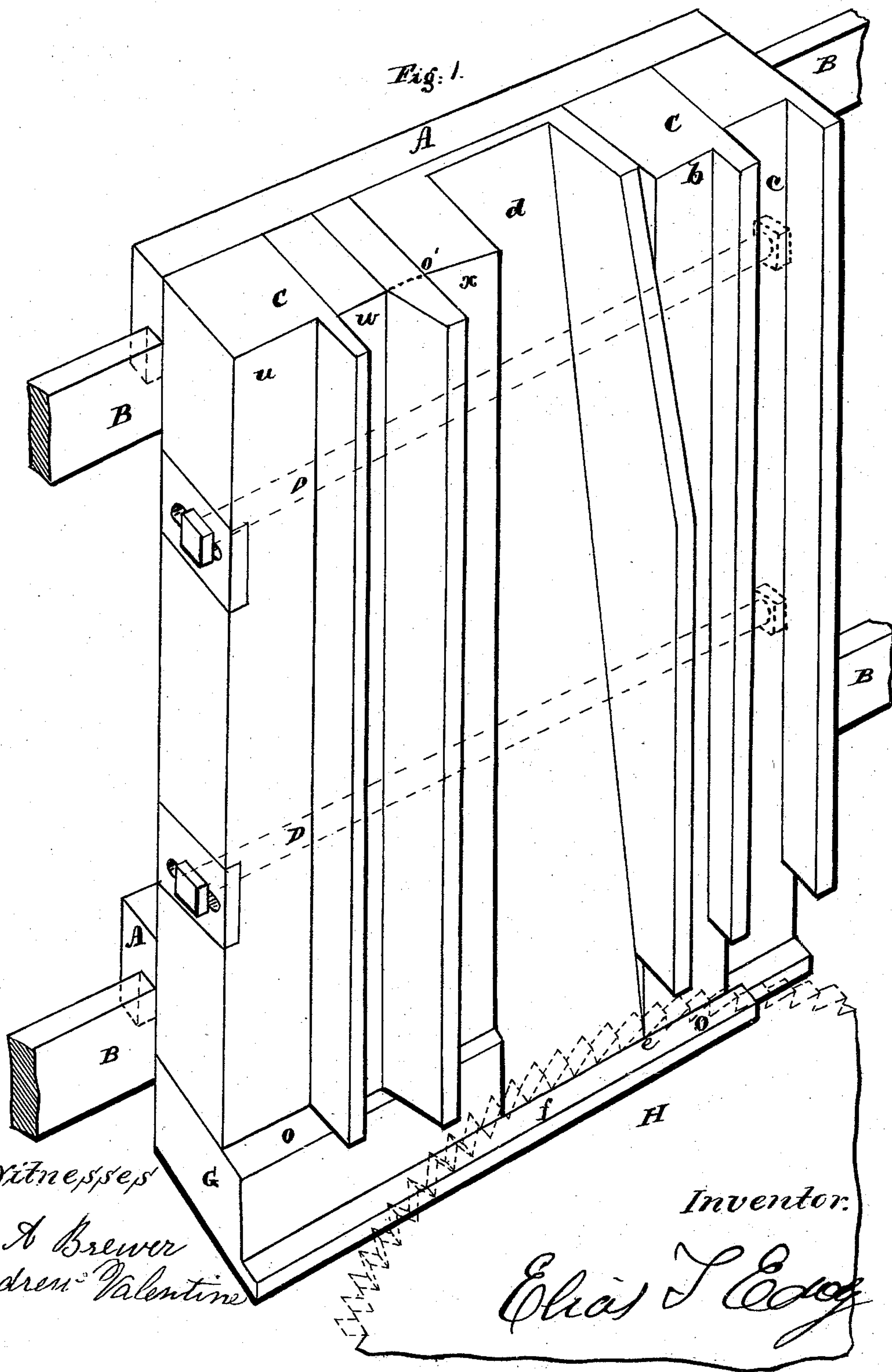


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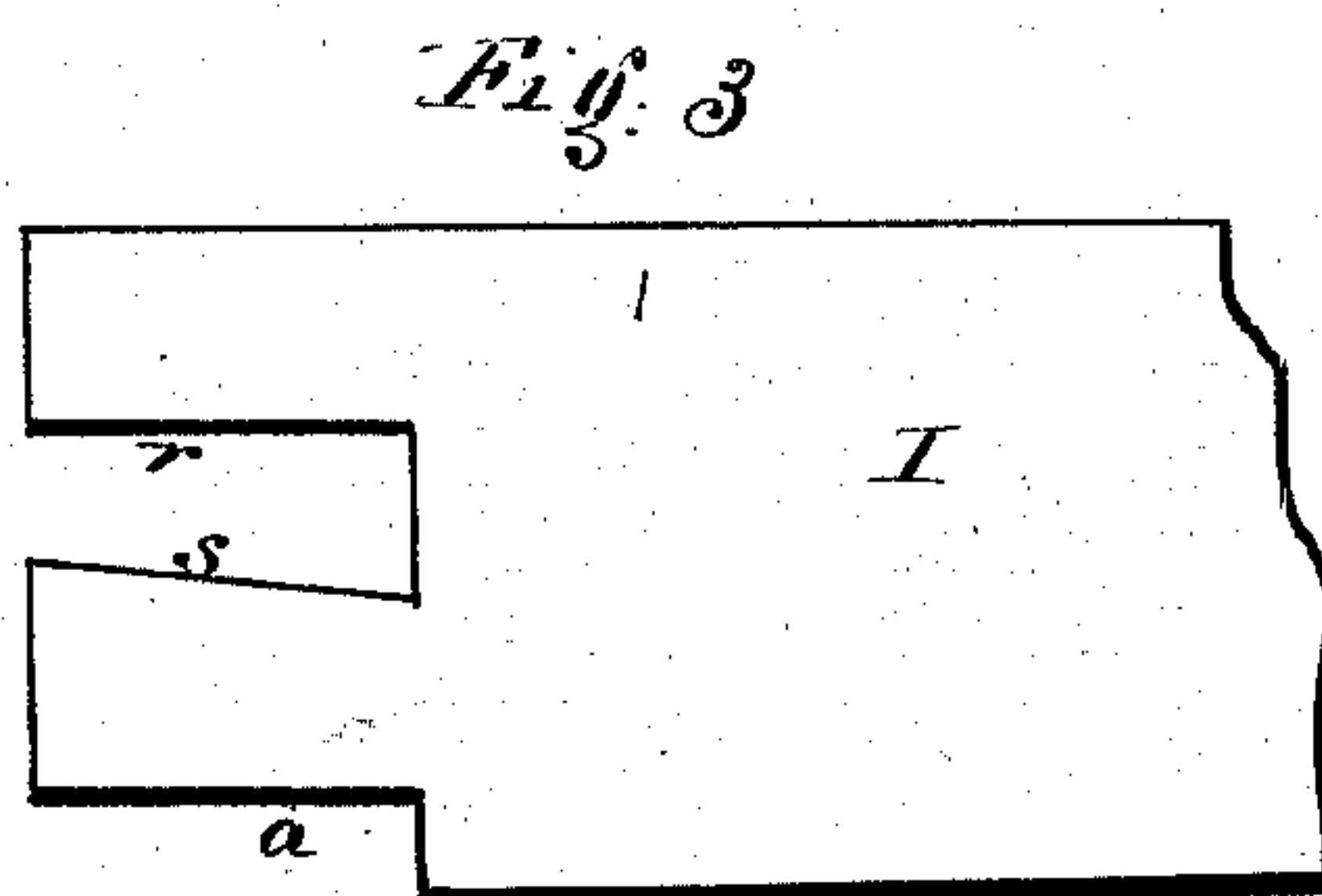
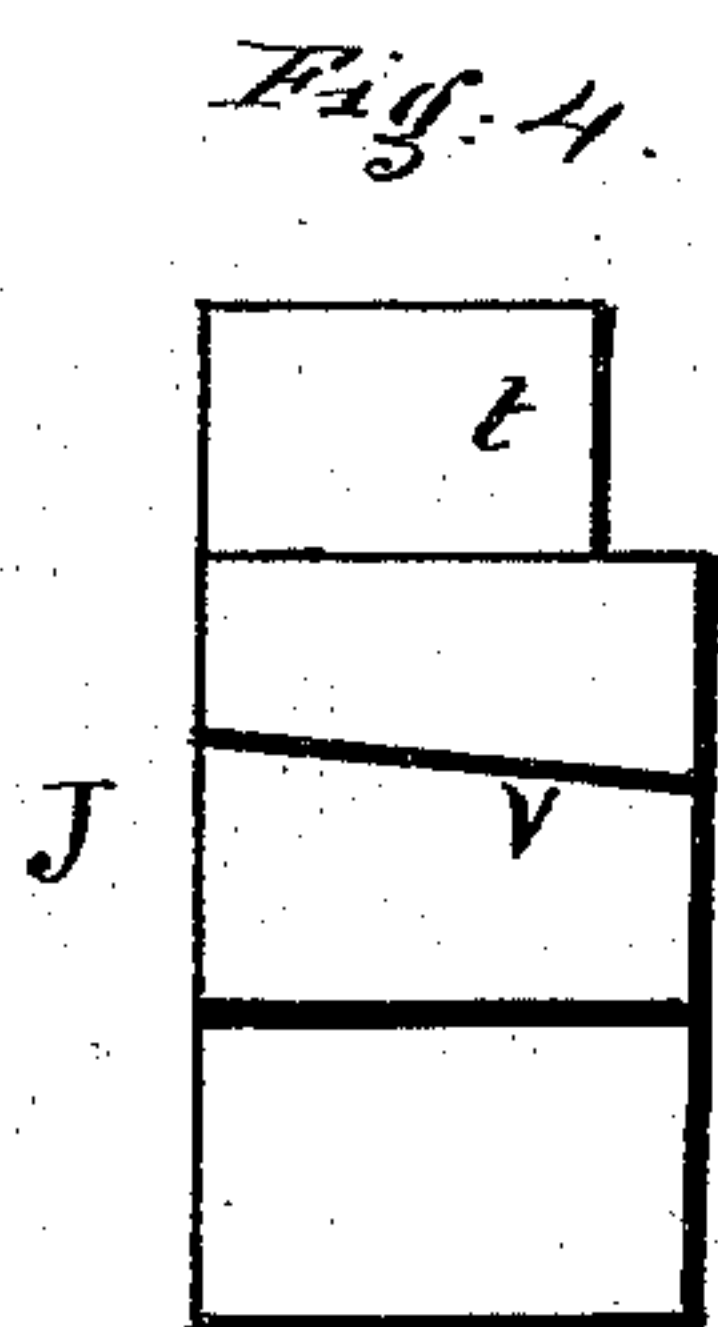
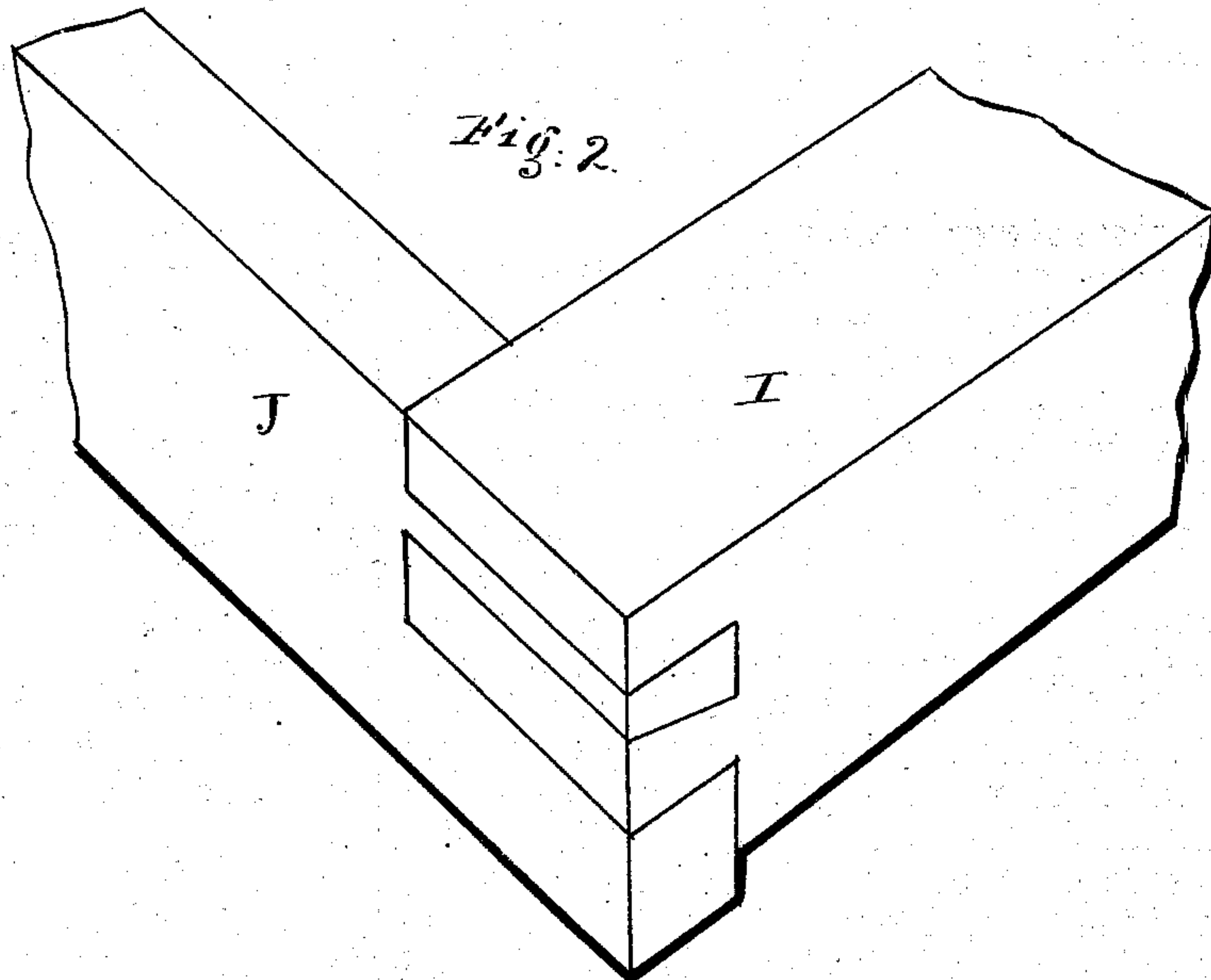
Machines for Forming Dovetails.

No. 156,883.

Patented Nov. 17, 1874.



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IMPROVEMENT IN MACHINES FOR FORMING DOVETAILS.

Specification forming part of Letters Patent No. **156,883**, dated November 17, 1874; application filed February 18, 1874.

To all whom it may concern:

Be it known that I, ELIAS T. EDDY, of Green Point, Kings county, New York, have invented an Improvement in Machines for Forming Dovetails; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the annexed drawings making part of this specification, in which—

Figure 1 represents a view, in perspective, of the sliding or reciprocating guide frame or rest, with its beveled or inclined surfaces, by which the dovetail is formed, together with a fragment of a circular saw, by which the dovetail is made. Fig. 2 is a view, in perspective, of the stile and meeting-rail of a window-sash, showing the several kerfs of the circular saw forming the dovetail by which the ends of the stile and rail are joined. Figs. 3 and 4 are views of the stile and meeting-rail separated, showing the kerfs of the saw forming the dovetail.

My invention consists, first, in a sliding guide-frame, upon whose surface are formed the several perpendicular and inclined planes or beveled rests, against which the pieces to be dovetailed are held while the dovetail is being cut or formed; second, in the construction and arrangement of a series of adjustable and removable perpendicular and beveled or inclined guiding surfaces or rests, by which dovetails of different sizes and angles may be made to suit the various sorts of work to which dovetails are applicable; third, the combination of a sliding guide-frame, having perpendicular and beveled or inclined rests to govern the angle of the kerf of the saw or other cutting-tool, with a variable bottom rest, which gages the depth of the kerf forming the dovetail.

Like letters designate corresponding parts in all of the figures.

A, in the accompanying drawings, represents grooved guides, which rest upon and are supported by parallel ways B, giving direction to these guides A, and to which guides are secured the adjustable and removable perpendicular and inclined planes or beveled surfaces C, which govern the direction of the saw kerfs or mortises forming the dovetail. These

perpendicular and beveled or inclined surfaces C are clamped together and retained in position by means of bolts and nuts, as shown at D in dotted lines, Fig. 1. The grooved guides A are secured to the back of these adjustable and removable rests by means of screws, or in any other convenient manner which would readily suggest itself to a skilled workman. To the bottom or lower side of these perpendicular and beveled inclined surfaces C is fitted a variable rest, G, which governs the depth of the several kerfs or mortises forming a complete dovetail, and which is also firmly secured to the lower side of the series of surfaces C in any convenient manner. At the lower front side of this series of sliding rests C, and at the proper distances therefrom, is arranged a circular saw, H, as represented in fragment, dotted lines, Fig. 1, and running in a line parallel with the front surface of the rests C, and by the kerf of which, or any other suitable cutter, dovetails are formed.

The kerfs or mortises forming the part of a dovetail in a window-frame, as represented in Fig. 3, are made in the following manner or order: The first or outside kerf *a* in the stile I of a window-frame, being a simple notch, is made in any convenient manner, or it might be made by adding another guiding-surface to this general machine.

To make the first kerf or cut *r*, in forming the mortise of a dovetail, the stile is placed against the perpendicular rest or guiding-surface *b*, the lower end of which rests upon the variable support G at *o*, which governs the depth of the straight side *r* of the kerf or mortise, the kerf being made by passing the stile I, supported upon this perpendicular surface *b* of the frame C, from left to right over the circular saw or cutter H, as hereinbefore described. The stile I is then changed to the inclined rest *d*, the lower end *e* of which terminates at a point on the surface of the variable rest G with that of the perpendicular rest *b*, when it is again passed over the saw or cutter and the inclined sides cut, which completes the mortise of the dovetail on the stile I, as represented in Fig. 3.

To form a dovetail in the meeting-rail of a window-frame to correspond with that just de-

scribed in the stile I, the notch *t* on the outside being previously made in any convenient manner, the rail J is placed in the shallow perpendicular rest *u* and passed over the cutter H from left to right, by which the straight side of the mortise is made to the required depth to correspond with the width of the stile I, as clearly represented in Fig. 2. To complete the mortise of this dovetail, the rail is changed to the inclined rest *x*, the edge *o'* of which terminates at a point in a plane parallel with that of the perpendicular rest *u*, (see dotted lines, Fig. 1,) when the rail is again passed over the cutter H, completing the mortise of the dovetail in the meeting-rail.

Here it will be observed that the gage-rest G varies, and, instead of a shallow mortise to correspond with the thickness of the meeting-rail J, as in the stile I, by its resting upon the uppermost projection *o*, the end of the rail J rests upon the lowermost projection *f* of the gage-rest G, which is of sufficient depth below the projection *o* to correspond with the width of the stile I. Hence the difference in the depth of the kerf to form the mortise of a dovetail complete in material of different thickness. If, however, the material in which a dovetail is to be formed is of uniform thickness, then the projections *o f* upon the gage-rest G would be alike and not varied in depth, as in this instance.

To recapitulate, the outside notch *a* in a stile of a window-frame being previously cut in any convenient manner, the stile is then placed in the guide-rest *c*, forming the straight side of the mortise, and then changed to the

inclined rest *d*, completing the mortise for the reception of the tenon on the meeting-rail by forming the inclined side *s*.

Forming the dovetail in the meeting-rail of a window-frame is simply repeating the operation as in the stile I, using, instead, a corresponding set of inclined and straight or perpendicular rests, *w* and *x*, instead of *u* and *v*.

To form dovetails on the opposite ends of the stile I and meeting-rail J, the rests *c* and *w* are used instead of the rests *x* and *b*, as before stated. Hence it will be seen that both ends of the stile I and meeting-rail J of a window frame or other articles may be dovetailed without changing the parts in one and the same machine.

Having thus fully described my improved machine for forming dovetails, I disclaim the patent of J. Travers of September 2, 1873, and numbered 142,420; but

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

1. The construction and arrangement of a series of adjustable and removable guiding surfaces or rests, for cutting dovetails varying in form, substantially as described.

2. A sliding guide-frame having perpendicular and inclined or beveled rests, in combination with a variable gage, to determine the different depths of the kerfs in forming a complete dovetail in material of different thickness.

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