No. 788,040. PATENTED APR. 25, 1905.

C. V. FRIEND.

ADJUSTABLE BIPLANE MITER BOX.

APPLICATION FILED FEB. 6, 1904.

3 SHEETS—SHEET 1.

Fig. 1.

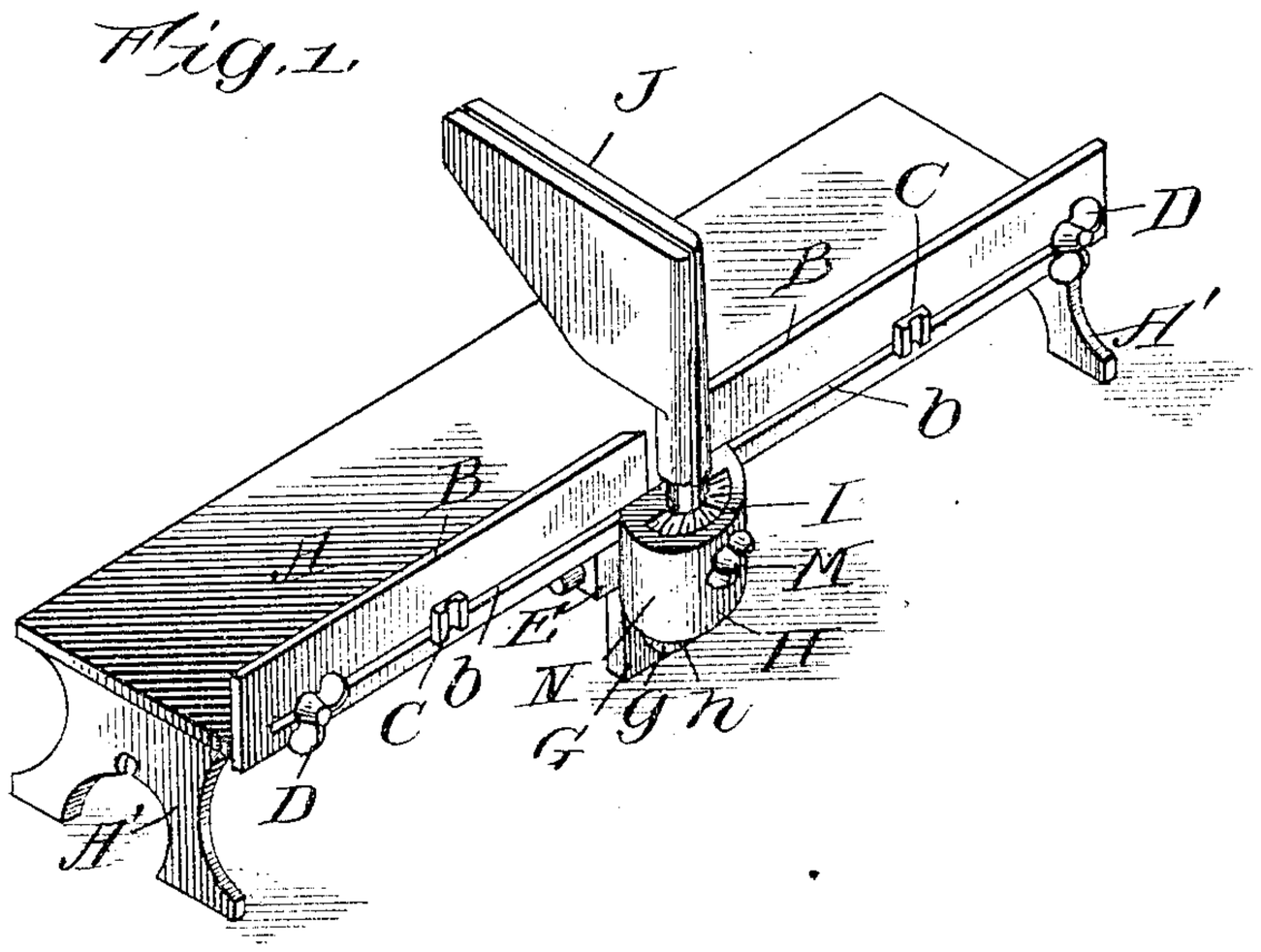
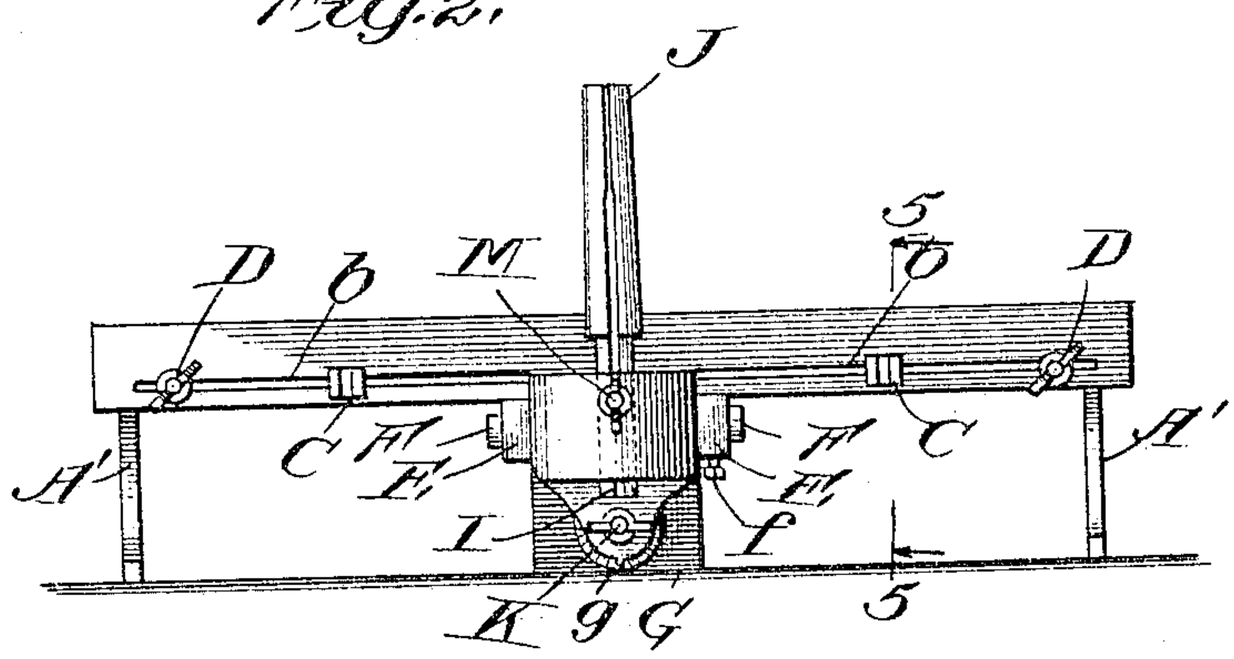


Fig. 2.



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3 SHEETS—SHEET 2.

Fig. 3.

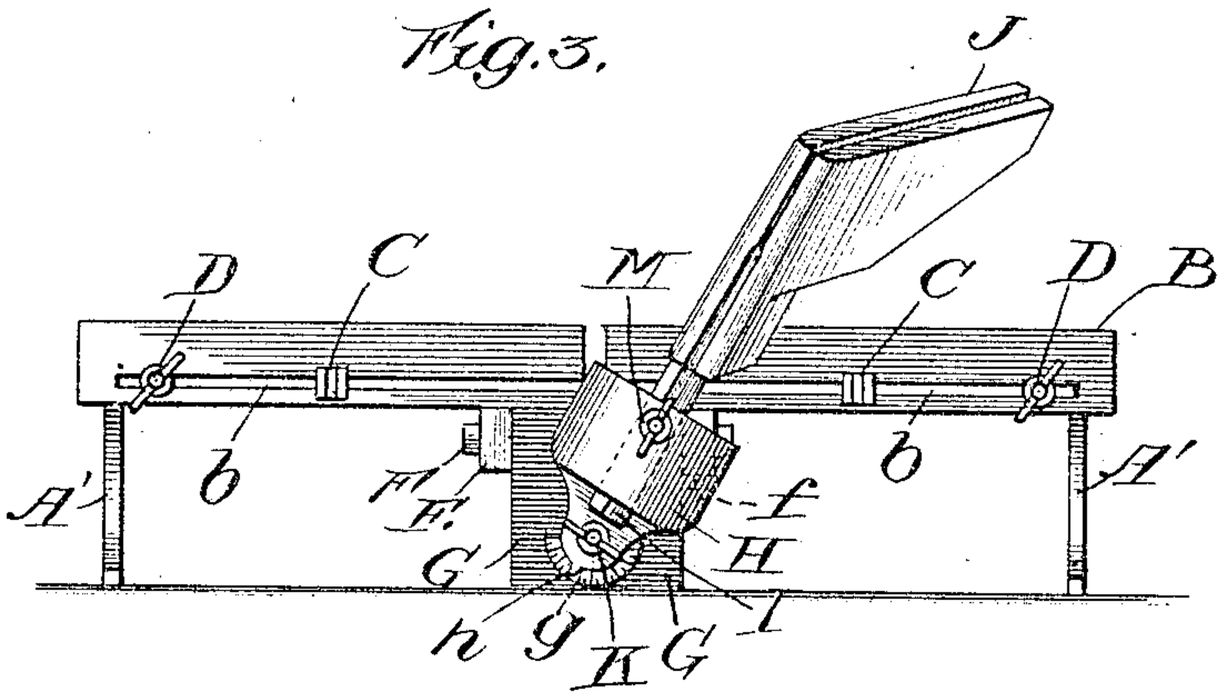


Fig. 4.

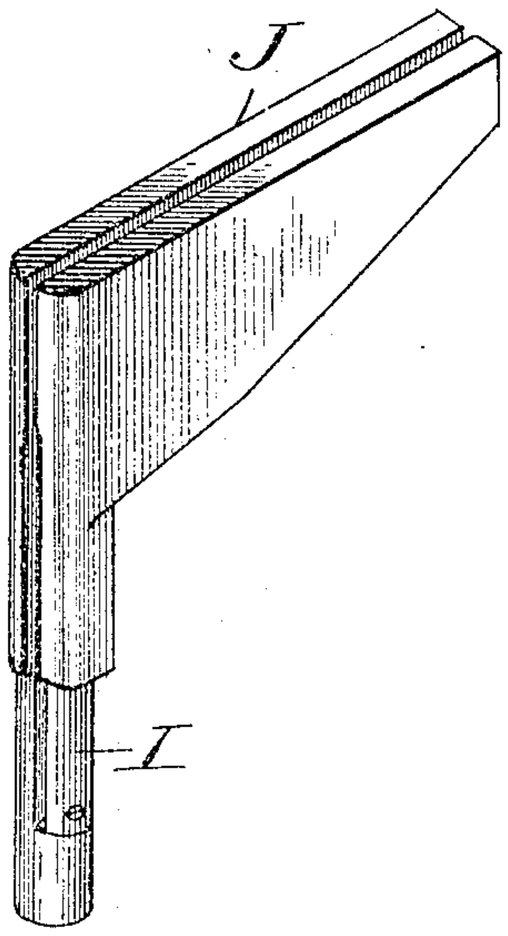
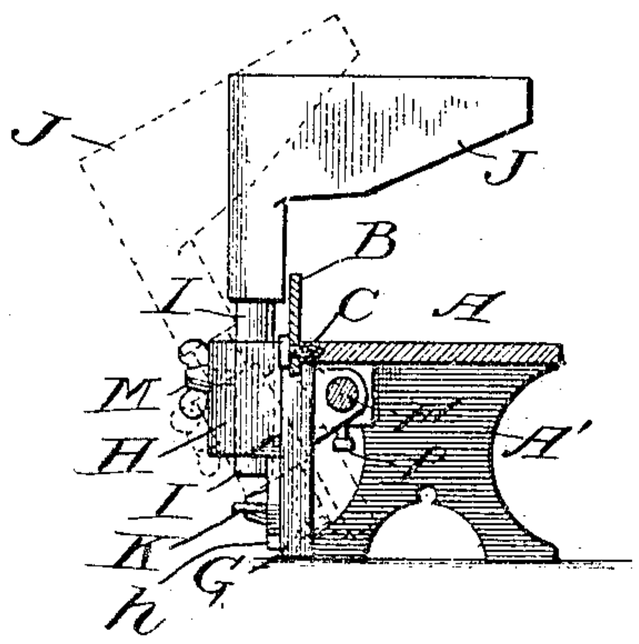


Fig. 5.



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3 SHEETS—SHEET 3.

Fig. 6.

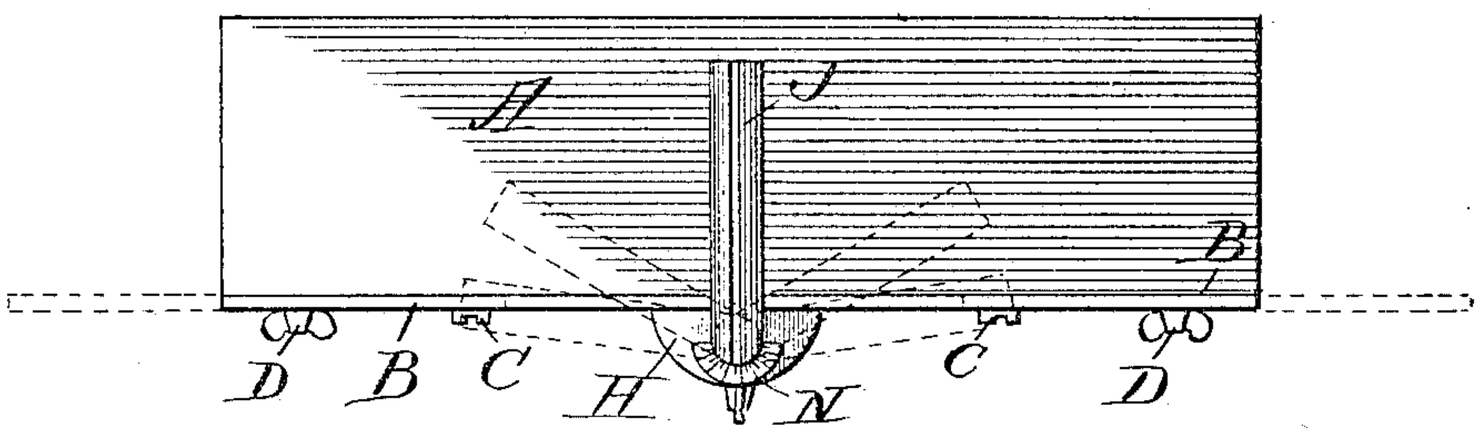


Fig. 7.

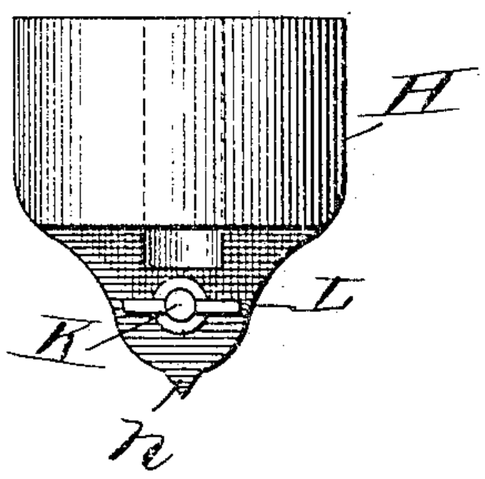
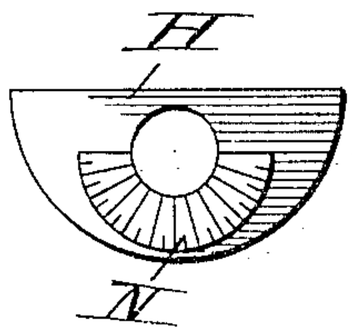


Fig. 8.



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No. 788,040. Patented April 25, 1905.

UNITED STATES PATENT OFFICE.

CALVIN V. FRIEND, OF ALTONA, ILLINOIS, ASSIGNOR OF ONE-HALF TO JOHN M. McKIE, OF ALTONA, ILLINOIS.

ADJUSTABLE BIPLANE MITER-BOX.

SPECIFICATION forming part of Letters Patent No. 788,040, dated April 25, 1905.

Application filed February 6, 1904. Serial No. 192,447.

To all whom it may concern:

Be it known that I, CALVIN V. FRIEND, a citizen of the United States, residing at Altona, in the county of Knox and State of Illinois, have invented certain new and useful Improvements in Adjustable Biplane Miter-Boxes, of which the following is a specification.

The present invention relates to that class of miter-boxes in which the saw-guide is capable of adjustment in two planes, one for producing a miter cut and the other for producing a bevel cut.

The object of the invention, broadly stated, is to provide an improved miter-box of this class.

To this end the invention consists in the features of novelty that are hereinafter described with reference to the accompanying drawings, which are made a part hereof, and in which—

Figure 1 is a perspective view of a miter-box embodying the invention. Fig. 2 is a rear elevation thereof. In Figs. 1 and 2 the saw-guide is shown as occupying a position perpendicular and at right angles to the base or work-table. Fig. 3 is a rear elevation of the improved miter-box with the saw-guide inclined and at an oblique angle to the base or work-table. Fig. 4 is a perspective view of the saw-guide. Fig. 5 is a vertical transverse section on the line 5 5, Fig. 2. Fig. 6 is a plan view. Figs. 7 and 8 are respectively a rear elevation and a plan view of the block or socket by which the saw-guide is carried.

A represents the horizontal base or work-table, which is supported at its ends by suitable legs A'.

B is the back of the "box." It is preferably formed in two parts, which are adjustable endwise relatively to each other, so that they may be placed in the positions shown in Fig. 1 or in the positions indicated by dotted lines in Fig. 6 or in any intermediate positions. Each part is provided with a longitudinal slot *b*, through which pass the stems of screws C, said screws being tapped into the rear edge of the table. It is the intention that these screws shall be set up tight enough to prevent any lateral movement of the sections of the back, while at the same time they will permit endwise movement. In addition to the screws C thumb-screws or screws carrying thumb-nuts D pass through the slots of the back sections and into the rear edge of the table. These thumb-screws are for the purpose of clamping the back sections and holding them to their adjustment. At the same time they coöperate with the screws C in confining the back sections to a strictly rectilinear movement.

At equal distances upon opposite sides of the transverse center of the table lugs E are secured to its under side. These lugs are perforated for the passage of a pivot F, to which a leg or support G is secured, so that it may be placed in the position shown by full lines or swung to a position beneath and in contact with the under side of the table or placed in any desired intermediate position, such as indicated by dotted lines in Fig. 5, and there secured by a screw *f*, which passes through a threaded opening in one of the lugs and engages the pivot. This leg or support has the double function of supporting the table at the point where it is subjected to the greatest strain and of providing a support for a block H, which has a socket for receiving the stem I of the slotted saw-guide J. The block H is secured to the leg or support G by means of a threaded pin or pivot K and a thumb-nut L, mounted thereon so that the block may be moved in the vertical plane about the said pin, and thereby bring the saw-guide to any desired angular position with relation to the top of the table. When brought to the desired position, it may be there held by tightening the thumb-nut, and its angle with relation thereto will be shown by a pointer *h*, arranged to sweep a protractor *g*, carried by the leg or support G. It is this adjustment of the saw-guide that causes the bevel cut. When thus adjusted, it is necessary to separate the inner ends of the back sections, as shown in Fig. 3.

The stem I of the saw-guide is adjustable about its axis in the socket in the block H and may be moved to the extreme positions indicated by dotted lines in Fig. 6 or to any intermediate position. When adjusted to the

desired position, it may be there held by a set-screw M. It is this adjustment of the saw-guide that produces the miter cut. The angle of the saw with relation to the back of the box is indicated on a protractor N on the top of the block, the saw in this case serving as a pointer.

When not in use, the saw-guide may be removed and the leg or support G folded under the table, so that none of the parts will project beyond the back of the box.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a device of the class described, the combination with a work-supporting table having back and suitable supporting-legs, of an intermediate support arranged at the back of the table and secured thereto pivotally so as to be movable in a vertical plane perpendicular to the table whereby it may be folded under the table, a saw-guide, and means whereby said saw-guide is adjustably secured to said support, substantially as described.

2. In a device of the class described, the combination with a table having a back, of a support arranged at the back of the table, means pivotally supporting said support whereby it may move in a vertical plane perpendicular to the table, a block pivotally connected to said support, the pivotal axis of said block being perpendicular to the pivotal axis of the support and a saw-guide carried by said block, substantially as described.

3. In a device of the class described, the combination with a table having a back, of a support located at the back of the table, means pivotally connecting said support to the table, the pivotal axis being parallel with the table, a block, means pivotally connecting said block to said support, the pivotal axis of the block being perpendicular to the pivotal axis of the support, a saw-guide mounted upon said block, the pivotal axis of the saw-guide being perpendicular to the pivotal axis of the block, and means for holding the several parts to their adjustment, substantially as described.

4. In a device of the class described, the combination with a table, of a support located at one side of the table, a block, means pivotally connecting said block to said support with its pivotal axis horizontal and transverse to the table, a protractor for showing the inclination of said block, said block having a vertical socket which is perpendicular to its pivotal axis, a saw-guide having a stem occupying said socket, and a protractor on the block in operative relation to the saw-guide, substantially as described.

5. In a device of the class described, the combination with the table and supporting-legs, of an intermediate support, means pivotally connecting it to the table, at the rear side thereof, means carried by said support for carrying the saw-guide, a saw-guide and means for removably attaching it to said carrying means, substantially as described.

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