

H. L. McNish,
Crozing Staves.

N^o 18,123.

Patented Sep. 1, 1857.

Fig. 1

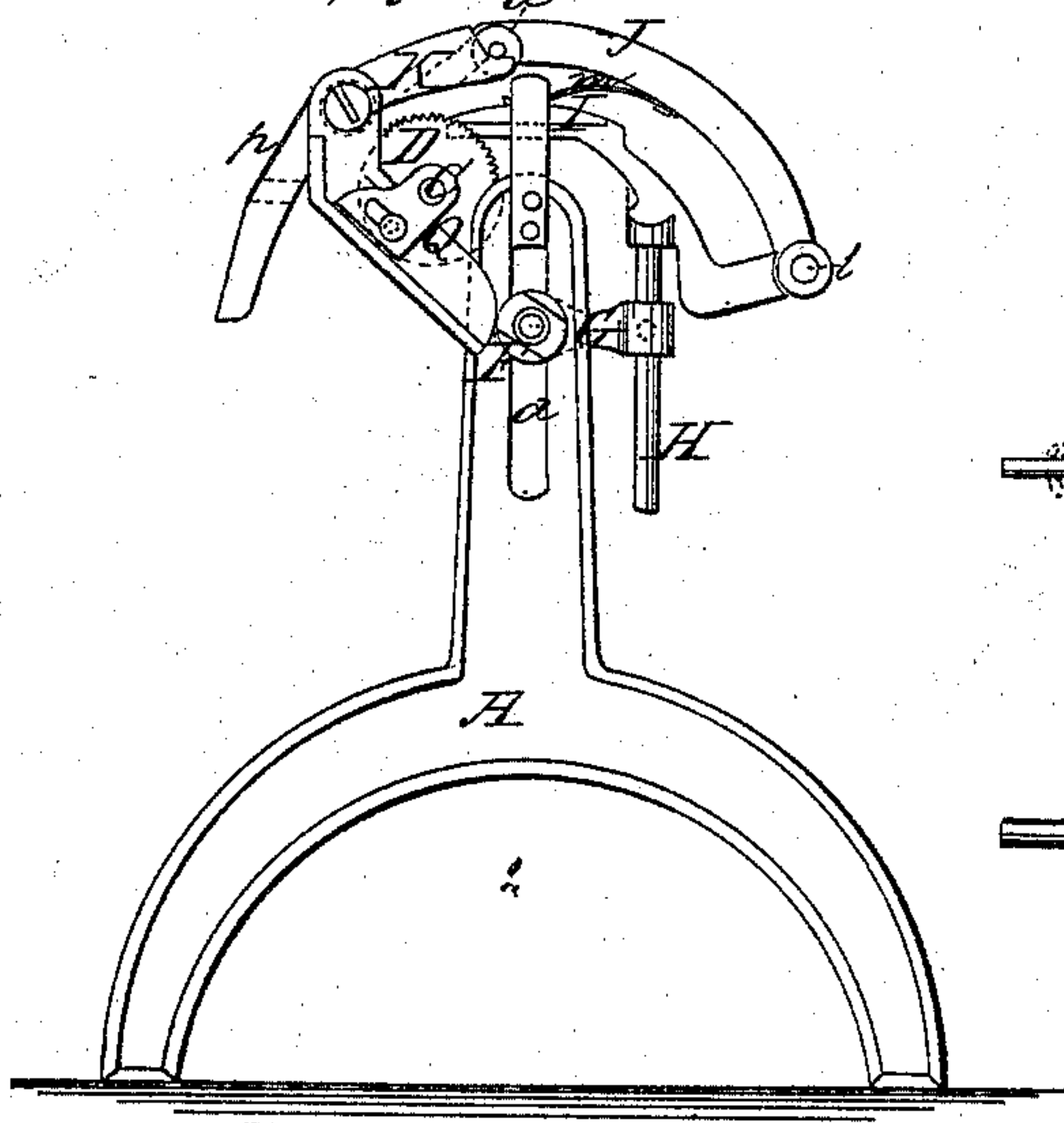


Fig. 2

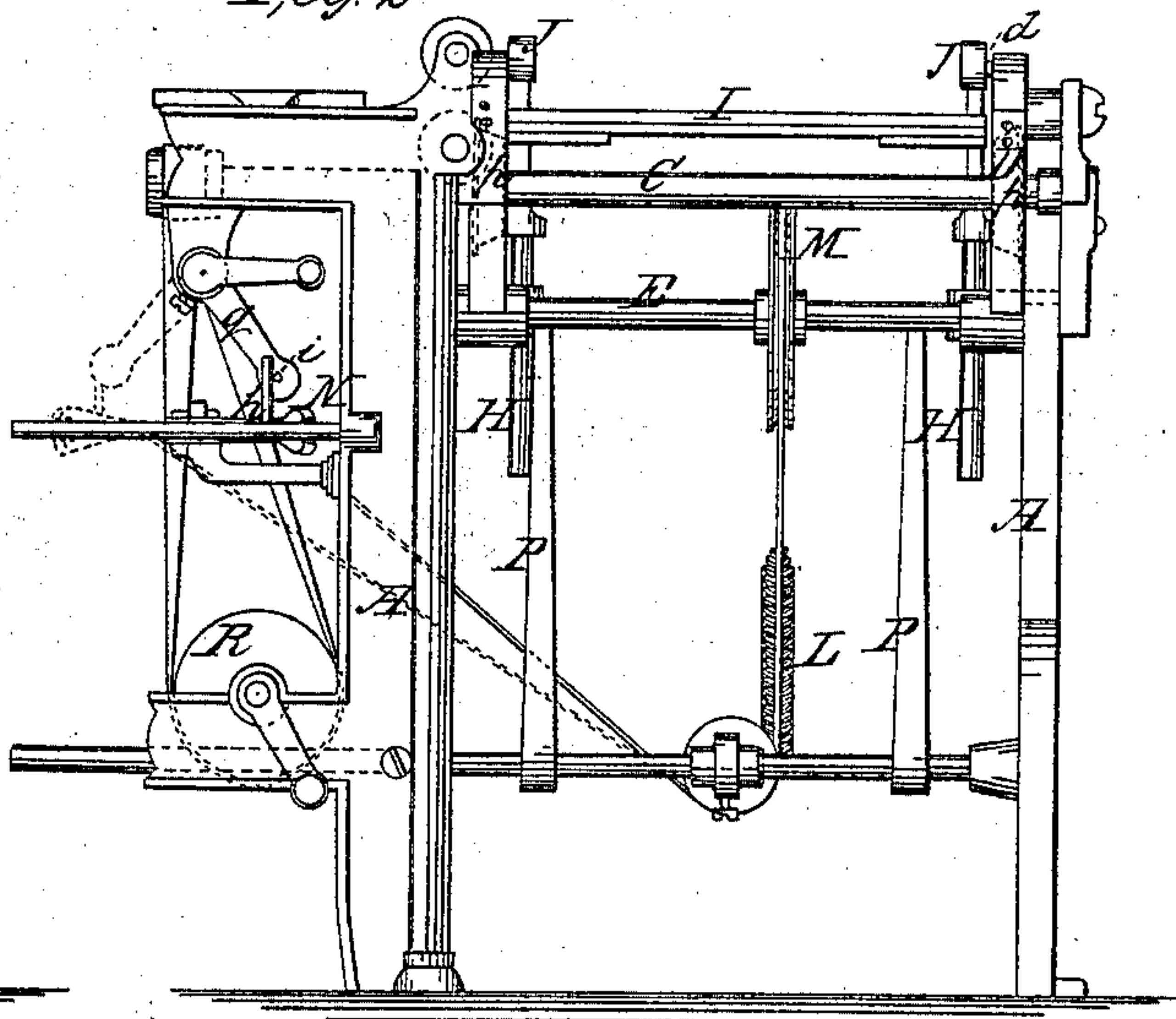


Fig. 3

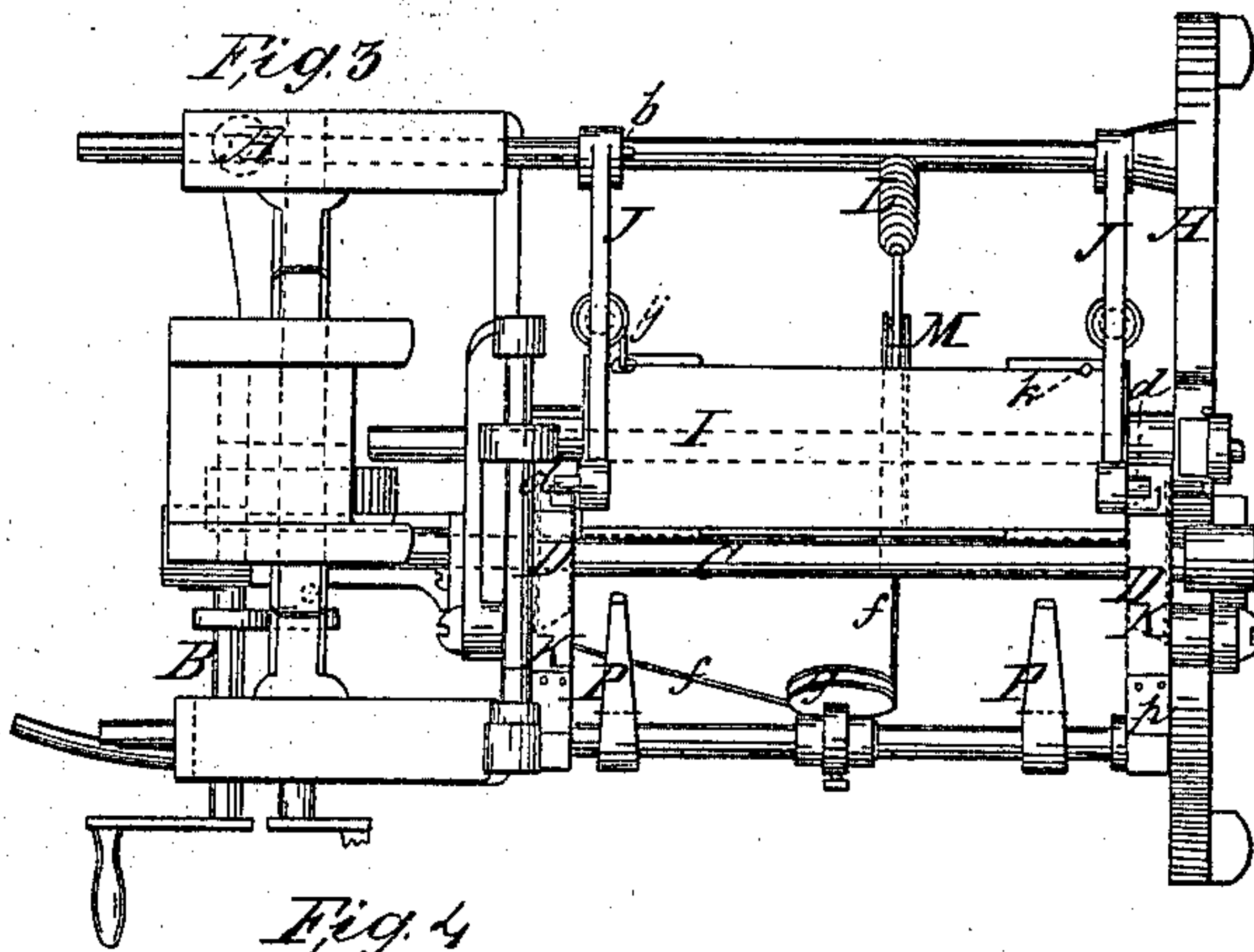
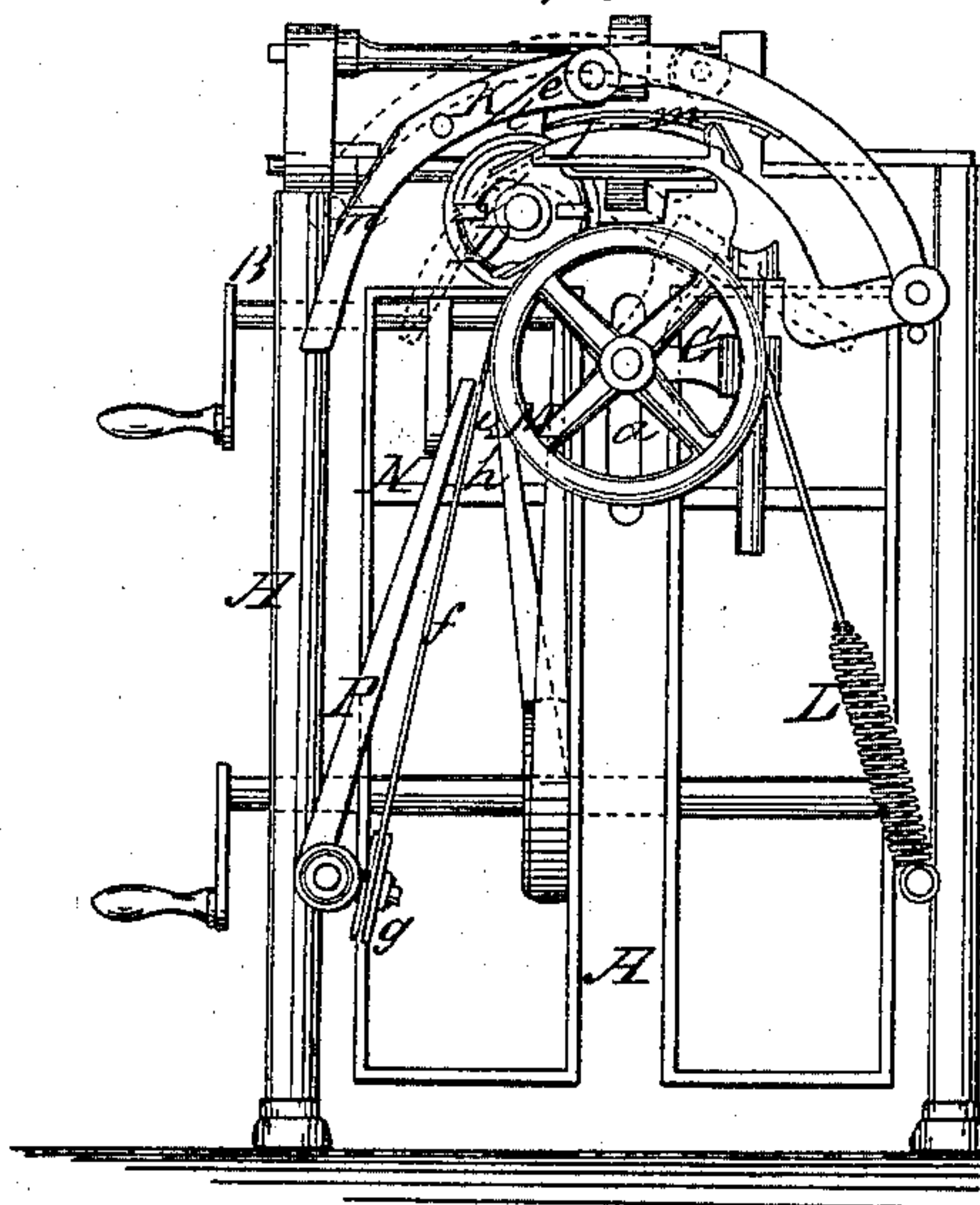


Fig. 4



Witnesses:

Daniel S. Richardson

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Inventor.

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UNITED STATES PATENT OFFICE.

H. L. McNISH, OF LOWELL, MASSACHUSETTS, ASSIGNOR TO HIMSELF AND DAVID C. BUTLER.

MACHINE FOR CROZING AND CHAMFERING STAVES.

Specification of Letters Patent No. 18,123, dated September 1, 1857.

To all whom it may concern:

Be it known that I, HENRY L. McNISH, of Lowell, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Machines for Crozing the ends of Staves, which I have described in the following specification and illustrated in the accompanying drawings with sufficient clearness to enable others of competent skill to make and use my invention.

My invention consists in a method hereinafter described of clamping the stave and carrying it over the cutters, and delivering it after the operation is finished as hereinafter more fully set forth.

In the accompanying drawings Figure 1 is an end elevation of my improved machine. Fig. 2 is a longitudinal elevation. Fig. 3 is a plan. Fig. 4 is a transverse vertical section.

A is the frame.

This machine is intended to be attached to a machine for dressing staves, and to be so geared to it that the two shall work in unison or in other words that their motion shall correspond.

B is what is termed the cam shaft of the machine, and upon the motion of this shaft, the motions of all the reciprocating parts of the machine are dependent.

C is the shaft which carries the cutters that croze the stave and chamfer its ends, and cut it off the proper length, at one and the same operation. The cutter head in which the cutters are fixed are designated in the drawings by the letter D.

E is the shaft which carries the clamps that hold the stave and in which it is carried over the cutter heads D. This shaft E is hung in adjustable bearings F which may be raised or lowered in the slot *a* to adjust the clamps to the radii of different barrels required. The shaft E has two arms G upon it, which receive, the sliding arms H to which the bed I is attached, and to which the spring clamps J are also hinged at *b*.

In my specification of a stave dresser filed in the Patent Office Nov. 10, 1856, I have described the kind of dresser and jointer to which the machine is properly

intended to be attached. In fact the machinery of both should be hung in the same frame.

The feeding apparatus is so arranged that one stave shall be partly fed into the crozing apparatus while its predecessor is being delivered from the machine and the clamps are returning to their place in which they are here represented.

K K are guides which guide and confine the ends of the clamps so as to cause them to hold the stave firmly while it is being crozed and chamfered. These guides are fastened to the frame. When the clamps J go back after having delivered a stave, to their natural position, the bed I is brought under the stave which is being fed forward into the crozing apparatus, the spring catch *j* yielding so as to pass under the stave. The pins *d* which are fixed in the ends of the clamps J rest upon the lips *e* of the guide K and keep the spring jaws *m* up a little more than the thickness of a stave from the bed, though they are here erroneously represented as resting on it. The clamps are kept in their present position by the spring L which is connected to the wheel M from which the cord *f* extends under the pulley *g* to the lever N. This lever N has a pin *h* which is operated upon by the crank pin *i* in the crank *q* on the cam shaft B to move the clamps forward so as to carry the stave over the cutter heads. This cam shaft is made to operate at the proper time by gearing it to the feed rollers. When the clamps are started to carry the stave over the cutters, the catches *j* and *k* first strike the stave and bring it square upon the bed, the pins *d* then slide down the groove *l* under the guides *k* and bring the spring jaws *m* down upon the stave and hold it firmly while it is being crozed. After the stave has passed the cutters, the pins *d* pass through the groove *n* and pushing the springs *p* aside pass to the outside of the guides and beyond the ends of the springs, thus releasing the stave and allowing it to fall, the arms P guiding it clear of the machine. Just at this juncture the crank pin *i* passes the pin *h*, and the clamps return to their original position, the pins *d* passing outside of the guides. The cutter shaft is

hung in adjustable bearings Q to regulate the depth the cutters shall cut. The cutters are driven by a belt over the pulley R. The parts of this machine are so made that
5 it may be set to different lengths of stave.

I claim—

1. The self opening and closing clamp described, or its equivalent, so geared to other parts of the machine as to operate period-

ically, corresponding with the motion of the 10 feed rollers as set forth.

2. I also claim making the clamps adjustable to croze staves of barrels of different diameters as herein set forth.

HENRY L. McNISH.

Witnesses:

WILLIAM A. RICHARDSON,
B. C. SARGEANT.