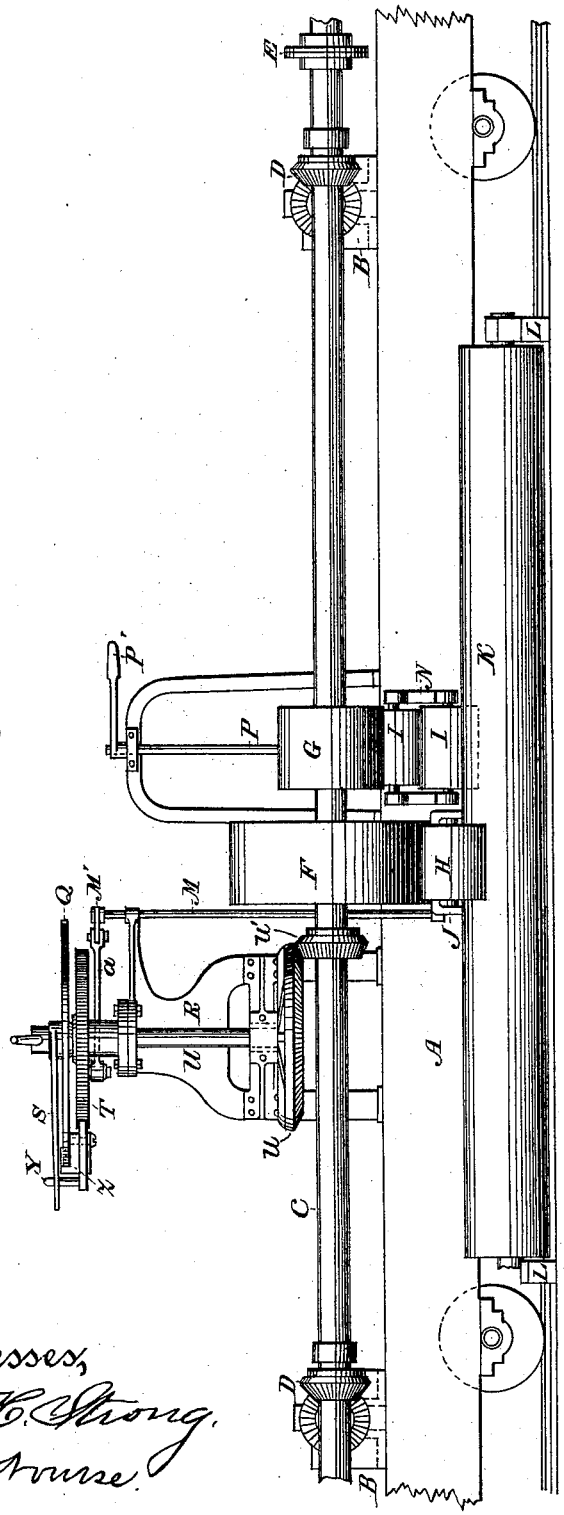
(No Model.) 3 Sheets—Sheet 1.

A. A. OSBORN.

SAW MILL SET WORKS.

No. 301,828. Patented July 8, 1884.

Fig. 1.



Witnesses,
Geo. H. Strong.
J. H. Nourse.

Inventor,
A. A. Osborn
By Dewey & Co.
Attorneys

(No Model.) 3 Sheets—Sheet 2.

A. A. OSBORN.

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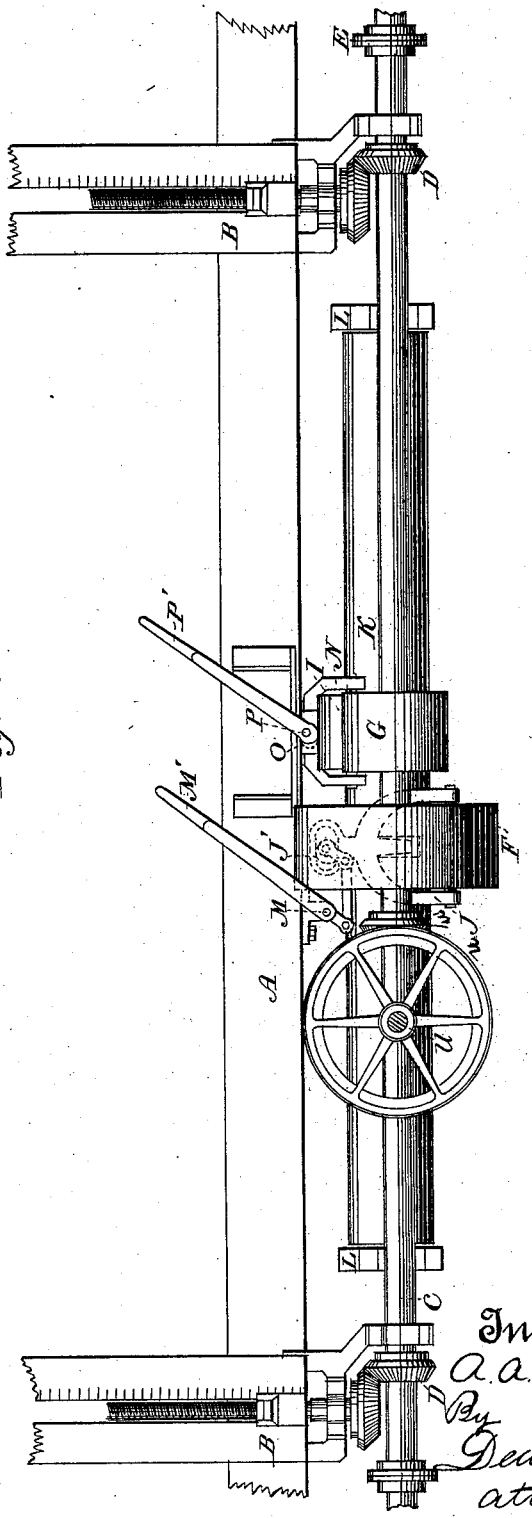
Fig. 2.



Witnesses,
Geo. H. Strong.
J. B. Stowell

Inventor,
A. A. Osborn
By Dewey & Co.
attorneys

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A. A. OSBORN.

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Fig. 4.

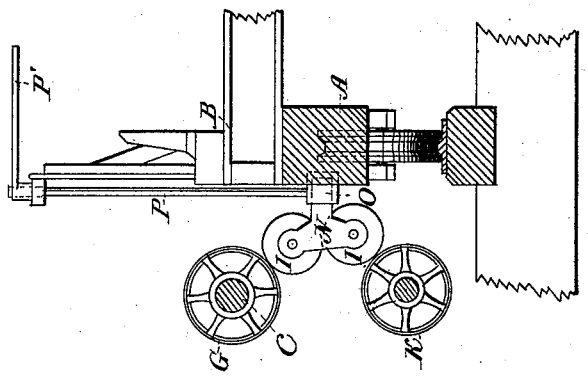


Fig. 3.

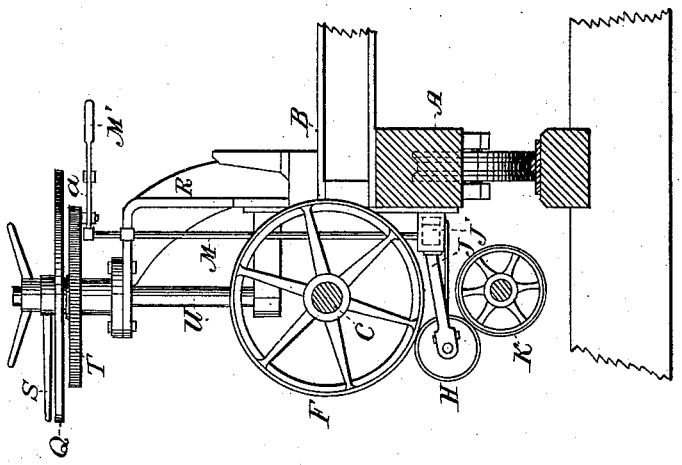
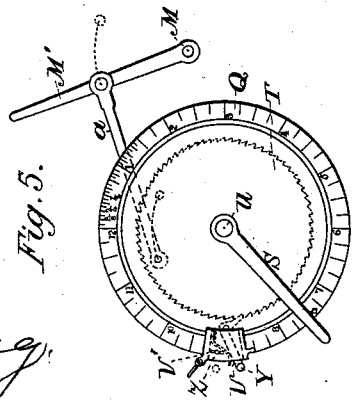


Fig. 5.



Witnesses,
Geo. H. Strong.
J. H. Howse

Inventor,
A. A. Osborn
By Dewey & Co.
Attorneys

UNITED STATES PATENT OFFICE.

AMBROSE A. OSBORN, OF SAN FRANCISCO, CALIFORNIA.

SAW-MILL SET-WORKS.

SPECIFICATION forming part of Letters Patent No. 301,828, dated July 8, 1884.

Application filed October 15, 1883. (No model.)

To all whom it may concern:

Be it known that I, AMBROSE A. OSBORN, of the city and county of San Francisco, and State of California, have invented an Improvement in Power Set-Works for Saw-Mills; and I do hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to what I term a "power set-works" for saw-mills; and it consists of a mechanism by which the log may be set upon the carriage for any desired cut, and a dial or indicator connected with said mechanism, so that the amount of set may be shown at once.

It also consists of certain details of construction, all of which will be more fully explained by reference to the accompanying drawings, in which—

Figure 1 is a side elevation, showing a part of the log-carriage and my mechanism. Fig. 2 is a plan view of same. Fig. 3 is a transverse section of gear or forward motion. Fig. 4 is transverse section of gear for back motion. Fig. 5 is a plan view of the dial.

In saw-mills especially where long logs are sawed, considerable time must be consumed in setting the logs for a new cut each time after the carriage has been run back, and also to set all the standards equally throughout the whole length of the log.

In my invention A is the carriage. B are the head-blocks with screws to advance the standards and the log.

C is a shaft extending along the side of the carriage, being coupled, as at E, to secure the desired length.

D are miter-gears secured to the shaft and the head-block screws, so that when the shaft is turned the standards will be advanced or retracted, as may be desired.

F is a pulley keyed to the shaft C, which is intended to produce the forward motion, and G is a smaller pulley, also keyed to the shaft near F, to produce the back motion. In order to actuate these pulleys when desired, I mount a long cylindrical drum or pulley, K, opposite the point where the pulleys F and G will stop when the carriage is run back after a cut has been made. The journals of this pulley turn in pillow-blocks L, and the pulley itself is long enough to allow for any reasonable difference in the point of stoppage of the carriage, thus insuring the pulleys F and G stopping opposite some portion of its length. The pulley K is kept running constantly, and in order to communicate its motion to the pulley F a friction-pulley, H, is journaled in the end of an arm, J, so that when this arm is drawn inward it will force the pulley H into contact with both K and F, thus communicating the motion of the former to the latter and its shaft, and by means of the miter-gears D to all the head-block screws simultaneously, thus advancing all parts of the log equally. The inner end of the arm J is moved by an eccentric, J′, on the lower end of the shaft M, which shaft is turned by a lever, M′, at the upper end.

When the head-block screws are to be run back, it is done by communicating a reverse motion to the pulley G. This is done by means of the two friction-pulleys I I, which are journaled in the end of an arm, N, this arm being moved in or out, so as to throw the pulleys I into or out of contact with the pulleys K and G by means of an eccentric, O, upon the lower end of a shaft, P, which is moved by a lever, P′, in the same manner as before described for the operation of the forward gear. The pulley G is made smaller than the pulley F, so that the head-blocks being empty and light may be moved back more rapidly than they are moved forward with the weight of the log upon them. It will be manifest that a loose belt might pass around each of the pulleys F and G, and also around the drum K, with a tightening-pulley to cause them to act when desired, instead of the contact friction-wheels, the effect being essentially the same.

In order to indicate the exact amount which the log is set forward, I employ a dial, Q, which is supported upon a bracket, R, at some convenient point above the carriage for observation. This dial is graduated around its circumference into inches and subdivisions of an inch to any degree desired, and a pointer or indicator, S, is fixed to a central shaft, U, so as to extend out over the face of the dial. The indicating-arm S is loosely connected to the set-shaft, and may be firmly secured thereto by a thumb-screw, the said shaft being connected at its lower end to a beveled gear-wheel,

u, which intermeshes with a small gear-wheel, *u'*, secured to the shaft C, and by which means it is operated when the pulley F and driving-cylinder K are forced into frictional contact by the roller H, as before described. A toothed wheel, T, turns loosely around the shaft U. A pawl, V, is attached to a slide, Z, which may be adjusted to any point around the periphery of the dial, and held by a set-screw or eccentric, V'. The pawl then engages the teeth of the wheel and holds it stationary. The lever M', by which the friction-wheel H is thrown into contact with the pulleys, has a rod or link, *a*, attached to it, and also to the toothed wheel T, and when the lever is forced forward so as to throw the friction-roller H into contact with the pulleys F and K, the pawl V engages the teeth of the wheel, and thus holds it and the lever and friction-gear in place. The slide Z is set at any point desired on the circumference of the dial to indicate the amount of set, and the pointer or hand S, being first loosened on the shaft U by means of a thumb-nut or an eccentric, is turned back to zero, where it is again fixed by the nut. When the lever M' is thrown forward and the friction-wheel has made connection between the driving-cylinder K and the pulley F, the shaft U and the pointer S will move around until the pointer strikes the arm Y, which extends upward from the outer end of the pawl-lever V. This action disengages the pawl from the toothed wheel T, which then turns back the lever M', the friction-gear also moving back so that the friction-wheel is thrown out of contact with the pulleys, so that the shaft C stops and the log is moved no farther. This disengagement will take place at any point where the slide Z and pawl V may be set, from any fraction of an inch up to as many inches as are indicated upon the dial.

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

1. In a saw-mill, the power set-works consisting of the stationary elongated drum or cylinder, K, journaled to revolve at the side of the carriage, the shaft C, journaled upon the carriage, connected with the setting-screws by bevel-gears, and having fixed to it the pulleys F and G, in combination with the intermediate friction-wheels, H and I I, and the shafts, levers, and eccentrics for moving them into or out of contact with the driving-cylinder and their respective pulleys, substantially as herein described.

2. In a saw-mill, and in combination with a setting mechanism, as shown, a means for indicating the amount of set, consisting of a dial with an indicating arm or pointer, and a shaft and gearing by which the indicating-hand is connected with and moved by the setting-shaft, substantially as herein described.

3. In a saw-mill, and in combination with a setting mechanism, the shaft U, pointer S, and fixed dial, the toothed wheel T, loose upon the shaft U, and connected with the lever M' by a rod or link, and the pawl V, adjustable upon the edge of the dial-plate, and engaging the wheel T, and having an arm, Y, by which it may be thrown out from the wheel, and the movement of the setting mechanism stopped, substantially as herein described.

4. In a saw-mill, and in combination with a setting mechanism, a shaft, U, connected with said mechanism, so as to be revolved by it, a hand or pointer, with a means for securing it to the shaft or allowing it to be turned loosely upon it, and a graduated dial over which the pointer may move, in combination with a slide, Z, with a clamp by which it may be fixed at any point upon the edge of the dial, a pawl, V, which engages and holds a toothed wheel, T, loosely mounted upon the shaft U, and a link or rod connecting said wheel with the lever M', substantially as herein described.

5. In a saw-mill, the power set-works consisting of the stationary elongated drum or cylinder K, journaled to revolve at the side of the carriage, and the shaft C, journaled upon the carriage, connected with the setting-screws by bevel-gears, and having fixed to it the pulleys F and G, in combination with an intermediate mechanism by which the motion of the drum may be communicated to either of the pulleys, so as to advance or retract the head-blocks, substantially as herein described.

6. In a saw-mill, the combination, with a drum, K, journaled in pillow-blocks and kept in continuous motion, of a friction-pulley, H, journaled in the end of an arm, J, moved by an eccentric, J', and a pulley, I, thrown in and out of gear with drum K by an arm, N, through the intervention of an eccentric, O, upon the lower end of shaft P, moved by a lever, P', substantially as and for the purpose set forth.

In witness whereof I have hereunto set my hand.

A. A. OSBORN.

Witnesses:
S. H. NOURSE,
E. A. BRANDON.