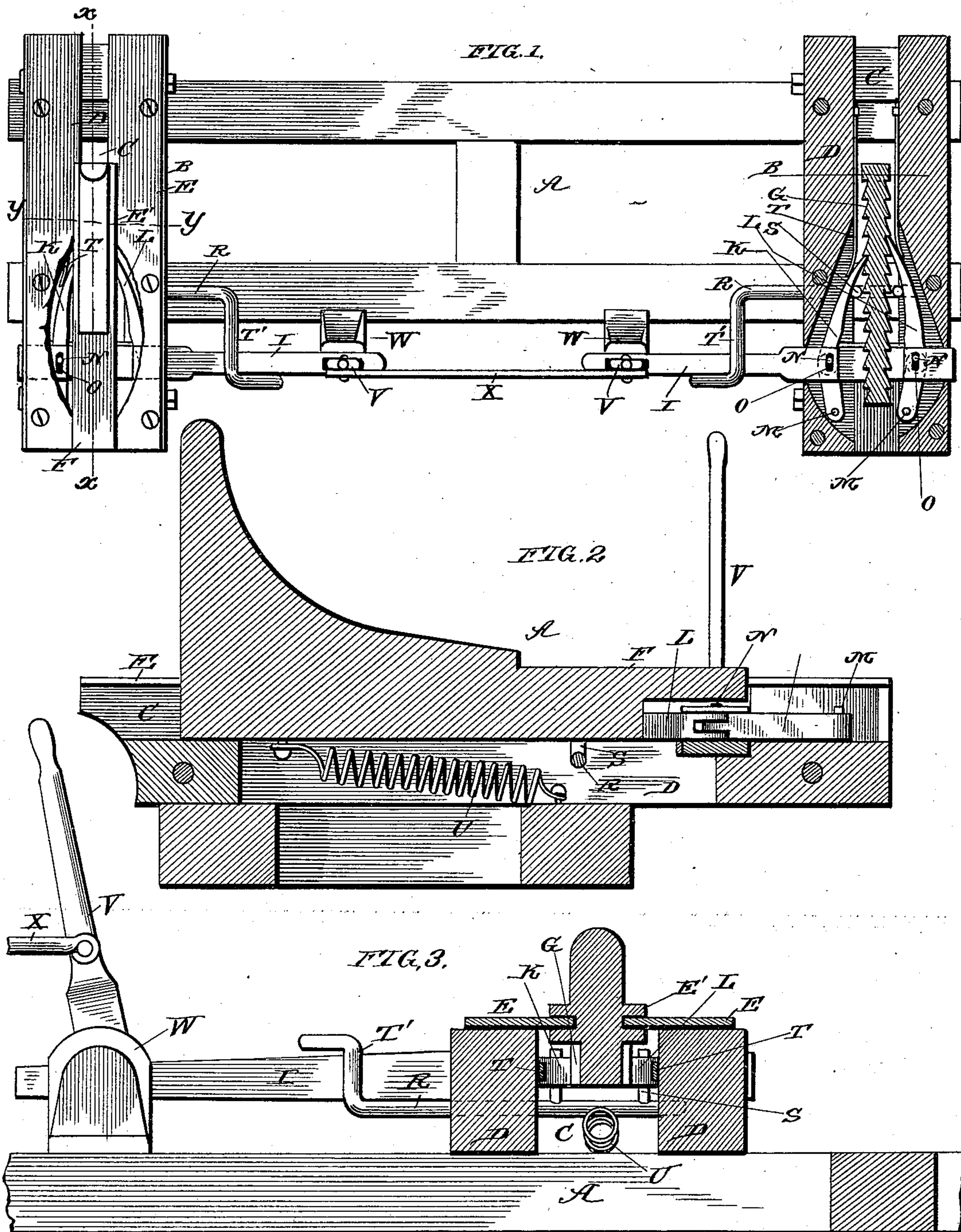


(No Model.)

W. B. WILLET.
SET WORKS FOR SAW MILLS.

No. 374,511.

Patented Dec. 6, 1887.



Witnesses

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WARREN B. WILLET, OF PLYMOUTH, NORTH CAROLINA.

SET-WORKS FOR SAW-MILLS.

SPECIFICATION forming part of Letters Patent No. 374,511, dated December 6, 1887.

Application filed February 28, 1887. Serial No. 229,210. (No model.)

To all whom it may concern:

Be it known that I, WARREN B. WILLET, a citizen of the United States, residing at Plymouth, in the county of Washington and State of North Carolina, have invented a new and useful Improvement in Set - Works for Saw-Mills, of which the following is a specification.

My invention relates to an improvement in set-works for saw-mills; and it consists in the peculiar construction and combination of devices, that will be more fully set forth hereinafter, and particularly pointed out in the claims.

In the drawings, Figure 1 is a top plan view of a saw-carriage having my invention applied thereto. Fig. 2 is an enlarged transverse sectional view of the same, taken on the line $x x$ of Fig. 1. Fig. 3 is an enlarged detail sectional view taken at right angles to Fig. 2, and on the line $y y$ of Fig. 1.

A represents a portion of a saw-mill carriage, which may be of any suitable construction. Upon this carriage, at a suitable distance from the ends thereof, are head-blocks B, which are arranged in the usual manner and extend transversely across the carriage. In each head-block is made a longitudinal central opening, C, which extends entirely throughout the length of the head-block. On the upper sides of each head-block are bolted plates E, the inner opposing edges of which project laterally over the opening C, and thereby form guide flanges or ways for the knees E', the said knees having on their lower sides rearwardly-extending base-arms F, the sides of which are provided with longitudinal grooves in which the flanged edges of the plates E fit. By this construction it will be readily understood that the knees E' are movable longitudinally on the head-blocks and transversely with relation to the saw-carriage.

On the lower side of the arm F is formed a depending ratchet-bar having rearwardly-extending ratchet-teeth G' on opposite sides.

I represents the longitudinal slide-bar, which extends through a transverse opening made in the head-block, near the rear end of the latter, and on a plane below the ratchet-bar of the knee. One of these slide-rods is provided for each head-block.

K and L represent a pair of toggle-jointed pawls which are arranged on opposite sides

of the opening C in each head-block and have their rear ends pivoted to the head-block, on pins or bolts M. The pins N, which connect the jointed sections of the pawls together, engage transverse slotted openings O, with which the slide-bars I are provided.

T represents flat springs which are secured in opposite sides of the opening C and have their free ends bearing against the free forward sections of the pawls, the function of the said springs being to keep the pawls normally in engagement with the ratchet-teeth G.

From the foregoing description it will be readily understood that when the bar I is moved longitudinally in one direction one of the pawls will be straightened, and thereby cause the spring-actuated front section thereof to extend longitudinally in the opening C and in a direction parallel with the arm F, and that at the same time the pawl on the opposite side of the ratchet-bar will be bent, and thereby cause its free end to draw rearwardly on the opposite side of the ratchet-bar, and thereby slip idly over the ratchet-tooth in rear of the one with which it previously engaged. On the reverse movement of the slide-bar I the action of the pawls before described will be reversed, and thus it is evident that at each movement of the slide-bar I in either direction the knee will be urged forward on the head-block a distance corresponding to the width of one tooth.

R represents a rock-shaft which is journaled in transverse openings in the head-block at a suitable distance in front of the slide-bar I. That portion of the rock-shaft between the opposing sides of the opening C is provided with right-angled arms S, which bear against the opposing sides of the free outer ends of the pawls. The springs T keep the said free ends of the pawls pressed firmly against the said arms.

At the inner end of the rock-shaft R is a crank-arm, T'. By turning the said arm T' rearwardly, so as to partly rotate the rock-shaft in that direction, the tappet-arms S will be moved rearward on the inner sides of the spring-actuated pawls and the latter will be permitted to engage the ratchet-teeth G. By turning the said rock-shaft R forward in the reverse direction, so as to move the tappet-

arms forward, the free spring-actuated ends of the pawls will be diverged to such an extent as to cause them to release their hold of the ratchet-teeth.

5 U represents a spring which bears rearwardly against the arm with which the knee is provided, and the function of the said spring is to return the knee to its initial position by sliding its supporting-arms F rearward in the
10 guideways D on the head-block when the pawls are disengaged from the ratchet-teeth, as will be very readily understood. Each head-block is provided with the slide-bar I, the toggle-jointed pawls, and the rock-shaft R,
15 having the tappet-arms to disengage the pawl from the ratchet-teeth of the knee. To each of the slide-bars I is connected a hand-lever, V, the said hand-levers being fulcrumed to brackets W, secured on the rear side of the
20 saw-carriage.

X represents a connecting-rod which connects the levers V, and the said rod is adapted to be detached at either end from the said
25 hand-levers, so that the latter may be operated independently of each other. When they are connected together by the rod X, it will be readily understood that when one of the hand-levers is moved a corresponding motion will be imparted by the rod X to the other hand-
30 lever, and thereby both knees will be moved forward simultaneously, so as to carry the log into the path of the saw. When the rod X is disconnected from the hand-levers, either may be operated independently of the other in
35 order to adjust a log properly to the action of the saw when the log is larger at one end than at the other.

Having thus described my invention, I claim—

40 1. The combination, in a saw-carriage, of the knees having the ratchet-teeth G on opposite sides, the toggle-jointed pawls fulcrumed to a fixed point and engaging the ratchet-teeth of the knee, and the slide rod or bar I, con-
45 nected to the toggle-jointed pawls at the joints thereof to operate the same, substantially as described.

2. The combination, in a saw-carriage, of the head-block, the knee movable longitudinally therein and having the ratchet-teeth G on
50 opposite sides, the toggle-jointed pawls engaging the said ratchet-teeth and fulcrumed to a fixed point, the springs bearing against the said pawls to keep them normally engaged with the ratchet-teeth, and the slide-bar I, con-
55 nected to the joints of the pawls to operate the latter, substantially as described.

3. The combination, in a saw-carriage, of the movable knee having the ratchet-teeth on opposite sides, the toggle-jointed pawls engag-
60 ing the said ratchet-teeth, the springs bearing against the said pawls, the rod I, connected to the joints of the pawls to operate the latter, and thereby urge the knee forward, and the rock-shaft having the tappet-arms to diverge
65 the free ends of the pawls and disengage them from the knee, substantially as described.

4. The combination, in a saw-carriage, of the movable knee having the ratchet-teeth on opposite sides, the spring U, normally pressing
70 rearwardly on the knee, the spring-actuated toggle-jointed pawls engaging the ratchet-teeth, the rod I, connected to the joints of the pawls, and the rock-shaft having the tappet-
75 arms to diverge the free ends of the pawls and disengage them from the knee when the latter reaches the forward limit of its movement, substantially as described.

5. The combination, in a saw-carriage, of the movable knees having the ratchet-teeth on
80 opposite sides, the toggle-jointed pawls fulcrumed to a fixed support to engage the ratchet-teeth, the said pawls having the connecting-pins N, and the slide-bar I, arranged trans-
85 versely with relation to the pawls and having the slots O, in which the pins M work, for the purpose set forth, substantially as described.

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

WARREN B. WILLET.

Witnesses:

W. H. STUBBS,
B. F. OWENS.