2 Sheets--Sheet 1.

D. RAWSON.

Head-Blocks for Saw-Mills.

No. 151,432. Patented May 26, 1874.

Fig 1.

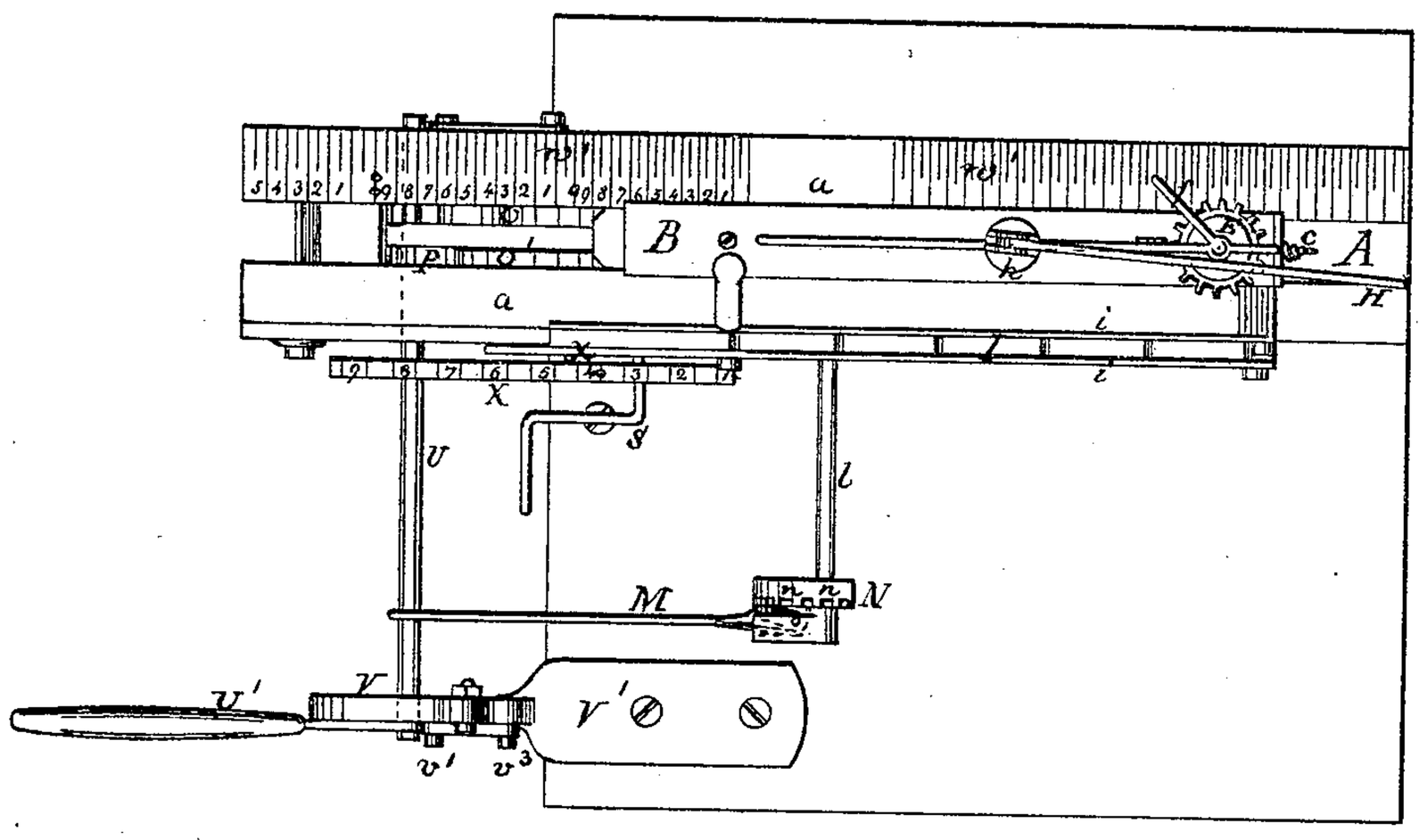
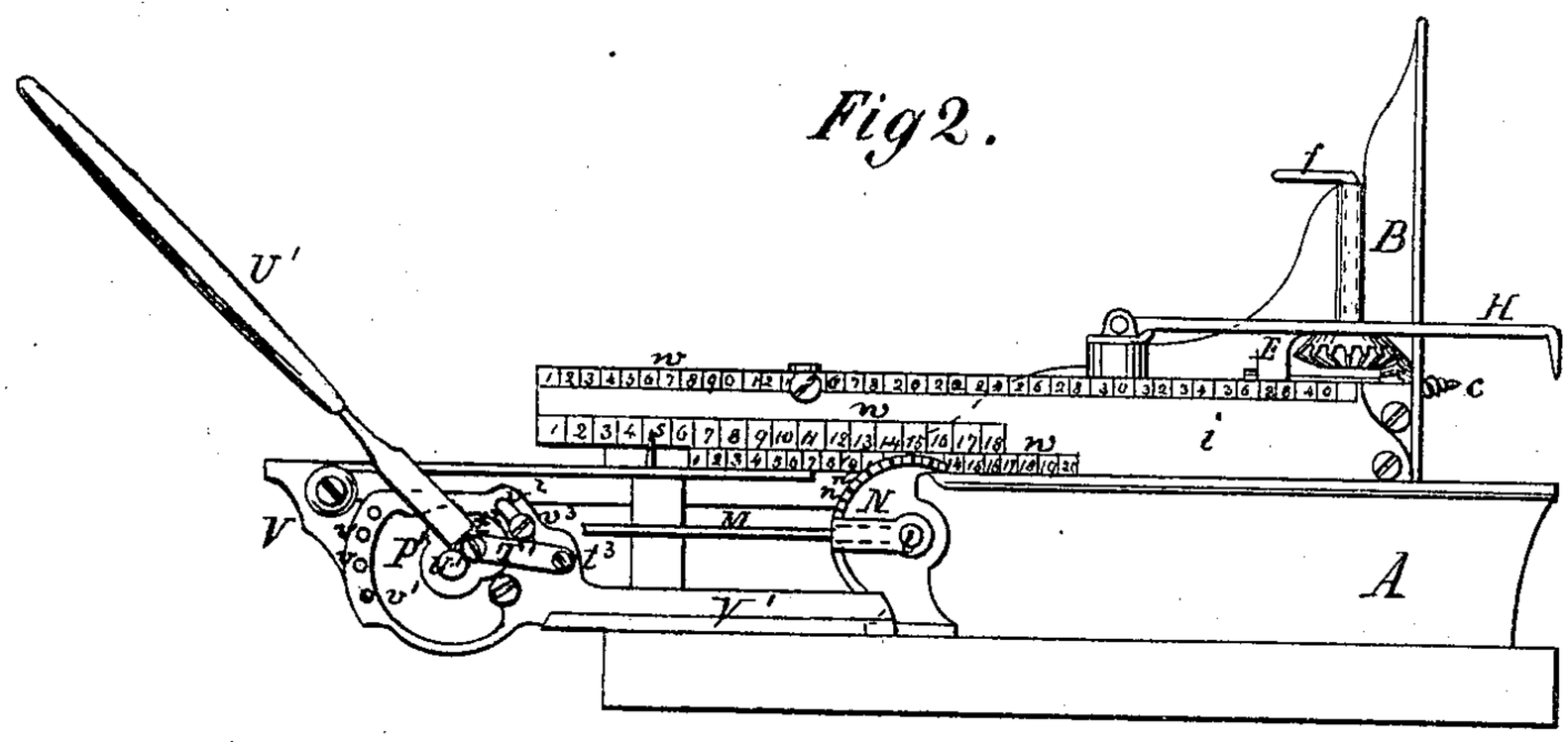


Fig 2.



WITNESSES.

J. P. Theodore Lang.

C. L. Emmet.

By

INVENTOR

David Rawson

Alexander Mason

Attorneys.

2 Sheets--Sheet 2.

D. RAWSON.

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Fig 3.

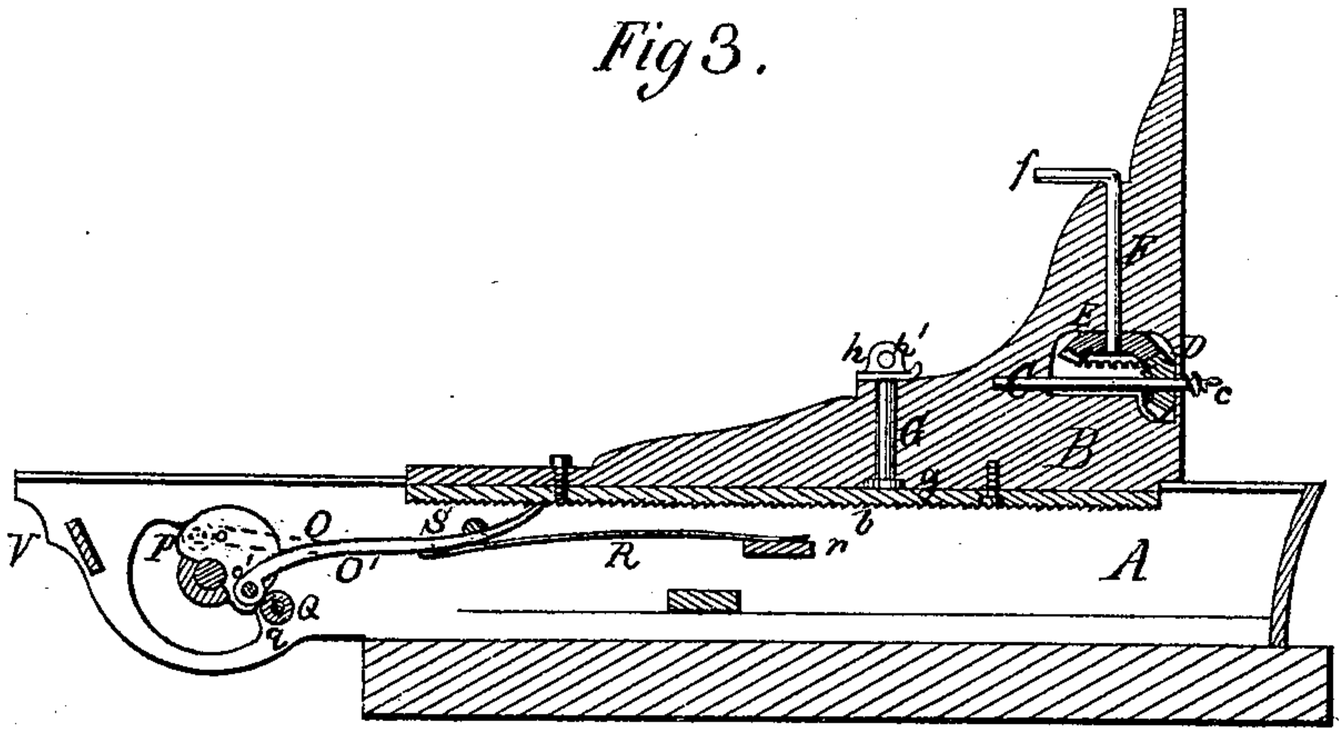
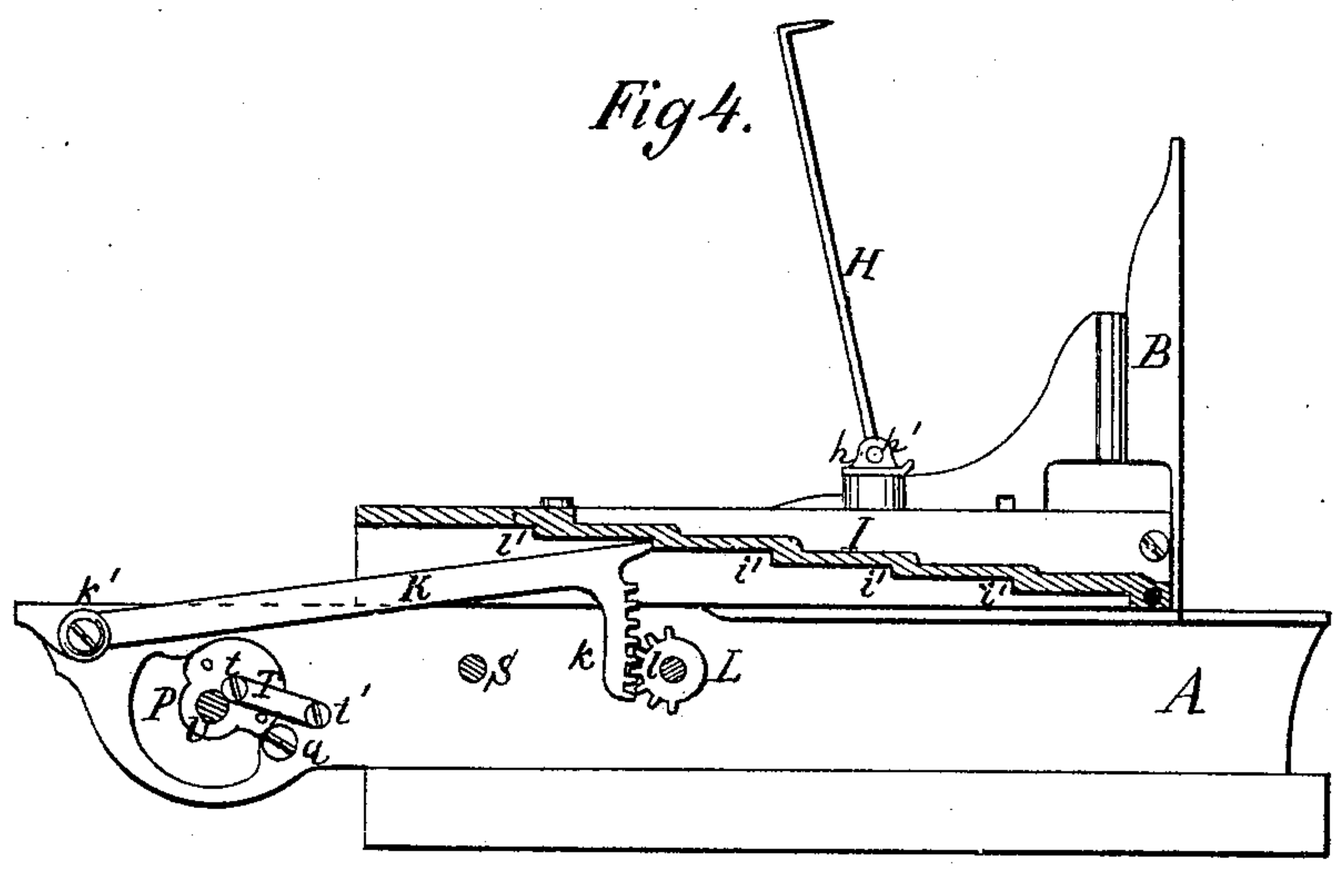


Fig 4.



WITNESSES.

J. P. Theodore Lang

C. L. Ewert.

INVENTOR

David Rawson

Alexander Ruston

By

Attorneys.

UNITED STATES PATENT OFFICE.

DAVID RAWSON, OF BELMONT, NEW YORK.

IMPROVEMENT IN HEAD-BLOCKS FOR SAW-MILLS.

Specification forming part of Letters Patent No. **151,432**, dated May 26, 1874; application filed April 16, 1874.

To all whom it may concern:

Be it known that I, DAVID RAWSON, of Belmont, in the county of Allegany and in the State of New York, have invented certain new and useful Improvements in Head-Block for Saw-Mills; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making a part of this specification.

My invention relates to head-blocks for saw-mills; and it consists of a bed with a sliding head, and the following appendages: First, a propelling motion of double-acting pawls, and a ratchet-surface at the bottom of the sliding head operated by a hand-lever; second, an inclined step-rack, and a pawl operated by a toothed sector, and a pinion with an adjustable spring-lever, and a notched index-plate for regulating the distance of the sliding head by the elevation of the spring-lever; third, a dog horizontally pivoted to a vertical pivot in the sliding head for fastening the log; fourth, a gimlet-point screw operated by bevel-wheels for fastening the log to the face of the sliding head; fifth, a combination of board-rules on the side of the sliding head and on the off-shear of the bed, and a common scale with a pointer, by the aid of which the log may be adjusted, and its remaining thickness indicated.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawings, in which—

Figure 1 is a plan view of my improved head-block. Fig. 2 is a side elevation of the same. Fig. 3 is a vertical central section of the head-block. Fig. 4 is a vertical longitudinal section through the step-rack.

A represents the bed of my head-block, on the shears *a* of which the head B slides, being secured to the same by groove and tongue, or any other suitable arrangement. The head B is provided at the bottom with a ratchet-surface, *b*, and at the face with a gimlet-screw, *c*, which forms the front end of the horizontal shaft C, embedded in the sliding head, and revolved by aid of the pinion D, and the bevel-wheel E on the vertical shaft F, with the crank *f*. A vertical pivot, G, secured to the sliding head B by a shoulder, *g*, and a head, *h*, has a dog, H, attached to it by means of the horizontal pin *h'*, thus forming an universal joint, permitting the turning of the dog to either side of the sliding head. The pivoted end of the dog is of eccentric shape, so that the dog may be turned back in an almost vertical position, as seen in Fig. 4. A step-rack, I, with two vertical guide-flanges, *i*, is so attached to the sliding head B as to overlap the bed A, so that the pawl K, which is pivoted to the rear end of the bed, may slide in or out of the guides *i*, to engage with or disengage from the said rack. The steps *i'* of the rack I are arranged vertically above each other with horizontal backs like the steps of a stairway, so that the pawl K, at a certain elevation, will always strike the same step. The pawl K is provided with a toothed sector, *k*, which is operated by the pinion L on the shaft *l*, by means of the spring-catch lever M, and the notched circular index N, wherein the shaft *l* has its bearing. The notches *n* on the index N are so arranged that each one of them answers the proper elevation of the pawl K for engaging with one of the steps *i'* in the rack I. The distance of the steps being known, (it is generally about five inches,) it is easy to set the pawl, when a log is to be rolled on the bed A, to the notch which answers the right distance of the sliding head B from the saw of the saw-mill. The head B is propelled by two pawls, O O', pivoted to the crank-pins *o o'*, between the slots of the cam-head P in opposite directions, thus reversing their actions, and effecting a double-acting propulsion. The pawls O O' are supported by the springs R, which are fastened to them and rest on the brace *r* of the bed A. An eccentric shaft, S, having its bearings in the sides of the bed A, and being provided with a crank, *s*, serves to disengage the said pawls from the ratchet-surface *b* by depression, when the head B is to be slipped back. The board-rules on the side of the flange *i*, marked *w*, and the scales on one of the shears *a* of the bed A, marked *w'*, serve to guide the operator in setting the head B for the various thicknesses of the boards to be sawed, the pointer *x* on the flat rule X show-

ing the remaining portion of the log at the different stages of operation, in numbers and measures of board-thicknesses on the board-rules, and the inches on the flat rule X being counted from the end-corner of the lowest board-rule, which is shortened as much as the thickness of the reversed log. The cam-head P has two circular bearings, *p*, in the sides of the bed A, the friction of which is greatly alleviated by the anti-friction roller Q on the pin *q*, which is fastened in the sides of the bed. The cam-head P is coupled to another cam-head, P′, of similar construction, by the shaft U, to which the lever-handle U′ is attached. The said cam-head P′ moves in a frame, V, by means of a circular bearing and the anti-friction roller Q, fastened to the frame by the pivot-pin *q*. The frame V is provided with holes *v*, and a stopping-pin, v^1, and on the opposite side with a slot, v^2, and stopping-bolt v^3. The pin v^1 and the bolt v^3 serve to terminate the movements of the lever U′, and may be adjusted by the change of position in the slots v^2 or the holes *v*. The frame V may be fastened to the floor by means of a flange, V′, or by any other practical means. The bearing-surfaces are kept in contact by the links T and T′, which are pivoted to the cam-heads P and P′ at the centers of their respective circular bearings, and to their supporting-frames. Thus T is pivoted, at *t*, to the cam-head P, and at t^1 to the side of the bed A, and the link T′ is pivoted, at t^2, to the cam-head P′, and at t^3 to the frame V. The cam-head P is provided with two links of the same construction, one at each side of the bed A. There are two of the described head-blocks used for a saw-mill, one for each end of the log, which may have the pinions L attached to one shaft, *l*, so as to be simultaneously moved.

The operation begins with the setting of the spring-lever M, to allow the head B to be pushed back by the new log, which is rolled or otherwise moved on the bed A to the full extent of its diameter. The log is then fastened by means of the dog H and the screw *c*. The head B is then propelled, by means of the lever U′, to the proper distance before the saw, according to the number and thickness of the boards to be cut. After the cutting of boards has approached the center of the log, the log is unfastened and refastened to the head B with its flat side against it. The calculations for the first cut or slab are now made from the rear end of the lower rule *w* on the rule X, and after this the work goes on again in the usual manner.

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

1. The combination of the cam-head P, the pawls O O′, the links T, the pivots *t* t^1, and the roller Q, with the head-block B, having the under ratchet-surface *b*, and the springs R on the bed-frame A, substantially as and for the purpose set forth.

2. The combination of the screw *c*, the shaft C, the wheels D E, and the shaft F, applied to the sliding head B, in the manner and for the purpose set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 6th day of March, 1874.

DAVID RAWSON.

Witnesses:
E. W. CHAMBERLAIN,
PHILIP H. HORNE.