

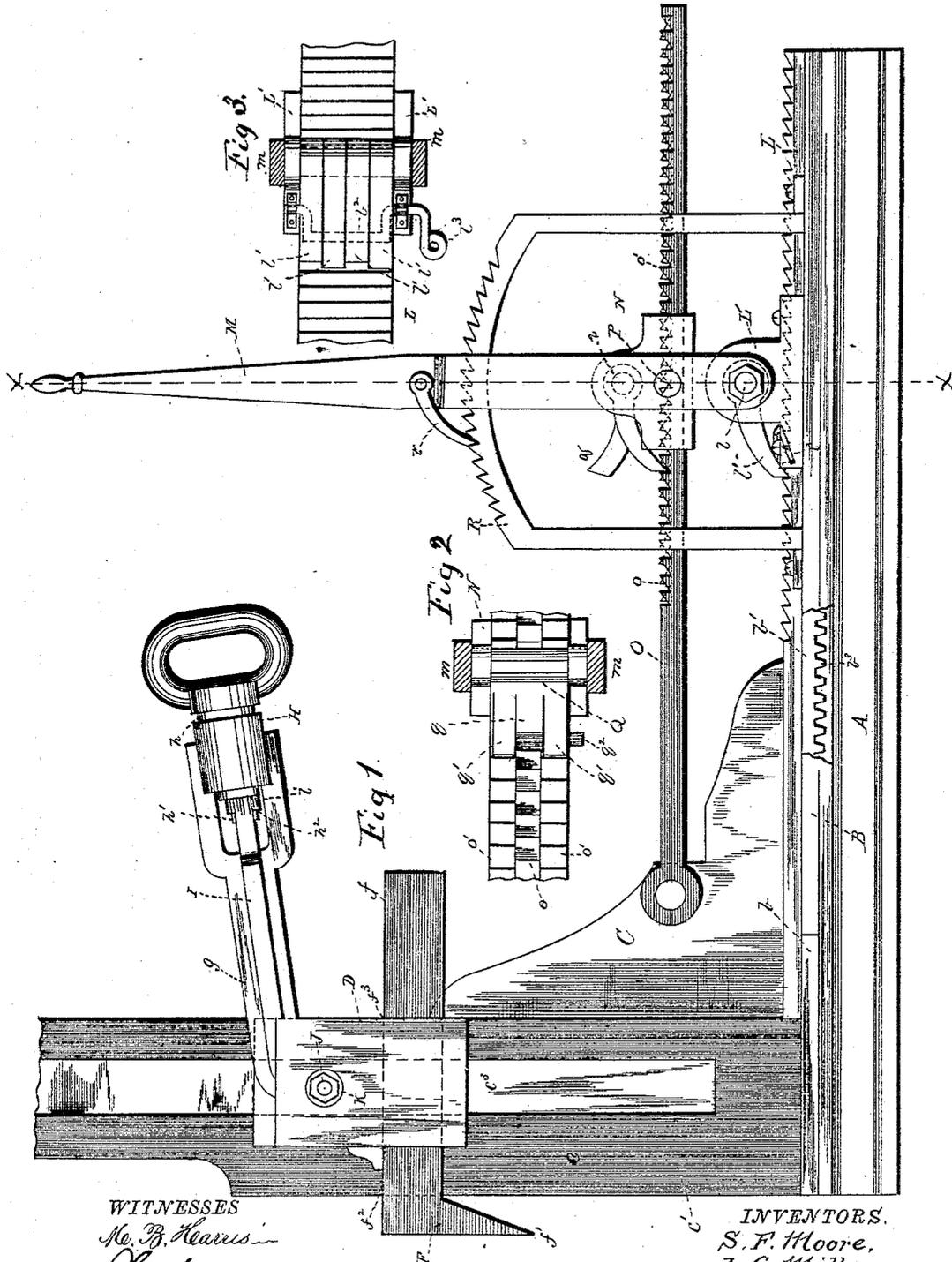
(No Model.)

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S. F. MOORE & J. C. MILLER.  
SAW MILL.

No. 388,902.

Patented Sept. 4, 1888.



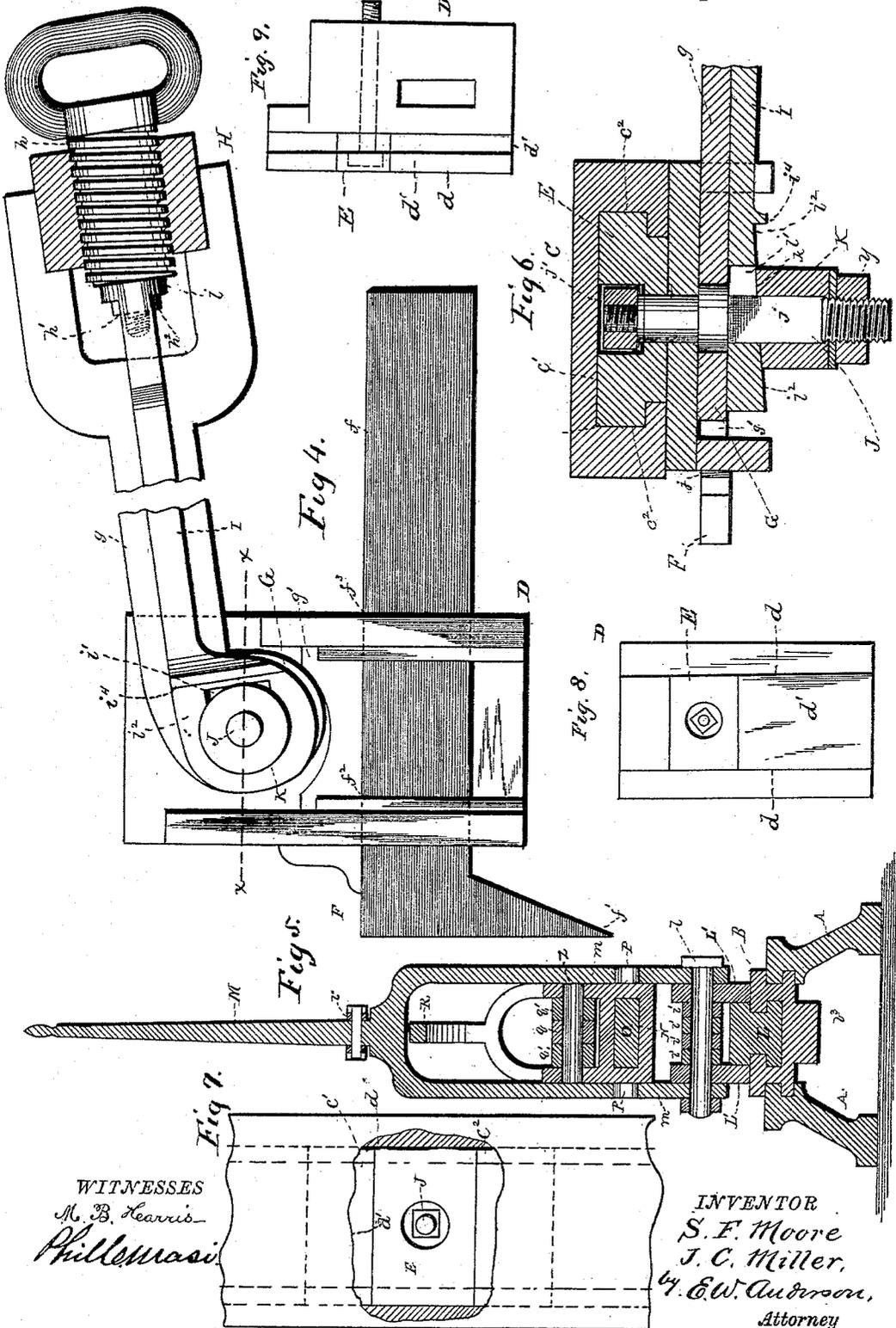
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S. F. MOORE & J. C. MILLER.  
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# UNITED STATES PATENT OFFICE.

SIDNEY F. MOORE, OF FOREST, AND JOHN C. MILLER, OF DUNKIRK, OHIO.

## SAW-MILL.

SPECIFICATION forming part of Letters Patent No. 388,902, dated September 4, 1888.

Application filed June 25, 1887. Serial No. 242,508. (No model.)

*To all whom it may concern:*

Be it known that we, SIDNEY F. MOORE, of Forest, county of Hardin, and JOHN C. MILLER, a resident of Dunkirk, in the county of Hardin, and State of Ohio, both citizens of the United States, have invented certain new and useful Improvements in Saw-Mills; and we do 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, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

Figure 1 of the drawings is a side elevation of the improved saw-mill attachment. Fig. 2 is a detail plan view of the rack-bar I, showing the pawls  $g$   $g'$ . Fig. 3 is a detail plan view of the rack L, showing the pawls in connection therewith. Fig. 4 is a detail side elevation, partly in section, of the sliding head D and lever  $g$ . Fig. 5 is a vertical transverse section on the line  $x$   $x$  of Fig. 1. Fig. 6 is a longitudinal section on the line  $x$   $x$  of Fig. 4; and Fig. 7 is a detail view of the vertical part  $c$ , broken away to show the detent-block E. Fig. 8 is a detail back view of the sliding head, showing the clip  $d'$  and block E. Fig. 9 is a detail end view of same.

The invention relates to improvements in saw-mill carriages; and it consists in the construction and novel combination of parts, as hereinafter set forth.

Referring by letters of reference to the drawings, A designates the bed or way upon which the head-block B rests and moves. The carriage is composed of a front and rear portion,  $b$  and  $b'$ , respectively, the former,  $b$ , constituting the horizontal part, to which the vertical part  $c$  and the knee C are attached. The vertical part  $c$  is provided with the way  $c'$ , within which the hollow sliding head D is raised and lowered. The said way  $c'$  is formed with grooves  $c^2$  at the sides of the recess  $c^3$ , in which grooves the lateral flanges  $d$  of the clip  $d'$  slide. The clip  $d'$  is secured to the inner face of the sliding head D, and is cut away transversely to the inner face of the sliding head to form a seat for the detent-block E, as shown in Fig. 7. The detent-block E is provided with lateral flanges similar to the flanges  $d$  on the clip. Its portion from the flange to the side adjacent to the sliding head, however, is somewhat less in thickness than the cor-

responding portion of the clip, so that when the detent-block is drawn toward the sliding block its respective flanges bind on the adjacent inward projections of the grooves  $c^2$  and hold the head in any desired position.

F is a dog having the shank  $f$  provided with parallel edges and the point  $f'$  to enter the log to be sawed. The dog is seated in slot-openings  $f^2$   $f^3$  through the front and rear walls of the hollow sliding head. The dog fits rather loosely in the openings when not locked, so that it can be tilted as the point is driven into the log. A rectangular block,  $g'$ , rests upon the upper edge of the shank of the dog within the hollow head D, and its upper edge is preferably made concave longitudinally.

G is an eccentric on the end of the lever  $g$ , pivoted within the sliding head. By turning the lever downwardly on its pivotal point the eccentric bearing in the concavity will force the block  $g'$  down upon the shank of the dog, so as to hold it in position. The outer end of the lever  $g$  is bifurcated, as shown, and between the arms of the bifurcated portion is secured the internally-tapped sleeve H, which engages the screw  $h$ , provided at its outer end with a suitable handle and having on its opposite end a stem,  $h'$ , which is threaded to engage a nut,  $h^2$ .

I is a slide-bar resting against the side of the eccentric-lever  $g$  and having at one end the transverse ring or collar  $i$ , engaging the stem  $h'$  between the nut  $h^2$  and the end of the screw  $h$ . The opposite end of the slide-bar has a head similar in shape to the eccentric G, provided with a rectangular opening,  $i'$ , and having its outer face,  $i^2$ , outwardly inclined toward its rounded end, forming a transverse shoulder,  $i^3$ , plainly seen in Fig. 6. The pivot-pin J has its portion  $j$  within the sliding head squared to engage the square eye through the eccentric and turn therewith. The outer end of said pin J is reduced and provided with a thread to engage a tapped nut, and its inner end has a bearing through the inner wall of the sliding head, and its reduced cylindrical stem  $j'$  passes through an opening in the detent-block E to the rear face thereof, where it is threaded and provided with a nut countersunk into the face of the block.

K is a sleeve provided with a squared axial opening adapted to slide upon the part  $j$  of the pivot-pin, which extends outwardly beyond the inclined face  $i^2$  of the head of the

slide-bar. The inner end of the sleeve K is inclined, as at *k*, reversely to the incline *i*<sup>2</sup>, upon which it impinges, and the said sleeve is held in place by the nut *γ* on the outer end of the pin. The squared portion of the pin also passes loosely through the rectangular opening *i*<sup>1</sup>. When the slide-bar I is drawn longitudinally outward by means of the screw *h* within the sleeve H, the inclined face *i*<sup>2</sup> forces the sleeve K outwardly, thus causing the detent-block E to bind upon the inwardly-projecting portions of the grooves *e*<sup>2</sup>. The lower part of the knee C extends longitudinally, and has secured to it the straight rack-bar L, which has the vertical sides of its teeth toward the end of the bar opposite the knee. The rack-bar moves on the way *b*, made on the rear part, *b*<sup>1</sup>, of the head-block, and serves a purpose hereinafter explained. The part *b*<sup>1</sup> of the head-block has on its under surface the cogs *b*<sup>2</sup>, to prevent its sliding on the way. *L*<sup>1</sup> *L*<sup>2</sup> are pivotal brackets secured opposite each other at each side of the rack L at a suitable point on the part *b*<sup>1</sup> of the head-block. The pin *l*, having bearings in the brackets *L*<sup>1</sup>, has pivoted upon it between said brackets the forwardly-standing pawls *l*<sup>1</sup> *l*<sup>2</sup>, preferably four in number, decreasing in length about one-twelfth of an inch from the longest to the shortest, and engaging the rack L, so as to prevent the retraction of the knee C when moved outward from the part *b*<sup>1</sup> of the head-block.

A disengaging-rod, *l*<sup>3</sup>, is journaled in bearings on the front feet of the brackets *L*<sup>1</sup>, and has its central portion under the pawls *l*<sup>1</sup> bent rectangularly outward and upward, so that by moving the arm *l*<sup>3</sup> of said rod the pawls can be engaged or disengaged.

M is a lever bifurcated at its lower end and having the arms *m* of said bifurcation pivoted on the pin *l* outside the brackets *L*<sup>1</sup>.

N is a rectangular box trunnioned in bearings in the arms *m* at a suitable distance above the pivotal pin *l*. The said box has passing through it the rack-bar O, pivotally connected at its front bifurcated end to the rear lower portion of the extension-knee and provided with three separate racks, the central one, *o*, of which is provided with teeth having their shoulders frontward, while the teeth of the side racks, *o*<sup>1</sup>, are shouldered oppositely thereto. The trunnions P, journaled in the arms *m*, allow the box N to retain a position parallel with the rack-bar O when the lever M is operated.

Q represents a compound or reversible detent pivoted on the journal *z* within the box N, the central pawl, *q*, of which is designed to engage the central rack, *o*, when the lever is operated to retract the knee, and the oppositely-curved pawls *q*<sup>1</sup> are designed to reverse the motion when put in engagement with the racks *o*<sup>1</sup> by turning the detent on its pivot to face in a reverse direction, and a pin, *q*<sup>2</sup>, standing laterally from the detent is provided, so that the detent can be reversed by the operator with his foot.

R is a curved rack concentric with the pin *l* and supported on standards rising from the part *b*<sup>1</sup> of the head-block; and *r* is a pawl pivoted to the lever M, adapted to hold the lever in its adjusted position.

Having thus described our invention, we claim—

1. The combination, with the saw-mill carriage-knee provided with the vertical way *c*<sup>1</sup>, having the grooved edges, of the hollow head provided with the flanged clip on its side to move in said grooved way, the eccentric pivoted in said head, the detent-block E, and the pin for clamping said detent-block, substantially as specified.

2. The combination, with the extension-knee, the head-block consisting of the two parts *b* *b*<sup>1</sup>, the rack, the rack-bar L, secured to the knee and moving on ways on the carriage, and the rack-bar O, pivoted on the knee, of the lever M, the pawls engaging the rack L, the rod for engaging and disengaging said pawls, the box N, having the trunnion-bearings P, and the compound detent Q, having the pivotal bearing *z* in said box, substantially as specified.

3. The combination, with the extension-knee having the vertical grooved way and the hollow sliding head D, of the lever *g*, having the eccentric-head pivoted within the head, the detent-block *g*<sup>1</sup>, the internally-threaded sleeve H, secured within the bifurcated outer end of the lever *g*, the screw engaging in the threaded sleeve, the slotted slide-bar I, provided with the inclined face *i*<sup>2</sup>, the sleeve having the inclined end *k*, corresponding to the incline *i*<sup>2</sup>, and provided with the axial opening to fit upon the squared part of the pivotal pin having the squared portion and the nut, substantially as specified.

4. The combination, with the extension-knee, the head D, having a flanged clip, *d*<sup>1</sup>, moving in the vertical way having the lateral grooves, and the dog carried by said head, of the eccentric-lever adapted to hold the dog in place, the flanged detent-block E, and the means, substantially as specified, connected to said lever for binding said detent E on the inward projections of the grooves *c*, substantially as specified.

5. The combination of the extension-knee, the rack-bar O, pivoted thereto and provided with racks having oppositely-facing teeth, the pivoted lever M, the box N, having the trunnion-bearing P in the arms *m*, the compound detent pivoted within said box, the rack R, curved concentrically with the pivotal point *l*, and the pawl secured to said lever and engaging the rack, substantially as specified.

In testimony whereof we affix our signatures in presence of two witnesses.

SIDNEY F. MOORE.  
JOHN C. MILLER.

Witnesses:

JOHN CAMPBELL,  
H. C. WIKOFF.