

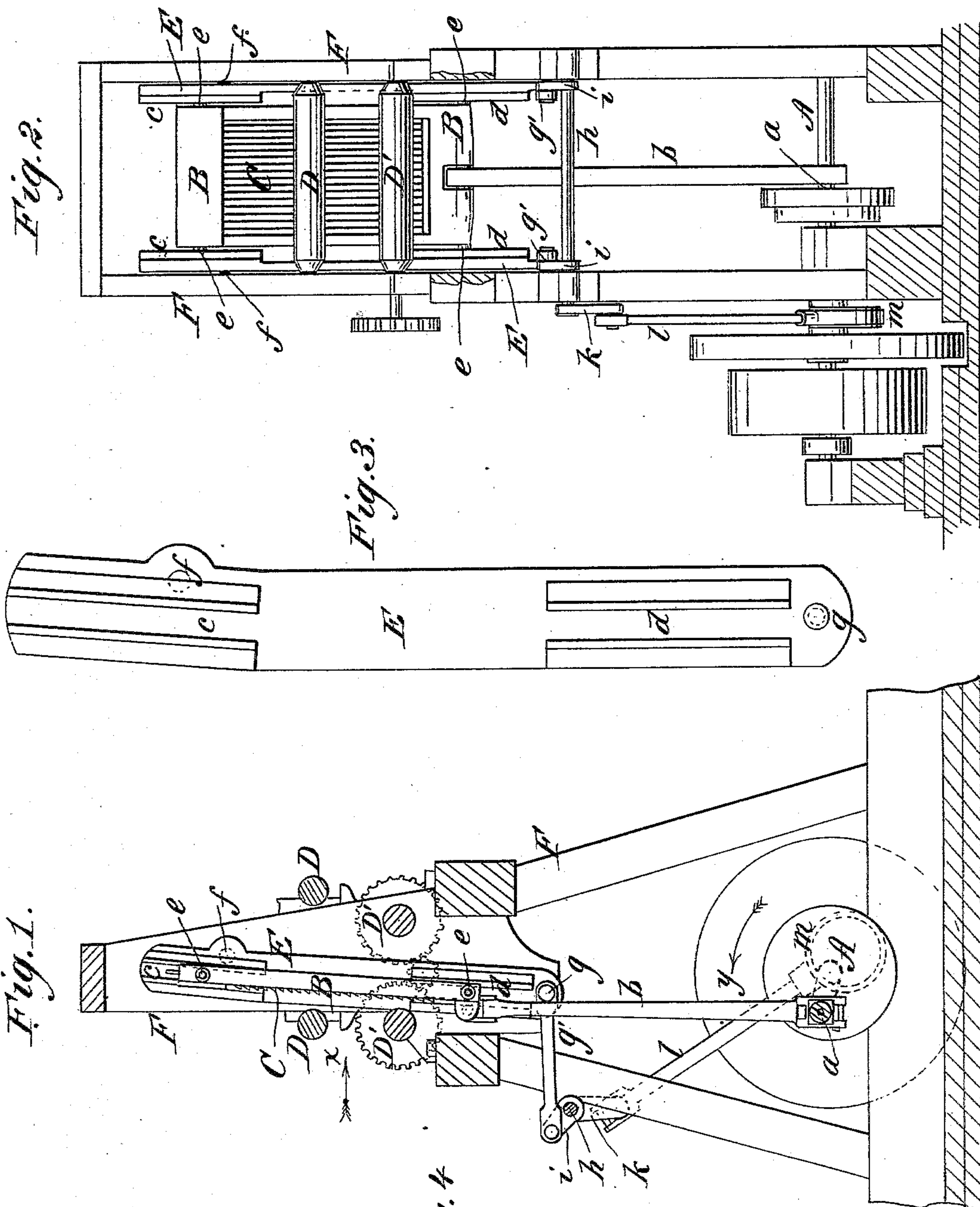
(No Model.)

C. H. WESTON.

OSCILLATING GUIDE FOR GANG SAWS.

No. 286,351.

Patented Oct. 9, 1883.



WITNESSES:

Down Twitchell
C. Sedgwick

INVENTOR:

C. H. Weston

BY

Munn & Co
ATTORNEYS.

UNITED STATES PATENT OFFICE.

CLINTON H. WESTON, OF MOUNT CLEMENS, MICHIGAN.

OSCILLATING GUIDE FOR GANG-SAWS.

SPECIFICATION forming part of Letters Patent No. 286,351, dated October 9, 1883.

Application filed January 3, 1883. (No model.)

To all whom it may concern:

Be it known that I, CLINTON H. WESTON, of Mount Clemens, in the county of Macomb and State of Michigan, have invented certain new and useful Improvements in Oscillating Guides for Gang-Saws, of which the following is a full, clear, and exact description.

This invention relates to gang-mills constructed to work with what has been termed a "pendulum-slide oscillating movement" of the sash, which carries all sawdust before the log and frees the saws in the upstroke. In a previous arrangement for this purpose the sash has been made to move on each of its opposite side edges in a fixed upper guide or slideway set slightly inclining forward in a downward direction, and in a lower guide or slideway, which is hung on a pin at its top to permit of its being oscillated or vibrated forward and backward by means of a rock-shaft, cranks or levers, a connecting-rod, and eccentric on the main shaft, from which the shaft is driven. In other arrangements for the same purpose the upper and lower guides or slideways, in which the trunnions of the sash move up and down, have been in or on the same vibrating or oscillating piece; but said piece or pieces—that is, one on opposite sides of the main frame—have been vibrated either from a center which is above the upper guides or from a center which is intermediate of the upper and lower guides, both of which arrangements are defective in practice.

My invention, which is an improvement upon these descriptions of gang-saw devices that free the saws in their upstroke, consists in an arrangement of the upper and lower guides or slideways for the sash on either side of the main frame on or in the same vibrating or oscillating piece hung to swing from a center which is slightly back or to one side of the upper guide and about the same distance from the lower end of the sash-stroke therein, whereby an opportunity is afforded for the saws to let go or stop cutting before the crank-pin, which gives the saws their up-and-down motion, is on its lower center, and provides a clear space for the saws to rise, and so that they do not come to the cut till said crank-pin gets to its upper center, the feed of the stuff to be cut meantime, as in the other arrangements hereinbefore referred to, being continuous. By thus

placing the pivot near the bottom of the upper slide and in the rear, and having the crank below, a perfect whip-saw motion is produced, entirely relieving each successive tooth of the saw as soon as it has completed its operation.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 represents a sectional side elevation of a gang-saw-mill having my invention applied. Fig. 2 is a front view of the same; Fig. 3, an inside face view, upon an enlarged scale, of one of the vibrating or oscillating side pieces having the upper and lower guides or slideways for the saw-sash trunnion to move up and down in, and showing the pivot or center from which said side piece is arranged to swing. Fig. 4 is a diagram illustrating the cut made by the saws.

A in the drawings indicates the main shaft, from which up-and-down motion is communicated by a crank-pin, *a*, and rod *b* to the sash B, carrying the saws C.

D D' are the upper and lower rollers, between which the lumber to be cut is continuously fed in direction of the arrow *x* in Fig. 1, the shaft A rotating, as indicated by the arrow *y*.

E E are the vibrating or oscillating side pieces on the interior of opposite sides of the main frame F, and in upper and lower guides or slideways, *c d*, on which the trunnions *e e* of the saw-sash B move. The upper one, *c*, of these guides in each oscillating side piece, E, is arranged, as usual, to slightly incline forward in a downward direction, as shown in Fig. 3, while the lower one, *d*, is arranged parallel with the side pieces, E, and consequently at an angle from the plane of the upper guides, *c*. Each of said side pieces, E, has the pivot *f*, on which it swings, arranged slightly back of the upper guide, *c*, and near the lower end of said guide, or about as far from the lowest point reached by the trunnion of the sash in such guide as said pivot is back of the guide, or, in other words, about the same distance from the lower end of the sash-stroke. Said side pieces, E, are operated from their lower ends by a pin, *g*, connecting-rods *g'*, rock-shaft *h*, cranks or levers *i k*, eccentric-rod *l*, and eccentric *m* on the main shaft A, as other guide-

carrying devices for the saw-sash have been vibrated or moved backward and forward to free the saws in their upstroke, as in the arrangements hereinbefore referred to. When the gang is on the front center—that is, the crank-pin *a* in the position shown in Fig. 1—the eccentric *m* is so set as to give its full throw, and the upper and lower guides, *c d*, are made to similarly incline forward.

By employing a proper length of eccentric-rod *l*, when the saw-sash comes up the saws leave the cut, and in their downstroke, by reason of the arrangement of the upper and lower guides, *c d*, and vibration of the side pieces, *E*, carrying them, the saws accomplish only a trifle over one half of their cut during the first half of the downstroke, making a sloping cut, *n*, in the log *G*, as shown in Fig. 4, and finishing the cut in a straight line, or nearly so, as shown at *o*, same figure, during the remaining half of the downstroke.

By the within-described arrangement of the pivots *f*, on which the sash-guide carriers or side pieces, *E*, swing, and the arrangement of their operating-pins *g* relatively to the guides *c d* when the pins *g* are coming forward during the first half of the downstroke, the upper ends of said side pieces, *E*, move back, and during the last half of the downstroke the lower ends of such side pieces or guide-carriers move back from the cut, while their upper ends move forward until they reach a certain point, when they gradually recede. This gives the saws an opportunity to let go or stop cutting before the crank-pin *a* gets on its bottom center, (the feed being continuous,) and gives the saws clearance when rising, so that they do not come to the cut until the crank-pin *a* is at its

top center. In this way the saws are made to do good work and to cut all the way down, but to stop cutting when reaching that point.

I am aware of Patent No. 231,249, of 1880, in which the sash is pivoted above and in the center, and upon this construction this present invention is designed to be an improvement. I am also aware of Patent No. 267,449, and make no claim to the construction shown therein.

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

1. In a gang-saw mill in which the saw-sash is arranged to work up and down within oscillating guides comprised in a single frame, the combination of the supporting-frame with the saw-sash working in oscillating guides, said guides being pivoted to the frame at a point near to but below the center and in rear of the upper guides, as and for the purposes set forth.

2. The combination of the vibrating side pieces, *E E*, having upper guides, *c*, arranged to incline forwardly in a downward direction, and lower guides, *d*, with the swinging pivots *f* for said side pieces arranged back of the upper guides, and nearer the lower than the upper ends thereof, the pins *g*, the rods *g'*, the rock-shaft *h*, the cranks *i k*, the rod *l*, the eccentric *m*, the shaft *A*, crank-pin *a*, the rod *b*, and the saw-sash *B*, for operation in relation with each other essentially as shown and described.

CLINTON H. WESTON.

Witnesses:

C. A. BETTS,
H. E. RUSSELL.