

J. W. JONES.
Machines for Chamfering and Crozing Barrel-Staves.

No. 134,892.

Patented Jan. 14, 1873.

Fig. 1.

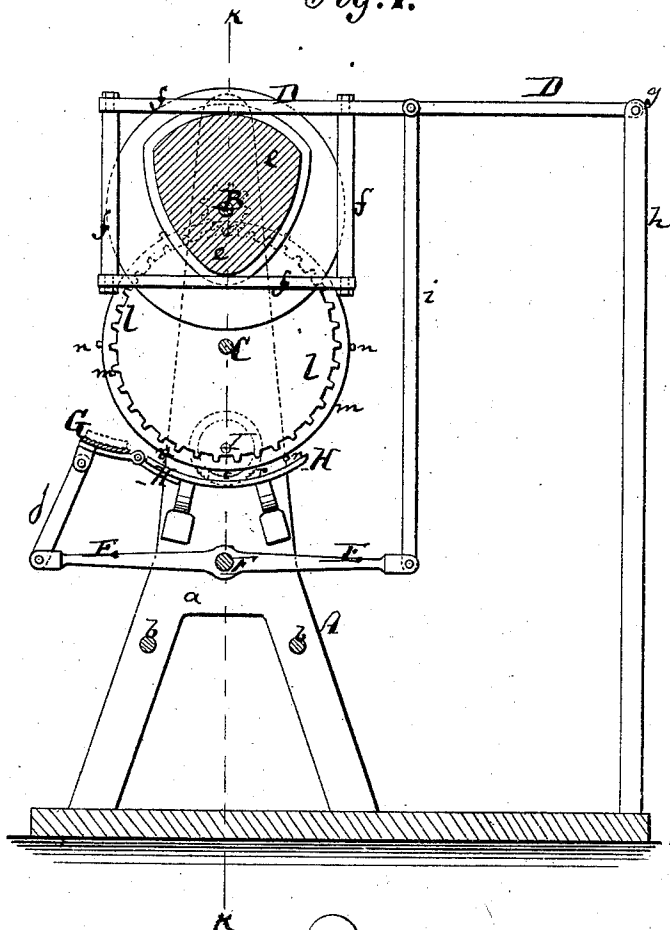


Fig. 2.

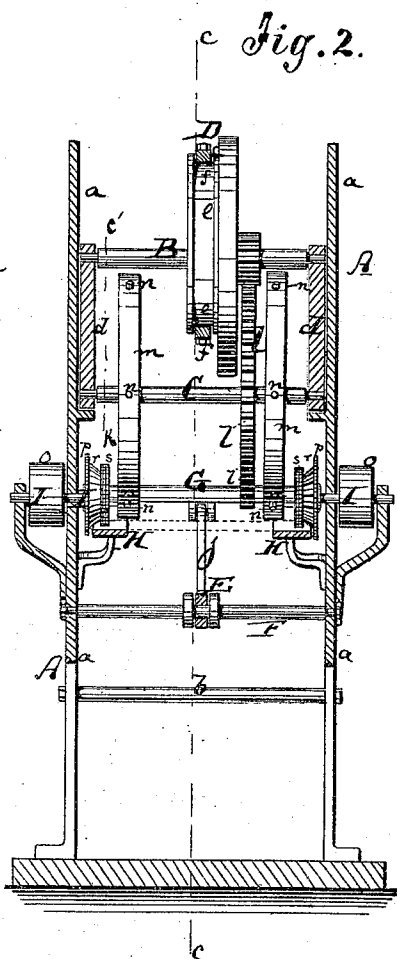


Fig. 3.

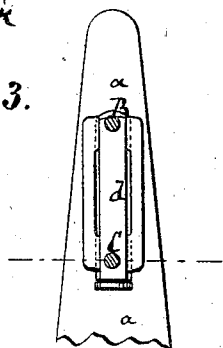


Fig. 4.

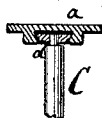
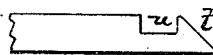


Fig. 5.



Witnesses:

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UNITED STATES PATENT OFFICE.

JOEL W. JONES, OF MIDDLEPORT, OHIO.

IMPROVEMENT IN MACHINES FOR CHAMFERING AND CROZING BARREL-STAVES.

Specification forming part of Letters Patent No. **134,892**, dated January 14, 1873.

To all whom it may concern:

Be it known that I, JOEL W. JONES, of Middleport, in the county of Meigs and State of Ohio, have invented a new and Improved Machine for Crozing and Chamfering Barrel-Staves, of which the following is a specification:

Figure 1 represents a vertical longitudinal section of my improved stave-machine, the line *c c*, Fig. 2, indicating the plane of section. Fig. 2 is a vertical transverse section of the same on the line *k k*, Fig. 1. Fig. 3 is a detail vertical section on the line *c' k*, Fig. 2. Fig. 4 is a horizontal section of Fig. 3; and Fig. 5, a detail edge view of one end of the stave as formed on my machine.

Similar letters of reference indicate corresponding parts.

The invention consists in certain improvements upon machines for crozing barrel-staves, as hereinafter fully described and specifically claimed. The machine is composed of the end-cutting saws, chamfering cutter-heads, and grooving-saws; also of stationary curved beds on which the staves are held and carried during the operation by projecting pins on rotary feed-disks; and also of a vibrating feed-dash, which places the staves upon the curved bed in the requisite order. The grooving-saws cut a square crozing, which will be adapted to receive the full edge of the barrel-head and insure greater firmness and durability of the barrel.

In the accompanying drawing, the letter A represents the frame of my improved machine. This frame is principally composed of two posts, *a a*, which are connected by suitable bars or braces, *b b*, and held stationary. In the inner faces of these posts, near their upper parts, are vertical grooves or channels for the reception of the vertically-adjustable bearings *d d* of two horizontal shafts, B and C. Both of these shafts hang in the same bearings, as is clearly shown in Fig. 2, so that their relation to each other cannot be varied, although they can jointly be set higher or lower, at pleasure. The upper shaft B carries an eccentric, *e*, which is embraced by a square frame, *f*, joined at the free end of a lever, D. The other end of this lever is pivoted at *g* to a stationary upright or pendant, *h*. A rod, *i*, connects the lever D with a beam, E, whose rock-shaft F has its

bearings in the posts *a*, beneath the shaft C, as shown in Fig. 1. One end of the beam E connects with the rod *i*, the other end, by a short rod, *j*, with the hinged feed-dash G. This feed-dash is a transverse plate, long and wide enough to support one stave, and is hinged to the ends of two curved plates, H H, which are exactly parallel to each other, rigidly fastened to the inner sides of the posts *a*, between the rock-shaft F and the shaft C. These curved plates H constitute the concave bed of the machine on which the stave is held while being chamfered and crozed. The shafts B and C are connected with each other by gearing *l*, or by belt or otherwise, so that the lower shaft C moves considerably slower than B, making, say one revolution to six of B. Upon the shaft C are mounted two disks, *m m*, whose edges sweep a short distance over the concave face of the bed H. In fact, the curve of H is by preference made parallel to the edge of the disks *m*, as shown in Fig. 1. From the edge of each disk *m* project as many pins, *n n*, at equal distances from each other, as the shaft B moves faster than C.

The stave to be acted upon is placed upon the feed-dash G, and rotary motion then imparted to the shaft B or C by suitable means, their height having previously been regulated so that the thickness of the stave will have room between the bed H and edge of *m*. By the rotation of the shaft B the dash G is tilted, dropping its stave upon the concave bed H. There the stave is taken hold of by one pair of pins, *n*, and carried along the bed H until it reaches the other end of the bed, when it drops off. While the stave passes over the bed H it is subjected to the action of the cutting and chamfering devices, as hereinafter more fully set forth. While one stave passes along the bed the dash G is again lowered into position for receiving a new stave, and is tilted to deposit the same upon the bed as soon or nearly as soon as the first stave has left the bed. In the posts *a* are hung, below the shaft C, but above the bed H, two shafts, I I, in line with each other, and provided with pulleys *o o* on their outer ends for receiving rotary motion by suitable means. Each of these shafts I carries a circular saw, *p*, a bevel cutter-head, *r*, and a smaller gang of circular saws, *s*, as is clearly shown in Fig. 2. The saws *p* cut the

ends of the stave, making thus all the staves of equal length, the cutter-heads *r* chamfer or bevel the ends of the stave, as at *t*, in Fig. 5, while the saws *s* groove the staves for the reception of the barrel-head, as at *u* in Fig. 5. The saws *s* are all of equal diameters to cut square grooves *u*. This is an advantage over the ordinary V-grooves, as it admits a larger part of the barrel-head, and makes it unnecessary to bevel the head at the edges, thus leaving the head stronger and giving it a firmer support. The durability and strength of the barrel is by this means considerably increased. The shafts *I I* may be made vertically adjustable, to allow the cutting of deeper or shallower crozing; but when once set they will cut the grooves invariably to a certain distance from the outer sides of the staves, no matter whether the staves vary in thickness or not. This will provide a circular edge for the edge of the barrel-head to bear against, and will also bring the outer faces of the staves invariably flush, so that the hoop will have an exact fit.

The hoops may, when a staving-machine of the above construction is used, be prepared, crimped, and closed, ready for application to the barrel, which cannot be done where the grooves are cut to equal depths, as heretofore, leaving the staves to project more or less from the edge of the barrel-head.

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

1. The vertically-adjustable shafts *B C*, actuating the feed-dash *G* and the feed-disks *m m*, substantially as herein shown and described.

2. The tilting stave-feeder *G* hinged to the stave-bed, as and for the purpose described.

3. The means for tilting the feeder *G*, consisting of the strap *j*, lever *E*, connection *i*, yoke-lever *D f*, and cam on shaft *B*, arranged substantially as described.

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Witnesses:

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