fig. 4.

Referring to the drawings, the numeral 6 designates the rail stock which is provided at its end with the two integral dowel pins 7, each one of which is oval in cross section and relished or machined upon the extreme ends thereof as at 8, the rail stock in this instance being further provided with the cross groove 9 so that when the dowel pins 7 are inserted and pressed home in the transversely formed round or circular bores 10 of the stile member 11, the rounded edge 12 will be received in the groove 9, as clearly illustrated in Fig. 5.

The dowel pins 7 are each provided with oppositely disposed flat longitudinal sides which are substantially parallel with the wider faces of the rail stock, while the remaining sides are rounded to produce an irregularly shaped oval.

These dowel pins 7 are formed with the grain of the rail stock and are so constructed as to secure end squeeze or compression as is desired in the square dowels now used to obtain the same result, but which require the employment in forming the mortises of a hollow chisel for the bit revolving therewithin.

In the present instance, the mortise bores 10 are formed transversely of the grain of the stile member with the ordinary bit or auger, and the diameter thereof is substantially the size of the narrowest cross section of the pin 7, so that the pins are permitted to be compressed in the round bores and be retained therein without the use of glue or other adhesives.

In forming the pins 7, the lower face of the railstock 6 constitutes the lower flat faces of such pins, while the upper flat faces thereof are formed simultaneously with the formation of the groove 9. It will also be noted that the pins 7 are adjacent the edges of the railstock 6 so that the rounding thereof is readily performed simultaneously. It is therefore only necessary to remove surplus material between the pins 7 by a cutting instrument producing two substantially square pins whose opposite faces, as shown in Fig. 2, are then rounded and the extreme ends relished or machined to point the same.

Thus, this form of mortise and tenon joint is exceedingly cheap to manufacture, due to the facts that the dowel pins are readily constructed with the usual tools, while the bores for receiving the same are formed with the usual bit or auger.

What I claim as new is:—

1. A mortise and tenon joint, including a railstock and a stile member, said stile member being provided with a cylindrical bore transversely of the grain thereof, an integral dowel pin formed upon the end of the railstock with the grain thereof longitudinally of the pin, said dowel pin being provided with two oppositely disposed relatively flat sides, the width of which at this part is substantially the diameter of the bore,

whereby the pin when driven in the bore will produce a compressive action longitudinally of the stile member without causing splitting strains therein.

2. A mortise and tenon joint, including a rail stock and a stile member, said stile member being provided with two cylindrical bores transversely of the grain thereof, two integral dowel pins formed upon one end of the rail stock with the grain thereof longitudinally of the pins, one face of each of the pins being the flat face of the stile member, while the opposite faces are each flattened and terminate at a point within and parallel to the outer face of the stile member, the width of each pin from one flat face to the other being substantially the diameter of the cylindrical bores and providing four rounded corners, whereby when the pins are driven in the bores, there is a compressive action longitudinally of the stile member without any tendency to produce splitting strains.

3. A mortise and tenon joint, including a rail stock and a stile member, said stile member being provided with two cylindrical bores transversely of the grain thereof, two integral dowel pins formed upon one end of the rail stock with the grain thereof longitudinally of the pins, one face of each of the pins being the flat face of the stile member, while the opposite faces are each flattened and terminate at a point within and parallel to the outer face of the stile member, the width of each pin from one flat face to the other being substantially the diameter of the cylindrical bores and providing four rounded corners, each of said pins being relished upon their terminals to produce a point, the sides of which lead from the flat faces of the pin, whereby when the pins are driven in the bores, there is a compressive action longitudinally of the stile member without any tendency to produce splitting strains.

In testimony whereof I affix my signature.

BYRD C. ROCKWELL.

Witnesses:

F. A. EDWARDS,

JACK GIFFORD.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."