A. KNIPPER.

MACHINES FOR SAWING STAVES.

No. 191,158. Patented May 22, 1877.

Fig. 1.

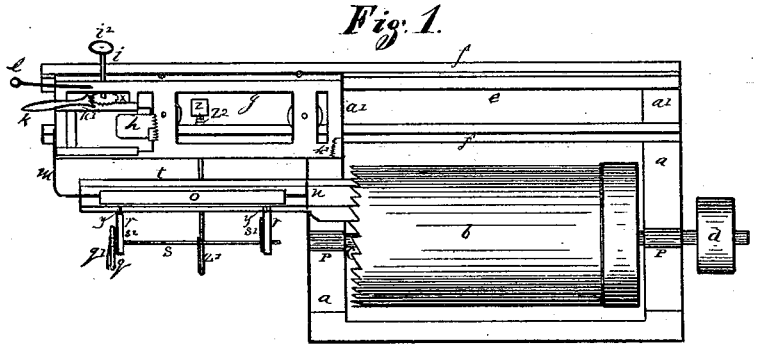
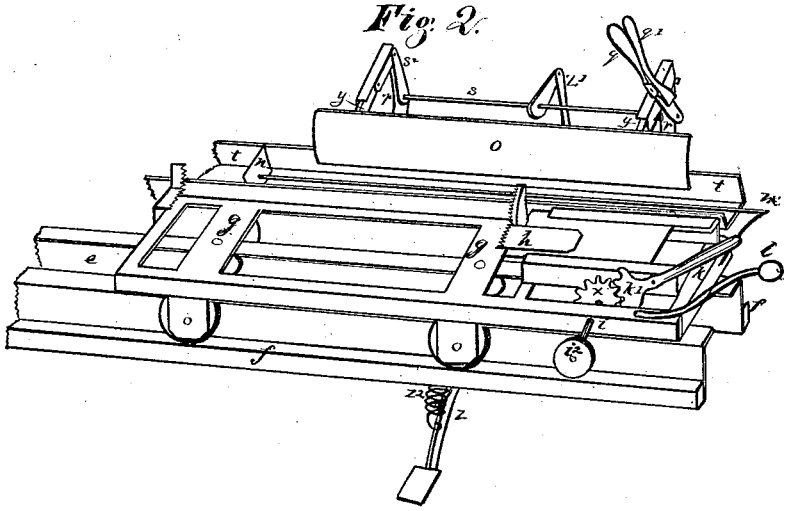


Fig. 2.



Witnesses

J. Mahon

B. S. DeForest

By

Andrew Knipper Inventor

Geo. W. Tibbitts

Attorneys

UNITED STATES PATENT OFFICE.

ANDREW KNIPPER, OF CLEVELAND, OHIO.

IMPROVEMENT IN MACHINES FOR SAWING STAVES.

Specification forming part of Letters Patent No. **191,158**, dated May 22, 1877; application filed April 21, 1876.

To all whom it may concern:

Be it known that I, ANDREW KNIPPER, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain Improvements in Machines for Sawing Staves, of which the following is a specification:

These improvements relate to cylindrical stave-sawing machines, being improvements on Patent granted to Peter Gerlach, John Gerlach, and Andrew Knipper, No. 130,802, August 27, 1872; and consists in the peculiar construction and arrangement of the gaging device, whereby the same may be operated by a foot-lever for adjusting it to set the wooden block for cuttting, more or less, as may be required, when starting on a new block.

In the drawing, Figure 1 is a top or plan view. Fig. 2 is an enlarged perspective view of the carriage, embracing the aforesaid dogging device and the gaging devices.

a is the saw-frame, which I make entirely of iron, for firmness and solidity. *b* is a cylindrical saw attached to an arbor, *c*, working in journals *p p* in the frame, and carrying a band-wheel, *d*. To the frame *a* a trough, *t*, extending within the cylinder, is attached, to catch the staves as they are sawed from the block. From the frame, upon one side of the saw, arms *a'* are extended, to which the carriage-bed *e* is secured. Upon the carriage-bed parallel rails *f f* are arranged, upon which the carriage *g* travels.

The carriage is provided with two series of wheels or rollers, to travel upon the rails *f f*, one of which is arranged parallel to and the other vertically with the plane of the carriage.

The carriage is propelled by means of a handle, *l*. A bent arm, *m*, extends from the rear end of the carriage, to which it is rigidly attached, and connects with a rake, *n*, which advances and recedes in the trough *t* with the carriage and withdraws the stave.

Thus far the description is like the machine patented August 27, 1872.

Here my improvements begin—

Dogging devices *h h'* are attached to the carriage, to securely hold the block from which the stave is sawed. *h'* is a fixed angular serrated plate at the forward end of the carriage. *h* is a sliding plate, which moves in a slide-frame attached to the carriage. It has a serrated edge, and is provided with an upwardly-curved plate, also having a serrated edge. The plate *h* is actuated by a lever, *k*, pivoted to the side of the slide-frame, and has its lower end made in the form of a toothed arc, *k'*, which meshes with a pinion-gear, *x*, on a shaft, *i*, said shaft being journaled in the sides of the carriage *g*, and having on it, underneath the sliding plate *h*, a pinion, which works in a rack secured to the under side of said plate *h*. The wooden block, being placed between the plates *h* and *h'*, is clamped therein by depressing the lever *k*.

The outer end of the shaft *i* is provided with a knob, i^2, the object of which is, that, if it should be necessary to adjust the plate *h* to reach blocks of varying lengths, the lever *k* being thrown out of gear with the pinion *x*, the shaft may be turned so as to bring the plate to the block, and then the lever put into gear again at a different point on the pinion.

Arms *r r*, extending up from the trough *t*, support the gage *o*, which is provided with arms *y y*, sliding in grooves in the upper parts of said arms. A rock-shaft, *s*, is placed between the arms *r r*, having arm s^1 connected by short links s^2 to the arms *y y*. A hand-lever, *q*, is attached to the rock-shaft, by which the gage may be operated. It is provided with a spring-lever catch, *q'* which, in connection with notches on the arm *r*, serves to hold the lever at any desired position. *z* is a foot-lever pivoted to the under side of the trough *t*, and connected to the rock-shaft *s* by a link and arm, z^2, by which the gage may be operated by the foot, a spring z^2 drawing the foot-lever upward when released from pressure.

The advantages of this adjustable gage are, that in commencing to cut a block the gage may be made to move toward the carriage, so as to cut off a thin piece, to give the inside curve to the first stave. Or should the block be rough, broken, or imperfect on the side, the gage may be moved farther away from the carriage and cut off a thick piece, to

prepare the block without the necessity of cutting several times to reach a perfect portion of the block.

Having described my invention, I claim—

The gage *o*, provided with arms *y y*, the rock-shaft *s*, having arms s^1, the handle *q*, provided with the catch-lever *q'*, the foot-lever *z*, arms and link z^1, and spring z^2, all combined, arranged, and operating substantially as and for the purpose specified.

ANDREW KNIPPER.

Witnesses:

GEO. W. TIBBITTS,

F. A. CADWELL.