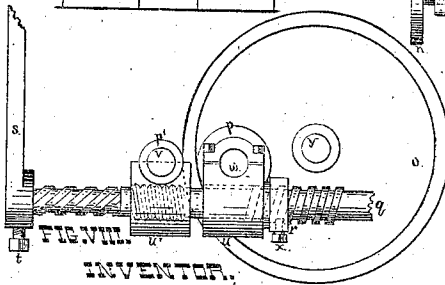
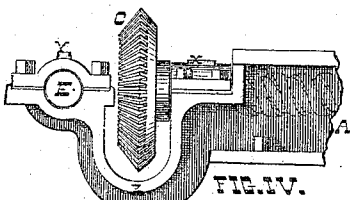
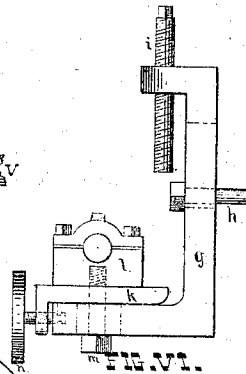
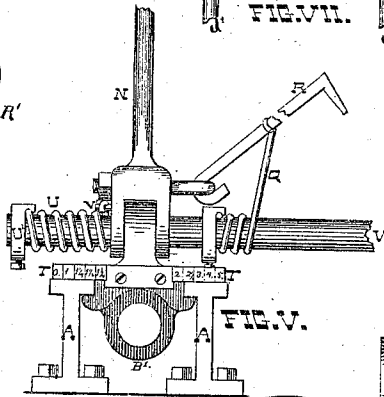
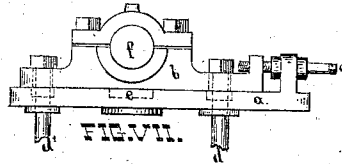
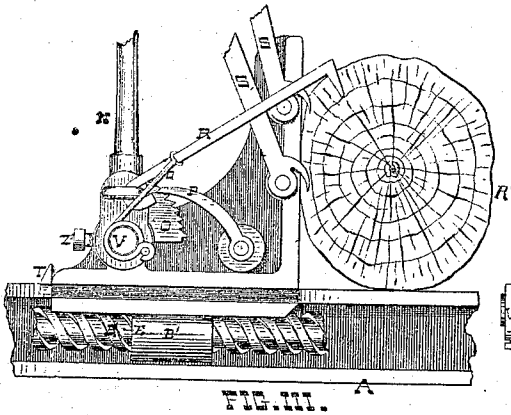
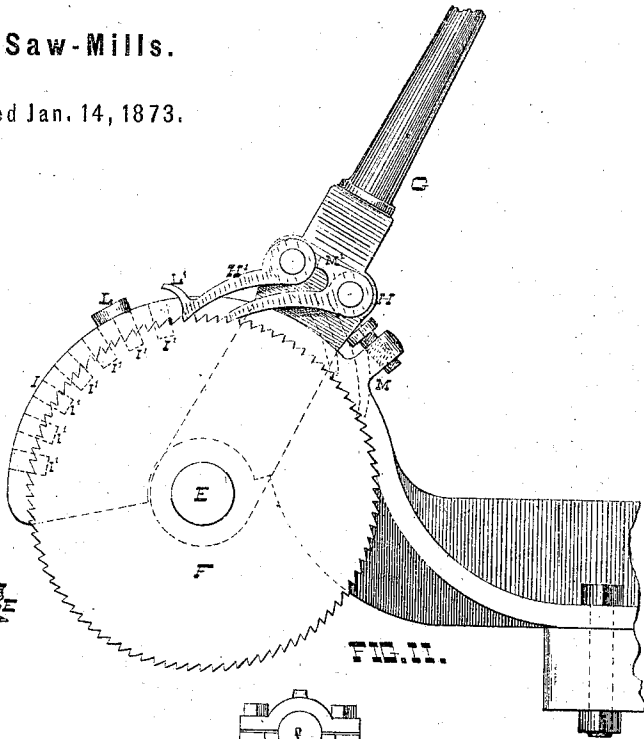
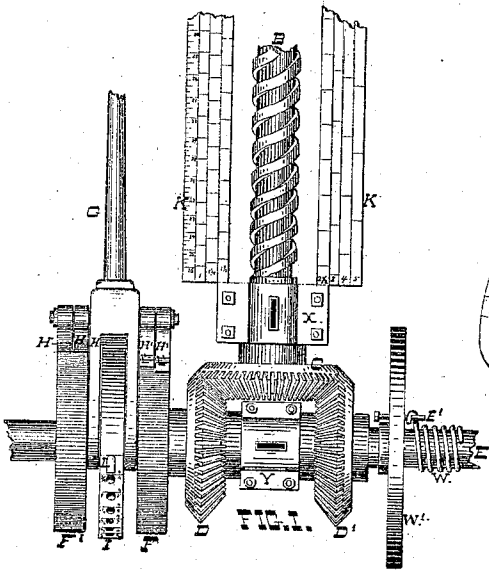


W. GOWEN.

Saw-Mills.

No. 134,795. Patented Jan. 14, 1873.



WITNESSES.

J. B. Smith
W. M. Hornor.

INVENTOR.

William Gowen

UNITED STATES PATENT OFFICE.

WILLIAM GOWEN, OF WAUSAU, WISCONSIN.

IMPROVEMENT IN SAW-MILLS.

Specification forming part of Letters Patent No. 134,795, dated January 14, 1873.

To all whom it may concern:

Be it known that I, WILLIAM GOWEN, of Wausau, in the county of Marathon, in the State of Wisconsin, have invented certain Improvements in Saw-Mills, of which the following is a specification:

Nature and Objects of the Invention.

My invention is for a new set-works and other arrangements for saw-mills, whereby the work is made easy and efficient.

Description of the Drawing forming part of this Specification.

Figure 1 is a top view of the set-works; Fig. 2, a side view of same; Fig. 3, a view of the end of a log with the dogs connected with the set-works; Fig. 4, a side view of a section of the set-pinion and goose-neck; Fig. 5, an end view of the set-works; Fig. 6, an adjustable hanging box for the upper saw in a rotary saw-mill; Fig. 7, an adjustable box for the saw-arbor for the lower saw. Fig. 8 is an adjustable gig and feed works.

General Description.

A is the frame-work of an adjustable saw-mill; B, the set-screw. B' is the jack-head—these two move the log toward the saw; C, pinion on the end of screw B. D and D' are pinions on shaft E, meshing into pinion C. D is a loose pinion turning on the shaft E; and D' is a pinion fastened securely on shaft E; F, a loose ratchet keyed on the hub of loose pinion D, so that as it moves pinion D moves with it, and shaft E moves in the opposite direction; F', ratchet keyed on shaft E; G, lever with an eye in its lower end fitting on shaft E. This lever is made crotched at its lower end and straddles an indicator or gage; H', outside pawls attached to lever G, and fitting, at their lower end, into teeth on ratchets F and F'; H, inside pawls attached to lever G, and their lower end, fitting into teeth on ratchets F and F'. These outside pawls H' have a handle, L', with which to raise them, and the inside pawls H have a projection, M', which, as pawls H' are raised and thrown back, a cam projection on H' strikes projection M' and raises pawls H out of the teeth in the ratchets. I, an indicator or gage for lever G, bolted onto the carriage side; I', holes in

the indicator I for a pin with which to regulate the set; K K, graduated scale to regulate the set by; L, pin in hole I' with which to regulate the set; M, a screw-bolt working in a projection on indicator I, with which to regulate the set; N, lever to take up the slack of the dogs after the log is dogged; O, ratchet on lever N; P, pawl working in ratchet O; Q, a spiral spring wound around shaft V, and its outer end attached to dog R to hold it up when loose; R, dog, with which the log is held securely when being sawed; S S, dogs; T, indicator on the back end of the jack-head to agree with graduated scale K K, as marked off on the back end of said scale K K; U, spiral spring on shaft V, one end fastened to a collar, U', on the shaft, and the other end to a pin, V', in lever N, to hold up said lever N when the dog is free from the log; V, shaft in the back side of the jack-head; W, spiral spring on shaft E. One end is to be fastened to a stationary box fastened to the carriage sides, not shown, and the other end fastened to an adjustable pin, E', in wheel W'. W', a hand-wheel keyed onto shaft E; X and Y are boxes for shaft E; Z, a goose-neck passing under pinion C, and curving up forming a bearing for shaft E; Z', set-screw holding lever N to shaft V; a, bed-plate for the lower saw-mandrel; b, pillow-block on bed-plate a for the lower saw-mandrel; c, an adjustable screw with stationary collar on each side of lug on bed-plate a to regulate pillow-block b; d and d' are collar-bolts, which hold the pillow-block and bed-plate a to the frame; e, a projection on the pillow-block, working in bed-plate a, and a center on which the pillow-block next to the saw swings; f, saw-mandrel; g, hanging bed-plate for the top saw; h, bolt, which secures the hanging bed-plate to the frame above; i, an adjustable screw for raising or lowering the upper saw; k, slide on which sets the pillow-block of the upper saw; l, the pillow-block; m, a screw-bolt through a slot in the hanging bed g and into pillow-block l; n, a hand-wheel screw through a lug in slide k with a notch on its end, into which works a pin in bed-plate g. This screw is for the purpose of moving slide k out and in. o, friction-pulley; p, a gig friction-pulley working on the inside of pulley o; p', feed friction-pulley, working on the outer rim of pulley

o; *q*, a screw-shaft fastened to the under side of the head girt of the saw-frame and to the center girt, running parallel to the saw or at right angles with the saw-mandrel; *r*, a collar on shaft *q*; *s*, a lever for working screw-shaft *q*; *t*, a set-screw holding lever *s* to set-screw shaft *q*; *u*, nut on shaft *q*. This nut is hollow, and shaft *q* runs through it. *u'* is the lower half of box for shaft *v*, with a nut in which works a screw on shaft *q*. *v* is a shaft for feed-friction pulley *p'*; *w*, the gig friction-pulley shaft; *x*, a screw working through collar *r*, the end of it working in screw on shaft *q*. The collar *r* is for the purpose of tightening up *u* to *u'* as they wear away. *y*, gig and feed shaft, on which is fastened friction-pulley *o*. Friction-pulley *o* is made with a rim on one side, into or under which friction-pulley *p* works, and on the outside friction-pulley *p'* works; and as the lever *s* is operated back or forward this pulley *o* is either turned back or forward by the pulleys *p* and *p'*.

The operation of this saw-mill is as follows: The log being placed on the carriage, as shown, Fig. 3; the dog *R* being driven into the log, and the lever *N* drawn back to take up the slack and hold the log up against the jack-head; the pawl *P* falling into ratchet *o*, holding it secure, the set-works are arranged as follows: The figures on indicator *I* are permanently fixed, graduated by eighths to each hole, so that moving the lever *G* back and forth makes a fourth of an inch, but when the pin *L* is moved into another hole, *I'*, will make another fourth of an inch, and so on till the pin is put into the last hole will make two inches, moving the lever both ways. When commencing to saw the log, when canted down set it up so as to take off the slab; then to set the log so as to come out at a particular thickness and be no waste, the jack-head is set at one of the lines on the gage *K*, marked $1\frac{1}{2}$, and then set pin *L* into the hole *I'*, marked $1\frac{1}{2}$ on the left of the indicator; and then to set the log, move lever *G* up so as to strike the pin *L* and back to screw *M*; and for thicker stuff, set the jack-head on the lines on the right-hand indicator *K*, marked 4, and then set the pin *L* in the hole *I'*, marked 4, and then repeat the moving of the lever *G* four times back and forward. The figures above the lines on the indicator *I* indicate the number of times to repeat the motion of the lever,

and the figures below the lines indicate the thickness of the stuff to be sawed, or vice versa. The motion of the lever *G* moves loose pinion *D*, and carries screw *B* in one direction; and when the lever is moved in the opposite direction it moves the shaft *E* and pinion *D'* in the opposite direction, and moves screw *B* the same way that the loose pinion moved it, the pawls on the lever moving the loose ratchet-wheel *F* in one direction and the fixed ratchet-wheel *F'* in the opposite direction, constantly setting the log up to the saw. The dotted lines in Fig. 2 show the pawls working in the opposite direction from those drawn; and as you set up the log toward the saw the coiled spring *E'* is wound up, and when the pawls are tripped this spring will throw the jack-heads back ready for another log. The figures on the back end of the jack-head correspond with those on the indicator *K*, so that the operator can read them, and thus facilitate the work. The feeding of the machine is done by pulley *o*. To feed up the log to the saw, the lever *s* is turned so that the screw on shaft *q* throws pulley *p'* against the outside of pulley *o*; and to gig back, the lever *s* is reversed, and pulley *p* is thrown up on the inside of pulley *o*, and the log is gigged back; and when the lever *s* is turned just enough so that neither pulley *p* or *p'* touches the feed-pulley *o* the carriage will stand still.

Claims.

I claim as my invention—

1. The pinion *C*, gears *D D'*, shaft *E*, ratchet-wheel *F* and *F'*, lever *G*, pawls *H* and *H'*, all in combination, substantially as described.
2. The lever *G*, wheel *F*, and pawl *H*, in combination with screw *M*, stop *L*, and their supporting-bar, substantially as specified.
3. The lever *G*, in combination with pawls *H* and *H'*, provided with handle *L'*, projection *M'*, and the eccentric on pawl *H*, substantially as described.
4. The graduated scales *K K* and indicator *I*, in combination with the head-block and operating mechanism, as shown and described.
5. The lever *G*, indicator *I*, wheels *F* and *F'*, and pawls *H* and *H'*, in combination with screw *M*, substantially as described.

WILLIAM GOWEN.

Witnesses:

J. B. SMITH,
W. M. HONOR.