2 Sheets: Sheet 1.

W. M. Wilkin,

Reciprocating Saw Mill.

No. 108,665. Patented Oct. 25. 1870.

Fig. 2.

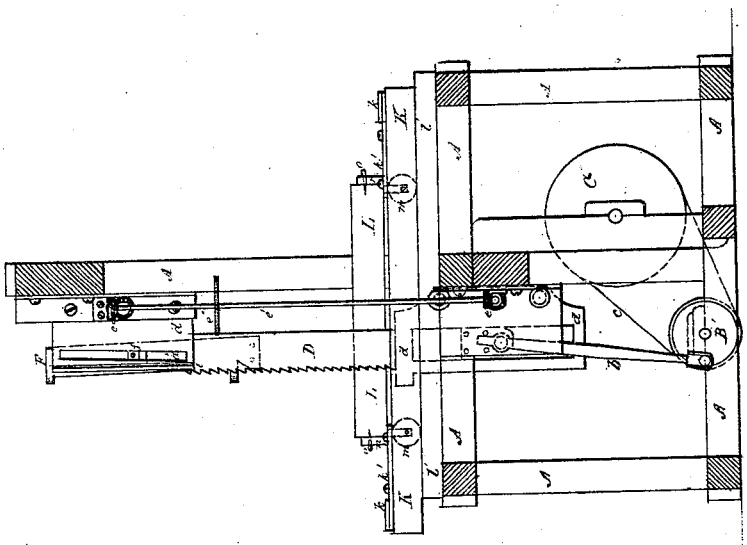
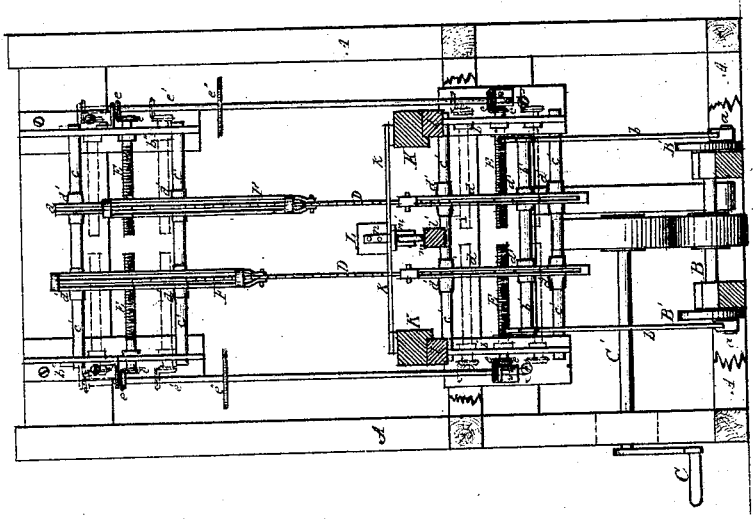


Fig. 1.



Witnesses:
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Robt. C. Brewster

Inventor:
William M. Wilkin
By Newton Crawford, his Attorney

2. Sheets, Sheet 2.

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Fig. 3.

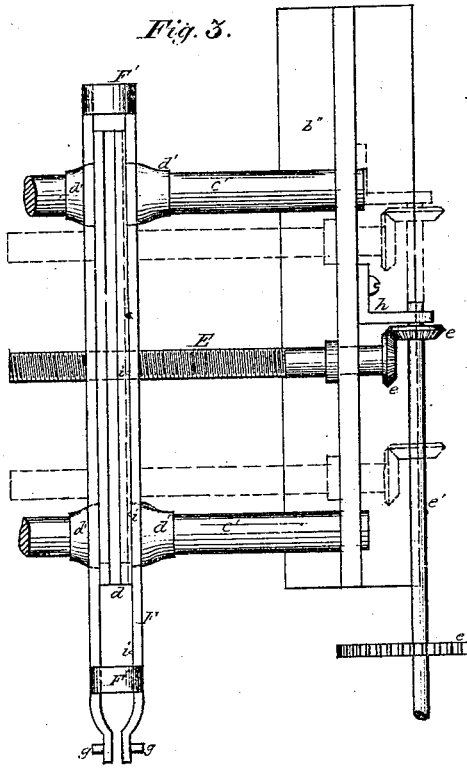
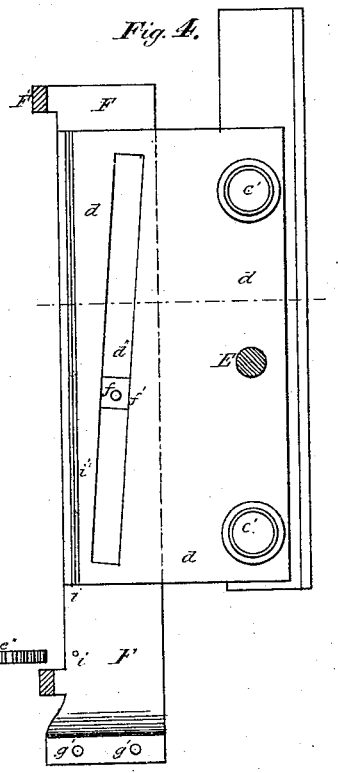


Fig. 4.



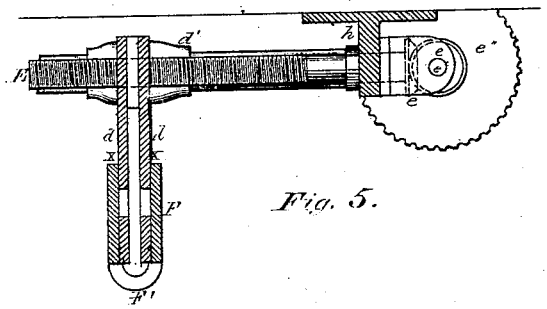


Fig. 5.

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United States Patent Office.

WILLIAM M. WILKIN, OF KALAMAZOO, MICHIGAN.

Letters Patent No. 108,665, dated October 25, 1870.

IMPROVEMENT IN SAW-MILLS.

The Schedule referred to in these Letters Patent and making part of the same

To all whom it may concern:

Be it known that I, WILLIAM M. WILKIN, of Kalamazoo, in the county of Kalamazoo, in the State of Michigan, have invented certain new and useful Improvements in Saw-Mills, of which the following is a specification.

This invention relates to that kind of saw-mills known as "gang-muley saw-mills;" and

The object of the invention is to construct the mill in such way as that the saws are moved to make their cut through the log instead of moving or setting the log to the saw; and

The invention consists in the special construction of the upper and lower muley-heads, slides, and the guide-ways upon which the muley-heads slide, the means by which the saws are set or moved with relation to the log, the method of connecting the saws to the pitmen and the slide-block in the upper muley-head, the spring sliding guide-keeper, that can be adjusted at any desired height on the upper muley-heads, and serving to guide the saw and hold the slide-block to which the saw is attached in its place, and in the construction of the log-carriage, by which the log remains stationary on the head-blocks of the carriage, and can be reciprocated entirely past the saws in either direction.

In the drawing—

Figure 1 is an upright front view of the mill with my invention;

Figure 2 is an upright side view of the same;

Figure 3 is an upright view of some of the parts enlarged.

Figure 4 is an upright side view of upper muley-head; and

Figure 5 is a top or plan view of the same, with the devices for moving the saw.

A represents the frame that supports the mill, and it may be constructed in any form to produce the best effect.

B is a driving-shaft, upon which are two crank-wheels, B′ B′, and gets its motion from the crank C, shaft C′, driving-pulley C″, belt *c*, going over pulley C″ and pulley on shaft B′, or motion can be given it by any other known means.

a a are the cranks on crank-wheels B′, and to which pitmen *b b* are fixed.

Pitmen *b b* go from cranks *a a*, and are attached to the horizontal slide-rod *b′* and extend above it, and have the slide-block slide in the same groove with the ends of slide *b′* in the slides *b″ b″*, by which connection, the lower end of the saw is caused to be advanced forward or be thrown back rapidly at a particular part of every revolution of the crank-wheels B′.

The lower slides *b″ b″* are constructed to have the perpendicular or nearly perpendicular grooves, in which the ends of the horizontal slide-rod *b′* and the slide-block attached to the upper end of the pitmen freely slide in their reciprocations, to receive and hold the guide-rods upon which the muley-heads slide, have the journals of the setting-screws that move or set the saws and muley-heads therein, and brackets in which are journaled the shafts that carry gear-wheels to revolve the setting-screws.

Sliding rod *b′* is made of the same diameter from the inside of slide *b″*, but larger than the width of the groove in slide *b″* and the saw-buckle at the lower end of the saw, and at its lower end has a thimble, *d′*, that slides freely but closely thereon, admitting the saw and muley-head to slide in either direction, as may be desired.

c′ c′ are guide-rods or ways, firmly attached to slides *b″* at their ends, and upon which the muley-heads slide by the thimbles *d′*, which are similar to the thimbles on the lower end of the saw-buckle that slide on slide-rod *b′*.

The lower muley-blocks *d* are constructed to receive a guide to the saw in a slot that separates the sides, except at each end. This slot is long enough to allow the reciprocation of the guide at the lower end of the saw with the saw without striking at either end of the slot. At or near the upper end of the lower muley-heads are holes to receive the wooden guide-pins *g g*.

The upper muley-heads are constructed to have a deep slot in their forward edge, deep enough and wide enough to receive the saw, and allow it to freely reciprocate therein without striking or rubbing, with holes and thimbles *d′*, to freely slide upon guide-rods *c′ c′*, which pass through the muley-heads and into the plates *b″ b″*, that are made fast to frame A, and are constructed like the lower side plates, with the exception of the grooves in which the slide-blocks and ends of the guide-rod slide, having the same or similar brackets to support the upright shaft *e′*.

In each of the upper muley-heads are inclined slots *d″*, and fitting therein are slide-blocks *f*, which have nearly the same thickness as the sides of the muley-head, and in the center of this slide-block *f* is a bolt or pin *f′*, which pin goes through the two slide-blocks *f* and through the top of the saw between the slide-blocks.

Upon the front part of each of the upper muley-heads is placed an adjustable sliding-keeper, F, that is plainly shown in figs. 3, 4, and 5, composed of the two flat side plates, with a spring bow or bend, F′, on the front edges, at the top, and near to the bottom ends.

On the inner side of one of the side plates projects a small pin, *i*, that, when the spring-keeper is put in its place, fits and slides in a groove, *i′*, in the side of the muley-head, as shown in said figs. 3, 4, and 5.

The purpose of this construction is that the spring

in the bow or bend F′ is just sufficient to hold the side plates in close contact with the outer sides of the upper muley-heads at *x x*, seen in fig. 5, as against the friction of the saw between guides *g g*, side-blocks *f*, and the weight of the keeper itself, at the same time keeping the slide-blocks *f* that carry the upper end of the saw truly in their places in their reciprocations, while the pin *i*, sliding in groove *i′*, prevents any movement of the keeper in a horizontal direction.

In order to adjust the saws to any desired point and have the upper and lower ends move exactly the same distance, setting-screws E are arranged in such way that they turn in nuts in the muley-heads, and are journaled in the plates *b″ b″* in such manner as that they will not move longitudinally, and at the outer ends of each setting-screw a miter gear-wheel, *e*, is firmly secured, which gears into another similar gear-wheel, *e*, that is fast upon the setting-shaft *e′*, which has a setting-disk, *e″*, serrated on its periphery, by which shaft *e′* is revolved in either direction.

This setting-shaft *e′* extends from the upper to the lower muley-heads, and has the gear-wheels *e* so arranged thereon as to operate the setting-screws E, that work in nuts in the upper and lower muley-heads, thus moving the upper and lower muley-heads with the saw, and at the same instant equal distances, whether in the one or the other direction, and are supported upon and journaled in suitable brackets *h* on plates *b″ b″*.

In the drawing, but one setting-screw E to each muley-head is shown, but in practice two of such setting-screws are used, as may be seen in the broken lines in figs. 1 and 3, by which arrangement both ends of each muley-head must move the same distance as the other, without in any way binding or clamping in the movement of the muley-heads upon the guide-rods or ways.

It will be observed that the two upper and lower muley-heads are independent of each other, that is, the upper and lower muley-heads, and the saw working therein on one side of the log, are moved and adjusted independently of the muley-heads on the other side of the log, as there are provided two sets of setting-shafts and screws that are operated separately, as they are not connected in any way, thus providing for the saws to be set toward each other and toward the center of the log-carriage in equal or unequal distances, as may be desired, and whereby two distinct sizes of lumber may be cut from the same log at the same time and same reciprocation of the log-carriage.

The construction of the muley-heads and the movement of the saws in setting them to the log, as above described, necessitates a different construction of log-carriage to adapt itself to the adjustment of the saws with relation to the log to be sawed, and to accomplish this construction of carriage, K K represents the usual log-carriage sides sliding over longitudinal ways *l l*.

These carriage sides are connected together at each end by the cross-girts *k k*, to the under side of which, and extending longitudinally a sufficient distance and parallel with the sides, and centrally between them, is the head-blocks *k′*, that supports the log, and by which it is held in place while it is being sawed; and on the under side, near the inner end of each of the head-blocks *k′ k′*, and securely attached thereto by means of arms *m′*, is a supporting-truck or wheel, *m*.

This wheel *m* supports the head-block *k′* and the log L, which rests upon the head-block, and the wheel *m* runs on the track or guide-way *l′*, which is placed on and supported by the frame A centrally between and parallel with the ways *l l*.

Above the head-blocks *k′ k′*, and firmly attached thereto, is post *n*, with holes therein to drive a pointed bolt or pin, *o*, into the end of the log L, whereby the log is firmly held in its place until completely sawed into the required size or sizes of lumber.

The construction of the log-carriage may be varied from this description without departing from the principles of the invention, as the head-blocks that support the ends of the log must from necessity extend inward far enough to let the saw pass completely by the end of the log to be set for the next cut.

The construction of the slides or guides *c′* may also be varied, as V-shaped edged bed-plates or bars may be used instead of the round rods or guides. So may the sliding horizontal guide-bar *b′*, to which the pitmen and lower ends of the saw are attached be changed in form, and have V-shaped edges instead of being round. It may also, and preferably it is so made as to be hollow or tubular, which makes it lighter, and has strength enough left for all practical purposes.

I am aware saws have been made and arranged with other devices to be set to the log instead of setting the log to the saw, but such arrangements are confined to saws hung and strained in frames or sashes, which make the moving of the saw in any direction very difficult and never to be depended upon as correct; and I am not aware that any attempt has been made previous to my invention in setting what are termed muley-saws to the log, and especially so when more than one saw is used.

Having thus described my invention,

What I claim, and desire to secure by Letters Patent, is—

1. The arrangement, in a saw-mill, of one or more muley-saws with the muley-heads in which such saw or saws reciprocate, whereby they can be set to the log to saw lumber of the same or different dimensions, instead of setting the log to the saw, in the manner and by the means herein described.

2. The reciprocating guide-rod *b′*, lower muley-heads *d*, saw D, and its connecting devices with the guide-rod, in combination with the pitmen *b b*, having the slide-blocks and the slide-plates *b″ b″*, all constructed and arranged to operate in the manner described.

3. The spring sliding guide-keeper F, when constructed and applied to muley-heads *d*, in the manner and for the purpose specified.

4. The slide-blocks *f*, pins *f′*, muley-heads *d*, having inclined slots *d″*, in combination with the spring sliding-keeper F, as herein described for the purpose set forth.

5. The upper and lower muley-heads *d*, carrying saws D, in combination with the setting-screws E, guide-rods *c′*, gear-wheels *e*, and setting-shaft *e′*, in the manner and for the purpose described.

6. The log-carriage, when constructed with the sides K K, cross-girts *k*, inwardly-projecting head-blocks *k′ k′*, supporting wheels *m*, and bearing upon track *l′*, in the manner and for the purpose described.

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Witnesses:

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CHARLES H. BOOTH.