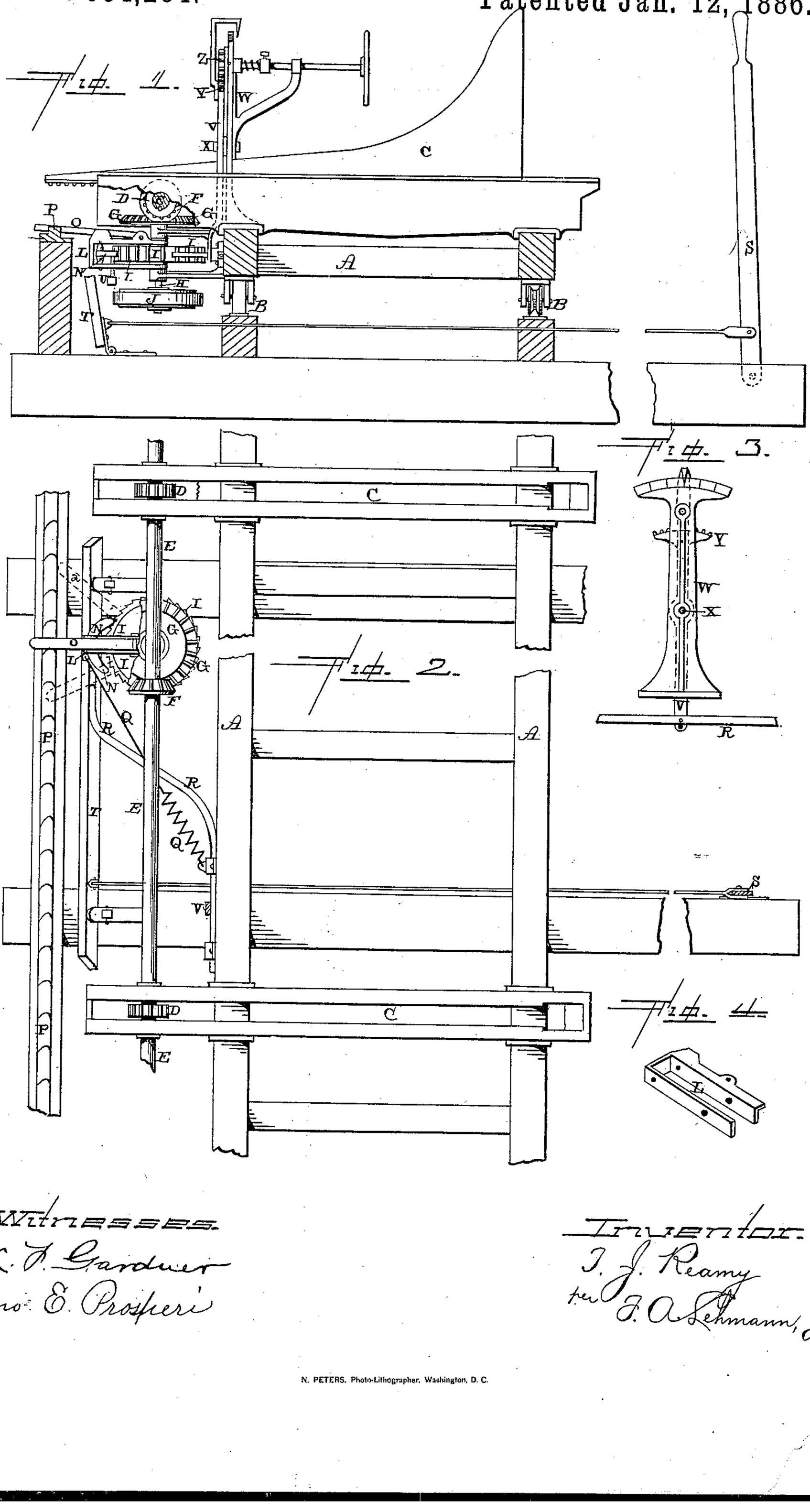
(No Model.)

T. J. REAMY.

HEAD BLOCK FOR SAW MILLS.

No. 334,284. Patented Jan. 12, 1886.



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UNITED STATES PATENT OFFICE.

THOMAS J. REAMY, OF NASHVILLE, TENNESSEE.

HEAD-BLOCK FOR SAW-MILLS.

SPECIFICATION forming part of Letters Patent No. 334,284, dated January 12, 1886.

Application filed August 18, 1885. Serial No. 174,696. (No model.)

To all whom it may concern:

Be it known that I, THOMAS J. REAMY, of Nashville, in the county of Davidson and State of Tennessee, have invented certain new and useful Improvements in Head-Blocks for Saw-Mills; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to an improvement in head-blocks for saw-mills; and it consists in, first, the combination, with the carriage, of a stationary rack-bar and a pivoted lever, which is made to connect with rack-bar at its outer end, and with an adjusting mechanism at its inner end for regulating the distance the knees shall be moved for regulating the thickness that the lumber is to be cut; second, the combination of the stationary rack-bar, a pivoted lever which engages with the rack-bar and regulates the thickness of the lumber that is to be cut, with an adjustable stop or cam for regulating the distance that the lever shall be moved, and thereby automatically regulate the forward movement of the knee; third, the combination of a friction-wheel connected to a mechanism which moves the knees, a movable board or surface which is made to operate this friction-wheel, and a dog connected indirectly with the lever, whereby the regulating mechanism can be reversed and the knees made to move backward; fourth, in the arrangement and combination of parts, which will be more fully described hereinafter.

The object of my invention is to use a stationary rack-bar in contradistinction to a movable one, and to have the carriage carry the lever which moves the adjusting mechanism for the knees back and forth with it over this rack-bar, and to limit the movement of the lever, so as to automatically regulate the thickness of the lumber that is to be cut.

Figure 1 is a side elevation of a head-block embodying my invention. Fig. 2 is a plan view of the same. Fig. 3 is a detail view of the setting mechanism. Fig. 4 is a perspective of the casting which carries the dog.

A represents the head-block, which is made to move back and forth upon the rack B, in the usual manner, and C the knees, which are provided with teeth for the purpose of meshing with the pinions D on the shaft E, in the usual manner. The movement of the shaft causes the pinion to revolve, and thus the knees are made to move back and forth in either direction at the will of the operator. Secured to this shaft E is a beveled pinion, F, which meshes with the horizontal beveled gear G, which is supported in a suitable frame-work which is bolted to the timber of the carriage. Connected to this beveled gear G is a vertical shaft, H, upon which the ratchet-wheel I is secured. Upon the lower end of this shaft is also placed a friction-wheel, J. Suspended from this shaft H is the horizontal metallic frame L, which carries the pivoted dog N, and which frame L has a free pivoted movement around the shaft, so as to carry the dog back and forth. This dog N engages with the ratchet-wheel, and when the carriage moves forward the frame carrying the dog causes the ratchet-wheel to partially revolve, and thus cause the vertical shaft H and the beveled gear upon its upper end to partially revolve the shaft E. Pivoted upon the top of this pivoted frame L is the lever O, which has its outer end to engage with the rack-bar P, which bar is here made stationary in contradistinction to the usual movable one. This lever O is made to catch between flanges formed on the edges of the frame L, and thus cause the frame to move with it in either direction. The teeth of the rack-bar P are beveled in one direction, so that the outer free end of the lever can slip freely over them when the carriage is moving backward; but when the carriage begins to move forward, the outer end of this lever catches behind one of the teeth, and then as the carriage continues its motion this lever O and frame L are made to partially revolve on the shaft H, for the purpose of causing the dog N to force the ratchet-wheel partially around, and thus move the knees forward. When the carriage moves backward, the spring Q, which is connected to the lever, draws the lever backward until it strikes against the end of the adjustable stop or cam R.

As here shown, a bent rod is used as a stop, and this rod is adjustable back and forth

through the keepers in which it is held; but a cam may be used instead of this rod, if so desired. By moving this stop R forward or backward the distance the lever shall be drawn backward by the spring is regulated at will. By lessening the distance the lever shall be moved backward the distance the frame L shall move the dog N is correspondingly lessened, and the greater the distance the stop is drawn backward the greater will be the distance that the lever will be made to move the frame L and dog N. The distance this lever is moved by the carriage regulates the distance that the knees are moved and the thickness of the lumber that is to be cut.

When the lever catches behind one of the teeth of the rack-bar, the carriage moves on forward until the lever is moved into the position *a*, (shown in dotted lines,) and then the end of the lever slips off the rack-bar and its end drops down along the side of the rack-bar and remains in that position until the carriage has made its movement forward, when the lever slips up over the round end of the rack-bar, and then is drawn back into position again by the spring.

When it is desired to move the knees backward, the operator moves the lever S, and through it the board or surface T, which is pivoted upon the sills, and which board T, as it is moved forward, first strikes a hanger, U, connected with the dog N, so as to throw the dog out of contact with the ratchet-wheel, and then the board comes in contact with the friction-wheel J. The movement of the carriage causes the friction-wheel J to revolve while it is in contact with the board T, and then the shaft E is made to move the knees back to receive a fresh piece of lumber.

For the purpose of regulating the throw of the lever and regulating the thickness of the lumber which is to be cut, there is secured to the stop R a vertical lever, V, which is pivoted in the frame or upright W at the point X. The upper end of this lever has a pointer secured to it, and this pointer moves back and forth over the upper end of the frame or upright W, which has a suitable gage marked upon or secured to it; also, secured to this lever is a toothed segment, Y, with which engages the pinion Z, which is secured to the inner end of the operating-shaft. By turning this operating-shaft the pinion is made to move the lever, and this lever in turn moves the stop, which regulates the distance that the spring shall draw the lever backward. By this construction the operator gages the thickness of the lumber when the carriage is first set in operation, and then there is no need to again touch any of the mechanism until it is desired to saw the lumber of a different thickness, as the knees are automatically moved forward the desired distance by the movement of the carriage.

Having thus described my invention, I claim—

1. In a head-block for saw-mills, the combination of the stationary rack-bar placed to the rear of the carriage, a vertical shaft journaled in the carriage and having a mechanism connected to its upper end for moving the knees, a frame pivoted on said vertical shaft and carrying a dog to engage with a ratchet-wheel rigid on said shaft, and a lever pivoted on said pivoted frame to engage with the said stationary rack-bar for the purpose of moving the knees, substantially as shown.

2. The combination of the pivoted lever, which is connected to the setting mechanism and carried back and forth by the carriage, a pivoted frame which is supported upon the vertical shaft and which carries and is moved by the said lever, a dog which is pivoted in the frame, the ratchet-wheel which is placed upon the vertical shaft and with which the dog engages, a mechanism connected to the upper end of the vertical shaft for moving the knees, and a rack-bar which is placed to the rear of the carriage, substantially as set forth.

3. The combination of the vertical shaft, a mechanism connected to its upper end for moving the knees to regulate the thickness of lumber being sawed, a friction-wheel which is secured to the lower end of the shaft, and a movable bolt or surface, T, which is attached to a permanent support and which is operated by a hand-lever so as to be thrown in and out of contact with the friction-wheel, substantially as specified.

4. The combination of the mechanism for moving the knees, the vertical shaft carrying the bevel-gear G upon its upper end, a horizontal swinging frame pivoted upon the shaft and carrying a dog provided with a projection, a ratchet-wheel secured to the shaft and with which the dog engages, the friction-wheel which is secured to the lower end of the vertical shaft, the bolt T, pivoted upon a suitable support, and an operating-lever for moving the bolt, whereby the bolt, as it is moved toward the friction-wheel, is made first to move the dog out of contact with the ratchet-wheel and then operate the friction-wheel, substantially as shown and described.

5. The combination of the vertical shaft having a mechanism connected to its upper end for moving the knees, the swinging frame which is pivoted upon this shaft, the lever which is pivoted upon the top of the frame and which moves the frame horizontally around the shaft, the dog pivoted in the frame for engaging with the ratchet-wheel which is secured to the vertical shaft, a spring connected to the lever and which draws both the lever and the frame backward when they are left free to move, and a suitable stop carried by the carriage for regulating the distance the lever shall be moved backward, substantially as set forth.

6. The combination of the pivoted lever and the horizontal pivoted frame placed upon the vertical shaft H, the frame carrying a dog for

engaging with the ratchet-wheel upon the vertical shaft, the stationary rack-bar with which the lever engages, and a spring for drawing the lever backward when it is left free to move, substantially as specified.

7. The combination of the adjustable stop which is carried back and forth by the carriage, a pivoted lever which has a horizontal movement around the vertical shaft, a frame which is pivoted upon the vertical shaft and which carries said lever, a spring for moving the lever and frame backward, and a setting mechanism connected with the upper end of the vertical shaft for regulating the thickness of the lumber to be sawed, and an adjusting mechanism, substantially as shown, which is connected to the stop for regulating its movement, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

THOMAS J. REAMY.

Witnesses:

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