J. ALTA.

DOVETAIL MORTISE AND TENON.

APPLICATION FILED SEPT. 20, 1912.

1,093,023. Patented Apr. 14, 1914.

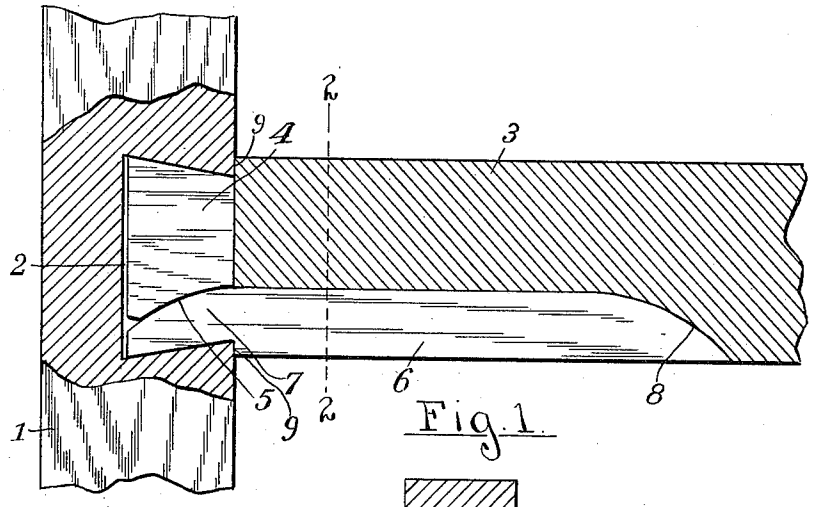


Fig. 1.

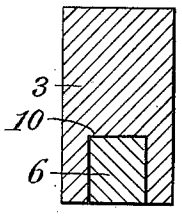


Fig. 2.

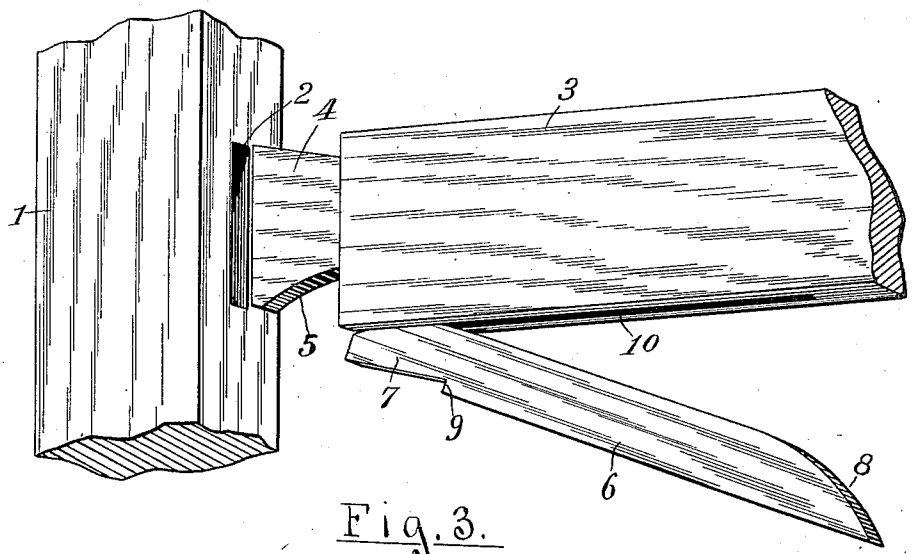


Fig. 3.

Inventor

John Alta

Witnesses

Ray W. Longfield

Harold O. Vanderwaas

By Luther V. Moulton

Attorney

COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JOHN ALTA, OF GRAND RAPIDS, MICHIGAN.

DOVETAIL MORTISE AND TENON.

1,093,023. Specification of Letters Patent. Patented Apr. 14, 1914.

Application filed September 20, 1912. Serial No. 721,342.

To all whom it may concern:

Be it known that I, JOHN ALTA, a citizen of the United States of America, residing at Grand Rapids, in the county of Kent and State of Michigan, have invented certain new and useful Improvements in Dovetail Mortises and Tenons; 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.

My invention relates to improvements in mortise and tenon joints and its object is to provide a dove-tail mortise, and a tenon that can be locked within the same and securely held in place therein.

My device consists essentially of a mortise under-cut at each end in dove-tail form and a tenon to fit within the same, a portion of said tenon being detachable and adapted to act as a wedge when inserted in place, and thus fill the mortise and securely hold the tenon within the same, and in various features of construction and arrangement as hereinafter more fully described and particularly pointed out in the claims, reference being had to the accompanying drawings in which:—

Figure 1 is a side elevation of a device embodying my invention with portions broken away to show the construction; Fig. 2 a vertical section of the same on the line 2—2 of Fig. 1; and Fig. 3 a perspective of the same with parts disassembled.

Like numbers refer to like parts in all of the figures.

1 represents a post or other vertical member of any article of wood work such as pieces of furniture, and provided with a mortise 2 therein which is under-cut at the end in dove-tail shape.

3 is a rail or other horizontal member of the structure provided at its end with a tenon to fit within the mortise and having one edge of dove-tail form to accurately fit one end of the mortise. The opposite edge of the tenon is oppositely inclined as at 5, preferably in a curve as formed by a circular cutter, and extending along the under side of the member 3 is a groove, 10 the bottom of which extends from the base of the dove-tail tenon 4 where it has been cut away the other end of this groove opposite the tenon also terminating in a curve, corresponding to the curvature of the cutter which forms the groove. In this groove and adapted to fill the same is inserted a locking member 6 having an end portion 7 adapted to complete the dove-tail tenon and having one edge to fit the inclined end of the dove-tail mortise and the opposite edge rounded or curved to fit against the concave lower edge of the other part of the tenon 4, the edge of the tenon and the adjacent end of the mortise are so inclined as to form a tapering chamber therebetween, and the end 7 of the locking member fits within this chamber and acts as a wedge when inserted therein and thus in connection with the part 4 closely fills the dove-tail mortise and makes a complete dove-tail tenon and when forced into place also fills the groove 10, the curved end thereof engaging the concave end of the groove and securely holding the wedge shaped member in place shoulders 9 are preferably formed at the base of the tenon in the usual manner.

The locking member 6 may be secured in place by glue or any other convenient means. If however the device is used in a knock-down structure, for which it is well adapted, a removable fastening such as a screw may be used to hold the locking member in place, or if such fastening is omitted entirely it is not likely to come loose. The device thus forms a very satisfactory and secure dove-tail mortise and tenon for use either in fixed or knock-down structures.

What I claim is:—

1. A dovetail mortise and tenon, comprising a member having a mortise under-cut or dovetailed at each end, and a tenon having inclined edges to fit within the mortise, said tenon having a removable and tapered portion adapted to be separately inserted in the mortise or removed from the same.

2. A dovetail mortise and tenon, comprising a member having a mortise having under-cut ends, a tenon having a portion adapted to partially fill said mortise and having one edge to fit against one end of the mortise and having an oppositely inclined opposite edge, the other portion of the tenon being detached and forming a locking member to fit between the other end of the mortise and the first named portion and means for inserting and removing said locking member.

3. A dovetail mortise and tenon, comprising a vertical member having a mortise therein under-cut at its respective ends, a

horizontal member having a tenon having a portion fixed thereon adapted to partially fill the mortise fitting the under-cut end of the same at one side and having an oppositely inclined opposite side, and a detached wedge portion to said tenon having one side adapted to fit the opposite under-cut end of the mortise said wedge portion also having an extension within a groove in the horizontal member and adapted to fill the same.

4. A dovetail mortise and tenon, comprising a vertical member having a mortise therein under-cut at its upper and lower ends, a horizontal member having a groove in one side, a horizontal member having a fixed tenon adapted to partially fill the mortise and to fit at one side against the under-cut of the same, and having its opposite side concave and oppositely inclined to its other side, and a removable locking member having a wedge portion convex at one side to fit the concave side of the tenon, and inclined at the opposite side to fit the under-cut end of the mortise, said member also having an extension within the groove to fill the same, said extension having a convex end to fit the concave end of the groove.

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

JOHN ALTA.

Witnesses:
PALMER A. JONES,
LUTHER V. MOULTON.

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