J. Kunsman,

Reciprocating Saw Mill,

No. 5,059. Patented Apr. 10, 1847.

Fig. 1

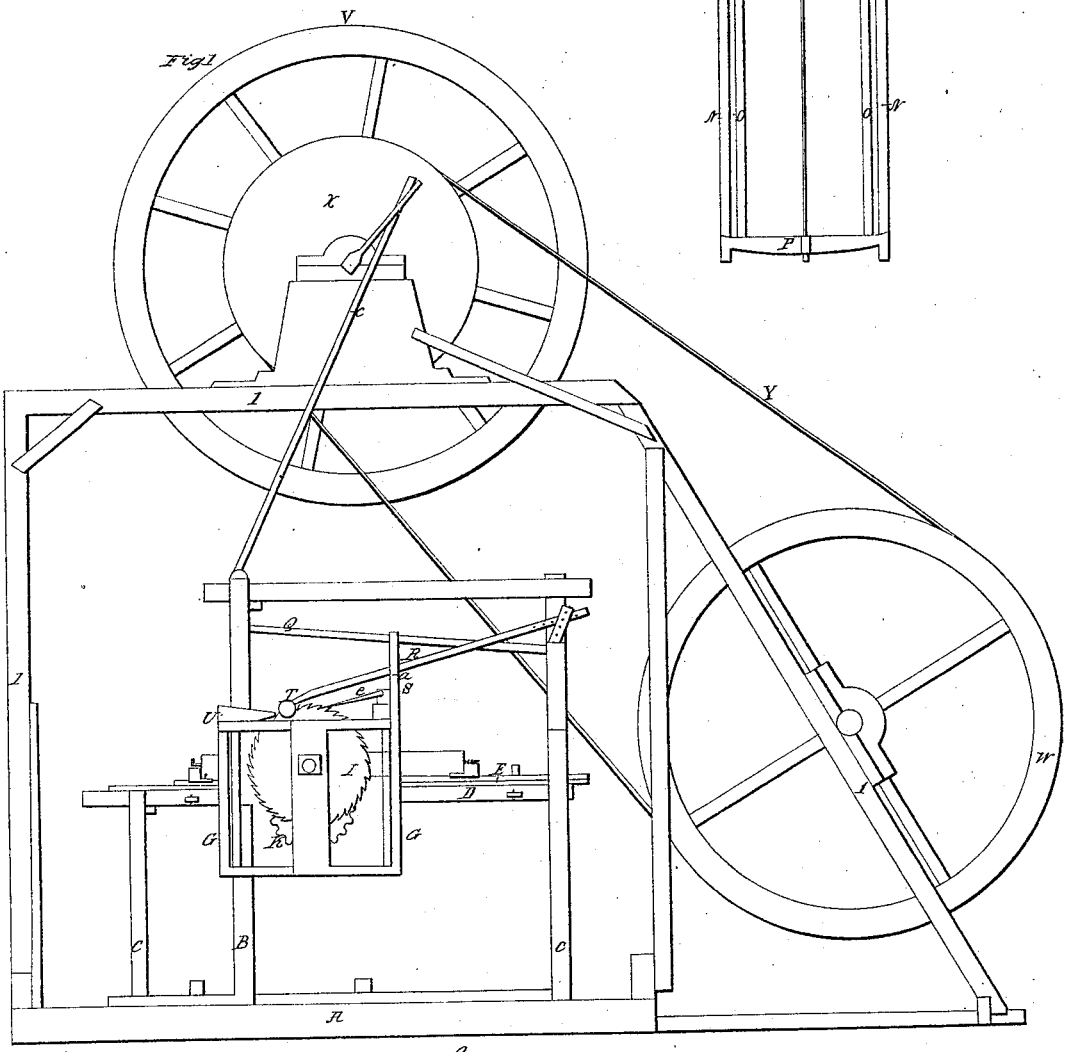


Fig. 2

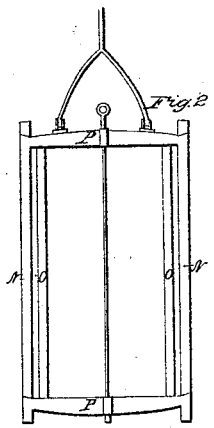


Fig. 3

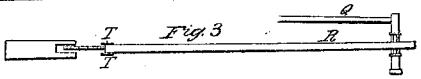


Fig. 4

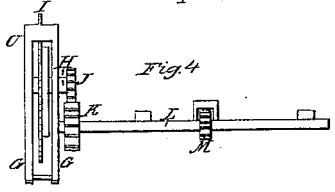
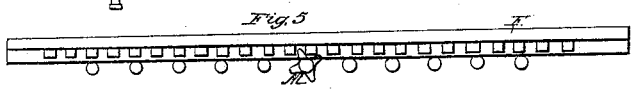


Fig. 5



UNITED STATES PATENT OFFICE.

JACOB KUNSMAN, OF READING, PENNSYLVANIA.

FEEDING SAWMILLS.

Specification of Letters Patent No. 5,059, dated April 10, 1847.

To all whom it may concern:

Be it known that I, JACOB KUNSMAN, of Reading, in the county of Berks and State of Pennsylvania, have invented a new and useful Improvement in Reciprocating Sawmills; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings, making a part of this specification, of which—

Figure 1 is a side elevation of the mill. Fig. 2 a front view of the saw gate. Fig. 3 a top view of the feeding-hand and lever. Fig. 4 an end view of the gearing moving the carriage. Fig. 5 a longitudinal section through the center of the carriage.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

(A, Fig. 1,) represents the frame upon which are placed the fender-posts (B,) and the upright pieces (C C) for the support of the carriage-way (D) which is made in any convenient manner. The carriage (E) is constructed of three long pieces of timber and connected by transverse pieces in any suitable manner and moves on rollers placed transversely between the side pieces composing the carriage-way. The carriage has the usual appendages, viz: head and tail blocks dogs, &c., for fastening the log. The center piece of the carriage represented in section (Fig. 5) is grooved out on the under side and a rack (F) placed in it; the object of which will be hereafter stated. Fixed to the fender post (B) and pieces extending from the carriage-way is a frame (G G) represented in (Figs. 1 and 4) supporting a shaft (H) on which is placed a ratchet wheel (I) revolving with it. On the end of the shaft (H) next to the carriage-way is fixed a pinion (J) the leaves of which take into the teeth of a wheel (K) fixed to a shaft (L) running through the side pieces of the carriage-way and supported at one end by the vertical piece in the frame (G G) and at the other end by one of the side pieces of the carriage frame. On this shaft is placed a pinion (M) revolving with it in such manner that it shall take into the rack (F) and move the carriage. The saw-gate (Fig. 2) is constructed similar to the common saw-gate but with this difference. In addition to the side pieces (N N) of the saw-gate are placed two other pieces (O O) and are fastened to the cross-heads (P, P) by a tenon and mortise or any other suitable contrivance.

The object of the pieces (O, O) is to keep the outside pieces of the saw-gate from bowing when the saw is drawn very tight. In the common saw-gate, when the saw is drawn tight the side pieces thereof are liable to curve or bow and in that case renders the movement of the gate in the cap pieces of the fender post hard and heavy: while in mine when the saw is tightened the strain is on the pieces (O O) and consequently keeps the outside pieces (N N) of the saw-gate perfectly straight.

Attached to, and near the top of the saw-gate, is a lever (Q) the fulcrum of which is supported by a suitable contrivance attached to one of the uprights (C) supporting in part the carriage-way. To the top of this lever is fixed the feeding-hand (R) which passes through a slot made in the upright (*a*) Fig. 1 fastened to the frame (G G) and rests in the teeth of the ratchet wheel (I). At the end of the feeding hand (R) and on each side of it are placed two small wheels or rollers (T Fig. 1) the object of which will be hereafter pointed out. On the top of the frame (G G) is placed an inclined plane, (U, Figs. 1, 3 and 4) which I denominate a chair, having an opening in the end so as not to interfere with the movement of the ratchet wheel (I) the use of which will be hereafter stated.

1, 1, 1, represents the frame of the mill. The balance wheel (V) is placed on the top of the frame in any suitable manner.

The driving wheel (W) is placed in any convenient portion of the frame and is connected with the band wheel (X) fixed to the balance wheel by a strap or band (Y).

The cross-head (P) of the saw-gate is attached to the crank (*b*) of the balance wheel by a pitman (*c*).

In operating the mill the power is applied to the driving wheel (W) which causes the balance wheel (V) to revolve by means of the band wheel (X) and strap (Y) and work the saw-gate by means of the pitman (*c*) connecting the cross-head (P) with the crank (*b*) attached to the shaft of the balance wheel. While the saw is making the downward stroke the lever (Q) attached to the saw-gate causes the feed-hand (R) to push the ratchet wheel (I) around and the pinion (J). On the end of the shaft (H)

takes into the wheel (K) on the shaft (L) and causes it to revolve carrying with it the pinion (M) which acts on the rack (F) Fig. 5, and moves the carriage forward to the saw while it is cutting. Before the saw entirely accomplishes the downward stroke the ratchet wheel (I) is relieved of the feed hand (R) by means of the rollers (T T) coming in contact with the top of the chair or inclined plane (U) which stops the progress of the carriage to the saw. The saw then makes the remainder of the cut and when it rises the teeth do not drag on the log as is always the case in other saw mills. The catch (*e*) falls into the teeth of the ratchet-wheel and prevents the carriage from receding when the feed-hand (R) is thrown off the wheel (I).

What I claim as my invention and desire to secure by Letters Patent is—

The combination with the rollers (T, T,) attached to the feeding-hand (R) and the chair or inclined plane (U) arranged in the manner and for the purpose above specified.

JACOB KUNSMAN.

Witnesses:

J. HAGENMAN,

WM. SCHOENER.