4 Sheets--Sheet 1.

A. RODGERS,

Head-Block for Saw-Mills.

No. 161,279. Patented March 23, 1875.

Fig. 1.

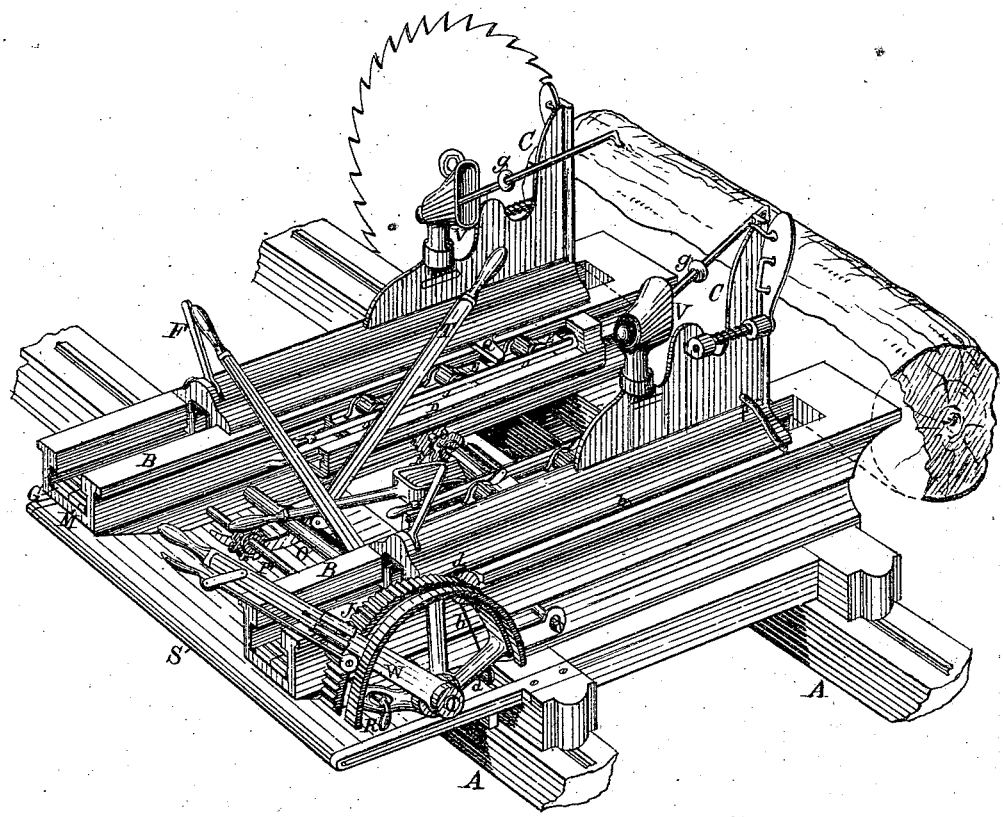
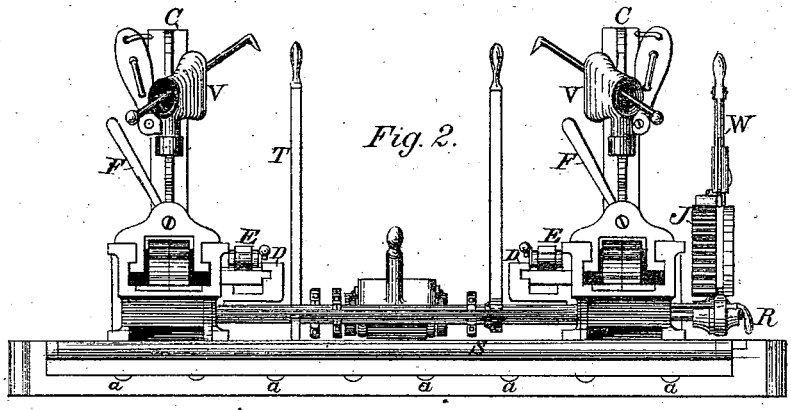


Fig. 2.



Attest:

F. H. Schott.

S. E. Harding

Inventor:

Alexander Rodgers

THE GRAPHIC CO. PHOTO-LITH. 39 & 41 PARK PLACE, N.Y.

4 Sheets--Sheet 2.

A. RODGERS.

Head-Block for Saw-Mills.

No. 161,279. Patented March 23, 1875.

Fig. 3.

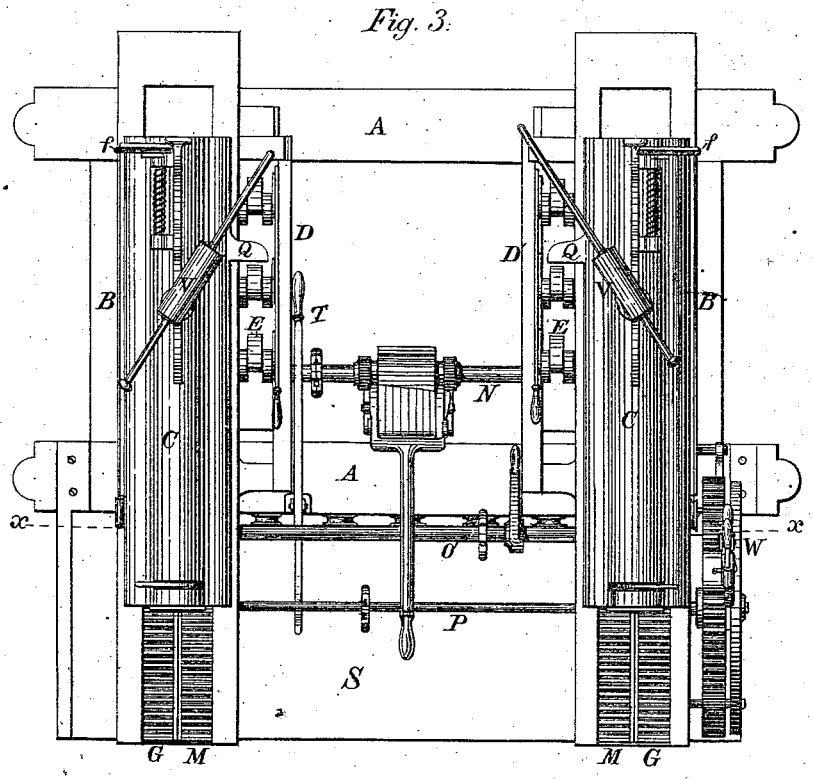
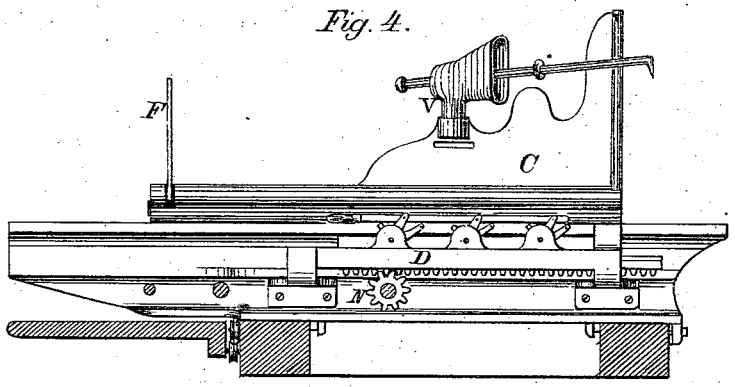


Fig. 4.



Attest:

F. H. Schott.

S. E. Harding

Inventor:

Alexander Rodgers

A. RODGERS.

Head-Block for Saw-Mills.

No. 161,279. Patented March 23, 1875.

Fig. 5.

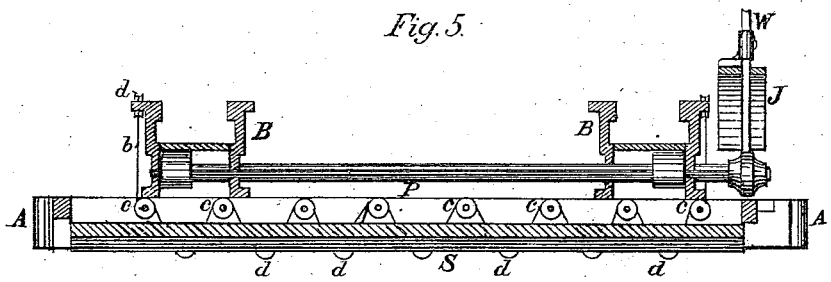


Fig. 6.

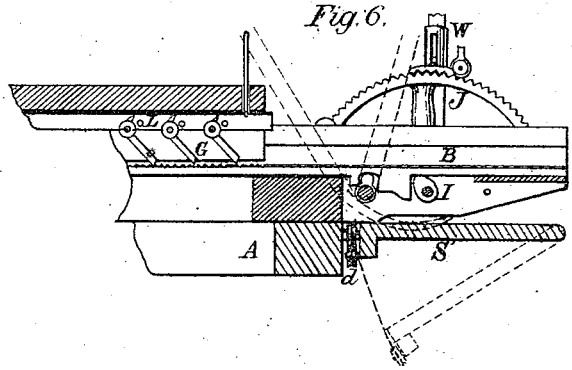


Fig. 7.

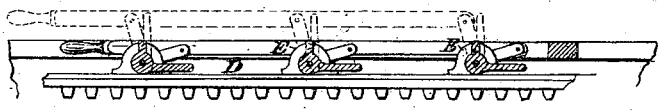
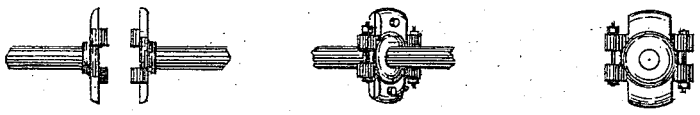


Fig. 8.



Attest:

F. H. Schott.
S. E. Harding

Inventor:

Alexander Rodgers

THE GRAPHIC CO. PHOTO-LITH. 39 & 41 PARK PLACE, N.Y.

4 Sheets--Sheet 4.

A. RODGERS.

Head-Block for Saw-Mills.

No. 161,279. Patented March 23, 1875.

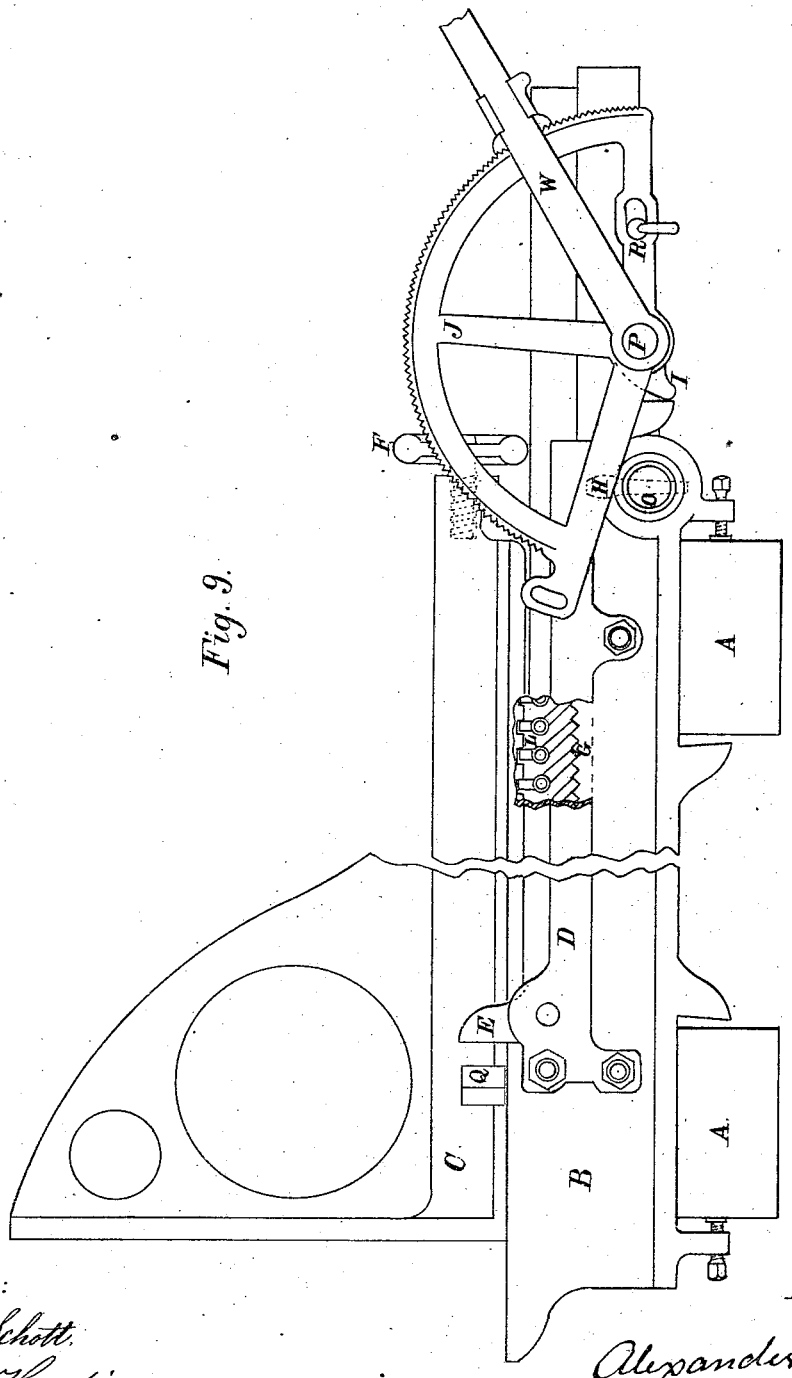


Fig. 9.

Attest:
F. H. Schott.
S. E. Harding

Inventor:
Alexander Rodgers

UNITED STATES PATENT OFFICE.

ALEXANDER RODGERS, OF MUSKEGON, MICHIGAN.

IMPROVEMENT IN HEAD-BLOCKS FOR SAW-MILLS.

Specification forming part of Letters Patent No. **161,279**, dated March 23, 1875; application filed December 31, 1874.

To all whom it may concern:

Be it known that I, ALEXANDER RODGERS, of the city of Muskegon, in the county of Muskegon and State of Michigan, have invented certain new and useful Improvements in Carriages and Head-Blocks for Saw-Mills; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to the devices used in giving to the setting-jack of the head-block of a circular-saw-mill carriage the desired forward movement required for setting the log toward the saw the proper distance for cutting off a board or other piece of lumber, so that the same shall be exact and true from end to end, as well as of equal thickness. I also provide a means for the retraction of the setting-jacks after they have moved the log forward and it has been wholly cut into lumber, the whole being an improvement upon the saw-mill head-block for which Letters Patent No. 139,264 were granted to me upon the 3d day of May, 1873; and the invention consists in the construction and arrangement of the several parts of the device, as will be hereinafter fully described, and then pointed out in the claims.

Figure 1 is a perspective view of a pair of the head-blocks in use. Fig. 2 presents a view of the back side of the carriage and rear of the blocks. Fig. 3 presents a plan of the block with the additional improvements. Fig. 4 is a side view of the same, partly in section. Fig. 5 is a longitudinal section on the line *x x* of Fig. 3. Figs. 6 and 7 are views in detail of different parts of the device. Fig. 8 represents enlarged views of the adjustable couplings. Fig. 9 shows a modification, partly in section, of one of the head-blocks.

A represents the carriage, generally constructed of wood, but may be of iron, if preferred. B shows the principal part of the head-block which carries the log, as well as the operating mechanism, and is itself supported upon the carriage and adjusted thereon by set-screws passing through lugs which project from its lower side, and bearing against the sides of the carriage. C is the setting-jack, sliding in a longitudinal groove in the upper side of the head-block. This jack is provided upon its under side with a series of pawls which, falling into the reciprocating setting-rack G, cause the jack, when the setting-rack receives a reciprocating movement, to move forward upon the head-block, pushing the log before it. When it is necessary to retract the setting-jack it is accomplished by turning a hand-wheel or the lever F, which causes the disconnecting-rack L to raise the pawls, so that the jack may be readily moved backward by a rack-and-pinion or any other convenient means, but I prefer to do it by the mechanism herein shown, consisting of the hinged platform S, attached to the rear of the carriage by a pivoted connection, and forming a stand upon which the operator of the head-blocks rides back and forth, this platform being provided with the series of sheaves *a*, attached to its front side, around which passes the cord or wire-rope *b*, in its course passing over the series of sheaves *c* secured to the side rail of the carriage, and thence over the sheaves *d* upon the head-blocks to the arms *f*, projecting therefrom, and to which it is secured. It will be seen that the weight of the platform and operator, assisted by the lever T, if necessary, will, when the pawls are raised from the rack G, cause the setting-jacks to run backward the whole length of the head-block, or until arrested by one of the stops E—a movement the whole length of the head-block, causing a fall of only a few inches in the front edge of the platform, not sufficient to cause any inconvenience to the operator.

In order to prevent the jack from slipping backward while moving the log forward, a stationary rack, M, is secured to the head-block, and into which the pawls upon the setting-jack act, so as to prevent any retrograde movement thereof.

Upon the side of the head-block B is secured a supplementary rack or piece, D, which is provided upon its under side with teeth, which mesh with the teeth upon a pinion secured upon the shaft N. This rack is pro-

vided with a series of stops, E, formed by a dog oscillating upon a pivot in such a manner that, when turned down, a projection, Q, upon the setting-jack passes over without touching; but when either of them is turned up it strikes against the projection Q and carries the setting-jack along with it. This arrangement being the same upon both head-blocks of the carriage, and the shaft N extending from one to the other, it is evident that when required for cutting coarse lumber, this affords a more speedy means of setting forward the log than would be furnished by any arrangement of pawl-and-rack mechanism, and is at the same time sufficiently accurate for practical purposes in sawing this class of lumber, but will not answer for the finer qualities, such as flooring-boards, siding, &c.

Projecting through one side of the head-block B near its rear end is a shaft, P, upon which a cam, I, oscillates. This cam is operated by a hand-lever, W, provided with a sliding pawl or stop, which secures it at any desired point upon the periphery of the toothed arc J, which is adjustably secured to the head-block.

It will be seen that this cam I controls the movement of the reciprocating rack G, and through it that of the setting-jack.

An eccentric, R, is so placed as to vary the position of the toothed arc, in order to compensate for the variation in thickness of the saws or difference in set of their teeth.

The setting-racks G are operated by an epicycloidal-shaped tooth, H, which is inserted in a mortise in the oscillating shaft O, and acts upon downwardly-projecting lugs, forming a part of the rack.

Rising from the setting-jacks C are the posts V oscillating on a suitable pivot and provided with a spring, for the purpose of keeping them in one position with relation to the setting-jack, except when forcibly removed or swung from that position, and having large orifices in their upper ends, through which pass the dogs. These dogs are formed of a straight bar, on one end of which is the hook for driving into the log, and on the other a globular head, the orifice through which it passes in the post being so large as to allow perfect freedom of motion; but they are prevented from being thrown out of place by rubber washers or rings *g*, forming cushions, which are slipped upon them, and placed in such position as may be found best in actual use.

The shafts N and O are formed in two or more pieces, connected to each other by couplings, shown upon an enlarged scale in Fig. 8.

These couplings are each formed in two parts, connected by adjusting-bolts, which enables the pinions or other operating devices upon them to be readily adjusted in line with each other.

These devices form a ready means of adjustment for all the different kinds of lumber cut upon a circular-saw mill, and at the same time are so simple in construction as to be readily understood by the operatives employed in working them, cutting the lumber with such accuracy as to cause it to bring a higher price than lumber sawed in mills of ordinary construction.

Having thus described my invention, I claim as new, and desire to secure by Letters Patent, the following:

1. The supplementary rack D, in combination with the head-block B, as specified.

2. The stops E upon the rack D, in combination with the stop Q upon the head-block B, as set forth.

3. The disengaging-rack L, in combination with the setting-jack C and adjusting-lever F, as and for the purpose specified.

4. The reciprocating rack G, in combination with the setting-shaft O, provided with the tooth H, as and for the purpose set forth.

5. The cam I, operated by the hand-lever, as set forth, in combination with the toothed arc J and setting-rack G, as specified.

6. The platform S, in combination with the devices for retracting the setting-jacks, substantially as set forth.

7. The platform S, in combination with the carriage and head-blocks of a circular-saw mill, giving a suitable position for the operator of the head-blocks, as set forth.

8. The dogs provided with the rubber cushions *g*, in combination with the oscillating spring-posts V and setting-jacks, as specified.

9. The setting-shafts N and O, provided with the adjustable couplings, as herein described, for the purpose of regulating the relative positions of their pinions or other operating devices, substantially as set forth.

In testimony that I claim the foregoing as my own I hereunto affix my signature in presence of two witnesses.

ALEXANDER RODGERS.

Witnesses:

ANDREW R. BROWN,

M. K. CHANDLER.