Howell & Murphy,

Stave Machine.

No. 111,457. Patented Jan. 31, 1871.

FIG. 1.

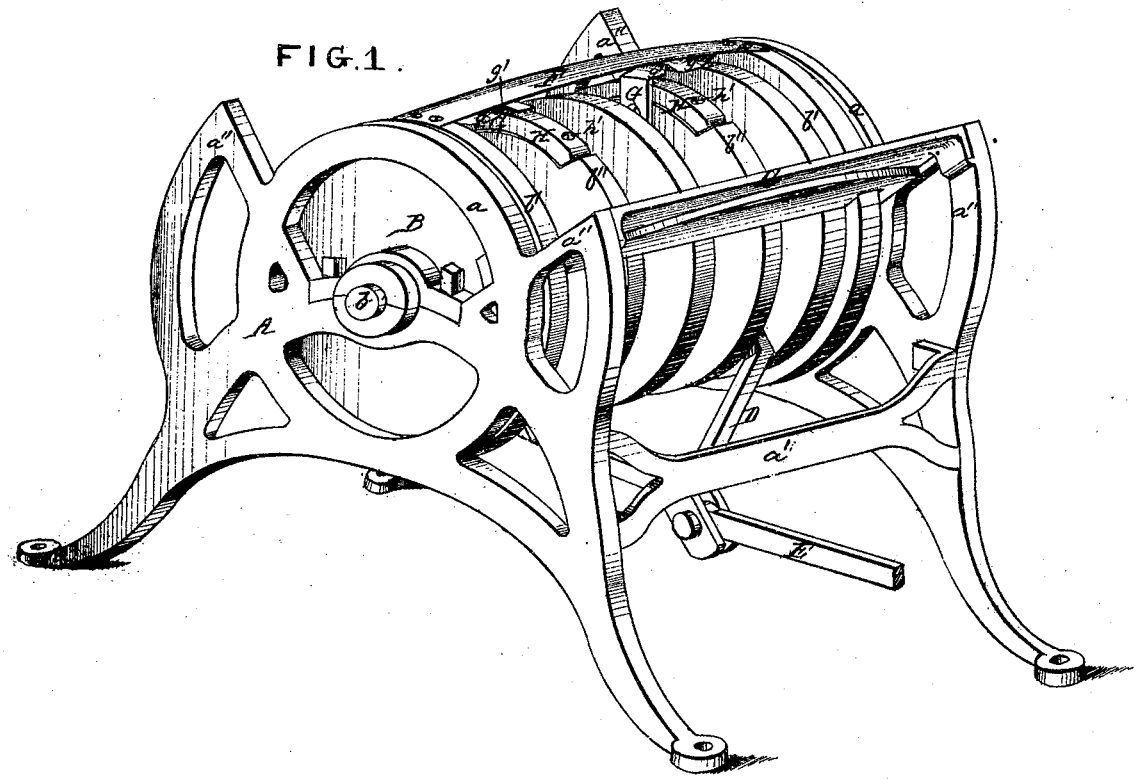
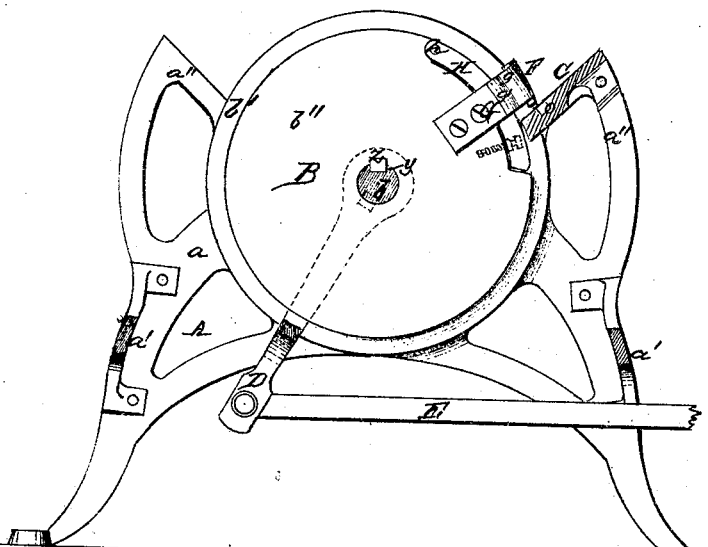


FIG. 2.



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AMYNTAS J. HOWELL AND JAMES MURPHY, OF SPRUCE HILL, PENNSYLVANIA.

Letters Patent No. 111,457, dated January 31, 1871.

IMPROVEMENT IN MACHINES FOR CUTTING STAVES.

The Schedule referred to in these Letters Patent and making part of the same.

We, AMYNTUS J. HOWELL and JAMES MURPHY, both of Spruce Hill, in the county of Juniata and State of Pennsylvania, have invented an Improved Stave-Cutter, of which the following is a specification.

Nature and Objects of the Invention.

The knives are attached to the periphery of an oscillating cylinder or series of connected parallel disks arranged with proper relation to a stationary platform, which supports and guides the blocks or bolts.

An outer cutter curved longitudinally severs the staves from the bolts and forms their outer sides.

The inner sides are crozed and chamfered by a combination of cutters within the said outer knife, and adjustable relatively thereto, the several operations being performed simultaneously.

A stave complete, except jointing, is produced at each movement.

The cylinder is operated through a rod attached to a depending arm of the same.

The improvement consists in a peculiar construction of the crozing and chamfering cutters, and in the employment of a novel adjusting device to regulate the thickness of staves, whereby the machine, at the same or a less cost than those now in use, is adapted to successfully perform its several functions without liability to rapid wear or disarrangement of parts.

Description of the Accompanying Drawing.

Figure 1 is a perspective view of an illustrative machine adapted to form staves for barrels or kegs.

Figure 2 is a transverse section of the same.

Like reference letters indicate corresponding parts.

General Description.

A in the drawing represents a strong frame, of either metal or wood;

B, a cylinder journaled horizontally therein; and

C, a shelf or table on the same, about in line with the axis of the cylinder B.

The table C serves to support the bolts from which the staves are immediately cut, and may be provided with suitable guiding and feeding devices. It consists, preferably, of a solid metal plate, provided with a groove, *c*, supplied with wood on end, rubber, or analogous substance for the reception of the edge of the severing-knife.

The cylinder B is the base or stock of the knives or cutters, and is adapted to receive an oscillatory motion to operate the same. The pendants D D and connecting-rod E are for this purpose. The said cylinder is preferably composed of a wrought-iron central shaft, *b*, and parallel cast-iron disks *b' b''*, secured on said shaft by keys *z*, in a continuous key-seat, *y*, or their equivalent, so as to be adjustable as to distances apart, the said disks being so arranged as to afford the requisite points of attachment for the knives, &c. But this construction is not essential.

The frame A, as shown, is composed of cast ends *a* and wrought-iron strut-braces *a'*, the former being adapted to be cast from a single pattern by having the support *a''* for the table C on each edge.

F represents the outer cutter, which is a thin steel knife of sufficient length to cut the gauge of stave, for which intended form one of its long edges being so curved transversely and longitudinally as to conform with the desired outer surface of the stave in its complete form.

G G are the inner knives, which are also of thin steel. They are supported by their inner ends at a distance from the outer knife sufficient to accommodate the greatest thickness of stave of their gauge of cask, and curve outward to the said outer knife. The extremities of these curved portions *g* form the chines of the staves. Grooves transversely of them, at proper distance from their ends, form V or U-shaped edges *g'*, which serve to form the crozes.

H H are gauges for determining the thickness of stave cut by the machine. They are arranged in the periphery of any of the disks *b' b''* of the cylinder, being attached to them by hinges or pivots *h*, and are adjustable by screws *h'* on their equivalent, applied to their free ends. Or said gauges may form, additionally, the attachments for the cutters G, and the resiliency of said cutters may enable wedges or blocks simply to be employed to adjust them. They are wholly or in part in front of the edges of the cutters, and operate by the bolts being set up to them.

For varying the length of stave the disks *b' b''* of the cylinder are adjusted to the proper relative positions and the knives replaced as required.

The cutters G may obviously constitute the ends of a single bar.

Operation.

Reciprocating motion being imparted to the rod F from the crank of a horse-power or other motor, a steamed bolt is placed on the table C, with its grain parallel to the axis of the cylinder, and fed up, by hand or suitable machinery, to the cutters, when the operation commences. At the first oscillation the knife F prepares the face of the bolt to form the inner surface of a stave. The bolt is then fed up against the gauges H, and, the knives descending, a

stave is severed, and its outer surface formed by the knife F, the face of the bolt being prepared for the succeeding one, while the knives G croze and chamfer the stave being severed. The operation thus continues, a stave, finished except jointing, being produced at each movement.

Claims.

We claim as our invention—

1. The crozing and chamfering-knives G, constructed as represented and described, for the purpose specified.

2. The arrangement, in the surface of the cylinder B, of the hinged or pivoted gauges H, for determining the thickness of the staves, substantially as shown and set forth.

A. J. HOWELL.
JAMES MURPHY.

Witnesses:
JOHN ANDERS,
E. H. DOBBS.