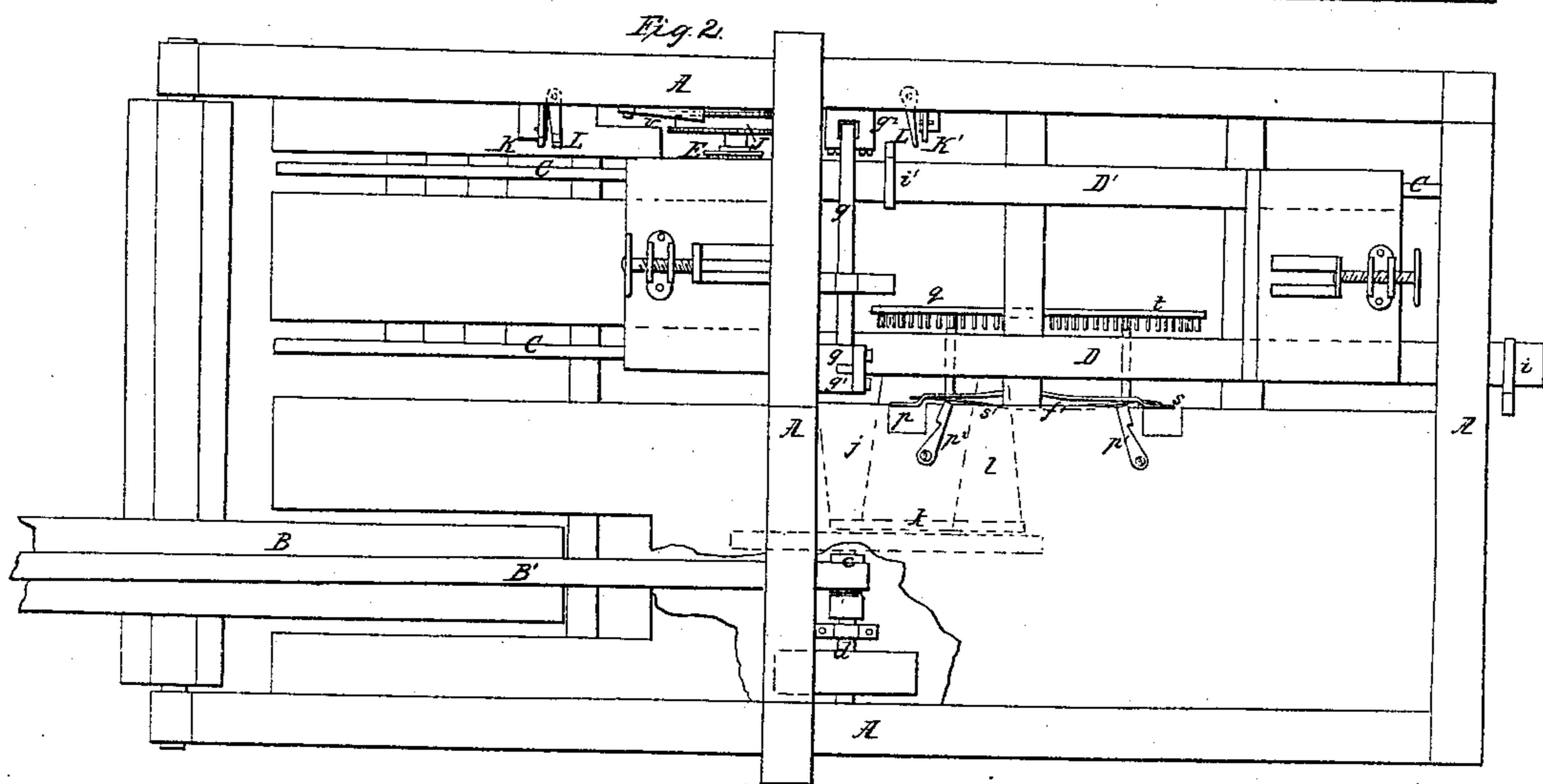
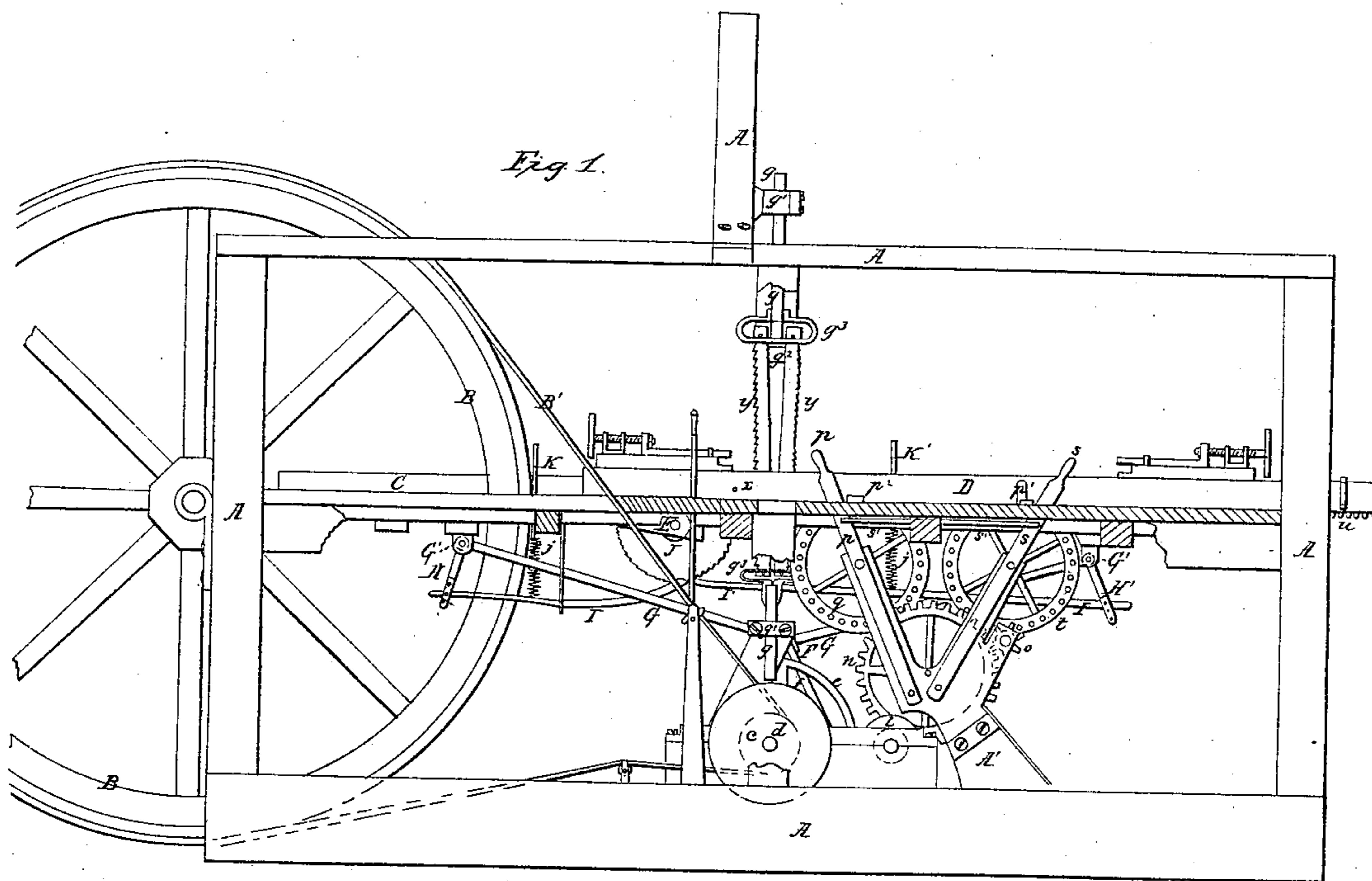


# H. Caslow, Reciprocating Saw Mill.

N<sup>o</sup> 39,338.

Patented July 28, 1863.



Witnesses:  
H. T. Rumpell  
Charles Smith

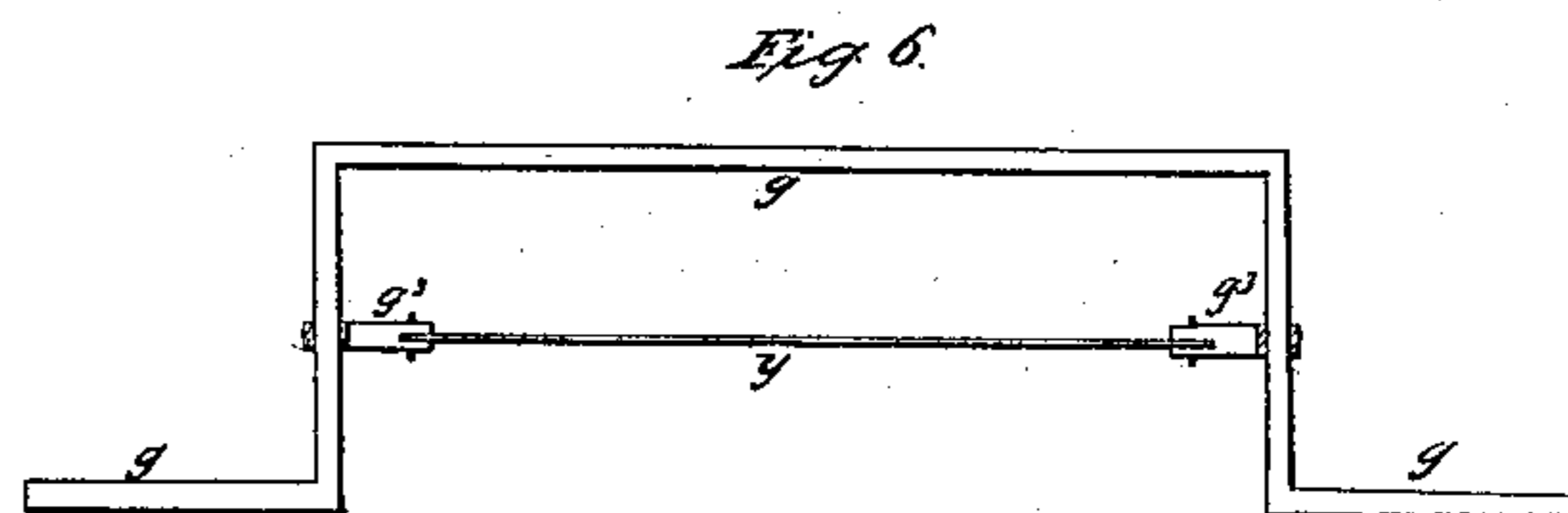
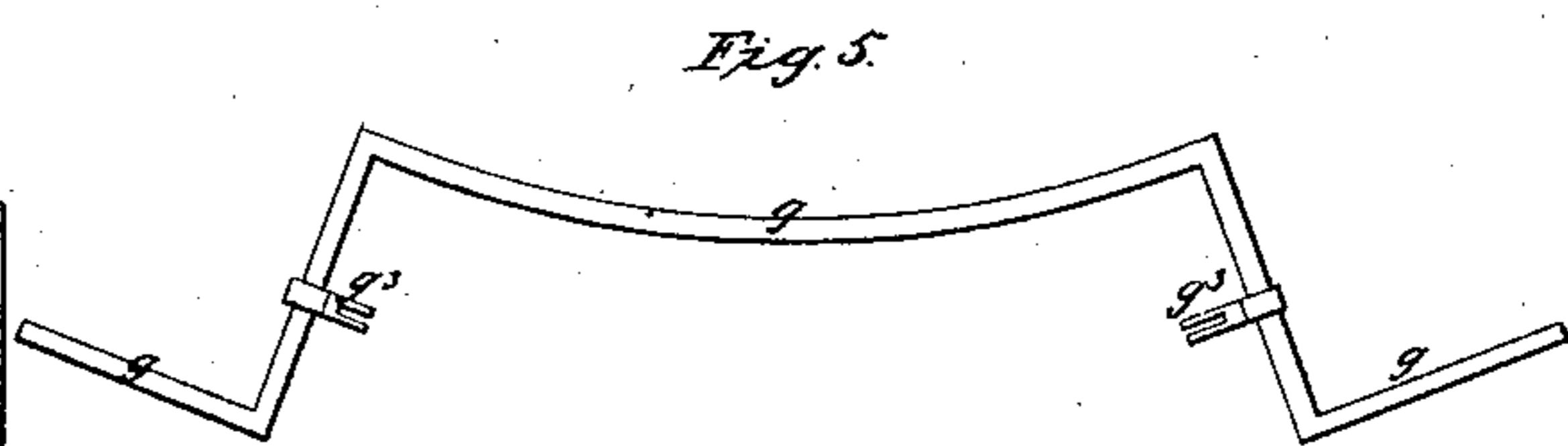
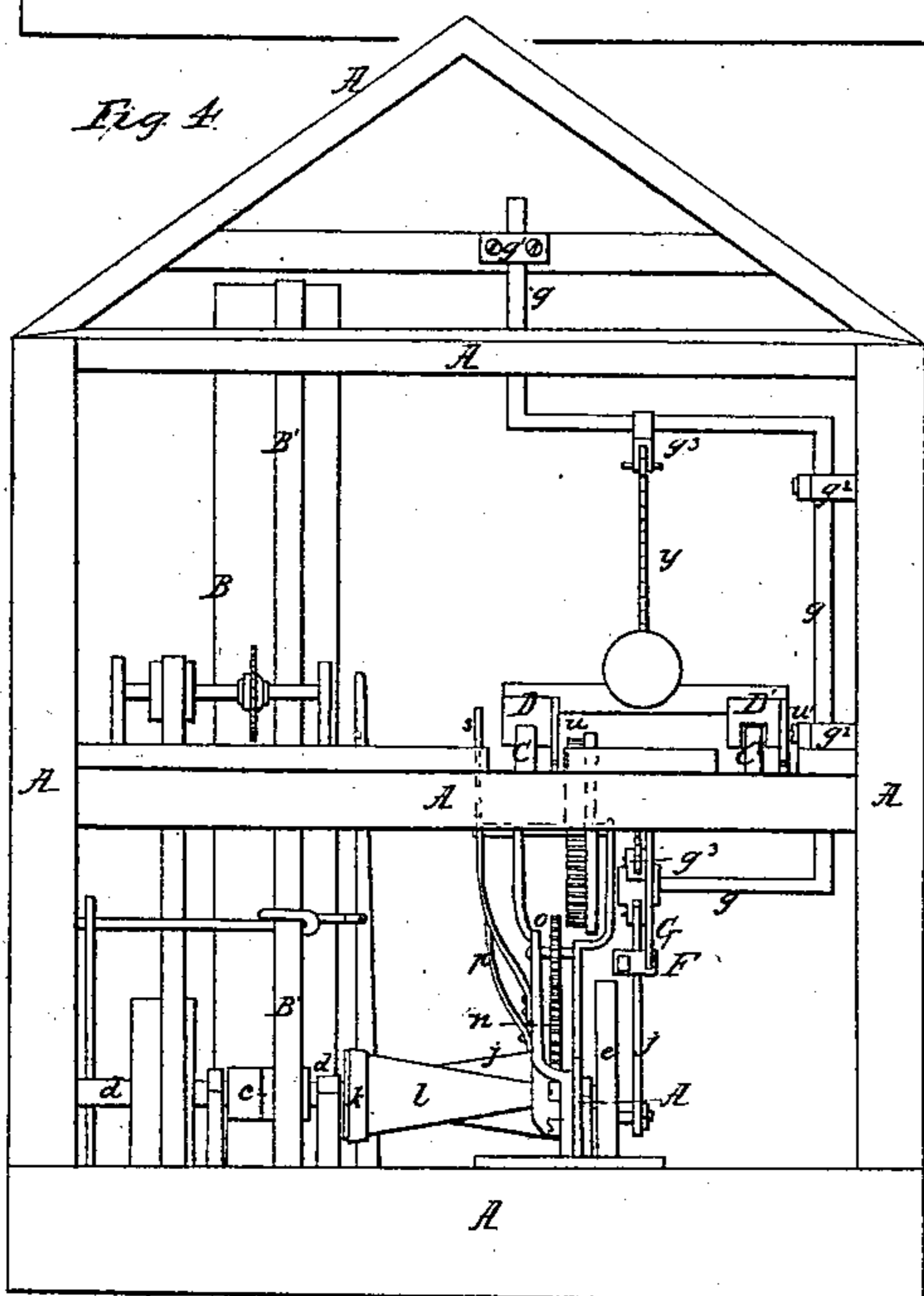
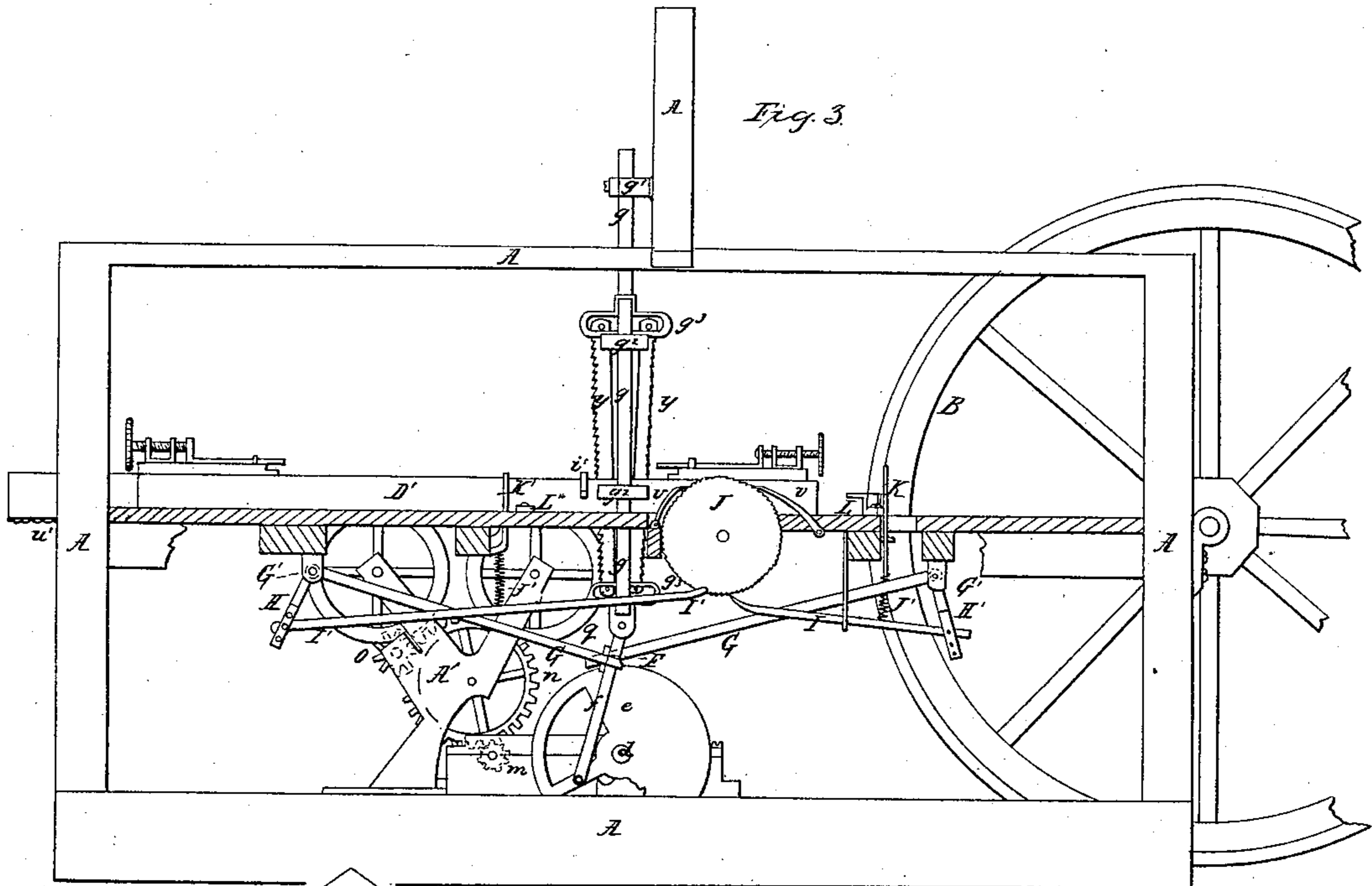
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Reciprocating Saw Mill.

N<sup>o</sup> 39,338.

Patented July 28, 1863.



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# UNITED STATES PATENT OFFICE.

HENRY CASLOW, OF YORK, PENNSYLVANIA.

## IMPROVED SAW-MILL.

Specification forming part of Letters Patent No. 39,338, dated July 28, 1863.

*To all whom it may concern:*

Be it known that I, HENRY CASLOW, of the borough of York, county of York, and State of Pennsylvania, have invented certain new and useful Improvements in Constructing and Operating Saw-Mills; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is an elevation of one side of my improved saw-mill with the front bars of the frame broken away. Fig. 2 is a plan view of Fig. 1. Fig. 3, Sheet 2, shows the opposite side of the machine to that shown by Fig. 1, in which a portion of the frame is broken away. Fig. 4, Sheet 2, is an elevation of one end of the machine. Figs. 5 and 6, Sheet 2, are two views of the improved saw-sash.

Similar letters of reference indicate corresponding parts in the several figures.

This invention relates to certain novel improvements in machinery for giving an alternate reciprocating motion to the log-carriage, and enabling me to stop the motion of said carriage automatically at any desired point in its stroke, according to the length of the log which is to be sawed into boards, as will be hereinafter described; also, to a means, combined with the log-carriage and the main driving-shaft of the reciprocating saw, whereby I can readily adapt the motion of the saw to the movements of the log-carriage, whether the latter be moved backward or forward; also, to a novel mode of hanging the saw or saws.

In the accompanying drawings, A represents the frame-work for containing and supporting the machinery which operates the saw and the log-carriage. B is a large driving belt-wheel, which may receive its rotatory motion from any convenient prime motor. B' is the belt which passes from the driving-wheel B to the large pulley c, which is attached to the end of crank-wheel shaft d, Fig. 3, to the other end of which is keyed the balance-wheel e. To the radial arm on the light side of balance-wheel e the lower end of the pitman f is attached, the upper end of which is pivoted to the lower side of the saw-sash g. This saw-sash is constructed of steel, and is spring-backed, as is shown in Fig. 5; but

when the saw is adjusted for use the sash is drawn down at the ends and keeps the saw stretched and under tension, as shown in Fig. 6. The two vertical arms of the saw-sash g work in the stationary guide-boxes g' g', which are bolted to the frame-work A, and the back of the saw-sash slides in fixed blocks g<sup>2</sup> g<sup>2</sup>, which are bolted to one of the upright posts of frame A. The saws y y or saw, as the case may be, are connected at their ends to flattened loops g<sup>3</sup> g<sup>3</sup>, which are slotted to receive the ends of these saws. Pins are then passed through the ends of the saws to confine them in these loops, as shown Figs. 1, 3, and 6. Now it will be seen that when the driving-wheel B is turned motion will be communicated to the balance-wheel e, which will transmit through pitman f a reciprocating motion to the sash which carries the saws.

To the crank-shaft d a conical pulley, j, is keyed, from which a belt, k, passes to a corresponding cone-pulley, l, which latter carries on its smallest end a pinion spur-wheel, m, Fig. 3. The cone l occupies a reverse position to that of cone j, and the spur-wheel on the end of cone l engages with the teeth of a large spur-wheel, n, which has its bearings in a forked frame, A', Figs. 1 and 3. This latter wheel, n, engages with a pinion spur-wheel, o, and also with a trundle-wheel, q, in frame A', and the wheel o engages with a corresponding trundle-wheel, t, (shown in Figs. 1 and 3,) which is also in the frame A'.

The shortsliding shafts to which the trundle-wheels q t are keyed are connected at one end to the respective pivoted spring-arms s p, by means of which arms either one or both trundles may be disengaged from their driving spur-wheels. A spring, s', is applied to the arms s p in such a manner that when these arms are disengaged from the hooked catches p' p<sup>2</sup> they will be thrown back and caused to disengage the trundles from their respective spurs.

C C are two longitudinal rails which receive the grooved bars of the log-carriage. These bars D D' carry on their inner and outer sides, respectively, toothed racks u u', which latter engages with the trundles t q when they are in gear with their driving-spurs, above described, and the former u engages with a small trundle-wheel, E, Fig. 2. By the motions which are

given to these three trundle-wheels the log-carriage is caused to move backward and forward on the parallel ways C C.

In Fig. 3 I have shown a plate, F, attached to the pitman *f*, which works the saws, and through slots in this plate F the ends of inclined rods G G pass loosely, the opposite ends of which rods are secured to rock-shafts G' G', from which project short arms H H'. To the ends of arms H H' pawls I I' are pivoted, which engage with the teeth of a double or right-and-left ratchet-wheel, J, which is keyed on the shaft of small trundle-wheel E. The movements of the saw-sash are by these means made to give either a right or a left rotation to the trundle wheel E—i. e., when the pawl I is engaged with its ratchet-wheel J this wheel, together with the trundle E will be moved in one direction, and when this pawl I is disengaged and the pawl I' brought into play with the ratchet-wheel J, this wheel with its trundle will be moved in an opposite direction. The disks *vv* are applied to the ratchet-wheel J to prevent it from moving in the wrong direction, and only one of these is used at a time. The pawls I I' are held up against their respective plates of wheel J by means of coiled springs J' J', the upper ends of which are connected to slotted handles K K', which are suspended upon pins which project from the sides of slots through the upper flooring, through which the handles K K' pass, as shown in Fig. 3. On one side of each of the arms K K' is a short lever, L, which, being struck by a projection on the side of the bar D' of the log-carriage detaches its respective arm or handle K K' and causes the pawl of this arm to drop from the ratchet-wheel to be adjusted in place again by hand, as will be hereinafter described.

The operation of the machine in sawing logs is as follows: The log which is to be sawed into boards is clamped to the log-carriage and properly adjusted thereon by means of the adjustable dogs or forked clamps N N. The carriage, we will suppose, is at that end of the frame farthest from the driving-wheel B, with a log clamped to it ready to be brought up to the saw, which may be constructed with teeth on both edges; or two saw-blades may be used, placed back to back, as shown in the drawings. The removable clamps *i i'*, which are on the longitudinal side bars, D D', of the log-carriage, are now adjusted with reference to the length of the log and the latches *p' L<sup>x</sup>*, so that when the log is sawed through these clamps *i i'* will strike the latches *p' L<sup>x</sup>* and stop the further movement of the log-carriage by throwing the trundle-wheel *q* out of gear with its pinion *o*, and also the pawl I out of gear with the right-and-left ratchet-wheel J. The trundle-wheel *t* and the pawl I', which remained inactive during the forward movement of the log-carriage, are now put into gear with their respective wheels, J and *n*. Previously

to this adjustment, however, and when the carriage is at rest, the log is again adjusted for cutting off another plank. The carriage now moves backward, and another board is cut off and the carriage stopped by pin *x* and clamp *i'*, which project from the sides of the longitudinal bars D D' of the log-carriage, which pins strike the latches *p<sup>x</sup> K'*, which keep in gear the trundle-wheel *t* and the pawl and throw out of gear these devices, stopping the carriage again. Thus, it will be seen, the log carriage can be moved back and forth on its ways without reversing the motion of the driving-wheels. The clamps, which disengage the latches *p' p<sup>x</sup> K K'*, can be set so as to stop the motion of the log-carriage immediately the log is sawed through for allowing the log to be adjusted for the next stroke of the carriage. The velocity of the log-carriage is regulated and adapted to the velocity of the saw by means of the belt *k* and the cone-pulleys *j l*. By shifting the belt *k* nearer to the small end of the pulley *l* the belt is necessarily thrown upon the large end of the pulley *j*, the effect of which is to increase the velocity of the log-carriage, and by shifting the belt *k* to the other ends of the pulleys *j l* the effect will be to diminish the velocity of the log-carriage. The motion of the saw during these adjustments will not be affected.

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

1. Operating the log-carriage by means of the cone-pulleys and the toothed wheels *o t q*, so as to enable the saw to cut the timber both ways, substantially as herein described.

2. The combination of cone-pulleys, main driving saw-shaft, balance-wheel, and pitman with the log-carriage, substantially as and for the purposes described.

3. The laterally-sliding trundle-wheels *t q*, levers, spring, and catches with the adjustable clamps on the longitudinal bars, operating substantially as and for the purposes described.

4. The saw-sash constructed with a spring-back for stretching and keeping the saw under constant tension, substantially as herein described.

5. The slotted yokes or loops applied to the saw sash and adapted for receiving two single saw-blades in conjunction with a spring-backed saw-sash, substantially as described.

6. The combination of vibrating arms, working in a slotted plate on pitman, rock-shafts, vibrating arms, pawls, and double right-and-left ratchet-wheel J, with their spring supporting-rods and latches, all arranged and operating substantially as herein described.

HENRY CASLOW.

Witnesses:

H. L. FISHER,  
JAMES KELL.