

(No Model.)

3 Sheets—Sheet 1.

J. LUCIA.
SAW MILL.

No. 284,870.

Patented Sept. 11, 1883.

Fig. 1.

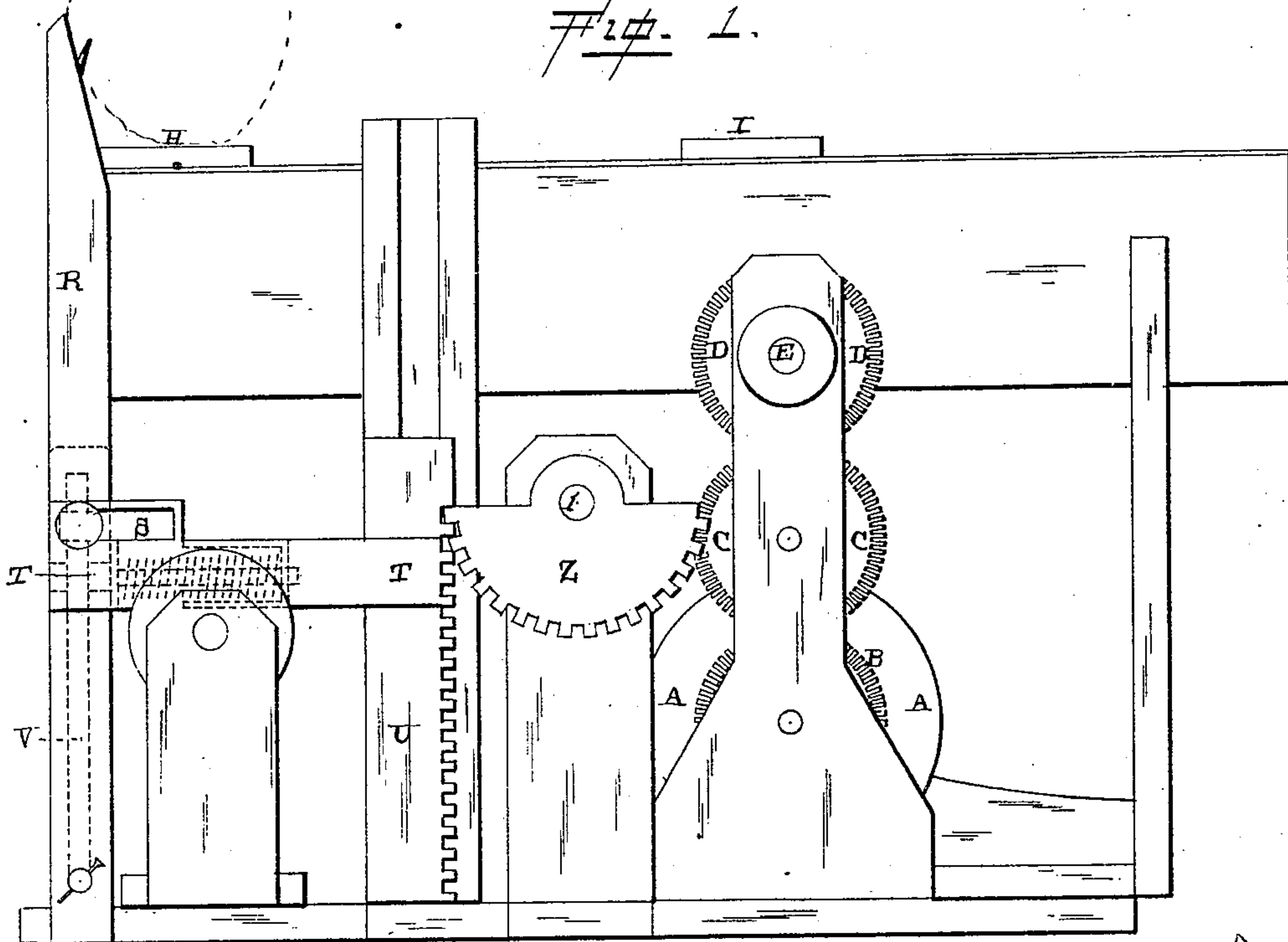
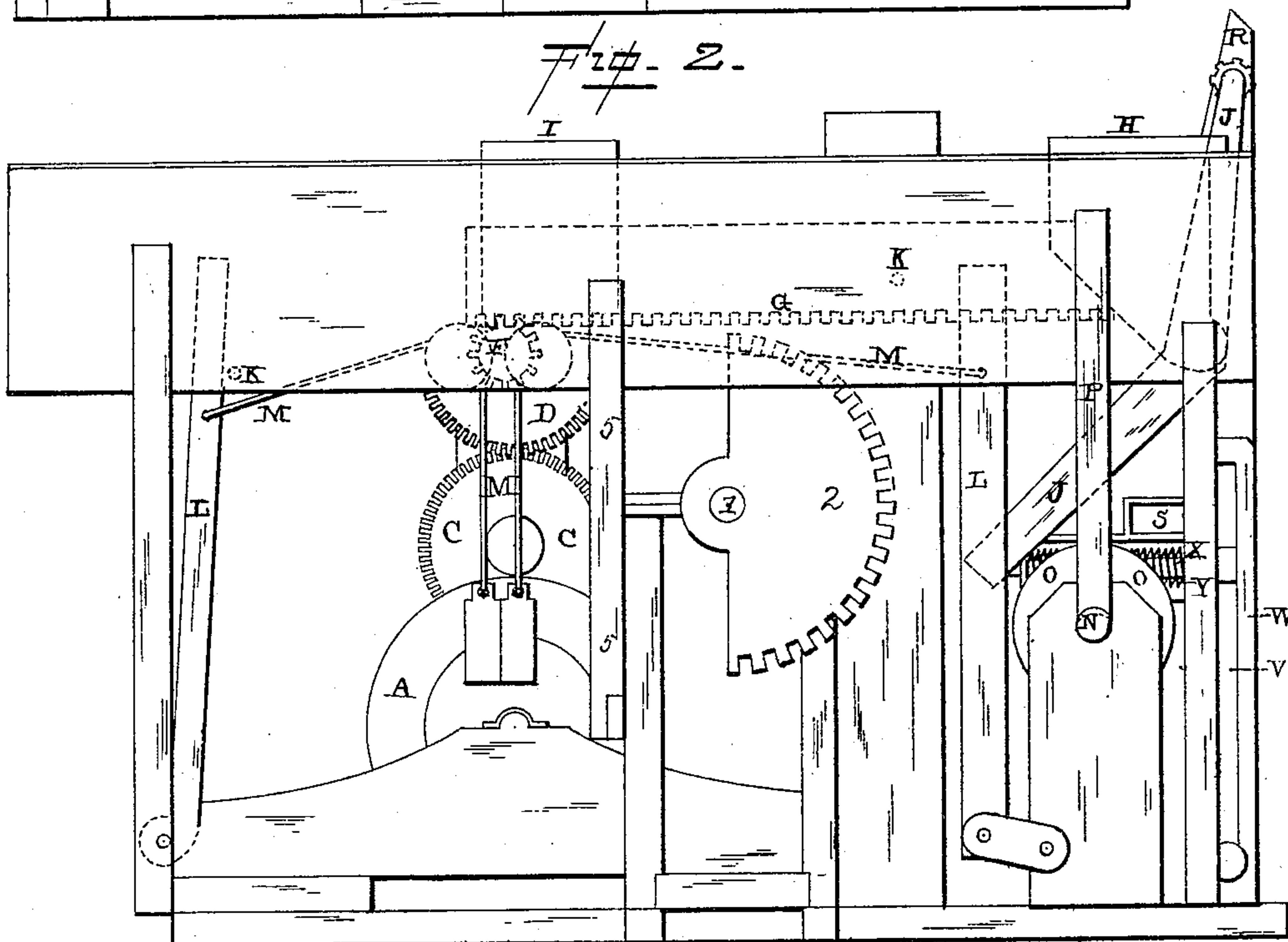


Fig. 2.



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Joel Lucia
per J. A. Lehmann, atty

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3 Sheets—Sheet 2.

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Fig. 3.

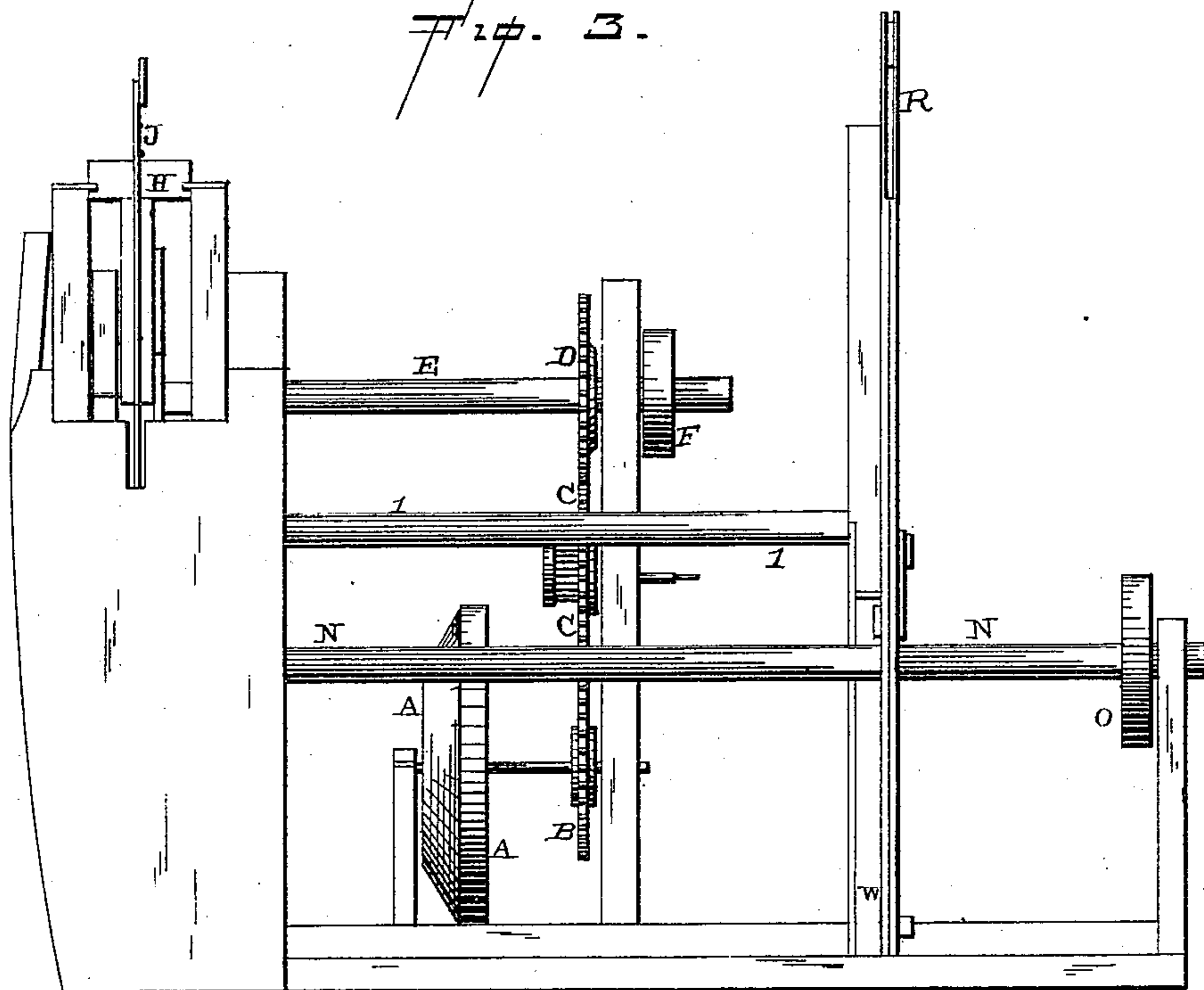
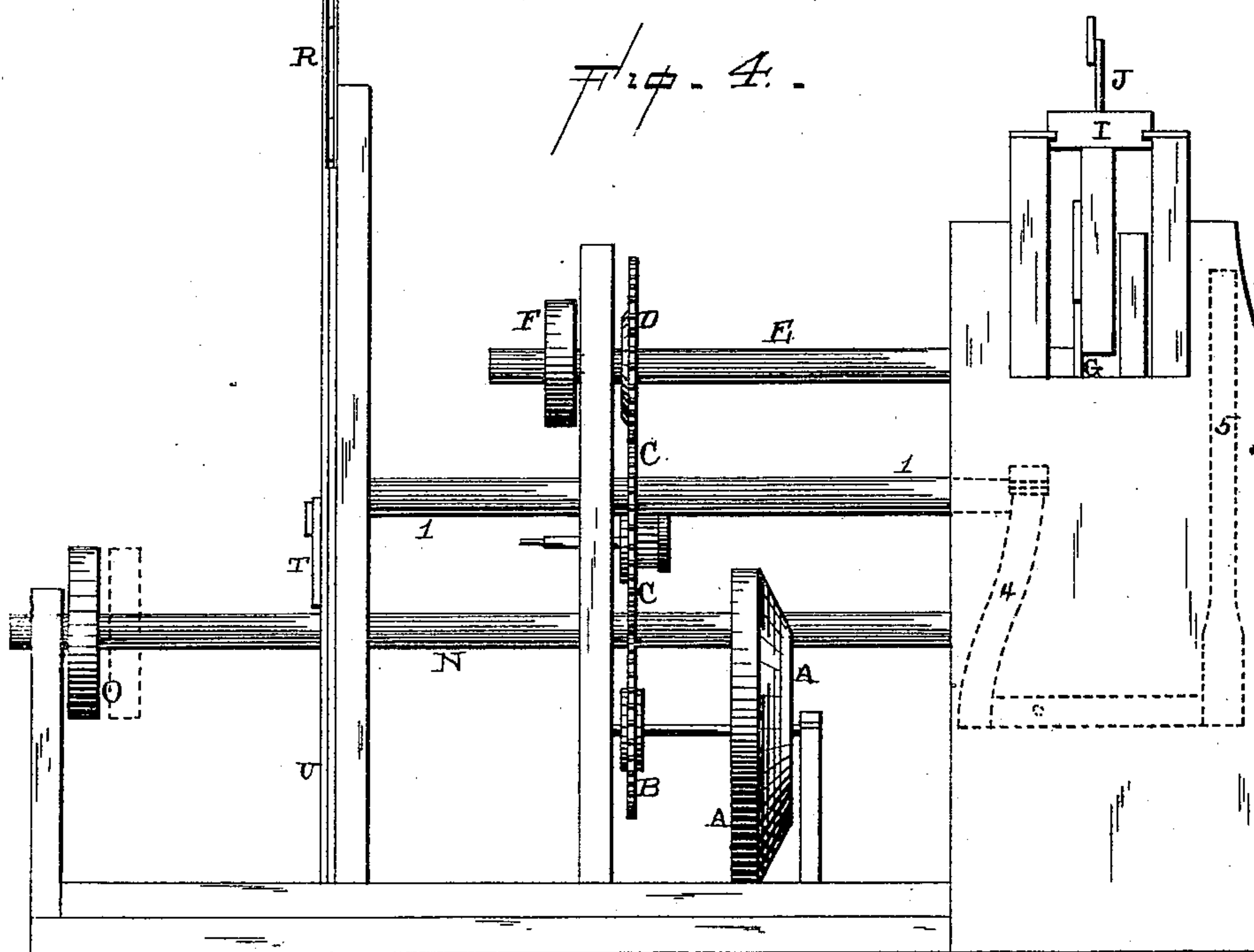


Fig. 4.



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Fig. 5.

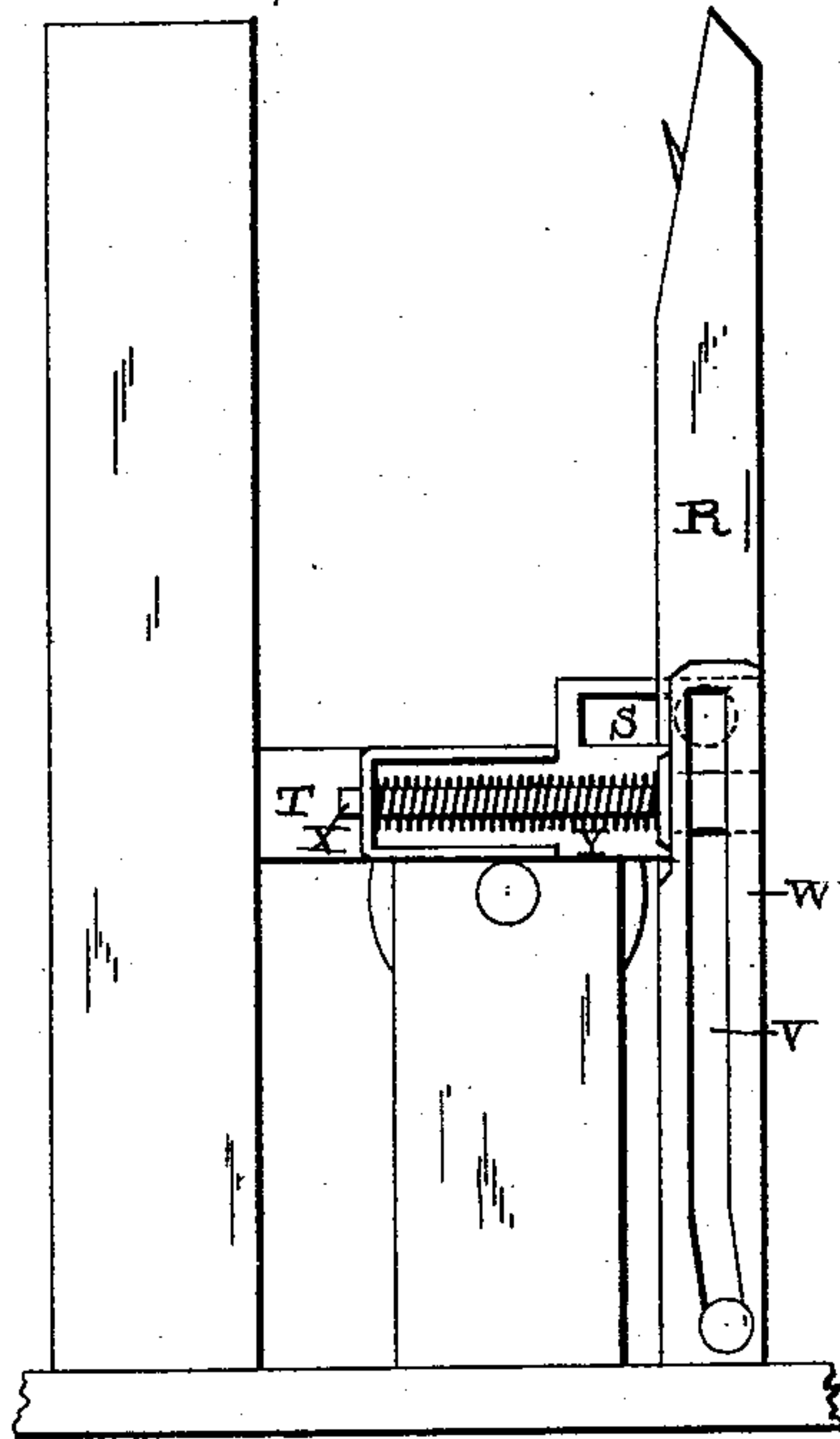


Fig. 6.

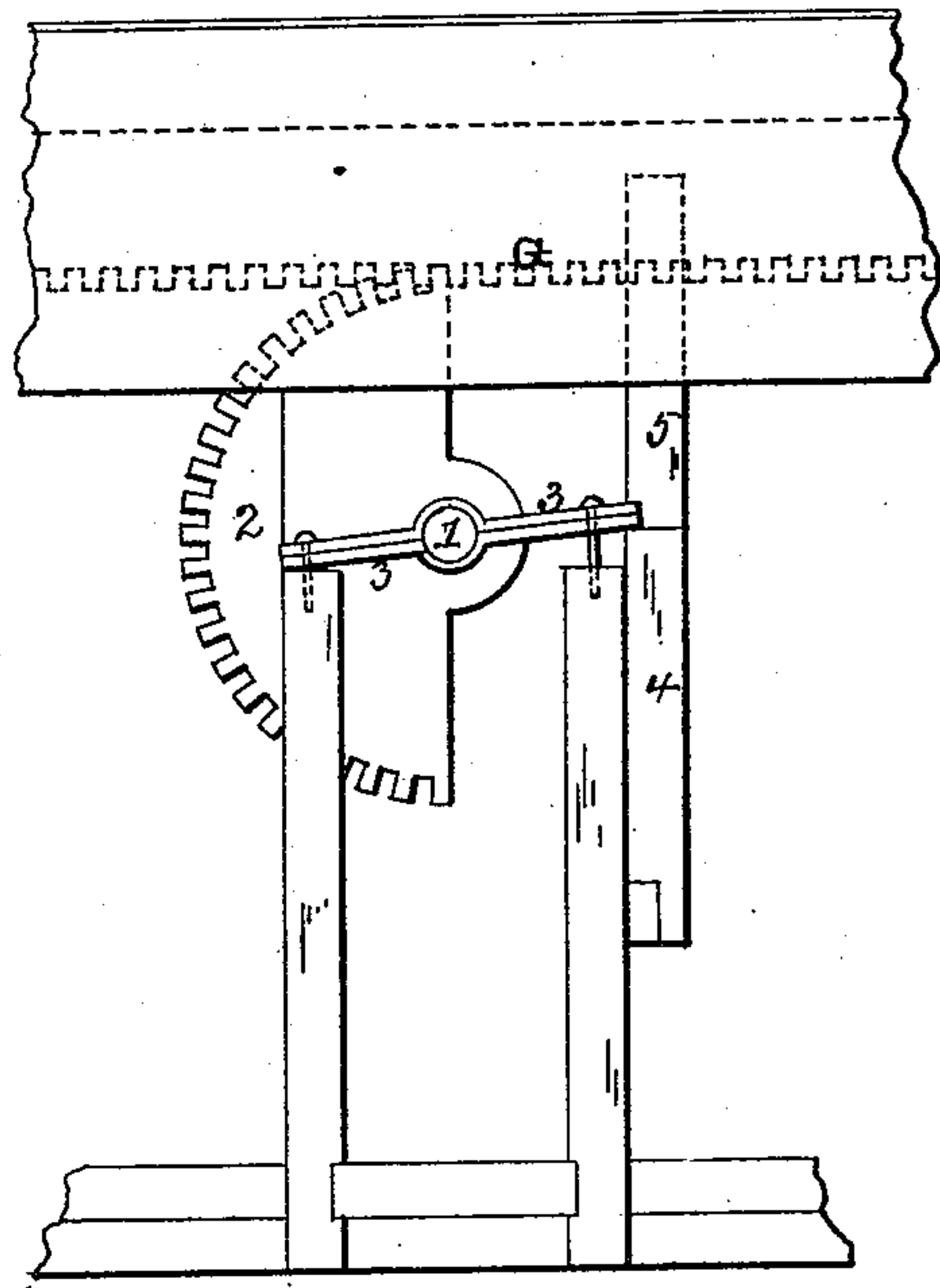
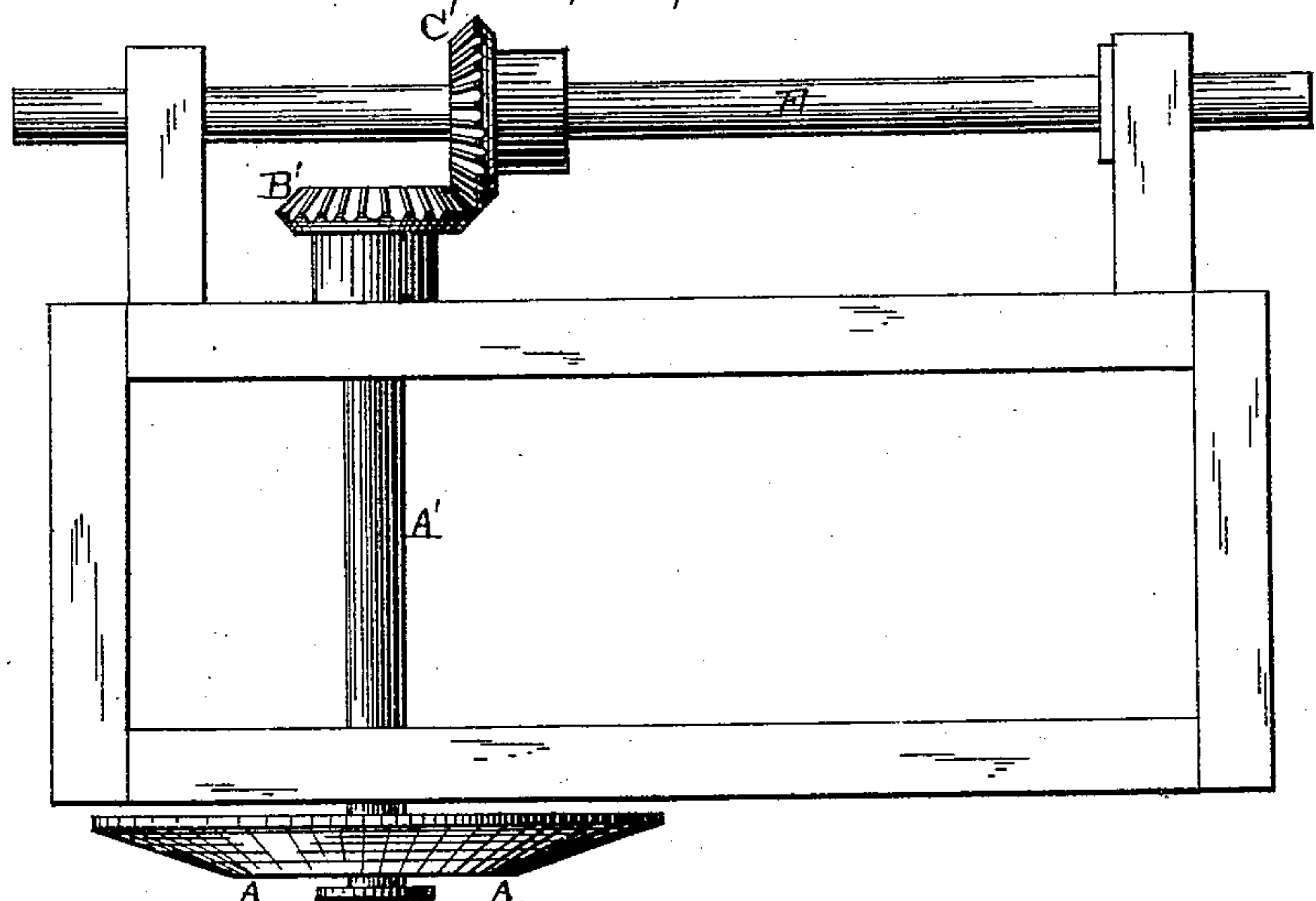


Fig. 7.



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UNITED STATES PATENT OFFICE.

JOEL LUCIA, OF LITTLE SUAMICO, WISCONSIN.

SAW-MILL.

SPECIFICATION forming part of Letters Patent No. 284,870, dated September 11, 1883.

Application filed November 22, 1882. (No model.)

To all whom it may concern:

Be it known that I, JOEL LUCIA, of Little Suamico, in the county of Oconto and State of Wisconsin, have invented certain new and
5 useful Improvements in Saw-Mills; and I do 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 pertains to make and use it, reference being
10 had to the accompanying drawings, which form part of this specification.

My invention relates to an improvement in saw-mills; and it consists, first, in the combination of the driving-shaft, the pinion upon
15 its end, the rack-bar secured to the two cross-heads, and which is provided with a pin or projection to strike against the weighted levers, for the purpose of forcing the rack-bar back in contact with the pinion, so as to have
20 the parts always in gear; second, the combination of the cross-heads, provided with a pivoted log-roller, with an endwise-moving shaft having suitable wheels or disks for the lower ends of the log-rollers to strike against, where-
25 by the log-roller can be made to move the log a greater distance; third, in a log-turner which is operated by means of two segments, one of which can be thrown in and out of gear with a rack-bar, all of which will be more fully de-
30 scribed hereinafter.

Figures 1 and 2 are side elevations of my invention, taken from opposite sides. Figs. 3 and 4 are end views taken from opposite ends. Figs. 5, 6, and 7 are detail views.

35 A represents the friction-wheel, to which the driving-power is to be applied. Secured to the same shaft as this friction-wheel is a spur-wheel, B, which meshes with an idle or intermediate wheel, C, and this wheel C in
40 turn meshes with the wheel D of the driving-shaft E, which has a pinion, F, upon each end. The pinion upon the outer end meshes with the rack-bar G, which is secured to the two cross-heads H I. To the forward cross-head
45 is secured the pivoted log-roller J in the usual manner. Projecting outward from the side of the rack-bar G are pins K, which, as the rack-bar reaches either end of its travel, strike against the levers L, which have secured to
50 their upper ends weighted cords, wires, or chains M. These levers are held in position

by suitable holding devices or guides, so as to retain them in an upright position, and their only office is to force the cross-heads
back, carrying with them the rack-bar G, so
55 as to keep it constantly in contact with the pinion that drives it. Each of these levers has its cord to pass over a suitable pulley, and they may each have a separate weight of their
own; or a single weight may be used for them
60 both, the weight being just sufficient to move the cross-heads endwise.

Extending across the frame-work, underneath the guides in which the cross-heads
travel, is the shaft N, which has a smooth disk
65 or wheel, O, secured to each of its ends. This shaft is made movable endwise, so as to shift the wheels or disks in such a manner as to cause them to move in the line of travel of the
log-rollers. The lower ends of the pivoted
70 levers J, when these wheels or disks are moved in their line of travel, strike the wheels and cause the levers J to tilt forward, and thus move the log a greater distance than they
would do if the wheels or disks were not used. 75
The shaft N is caused to move endwise by the pivoted lever P, which has its upper end to project up through the hole in the floor, where it can be operated by the foot of the operator. When this lever is pressed, the shaft is moved
80 endwise, and the wheels or disks are shifted so as to have the pivoted levers J strike them.

In some cases, instead of having three spur-wheels placed one above the other, a vertical
shaft, A', will be used, having a beveled pin-
85 ion, B', upon its upper end. This beveled pinion meshes with a smaller pinion, C', upon the driving-shaft. The friction-pulley will then be placed upon the lower end of the shaft A', instead of as shown in Figs. 1 and 2. 90

Whenever the log which is being sawed has a knot or bunch that would be likely to strike
against the saw-collar, it becomes necessary to turn the log so as to move the knot or bunch
upon the other side. For this purpose a log-
95 turning mechanism is provided. This mechanism consists of the sharp-pointed prong or lever R, which is pivoted in the slot S of the extension T of the vertically-moving frame U. This lever R has a pin passed through its lower
100 end and through the slot V, which is made in the guide W. The lower end of the slot in

this guide is curved or turned forward, so that as the log-turner is raised upward its point will be given a forward movement, so as to assist in turning the log. Secured to this log-turner R is an arm or prong, X, around which is placed a spiral spring, Y, for the purpose of forcing the lever back into position after it has been moved.

The frame U is provided with teeth upon its rear edge, and is made vertically adjustable by the toothed segment Z. This segment is secured to one end of the shaft 1, which has a larger toothed segment, 2, secured to its other end. The segments are turned at right angles to each other, so that the segment Z will be made to move the frame U, carrying the log-turner R with it, the greatest possible distance. The segment 2 is intended to mesh with the rack-bar G when it is desired to bring the log-turner into use, or at any other time. As the segment 2 is not made large enough to gear with the rack-bar, it is necessary that the segment should be raised upward, so as to have the rack-bar move it when necessary. For this reason the shaft 1 has its outer ends journaled in a box, 3, which has a vertical play, and which is moved by means of the lifting-rod 4, which is pivoted to the lever 5. The upper end of this lever projects through the hole in the floor, so that the operator has only to press down upon it, when the segment 2 will be raised upward, so as to mesh with the rack-bar. While the segment is in gear with the rack-bar the segment Z is made to force the log-lifter upward until the rack-bar runs past the segment 2, and the log-lifter will drop into place of its own weight. Only one end of the machine is here shown, the other end being exactly alike, so far as the cross-heads, the rack-bar, and other parts connected thereto are concerned.

Having thus described my invention, I claim—

1. In a saw-mill, the combination of the two cross-heads H I, connected together by the rack-bar G, with the driving-shaft provided with a pinion for meshing with the rack and moving the two heads back and forth, and a weight which is attached to each head, substantially as shown. 45

2. The combination of the cross-heads moving in suitable ways or guides, the rack-bar secured between the two, and having a pin or projection formed upon it, with suitable weighted levers for forcing the rack-bar back in contact with the driving-pinion, substantially as described. 55

3. The combination of the cross-heads, the pivoted log-roller, and an endwise-moving shaft provided with a wheel or disk which can be moved in the line of travel of the log-roller, and a suitable mechanism for moving the shaft, substantially as set forth. 60

4. The combination of a log-turning mechanism with the two segments Z 2, the segment 2 being given a vertical movement, so that it can be made to gear with the rack-bar, substantially as specified. 65

5. The combination of the frame U, with the segment Z for moving it vertically, and provided with a slotted extension, with the log-roller A, slotted guide, and the spring-arm, substantially as shown. 70

6. The log-turner R, provided with a suitable arm or projection, the spring which is placed around the arm, and the slotted guide, the lower end of the slot in the guide being curved, substantially as described. 75

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

JOEL LUCIA.

Witnesses:

PAUL SCHEURING,
A. R. COOPER.