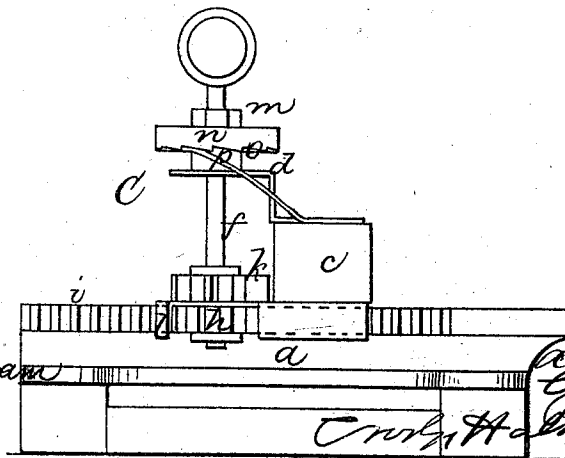
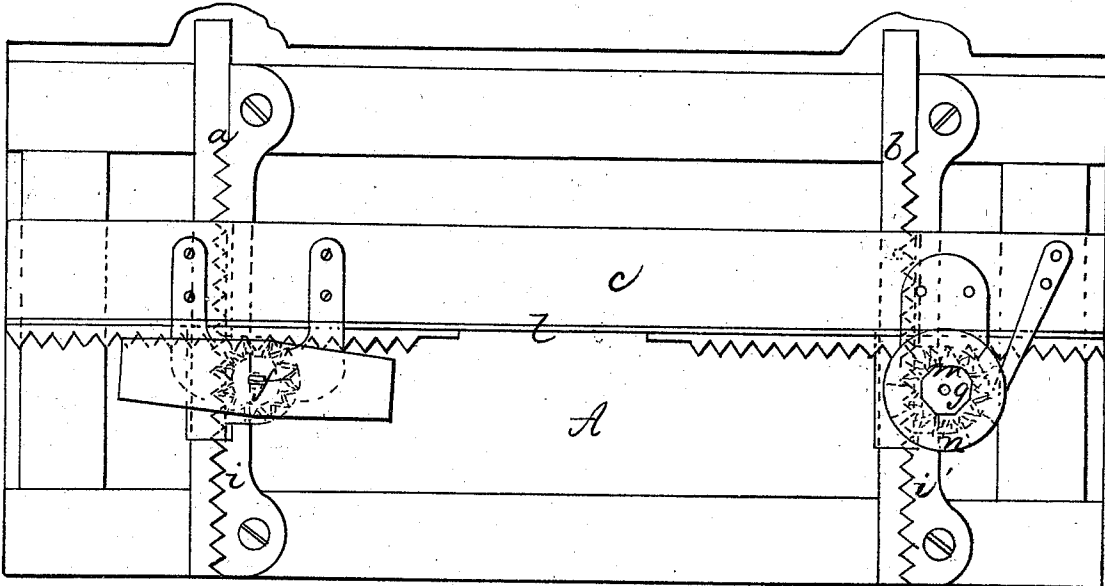
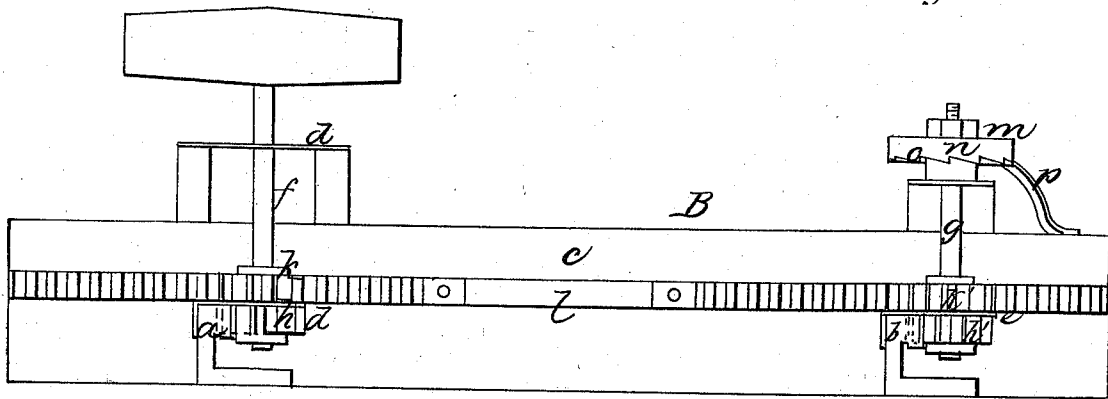


*A. M. Beard,*

*Head Block.*

*No. 89,969.*

*Patented May 11, 1869.*



*Witnesses*  
*M. W. Frothingham*  
*G. B. Hilder.*

*Inventor*  
*A. M. Beard*  
*By his atty*  
*Crabtree & Gould*

# United States Patent Office.

ASA M. BEARD, OF HILLSBOROUGH, NEW HAMPSHIRE.

Letters Patent No. 89,969, dated May 11, 1869.

## IMPROVEMENT IN HEAD-BLOCK FOR SAW-MILLS.

The Schedule referred to in these Letters Patent and making part of the same.

*To all whom it may concern:*

Be it known that I, ASA M. BEARD, of Hillsborough, in the county of Hillsborough, and State of New Hampshire, have invented an Improvement in Log-Setting Mechanism for Saw-Mills; and I do hereby declare that the following, taken in connection with the drawings which accompany and form part of this specification, is a description of my invention sufficient to enable those skilled in the art to practise it.

The invention relates to the manner of feeding forward the beam, against which the log is dogged, with reference to the simultaneous forward movement of both ends of the log.

The invention primarily consists in combining with the log-supporting beam, and with the ways upon which the beam slides, and pinions, working in gear-racks on the sides of these ways, auxiliary pinions, upon the shafts of the main pinions, these auxiliary pinions communicating end-movement to a long gear-toothed connecting-bar, so that the rotary movement of one of the main pinions not only moves forward the adjacent end of the beam, but communicates movement to the other main pinion, and thereby causes the opposite end of the beam to be correspondingly moved forward.

The drawings represent a log-setting mechanism, embodying my invention.

A shows the mechanism in plan.

B is a front elevation of the same.

C is an end elevation.

*a b* denote the ways, or rails.

*c*, the beam, to the front face of which the log to be sawed is fastened, this beam resting upon, and sliding over the ways.

Fastened to the beam are bearings, *d e*, which support vertical shafts, *f g*, upon the lower end of each of which is a pinion, *h*, or *h'*, which meshes into a stationary gear-rack, *i*, or *i'*, on the side of the adjacent way, or rail *a*-or *b*, the rotation of the pinions and their engagement with the rack-teeth communicating motion to the beam over the ways, as will be readily understood.

Over the lower bearing-plate each pinion-shaft has fixed to it an auxiliary pinion, *k*, or *k'*.

Between these pinions *k k'* and the rear face of the beam, is a bar, *l*, which rests loosely upon the ways, (or upon the bearing-plates,) and slides freely lengthwise of the beam, and upon the face of this bar are gear-teeth, with which the teeth of the respective pinions *k* engage.

Now, as the main pinion-shaft *f* is rotated, its pin-

ion *h*, engaging with the adjacent rack *i*, causes the adjacent end of the beam, and the log fastened thereto, to advance on the ways, or toward the saw-cutting plane, while the rotation of the auxiliary pinion *k* on the same shaft moves the connector-bar *l* endwise, which movement actuates the auxiliary pinion *k'*, thereby turning the shaft *g*, and causing the main pinion *k'* to turn upon the rack *i'*, and impart a simultaneous and coincident movement to the adjacent end of the beam and log.

Thus equal movement is imparted at both ends of the beam, by turning one pinion-shaft, and by a simple and effective mechanism.

To prevent slight movement of the beam, by "backlash" of the gear-teeth of the main pinion *k'*, I apply a mechanism as follows:

At the top of the shaft *g* is fixed a nut, or stationary collar, *m*, just beneath which is a loose wheel, *n*, having, on its under surface, ratchet-teeth *o*, against which the end of a spring-pawl, *p*, presses, the spring also pressing the wheel up against the fixed nut *m*. Now, when the beam is sliding back, the ratchet-teeth slide freely over the pawl, permitting the wheel to turn freely with the shaft; but when the beam is being fed forward, the first tooth of the ratchet brings up against the pawl and arrests the wheel, and the upward pressure upon the wheel creates friction between the wheel and the nut fixed upon the shaft, sufficient to prevent the shaft and pinion slipping back, or "backlashing," the parallelism of the successive saw-cuts upon the log, and the consequent uniformity of thickness of the material cut from the log, being thus insured.

I disclaim anything found in the patent granted, June 6, 1854, to David Russell.

I claim, in combination with the longitudinal beam *c*, to which the log is secured, the sliding bar *l*, (with its gear-rack,) the stationary gear-racks, or rails *a b*, the pinions *h k*, and auxiliary pinions *k k'*, (the shafts of which turn in bearings fixed to and moving with the beam *c*,) the whole being constructed and arranged to operate substantially as described.

Also, in combination with the above, and with the auxiliary pinion *k'* and shaft *g*, the friction-wheel *n* and spring-pawl *p*, substantially as and for the purpose set forth.

ASA M. BEARD.

Witnesses:

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