

J. BRETT & B. PERRY.
Saw-Mill Head-Block.

No. 204,192.

Patented May 28, 1878.

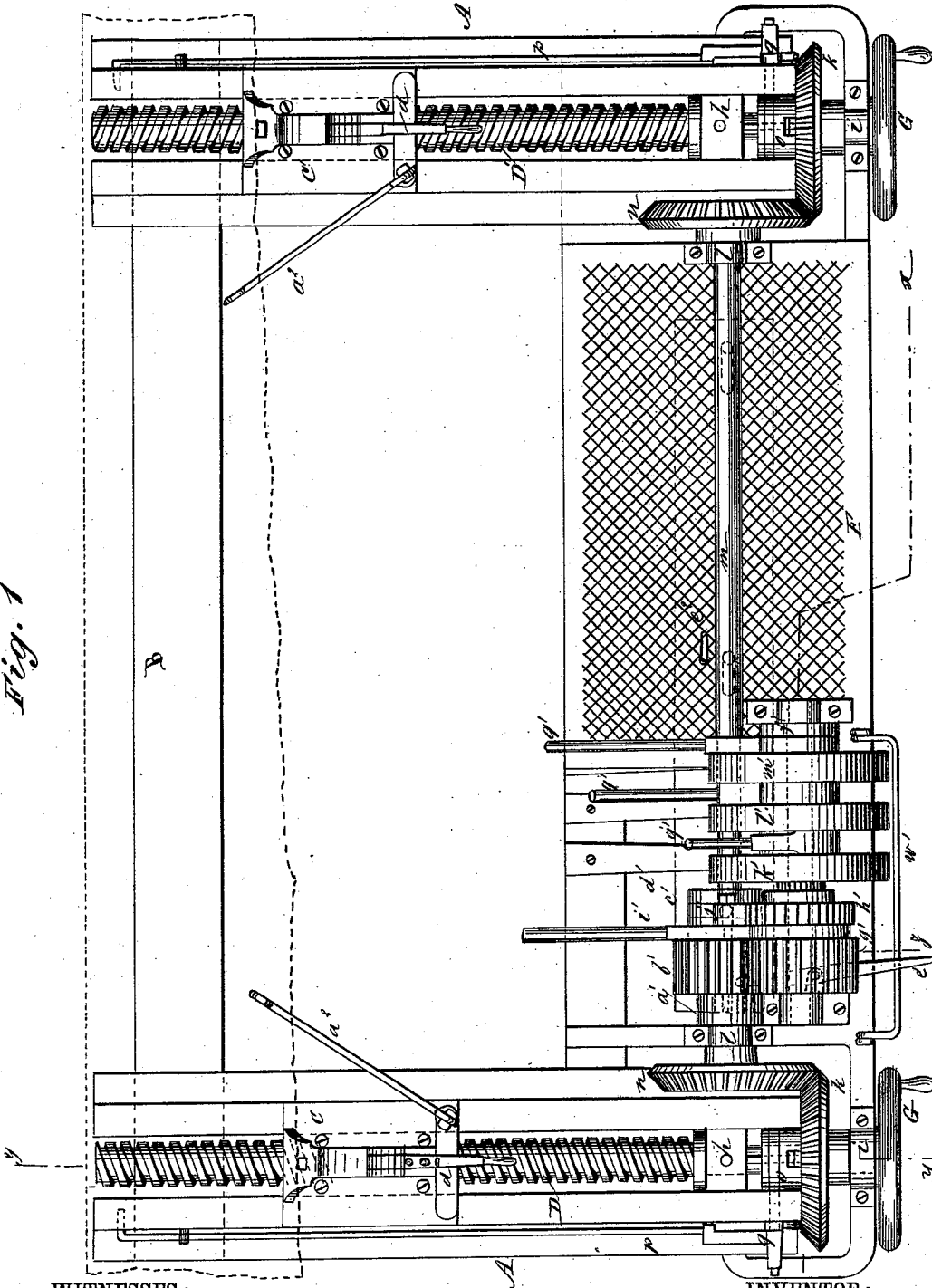


Fig. 1

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C. Sedgwick

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BY

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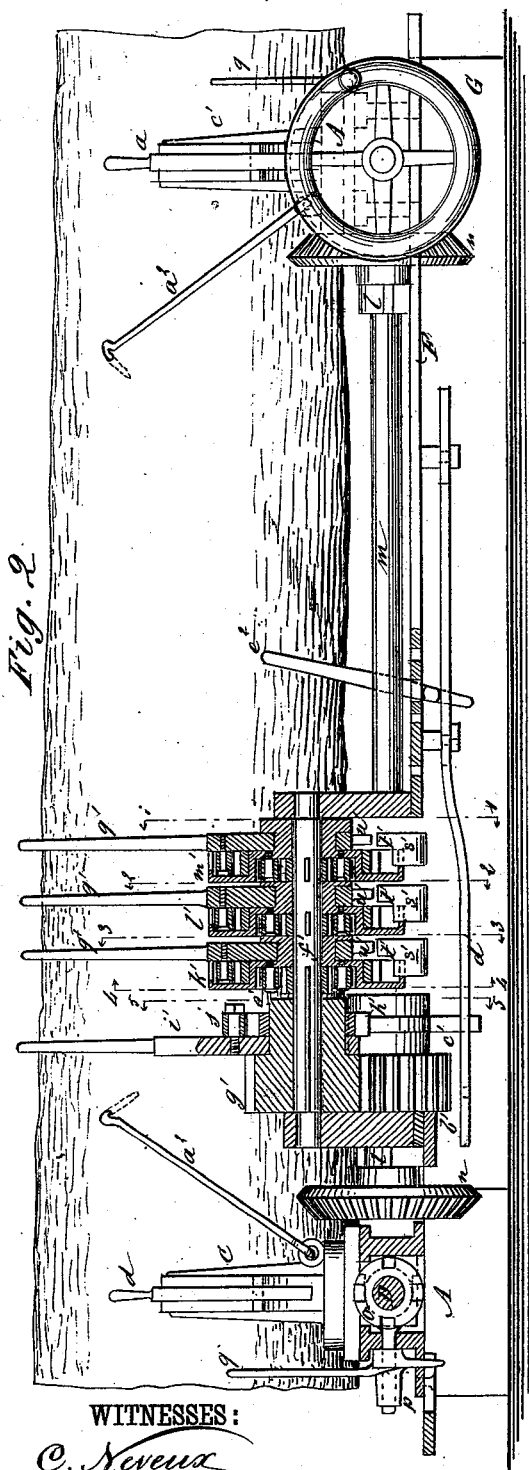


Fig. 2

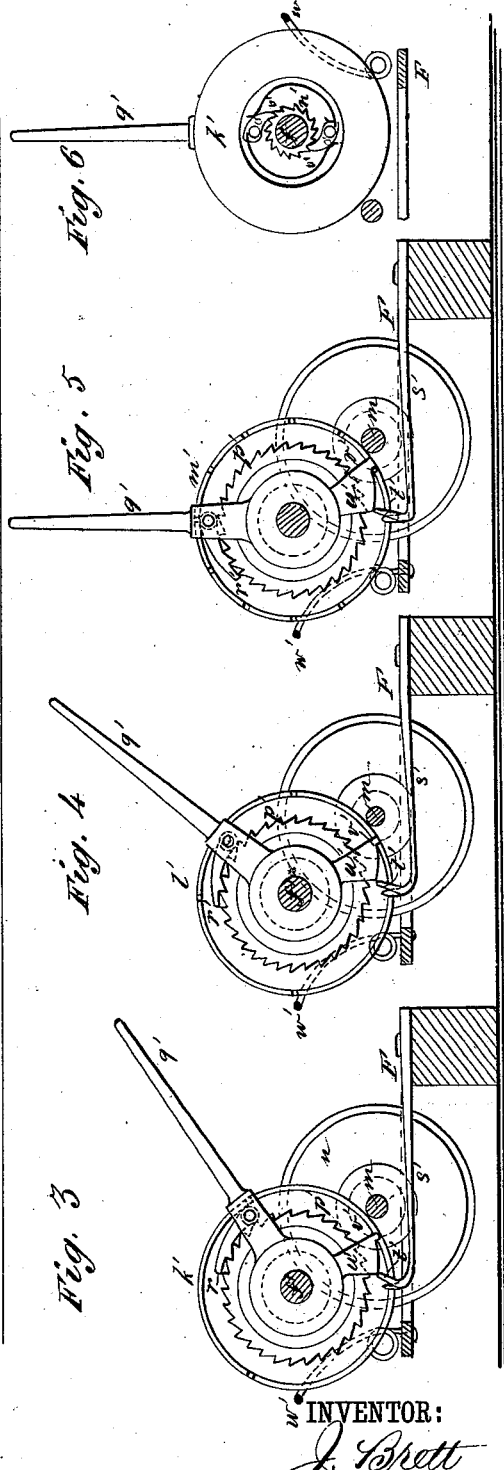


Fig. 6

Fig. 5

Fig. 4

Fig. 3

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Fig. 7

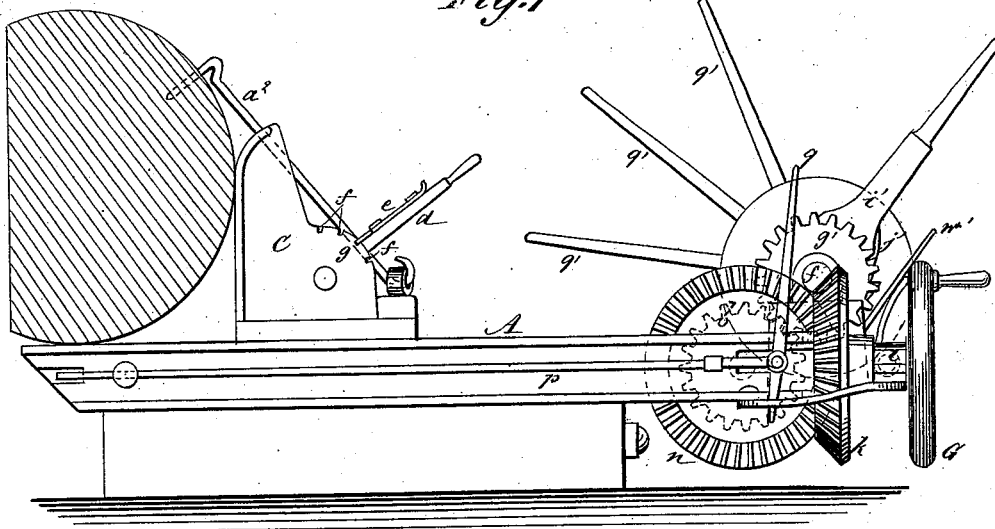


Fig. 8

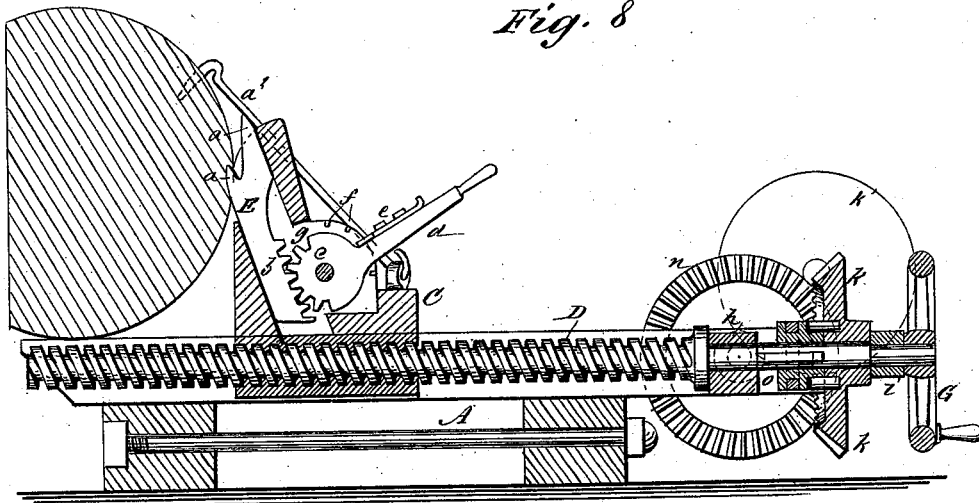
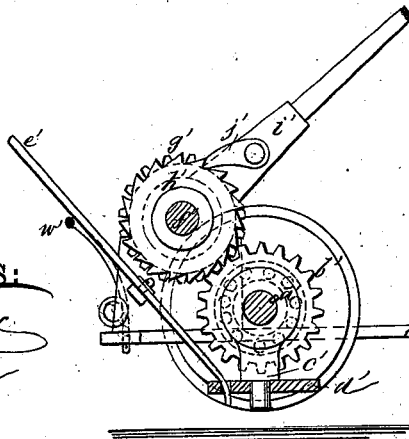


Fig. 9



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UNITED STATES PATENT OFFICE.

JAMES BRETT AND BETHUNE PERRY, OF ALBION, CALIFORNIA.

IMPROVEMENT IN SAW-MILL HEAD-BLOCKS.

Specification forming part of Letters Patent No. 204,192, dated May 28, 1878; application filed March 6, 1878.

To all whom it may concern:

Be it known that we, JAMES BRETT and BETHUNE PERRY, of Albion, in the county of Mendocino and State of California, have invented a new and Improved Set-Gear for Saw-Mills, of which the following is a specification:

In the accompanying drawings, forming part hereof, Figure 1 is a plan view of our improved set-gear. Fig. 2 is a side elevation, partly in section, taken on line *x x* in Fig. 1. Fig. 3 is a vertical transverse section taken on line 1 1 in Fig. 2. Fig. 4 is a vertical transverse section taken on line 2 2 in Fig. 2. Fig. 5 is a vertical transverse section taken on line 3 3 in Fig. 2. Fig. 6 is a vertical section taken on line 4 4 in Fig. 2. Fig. 7 is an end elevation of the set-gear. Fig. 8 is a longitudinal section of one of the head-blocks, taken on line *y y* in Fig. 1, and Fig. 9 is a section taken on line 5 5 in Fig. 2.

Similar letters of reference indicate corresponding parts.

The object of our invention is to provide a convenient and accurate device for setting logs on the carriages of saw-mills.

The invention consists in a combination of set-wheels, provided with notches for receiving a detent, and with ratchet-wheels and levers for disengaging the detents and moving the set-wheels.

It also consists in an arrangement of gearing by means of which the screw of the head-block may be moved independently of the set-wheels.

Referring to the drawings, A A' are head-blocks supported by the carriage B, and having formed in them guides for receiving the followers C C', which are moved in the head-blocks by the screws D D'. Each follower is cored to receive an inclined bar, E, which is provided at its upper end with spurs *a*, for engaging the surface of the log, and has formed on it a rack, *b*, which is engaged by a toothed sector, *c*, which is journaled in the follower, and provided with a lever, *d*, having a stop-bolt, *e*, which may engage any of the notches *f* in the projection *g* formed on the followers.

The screws D D' are journaled in boxes *h* in the head-blocks, and also in boxes *i*, sup-

ported by the frame F, that is attached to the head-blocks and to the log-carriage.

Upon the spindle of each screw D D', between the boxes *h i*, a miter-wheel, *k*, is placed, so that it may turn easily on the spindle, and in boxes *l*, supported by the frame F, a shaft, *m*, is journaled. Upon opposite ends of the shaft *m* miter-wheels *n* are placed, which mesh into the wheels *k* on the spindles of the screws D D'. This arrangement of gearing necessitates making the screw D right-hand, and the screw D' left-hand.

On the spindle of each screw D D', and between the miter-wheel *k* and the box *h*, a clutch, *o*, is placed, which will slide longitudinally on the spindle, but is prevented from turning thereon by a slot in the clutch and a feather in the spindle.

The clutch *o* is engaged by lug-pins that project from the face of the miter-wheel *k*, and is grooved circumferentially to receive the fork on the end of the shifting-rod *p*. The rod *p* is connected with a lever, *q*, that is fulcrumed on the head-block, and the said rod extends to the saw end of the head-block, and is bent inward through a slot in the side of the head-block, so that it will be engaged by the follower C, when it is moved forward by the screw, and disengage the clutch and prevent the follower from being moved beyond the end of the head-block.

Upon the end of the screw-spindle that projects through the box a hand-wheel, G, is secured, for convenience in turning the screw.

The two head-blocks are alike in all respects, excepting that the screw D is right-hand, and the screw D' is left-hand, and the clutch-levers *q* are oppositely arranged.

Upon the shaft *m*, near the head-block A, a perforated collar, *a*¹, is secured, and there is a spur-pinion, *b*¹, on the shaft *m*, which is capable of sliding on the shaft.

Lug-pins project from the pinion *b*¹ in position to enter the holes in the collar *a*¹, and the boss of the pinion is grooved circumferentially to receive the fork *c*¹, which is secured to the clutch-bar *d*¹, placed in guides under the frame F. Two levers, *e*¹ *e*², are fulcrumed in the frame F, and connected with the bar *d*¹.

A shaft, f' , is journaled in standards secured to the frame F, and to it is secured a pinion, g' , of the same diameter as the pinion b' , which it engages. A ratchet-wheel, h' , is secured to the shaft f' , and between the said ratchet and the pinion g' a lever, i' , is loosely placed. The lever i' carries a pawl, j , which engages the teeth of the ratchet h' .

Upon the shaft f' three disks, $k' l' m'$, are placed, all of which turn on the shaft, and are alike, excepting the graduation of their peripheries. Each disk is chambered in one side to receive one of the ratchet-wheels n' , three of which are secured to the shaft f' , and the disk is provided with two spring-pawls, o' , which engage the ratchet-wheel n' . An annular groove is cut in the opposite side of the disk to receive a ratchet-ring, p' , which is secured therein.

Levers q' are fulcrumed on the shaft f' , one opposite the grooved face of each disk, and each of the said levers carries a pawl, r' , which engages the ratchet-ring p' of the adjacent disk.

The periphery of each disk is slotted transversely at regular intervals to receive a detent-spring, s' , which is attached to the log-carriage and is bent upward at right angles at its free end to engage the slots in the periphery of the disk, and it also has a finger, t' , formed on it, which is engaged by the arm w' of the lever q' .

Upon the outer end of the arm w' a cam is formed, which is capable of throwing the detent-spring s' out of engagement with the disks, and at the end of the cam-surface on the arm w' there is a stop-lug, v' , which limits the motion of the lever q' when the said lever is moved over toward the log, and a guard, w' , consisting of an iron rod bent twice at right angles, is placed on the opposite side of the disks, and limits the motion of the levers q' when moved away from the log.

As before observed, the disks and their ratchets, levers, and detents are exactly alike, but the slots in the periphery of the disks differ in their distance apart. The slots in the disk m' are three in number, and they are placed at equally distant points on the periphery of the disk. The disk l' has four slots, and the disk k' twelve slots. The number of disks, as well as the number of slots in the disks, may be varied at pleasure. The log is rolled on the carriage in the usual way, and if it be a round one the hooks are driven in the top of the log, and the bars E are moved upward by means of the levers d , thus forcing them into the log and holding it securely. The upper end of the followers C C' are rounded to prevent the catching of the log when it is rolled against the followers. The

log is secured in place by the log-hooks a^2 , and if the log is tapering one end may be moved while the other end is stationary by disengaging the clutches o . When the log is adjusted the clutches o are both thrown into engagement with the pins projecting from the wheels n , when the log may be moved forward by moving the lever i' . When the slabs are removed the log is moved forward regularly by means of one of the levers q' and one of the disks $k' l' m'$.

The lever q' is moved forward until the detent s' is disengaged from the slot of the disk by the engagement of the arm w' with the finger t' , and until the stop-lug v' touches the finger t' . The lever q' is then drawn back until the detent enters another of the slots in the periphery of the disk. After disengaging the detent the lever q' may be moved back and forth through less space than would be required to turn the disk through one of its graduations, but it cannot be turned after the detent enters one of the slots without again moving the lever q' forward so as to disengage the detent.

The motion of either of the disks is communicated to the shaft f' through the pawls o' and ratchet-wheel n' , and motion is transmitted from the shaft f' to the shaft m , through the pinions $g' b'$, and the shaft m moves the screws D D' through the miter-wheels $n k$.

When it is desired to operate the two screws simultaneously without turning the shaft f' , the pinion b' is shifted by means of one of the levers $e^1 e^2$, so as to disengage it from the apertured collar a^1 .

By means of our improvements the log may be quickly and accurately adjusted on the carriage, so that the manufacture of lumber is greatly facilitated.

Having thus described our invention, we claim as new and desire to secure by Letters Patent—

1. The combination, with the wheel k , having pins and the clutches o , of the ratchet h' and pawl-lever i' , as and for the purposes specified.
2. The combination of the clutch o , clutch-rod p , and wheel k , having lug-pins, as herein shown and described.
3. One or more graduated disks, $k', l',$ or m' , the actuating-levers q' , and detent s' , in combination with the screws D D', substantially as herein shown and described.

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Witnesses:

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