(No Model.) 2 Sheets—Sheet 1.

W. H. APPLEMAN.

SAW MILL SET WORKS.

No. 306,312. Patented Oct. 7, 1884.

Fig. 1.

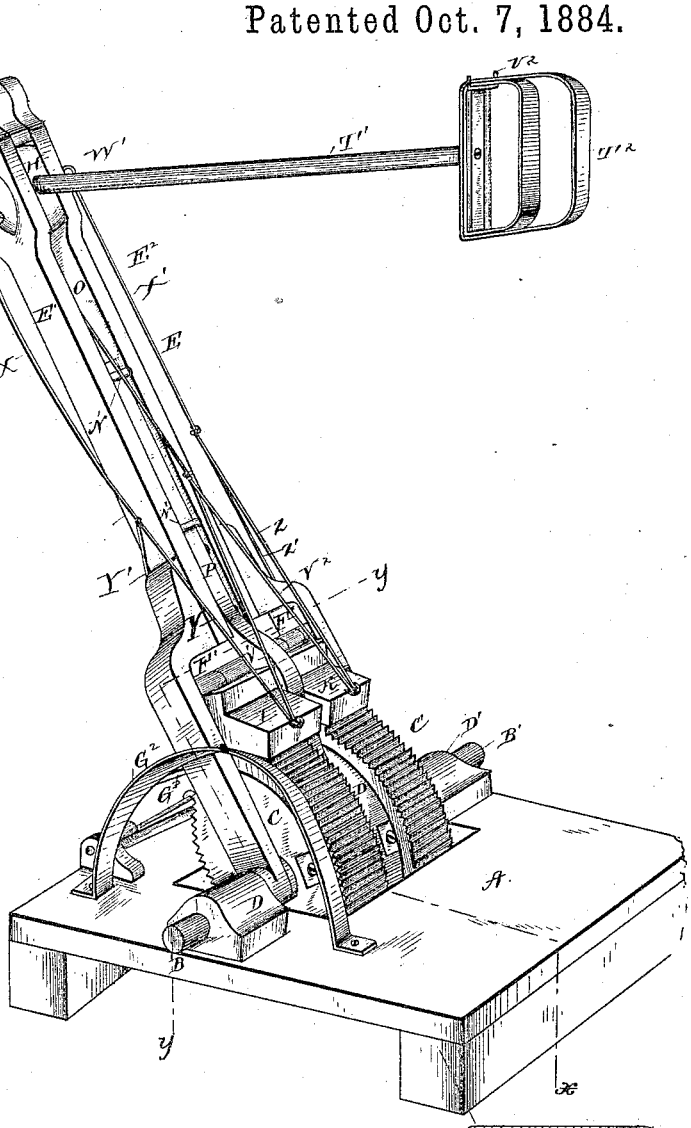
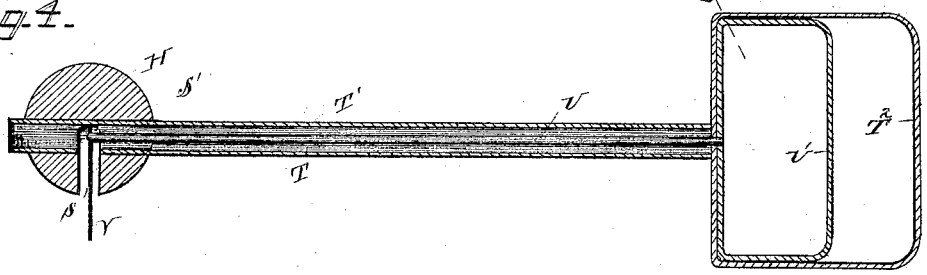


Fig. 4.



WITNESSES
C. W. Dashiell.
W. L. Harris

Wm. H. Appleman
INVENTOR
by C. A. Snow & Co.
Attorneys

(No Model.) 2 Sheets—Sheet 2.

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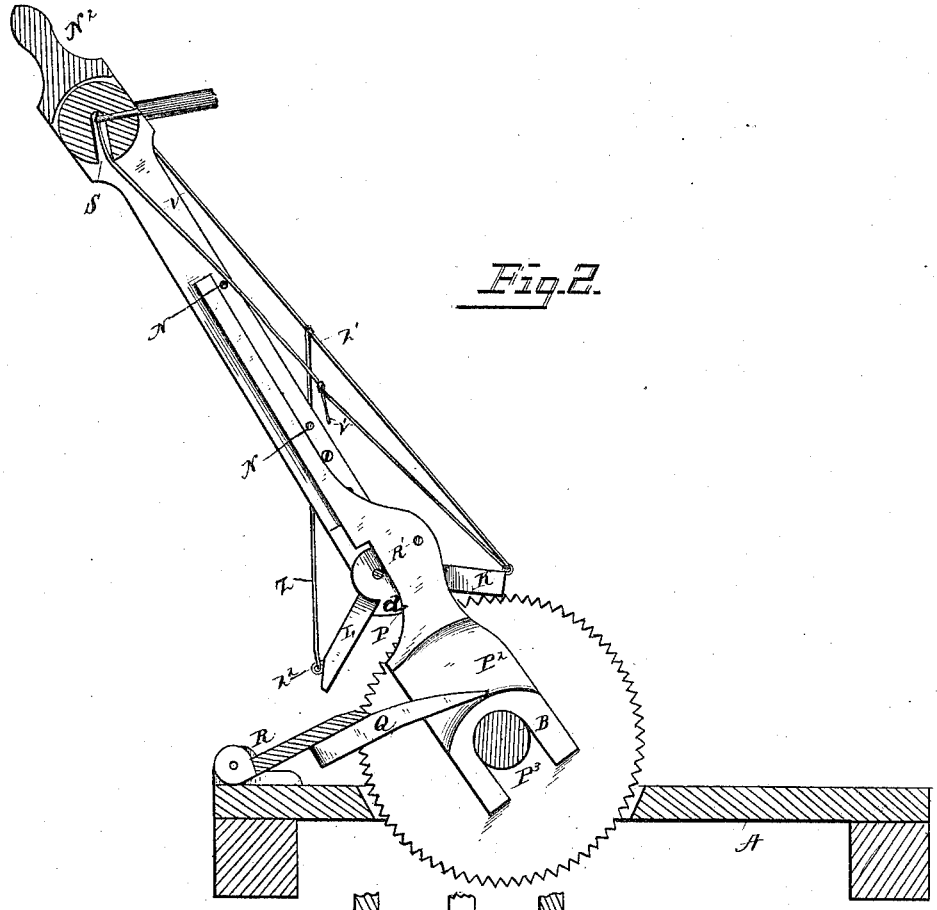

Fig. 2.

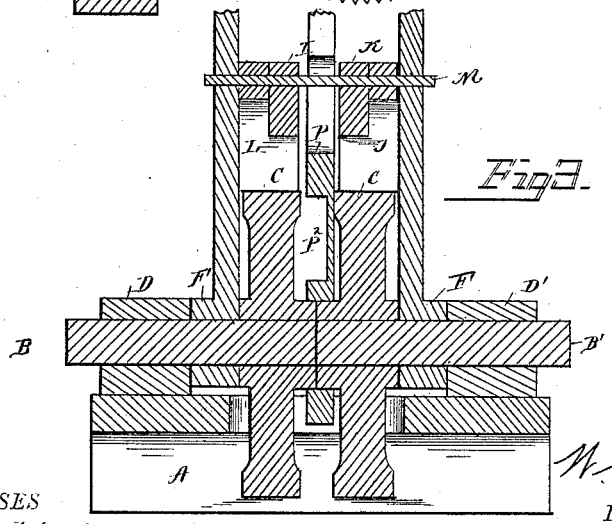

Fig 3.

WITNESSES
C. W. Dashiell.
W. L. Harris

W. H. Appleman
INVENTOR
by C. A. Snow & Co
Attorneys

UNITED STATES PATENT OFFICE.

WILLIAM H. APPLEMAN, OF DANVILLE, PENNSYLVANIA.

SAW-MILL SET-WORKS.

SPECIFICATION forming part of Letters Patent No. 306,312, dated October 7, 1884.

Application filed May 15, 1884. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. APPLEMAN, a citizen of the United States, residing at Danville, in the county of Montour and State of Pennsylvania, have invented a new and useful Set-Works for the Head-Blocks of Saw-Mill Carriages, of which the following is a specification, reference being had to the accompanying drawings.

This invention has relation to set-works for moving the standards of head-blocks on saw-mill carriages to move the log up to or away from the saw; and it consists in the construction and novel arrangement of parts, as will be hereinafter fully described, and particularly pointed out in the claims.

Figure 1 is a view in perspective of my improved setting devices and so much of the carriage as is necessary to illustrate the application of the invention thereto. Fig. 2 is a vertical section through the machine on the line *x x* in Fig. 1. Fig. 3 is a horizontal section on the line *y y* in Fig. 1. Fig. 4 is a transverse section through the axial line of the shafts that operate the head-blocks.

Referring by letter to the accompanying drawings, A designates a portion of the platform of the saw-mill carriage, and B B′ designate the shafts that connect with and move the standards of the head-blocks of the saw-mill carriage. These shafts B B′ are provided near their inner ends with ratchet-wheels C and C′, one on each shaft, a small space, D, being left between them.

D′ D′ are the boxes that form the inner bearings for the shafts B B′.

E designates the lever for operating the ratchet-wheels C C′. It consists of two arms, E′ E², made exactly alike, having eyes or fulcrum-openings F at their lower ends to receive the shafts B B′, rectangular bends F′ a short distance above the openings F, and openings G near their upper ends for the hollow oscillating ball H. These arms E′ E² are placed upon the shafts B B′ on opposite sides of the ratchet-wheels C C′, and between the ratchet-wheels and the boxes D′ D′, their bends projecting in opposite directions to form the space for the pivoted separable pawls I J K L, all on the same shaft, M, having its bearings in the arms E′ E² over the ratchet-wheels C C′. The arms E′ E² are connected by transverse rods N, passed through sleeves N′, interposed between said arms, as shown, and a plate, N², is interposed between the arms at their upper ends, so that a space, O, is left between the arms above the space for the pivoted separable pawls. In this space O, and extending down between the ratchet-wheels C C′ and over the ends of the shafts B B′, is a lifter-bar, P, provided with a notch or recess, P′, to avoid the shaft M, a recess, P², in one face to receive the curved arm Q, extending between the ratchet-wheels C C′ from the under face of the pivoted locking-detent R, pivoted to the platform in rear of the ratchet-wheels C C′, and a curved recess, P³, in its lower end to fit over the ends of the shafts B B′. This lifter-bar P is also provided with a cross-pin, R′, which rests upon the shoulders of the pivoted pawls I K. The oscillating ball H, seated in the opening G G in the upper end of the lever E, is provided with a transverse groove or notch, S, and a longitudinal perforation, S′, which is aligned with the bore T of the hollow handle or gas-tubing T′, which is connected to the oscillating ball H. This gas-tubing T′ is provided with a handle, T², which has an opening at its connection with the gas-tube, and through this opening and through the tube T′ is passed a rod, U, provided with a smaller handle, U′, within the handle T², and connected thereto by guides U², so as to slide back and forth therein. The other end of the rod U is connected by a chain, V, passing through the perforation in the oscillating ball H and down between the arms E′ E² of the lever E, to two short chains, V′ V², the former connecting with the pivoted pawl I and the latter with the pivoted pawl K, through eyes projecting from their lower ends. The sides of the oscillating ball H, above the ends of the notch S, are provided with eyes W W′. To these eyes W W′ are connected the upper ends of chains X X′. The lower end of the chain X connects with the upper ends of two chains, Y Y′, the chain Y leading to the eye on the pivoted pawl I, and the chain Y′ leading to an eye on the upper face of the pivoted pawl J, projecting in the rear of the lever over the ratchet-wheel C at the left side of the lifter-bar. The chain X′ connects with the upper end of two chains, Z Z′, one of which, Z, connects with the eye projecting from the

pivoted pawl K, and the other one, Z′, connects with an eye, Z^2, on the upper face of the pivoted pawl L. A curved guard, G^2, provided with stops G^3, is located at one side of the lever and secured to the platform, and is designed to limit the swing of the lever when operated. The gas-tube is long enough to extend over the log and bring the handles in easy reach of the sawyer in his position at the front of the saw. By this construction I am enabled to operate both ratchet-wheels forward at the same time, backward at the same time, or independently backward or forward to operate the head-blocks forward or backward, and thereby move the log to or away from the saw, as may be desired. When the handle T^2 is in a vertical position, and the handle U′ is pushed forward against the rear end of the handle T^2—*i. e.*, toward the lever E—the locking-detent R is in engagement with both of the ratchet-wheels C and C′ and prevents their backward movement, while both of the pivoted pawls I K will engage both of the ratchet-wheels C and C′, and a pull on the handle T^2 will turn the ratchet-wheels C and C′ forward, and will move both head-blocks forward. Permitting the handle T^2 to remain in the vertical position and pulling the handle U′ forward or away from the lever E will lift the pawls I and K, and they, through their shoulders *a a* on their rear faces, control the pivoted pawls J L and depress them, causing them to engage the ratchet-wheels C and C′. If the lever E be now worked through its handles, the ratchet-wheels will be turned backward at the same time. Assuming the handles T^2 and U′ to be in the position first described, turning it to the right will turn the oscillating ball H to the right and operate the chain X and Y Y′ to lift the pivoted pawls I J from the ratchet-wheel C, so that the ratchet-wheel C′ may be rotated forward independently of the ratchet-wheel C to move one end of the log independently of the other. By turning the handles to the left, the pawls K L will be lifted from the ratchet-wheel C′, and the ratchet-wheel C may then be operated forward independently of the ratchet-wheel C′. While the handles are in the position last described, by pulling the handle U′ forward, the locking-detent R and pawls I K L are raised and the pawl J depressed, and the ratchet-wheel C will then be rotated backward. By turning the handles from this position to the right of a vertical position, the detent R and pawls I J K will be lifted and the pawl L will be depressed, and the ratchet-wheel C′ may then be rotated independently backward. The head-blocks are therefore under the control of the sawyer at the front of the saw, and the services of one man behind the carriage to set the head-blocks up are entirely dispensed with.

I obtain a reverse motion of the ratchet-wheels, together or independently, without turning the pawls over, as in the old style of ratchet-levers.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. The combination, with the double lever E, having the seat G G near its upper end, fulcrumed to the shafts B B′, provided with ratchet-wheels C C′, of the locking-detent R, provided with the curved arm Q, the pivoted separable pawls I J K L, the notched and recessed lifter-bar P, provided with the cross-pin R′, the grooved and perforated oscillating ball H, having eyes W W′, the tube T′, provided with the handle T^2, the rod U, having handle U′, and the chains connecting the rod U and ball H with the pivoted separable pawls, substantially as specified.

2. The combination, with the lever E and the ball H seated therein, of the tube T′, having handles T^2, and the rod U, having handle U′ and guides connecting it with handle T^2, and mechanism, substantially as described, for operating the ratchet-wheels C C′, substantially as specified.

3. The combination, with the ratchet-wheels and swinging lever E upon the shafts B B′, of the locking-detent R, provided with the curved arm Q, the lifter-bar P, having the recess P^2 in its face and the cross-pin R′ near its forward edge, and mechanism, substantially as described, for operating the lifter-bar, substantially as specified.

4. The combination of the arms E′ E^3, having the fulcrum-openings F at their lower ends and the angular bends F″ above them and openings G G near their upper ends, and the transverse rods N, sleeves N′, and plate N^2, and the pivoted pawls I J K L on the shaft M, and mechanism, substantially as described, for operating the pawls in connection with the ratchet-wheels C C′, substantially as specified.

5. The combination, with the lever, ratchet-wheels, locking-detent, pivoted pawls, grooved and perforated oscillating ball seated in the opening G in the lever E, near the upper end of the same, and the handles, rod, and tube, substantially as described, of the chains V V′ V^2, connecting the rod U with the eyes on the pawls I K, and the chains X Y Y′, connecting the ball H to the pawls I J, and the chains X′ Z Z′, connecting the ball H with the pawls K L, substantially as specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

WILLIAM H. APPLEMAN.

Witnesses:
L. E. HAMLIN,
JO. S. DAY.