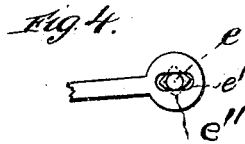
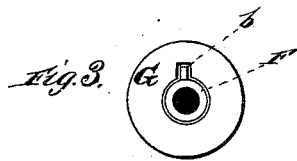
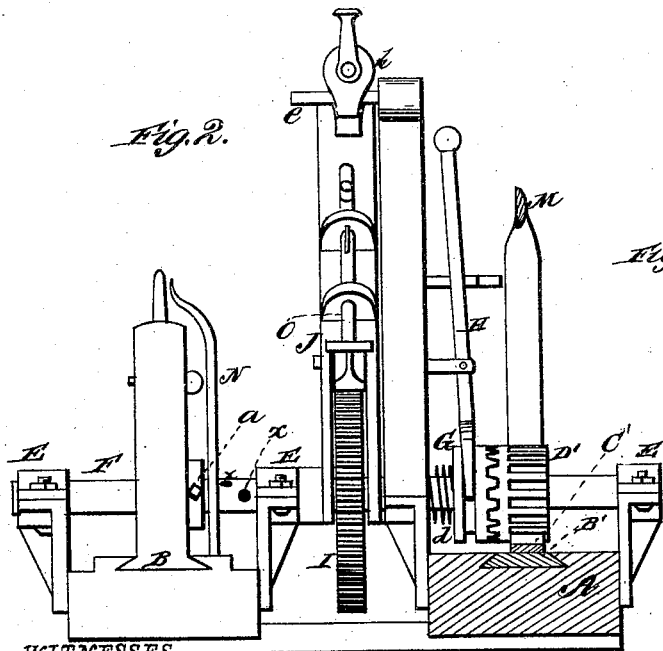
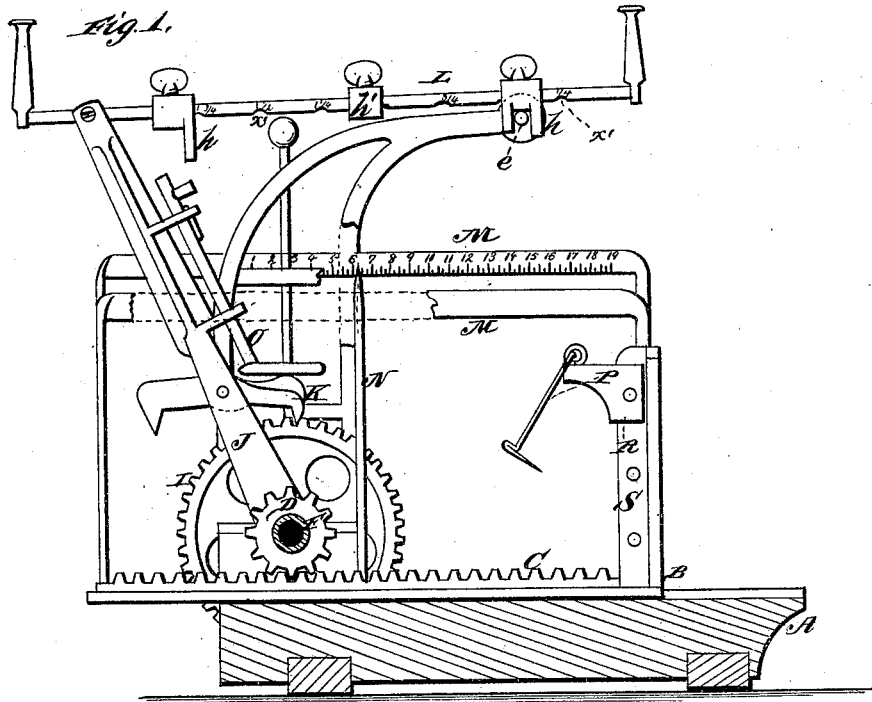


B. E. SERGEANT.
Saw-Mill Head-Blocks.

No. 210,567.

Patented Dec. 3, 1878.



WITNESSES.
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BENJAMIN E. SERGEANT, OF GREENSBOROUGH, NORTH CAROLINA.

IMPROVEMENT IN SAW-MILL HEAD-BLOCKS.

Specification forming part of Letters Patent No. **210,567**, dated December 3, 1878; application filed September 7, 1878.

To all whom it may concern:

Be it known that I, BENJAMIN E. SERGEANT, of Greensborough, in the county of Guilford and State of North Carolina, have invented a new and valuable Improvement in Saw-Mill Head-Blocks; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a side part section, of my saw-mill head-block. Fig. 2 is a front view, part section, of the same. Figs. 3 and 4 are detail views.

The nature of my invention consists in the construction and arrangement of head-blocks for circular-saw mills, and the devices for operating the same, as will be hereinafter more fully set forth.

The annexed drawings, to which reference is made, fully illustrate my invention.

A represents the log-carriage with the head-block slides B B', said slides being, respectively, provided with the rack-bars C C', which are operated by the pinions D D' on the shaft F. In working mills the slides B B' are made open between the cogs, so that the sawdust may fall through instead of lodging thereon, making it necessary to sweep it off. This shaft F has its bearings in suitable boxes E E, connected to the log-carriage.

Ordinarily, turned shafting is used in this class of machines; but I make the shaft F of gas-pipe, which makes a light, cheap, and sufficiently strong shaft, requiring no turning, and one which cannot sag.

Instead of fitting in a feather as far as the movable block is required to slip along on the shaft for different-length logs, as is done in other head-blocks using the solid shaft, I use a set-screw, *a*, in the hub of the pinion D, and drill holes *x x* in a line in the shaft F every foot, more or less; and when the sawyer wants to move the head-block for another-length log he loosens this set-screw in the pinion and slides the head-block to the point desired, and runs the set-screw into another hole in the pipe.

The pinion D' is loose on the shaft F and engages with a clutch, G, that slides on a feather, *b*, Fig. 3, made fast to the shaft. The

clutch G is pressed into said pinion by a spring, *d*, and withdrawn therefrom by a lever, H, as shown, so that when the pinion is uncoupled from the clutch the shaft F can turn without rotating the pinion D'.

By this arrangement tapering lumber can be sawed, as the head-blocks in this way may be disconnected, and the one moved back or forth by the same lever used in moving both, while the other remains stationary.

On the shaft F is secured a cog or ratchet wheel, I, and a lever, J, is placed loosely on said shaft next to the wheel or straddling the wheel, and to this lever is pivoted a dog or pawl, K, to take into the wheel I, so that by working the lever the wheel and shaft will be turned and the head-blocks moved.

In the upper end of the lever J is pivoted a rod, L, having a handle at each end, and this rod rests on an adjustable pin or arm, *e*, projecting through a slot, *e'*, in the frame-work. The lever-rod L is provided with movable sets *h h*, adjustable on the rod by set-screws or otherwise, and acting as stops against the arm *e*, to limit the movement of the lever J.

By means of the movable sets *h h* the operator can set for different thickness of lumber. With these two sets on a full-sized mill all thicknesses of lumber can be sawed up to two inches. Above two inches the throws of the lever must be multiplied as may be necessary.

The third or middle set, *h'*, is for making any fraction where the other does not divide evenly. The cogs on the log-slides, the pinions, clutch, and ratchet-wheel are all to be laid out to a scale of inches regulating the above-named sets.

Any wear or lost motion can easily be taken up by these sets, and any inaccuracy in setting thus avoided.

Each head-block slide is provided with a scale, M, moving with the same in plain view of the operator, and passing a stationary pointer, N, on the head-block, so as to show the distance from the saw-line at all times.

The ratchet dog or pawl K is double acting, so that it can be used to move the shaft either way. The dog K is weighted at one end, so that that end will naturally fall down and engage with the ratchet-wheel. The lever J is provided with a sliding counter-balance, O, which, when dropped, acts upon the lighter

end of the dog, and causes the dog to tilt on its pivot, so that said lighter end will engage with the ratchet-wheel, and thus turn the shaft in the opposite direction.

P represents the log-dog, which is connected to a slide, R, movable up and down on a vertical post, S, whereby the dog may be adjusted at all times level with the log, making the holding-power more direct.

The pin or arm *e*, above described, is made adjustable—that is, working in a slot, *e'*—so that if it is desirable to have a stationary stop at the sawyer's end of the lever all wear can be taken up by this pin by simply loosening the nut *e''*, (shown in dotted lines in Fig. 4,) moving the pin *e* in the slot *e'*, and again tightening the nut *e''*. The rod L is formed with numbered or graduated notches *x'*, to facilitate the exact setting of the sets *h h*.

What I claim as new, and desire to secure by Letters Patent, is—

1. The combination, with the head-block

slide B', having rack-bar C', of the shaft F, loose pinion D', spring *d*, clutch G, feathered on the shaft, and the lever H, substantially as for the purpose herein set forth.

2. The lever-rod L, with movable sets *h h*, in combination with the setting-lever J, for the purpose herein set forth.

3. The combination of the ratchet-wheel I, lever J, weighted double-acting dog K, and sliding counter-balance O, substantially as and for the purpose herein set forth.

4. The combination of the adjustable pin *e*, having set-nut *e''*, with the frame having slot *e'*, and with the lever-rod L, and slotted set *h*, as and for the purpose set forth.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

BENJAMIN EVENS SERGEANT.

Witnesses:

R. M. SLOAN, Jr.,

CHAS. E. SHALE.