L. S. Chichester,

Jointing Staves.

No. 6,568. Patented July 3, 1849.

Fig. 1

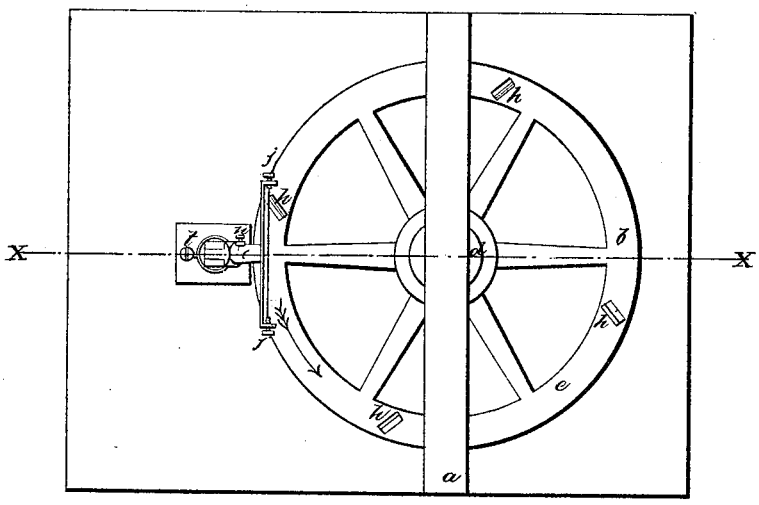


Fig. 2

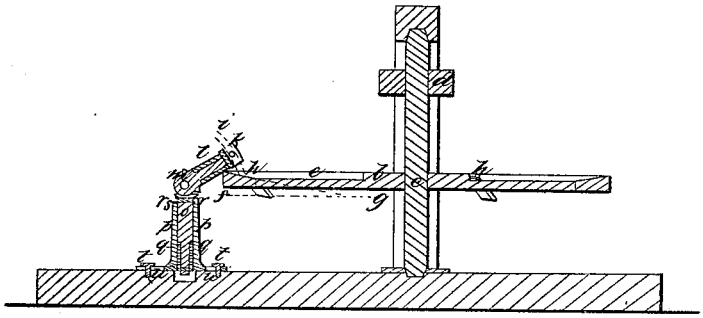
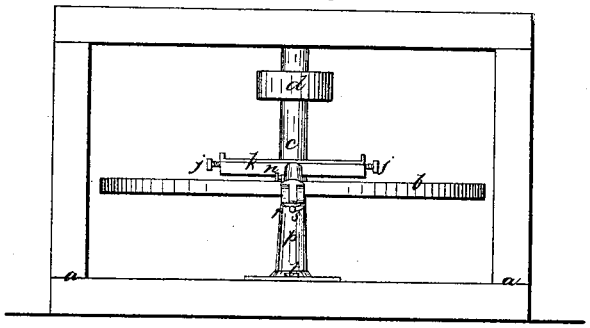


Fig. 3



UNITED STATES PATENT OFFICE.

LEWIS S. CHICHESTER, OF TROY, NEW YORK.

MACHINERY FOR JOINTING STAVES.

Specification of Letters Patent No. 6,568, dated July 3, 1849.

To all whom it may concern:

Be it known that I, LEWIS S. CHICHESTER, of Troy, in the county of Rensselaer and State of New York, have invented certain new and useful Improvements in the Machine for Jointing Staves, and that the following is a full, clear, and exact description of the principle or character which distinguishes them from all other things before known and of the manner of making, constructing, and using the same, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a plan of the machine; Fig. 2, a vertical section taken at the line (X, X) of Fig. 1; and Fig. 3, a front elevation.

The same letters indicate like parts in all the figures.

The object of my invention is to joint staves in the required curve for the bulge or bilge of casks or barrels, without the necessity of bending them in a clamp as heretofore generally practiced. And my invention to this end consists in the employment of a rotating shaving wheel with plane irons or cutters on the face of the rim which face is beveled inward or toward the axis, when this is combined with a clamp in which the stave is held in a straight line, which clamp for the purpose of presenting the stave to the plane irons, vibrates on an axis corresponding with the axis of the cask or barrel to be made, by means of which the edge of the stave will be shaved to a curve, which, when the stave is bent to the form required for the cask or barrel will present a plane corresponding with a plane passing through the axis of the cask or barrel.

My invention also consists in combining the clamp by means of a hinge or other turning joint with a rotating spindle that the two edges of the stave may be alternately presented to the action of the shaving wheel.

My invention also consists in making the upper end of the standard in which the spindle of the clamp turns with two inclined faces each extending around one half of the circle, when the spindle is made to rest on these inclined faces and connected with the standard by a spring the tension of which draws down the spindle, so that when the spindle is turned half way round to present the second edge of the stave to be jointed, the shoulder at the junctions of the inclined planes shall determine the extent of the required rotation. And lastly my invention consists in making the connection of the clamp with the spindle adjustable in combination with the making of the standard adjustable relatively to the axis of the shaving wheel, that the axis of vibration of the clamps may be shifted nearer to or farther from the axis of the shaving wheel to adapt the machine to the jointing of staves for casks or barrels of various diameters.

In the accompanying drawings (*a*) represents a frame properly adapted to the intended purpose, but which may be varied at pleasure, and (*b*) a horizontal wheel on a vertical shaft (*c*) having a pulley (*d*) to receive a belt from some first mover, to give the required rotary motion. The face of the rim (*e*) of this wheel instead of being at right angles with the axis is beveled inward at an angle of about 15° with a horizontal plane as indicated by the dotted line (*f*, *g*). Planing bits (*h*) of the usual construction are fitted to holes made in this rim, with their cutting edges in the line of tangents to a circle of about half the diameter of the wheel. These bits or cutters can be made single or double as may be desired and a greater or less number than four can be employed.

The stave (*i*) is secured by screw or other kind of dogs (*j*, *j*) into a clamp (*k*) with its inner face against the bar of the clamp so as to gage the cutting from the inside of the stave. The bar of the clamp is secured to the end of a tube (*l*) that slides on a rod (*m*) and which may be secured thereon at any point desired by a temper screw (*n*). The outer end of the rod (*m*) is jointed to a vertical spindle (*o*) that is fitted to and turns in a standard (*p*) secured to the bed of the frame—the lower end of the spindle being surrounded by a helical spring (*q*) the upper end of which bears against a shoulder in the standard while its lower end is secured to the spindle. In this way the spindle is at all times drawn down by the tension of the spring, and as the upper end of the standard is formed with the segment of a double helix (*r*, *r*) and the spindle is provided with two projecting pins (*s*, *s*) which rest on the inclined faces of the top of the standard, when the spindle is turned the pins move up on the inclined faces and when turned half way around are drawn down by the spring and rest against the shoulders formed at one

end of each segment. In this way it will be seen that the position of the shoulders formed by the segments of the double helix determines the position of the clamp relatively to the shaving wheel, and that as the shaving wheel turns in the direction of the arrow the cutting action always tends to force the pins (*s*, *s*) against the shoulders and hence to retain the stave in a proper position. When one edge of the stave has been jointed the clamp is turned up, the spindle turned half a revolution, and the clamp turned down again which presents the other edge of the stave to the shaving wheel so that it shall be jointed to a form corresponding with the first edge, the shoulders on the upper end of the standard determining precisely the semi-revolution of the spindle for this purpose. The foot of the standard is secured to the bed of the frame by means of screws (*t*, *t*) that pass through elongated holes (*u*, *u*) that the standard may be shifted farther from or near to the axis of the shaving wheel, the clamp being in the same manner moved on the rod (*m*). This arrangement as indicated above is for the purpose of adapting the machine to the jointing of staves for casks or barrels of different diameters, as it is important that the radius of the arc of vibration of the clamp should be equal to the semi-diameter of the intended cask or barrel.

The face of the wheel being beveled inward, and the stave being straight and presented to it in a right line at right angles to the radius of the wheel, the edge will be shaved in a curve, which when the stave is bent to the bulge or bilge of the cask or barrel will present a straight plane corresponding or nearly so with a plane passing through the axis of the intended cask or barrel.

The amount of bulge or bilge to be given to the cask may be varied by giving a slight curve to the bar of the clamp which will require the stave to be slightly bent when clamped.

What I claim as my invention and desire to secure by Letters Patent is—

The combination of the clamps for holding and presenting the stave with a turning spindle by means of a hinge or other turning joint, substantially as described for the purpose of presenting the two edges of the stave alternately to the action of the shaving wheel without removing it from the clamp substantially as described.

LEWIS S. CHICHESTER.

Witnesses:

G. ROBERTSON, Jr.,

JEREMIAH C. FELLOWS.