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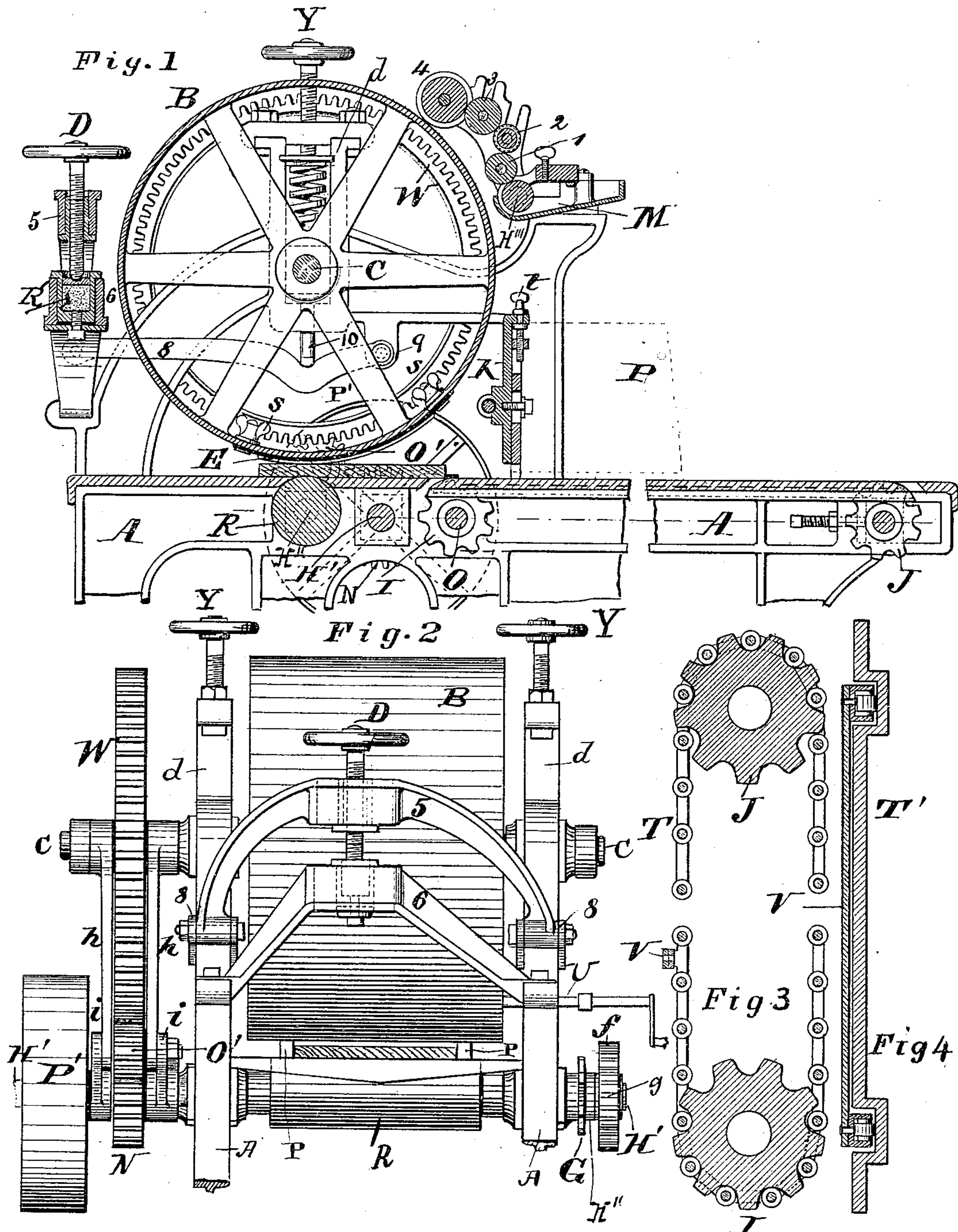
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L. ROTH.

MACHINE FOR PRINTING LUMBER.

No. 353,762.

Patented Dec. 7, 1886.



Witnesses  
J. S. Sullivan  
Atty. L. Rollwagen.

Inventor  
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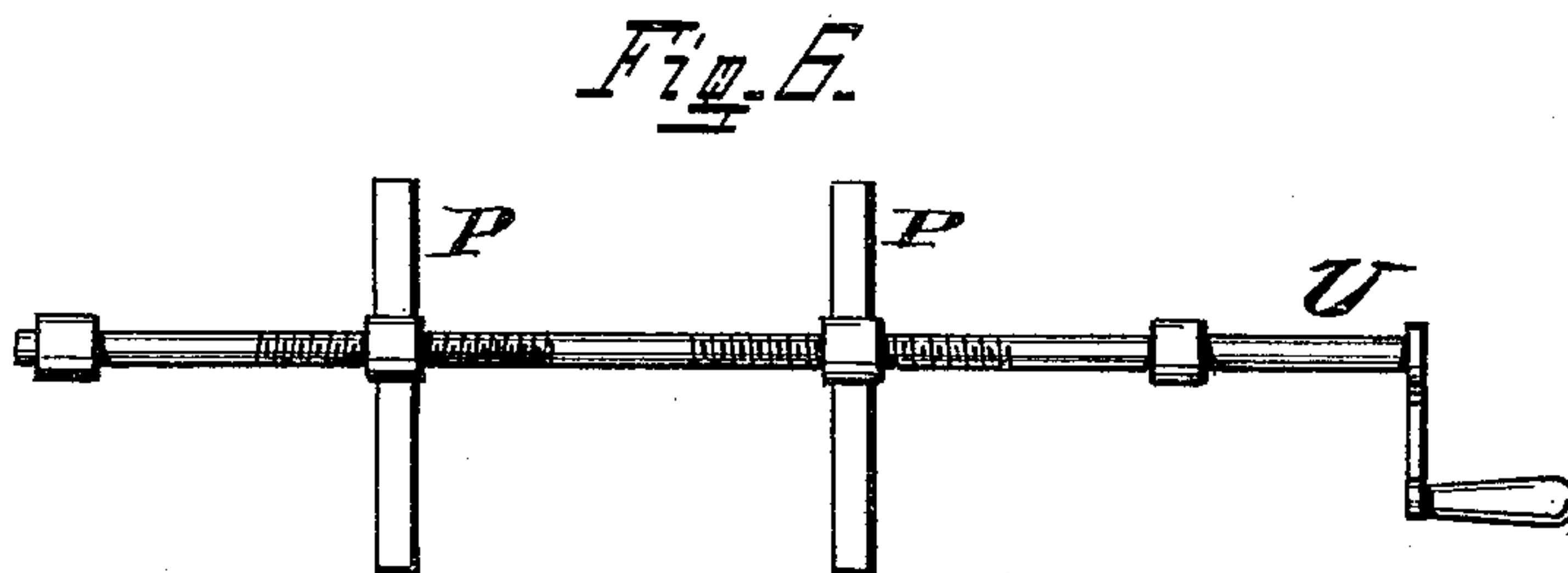
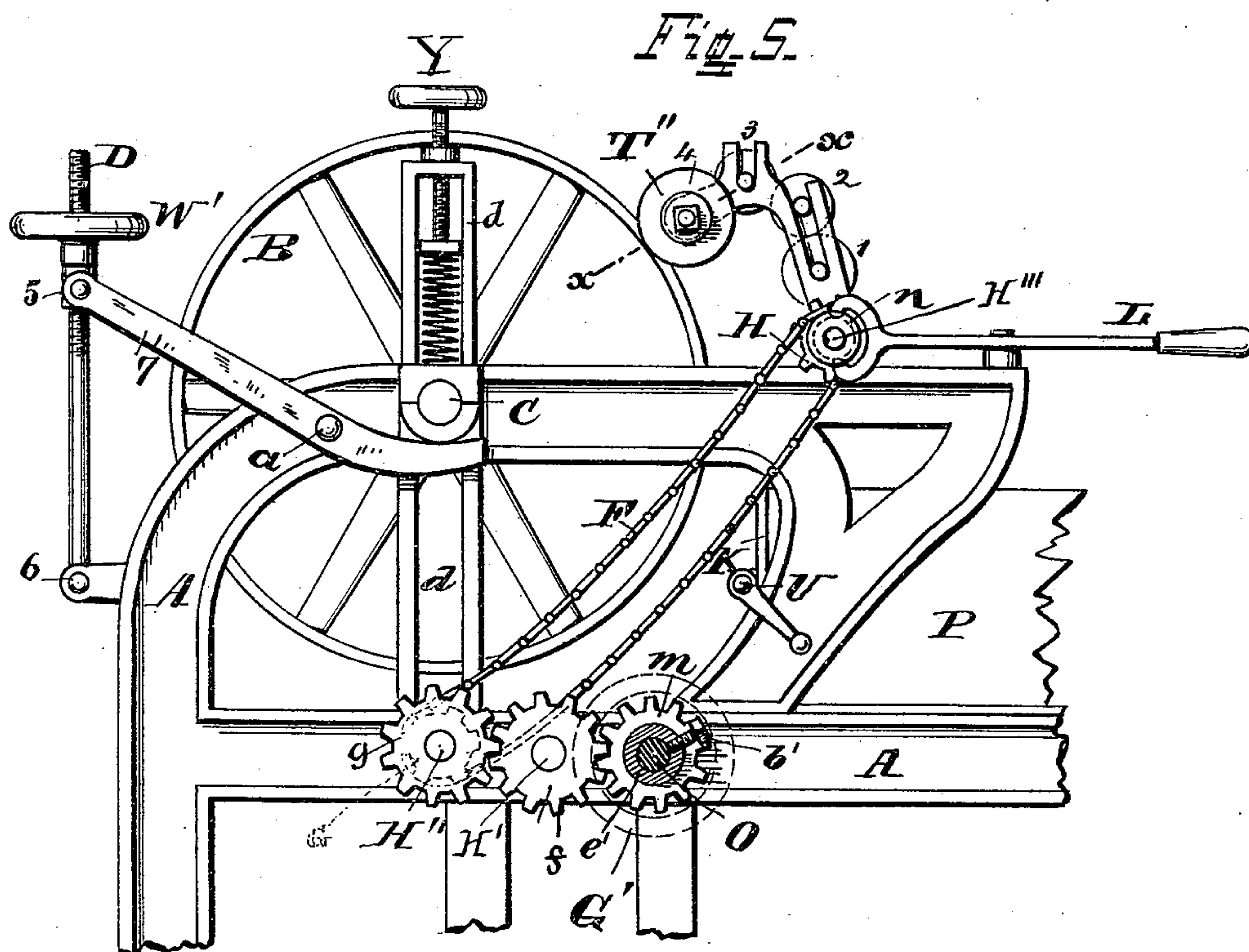
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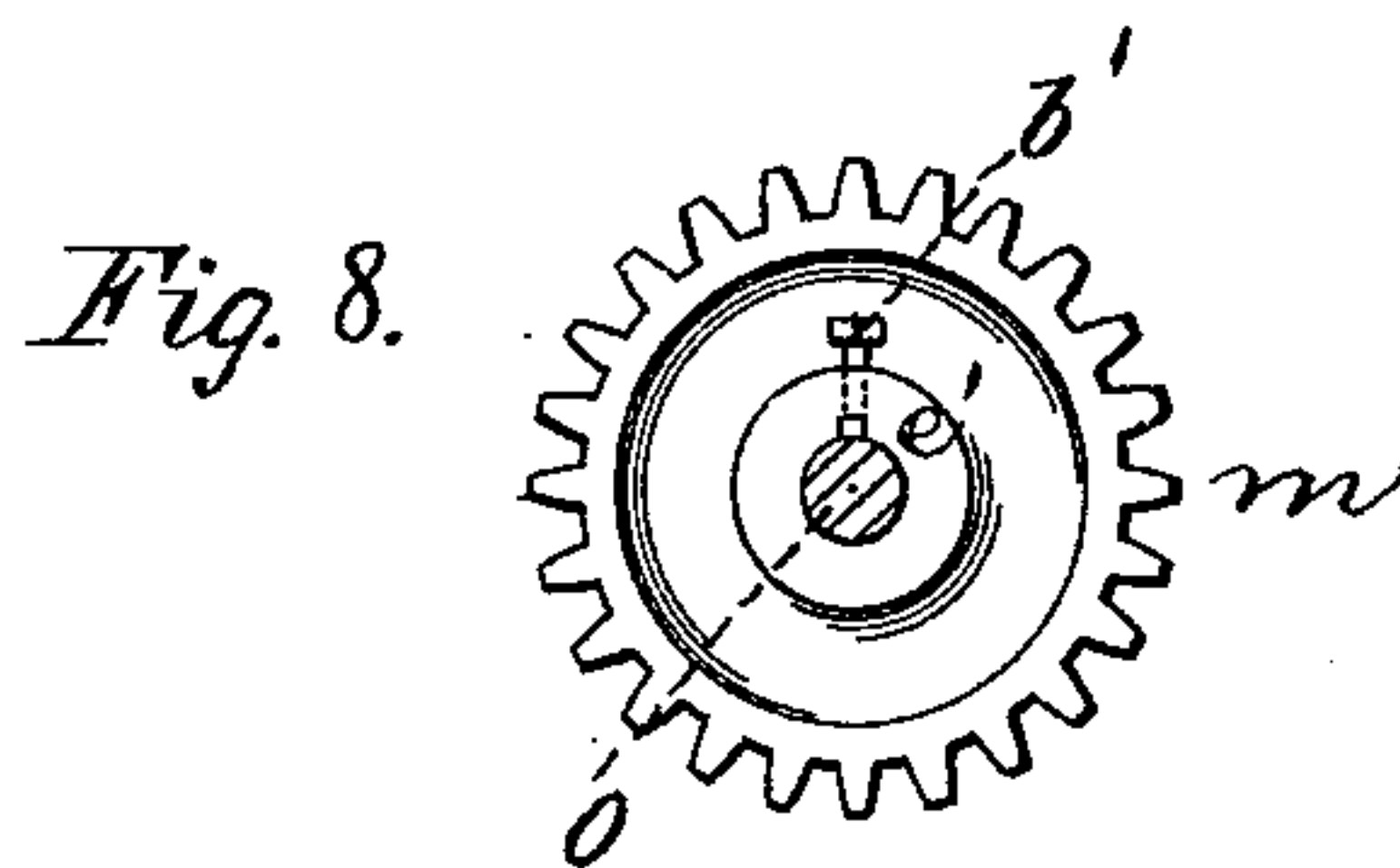
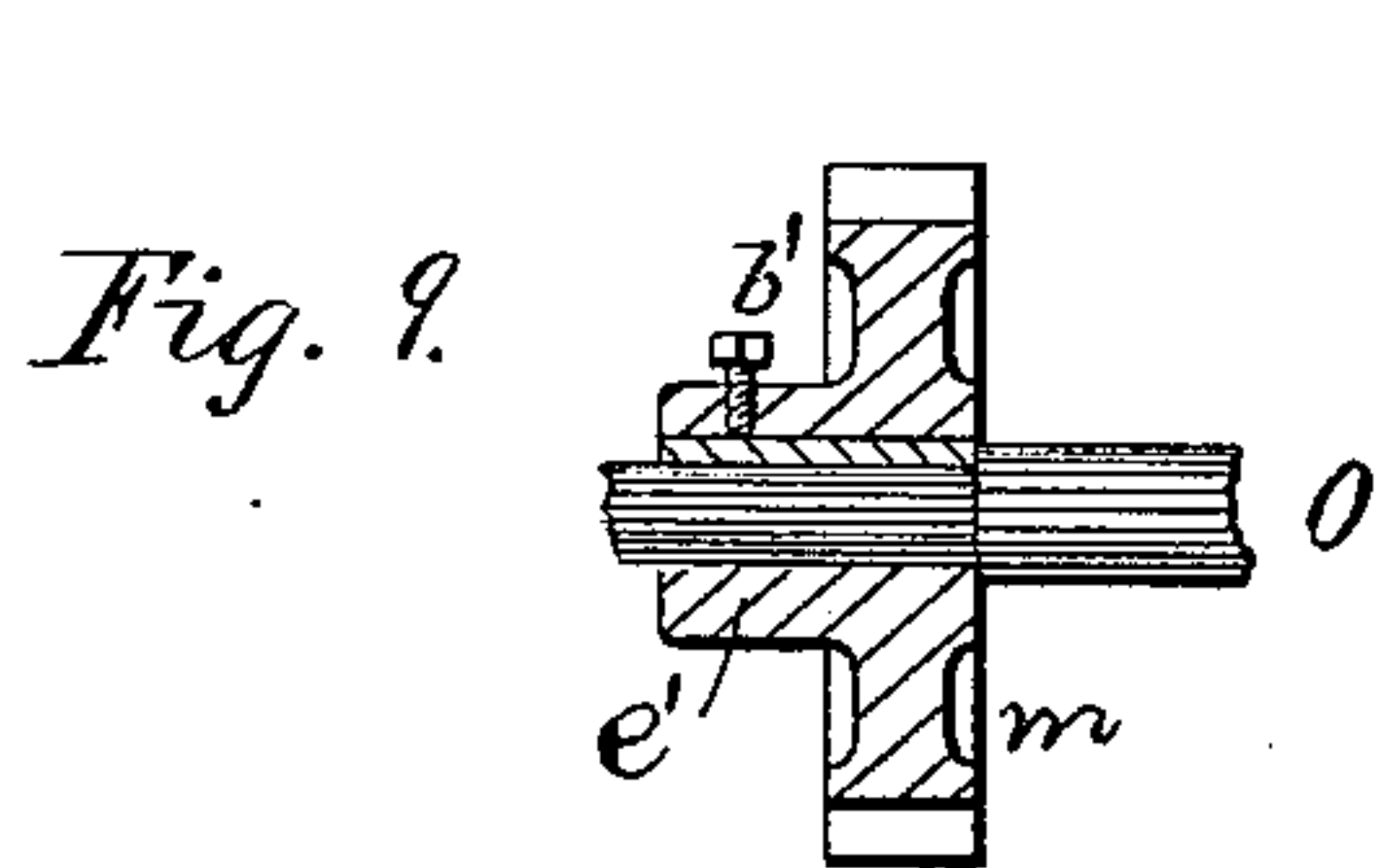
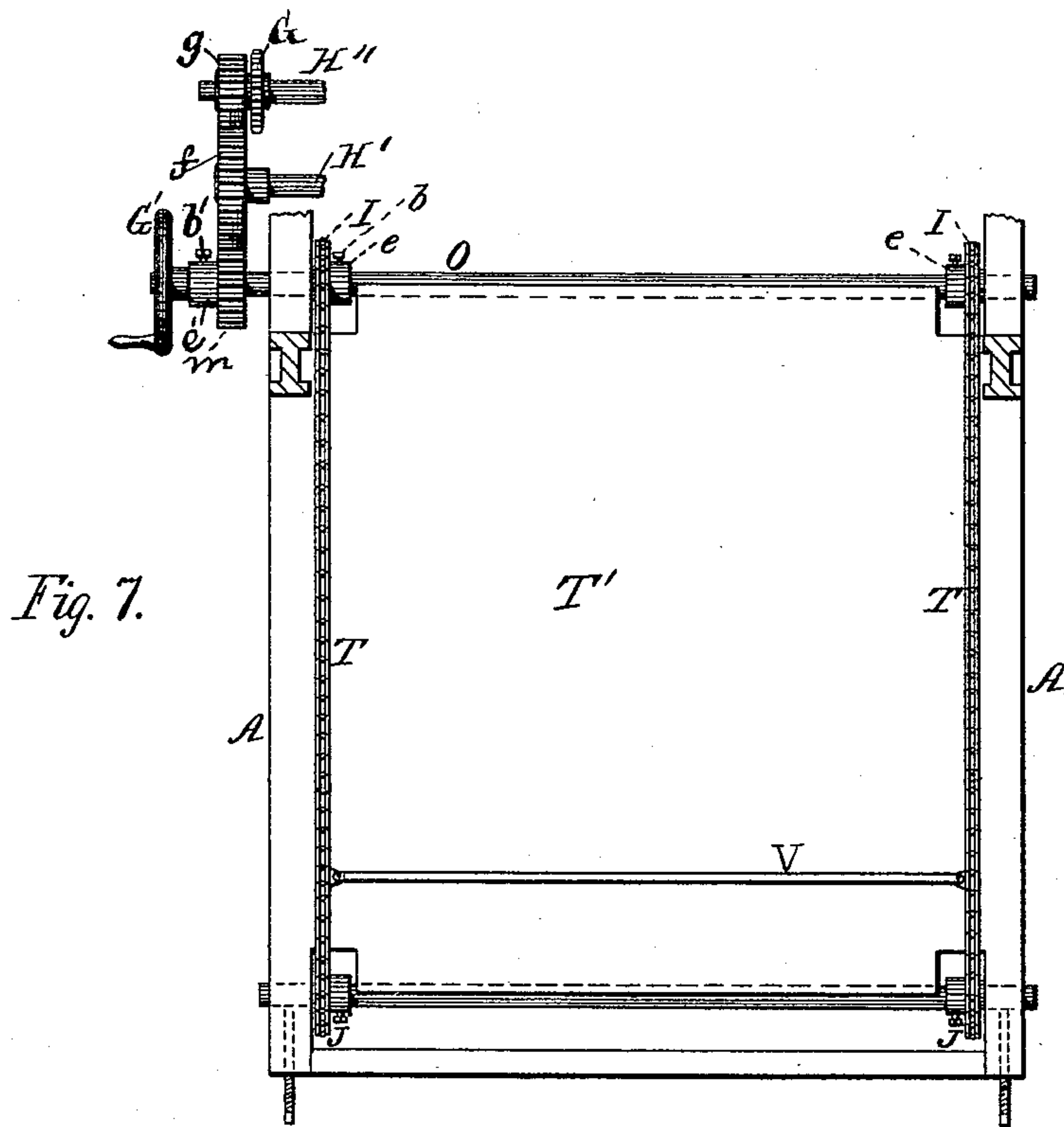
3 Sheets—Sheet 3.

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Witnesses:  
W. C. Jirdiniston.  
P. J. Cadwallader,

Inventor:  
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by *Jeffrey Garrard*  
his Attorneys.



# UNITED STATES PATENT OFFICE.

LAWRENCE ROTH, OF CINCINNATI, OHIO.

## MACHINE FOR PRINTING LUMBER.

SPECIFICATION forming part of Letters Patent No. 353,762, dated December 7, 1886.

Application filed April 23, 1885. Serial No. 163,098. (No model.)

*To all whom it may concern:*

Be it known that I, LAWRENCE ROTH, 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 Machines for Printing Lumber, of which the following is a specification.

In the accompanying drawings, Figure 1 is a central longitudinal section of my press. Fig. 2 is a rear view of the same. Fig. 3 is an enlarged view of the sprocket-wheels and chain which revolve the carrier. Fig. 4 is a cross-sectional view of the table and the carrier. Fig. 5 is a side view of a portion of the frame-work, and shows more particularly a modification of the mechanism for raising and lowering the main cylinder upon which the type is mounted, in order that the press may be gaged for different thicknesses of stuff, as well as assisting in securing a light or heavy impression of the type upon the board. This view also shows the mechanism for throwing the inking mechanism in and out of gear. Fig. 6 is a top or plan view of the lever, containing right and left screw-threads, whereby the guideways can be regulated to the width of the stuff that is to be printed. Fig. 7 is a plan view of the table portion of the machine. Fig. 8 is a side view of an adjustable gear-wheel. Fig. 9 is a section thereof in line with a shaft.

A indicates the frame of my press; B, the cylinder, which is mounted upon the shaft C, in guideways *d* upon each side of the press. This shaft C is revolved by means of the gear-wheel W, which in turn receives its power from the gear N and intermediate gear, O', the gear N being driven by the belt-pulley P'.

E is the electrotype-plate, placed in position on the periphery of the cylinder B. This plate is slotted at each end, and is held in place by means of the thumb-screws *s s*, extending through the cylinder and said slots, and their heads embracing the plate on the exterior thereof.

F is the chain, which works on the sprocket-wheel G on the shaft H'' and the sprocket-wheel H on the shaft H'''. (See Fig. 5.) The wheel G and the position it occupies is shown in Figs. 2 and 7 and in dotted lines in Fig. 5.

These wheels and chain communicate motion to the inking apparatus or rolls 1 2 3, &c., (of which rolls there may be two or more, according to the exigencies of the occasion,) through the medium of the main shaft H'.

By means of the lever L and the clutch *n*, to which it is connected, the inking mechanism may be thrown in or out of motion.

M is the ink-fountain, from which the rollers are fed.

R is the lower roller, over which the printed block passes.

Ordinarily in presses of this character two large drums or cylinders, such as B, are used, and between which the printed stuff passes; but the objection to this arrangement lies in the fact that such a pressure at one time over a large portion of the face of the type is exerted as will mash or deface it, or have the tendency so to do. By discarding the lower large cylinder and employing a roller, such as R, but a small portion of the face of the type is permitted at one time to be under pressure, thus preventing and overcoming the objections stated.

V is the carrier which delivers the blank board to the type. This carrier is composed of a rod placed and fastened transversely between the chains T, of which there are two—one upon each side of the table T' of the press—and mounted upon their respective sprocket-wheels I and J, which are properly journaled. The carrier is revolved by means of these chains, which receive their motion from the sprocket-wheels I, attached to sleeves *e*, which embrace the shaft O. These sleeves may be revolved or set at rest by means of the screw-bolts *b*. By screwing the bolts *b* down upon the shaft O the sleeves will revolve in conjunction with the shaft and put in operation the carrier. By loosening the screw-bolt the shaft will revolve without affecting the sleeves or their attachments. The shaft O is operated by a pinion or gear-wheel, *m*, having a sleeve, *e'*, and a screw-bolt, *b'*, by which it is engaged with and disengaged from the shaft. The main shaft H' carries a gear-wheel, *f*, meshing with the gear-wheel *m*, and also with a gear-wheel, *g*, on the shaft H'' of the sprocket-wheel G.

G' is a hand-wheel, which is used to set or



gage the carrier for the different lengths of boards which are to be delivered to the type. This gaging of the carrier is important, in that it must be so adjusted as to deliver the blank 5 to the type at the proper moment, so that the lettering will be evenly and centrally located upon the board.

P P are guide-pieces arranged upon the standard K. The space between them can be 10 regulated by means of the right-and-left-screw-threaded rod U (which has one end properly journaled and working in one side of the frame-work) to a greater or less width, according to the width of the blanks which are to 15 be printed. These blanks may be fed to the carrier singly, or they may be piled up between the guideways P P; and as the carrier approaches it takes the lowest blank and delivers it to the type, the space under the guide-pieces 20 being regulated by means of the thumb-screw t, operating an upright, to the thickness of the blank, and so that but one blank can pass under and be delivered at each revolution.

It will be perceived that the carrier does not 25 conduct the blank farther than to place it within reach of the type-plate, when it is carried along by the friction engendered. This is preferable, and, indeed, most desirable, because it sends the board through the press in a straight 30 line, whereas if the carrier conducted it the length of the press the board would probably "wobble," caused by the possible inequality of the length of the chains.

D, Fig. 1, is a stationary screw for raising 35 or lowering the cylinder B, in order to gain a light or heavy impression from the type, and also to accommodate the press to the different thicknesses of wood which are to be printed upon. This screw is inserted in a cross-head, 40 5, which is provided with a female screw, and is supported underneath by a cross-bar, 6, suitably attached to the frame of the press.

At each end of bar 5 are attached levers 8, whose inner ends are fulcrumed at 9 and support 45 shaft C in its guideways by means of the intermediate pins, 10. It will be readily seen that when the cross-head 5 is lowered by turning the screw D in one direction it lowers the outer ends of levers 8, which are attached to 50 the cross-head 5, and lowers the pins which support the shaft C on its journals, thus causing the cylinder B to be correspondingly lowered. When it is desired that the cylinder be raised, the screw D is turned in the opposite 55 direction.

It will be observed that the raising or lowering of the cylinder will not affect the gearing or throw out of action any of the parts of the press. The gearing, whose shafts are run 60 in guideways, is correspondingly raised or lowered through the links *h h*, attached to shaft C, carrying the gear W, which in turn connects with smaller links, *i i*, attached to the shaft H', carrying the gear N. In Fig. 5 I 65 have shown a modification of this adjusting apparatus from that shown in Figs. 1 and

2 in so far that instead of turning the screw itself I make the screw rigid, and use a hand-wheel, W', which is properly threaded. This hand-wheel bears upon the cross-head 5, so 70 as to depress the outer ends of the levers. Another distinction between Figs. 1 and 2 and Fig. 5 is, that in the latter the levers 7 are fulcrumed between the point of application and the weight, the working-point being at 75 the end, while in the machine as illustrated in Figs. 1 and 2 the working point is between the point of application and the fulcrum. In other words, in Fig. 1 the levers are arranged as levers of the second class, while in Fig. 5 80 they are arranged as first class.

R' is a piece of rubber inserted in the cross-bar 6, designed to take up and cushion any shock or back action that might be communicated to the press from the cylinder. Any 85 other flexible substance would be as preferable.

*f* is a pinion attached to the main shaft H'.

Y Y are ordinary impression-screws used for adjusting the cylinder B so as to assist 90 in securing an even pressure of the type.

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

1. The combination of the guideways *d*, cylinder, shaft, frame, levers fulcrumed to the 95 frame having a cross-head, a cross-bar secured to the frame, and a screw for adjusting the cross-head.

2. As a means for raising and lowering the 100 cylinder of a press for printing on lumber, a screw operating in a cross-head and properly supported underneath, said cross-head being connected at each end to a lever which is fulcrumed between it and its free end, the 105 latter supporting the shaft of the main or type cylinder, in combination with such main cylinder, whose shaft is secured in guideways and held in place from above by means of impression-screws, substantially as shown and 110 described.

3. In a press for printing on lumber, the combination, with a main cylinder and its shaft, of levers on which the cylinder is supported by its shaft, fulcrumed to the frame 115 and provided with a cross-head, a cross-bar secured to the frame, a screw for adjusting the cross-head on the cross-bar, impression-screws, springs, and a small roller beneath the cylinder. 120

4. In a printing-press, the combination of the main cylinder, the fulcrumed levers and means to operate same, impression-screws, as Y, the gears W, O', and N, with links *h i*, and driving-pulley P, all arranged in the manner 125 shown and described, and for the purpose set forth.

5. As a means for raising and lowering the cylinder of a lumber-printing press, a screw, as D, operating in a cross-head, as 5, and 130 properly supported underneath, as at 6, said cross-head being connected at each end to a



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crum and the point of application, the said  
levers supporting the shaft of the main cyl-  
inder, in combination with such main cylin-  
5 der and impression-screws, all being arranged  
substantially as shown and described, and for  
the purpose set forth.

The foregoing specification of my invention  
signed by me this 11th day of April, A. D.  
1895.

LAWRENCE ROTH.

Witnesses:

JEPHTHA GARRARD,  
BENJ. H. COX.