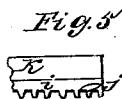
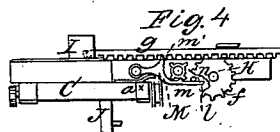
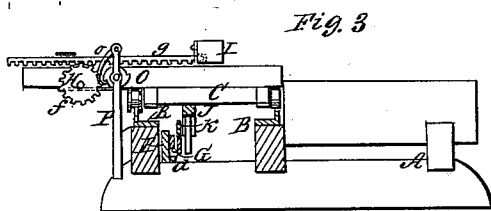
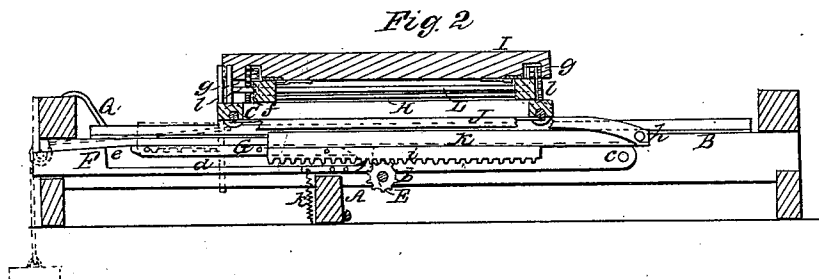
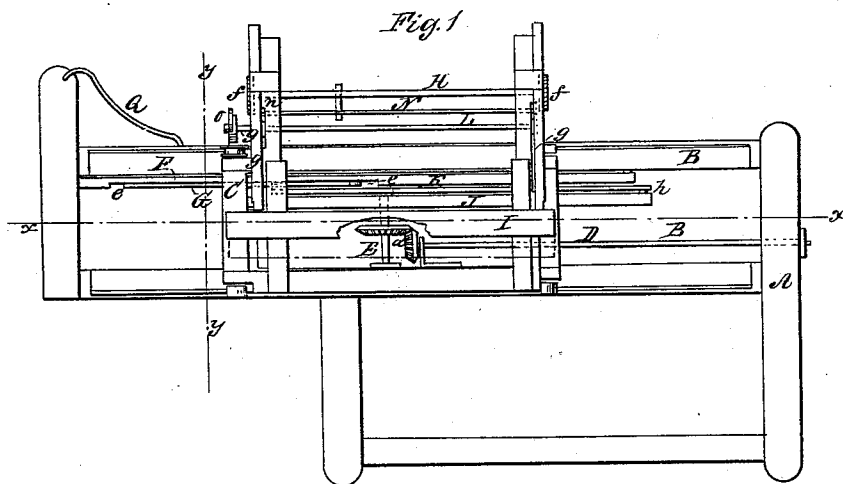


J. Holmes,
Making Stares.
N^o 82,718. Patented Oct. 6, 1868.



Witnesses;
Theo. Fische
J. Allen Fayer

Inventor;
James Holmes
Per Munroe & Co
Attorneys

United States Patent Office.

JAMES HOLMES, OF BELFAST, MAINE.

Letters Patent No. 82,718, dated October 6, 1868.

IMPROVEMENT IN STAVE-MACHINES.

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

TO ALL WHOM IT MAY CONCERN:

Be it known that I, JAMES HOLMES, of Belfast, in the county of Waldo, and State of Maine, have invented a new and improved Stave-Machine; and I do hereby declare that the following is a full and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

This invention relates to improvements in machines for sawing staves, and it consists in the arrangement of parts whereby the bolts are fed evenly to the saw.

In the accompanying sheet of drawings—

Figure 1 is a plan or top view of my invention.

Figure 2, a longitudinal vertical section of the same, taken in the line *x x*, fig. 1.

Figure 3, a transverse vertical section of the same, taken in the line *y y*, fig. 1.

Figure 4, a detached side view of the bolt-carriage pertaining to the same.

Figure 5, a detached side view of a portion of a rack-bar pertaining to the same.

Similar letters of reference indicate like parts.

A represents the framing of the device, which may be constructed in any proper manner to support the working parts, and B B are two parallel ways or guides on the framing, on which the bolt-carriage C works.

In the framing A, between the two ways B B, there is placed a shaft, D, which is parallel with the ways, and is connected at its inner end, by bevel-gears *a*, with a transverse shaft, E, having a pinion, *b*, at one end.

To the inner side of one of the ways B, there is attached, by a pivot-bolt, *c*, a bar, F, the bolt *c* passing through the bar F, near one end of the same, as shown clearly in fig. 2.

This bar F has an oblong recess made in one side, and in this recess there is secured a metal bar, G, which does not extend down to the bottom of the recess, a space, *d*, being allowed between its lower edge and the bottom of the recess, and a space, *e*, also allowed at each end.

In the bolt-carriage C there is placed a shaft, H, having a pinion, *f*, on each end of it, and these pinions *f* gear into racks, *g g*, placed at the ends of the bolt-carriage, said racks being allowed to slide freely in suitable guides, and having the bolt I, from which the staves are cut, attached to their outer ends.

The bolt-carriage C also has a bar, J, secured to its under side. This bar J is parallel with the ways or guides B B, extends at one end some distance beyond the bolt-carriage, and has a bar, K, pivoted to its extended end, as shown at *h*, the pivot *h* passing through one end of bar K, and the latter having a rack, *i*, attached to its lower edge, which rack is directly over the pinion *b* of shaft E, (see fig. 2.)

The rack *i* has a lateral projection or pin, *j*, at its front end, the use of which will be presently shown. This pin or projection is shown clearly in fig. 5. The bar F has a spring, *k*, attached to it, and this spring has a tendency to keep the bar F down, (see fig. 2.)

In the bolt-carriage C there is placed another shaft, L, which is parallel with the shaft H. The shaft L has a small pinion, *l*, on each end of it, said pinions having only four teeth each, (see fig. 4.)

These pinions gear into the racks *g g*, and underneath the pinion *l* the arms *m*, of pawls M, bear, the other arms, *m'*, of said pawls, engaging with the racks *g*, above them, (see fig. 4.)

There is also a shaft, N, fitted in the bolt-carriage, parallel with the shafts E L, and having a pendent projection, *n*, at each end, by which the arms *m*, of the pawls M may be acted upon by turning the shaft N, and the pawls forced down or depressed, so that the upper arms *m'* will be out from the racks *g*.

On one end of the shaft L there is a ratchet, O, having four teeth, like the pinions *l*. This ratchet O has a pawl, *o*, which engages with it, said pawl being connected to a lever, P, which is fitted loosely on the shaft L, (see fig. 3.)

To one end of the framing of the machine there is attached an inclined rod, Q.

The operation is as follows:

The shaft D may be rotated by any convenient power, and the bolt I is fed towards the saw when the bolt-carriage is moved in the direction indicated by arrow 1, the rack *i* of the bar K, in this case, being in gear

with the pinion *b* of shaft E, by which means the feed-movement is given the carriage. The rack *i* is kept in gear with the pinion *b*, in consequence of the pin or projection *j* on said rack being in the space *d*, underneath the bar G.

When the bolt-carriage reaches the termination of this feed-movement, the pin or projection *j* comes in line with the space *e* at the inner end of the bar G, the pin or projection, and consequently the rack *i* and bars K F, being slightly raised by a slight upward curvature of a metal bar, *x*, (see fig. 2,) and the rack *i* is thereby raised or thrown out from the pinion *b*, so that a weight, R, (shown in red, and attached to the bolt-carriage by a cord or chain,) will draw back the bolt-carriage.

Before the bolt-carriage reaches the termination of this gigging-back movement, the end of the lever P comes in contact with the inclined rod Q, and the latter causes said lever to be moved, the pawl *o*, in consequence of being engaged with the ratchet O, turning shaft L, and setting the bolt I to the saw, the pinions *l* effecting the setting-movement of the bolt, and throwing down the pawls M, so as to free or liberate the racks *g g*, in order to admit of them being moved by said pinions.

As the bolt-carriage reaches the termination of its gigging-back movement, the pin or projection *j*, passes down through the space *e* at the outer end of the bar G, by virtue of the gravity of the bar K and the rack *i*, so that the pin or projection will again be in the space *d* during the return or feed-movement of the bolt-carriage.

The staves are cut by a circular saw, arranged in the usual way.

The shaft H, with its pinions *ff*, is for running back the racks *g g*, when a new bolt is to be applied. *To effect this, the shaft N is previously turned, so that the pendants *n* may press down the pawls M and free the racks from the arms *m'* of the pawls, the latter being pressed upward by springs, *a^x*.

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

The pinions *f* and shaft H, arranged with reference to the racks *g* of the bolt-carriage, the shaft L, pinions *l*, shaft N, pawl *o*, and lever P, whereby the bolt-carriage is moved evenly toward the saw, as herein described for the purpose specified.

JAMES HOLMES.

Witnesses:

J. B. MURCH,

I. S. CALDWELL.