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MAR 3 1868

W. S. Reeder.

Saw Mill Head Block.

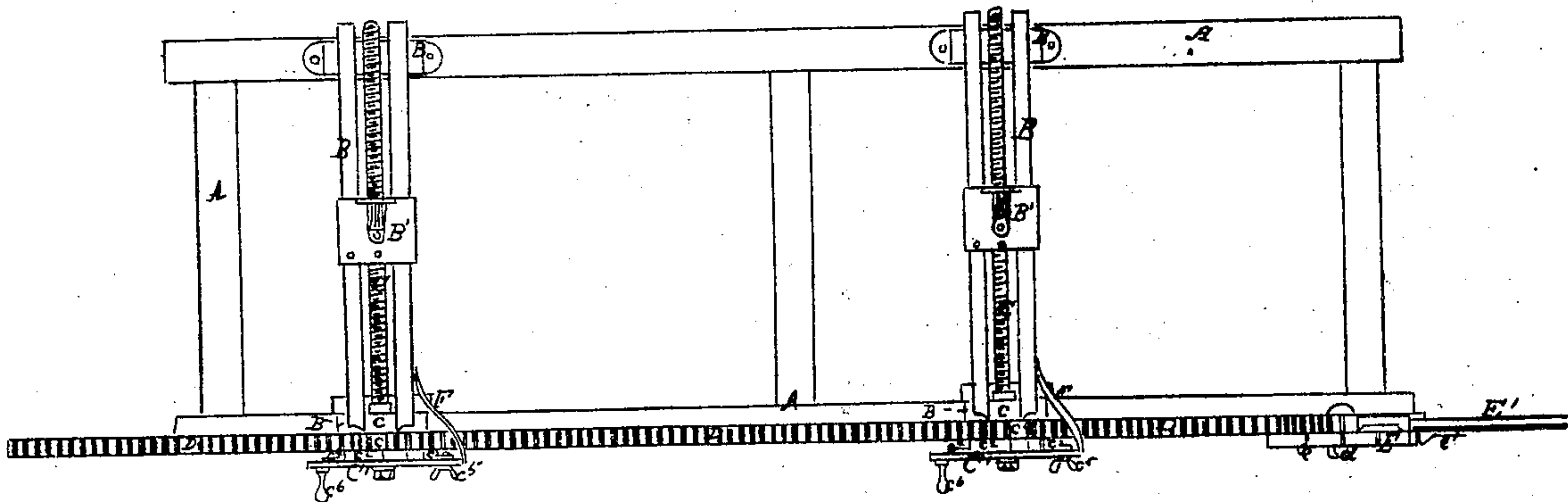


Figure 1

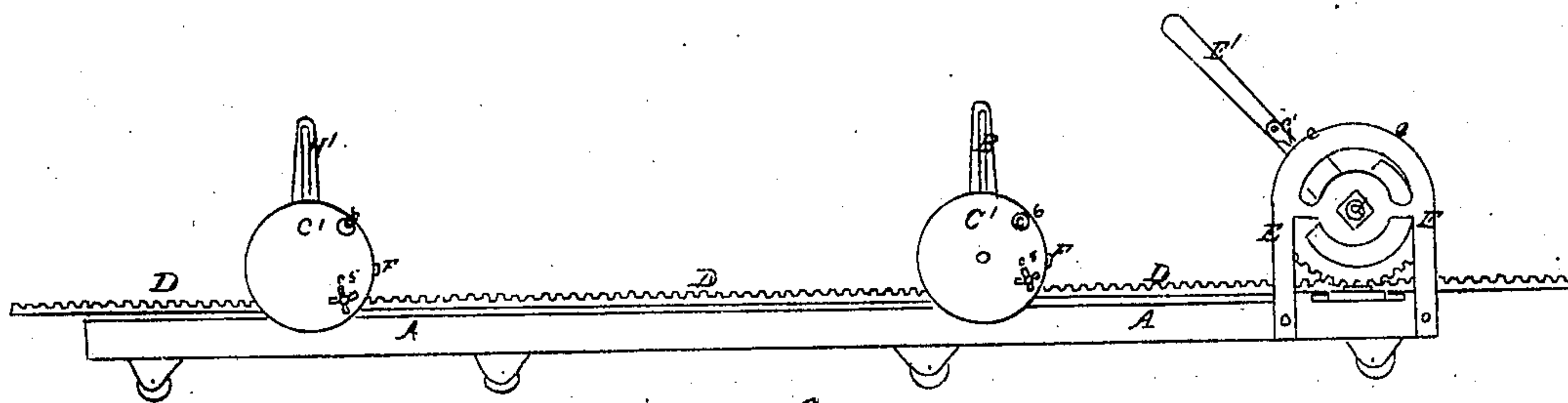


Figure 2

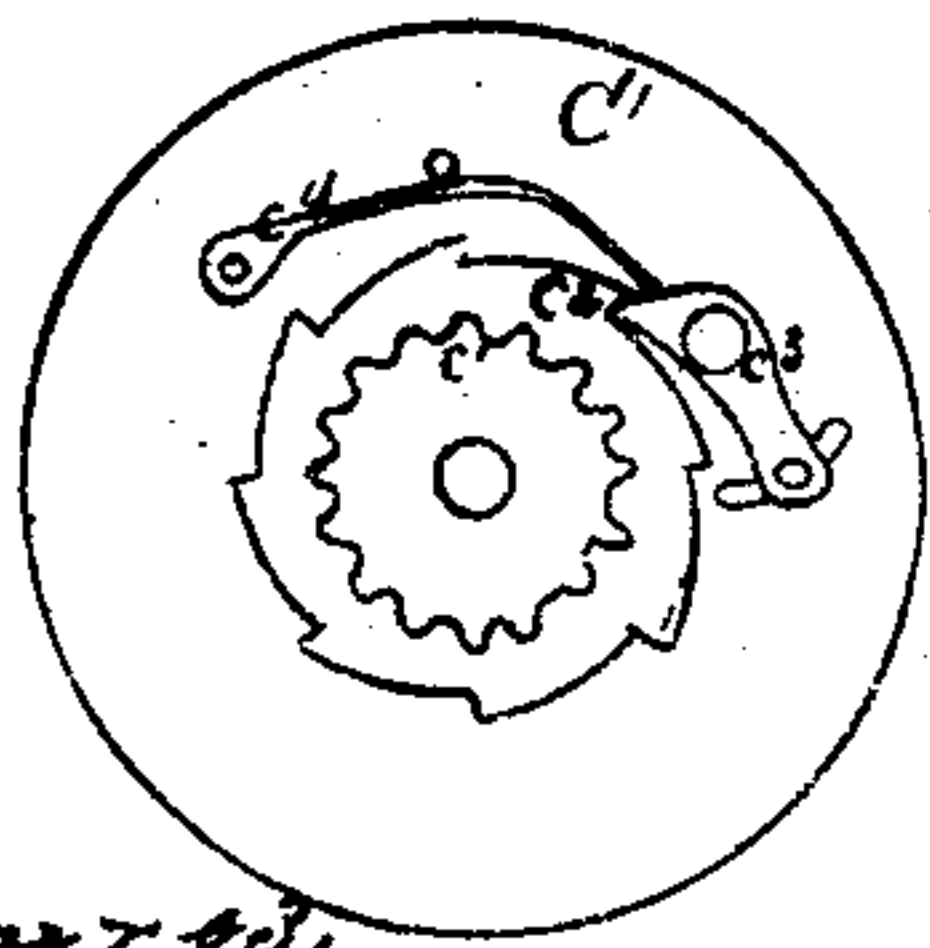


Figure 3

Witnesses:

Wm Randolph

Chas. H. Boyle

Inventor:

Wm S. Reeder

# United States Patent Office.

WILLIAM S. REEDER, OF ST. LOUIS, MISSOURI.

*Letters Patent No. 75,195, dated March 3, 1868.*

## IMPROVEMENT IN HEAD-BLOCKS FOR SAW-MILLS.

*The Schedule referred to in these Letters Patent and making part of the same.*

### TO ALL WHOM IT MAY CONCERN:

Be it known that I, WILLIAM S. REEDER, of the city and county of St. Louis, and State of Missouri, have invented a new and useful Improvement in "Saw-Mill Head-Blocks;" and I do hereby declare that the following is a full and clear description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

This invention relates, firstly, to a cogged rack, running the entire length of the carriage, and operated by a lever at one end, and, operating the feed-screws that move the log, rests on each head-block; secondly, to an arrangement of loose pinions and ratchets, which may be used to transmit motion from the cogged rack to the feed-screws; thirdly, to a peculiar construction of the pawl that operates the ratchet; and fourthly, to a spring-brake, that is intended to check the motion of the feed-apparatus when light logs are on the mill.

To enable those skilled in the art to make and use my improved "head-block," I will proceed to describe its construction and operation.

Figure 1 of the drawings is a plan of a saw-mill carriage, fitted with one of the improved head-block arrangements.

Figure 2 is a side elevation of the same, and

Figure 3 is a detail elevation of the pinion and ratchet.

A is the carriage, on which the head-blocks B are placed and secured in the usual manner. The log-rests or slides, B', are constructed and arranged upon the head-blocks in the same manner as those now in use, and are operated by the screws C, also in the customary way. The only difference in the screw C is, that the pitch of the thread should be an even inch or an even fractional part thereof, as, for instance, an inch and a quarter, or an inch and a half; but I prefer an even inch, as in that case one turn of the screw will make just an inch motion for the rest or slide B', and the fractional parts of an inch may also be set with the greatest precision, as hereinafter more fully set forth. The screws C have bearings in the head-blocks at *c*, and outside of these there are crank-wheels, C', permanently fastened to them, but in such a position as to leave the loose pinions *c*<sup>1</sup> and ratchets *c*<sup>2</sup> free play between the ends of the head-blocks and the said wheels C'. A cogged rack, D, having its bearings on one of the carriage-beams, actuates the two pinions *c*<sup>1</sup> and *c*<sup>2</sup>. These pinions, as before stated, are loose on the projecting ends of the screws, to which they impart motion through the medium of the ratchets *c*<sup>2</sup>, pawls *c*<sup>3</sup>, and the crank-wheels C'. The construction of the ratchets and their pawls, and their connection with the wheels C', are clearly shown in fig. 3. The ratchets are securely fastened to the pinions, and consequently any motion of the pinions will be imparted by it to the ratchet. The pawl is (in each case) pivoted to the wheel C', and thrown up to the ratchet by the spring *c*<sup>4</sup>. The outer end of the pawl has a short arm, passing through a slot in the wheel C', outside of which it is provided with a set-screw, *c*<sup>5</sup>. The slot is long enough to permit the back end of the pawl to be thrown down toward the ratchet far enough to disengage its other end from the teeth of the ratchet, and in this position it may be secured by setting up the set-screw *c*<sup>5</sup>, and the wheel C' may then be turned around by hand by means of the crank *c*<sup>6</sup>. This arrangement is intended to be used when the slides B' are to be run back by hand, which will usually be the preferable way, as it will be more expeditious, and it is also to be employed when it is required to set the log wider at one end than at the other.

There is a frame, E, having a segmental top, attached to the back end of the carriage, as shown clearly in fig. 2. The lever E', which operates the rack D, is pivoted to this frame at *d*. The lower end of the lever E' terminates in a segmental cogged rack, which gears into the cogged rack D. There are to be stops secured to and projecting from the inside of the frame E, so as to stop the lever E' in a horizontal position, either forward or backward, and this compels the segmental cogged rack on the lower end of the said lever to form an entire semicircle. As the lever is thrown forward it actuates the rack D, so as to bring the pawls in contact with the teeth of the ratchet, and the screws C are thereby turned over, so as to work the slides B' forward. When the lever is thrown backward the pawls will slip around on the ratchets without turning them.

The lever should always be thrown forward to the stop (already mentioned, but not shown,) on the forward part of the frame E, and as the top of the frame is graduated by marks, *e*, the distances between which are intended to indicate certain distances on the head-block, as, for instance, quarter inches, it follows that cer-



tain and rapid setting may be accomplished. A finger,  $e'$ , on the lever, points to the marks on the graduated frame E, and enables the operator to see just what he is doing. The ratchets  $e^2$  should have eight teeth or cogs, and if the screw has an inch pitch, each of these cogs will indicate an eighth of an inch on the screw.

If the marks  $e$  are made to represent quarter inches, and there be eight cogs on the ratchet, and the screw have an inch pitch, then, if the lever, being down on its forward rest, be raised up to the first mark  $e$ , and then thrown down again to its forward rest, the slides B will thereby be moved forward one quarter of an inch; or if the lever be raised up to the fourth mark  $e$ , it will in like manner move forward the slide one inch on being thrown down forward again, and so on. If it is desired to set to eighths of an inch, all that will be required to be done will be to raise up the lever from its rest until the pawl drops back one tooth on the ratchet, and then move it forward again, as before. As the teeth or cogs on the ratchets are quite long, a rapid motion of the lever may be made without danger of slipping the pawl farther than was intended.

In order to saw tapering stuff, all that it will be necessary to do will be to unship the pawl at the nearest end to the operator, and then either turn forward the farther end, as before, or turn the crank  $e^6$  of the rear one the required additional distance. There should be a spring-brake, F, secured to the side of the head block by means of set-screws, and arranged to operate against the periphery of the wheel C' when light logs are on the mill, to prevent throwing them too far.

Having described my invention, what I claim, is as follows:

1. The arrangement and combination of the lever-device E', the graduated limb E, the rack D, and the cog-wheels  $e^1$ , substantially as and for the purposes set forth.
2. The arrangement and combination of the crank-wheel C', the pawl  $e^3$ , ratchet-wheel  $e^2$ , and the application thereof to actuate the screw C to produce the feed-motion of the head-block B', as set forth.
3. The spring-brake F, to prevent small logs from being thrown over too far, when constructed substantially as set forth.

Witnesses:

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