

# P. Welch, Jointing Staves.

N<sup>o</sup> 40,784.

Patented Dec. 1, 1863.

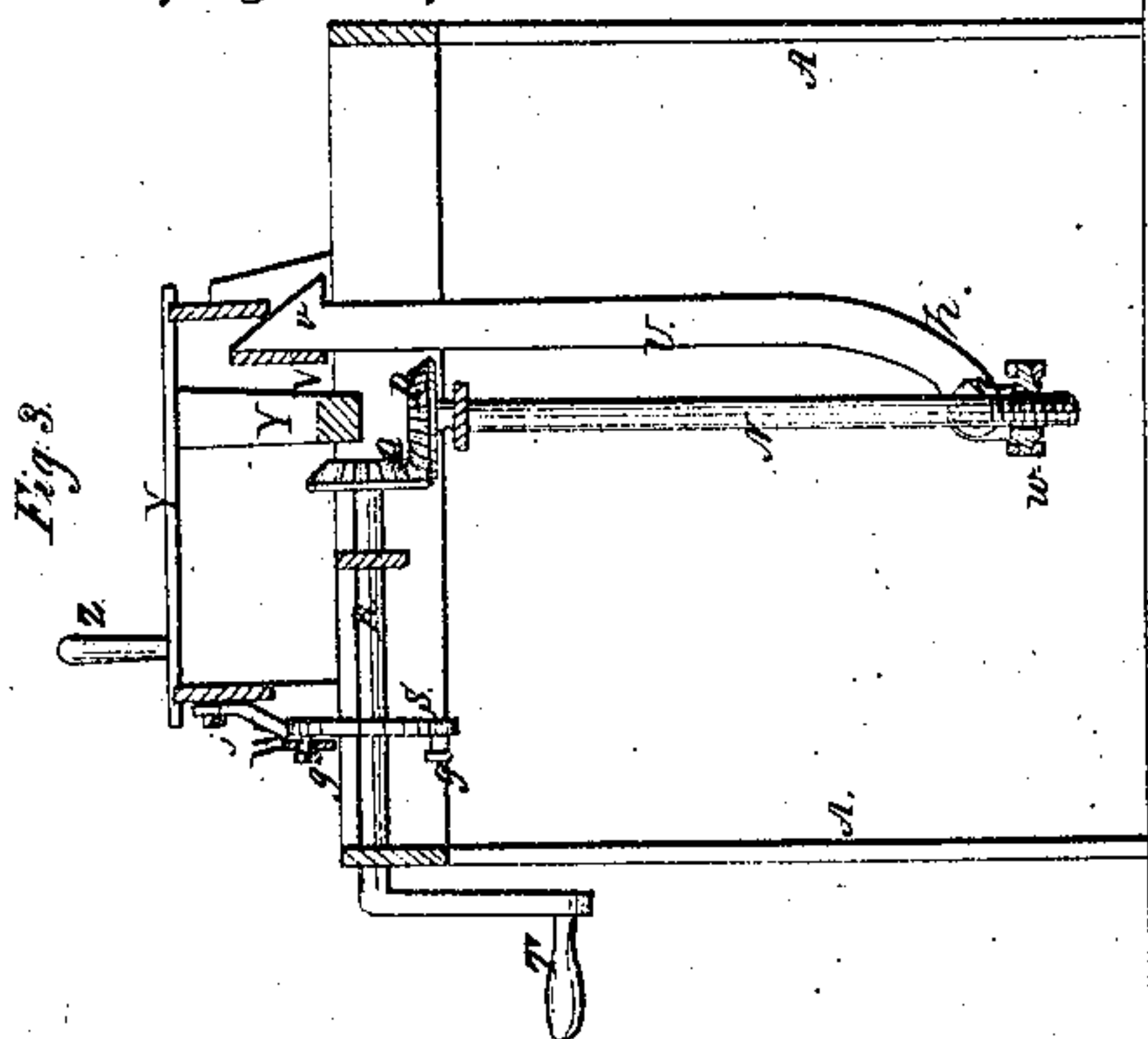


Fig. 3.

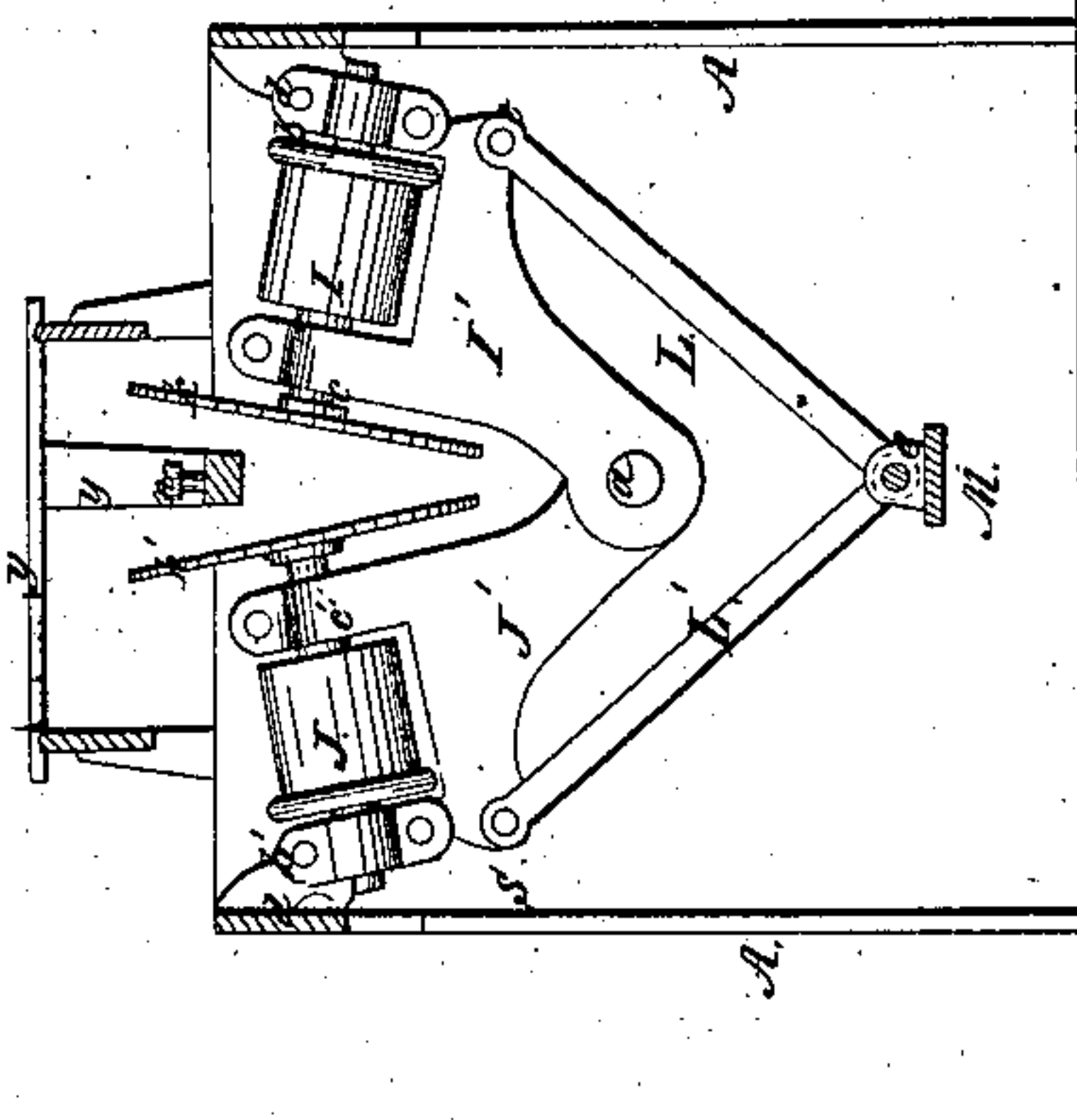


Fig. 4.

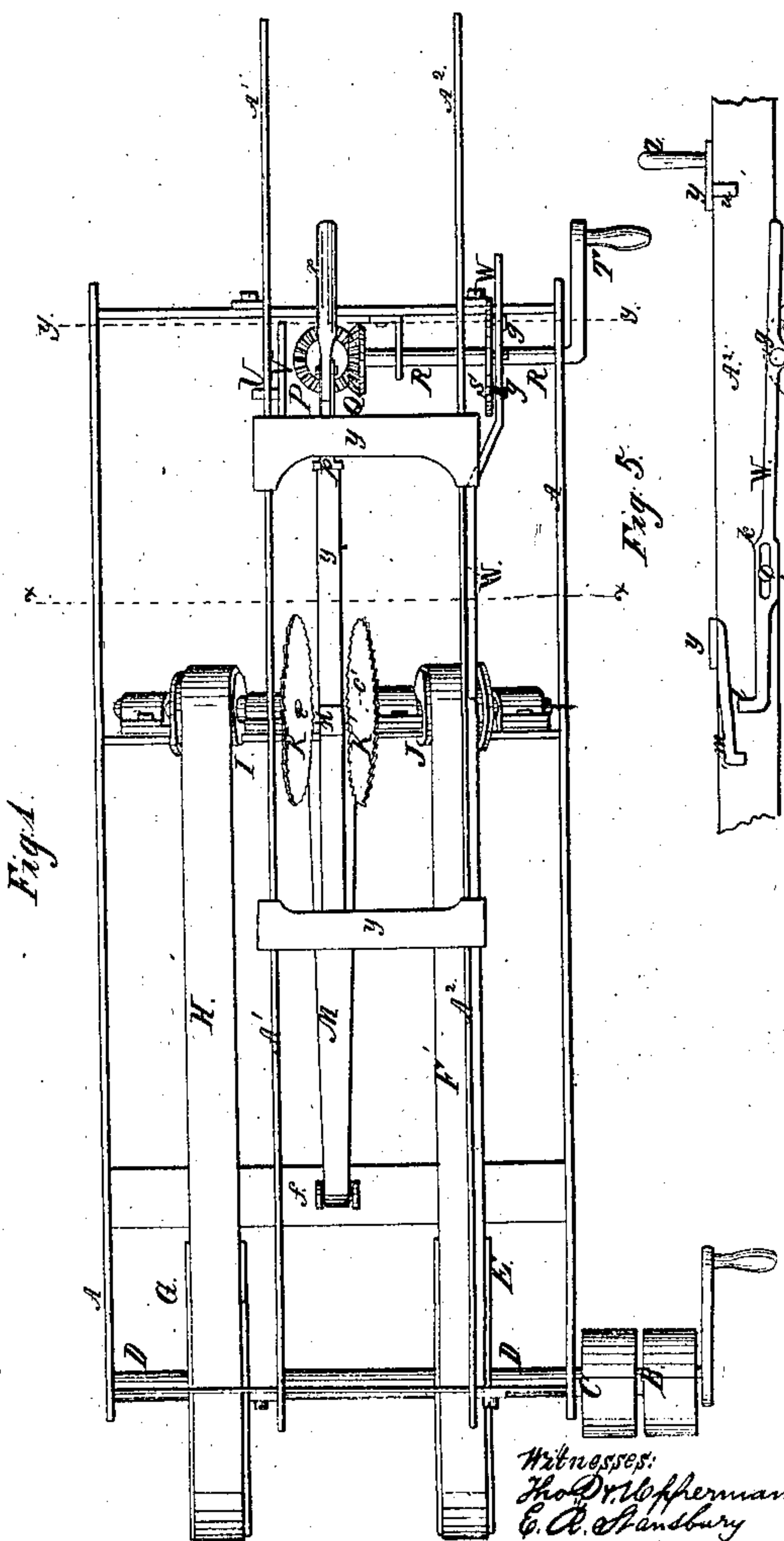


Fig. 1.

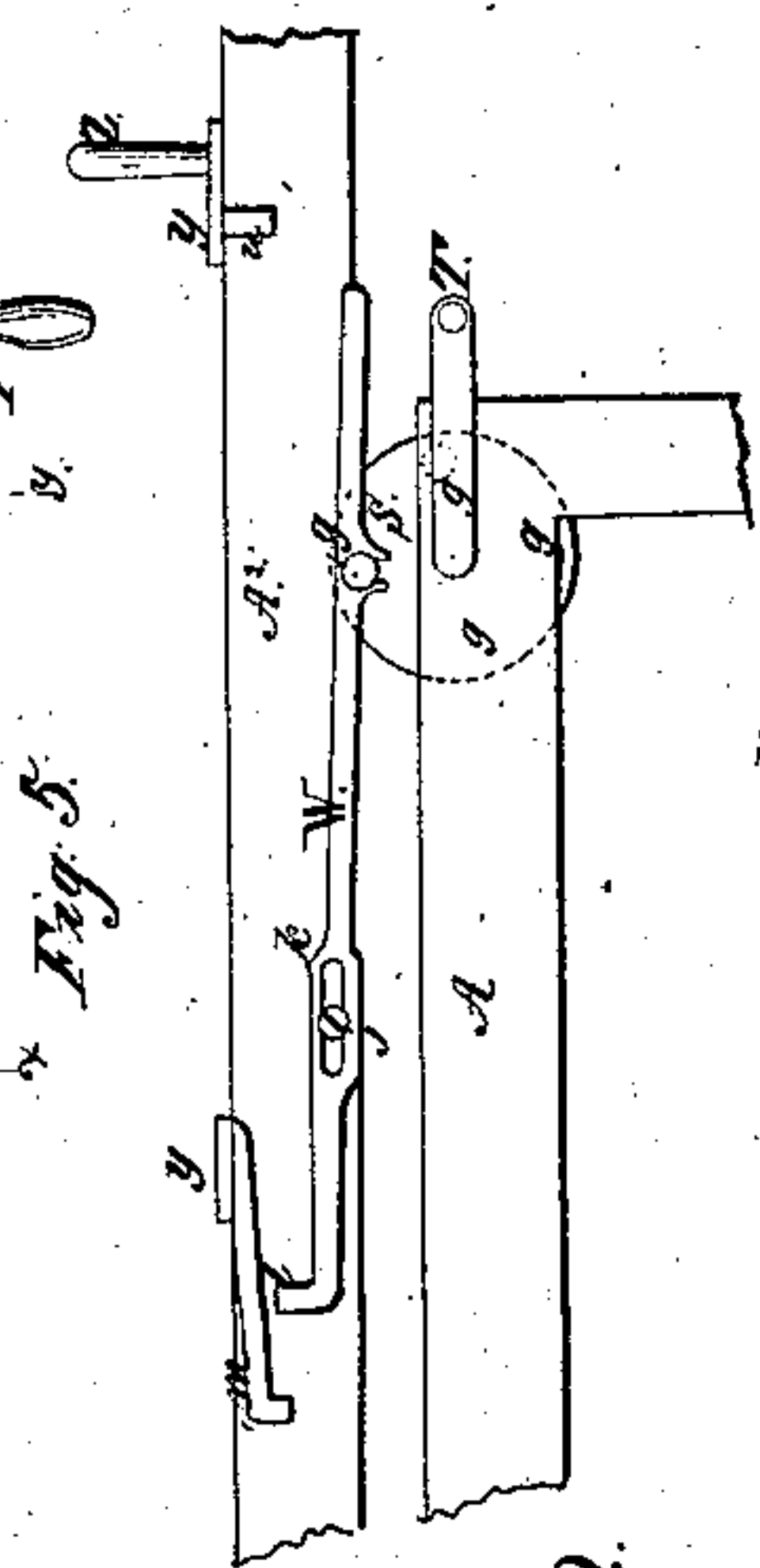
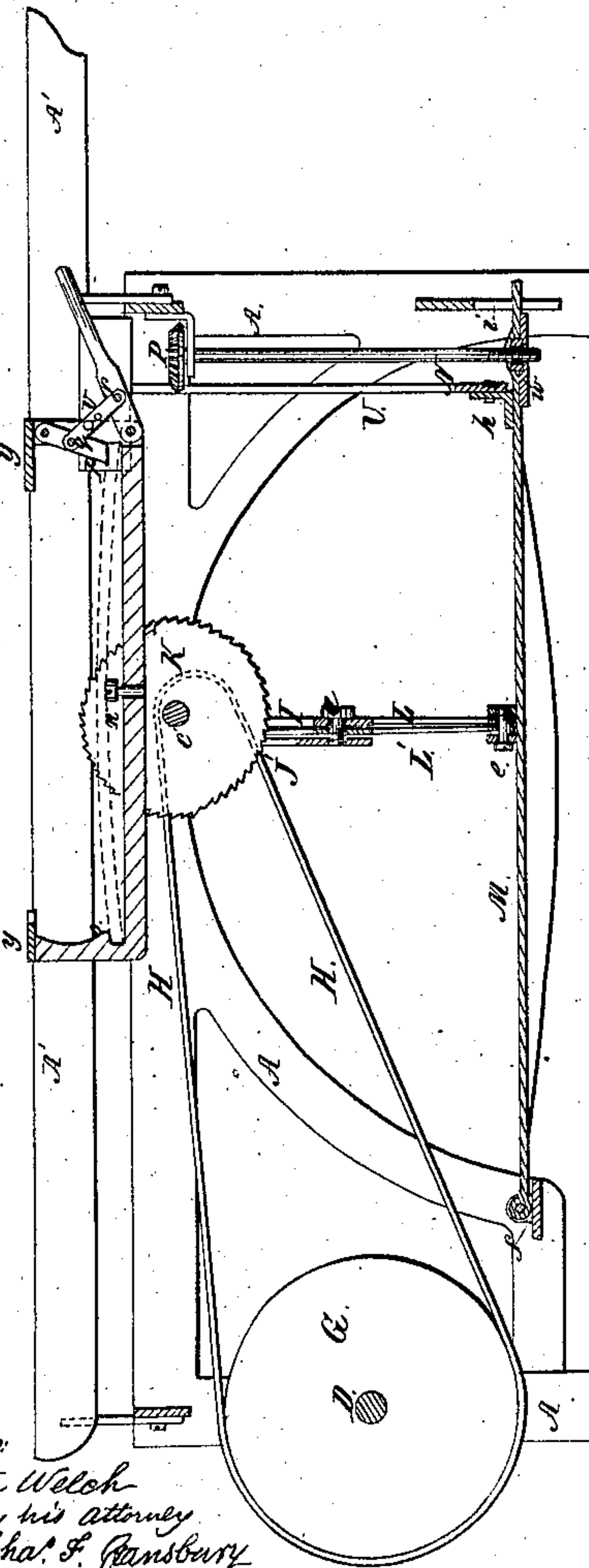


Fig. 5.

Fig. 2.



Witnesses:  
Thos. Dr. Löfflerman  
C. A. Mansbury

Inventor:  
Peter Welch  
By his Attorney  
Chas. F. Mansbury



# UNITED STATES PATENT OFFICE.

PETER WELCH, OF OSWEGO, NEW YORK.

## IMPROVED MACHINE FOR JOINTING STAVES.

Specification forming part of Letters Patent No. 40,784, dated December 1, 1863.

*To all whom it may concern:*

Be it known that I, PETER WELCH, of Oswego, in the county of Oswego and State of New York, have invented a new and Improved Machine for Jointing Staves; and I do hereby declare the following to be a full and correct description of the same, reference being had to the accompanying drawings, in which—

Figure 1 is a top view of my improved machine. Fig. 2 is a side elevation of the same. Fig. 3 is a transverse vertical section of the same through line *y y* of Fig. 1. Fig. 4 is a similar section through line *x x* of Fig. 1. Fig. 5 is a detail view of the side W and its connections.

The same part is marked by the same letter of reference wherever it occurs.

The nature of my invention consists in improvements in machinery for jointing staves by means of saws, whereby it is rendered so perfectly adjustable that staves of any width can be jointed in a superior manner without unnecessary waste of material, while each stave receives a bilge and bevel proportionate to its width, all substantially as hereinafter more fully described.

To enable others to make and use my improved machine, I will proceed to describe its construction and operation, referring to the drawings, whereon A marks the frame of the machine; B the loose and C the fast pulley on the main shaft D.

E is a band-wheel, and F its belt or band, driving small pulley J on shaft *e'* of saw K'.

G is a band-wheel, similar to E, driving by its band H pulley I on shaft *e* of saw K. Pulleys E and G are both fixed to main shaft D, which receives motion from any suitable prime mover. The only office of these pulleys is to drive the jointing-saws.

The saw-shafts *e* and *e'*, with their pulleys I and J, are hung in suitable bearings in the arms I' and J', which are hinged together at *a* and pivoted to the lugs *d d* by the pins *b b'*. (See Fig. 4.)

The arms L L' are pivoted, respectively, to the arms I' J' at *t* and *s*. They are also pivoted to each other and to the lever M at *e*. The lever M (see Fig. 2) has its fulcrum at the hinge *f*, and at its opposite end has a pivoted nut, *w*, into which the lower end of upright shaft N is screwed, so that, as that shaft

is rotated, it will raise or lower the free end of lever M. Shaft N has a bevel cog-wheel, *i*, on its upper end, which is driven by a similar wheel, Q, on the inner end of horizontal shaft R, which is rotated by means of the winch T. (See Fig. 3.)

Attached to shaft R is wheel S, Figs. 1, 3, and 5, in the side of which the pins *g g* are inserted. These pins are received into a notch on the lower side of slide W, and the wheel S is partially rotated by a reciprocating movement of said slide. The slide W is attached to the side of the frame by the headed pin *j*, which passes through a slot, *k*, in the slide, allowing it a limited back-and-forth movement, as is clearly shown in Fig. 5. A dog, *l*, projecting up from the end of slide W, is in such a position as to be acted upon alternately by the stops *m* and *n* of the carriage Y, as said carriage reciprocates on the ways A' A<sup>2</sup>. The free end of slide W can be lifted at pleasure to disengage the notch of said slide from the pins *g* of wheel S when required.

Y marks the reciprocating carriage or stave-holder, which rests on and reciprocates upon the ways A' A<sup>2</sup>. This carriage holds the stave in the proper position to be operated upon by the saws. An adjustable screw, *n*, in the middle of the carriage, gives the proper bilge to the stave. (See Fig. 2.) The forward end of the stave is inserted and held in notch *o*, and its rear end is held down by dog *p*, operated by lever *r*, to which it is connected by the short arm *q*. The lever *r* is under the control of the operator of the machine. The lower part of carriage Y is arranged to pass midway between the saws, as seen in Fig. 1.

Hinged to lever M at *h* is arm U, on the upper end of which is gage V. The inclined back *v* of this gage is so arranged in relation to rail A' that as the arm U is raised the gage will be thrown toward the center line of the machine, and as it is lowered will recede from said line, and this in the same proportion as the saws approach or recede from each other by reason of the rise and fall of lever M. The office of this gage is to regulate the position of the stave before it is fed to the saw, so that an equal quantity of material shall be sawed off from each side of the stave, whatever may be the width, thus preventing waste.

The operation is as follows: The stave being inserted in the carriage, and the saws and



gage adjusted, the machine is set in motion and the carriage passed in, by hand, between the saws, the carriage being moved by means of the handle Z by the operator. When the sawing of the joints is completed, the stop *u* on the carriage Y comes in contact with the dog *l* of slide W; and causes that slide to operate the wheel S on shaft R, so that, by means of the gears Q and P, the shaft N shall be so turned as to depress the lever M and throw the saws K K' a little farther apart at top, so that, as the carriage Y is drawn back, the edges of the jointed stave will not come into contact with the saws. When the carriage arrives at its starting-point, the stop *m* comes into contact with dog *l*, and restores the wheel S and, through it, the saws to their original position, ready for a repetition of the operation.

When a wider or narrower stave has to be jointed, the necessary adjustment of the saws

and gage is made by means of the winch T by the operator.

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

1. The combination of the carriage Y, slide W, wheel S, shaft R, shaft N, and lever M with the jointing-saws, substantially in the manner and for the purpose described.

2. The combination of the gage V with the lever M, so that it is operated at the same time and in the same proportion as the saws, substantially in the manner and for the purpose set forth.

The above specification of my said invention signed and witnessed at Oswego this 13th day of October, A. D. 1863.

PETER WELCH.

Witnesses:

J. STANFORD,  
ANSON B. JENKS.