W. PHILLIPS.

SAW-MILL HEAD BLOCKS.

No. 182,596. Patented Sept. 26, 1876.

Fig. 1.

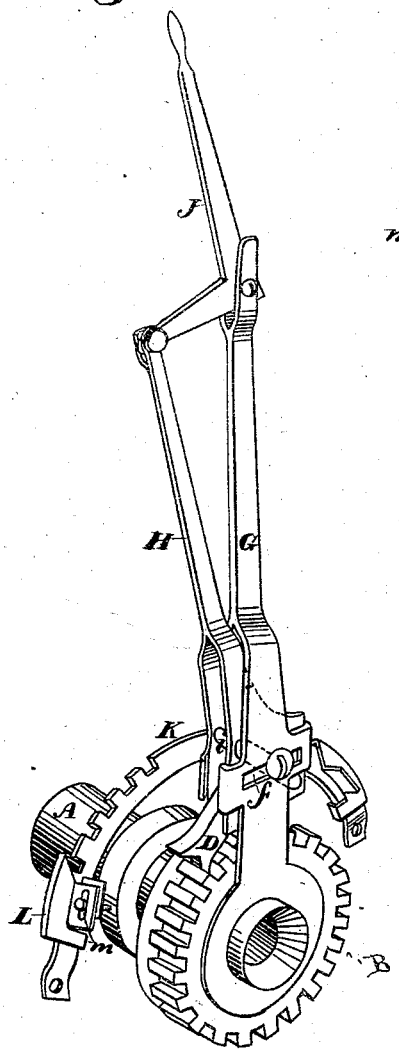
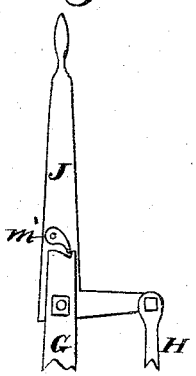


Fig. 2.



Witnesses

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UNITED STATES PATENT OFFICE.

WILLIAM PHILLIPS, OF COLFAX, CALIFORNIA.

IMPROVEMENT IN SAW-MILL HEAD-BLOCKS.

Specification forming part of Letters Patent No. **182,596**, dated September 26, 1876; application filed June 21, 1876.

To all whom it may concern:

Be it known that I, WILLIAM PHILLIPS, of Colfax, Placer county, State of California, have invented an Improvement in Saw-Mill Head-Blocks; and I do hereby declare the following description and accompanying drawings are sufficient to enable any person skilled in the art or science to which it most nearly appertains to make and use my said invention without further invention or experiment.

My invention relates to certain improvements in operating saw-mill head-blocks; and it consists, first, in a novel connection with the pawl-lever, which turns the ratchet and pinion to operate the rack on the head-block, so that all lost motion of the pawl between the teeth is taken up before the lever begins to move, and, consequently, the log will be moved exactly as much as is indicated upon the scale, over which the lever passes, and all the cuts will be made of the same size.

My invention further consists in the use of a curved rack, having subdivisions, and an adjustable stop, by which the exact thickness of the lumber will be insured at each cut.

Referring to the accompanying drawings for a more complete explanation of my invention, Figure 1 is a perspective view. Fig. 2 shows the lever J.

A is a shaft, having secured to it the pinion B, which serves to move the rack, and operate the head-block mechanism. It also forms the ratchet, into which the pawl D falls. This pawl is usually pinned to an operating-lever, and, when the lever is thrown forward, the pawl will engage with the teeth of the ratchet, thus turning the shaft and pinion, and through its action on the rack the head-block mechanism and log will be moved.

The objection to this mechanism is, that the lever must be moved to a certain distance indicated by a pointer on the head-block, and as there will always be a varying amount of lost motion before the pawl engages with the ratchet, the movement of the mechanism in the head-block will vary in the same manner, and, consequently, the lumber will vary in thickness, or the movement of the lever must be varied.

In my construction the pawl is secured by a pin, *e*, which passes through a slot, *f*, in each side of the lever G, which is divided, so as to clasp the shaft A on each side of the ratchet. Between the two sides of this part of the lever the sides of a bar, H, extend, also clasping the sides of the pawl. A slot, *i*, is made in the sides of this bar H, to allow the pin *e* to pass through, and this slot is made at an angle with the slot *f*, so that, when the inner bar is forced down, the inclined slot will act upon the pin *e*, and cause it to move forward in the slot *f*, and this will move the end of the pawl until it reaches a notch or tooth of the ratchet. The bar H extends up beside the lever G, and a bell-crank lever, J, has its angle pivoted to the end of the lever G, while its long arm extends up in a line with the lever G, and the short arm is attached to the bar H, as shown.

The operation will then be as follows: The lever G being drawn back as far as the stop, the pawl D may rest upon the top of one of the ratchet-teeth, or at any other point. The handle of the bell-crank lever being pushed forward, its short arm will act upon the bar H, pushing it down, and the inclined slot *i* will cause the pawl to move forward until it engages the teeth of the ratchet. By pushing the lever J still farther forward, the lever G will begin to move, and, as the lost motion of the pawl has been taken up by the above-described action, the movement of the lever G will act to turn the pinion B, and thus move the head-block at once.

My scale K is an arc of a circle, and has its circumference divided into such spaces as will give the proper width to the different classes of lumber.

In order to adjust the movement of the lever to make the lumber full or scant in size, I employ a temper-gage, L, with a set-screw, *m*, so that it can be adjusted forward or back.

It will thus be seen that the motion of the lever will cause all of the machinery connected with the ratchet-wheel to move at the same time that the main lever moves, so as to set the log by rule or scale. A certain sweep of the lever will set out a corresponding space on the head-block, and my temper-gage L will give any minor adjustment exclusive of the usual scale upon the arc K.

When it is desired to move the device backward, and prepare the carriage to receive a

new log, it will only be necessary to throw the pawl over to the opposite side of the lever, when it will turn the pinion in the opposite direction. While this is being done, the mechanism for taking up the lost motion of the pawl and ratchet will not be needed, and the lever J can be locked, so as to move simultaneously with the lever G, by means of a catch, m', which falls into a notch in the top of the lever G.

I have described the mechanism as connected with one head-block of a saw-mill carriage, and in order to cause all of the head-blocks to move at once, and over the same distance, the shaft A is made hollow, and a bar is secured, by a key or otherwise, to each one, and this insures the simultaneous movement of all of them.

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

1. The lever G, slotted at f, and the movable bar H, with its angular slot i, having the fulcrum-pin e of the pawl D passing through both slots, so that, when the bar H is forced downward, the pawl will be moved forward until it falls into the teeth of the ratchet, for the purpose of taking up the lost motion, substantially as herein described.

2. The bell-crank lever J, pivoted to the lever G, so that its long arm acts as a part of the lever, while its short arm is connected with the bar H, and operates to force it down and throw the pawl into contact with the ratchet before the lever G begins to move, substantially as herein described.

3. In combination with the lever J, pivoted to the lever G, the catch m', for the purpose of preventing a movement of the joint and causing the two levers to move as one when working backward, substantially as herein described.

In witness whereof I have hereunto set my hand.

WILLIAM PHILLIPS.

Witnesses:
GEO. H. STRONG,
CHAS. G. PAGE.