

No. 778,178.

PATENTED DEC. 20, 1904.

H. S. DOTTS.  
HAND MITER AND SAW GUIDE.

APPLICATION FILED MAY 4, 1904.

NO MODEL.

Fig. 1.

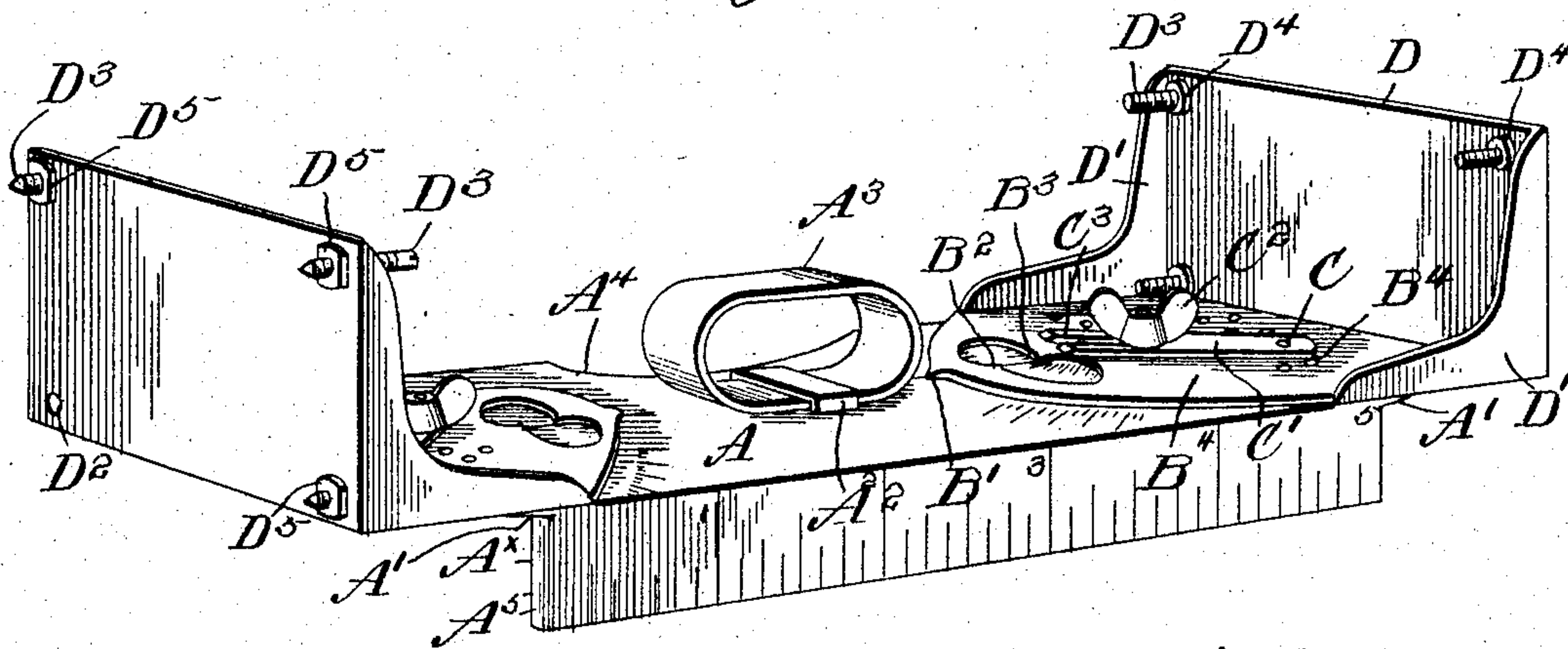


Fig. 2.

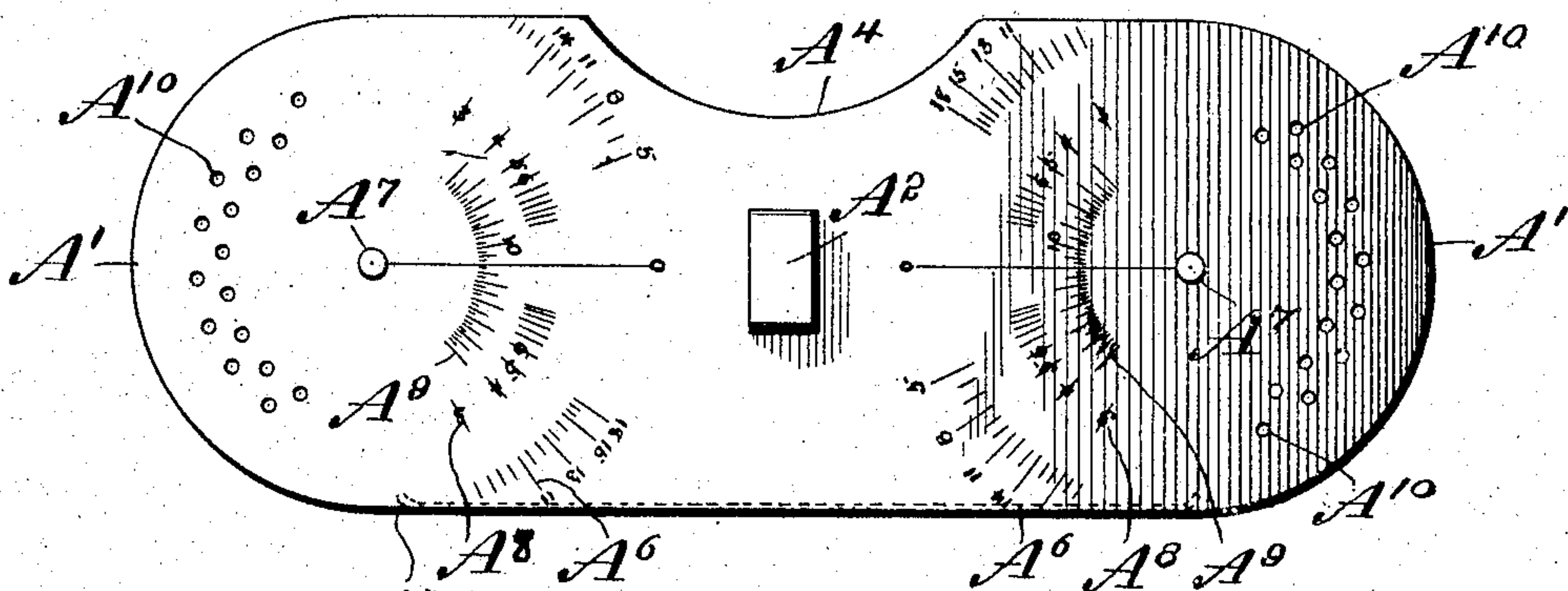
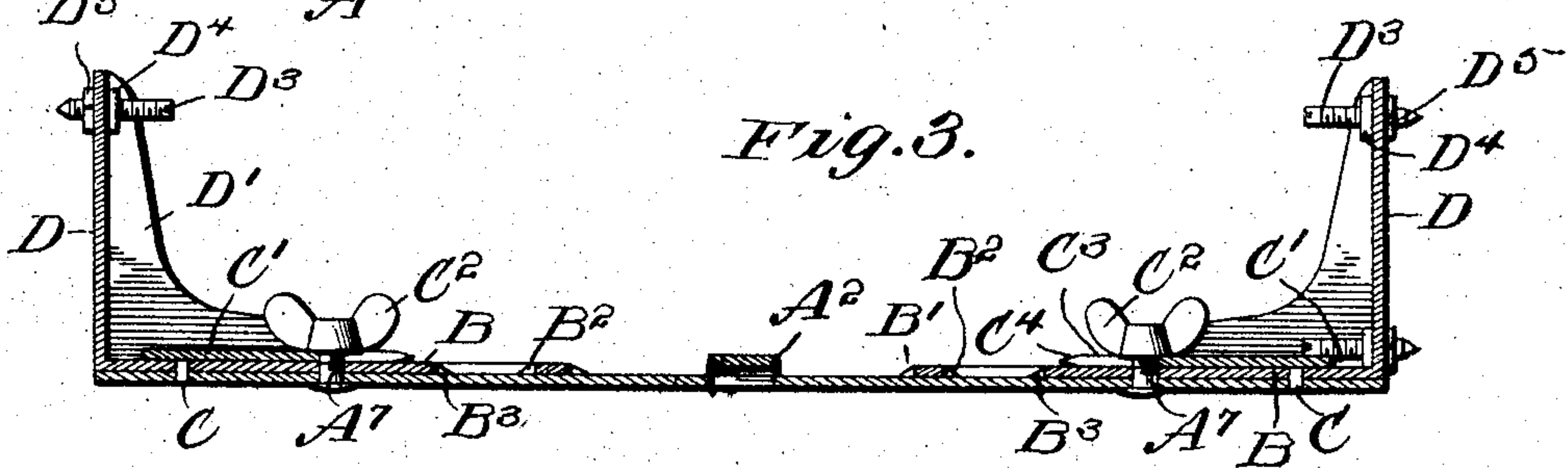


Fig. 3.

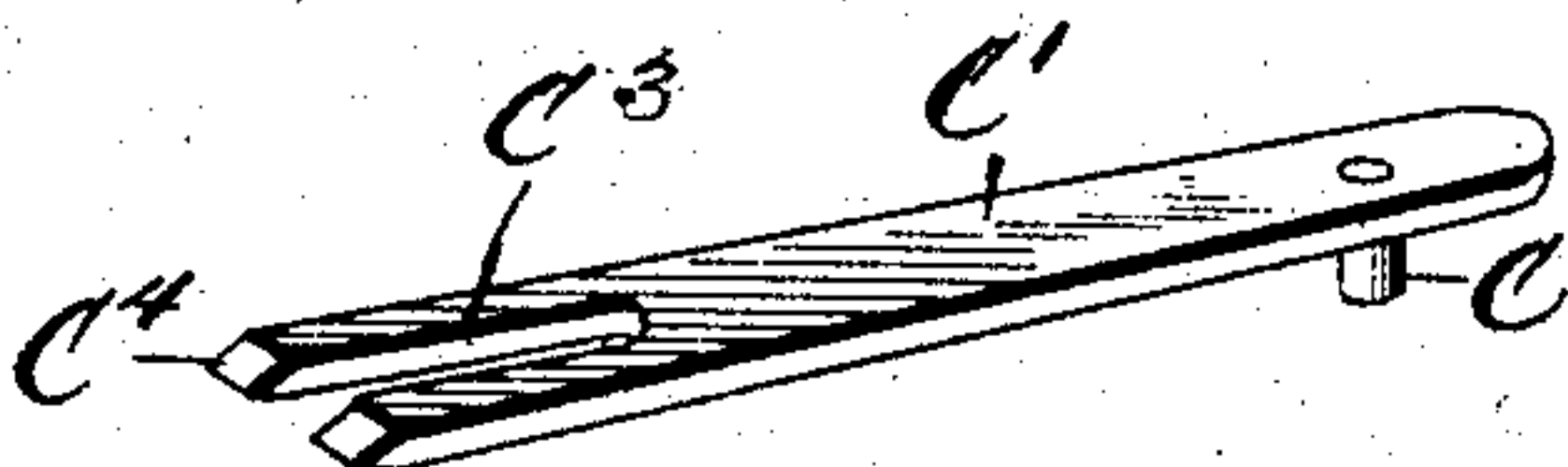


WITNESSES:

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Fig. 4.



INVENTOR

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# UNITED STATES PATENT OFFICE.

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## HAND-MITER AND SAW-GUIDE.

SPECIFICATION forming part of Letters Patent No. 778,178, dated December 20, 1904.

Application filed May 4, 1904. Serial No. 206,359.

*To all whom it may concern:*

Be it known that I, HIRAM S. DOTTS, a citizen of the United States, residing at Monongah, in the county of Marion, State of West Virginia, have invented certain new and useful Improvements in Hand-Miters and Saw-Guides, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention relates to a hand-miter and saw-guide, and particularly to a compact structure which can be readily carried in the pocket of a workman and adapted for immediate use.

15 The invention has for an object to provide a structure embodying a graduated base-plate having an index-plate pivotally mounted thereon to cooperate with said graduations and adapted to be locked and held in its adjusted position, so that any of a large number of miters may be cut by a proper adjustment of the parts.

20 A further object of the invention is to provide a guide-plate with adjustable means by which the vertical cut of a saw-blade may be adjusted to equalize any differences in the dress thereof which would cause it to run from a perpendicular cut and also to equalize for the differences in thickness between the 30 toothed edge and the back, as occur in some classes of saws, the guide being adapted not to confine the saw, but simply to contact with one face thereof, leaving the saw free to be used at any desired inclination without interference from the guiding-points upon the plate.

35 Another object of the invention is to provide an improved locking means for the adjustable guide-plate which can also be used as a screw-driver for the adjusting-screws or as a wrench for setting the clamping-nuts thereon.

40 Other and further objects and advantages of the invention will be hereinafter set forth and the novel features thereof defined by the appended claims.

In the drawings, Figure 1 is a perspective of the invention; Fig. 2, a plan of the gradu-

ated base-plate; Fig. 3, a vertical longitudinal section through Fig. 1, and Fig. 4 a detail perspective of the combination locking- 50 tool for the adjustable guide-plates.

Like letters of reference refer to like parts in the several figures of the drawings.

The letter A designates the base-plate, which may be of any desired configuration, but preferably formed with curved opposite ends A' 55 and between its ends with an upset loop A<sup>2</sup>, adapted to receive a strap or other holding device A<sup>3</sup> to be engaged by the hand of the user. This plate is cut away at one side, as 60 shown at A<sup>4</sup>, for convenience in handling and at the opposite side is provided with a depending flange A<sup>5</sup>, disposed at a right angle to the body of the plate and adapted to abut against a straight face of the mate- 65 rial to be cut when the base-plate rests upon the upper surface thereof. The opposite ends of the flange are slightly inturned, as at A<sup>6</sup>, to prevent slipping of the tool when placed in position. This flange may be suit- 70 ably graduated, as shown in Fig. 1, if desired. The opposite ends of the base-plate are similar in construction and graduation, so that only one thereof will be specifically described, and any desired system of graduations may 75 be used; but as showing a convenient form thereof for the use of carpenters and other woodworkers a series of graduations A<sup>6</sup>, conforming to framing-angles, is disposed upon the face of the plate concentric to the pivot- 80 ing point or post A<sup>7</sup>, which graduations are adapted to coincide with a point B' upon the index-plate B, which is pivoted upon the screw or point A<sup>7</sup>, before described. A second set of miter graduations A<sup>8</sup> are provided 85 upon the face of this plate and adapted to cooperate with a point B<sup>2</sup>, carried by the index-plate, while a third set, A<sup>9</sup>, graduated according to the degrees of a circle, is adapted to cooperate with a point B<sup>3</sup> and is particularly 90 intended for use by those who do not desire to use the ordinary framing and miter angles used in this art.

Any desired means may be used for secur-



ing the guide and index plate in its adjusted position upon the base-plate; but I have herein shown a desirable form thereof which comprises a series of properly-disposed apertures 5 B<sup>4</sup> in the index-plate adapted to coöperate with similar apertures A<sup>10</sup> in the base-plate and with a pin C, Figs. 3 and 4, adapted to pass through said apertures and retain the parts in position. This pin is here shown as 10 carried by a convenient tool comprising a body portion C', which is adapted to lie beneath a wing-nut C<sup>2</sup>, threaded upon the pivoting-post A<sup>7</sup>, and is provided at the opposite end from the pin with a slotted opening C<sup>3</sup> to 15 permit its adjustment longitudinally to adapt the pin for entrance into the different holes. The side walls of this slotted opening are parallel to each other and adapted to act as a wrench for operating nuts, while the ends are 20 suitably sharpened, as at C<sup>4</sup>, to perform the functions of a screw-driver, thus combining in the single piece a tool for manipulating the various parts of the device, which when not in use for that purpose performs the locking 25 function between the parts.

The guide-plate D, which may be formed integral with the index-plate B or otherwise secured thereto, is disposed at a right angle to said plate and connected therewith at opposite ends, if desired, with strengthening- 30 webs D', while this plate is provided at suitable points—for instance, the angles of its rectangular face—with apertures D<sup>2</sup> for the location of adjusting-screws D<sup>3</sup>. The plate 35 may be also provided upon its inner face with a threaded lug D<sup>4</sup>, so as to secure a proper threaded bearing for its screws, which after their adjustment may be locked in position by means of a nut D<sup>5</sup>, threaded upon the screw 40 to contact with the outer face of the guide-plate. Three of these adjusting-screws are preferably used, so that when the saw is used in an inclined position there is no screw at the cutting edge of the plate to interfere with 45 the teeth of the saw or the angle at which it may be used, and if the tool be used by a left-handed instead of a right-handed person the lower screw may be removed from one corner to the other, so as to leave the free space at 50 the cutting edge of the tool.

In the operation of the invention only one of the guide-plates is used at a time; but two are provided, so that the tool may be readily reversed in position as found desirable in different classes of work; but one guide-plate 55 may be set at a certain angle and the other at a different angle to permit the use successively of the opposite ends when different angles are to be cut and to obviate the necessity of adjusting one of the ends to secure different angles thereon. This is particularly useful in the sawing of framing-angles which are disposed at different degrees. For instance, in 60 cutting a five by twelve angle one end can

be used for the twelve cut and the other for 65 the five. The arrangement of graduations for the framing-angles, however, is sufficient to permit either end to be adjusted for any desired cut. The miter graduations can also be 70 similarly used at the opposite ends, or the miter upon any one end can be adjusted from a triangle cut to a cut for a twelve or more sided figure. These framing and miter angles 75 are particularly adapted for carpenters who may not be familiar with the degrees of a circle, which degree graduation is also provided for those who may desire its use. It has also been found that the dress of a saw is very seldom so accurate as to permit a perfectly 80 straight perpendicular cut through the work, and to equalize this tendency in the ordinary saw the adjusting-screws are provided, which can be operated by a locking-tool, before described, by using the wrench to release the 85 nut on the screw and the driver to adjust the screw to the desired extent. These screws are also intended to be adjusted if the saw to be used is of greater thickness upon the cutting edge than at its back edge, so that when 90 held firmly in contact with the screws a perfectly perpendicular cut will be secured and no obstruction whatever offered to the free play of the saw or the inclination thereof during a cutting operation. It will furthermore 95 be seen that the tool is simple in construction, being adapted to be formed by a stamping operation from sheet material, so that the accuracy and efficiency thereof can be insured at a minimum in cost of production.

It will be obvious that changes may be made 100 in the details of construction and configuration without departing from the spirit of the invention as defined by the appended claims.

Having described my invention and set forth its merits, what I claim, and desire to secure 105 by Letters Patent, is—

1. In a tool of the class described, a base-plate provided with a pivoting-pin at one end thereof and a plurality of graduations arranged concentrically to said pin and upon the 110 opposite side from the end of the plate, an index-plate mounted centrally of its straight edge upon said pivot and provided with a plurality of pointers in line with said pivot to coöperate with the series of said graduations, 115 and a guide device carried by the index-plate beyond the end of the base-plate.

2. In a tool of the class described, a base-plate having graduations upon its upper face, an index-plate pivotally mounted thereon and 120 provided with a pointer to coöperate with said graduations, a guide-plate carried by said index-plate, guiding projections carried by the outer face of said guide-plate near the top and one side edge thereof to contact with a saw- 125 blade, and a locking means carried by the index-plate to engage the base-plate.

3. In a tool of the class described, a base-



plate having graduations upon its upper face, an index-plate pivotally mounted thereon and provided with a pointer to cooperate with said graduations, a guide-plate carried by said index-plate, locking means carried by the index-plate to engage the base-plate, and adjustable screws carried by the outer face of said guide-plate to contact with a saw-blade.

4. In a tool of the class described, a base-plate having graduations upon its upper face, an index-plate pivotally mounted thereon and provided with a pointer to cooperate with said graduations, a guide-plate carried by said index-plate, locking means carried by the index-plate to engage the base-plate, a depending flange at one side of the base-plate, and adjusting-screws carried by said guide-plate to project from the outside face thereof near the top edge and one end edge and form points of engaging and guiding contact with the saw-blade.

5. In a tool of the class described, a base-plate having graduations upon its upper face, an index-plate pivotally mounted thereon and provided with a pointer to cooperate with said graduations, a guide-plate carried by said index-plate, locking means carried by the index-plate to engage the base-plate, a depending flange at one side of the base-plate, adjusting-screws carried by said guide-plate to project from the outside face thereof near the top edge and one end edge and form points of engaging and guiding contact with the saw-blade, a loop extended from the upper face of said base-plate between its ends, and a handle carried by said loop.

6. In a tool of the class described, a base-plate, a guide-plate carried thereon, and adjusting-screws threaded through said plate to project from the outside face thereof near the top edge and one end edge and form points of engaging and guiding contact with the saw-blade.

7. In a tool of the class described, a base-plate, a guide-plate carried thereon and having apertures at the lower end corners thereof, adjusting-screws threaded through said plate to project from the outside face thereof near the top edge and one end edge and form points of engaging and guiding contact with the saw-blade, threaded lugs upon the inner face of said plate for said screws, and lock-nuts threaded upon the screws at the outer face of said plate.

8. In a tool of the class described, a reversible base-plate having a pivoting-post and oppositely-disposed concentric graduations at each end and a straight edge at one side, and an independently-adjustable guide-plate mounted upon each of said posts and having a straight edge extending transversely to and beyond the end of the base-plate and adapted

to be adjustably secured at a different angle to the other plate and the side edge of the base.

9. In a tool of the class described, a base-plate having a straight depending flange at one side thereof and a pivoting-post at each end, an adjustable guide-plate mounted upon each of said posts and having a straight edge extending transversely at the end of the plate, a separate series of graduations and locking means disposed upon the base-plate at opposite sides of each of said posts and concentric thereto, an index-plate carried by each of the guide-plates and having points to cooperate with said graduations, and means carried by said index-plate to engage the locking means upon the base-plate in the adjusted positions of the index-plate.

10. In a tool of the class described, a base-plate having opposite curved ends and a straight side portion at one side and a cut-away portion at the opposite side, a pivoting-post carried by said plate at opposite ends, a series of separate graduations disposed at different distances from said post and concentric thereto, index-plates disposed upon said post and provided with a plurality of points to cooperate with said graduations, means for clamping said base and index plates together, and a locking-pin carried by a plate extending beneath the clamping means, said pin being adapted to pass through coincident apertures in the index and base plates.

11. In a device of the class described, a base-plate provided with a clamping-screw and a series of locking-apertures, an index-plate pivoted thereon and provided with a series of coinciding apertures, a locking device comprising a plate having a slotted wrench-opening to embrace said screw and sharpened blades at one end and a locking-pin at its opposite end to enter said apertures, and a clamping-nut on said screw to bear on said device.

12. In a device of the class described, a base-plate provided with a clamping-screw and a series of locking-apertures, an index-plate pivoted thereon and provided with a series of coinciding apertures, a locking device comprising a plate having a slotted wrench-opening to embrace said screw and sharpened blades at one end and a locking-pin at its opposite end to enter said apertures, a clamping-nut on said screw to bear on said device, and a depending flange from the base-plate having inturned edges at its opposite ends.

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

HIRAM S. DOTTS.

Witnesses:

E. B. CARSKADON,

GEO. E. HOLDREN.