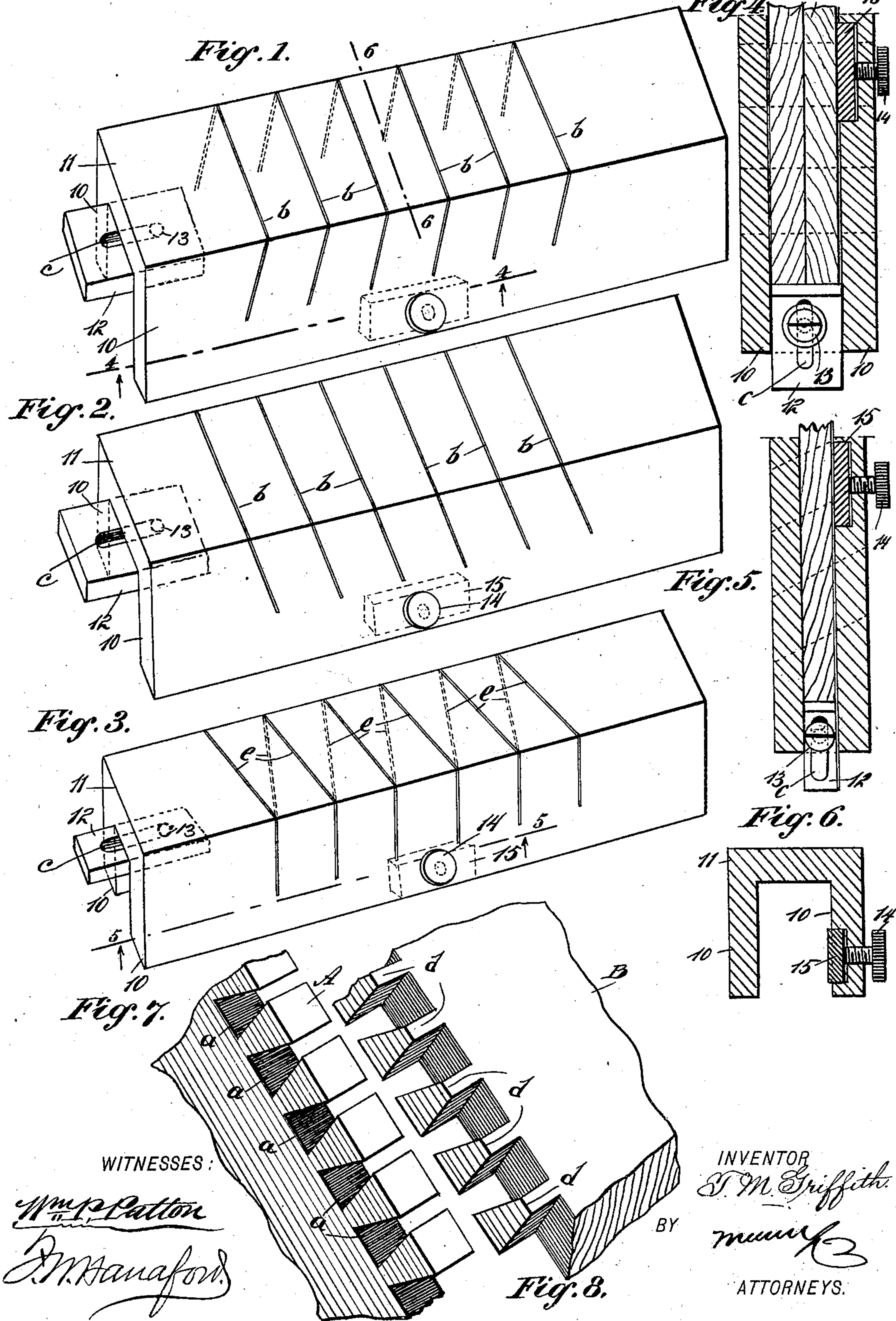


(No Model.)

T. M. GRIFFITH.
MITER BOX.

No. 592,139.

Patented Oct. 19, 1897.



WITNESSES:

Wm. Patton
J. M. Hanaford

INVENTOR
T. M. Griffith
BY *[Signature]*
ATTORNEYS.

UNITED STATES PATENT OFFICE.

THOMAS M. GRIFFITH, OF WEST NEW BRIGHTON, NEW YORK.

MITER-BOX.

SPECIFICATION forming part of Letters Patent No. 592,139, dated October 19, 1897.

Application filed May 12, 1897. Serial No. 636,195. (No model.)

To all whom it may concern:

Be it known that I, THOMAS M. GRIFFITH, of West New Brighton, in the county of Richmond and State of New York, have invented new and useful Improvements in Miter-Boxes, of which the following is a full, clear, and exact description.

This invention relates to miter-boxes provided to guide a saw in cutting kerfs for the formation of dovetail connections between the sides and ends of boxes and other rectangular receptacles formed of wooden boards or other available material.

The object of my invention is to provide simple and inexpensive miter-boxes of novel construction which afford means to accurately guide a saw in the formation of mating tongues and notches in the ends of box stuff, so that dovetail connections of such material may be produced by any one having a fair knowledge of fine woodworking as an art.

The invention consists in the novel construction and combination of parts, as is hereinafter described, and defined in the appended claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a perspective view of one of a pair of boxes provided to afford guides for cutting saw-kerfs in the formation of dovetail notches in the edges of material which is to be joined together by dovetail connections.

Fig. 2 is a perspective view of the miter-box, which is paired with the one shown in Fig. 1 and differs therefrom only in having the guide-kerfs therein sloped in an opposite direction. Fig. 3 is a perspective view of a

miter-box employed in guiding a saw when the tongues are cut on the edge of material of a form to exactly fit in the dovetail notches, the guide-kerfs therein sloped in one direction being represented by full lines and in the opposite direction by dotted lines. Fig. 4 is a

sectional reverse plan view in part of the miter-boxes shown in Figs. 1 and 2 and also of the material clamped therein, the section being indicated by the line 4 4 in Fig. 1. Fig.

5 is a sectional reverse plan view taken substantially on the line 5 5 in Fig. 3. Fig. 6 is a transverse sectional view substantially on the line 6 6 in Fig. 1. Fig. 7 is a fragmentary perspective view of the side wall of a box, hav-

ing dovetail notches in its edge; and Fig. 8 is a fragmentary perspective view of material having dovetail tongues cut to engage the notches in the side wall of the box and secure the two parts together at a right angle.

The two miter-boxes represented in Figs. 1, 2, and 4 each essentially consist of two side pieces 10, suitably spaced apart by the top piece 11, and the sides and top may be integrally formed or be secured together, so as to dispose the sides 10 parallel with each other.

Preferably said miter-boxes have such proportionate width afforded between their sides 10 as will permit the free introduction between them of the two pieces of material A when these are in contact with each other, as is clearly shown in Fig. 4.

The material A may be, for example, the two sides or the two end pieces of a rectangular box or cabinet, which are to have spaced dovetail notches, such as *a* in Fig. 7, cut in corresponding edges of the same.

Inspection of the notches *a* will show that they are each cut square across the stuff A from side to side and widened gradually to their bottoms.

To conveniently produce the notches *a*, two oppositely-inclined saw-kerfs are first cut, these being suitably separated where they begin at the edge of the stuff.

After the initial saw-kerfs are formed, the material between them is removed, and the dovetail notches are completed by leveling the bottoms of said notches, as shown in Fig. 7.

The miter-box shown in Fig. 1 is furnished with guiding-kerfs *b*, which, as shown, are all similarly inclined in parallel planes and evenly spaced apart.

The miter-box represented in Fig. 2 is the duplicate of that shown in Fig. 1, with the exception that the kerfs *b* slope in an opposite direction.

At an appropriate end of the miter-boxes a gage-block 12 is movably secured, as shown in Fig. 4, said block having a longitudinal slot *c* formed in it, through which a set-screw 13 passes into the top portion 11 of the miter-box.

The gage-block 12 for each of the miter-boxes described is provided to regulate the distance from the ends of the material A to the dovetail notch to be formed in said material adjacent to said ends.

To compensate for slightly-different thicknesses of pieces of material A that are to be held in the boxes shown in Figs. 1, 2, and 4, a set-screw 14 is provided, which engages its threaded body with a screw-threaded hole in one side wall 10, and at the inner end contacts with a clamping-plate 15, that is loosely seated in a recess formed for its reception in the side 10, that the set-screw penetrates.

It will be apparent that if two pieces A, which may be the sides or end walls of a rectangular cabinet, and that are to be dovetail-notched along their edges, are first clamped in the box shown in Fig. 1, with their ends abutted against the gage-block 12, a suitable saw (not shown) may be successively worked in the inclined guiding-kerfs *b* of said box, and result in the formation of a series of saw-cuts in the material, of like depth and inclination, said saw-cuts representing the corresponding sides of dovetail notches *a*, that are to be formed in the stuff A.

After the completion of the inclined kerfs for the like sides of the dovetail notches *a*, the box shown in Fig. 2 is to be substituted for the one previously used, and the material is clamped in box No. 2 against the gage-block 12 therein, which has been suitably adjusted to locate the guide-kerfs *b* at a correct distance from the saw-cuts already formed in the material A.

It will be seen that the use of the saw, by running it successively in the guide-kerfs of the miter-box wherein the material is now clamped, will cut the other series of saw-kerfs necessary to provide two oppositely-inclined side walls for each of the dovetail notches that are thus incipiently formed in the edges of the material A. The notches may now be completed by a removal of surplus material left standing between the inclined sides of each notch, as is indicated in Fig. 7.

The top and bottom B of a rectangular structure that is to be dovetailed together must have the dovetail tongues *d* projected from their edges, as shown in Fig. 8, and to give these tongues a correct dovetail formation the guiding-kerfs *e*, formed at spaced intervals in the miter-box shown in Fig. 3, are cut diagonally across the top of said box and are then downwardly extended a suitable depth in each side 10, substantially at right angles with the top 11 of said box.

Two boxes, such as are shown in Figs. 3 and 5, are preferably used in the production of the kerfs *e* for opposite sides of the tongue *d*, which kerfs in each series of the same trend oppositely in the tops of the otherwise similar boxes, as shown in Fig. 3, where the series of diagonal kerfs for the two boxes are represented by full and dotted lines.

The miter-boxes for guiding the saw in the formation of the tongues *d* are shown of a width which will take in but one top or bottom wall B of the cabinet, or other rectangular receptacle that is to be dovetailed to-

gether at the edges, as both top and bottom pieces cannot be cut together.

Each tongue-forming miter-box is provided with a gage-block 12, and also with a set-screw 14, together with a clamping-plate 15, which have already been described with regard to the miter-boxes illustrated in Figs. 1, 2, and 4; and it will be seen that if the gage-blocks 12 are correctly positioned in the ends of the boxes represented in Figs. 3 and 5 the kerfs for the tongues *d* may be cut at exactly-correct points, to adapt said tongues when completed to enter the notches *a*, and at the same time permit the ends of the joined pieces to occupy the same plane and avoid projecting one past the other.

The sets of miter-boxes which have been described may be formed of hard wood or other available material by common wood-working machinery rapidly and perfectly, so that sets of such boxes may be supplied for sale and use at a moderate price.

From the particular style of construction the miter-boxes hereinbefore described greatly simplify the operation of dovetailing corners of drawers or boxes together in a perfect manner, so that amateur mechanics not well skilled in the usual methods of dovetailing material together may by the use of the improved miter-boxes produce remarkably-fine exhibits of high-class cabinet-work.

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

1. A miter-box inverted-U shape in cross-section and provided with guide-kerfs extending through the top and down into the sides of the box, said kerfs being similarly inclined in parallel planes and evenly spaced apart, substantially as described.

2. A miter-box inverted-U shape in cross-section and provided with guide-kerfs extending through the top down into the sides of the box, said kerfs being similarly inclined in parallel planes and evenly spaced apart, and a longitudinally-adjustable gage-block on the under surface of the top at one end thereof, substantially as described.

3. A miter-box, comprising spaced sides, one of which is recessed and a top integral therewith, the top and sides being provided with kerfs extending through the top and down into the sides, said kerfs being similarly inclined in parallel planes and evenly spaced apart, a slotted gage-block on the under surface of the top, at one end thereof, a set-screw passing through the slot of the block into the top, a clamping-plate in the recess of the side, and a set-screw passing through the said side of the box and engaging the clamping-plate, substantially as herein shown and described.

THOMAS M. GRIFFITH.

Witnesses:

WM. P. PATTON,
JNO. M. RITTER.