

(No Model.)

2 Sheets—Sheet 1.

J. PLEUKHARP.  
STAVE JOINTING MACHINE.

No. 477,450.

Patented June 21, 1892.

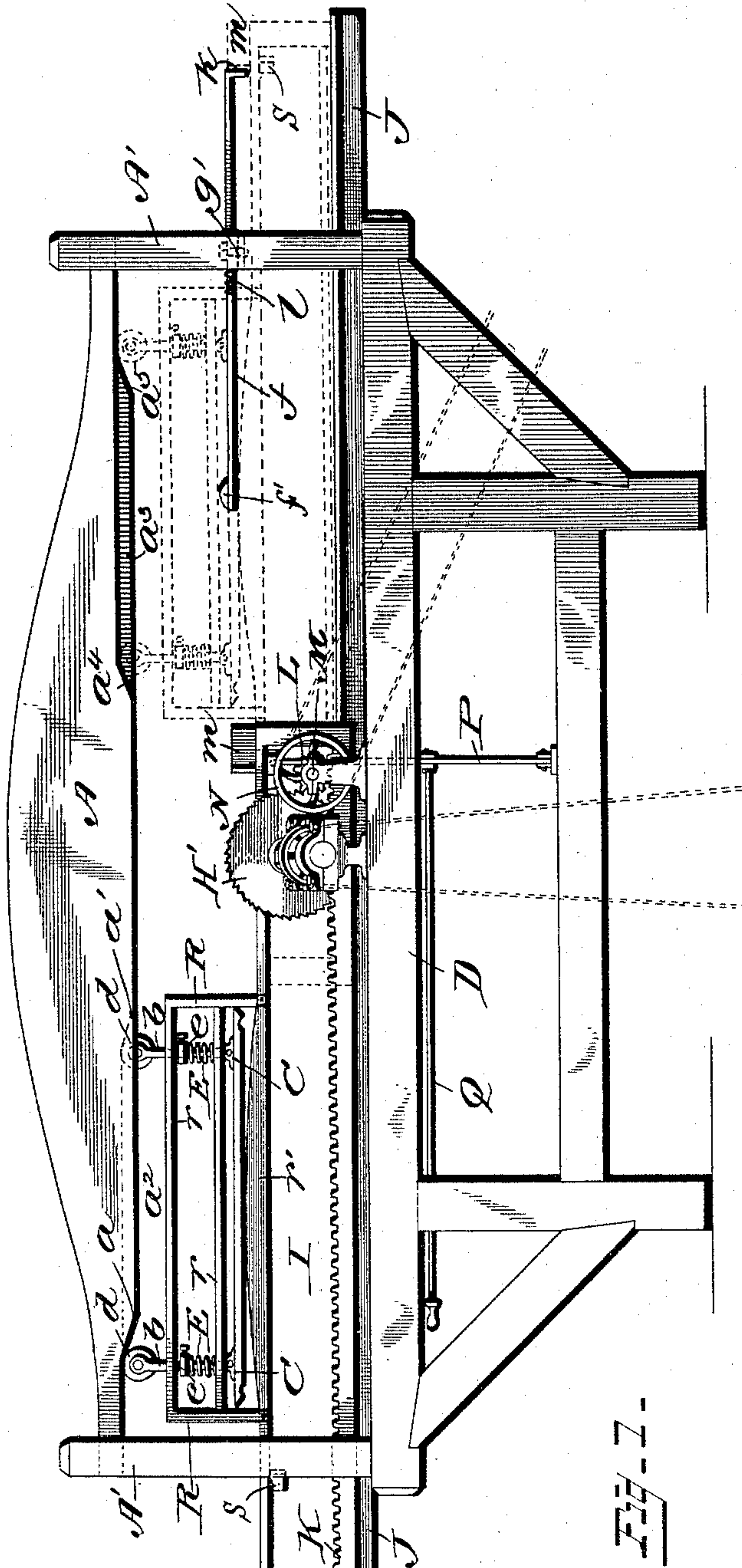


Fig. 1 -

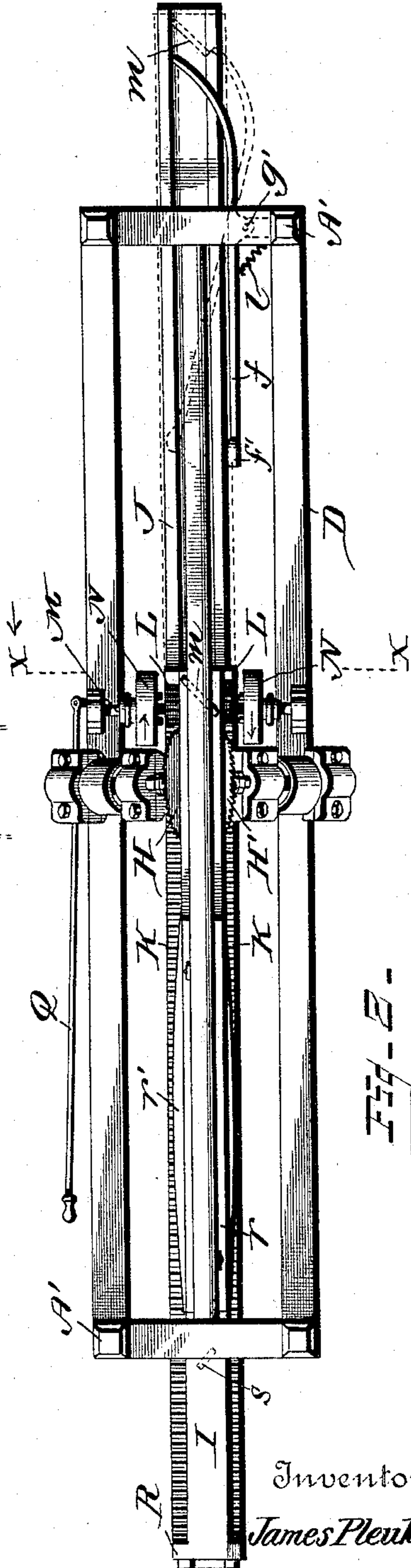


Fig. 2 -

Witnesses  
Albert Speeden.  
Van Buren Hillyard.

By his Attorneys

James Pleukharp  
R. S. & A. Lacey

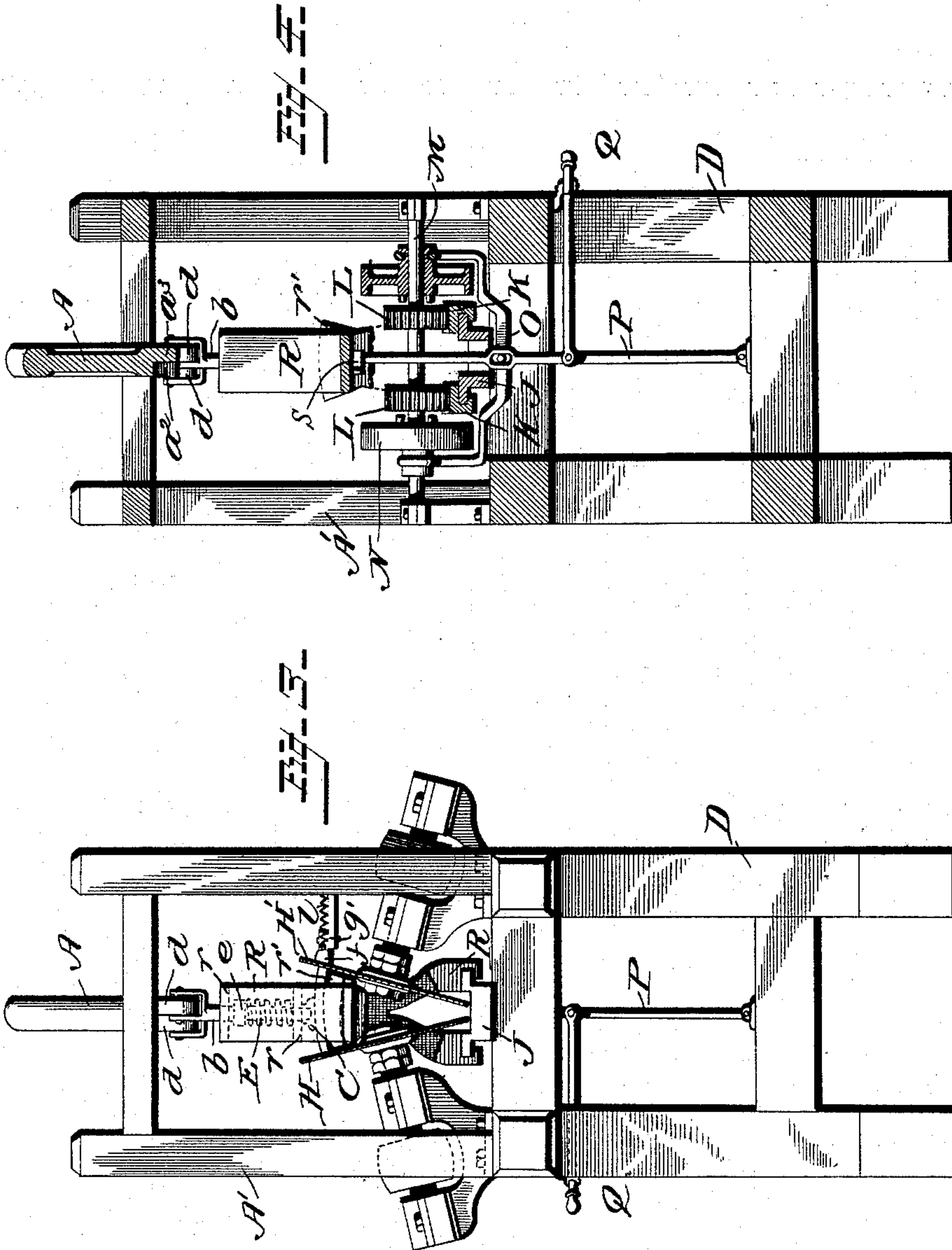
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*Albert Speiden*  
*Van Burro Hillyard.*

Inventor  
*James Pleukharp.*

By his Attorneys  
*R. D. & A. Lacey*



# UNITED STATES PATENT OFFICE.

JAMES PLEUKHARP, OF COLUMBUS, OHIO.

## STAVE-JOINTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 477,450, dated June 21, 1892.

Application filed April 4, 1891. Serial No. 387,615. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES PLEUKHARP, a citizen of the United States, residing at Columbus, in the county of Franklin and State of Ohio, have invented certain new and useful Improvements in Stave-Jointing Machines; 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 relates to stave-jointing machinery and aims to automatically bend the stave prior to jointing to obtain the proper bevel at the edges to effect a close joint and obviate calking after the barrel is formed and hooped, and to automatically release the stave from the confining devices after the jointing has been effected and throw it from the jointing-machine by mechanical appliances.

The improvement will be more particularly set forth hereinafter, and noted in the claims, and is shown in the accompanying drawings, in which—

Figure 1 is a side view of a machine embodying my invention, showing the operation of the carriage by dotted lines. Fig. 2 is a plan view of the machine. Fig. 3 is an end view of the machine having parts omitted for the sake of clearness. Fig. 4 is a cross-section of the machine on the line X X of Fig. 2, looking to the left, having parts omitted for the sake of clearness.

The frame or stand D is of ordinary construction and adapted to support the operating parts of the machine. The saws H and H' and their actuating mechanism (not shown) are of usual application and arrangement relative to the other parts of the machine. The carriage I is mounted on the track J and is reciprocated on the said track by the rack K and the pinion L on the cross-shaft M. There will be a second rack K on the other side of the carriage, and the shaft M will have a second pinion L to mesh therewith. Two band-wheels N are mounted on shaft M and are caused to revolve in opposite directions by suitable mechanical appliances, and are moved on the shaft M by means of the yoke O, lever P, and the hand-lever Q to bring one or the other of the said band-wheels N in engage-

ment with the corresponding pinion L to move the carriage in the proper direction. The frame comprising the vertical standards R and the horizontal parallel bars *r* spans the curved former *r'*, on which the staves are bent. The vertical presser-bars *b*—one near each end of the frame—are mounted in the horizontal bars *r r* and are adapted to move freely therein in a vertical direction. The springs E, surrounding the bars *b* and located between the bars *r r* and a collar *e*, secured to the bars, keep the said bars *b* at the limit of their upward movement. The shoes C, pivoted to the lower ends of the bars *b*, press on the staves and adapt themselves to the position of the staves, so as to bear uniformly thereon. The rollers *d* at the upper ends of the bars *b* travel on the overhead tracks *a<sup>2</sup> a<sup>3</sup>* and relieve friction. The overhead beam A is supported at its ends on standards A', which are projected up from the table D, and is provided on its lower side with two tracks *a<sup>2</sup> a<sup>3</sup>*. The track *a<sup>2</sup>* is in advance of the track *a<sup>3</sup>* a distance equal to the distance between the rollers *d d* and is provided at its front end with the incline *a* and at its rear end with the reverse incline *a<sup>4</sup>*. The track *a<sup>3</sup>* has the incline *a<sup>5</sup>* at its front end and the reverse incline *a<sup>5</sup>* at its rear end. The two tracks *a<sup>2</sup>* and *a<sup>3</sup>* are parallel and in different vertical planes, and the rollers *d d* are disposed relatively to the said bars *b*, so as to travel upon the proper track. The lever *f*, pivoted midway of its ends to the rear standards A' at *g'*, has its front end *f'* expanded and its rear end *k* bent down. The inclined block *m* on the carriage is adapted to strike the bent end *k* of the lever *f* and operate the said lever to throw the stave from the machine after being jointed. The spring *l* returns the lever *f* to a normal position after the stave has been ejected. The lever P, which is pivoted at its lower end to a cross-bar of the frame, has its upper end projected within the path of an incline block S on the carriage I to be engaged by the said block and moved thereby to shift the band-wheels N on the shaft M to reverse the motion of the carriage. One of these incline blocks S will be placed near each end of the carriage to alternately engage with and actuate the said lever P to reciprocate the said carriage. Ob-



viously by a proper manipulation of lever Q the carriage may be started, stopped, and reversed, as desired.

The operation of the machine is as follows:

- 5 The stave of proper length and crozed is placed on the former  $r'$ , its ends abutting against the standards R R, and with the shoes C C resting on or coming over the end portions. The carriage being set in motion, the rollers  $d d$
- 10 ride down the inclines  $a$  and  $a'$  and through the bars  $b$  press the ends of the stave close to the former. The carriage advancing carries the stave between the saws, and as it reaches the limit of its movement after the jointing
- 15 of the stave the rollers  $d d$  ride up the reverse inclines  $a^4$  and  $a^5$ , and relieves the stave, which assumes its original position. (See the dotted lines in Fig. 1.) At this moment the block  $m$  strikes the bent end of the lever and operates
- 20 the said lever and throws the stave from the former  $r'$ . At this instant one of the blocks S strikes lever P and shifts the same to cause the carriage to run back to the starting-point, and the operation is repeated. The staves are
- 25 placed in position prior to jointing by hand.

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

1. In a stave-jointing machine, the combination, with the carriage having a former to receive the stave, of vertically-moving shoes located near the ends of the said former, and tracks having inclines at their front ends to effect a pressure on the said shoes to press
- 35 the stave on the former, substantially as and for the purpose described.

2. In a stave-jointing machine, the combination, with the carriage having a former to receive the stave, of vertically-moving shoes
- 40 located near the ends of the said former, and tracks having inclines at their front ends to effect a pressure on the said shoes to press the stave on the former and having reverse inclines at their rear ends to permit a release of

the stave, substantially as and for the purpose specified.

3. In a stave-jointing machine, the combination, with the carriage having a former and means for holding the stave on the former during the process of jointing and releasing the
- 50 stave when joined, of a lever adapted to be struck by the carriage and actuated to throw the stave from the machine, substantially as described.

4. In a stave-jointing machine, the combination, with the carriage having the former
- 55  $r'$  and having a frame over the former, of the bars  $b$ , mounted in the said frame, the shoes C, pivoted to the lower ends of the bars, and the tracks having inclines  $a$  and  $a'$ , substantially as described.

5. In a stave-jointing machine, the combination, with the carriage having the former
- 65  $r'$  and having a frame over the former, of the bars  $b$ , mounted in the said frame, the shoes C, pivoted to the lower ends of the bars, springs for actuating the bars  $b$  and holding them at the limit of their upward movement, and tracks having inclines  $a$  and  $a'$ , substantially
- 70 as described.

6. In a stave-jointing machine, the combination, with the carriage having the former
- 75  $r'$  and having a frame over the former, of the bars  $b$ , mounted in the said frame, the shoes C, pivoted to the lower ends of the bars, and the springs E, of the tracks  $a^2 a^3$ , having inclines  $a a^4$  and  $a' a^5$ , respectively, the block  $m$ , and the lever F, pivoted between its ends, and having the end  $k$  constructed to be struck by block  $m$ , substantially as described, for
- 80 the purpose set forth.

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

JAMES PLEUKHARP.

Witnesses:

F. F. HOFFMAN,  
FRANK C. HUBBARD.