

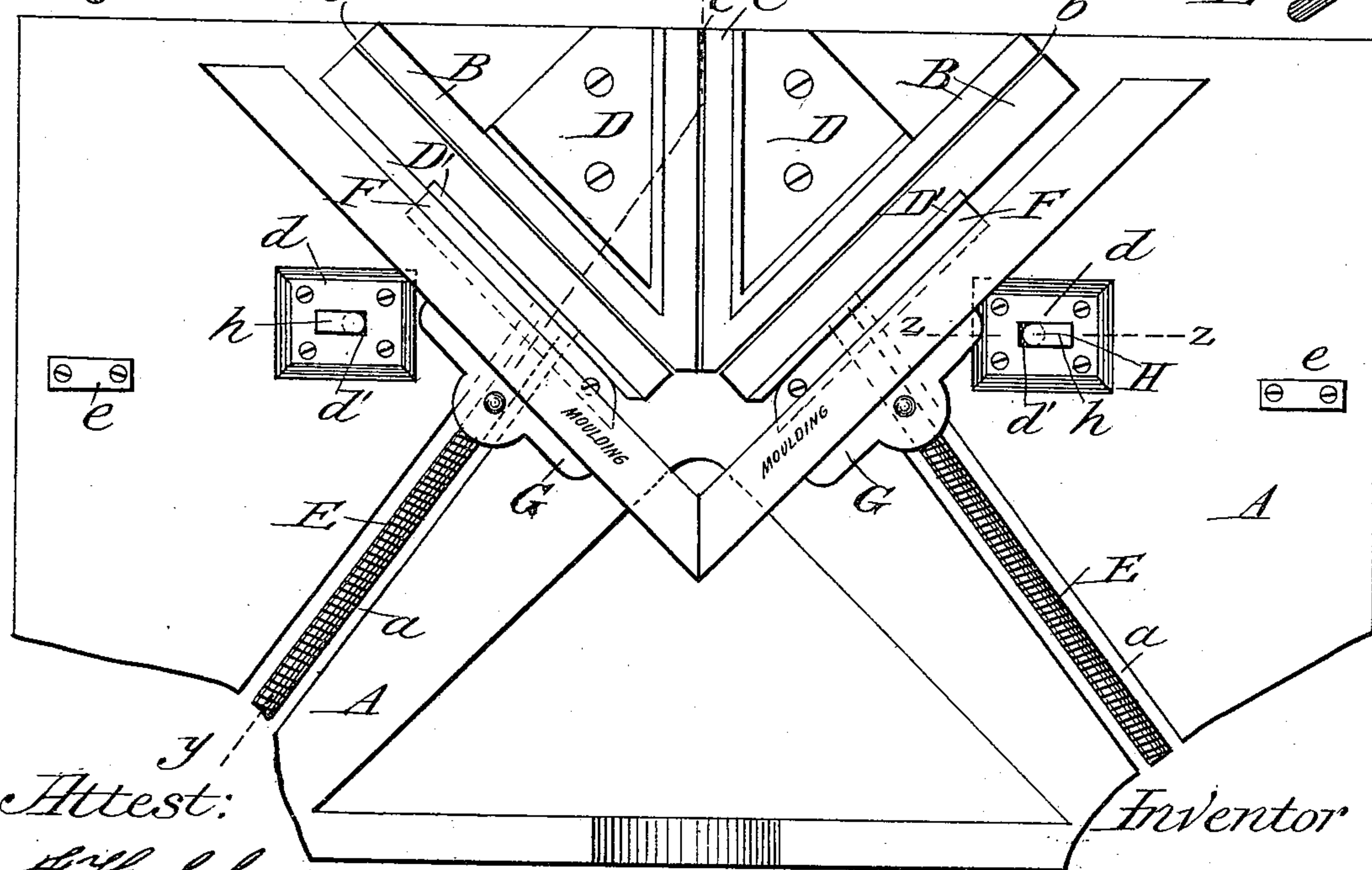
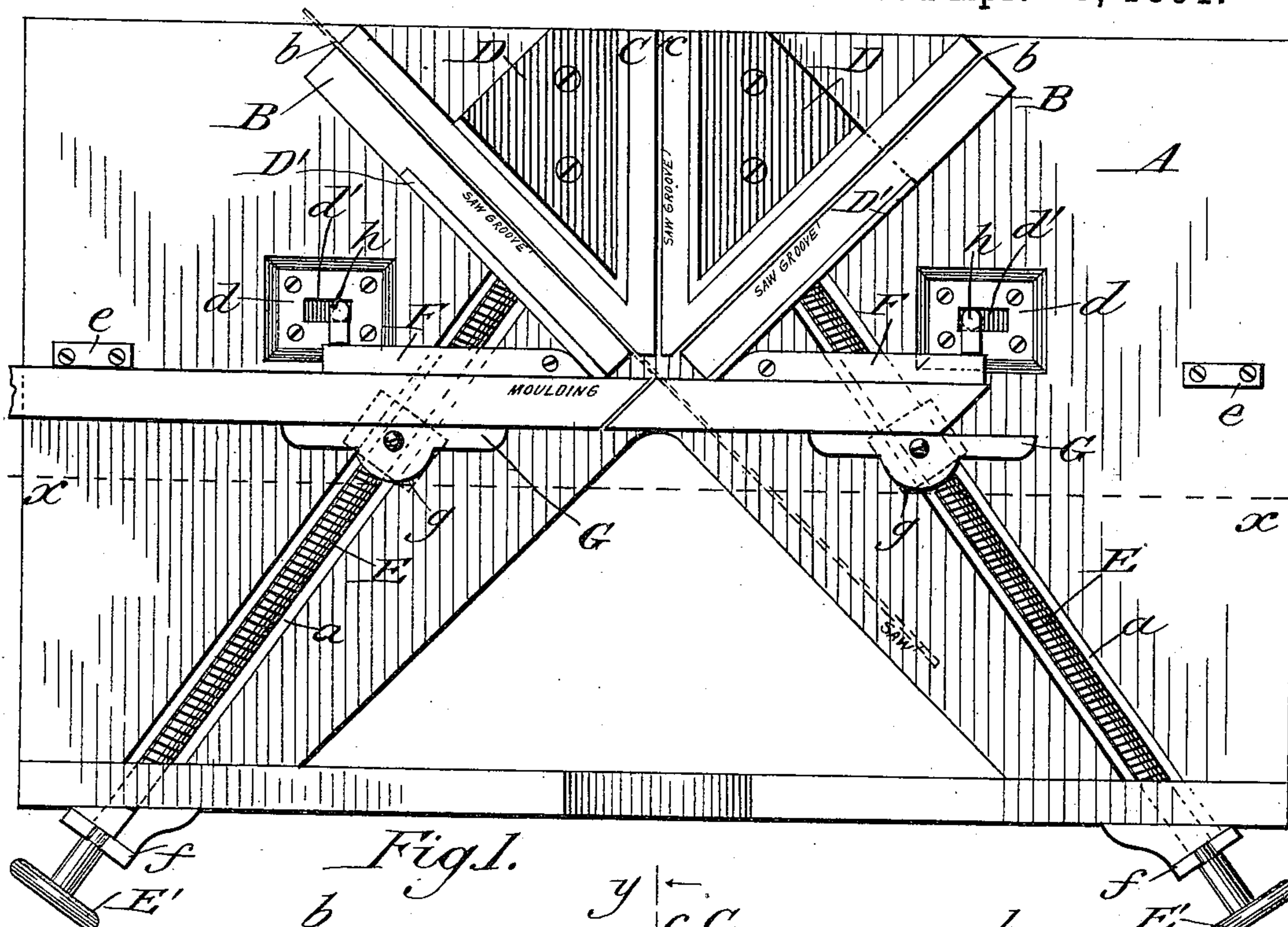
(No Model.)

2 Sheets—Sheet 1.

E. E. WAGONER.
MITER BOX.

No. 451,089.

Patented Apr. 28, 1891.



Attest:

H. H. Schott
Wm. L. Boyden.

Fig. 2.

Inventor
Edward Everett Wagoner,
per Charles W. Parker
Atty

(No Model.)

2 Sheets—Sheet 2.

E. E. WAGONER.
MITER BOX.

No. 451,089.

Patented Apr. 28, 1891.

Fig. 3. on xx.

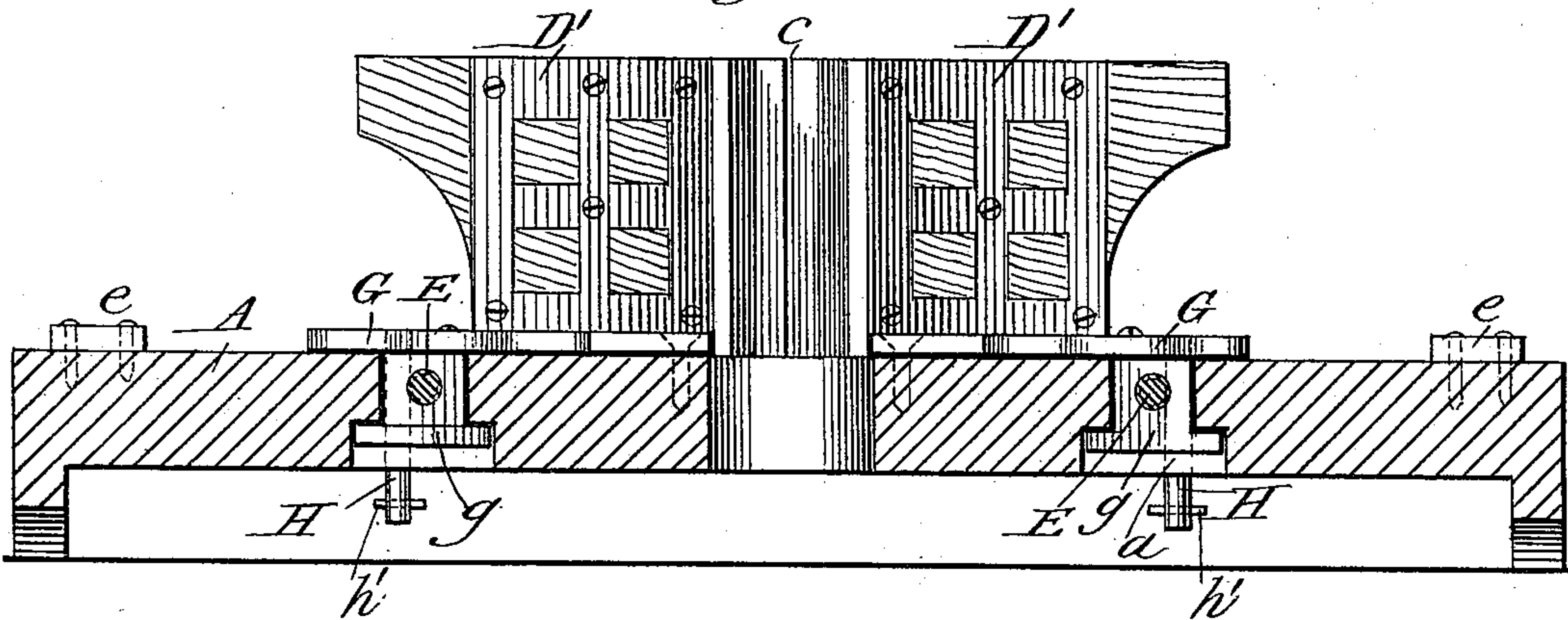


Fig. 4. on yy.

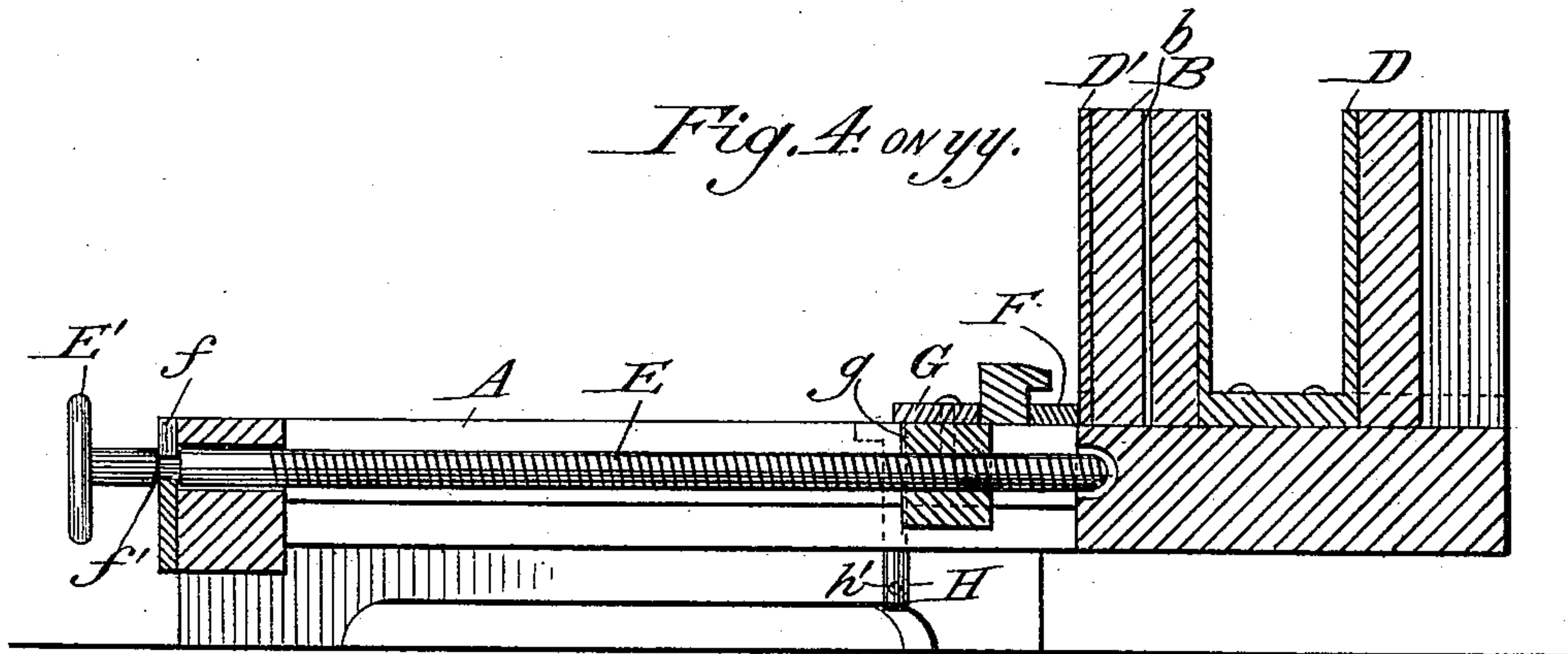
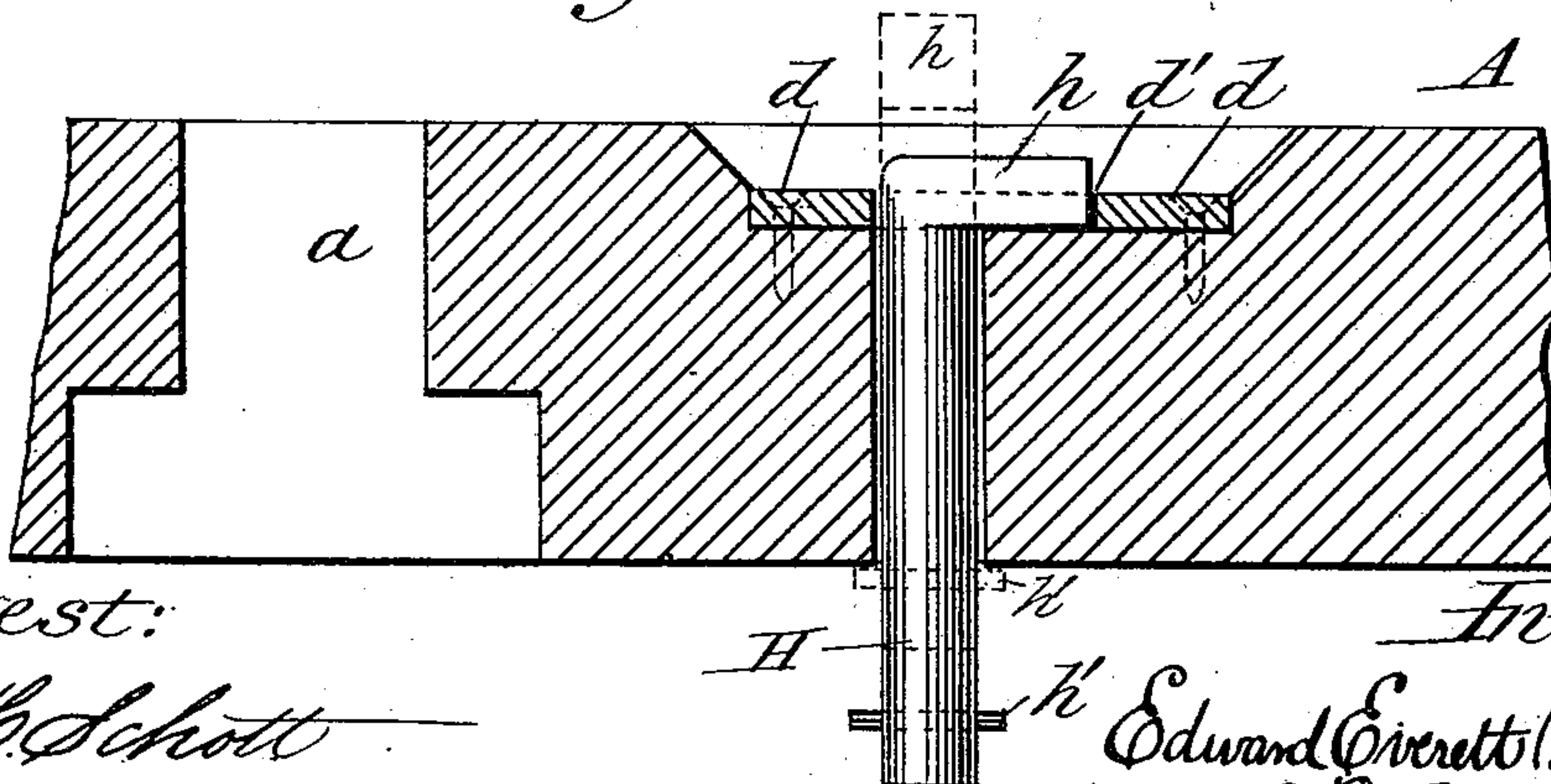


Fig. 5. on zz.



Attest:

J. H. Schott
Wm. L. Boyden.

Inventor

Edward Everett Wagoner.
per Chas. E. Barker.
Atty

UNITED STATES PATENT OFFICE.

EDWARD EVERETT WAGONER, OF HAGERSTOWN, MARYLAND.

MITER-BOX.

SPECIFICATION forming part of Letters Patent No. 451,089, dated April 28, 1891.

Application filed June 18, 1890. Serial No. 355,881. (No model.)

To all whom it may concern:

Be it known that I, EDWARD EVERETT WAGONER, a citizen of the United States, residing at Hagerstown, in the county of Washington and State of Maryland, 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.

This invention has reference to an improvement in miter-boxes or devices or clamps for use in wood-working, and more particularly in the cutting of moldings and the construction of picture-frames, the object of the invention being to provide a simple, cheap, and efficient miter-box, in combination with which there may be an adjustable clamping means or vise mechanism, which will firmly hold the material to be cut in the several positions in which it may be necessary to hold the same during the cutting; and the invention therefore consists in the construction, arrangement, and combination of parts, substantially as will be hereinafter described and claimed.

In the annexed drawings, illustrating my invention, Figure 1 is a top plan view of my improved miter-box, showing the clamping devices in the position that they occupy when the molding or other object to be cut is held in a rectilinear position. Fig. 2 is a similar plan view showing the clamping devices in the position that they occupy for the purpose of holding two pieces of molding placed at right angles to each other to form the two adjacent sides of a frame. Fig. 3 is a longitudinal section on the line *xx* of Fig. 1. Fig. 4 is a cross-section on the line *yy* of Fig. 2. Fig. 5 is an enlarged detail section on the line *zz* of Fig. 2.

Similar letters of reference designate corresponding parts throughout the different figures of the drawings.

A denotes the main frame, consisting of a board or surface of suitable size and form, upon which the parts of the miter-box and its vise or clamp are mounted. This main supporting-surface may be provided with suitable legs or feet, as shown in Fig. 3.

On the board A are mounted the blocks or projecting strips B B, which are placed at

right angles to each other. Midway between these two blocks, and consequently at an angle of forty-five degrees with each of them, is a third block or projecting strip C, which meets the two blocks B B at their point of junction. The block C is at right angles to the edge of the board A, and the blocks B B consequently lie at angles of forty-five degrees to said edge, as shown.

Between the blocks B B and the block C, respectively, are plates or angular braces D D, secured to the face of the board A for keeping the blocks in place. Further, it will be noted, as shown in Fig. 3, that the outer sides of the blocks B B are provided with plates D' D' for the purpose of strengthening the same, and also to provide smooth flat surfaces on the outer sides of the blocks.

The blocks B B and the block C are each provided with saw grooves or slits running straight and in the same direction as the blocks, respectively, said grooves being lettered *b b* and *c*. They are of suitable size to contain a saw-blade, as shown in Fig. 1, and permit it to have a free endwise movement therein, said grooved blocks thus serving as guides to control the direction of movement of the saw.

The surface A is preferably provided with two diagonal slots *a a*, which have a sort of T form, as shown in Fig. 5. Within each one of these slots *a a* lies a screw E, having at the outer end a hand-wheel E' for operating it. The outer ends of the screws are supported in bearings, within which smooth unthreaded parts of the stems are located, and these ends of the screws are made with grooves *f'*, providing shoulders abutting against the perforated plates *f*, wherein the screws revolve. Thus it will be seen that under the manipulation of the hand-wheels the screws rotate, but do not move endwise. On each screw is a traveling nut *g*, bearing a T shape to enable it to slide within the T-grooves *a a*. (See Fig. 3.) Pivoted to the top of each traveling nut *g* is a horizontal bar G, having a straight edge and adapted to shift horizontally upon its pivot, so as to occupy either the position indicated in Fig. 1 or that shown in Fig. 2.

Adjacent to the inner end of each of the grooved guide-blocks B B, and consequently opposite the traveling nuts, is an adjustable

bar F, which is pivoted to the face of the surface A. These bars F F swing upon their pivots, so as to occupy the position shown in Fig. 2, where they are parallel to the diagonal saw-grooves *bb* or the position represented in Fig. 1, where they are in a straight line with each other and at right angles to the direction of the saw-groove *c*. The surface of the board A at points proximate to the movable ends of the pivoted bars F F is recessed, (see Figs. 1 and 5,) there being secured in the bottom of the recesses the plates *d d*, which are slotted at *d'*. Right-angled pins H H lie within vertical perforations through the board A at these points, said pins being susceptible of a vertical and rotary adjustment. (See Fig. 5.) These pins are provided at their lower ends with cross-pins *h'*, and they have at their upper ends the right-angled horizontal projections *h*, adapted to lie within the slots *d'* when the pins are placed as shown in Fig. 5. Obviously the pins may be lifted when desired to withdraw the projections *h* from the slots *d'*, so that said pins may be rotated sufficiently to bring their projections *h* into position to serve as braces for the free ends of the pivoted bars F F, when said bars are in the position shown in Fig. 1. Further, it will be noted that the upper surface of board A is provided with straight-edged blocks or short bars *e*, secured thereto in position to be in line with the pivoted bars F F when the latter are in line with each other, said blocks *e e* and bars F F then serving to provide a straight-edge of considerable length, against which a molding may be held by the pivoted bars G G, as shown in Fig. 1, to permit a saw moving in one of the saw-grooves to make the proper cut in the molding.

It remains to describe the operation, use, and advantages of my improved miter-box. Suppose we take a length of molding, and, having first properly adjusted the pins H H and the pivoted bars F F, as shown in Fig. 1, place it in the device, next manipulating the hand-screws to impel the traveling nuts toward the molding and cause the straight edges of the pivoted bars G G to tightly grip the same. The molding will now be tightly held and the operator can drive his saw through either of the saw-grooves *bb c*, to cut the molding into the desired lengths, which lengths shall have their ends of the proper bevel or taper. After all the sides of the frame or other object have been cut thus, the operator by a few turns of each hand-wheel will release the clamps. Then the pins H may be turned to allow their projections *h* to drop into the slots *d'*; also, the pivoted bars F may be shifted against the blocks B B. Then the pieces of moldings forming two adjacent sides of a frame may be placed at right angles to each other (see Fig. 2) with their meeting ends together. Now give the hand-wheels a few turns and the clamping-bars G G will adjust themselves to the changed position of the molding and clamp the same as tightly

as before. The ends of the frame may now be secured together easily by brads or other means, or any other work may be performed that may be desired. Thus it will be seen that various adjustments of the clamps will be made and various kinds of work performed with my improved miter-box.

Many changes may be made in the precise form and structure of my device as experience may suggest without departing from the invention.

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 of the grooved guide-blocks for the saw and the clamping devices, consisting, essentially, of the operating-screws, the traveling nuts carrying pivoted clamping-bars, and the other pivoted clamping-bars adjacent to the guide-blocks, substantially as described.

2. In a miter-box, the combination of the grooved guide-blocks, two of which are at right angles to each other and the other located midway between them, and the clamping devices consisting, essentially, of the screw-operated nuts carrying pivoted clamping-bars and the other pivoted bars arranged so that the molding may be held in any one of several positions, substantially as described.

3. In a miter-box, the combination, with the grooved guide-blocks, of the pivoted bars F F, the devices for supporting the free ends of said bars, and the pivoted clamping-bars carried by traveling nuts and arranged relatively to the bars F F so that the molding may be clamped between them, substantially as described.

4. The combination of the main frame, the grooved guide-blocks, two of which are at right angles to each other and diagonally placed on the frame, and the other is midway between these two, pivoted bars F F, the devices for supporting the same, the screws E E, the traveling nuts thereon, and the pivoted clamping-bars G G on said nuts, substantially as described.

5. The combination of the main frame A, the grooved blocks B B C, the screws E E in the slots *aa*, said screws having hand-wheels E' E', and the traveling nuts *g g* on said screws, together with the pivoted clamping-bars G G, carried by the nuts, and the pivoted clamping-bars F F on the frame, at the free ends of which are supporting devices, substantially as described.

6. The combination, with the grooved guide-blocks, of the clamping devices consisting of the operating-screws having hand-wheels, the traveling nuts carried by said screws, the pivoted clamping-bars on the nuts, the pivoted clamping-bars on the frame, and the adjustable devices for holding the free ends of said bars, substantially as described.

7. The combination, in a miter-box, of the clamping devices consisting, essentially, of the pivoted bars F F, the traveling nuts *g g*,

the screws on which they move, the clamping-bars G G, pivoted to the nuts, and the adjustable pins H H, having projections *h h*, which serve as supports for the free ends of the bars F F at certain times, substantially as described.

8. The combination of the main surface A, having diagonal slots *a a* and provided with projections *e e* and slotted plates *d d*, the grooved blocks on said frame, and the clamping devices consisting, essentially, of the screw-operated pivoted clamping-bars G G, the pivoted clamping-bars F F, and the adjustable right-angled pins H H, substantially as described.

9. The combination of the main frame A, the diagonally-placed grooved guide-blocks B B at right angles to each other, the grooved block C midway between the blocks B B, the sustaining-castings D D between the blocks,

and the clamping devices, substantially as described.

10. The combination of the grooved guide-blocks, the clamping devices consisting, essentially, of the screws E E, having hand-wheels E' E' and grooved at *f'* to form shoulders against the plates *f f*, the traveling nuts *g g*, carrying pivoted clamping-bars G G, the pivoted clamping-arms F F, and the right-angled pins H H, having projections *h h*, adapted to lie within slotted plates *d* and to be removed therefrom, so as to serve as supports for the pivoted arms F F, substantially as described.

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

EDWARD EVERETT WAGONER.

Witnesses:

HARRY E. BRINING,
J. IRVIN BITNER.