

C. M. FAIRBANKS.

Improvement in Saw-Mill Head-Blocks.

No. 132,716.

Patented Nov. 5, 1872.

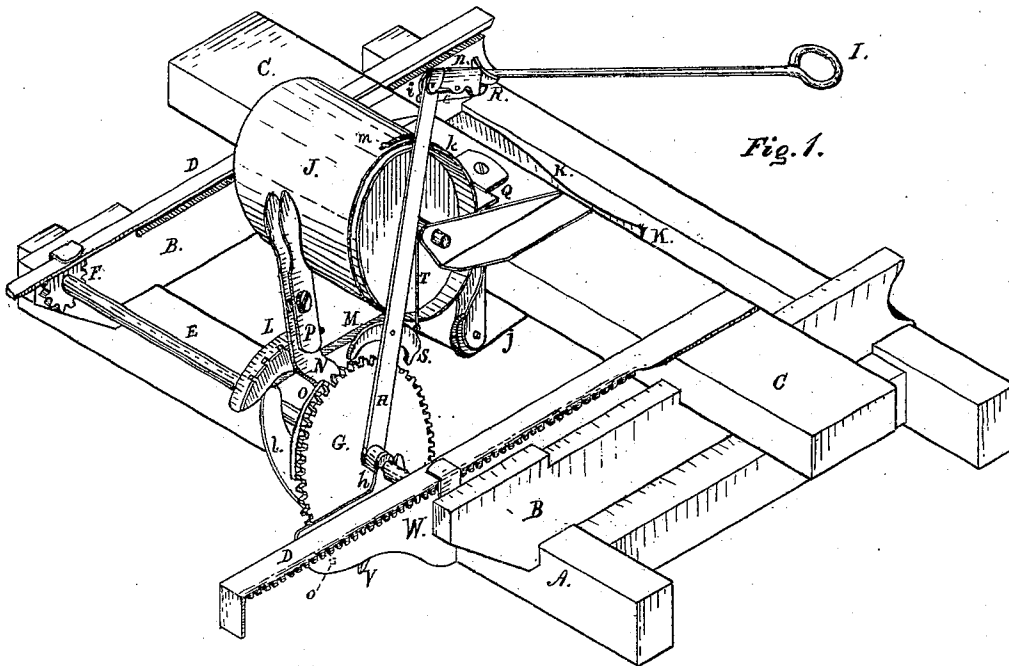


Fig. 1.

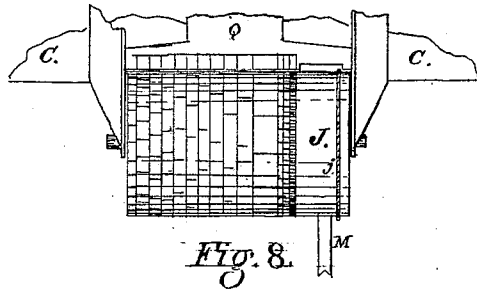


Fig. 8.

Witnesses.

Edward D. Osborn

Edward H. Johnson

Inventor.

C. M. Fairbanks
per C. M. Osborn
att'y

UNITED STATES PATENT OFFICE.

CHESTER M. FAIRBANKS, OF LEBANON, NEW HAMPSHIRE, ASSIGNOR OF ONE-HALF OF HIS RIGHT TO LEWIS C. PATTEE, OF SAME PLACE.

IMPROVEMENT IN SAW-MILL HEAD-BLOCKS.

Specification forming part of Letters Patent No. 132,716, dated November 5, 1872.

To all whom it may concern:

Be it known that I, CHESTER M. FAIRBANKS, of Lebanon, in the county of Grafton and State of New Hampshire, have invented certain Improvements in Saw-Mill Head-Blocks, of which the following is a specification:

My invention relates to the setting mechanism of saw-mills; and consists in certain novel combinations and arrangements of parts which have for their object to facilitate the operation of setting the log, as will be fully set forth hereafter.

Description of the Drawing.

Figure 1 is a perspective view of a portion of a saw-mill carriage with my improvements applied thereto. Figs. 2, 3, and 4 are enlarged views in detail of the mechanism for moving the setting-shaft. Figs. 5, 6, and 7 are detail views of the adjustable shield for regulating the movements of the gear G on the setting-shaft. Fig. 8 is a top view of the cylinder scale or index.

General Description.

A represents the carriage, and B B the rails on which the setting-bar C moves. D D are the racks secured to the setting-bar, and operated by the setting-shaft E through the pinions F F. G is the setting-gear, which is rotated by means of the lever H. I is the pull-rod for working the lever H. J is the cylinder-scale, by which the extent of motion of the log is regulated. K is the spring for giving motion to the scale J in one direction. L is the notched plate for holding the setting-lever N of the shield O in position. M is the spring-tape for rotating the scale J. O is the adjustable shield for controlling the extent of motion of the gear-wheel G. P is the catch for holding the lever N in place. Q is the index on the setting-bar C by which the scale J is set. R represents a cam secured upon the pull-rod I, and operating, when the rod is slightly turned, to raise or depress the forward end of the lever c and operate the pawl S, with which it is connected by means of the rod T. The log to be cut is held upon the carriage in the usual manner by means of the dogs on the setting-bar C, and as one board is cut off by the saw the log is moved forward a certain distance for the

next cut by the pull-rod I and the mechanism connected with it, shown in the detail views, Figs. 2, 3, 4, and 5. When the pull-rod is turned so that its cam R is held in the position shown in Figs. 1, 2, and 3, the lever c, to which the connecting-rod T is jointed, occupies the position shown in Fig. 2, and the tooth b of the pawl S takes into the meshes of the gear G, so that as the rod I is drawn forward by the operator the lever H, to which the pawl is pivoted, turns the gear G a certain distance in the direction of the arrow x, Fig. 2, and causes the set-shaft E to rotate and move forward the set-bar C. This movement of the set-bar feeds the log up to the saw and determines the thickness of the stuff to be cut from it, and the position of the lever H, when the rod I is pulled forward by the operator, determines the movement of the set-bar. The forward movement of the lever H is controlled by the projecting arm V, Figs. 1, 2, and 3, on the collar h of the lever, which rises as the lever is drawn forward and strikes against a pin on the side of the bracket W when the lever reaches its lowest position forward. Before the lever H is drawn forward to feed up the log it is thrown back by pushing upon the rod I until the end b of the pawl S comes in contact with the shield O, Fig. 5; at this point the tooth b is lifted by the shield clear of the teeth of the setting-gear G, and will not engage with any of the gear-teeth covered by the shield, so that the tooth of the pawl S can only catch in the teeth of the gear that are forward of the shield O. The action of the lever H is therefore controlled in one direction by the shield O, which is adjustable, and in the other by the arm V and stop on the bracket W; and when the lever H is thrown back and then drawn forward by the pull-rod I, the pawl S engages with the first tooth of the gear that is in front of the shield and turns the gear and the set-shaft E a certain distance forward. This distance is regulated by means of the adjustable shield O, secured to the segment U of the setting-lever N by a set-screw working through the slot g, Fig. 7. The setting-lever N, by which the shield is adjusted, is held in position by the spring-catch P, that is arranged to engage with the notched holding-plate L, (see Fig. 6.) and the position of the shield O is read-

ily changed, when desired, by depressing the catch P and moving the setting-lever N forward or back. The further the shield is set back the greater will be the movement of the setting-gear G when the rod I is pulled, because in pushing the lever H back to throw the tooth *b* of the pawl into the space between the teeth just in front of the shield the pawl can be thrown further backward before it comes in contact with the shield, and, therefore, when the lever H is drawn forward it will have a longer range of motion. The tooth *b* of the pawl S only engages with the gear-teeth when the lever H is drawn forward, and does not catch in the teeth when the backward motion of the lever is made; but the setting-bar C can be moved back at any time, and for any distance, by means of the same pawl S and the mechanism connected with it on the lever H. (Shown in detail in Figs. 2, 3, and 4.) The cam R on the pull-rod I is in contact with and operates the lever *c*, to which the connecting-rod T of the pawl S is jointed at *i*; and when it is desired to move the setting-bar C back or away from the saw, the operator turns the rod I slightly around to throw the cam R against the lever *c* to depress its forward end and cause its other end to draw upon the rod T and bring the pawl S into the position shown in Fig. 4. This action of the cam R throws the tooth *a* of the pawl into operation and raises the other one, *b*, clear of the teeth of the gear G, so that as the lever H is pushed back by means of the rod I the pawl engages with the gear G and causes it to turn in the direction of the arrow *y* (Fig. 4) or backward; and by vibrating the lever H back and forth when the cam R is held in this position the setting-bar C can be moved back as far as desired. The tooth *a* of the pawl is made thinner than the tooth *b*, so that it does not come in contact with, and is not controlled in its movements by, the shield O. The upper end of the connecting-rod T is screw-threaded and held in the stirrup *d*, (Figs. 2, 3, and 4,) so that it can be adjusted at pleasure, and the pawl regulated by it, to compensate for any wear of the parts. The lever *c* is prevented from being moved laterally by the ears *q* of the swiveled bearing *n* in which it works, (as shown in Figs. 2 and 4.) The setting-bar C is provided with a cylindrical scale or drum, J, and index Q for measuring the movement of the setting-bar and accurately determining the position of the log with reference to the saw. The cylinder J is held in bearings secured upon the setting-bar, and is turned in one direction, or forward, toward the front of the carriage, by the spring-metal tape M, which is fastened at *m* to the circumference of the cylinder and at the other end to the stationary bracket *l*. The rotation of the cylinder in the

opposite direction, or backward, is produced by the cord *j* secured at *k* to the cylinder, and at the other end to the spring K upon the side of the carriage. The movement of the setting-bar thus causes the cylinder to rotate in a regular manner, and enables the distance to be exhibited to the operator on the scale. Upon the circumference of the cylinder J are marked a number of scales of different degrees to facilitate the setting of the log, each scale being marked for a special kind of stuff to be cut, and the index Q being marked to enable each scale to be readily distinguished. The scale on the notched plate or rack L corresponds with the divisions on the cylinder J, so that when the setting-lever N, which adjusts the shield O, is set at any point the lever H will only move the gear G forward a certain distance, indicated on the cylinder-scale J and on the rack-scale, and show to the operator what distance the carriage A and its log has been moved toward the saw, and consequently indicate what thickness of stuff will be cut from the log as the carriage runs past the saw. When one board has been cut and the carriage runs back for the next board it only requires one pull of the rod I to move the carriage forward the required distance for the next cut.

It is not intended to limit the use of this invention with any particular arrangement of mechanism for moving the carriage or the setting-bar, as many different arrangements may be used in place of the racks and pinions herein described.

I lay no claim to the construction shown in patent No. 79,484, dated June 30, 1868.

Claims.

1. The combination, with the lever H and gear G, of the double pawl S, rod T, stirrup *d*, lever *c*, cam R, swiveled bearing *n*, and rod I, constructed and operating substantially as described and specified.
2. The combination of the lever H, pawl S pivoted to lever H, and having tooth *a* the width of the thickness of wheel G and tooth *b* wider and projecting over the shield, with the shield O, in the manner substantially as described.
3. The combination, with a setting-gear constructed as described, of a revolving index-drum, J, constructed as described, and for the purpose set forth.
4. The revolving index drum J, operated by means of a tape, M, cord *j*, and spring K, substantially in the manner described and specified.

CHESTER M. FAIRBANKS.

Witnesses:

C. A. DURGIN,
MARTIN BUCK.