

No. 792,271.

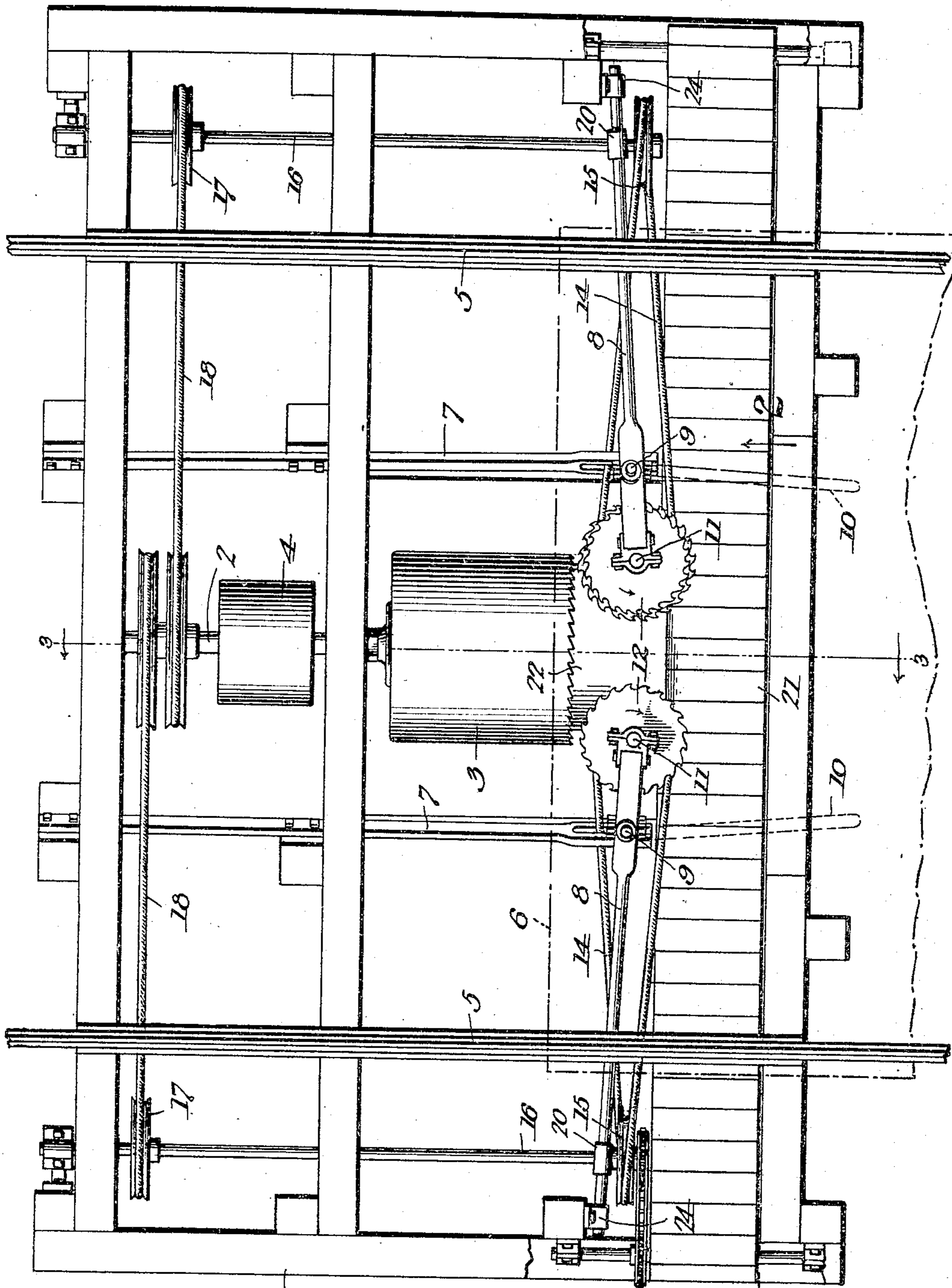
PATENTED JUNE 13, 1905.

J. A. KNIGHT.

MACHINE FOR SAWING, MATCHING, AND JOINTING STAVES.

APPLICATION FILED AUG. 2, 1904.

2 SHEETS—SHEET 1.



Witnesses

E. J. Stewart
Wm. Bagger

Fig. 1.

John A. Knight, Inventor.

by

Chas. H. Snow & Co.

Attorneys

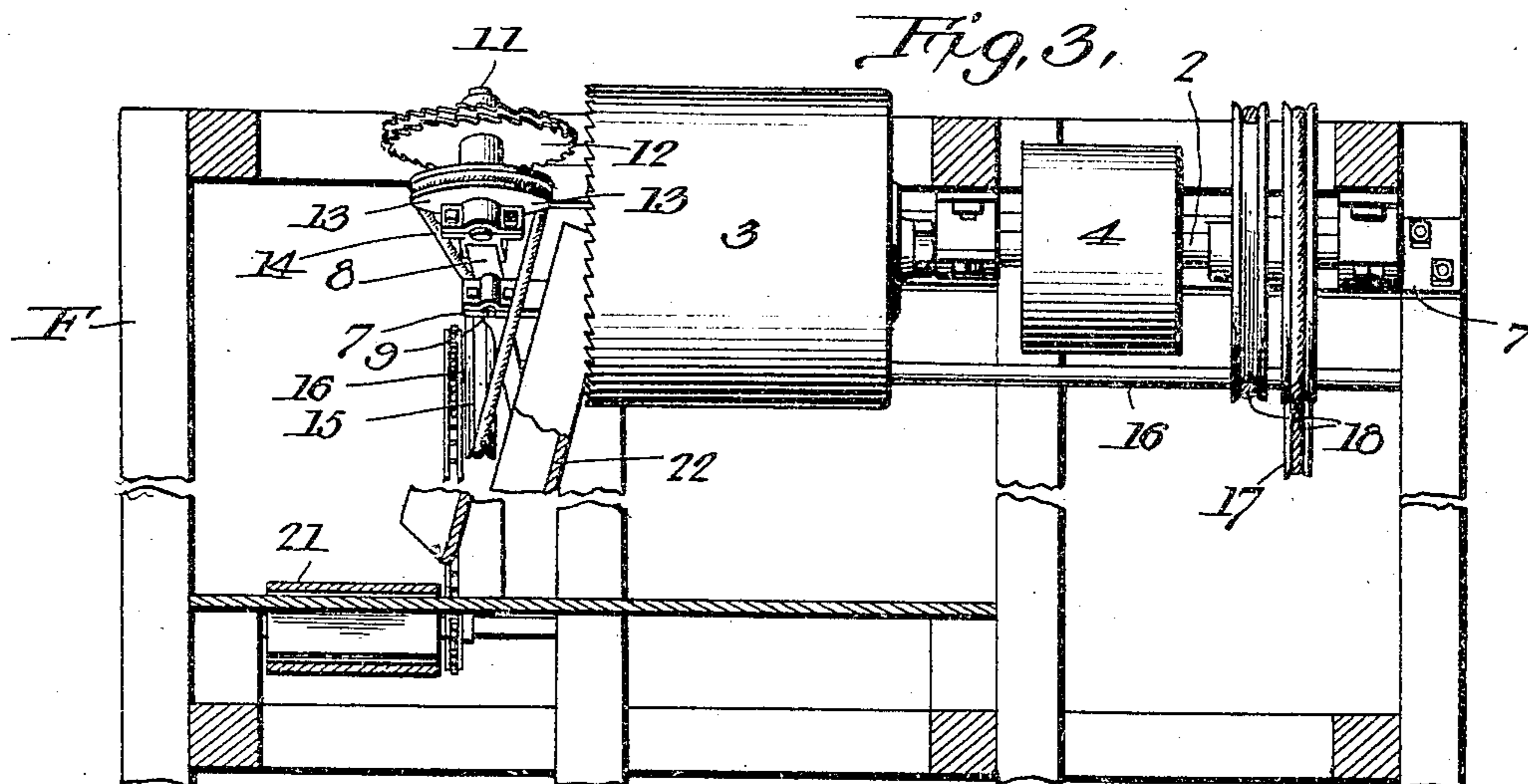
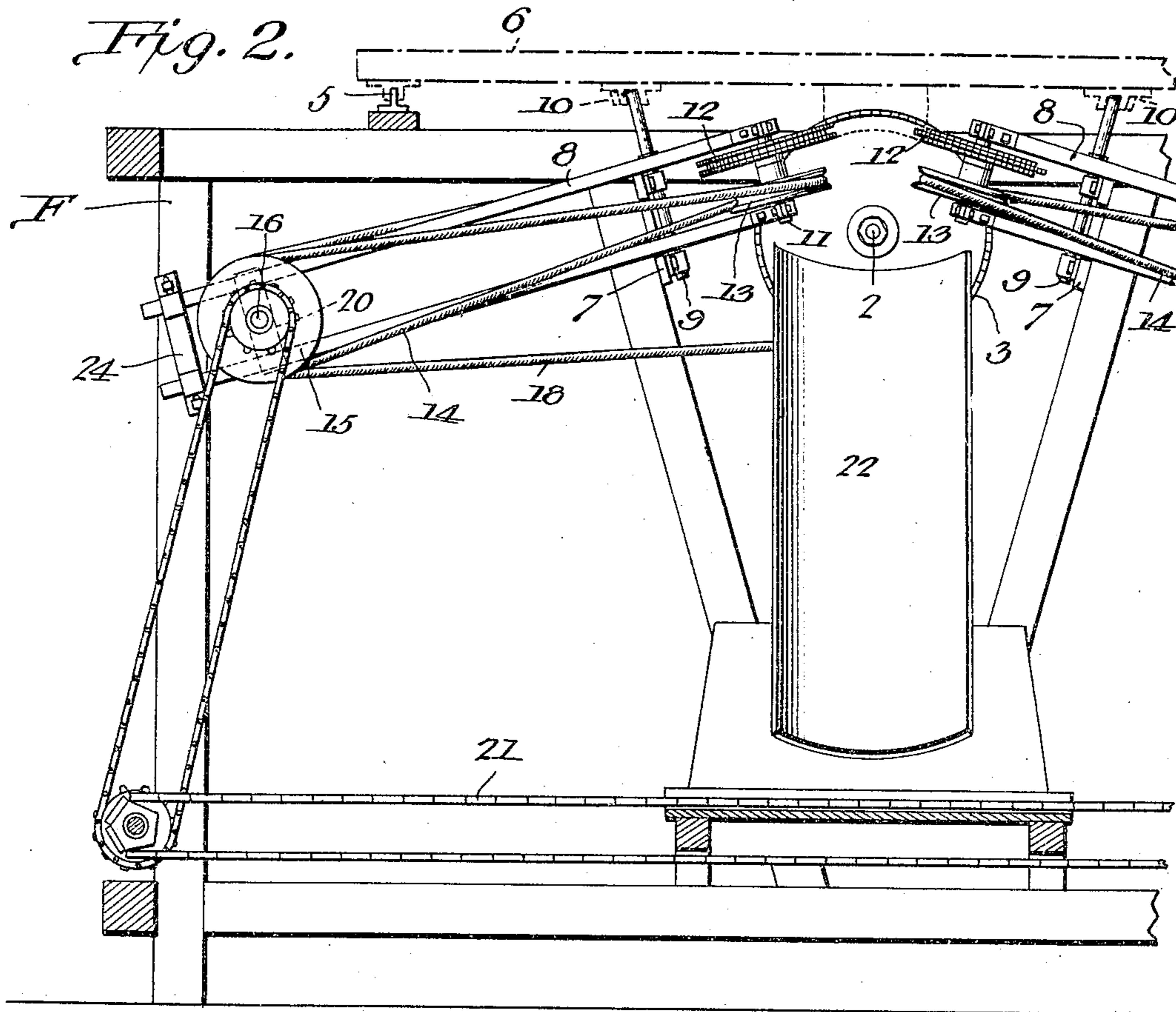
No. 792,271.

PATENTED JUNE 13, 1905.

J. A. KNIGHT.
MACHINE FOR SAWING, MATCHING, AND JOINTING STAVES.

APPLICATION FILED AUG. 2, 1904.

2 SHEETS—SHEET 2.



Witnesses
E. H. Stewart
Wm. Bagger

John A. Knight, Inventor.
by *C. A. Snow & Co.* Attorneys

UNITED STATES PATENT OFFICE.

JOHN A. KNIGHT, OF MARLBORO, NEW HAMPSHIRE.

MACHINE FOR SAWING, MATCHING, AND JOINTING STAVES.

SPECIFICATION forming part of Letters Patent No. 792,271, dated June 13, 1905.

Application filed August 2, 1904. Serial No. 219,200.

To all whom it may concern:

Be it known that I, JOHN ANDREW KNIGHT, a citizen of the United States, residing at Marlboro, in the county of Cheshire and State of New Hampshire, have invented a new and useful Machine for Sawing, Matching, and Jointing Staves, of which the following is a specification.

This invention relates to improvements in stave-making machinery of that class which is specially adapted for making pail-staves and which are of the type including tubular saws.

Among the objects of the invention are to combine in a single machine adapted to be attended by one operator mechanism for sawing staves from a bolt or block and by the same operation matching and jointing the staves.

With these and other ends in view, which will readily appear as the nature of the invention is better understood, the same consists in the improved construction and novel arrangement and combination of parts, which will be hereinafter fully described, and particularly pointed out in the claims.

In the accompanying drawings has been illustrated a simple and preferred form of embodiment of the invention, it being, however, understood that no limitation is necessarily made to the precise structural details therein exhibited, but that the right is reserved to any changes, alterations, and modifications to which recourse may be had within the scope of the invention and without departing from the spirit or sacrificing the advantages of the same.

In said drawings, Figure 1 is a top plan view of a machine constructed in accordance with the principles of the invention. Fig. 2 is a vertical transverse sectional view taken on the line 2 2 in Fig. 1. Fig. 3 is a longitudinal vertical sectional view taken on the line 3 3 in Fig. 1.

Corresponding parts in the several figures are indicated by similar characters of reference.

In carrying this invention into effect a frame or table F of suitable construction is employed. Bearings are provided for a shaft 2, carrying at its front end a tubular saw 3 of ordinary

construction and provided with a belt-wheel or pulley 4 to receive motion from a source of power. Track-bars 5 are provided for the carriage 6, which carries the bolt or block from which the staves are cut. The carriage may be operated manually or by any suitable mechanical means. (Not shown.)

Adjacent to the saw-carrying shaft, at each side of the latter, is supported a spring or resilient member 7. The front ends of these springs project in advance of the saw and serve as supports for frames 8, which may be connected therewith in any suitable and convenient manner. In the present instance the forward ends of the springs have been bifurcated, and the frames 8 are supported upon the upper sides of the members of the forks, with which they are connected by means of pins or bolts 9, extending vertically through the same. These pins also extend upwardly and engage converging grooves 10 in the under side of the carriage 6, so that when the latter is operated the frames 8 will be forced slightly in the direction of each other for the purpose of tapering the staves, as will be presently more fully set forth.

The frames 8 are provided at their inner ends with bearings for shafts 11, carrying the matchers 12, which are of ordinary well-known construction. The shafts 11 also carry band wheels or pulleys 13, which are connected by bands 14 with pulleys 15 upon the front ends of longitudinally-disposed shafts 16, the rear ends of which have pulleys 17 connected by bands 18 with pulleys upon the saw-carrying shaft 2. The rear ends of the shafts 16 are so mounted in suitable bearings in the frame or table as to permit the front ends of said shafts to move in a horizontal plane with the frames 8, which are provided with boxes 20, in which the front ends of said shafts are journaled. This movement is so slight, however, that special boxes need hardly be provided for the rear ends of the shafts 16, which may be simply loosely fitted in their respective bearings.

The frame F supports below and in front of the tubular saw an endless carrier 21, which may be driven in any suitable manner from one of the driven shafts of the machine—for

instance, from one of the shafts 16, as shown in the accompanying drawings. An inclined plane 22, the upper end of which extends into the tubular saw, is also provided to guide the staves as they drop from the latter onto the endless carrier.

From the foregoing description, taken in connection with the drawings hereto annexed, the operation and advantages of this invention will be readily understood by those skilled in the art to which it appertains. When the carriage supporting the bolt is advanced against the saw, the sides of the bolt first come into contact with the matchers, whereby that portion of the bolt which will be first removed by the saw is matched, one side being grooved and the other provided with a tongue, and at the same time the joint is effected, the proper bevel or taper being imparted to the sides of the staves by the matcher-frames being guided by the pins 9, which extend into the grooves 10 in the under side of the carriage. The springs or resilient members carrying the matcher-frames will assist in restoring the latter to normal position when the carriage recedes from the saw.

The outer or free ends of the matcher-carrying frames may, if desired, be supported independently of the resilient supporting means with which said frames are connected, as already described. In the drawings the said frames have been shown as supported in vertically-adjustable guide-blocks 24, in which the said frames are free to slide transversely of the machine, the vertical adjustment being for the purpose of enabling any desired tilt or inclination to be imparted to the matchers. The necessary range of adjustment being of course very limited, it may be readily effected, since the resilient supports of the matcher-carrying frames will readily adapt themselves to such adjustment.

Having thus described my invention, what is claimed is—

1. In a machine of the class described, the combination with a tubular saw, of movable supporting-frames, shafts journaled in said frames, matchers upon said shafts, a bolt-supporting slide, and means connected with the matcher-supporting frames and engaging pattern-grooves in said slide.

2. In a machine of the class described, the combination with a tubular saw, of matcher-carrying frames, resilient supporting means for said frames, a bolt-supporting slide, and means connected with the matcher-supporting frames and engaging pattern-grooves in said slide.

3. In a machine of the class described, the combination with a tubular saw, of matcher-carrying frames, forked resilient supporting means engaging and supporting said frames, a bolt-supporting slide, and means connected with the matcher-carrying frames and engaging pattern-grooves in said slide.

4. In a machine of the class described, a tubular saw, a shaft supporting said saw, resilient members adjacent to the sides of said saw, frames supported by said resilient members, shafts in said frames, matchers upon said shafts, longitudinally-disposed shafts having their front ends journaled in bearings in the matcher-carrying frames and their rear ends loosely journaled in bearings in the main frame, means for transmitting motion from said shafts to the matcher-carrying shafts, means for transmitting motion from the saw-carrying shaft to the longitudinal shafts, and means for operating the saw-shaft.

5. In a machine of the class described, the combination of stave-severing mechanism, matcher-carrying frames, resilient supporting means for said frames, a reciprocatory carriage having grooves in its under side, and studs extending from the matcher-carrying frames into said grooves.

6. In a machine of the class described, the combination with a tubular saw, of a pair of matchers normally supported adjacent to the cutting edge of said tubular saw, and means for feeding a block or bolt between said matchers in the direction of said tubular saw, said feeding means including pattern means for manipulating the matchers to effect the tapering of the staves.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

JOHN A. KNIGHT.

Witnesses:

CHARLES B. COLLINS,
G. W. BERA.