A. LUCKHAUPT.

MACHINES FOR DRESSING STAVES.

No. 179,932. Patented July 18, 1876.

Fig: 1.

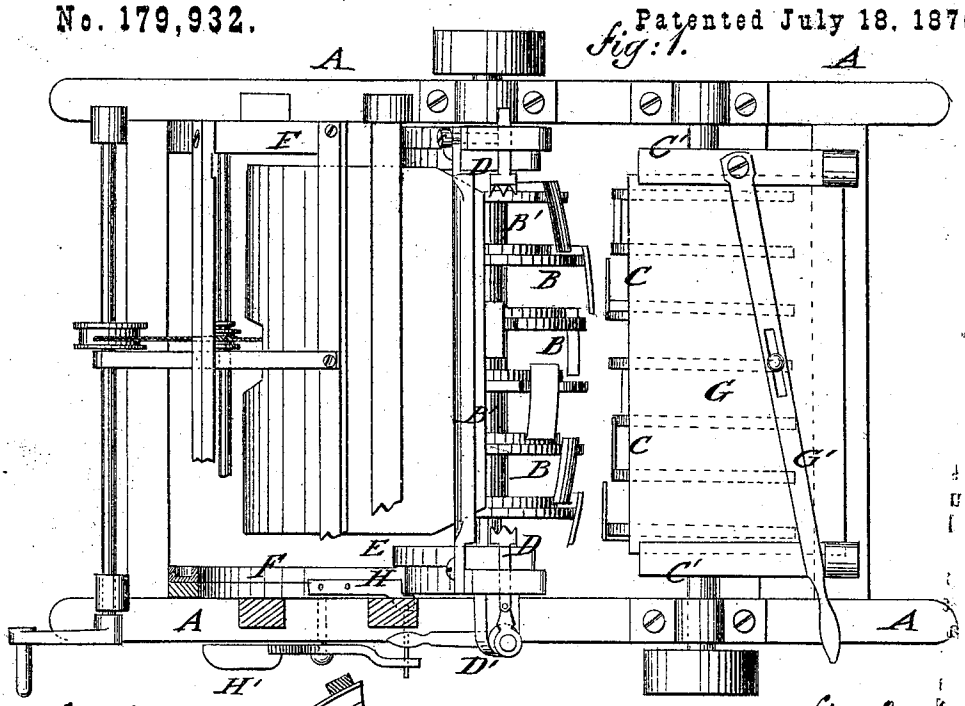

Fig: 4.

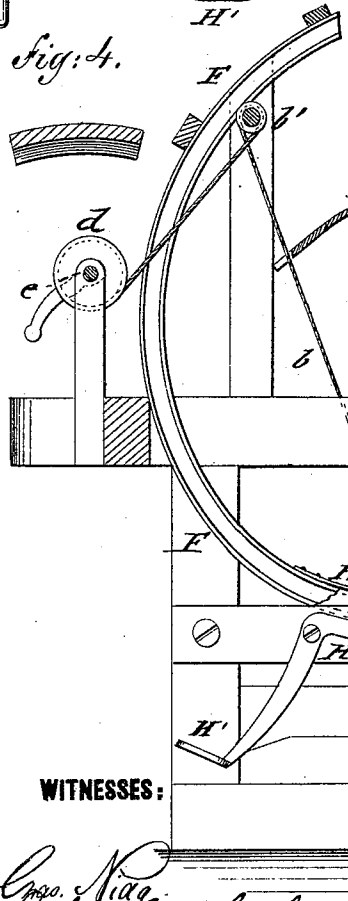

Fig: 2.

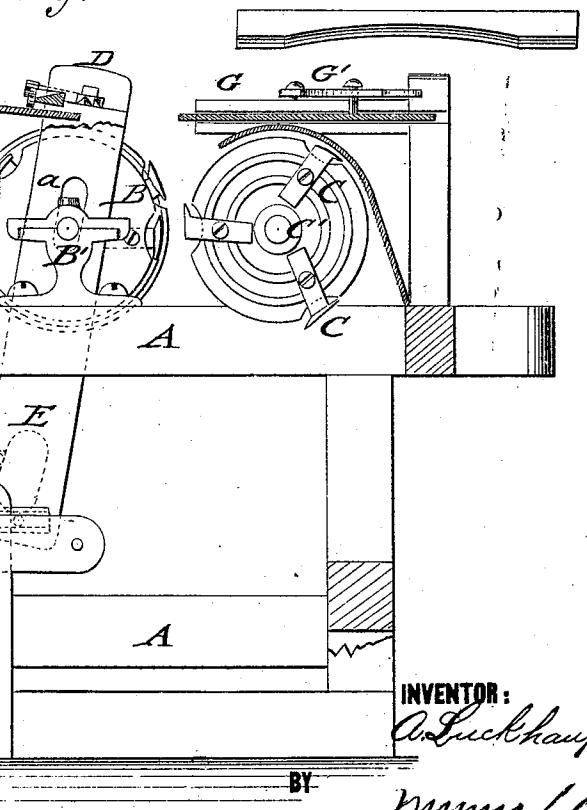

Fig: 3.

WITNESSES:

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UNITED STATES PATENT OFFICE.

ADAM LUCKHAUPT, OF COLUMBUS, OHIO.

IMPROVEMENT IN MACHINES FOR DRESSING STAVES.

Specification forming part of Letters Patent No. **179,932**, dated July 18, 1876; application filed June 20, 1876.

To all whom it may concern:

Be it known that I, ADAM LUCKHAUPT, of Columbus, in the county of Franklin and State of Ohio, have invented an Improvement in Machines for Dressing Staves, of which the following is a specification:

In the accompanying drawing, Figure 1 represents a top view, and Fig. 2 a vertical longitudinal section, of my improved machine for making staves; and Figs. 3 and 4 are respectively a side view and vertical transverse section of the stave produced by the machine.

Similar letters of reference indicate corresponding parts.

The invention relates to an improved machine for manufacturing staves for beer kegs and barrels of all kinds in such a manner that the wood is cut transversely to the grain, and not in the direction of the same, the wood being readily and without danger inserted into the machine, and quickly cut to the shape required.

The invention consists of two series of cutters that are secured to shafts revolving in opposite directions, and adjusted at such distance as to cut the shape of the stave.

The stave is secured to the clamps, prongs, or jaws of a weighted and swinging frame that runs in arc-shaped guides, being locked in vertical position, in connection with a sliding table or guard plate, and fed to the knives by releasing the locking device, and swinging the frame into horizontal position to expose the wood to the action of the knives. The finished stave is then released from the clamps and dropped, the frame being carried back to take up the next piece of wood.

In the drawing, A represents the supporting-frame of my improved machine for making staves for kegs, barrels, &c. A series of cutters, B, are applied to cutter disks or heads of a shaft, B′, turning by suitable power in one direction, while another series of cutters, C, is applied to the cutter-heads of a shaft, C′, that turns in a direction opposite to the former. The cutters B and C are arranged at such distance from their respective shafts that the exact shape of the stave required is cut by the same when exposed to the action of the same. The cutters may be made of twisted or spiral blades in place of the series of cutters shown in the drawing, provided they cut the blank at both sides to produce the shape of the stave shown in Figs. 3 and 4, namely, thicker at the ends than at the center.

The pieces of wood of the required size, from which the staves are cut, are clamped to pronged jaws D at the upper end of a swing-frame, E. One of the jaws D is stationary, while the other is movable by means of a lever and eccentric, D′, for the purpose of readily clamping the stave-blank and releasing the finished stave from the jaws. The stave-clamping frame is applied by means of slots *a* to the shaft B′ of one series of cutters, so as to slide and swing thereon. The lower ends of the frame E move by means of friction-rollers or otherwise on grooved arc-shaped guides F, and swing readily from vertical to horizontal position, and back again. The lower parts of the guides F are curved to approach nearer to the center of the guides, and cause thereby the upward sliding of the stave-holding frame simultaneously with the swinging of the same when approaching the vertical position. The stave-clamping jaws are thereby raised above the revolving cutters, so that a horizontally-moving table or guard-plate, G, may be carried over the cutters and admit thereby the fastening of the stave-blank without danger of dropping the same between the cutters or injury to the attendant.

The table or guard-plate slides in guide-grooves of frame A, and is operated by a slotted lever, G′, as shown in Figs. 1 and 2. When the stave-blank is rigidly clamped into position, the table is moved back again and the blank is ready to be exposed to the action of the cutters. The lower part of the weighted frame E is locked when arriving at the upright position by a suitable spring device, H, that has to be released by a treadle or foot-lever, H′, before the frame E can be carried into horizontal position. The frame E is swung into horizontal position by means of a rope, *b*, applied to the lower end and passed over a pulley, *b′*, at the top part of the frame to a larger pulley or drum, *d*, of a crank-shaft, *e*, which, being turned, winds up the cord. As soon as the swinging frame E leaves the lower part of the guides F, it slides down again and brings the stave-blank close to the cutters B,

which begin to shape the inside of the stave. By continuing the swinging up of the lower part of the frame until the same assumes a horizontal position, the stave-blank is gradually brought to the narrowest space between the cutters, and in this position finally cut to the shape required by the action of the cutters B and C on both sides of the blank. The movable jaw D is then withdrawn by its lever and eccentric and the stave dropped, the swinging frame assuming then, by its own weight, its former vertical position, the next blank being then inserted, and the operation described repeated over again. Thus the staves are produced by being cut crosswise to the grain in rapid and effective manner.

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

1. A machine for making staves, composed of two sets of cutting-knives, applied to shafts revolving in opposite direction, in combination with a swinging stave-clamping frame, substantially in the manner and for the purpose specified.

2. The combination of the swinging frame E, having stave-clamping jaws, with a sliding table or guard-plate, G, entering between the jaws and cutters to admit ready fastening of the wood, substantially as specified.

3. The combination of the swinging and weighted stave-frame E, having side slots, with the arc-shaped guides approaching nearer to the center at the lower parts, to produce sliding of the frame simultaneously with the swinging motion, for the purpose specified.

4. The combination of the swinging stave-frame E and guides F with a spring-locking device, H, and releasing-treadle H′, substantially as specified.

ADAM LUCKHAUPT.

Witnesses:
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