

(No Model.)

H. D. LANFAIR.

MITER BOX.

No. 376,200.

Patented Jan. 10, 1888.

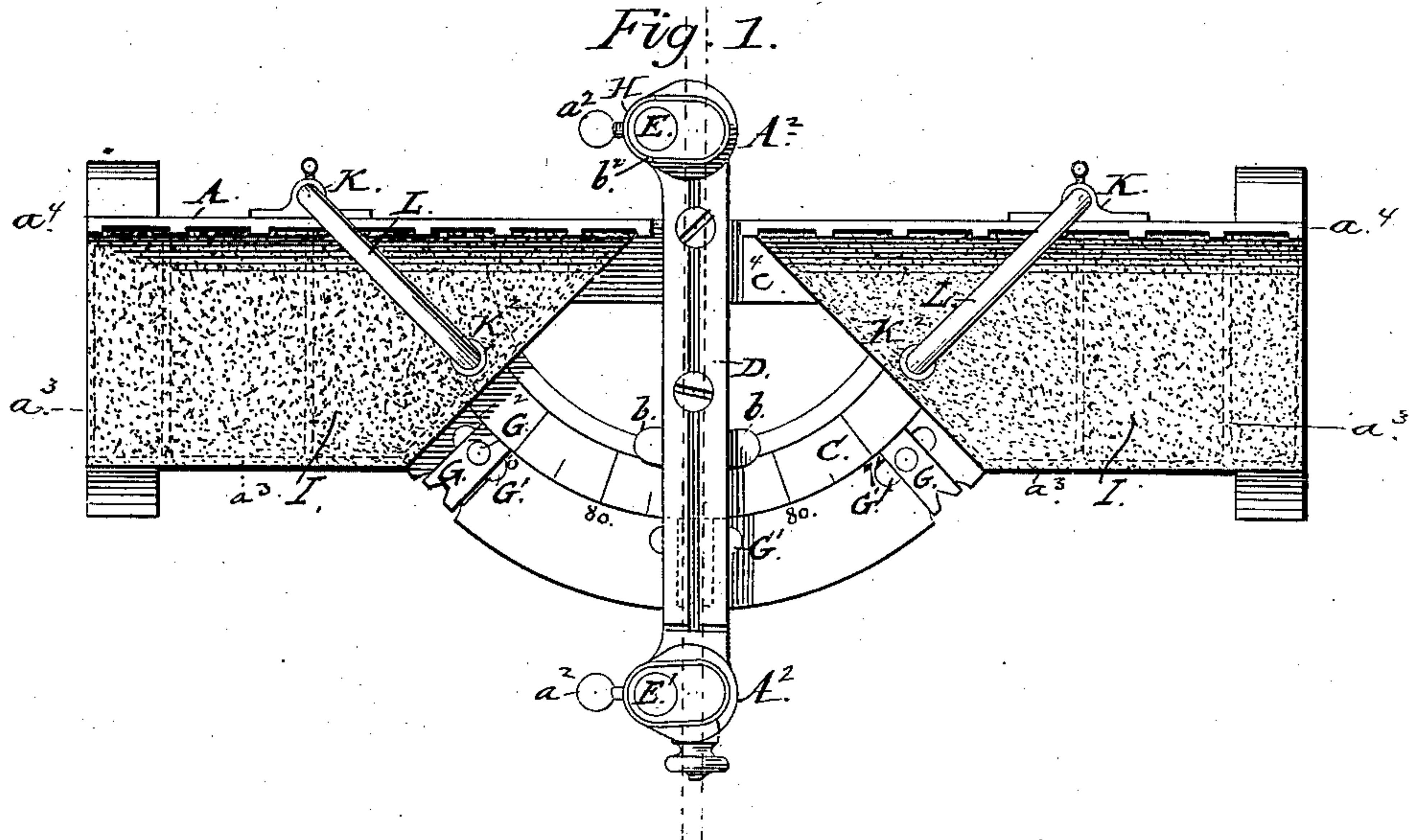


Fig. 2.

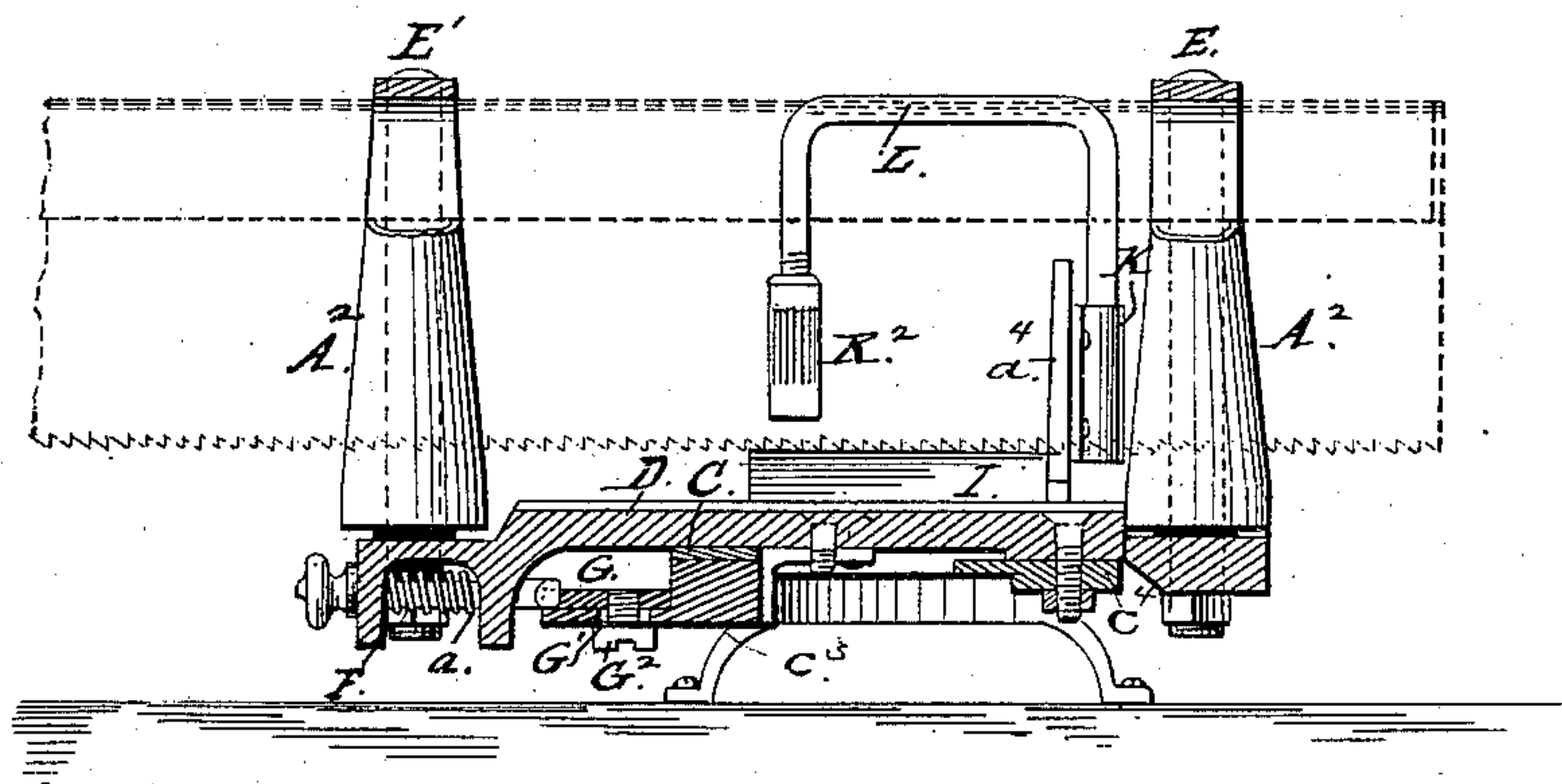
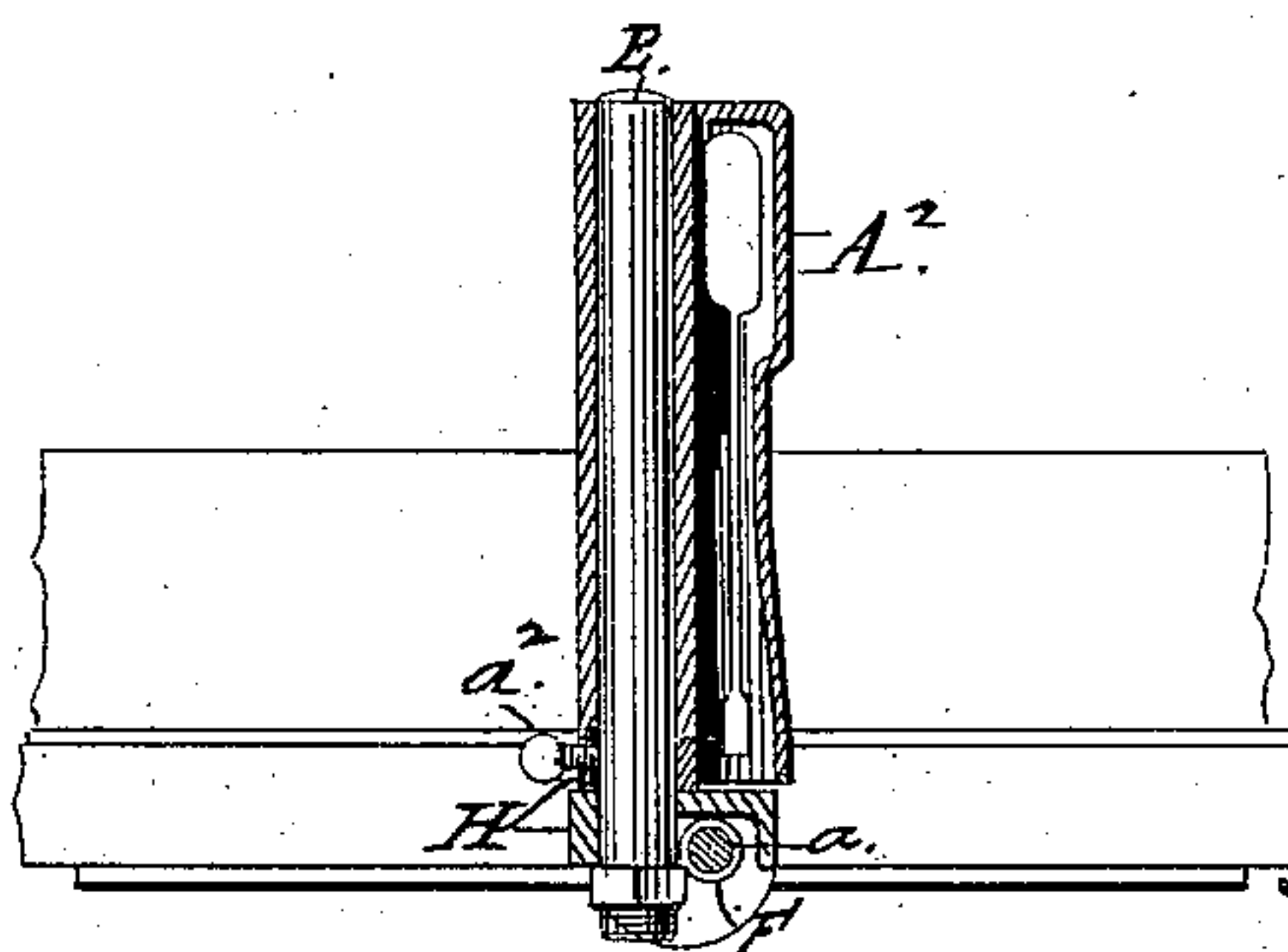


Fig. 3.



Witnesses:

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Inventor:

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UNITED STATES PATENT OFFICE.

HERBERT D. LANFAIR, OF MILLER'S FALLS, MASSACHUSETTS.

MITER-BOX.

SPECIFICATION forming part of Letters Patent No. 376,200, dated January 10, 1888.

Application filed May 20, 1887. Serial No. 238,883. (No model.)

To all whom it may concern:

Be it known that I, HERBERT D. LANFAIR, a citizen of the United States, residing at Miller's Falls, in the county of Franklin and State of Massachusetts, have invented certain new and useful Improvements in Miter-Boxes; 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 is an improvement in that class of miter-boxes in which the posts which hold and guide the saw to its work are adjustable horizontally with reference to the abutment against which the material to be cut is held.

My invention in a general way may be described as follows: The saw holding and guiding sleeves are formed and arranged so that they may be limited in downward movement with reference to the swinging bar by means of collars fixed to adjustment upon spindles, which, though bolted to the said bar, are practically a part of it. The supporting-bar for the saw-holding sleeves is pivoted in the frame of the miter-box at a point in line with the inner face of the upright back plate or abutment for the material to be sawed, and said bar is adjustable to the required angle of miter by means of a graduated arc fixed to the frame of the miter-box. Adjustable notched plates are fixed at definite points in the arc of the miter-box frame, which are engaged by a spring-latch arranged in the supporting or swinging bar, whereby the saw-carrying sleeves are set accurately to proper lines of adjustment. The frame of the miter-box has at its front a horizontal arc upon which is secured a plate graduated with radial lines and suitable indicating-figures, over which swings the saw-carrying bar. It will be noticed that the axis of the sleeve-carrying posts of the swinging bar are fixed to said bar not in line with the movement of the saw. The purpose of this arrangement is to have the saw-receiving slots of the saw-guiding sleeves independent of the posts which carry said sleeves, so that said sleeves may be raised to a proper height without having the said posts of any considerable height, as is required when the axes of the sleeves are in line with the movement of the saw.

In order that the material to be cut may not move horizontally in the act of cutting, a roughened bed-surface is provided of a gritty material secured to a base of wood.

To firmly secure the article to be sawed against the bed-plate, I employ two holding devices, either one of which consists of a U-shaped bar secured adjustably in a socket at the back of the abutment of the frame, which extends over the bed-plate, terminating with an adjustable sleeve which works upon the screw-threaded end of said U-shaped bar.

In the drawings, Figure 1 is a plan or top view of my miter-box. Fig. 2 is a sectional view through the swinging bar, showing distant parts in elevation and the saw in dotted lines. Fig. 3 is a detail showing the construction of essential parts of the saw-holding sleeves and adjusting means for same.

Similar reference letters indicate like parts in all of the figures.

Referring to the drawings, A is the metallic frame of the miter-box, composed of a rectangular and arc formed skeleton portion, a^3 , and a solid vertical abutment portion, a^4 , provided with inner offsets forming a holding-surface for the material to be cut. In the said horizontal portion of the frame is provided the base c^3 for the graduated arc C, which is marked in figures representing degrees or angles. Pivoted in the horizontal portion of the frame is a grooved swinging arm or bar, D, which bears upon the base for the graduated arc by laterally-extending lugs b , and carries near its extremities upright posts E E', bolted thereto.

The swinging arm D at its forward end, on the under side, is fashioned to receive a latch-bar, F, and fixed about said latch-bar is a spiral spring, a , which holds the said bar to engagement with notched plates G. The notched plates G are set over vertically-cut slots G' in the arc of the frame A, and said plates are clamped to suitable radial adjustment by bolts or screws G^2 , which pass vertically through said frame and the said plates. There are three of these notched plates shown in the drawings as applied to the slots G' of the frame, though this number of points of adjustment may be increased to the required number with similar notched plates.

Collars H, with set-screws a^2 , are fitted to the posts E E', and upon said posts said collars

may be adjusted to given points to form supports for the saw carrying and guiding sleeves A^2 . The sleeves A^2 are fashioned with openings for the posts $E E^2$ and rabbet recesses b^2 at their bases to fit over said posts and the collars H , and also the usual openings or slots for the saw-blade.

Upon the horizontal portion of the miter-box frame are fixed beds of wood, $I I$, covered on their upper horizontal surfaces with sand held by some suitable adhesive substance. The purpose of this sanded surface is to assist in holding the article to be cut against horizontal movement.

In sleeves K , secured to the back of the abutment of the miter-box, are rods L , adjustable vertically and horizontally about their axes by means of suitable set-screws. These rods are bent in a U or goose-neck form, and extend from their holding-sleeves K over toward the bed-plates $I I$. At the extremities of these rods, near said beds, are screw-threaded and superficially-milled sleeves K^2 , which form extensions to the screw-threaded ends of said rods. The purpose of these devices—the rods and their extensions—is to hold the article or material to be mitered, be it ever so thin or irregular, firmly to position against the surface of the bed-plates and the abutment of the miter-box.

In operating a saw with my miter-box to cut a miter the swinging lever-arm D is brought to the required angle, right or left, where it is held by the engagement of the latch F with one of the notched plates G . The sleeves are next adjusted by means of collars H and set-screws a^2 upon the posts $E E^2$, as a limit to the downward movement of the said sleeves. The material to be sawed to a miter is now placed upon the miter-box bed, where it is secured by means of the clamping devices $L K^2$, the screw-threaded sleeves of which are run down until they bear at proper points upon said material, the rods having been properly secured to the sleeves at the back of the abutments. The saw, after the sleeves have been lifted a proper height, are placed in the slots of the said guiding-sleeves. As the sawing is

effected the saw and sleeves move downward until the latter reach the collars on the posts $E E^2$, at which time, the sleeves having been properly set, the cut will have been formed to a proper depth.

I am aware of the patent of Suydam, which has a notched plate adjustably secured to the vertical flange of an arc-shaped portion of the frame, and the swinging bar of said patent has a spring secured to said swinging bar. To such I make no claim.

I am also aware of the patent of Goodell, which describes a roughened bearing-surface for the materials to be cut, and to such, broadly, I make no claim.

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

1. In a miter-box, the combination, with the supporting-frame having a horizontally-flat arc shaped portion in front provided with vertically cut slots G' , of the notched plates G , bolted to said plates through said slots, and the swinging bar provided with a latch radially movable to engage the notched plates, as and for the purpose set forth.

2. The combination, with the swinging bar and upright posts thereto fixed and the adjustable collars of said upright posts, of the saw-carrying sleeves adapted to fit over said posts and collar, as and for the purpose set forth.

3. The combination, with the swinging bar, the upright posts thereto fixed, and the adjustable collars for said posts, of the saw-carrying sleeves pivoted to said swinging bar out of the line of movement of the saw, as set forth.

4. The combination, with the miter-box frame and sleeves K , fixed thereto, of the clamping device composed of the bent bar having screw-threaded ends and the screw-threaded sleeve adjustably fitted thereon, substantially as and for the purpose set forth.

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

HERBERT D. LANFAIR.

Witnesses:

JAMES S. GRINNELL,
CHAS. ALLEN.