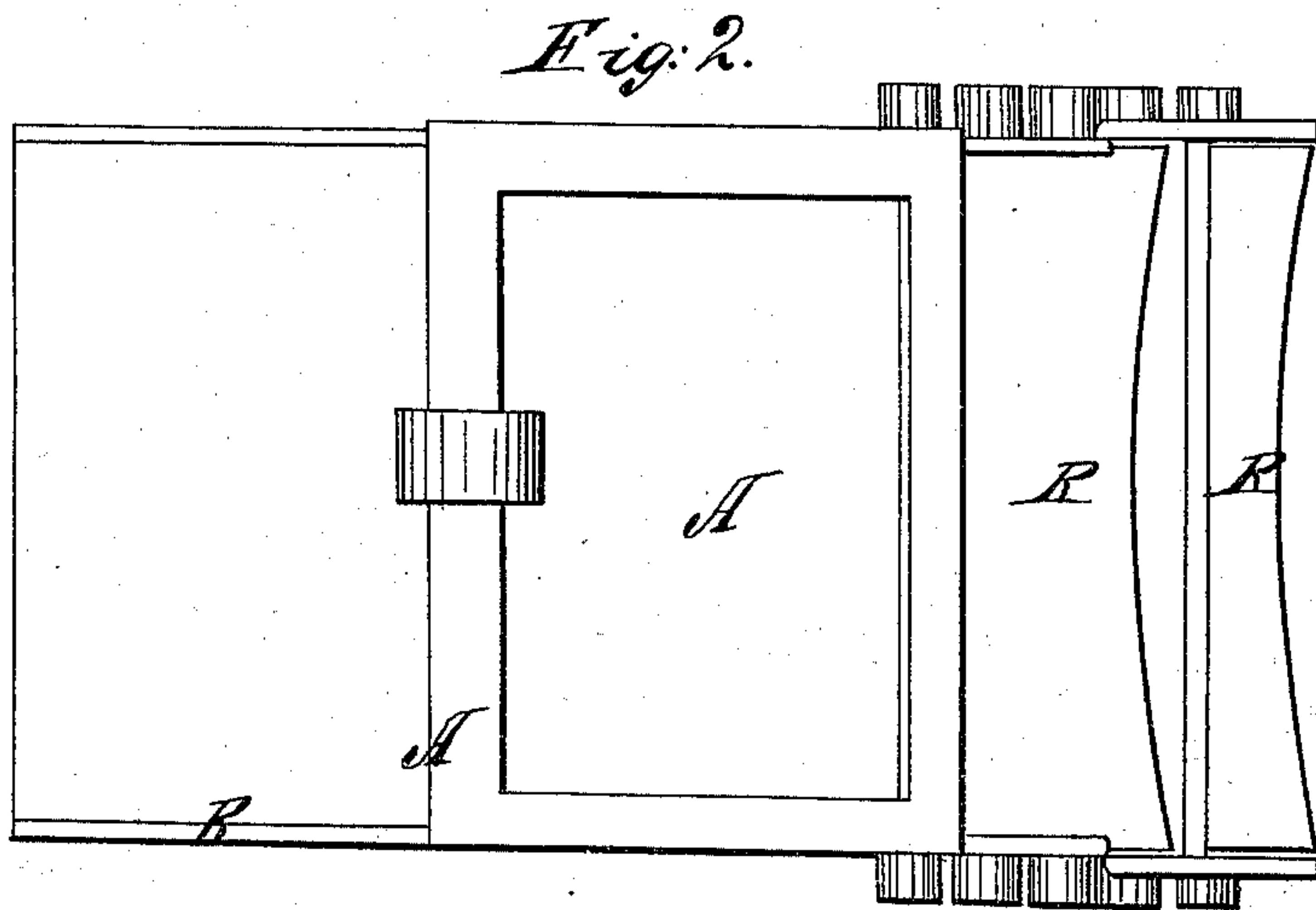
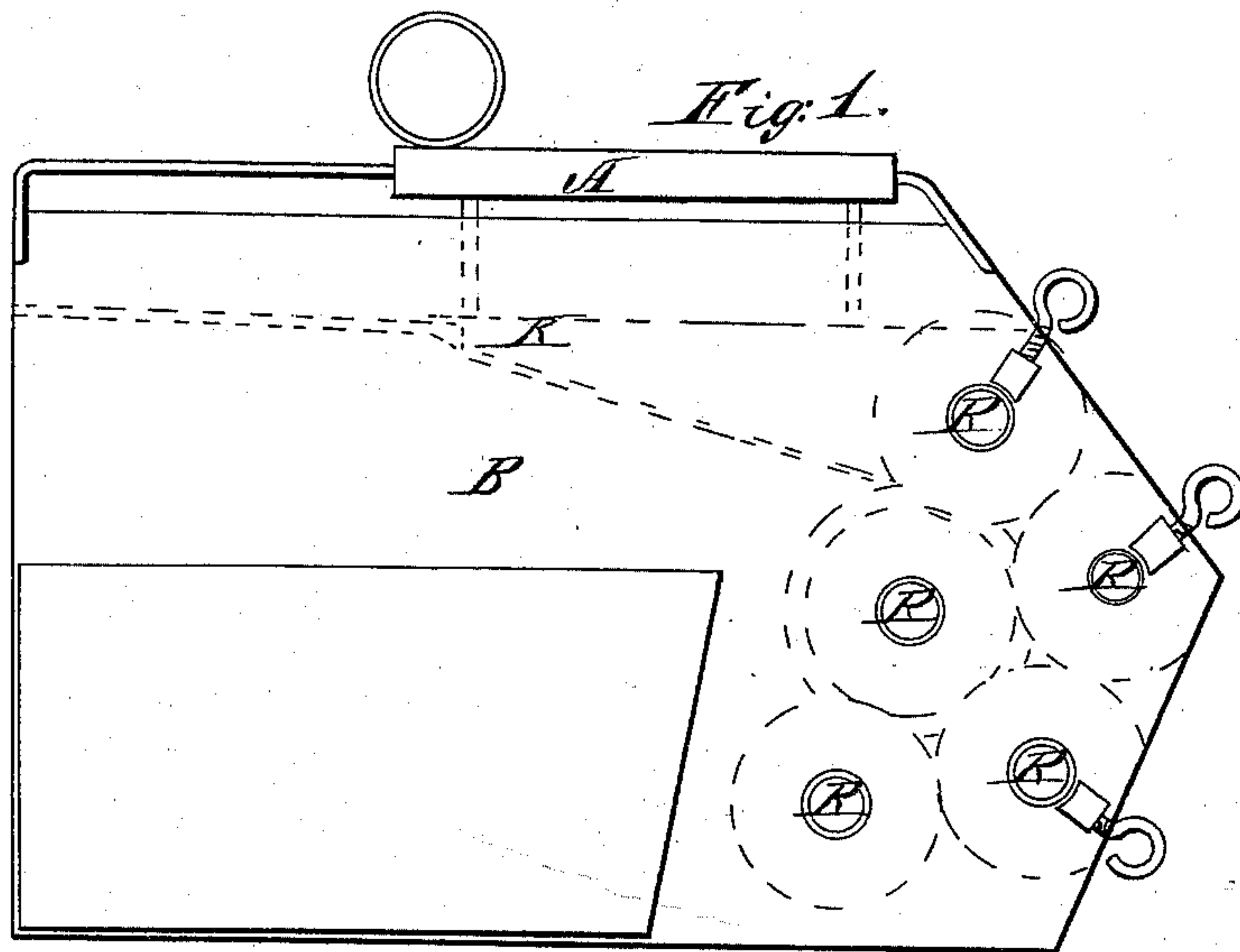


*T. Harvey,  
Making Staves.*

*N<sup>o</sup> 39,649.*

*Patented Aug. 25, 1863.*



*Witnesses:  
John Plin*

*Wm. L. Angerine*

*Inventor:  
Thos. Harvey*

# UNITED STATES PATENT OFFICE.

THOMAS HANVEY, OF ELMA, NEW YORK.

## IMPROVED STAVE-MACHINE.

Specification forming part of Letters Patent No. **39,649**, dated August 25, 1863.

*To all whom it may concern:*

Be it known that I, THOMAS HANVEY, of Elma, in the county of Erie and State of New York, have made and invented a certain new and Improved Machine for Manufacturing Staves for Barrels and Similar Products; and I do hereby declare the following to be a full and accurate description of the same, reference being had to the accompanying drawings, making part of this specification, and to the letters of reference marked thereon—same letters referring to like parts in both figures.

Of said drawings, Figure 1 is a side elevation of my improved machine, and Fig. 2 is a plan of the same.

The machine consists, essentially, of a cutting or slicing apparatus and a series of rollers so contrived and arranged as to receive the stave while yet warm from the knife, and, by powerful pressure, give it that permanent shape which is essential in the manufacture of barrels.

To cut off the stave I make use of a machine similar to that described in a former application for patent by me. In this machine, A is a box, into which the bolt or block from which the staves are to be cut is placed. This box is carried back and forth by means of a crank motion derived from any suitable power. As the box, passes over the knife edge K (seen in red lines in Fig. 1) the latter cuts a slice off the block, which slice falls down an inclined plane onto the center roller, and, passing over it and between the first outer roller, is carried round and successively between a series of rollers, R, which may be multiplied to any extent. Thence the slice passes out

as a fully-formed stave at the rear of the machine.

Before submitting a block of wood to the action of a machine of this kind, which is intended to cut across the grain in a longitudinal direction, it is necessary to steam it (the wood) thoroughly. This causes it to expand and soften, and if the staves are left just as they come from the knife they have a certain roughness and porosity which unfits them for the finer kinds of work; but by subjecting them to great pressure between a series of four or more rollers, as I do here, the wood is rendered smooth and compact, while its previously soft condition causes it to retain any form which the rollers may impress upon it. Hence, by having the center roller bilged and the outside rollers concave, the stave is accurately formed to the bilge of the cask, so as to be ready for use without further steaming or heating up.

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

The combination of the box A and knife K, as arranged in the frame B, with the rollers R R, whereby the staves are passed directly from the slicing-machine to the pressing and forming rollers, thus securing greater perfection in the shape of the stave and greater compactness in the material than can be otherwise obtained.

THOS. HANVEY.

Witnesses:

JOHN PHINE,  
WM. L. ANGERINE.