

(No Model.)

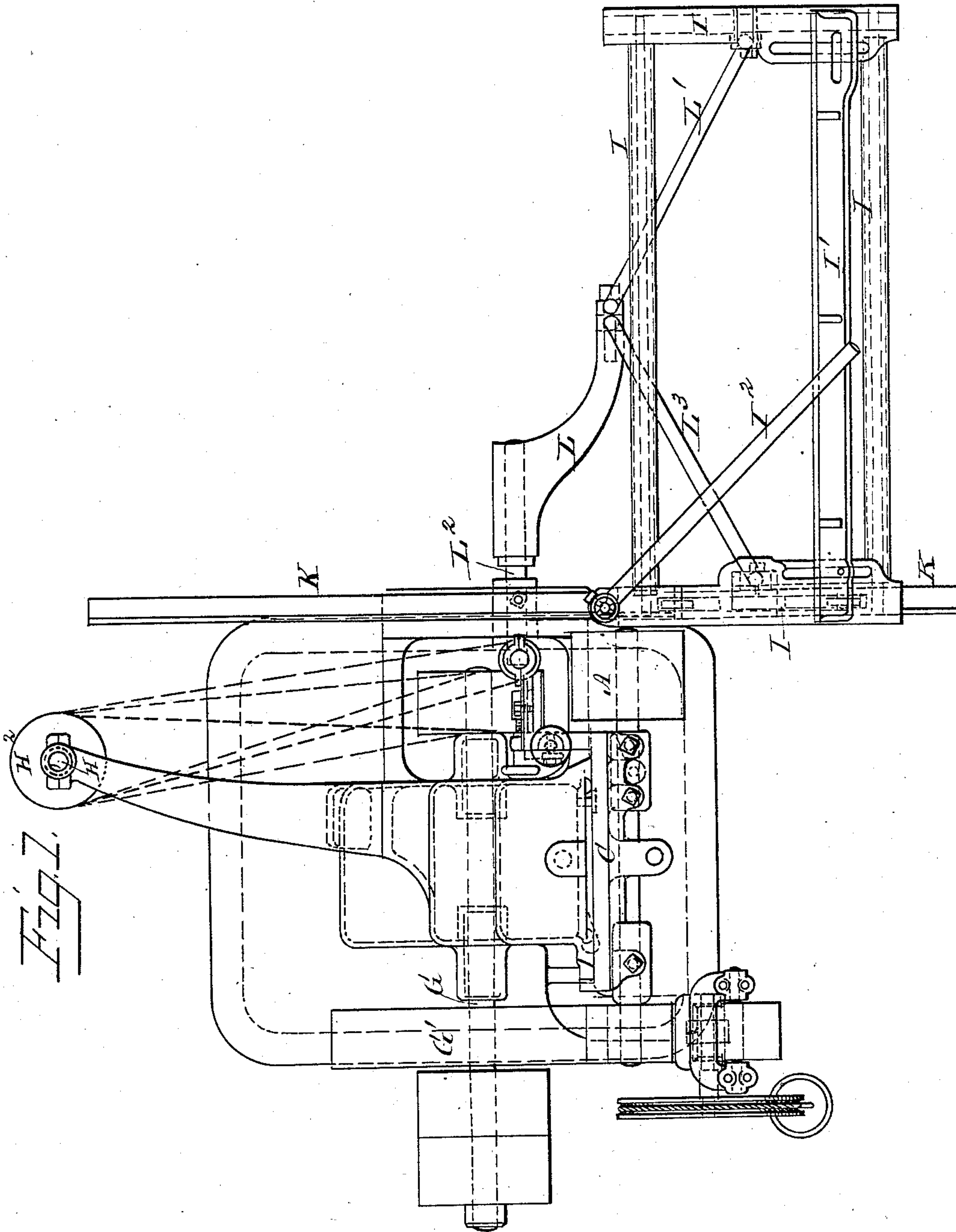
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W. H. DOANE.

CARRIAGE SUPPORT FOR TENONING MACHINES.

No. 285,586.

Patented Sept. 25, 1883.



WITNESSES

F. L. Oursand
F. McMahon

INVENTOR

William H. Doane
by his attorney
J. E. Ebb

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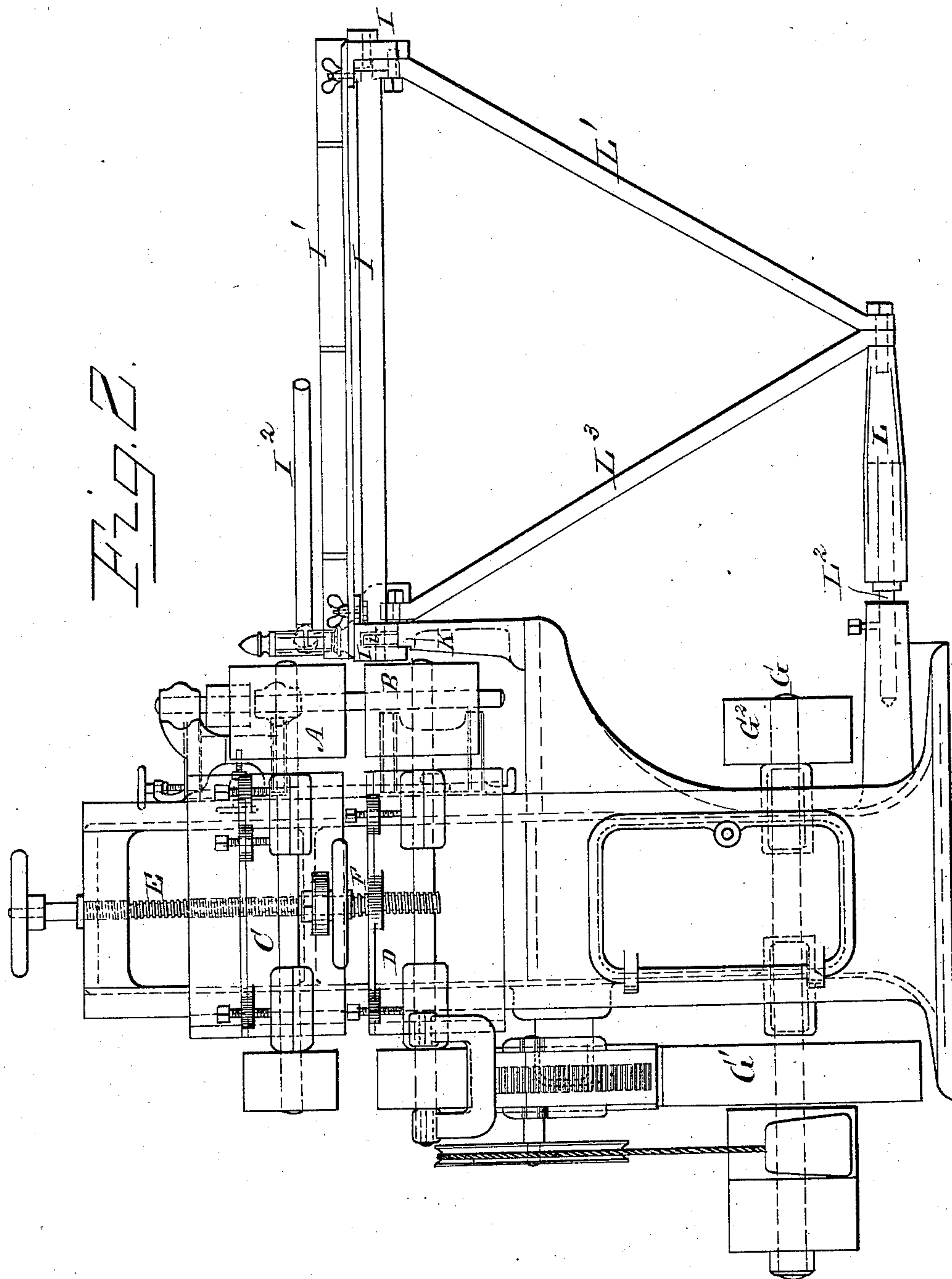
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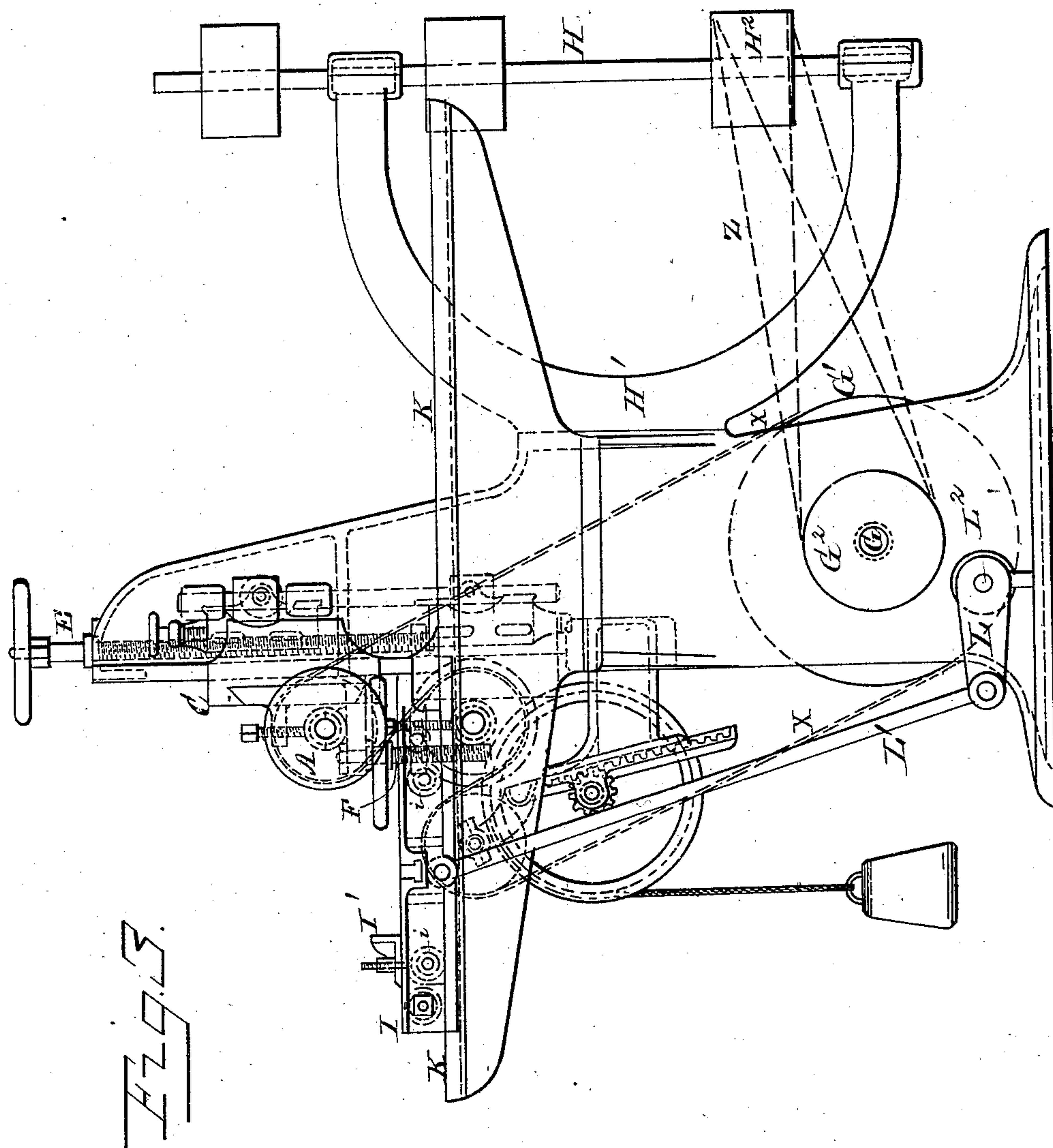
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UNITED STATES PATENT OFFICE.

WILLIAM H. DOANE, OF CINCINNATI, OHIO.

CARRIAGE-SUPPORT FOR TENONING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 285,586, dated September 25, 1883.

Application filed April 14, 1882. (No model.)

To all whom it may concern:

Be it known that I, WM. H. DOANE, a citizen of the United States, residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Carriage-Supports for Tenoning-Machines; and I hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates more especially to wood-working machines, in which a traversing carriage is used to feed the stuff to be operated upon past the cutting-tools.

In machines for shaping either end or both ends of long sticks of timber, and requiring that such sticks be fed crosswise past the cutter-head or cutter-heads, a carriage of considerable length must be provided for the proper support of the sticks of timber. Heretofore it has been customary to support such carriage at each end upon an extension of the main frame.

The principal object of this invention is to dispense with such extension-frame; and to this end it consists in supporting the outer end of such a carriage upon a vibratory crank, the inner end being supported upon the usual guide-rail, to which the axis of the said crank is arranged at right angles.

In order that the invention may be clearly understood, I have illustrated and will proceed to describe it as applied to a tenoning-machine in the best form at present known to me; but it should be understood that I do not limit my invention to its application to a tenoning-machine, since it can be used with advantage, not only on other wood-working machines, but on machines and machine-tools of various descriptions.

In the annexed drawings, Figure 1 is a plan view of a tenoning-machine embodying my invention. Fig. 2 is a front elevation of the same. Fig. 3 is an end elevation thereof.

The same letters of reference are used in all the figures to designate identical parts.

The tenoning-machine in connection with which I have illustrated the invention is constructed with the two tenoning cutter-heads A and B, the horizontal shafts of which are journaled in bearings on the slides C and D,

mounted on the main frame in the usual manner. Both slides C and D can be adjusted vertically at the same time by a screw-spindle, E, and the lower slide, D, may be separately adjusted vertically by the screw F.

The bearings of the cutter-head shafts may be connected with or formed on cross-slides on the main slides C and D, to provide for an endwise adjustment of the cutter-heads and their shafts and pulleys, one or both, so that tenons may be cut on a stick longer on one side than on the other by proper endwise adjustment of the respective cutter-heads.

The cutter-heads are driven by a belt, X, which passes from a pulley, G', on the counter-shaft G of the machine, over the pulley of the upper cutter-head, thence down and under the pulley of the lower cutter-head, thence up over a belt-tightener pulley back to the pulley G', the belt-tightener pulley being journaled in a bracket-bearing arranged to slide up and down on fixed rails, and constructed with an upright rack, which is engaged by a pinion journaled in fixed bearings. The shaft of the pinion protrudes at one end through its bearing, and carries a sheave from which a cord or rope is suspended carrying a suitable weight, in order to constantly force the belt-tightener pulley upward, so as to maintain a proper strain on the belt X, which drives the cutter-heads. The counter-shaft is provided with fast and loose pulleys, as usual, for driving it by belt from the line-shaft. The tenoning-machine illustrated is also provided with cope-heads in rear of the tenoning cutter-heads, and the vertical shafts carrying said cope-heads are provided with suitable pulleys to drive them by belts from driving-pulleys on the vertical shaft H, mounted on a bracket-frame, H', secured to the rear side of the machine, the vertical shaft H being driven by a belt, Z, which passes from the pulley G² on the counter-shaft G around the pulley H² on the shaft H, and back to the pulley G².

It is deemed unnecessary to describe more in detail those parts of the tenoning-machine thus far referred to, because they form no part of the invention to be claimed in this patent, which consists only of the manner of and means for supporting the traversing carriage I. The end of the carriage adjacent to the cutter-heads is mounted upon a longitudinal rail, K, of the

main frame of the machine, and is in this instance supported thereon by means of anti-friction rollers *i*, but might be fitted thereto in the ordinary way, so as to simply slide on
5 said rail.

The carriage may consist of an open framework, as usual, the outer end bar of which is connected to the inner end bar by stout distance-rods, and is provided with the ordinary
10 adjustable fence, *I'*, and the pivoted clamping-lever *I''*, for securely holding the stick of timber on the carriage in feeding it through between and past the cutter-heads.

The outer end of the carriage is supported
15 upon the vibratory crank *L*, or rather upon a stout wrist-pin thereof, through the medium of a prop, bar, or brace, *L'*, which is pivoted on the wrist-pin of said crank at its lower end, while its upper end is pivoted to the outer end bar
20 of the carriage at about the center thereof, as clearly shown in all the figures.

The crank *L* is arranged near the base of the main frame of the machine, and turns upon a stout gudgeon, *L''*, fitted in a sleeve bearing
25 or socket on the main frame. The crank is seated against a collar on the gudgeon *L''*, and the gudgeon can be adjusted endwise in its bearing, and, when properly adjusted, is firmly secured by a set-screw, as best shown in Fig.

30 2. The axis of the crank is arranged at right angles to the rail *K* and in a vertical plane at about the center of said rail. The axes of the pivots of the brace *L'* are parallel to the axis of the crank. Thus any endwise adjustment
35 of the gudgeon *L''* must necessarily turn the outer end of the carriage up or down, as the case may be, so that by means of such adjustment the carriage may be readily adjusted so as to occupy a horizontal position.

40 The crank may have about the form shown in Fig. 1, so as to reach with its wrist-pin to about a point located in a vertical plane parallel to rail *K*, and intersecting the carriage at about its mid-length.

The brace *L'* extends in a diagonal direction
45 from the wrist-pin of the crank up to the outer bar of the carriage. In order to give greater steadiness and rigidity of support to the carriage, a second brace, *L'''*, may be used, extending
50 from the wrist-pin of the crank to the inner bar of the carriage, to which it is pivoted, in line with the pivot connecting the upper end of brace *L'* to the outer bar of the carriage. Though it is preferred to use this second brace
55 *L'''*, yet it may be dispensed with. In moving the carriage back and forth on the rail *K*, the crank is vibrated back and forth to a limited extent—say through about ninety degrees—the parts being so proportioned that the crank
60 will not reach the dead-center in moving the carriage to its utmost limit in either direction.

Having thus described my invention, what I claim is—

1. The combination, substantially as before set forth, of the traversing carriage, the fixed
65 guide-rail for supporting its inner end, and the vibratory crank and pivoted brace for supporting its outer end.

2. The combination, substantially as before set forth, of the traversing carriage, the fixed
70 guide-rail for supporting its inner end, the vibratory crank and pivoted brace for supporting its outer end, and a second pivoted brace extending from the wrist-pin of the crank
75 to the inner end of the carriage.

3. The combination, substantially as before set forth, of the traversing carriage, the fixed
guide-rail for supporting its inner end, the vibratory crank and pivoted brace for supporting
80 its outer end, and the endwise adjustable gudgeon on which the crank turns.

In testimony whereof I affix my signature in presence of two witnesses.

WM. H. DOANE.

Witnesses:

THOMAS H. SCHULZ,
SIMEON HARRIS.