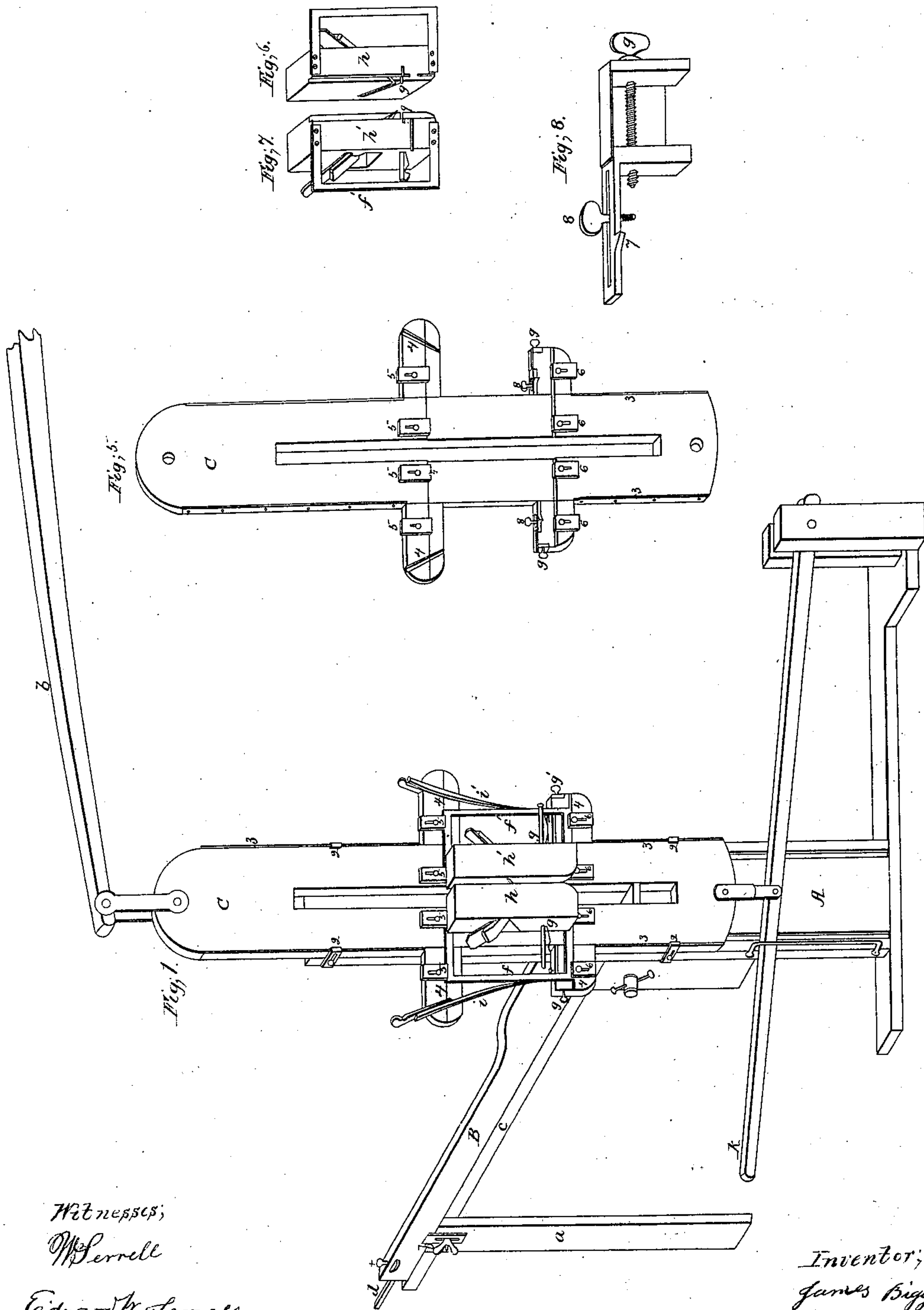


*J. Biggs,*  
*Tenoning Machine,*

*N<sup>o</sup> 4268.*

*Patented Nov. 12, 1845.*



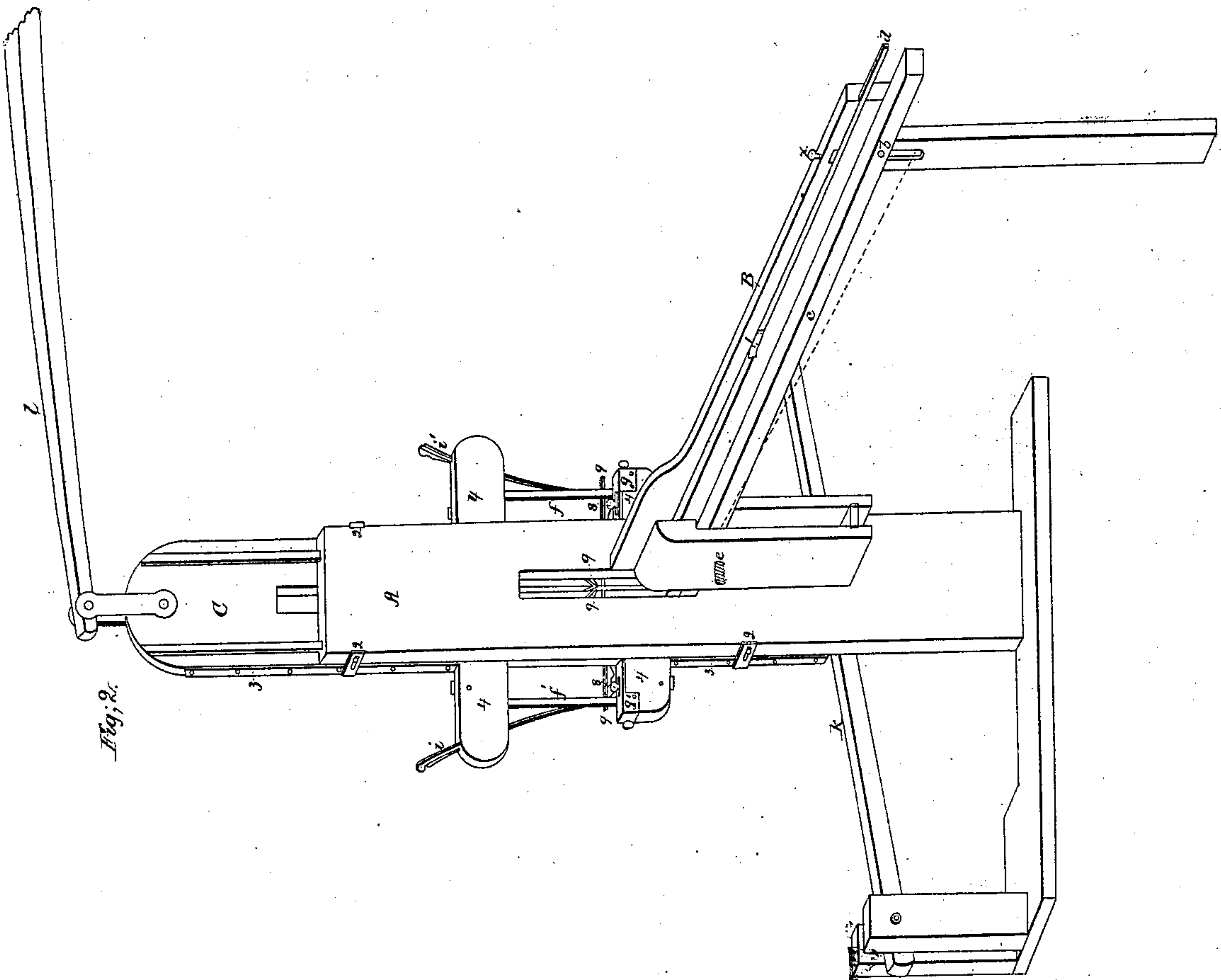
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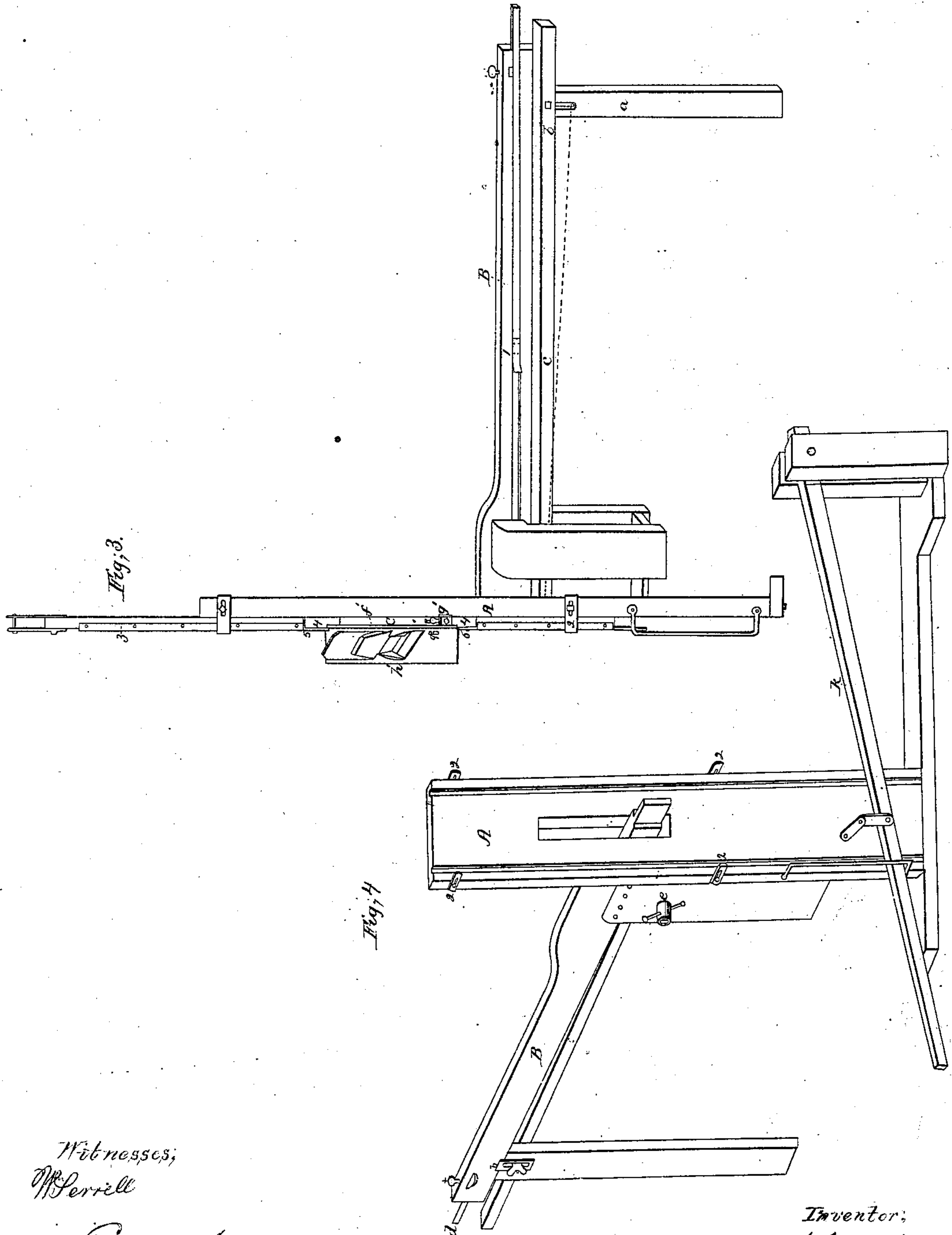


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# UNITED STATES PATENT OFFICE.

JAMES BIGGS, OF NEW YORK, N. Y.

## TENONING-MACHINE.

Specification of Letters Patent No. 4,268, dated November 12, 1845.

*To all whom it may concern:*

Be it known that I, JAMES BIGGS, of the city, county, and State of New York, carpenter, have invented and made and applied to use certain new and useful improvements in the arrangement, combination, and application of well-known mechanical means for the purpose of cutting tenons on the ends of wooden framing-pieces as wanted for any usual purposes, for which improvements I seek Letters Patent of the United States, and that the said improvements and the mode of constructing and using the same are fully and substantially set forth and shown in the following description and in the drawings annexed to and making part of this specification, wherein—

Figure 1, Sheet 1, is a general perspective front representation of the parts employed by me, shown collectively and in place for use; Fig. 2, Sheet 2, is a similar representation, in the opposite direction; Fig. 3, is a side elevation; Fig. 4, Sheet 3, is a perspective representation of the standing parts; Fig. 5, is a front elevation of the principal or moving carriage.

The other figures are hereinafter separately referred to, and the same letters and numbers, as marks of reference, apply to the same parts in all the figures.

A, is the main vertical standard, having a long vertical slot.

B, is a guide piece one end fixed in the standard A, the other end sustained on a secondary standard *a*, and having on one side a bearer *e*, that supports the material to be operated on, one end is set on a center pin, in the standard A, the other end is sustained by an adjusting screw *b*, in a slot in the standard *a*, this giving the means of cutting tenons with shoulders at any required angle, by lowering or raising the back end of the bearer *e*; a groove in the inner face of the guide piece B, carries an adjustable slide *d*, this has near the fore end, on the face, a stop spring *l*, with a shoulder and a set screw *x*, secures the slide *d*, and stop *t*, at any required point, so that on putting in a piece of material, to cut the tenon on one end first, the stop spring *l*, houses in the guide piece, but on reversing the material to cut the second tenon, the stop takes the shoulder of the first cut tenon, and fixes the length, between the shoulders of the two tenons; a holding clamp and screw *e*, similar to a car-

penter's vertical bench screw, holds the material against the guide piece B, when put in, so as to lay one end through the vertical slot, in the main standard A, when thus in place, on the standing parts, the material is to be operated on as follows.

The carriage *c*, is placed on the front of the standard A, and fitted with a corresponding vertical slot; four adjustable slide clips, 2, 2, 2, 2, on the standard take four corresponding slides 3, 3, 3, 3, on the carriage C, this is fitted with two ribs on the back, entering two grooves, on the face of the standard A, to insure the parallelism of the motion, and four arms 4, 4, 4, 4, on the outside of the carriage C, are rabbeted on the inner edges, equal with a countersink, in the carriage, so as that four slide clips 5, 5, 5, 5, above and four similar clips 6, 6, 6, 6, below, hold two frames *f*, *f'*, within the rabbet and countersink, the extent of inward motion of these frames is regulated by gage screws *g*, *g'*, set on the lower arms 4, 4; these are shown separately, in the detached Fig. 8, as governing a small slide 7, with a catch, projecting so as to take the inner edge of the outer vertical part of each frame *f*, or *f'*, when the tenon is cut, and a set screw 8, prevents any change while in work. The inner part of each frame carries a handed plane *h*, or *h'*, shown in the detached Figs. 6, and 7, as handed rabbet planes, with skew iron the required hand, and each fitted with an adjustable cutting tooth, 9, in advance of the cutting irons; two strong springs *i*, *i'*, are wedged into grooves in the upper arms 4, 4, so as to act against and on the outer part of the frames *f*, *f'*, and force them with the planes, toward the center of the machine; the inside of each plane head is cut with a semicycloidal bevel, which operates to force the planes outward, and past the material, on the down or cutting motion, which is to be given by the workman's foot, or by any other convenient power, acting on the treadle lever *k*, which is connected to the lower end of the vertical carriage *c*, the backspring lever *l*, connected above, gives the uphand or return motion to the carriage *c*, and when thus fitted, and adjusted to the size of tenon required, the obvious effects are, that the machine will cut, successively, any number of frame tenons, all exactly alike in the length between the shoulders



and in the depth on the guide side of each tenon and each tenon accurately the same thickness.

5 As all the parts, herein described and shown, taken separately, have been used before, for various purposes I do not claim to have invented any of such parts; but

I do claim as new, and of my own invention, and desire to secure by Letters Patent,

10 1. The mode described of giving any required angle, or bevel, to the shoulders of tenons, by the operation of the bearer *c*, and screw *b*, in combination with the means of fixing the length between the tenon shoulders by the slide *d*, stop spring *l*, and set screw *x*, as the same are described herein.

15 2. The mode of mounting the tenon planes *h*, *h'*, on frames in cross slides on the car-

riage C, in combination with the means of adjusting the depth of each tenon, by the 20 gage screws *g*, *g'* slide and catch 7, and set screw 8, and the farther combination with these parts, of the springs *i*, *i'*, to force the planes toward the center of the machine, in the act of cutting the tenon, substantially 25 as is herein described.

In witness whereof, I have hereunto set my hand, in the city of New York, this sixth day of July, one thousand eight hundred and forty four, in the presence of the 30 witnesses subscribing hereto.

JAMES BIGGS. [L. s.]

Witnesses:

WM. SERRELL,

EDWARD W. SERRELL.