

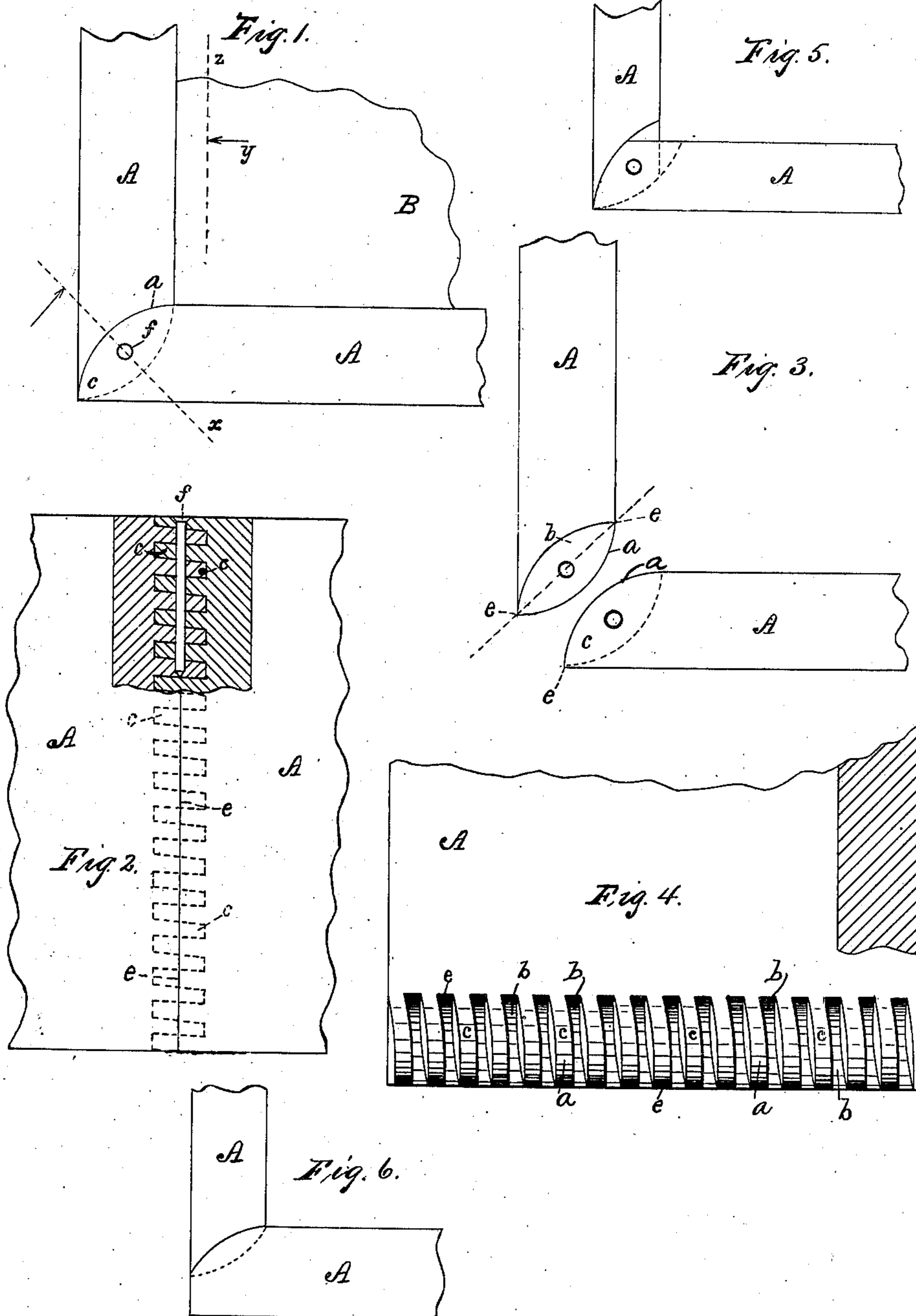
(Model.)

J. B. WEST.

BOX OR DRAWER CORNER.

No. 390,421.

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Attest:
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UNITED STATES PATENT OFFICE.

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BOX AND DRAWER CORNER.

SPECIFICATION forming part of Letters Patent No. 390,421, dated October 2, 1888.

Application filed December 27, 1887. Serial No. 259,064. (Model.)

To all whom it may concern:

Be it known that I, JONATHAN B. WEST, of Rochester, in the county of Monroe and State of New York, have invented a new and useful Improvement in Box and Drawer Corners, which improvement is fully set forth in the following specification and shown in the accompanying drawings.

The object of my invention is to produce a new form of interlocking tongue and groove for a box-corner, the invention being hereinafter fully described, and more particularly pointed out in the claims.

Referring to the drawings, Figure 1 shows a corner of a box formed in accordance with my invention, the observer looking into the box; Fig. 2, an elevation of the corner of the box, viewed from without, the two joined sides being sectioned in part upon the dotted line *x* in Fig. 1. Fig. 3 shows the two sides separated. Fig. 4 is a view of the inner face of one of the sides, seen as indicated by arrow *y* in Fig. 1, a part of the bottom being shown sectioned on the dotted line *z*. Figs. 5 and 6 show modifications.

In forming a box corner having mutually-interlocking tongues and grooves it is desirable, on account of strength, to have the interlocking parts numerous, in order to increase the number of glue-joints, or the number and extent of the surfaces of the two parts forming the corner covered by the glue and in contact. It is also desirable to have the sides of the tongues and grooves inclined instead of being plane surfaces, as when thus formed the joined sides resist separation with greater force when acted upon by stresses exerted outward against their inner faces or from direct pulls upon them. To make these boxes I cut the ends of the boards out of which the boxes are to be formed to a convex form, inclined, as shown, to the surface of the board, after which I pass the ends of the boards successively under a revolving cutter, which forms the grooves.

Referring more particularly to the parts as shown in the drawings, A represents two sides of a wooden box joined to form a corner, and B the bottom board. The ends of the sides are not cut to plane surfaces, as in the miter form of joining the sides, but are each formed convex, as shown at *a*, and afterward formed with a series of grooves, *b*, cut across them, as shown.

These grooves are preferably made narrow and equally spaced, having a tongue, *c*, between each two adjacent grooves about equal in thickness to the width of a groove. The bottom surfaces of the grooves are concaved to a curve similar to the convex curve of the edges *a* of the tongues or the blank ends of the side pieces before the grooves are formed. I give to these tongues and grooves a spiral form, the cutter above referred to being in the form of a spiral, the tongues and grooves being inclined according to the inclination of the spirals of the cutter, and the side faces of each tongue being winding in consequence, instead of plane surfaces. The right-hand face of each tongue, as appearing in Fig. 4, is slightly undercut, having a form in some degree representing a dove-tailed part.

On account of their curved form the tongues and grooves taper each way from the middle to edges or nothing at the lines *e*, so that when two sides are accurately joined neither the tongues nor grooves will appear, excepting as to said lines *e*, which together form, for instance, a corner line, as shown in Fig. 2. The width of the tongues at their middle parts is such that they lap sufficiently upon each other to receive the glue and hold firmly together. The parts are preferably formed so that a plane passing through the points or lines *e e* of a tongue or groove forms an angle of forty-five degrees with each of the inner faces of the two sides joined.

The tongues and grooves of any two sides to be joined are alternated with reference to each other, so that each tongue of one side comes opposite a groove in the other. To add to the strength of a corner, a nail or pin, *f*, may be inserted to pierce the overlapping tongues, as shown.

It is sometimes desirable to form the parts as shown in Fig. 5, in which case the ends of the tongues at the inside of the box terminate abruptly, or by planes which are continuations of the inner surfaces of the two respective sides of the box. These planes are inclined to the axes of the respective tongues and define the inner ends of said tongues. This gives a trowel-shaped bearing between contiguous tongues.

In case one side of the box is thicker than the adjacent sides, as shown in Fig. 6, the thicker side may extend to the amount of the

difference in thickness between it and the thin side beyond the ends of the tongues of the thin side without the box. In this construction, as in the construction shown in Fig. 1, the ends of the tongues do not show either without or within the box.

What I claim as my invention is—

1. A packing-box having the joined ends of its sides formed with inclined interlocking tongues and grooves, the bottoms of the grooves being concaved and the edges of the tongues being convexed, substantially as shown.

2. A box having its sides formed at their ends with inclined tongues and grooves, each tapered or narrowed to a line or edge at its ends, said edges or lines of the tongues and grooves being in a plane forming an angle with the inner faces of the adjacent sides of the box.

3. A box having its corners formed with inclined interlocking tongues and grooves, in combination with fastening-pins passed through the tongues, said tongues and grooves being oval in form, substantially as shown and described.

4. A packing-box having the joined ends of its sides formed with inclined interlocking tongues and grooves, the bottoms of the grooves being concave and the edges of the tongues being convex, the inner ends of said tongues being defined by planes inclined to their axes, substantially as shown and described.

JONATHAN B. WEST.

Witnesses:

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