

No. 683,590.

Patented Oct. 1, 1901.

G. W. BROWER.
SAWMILL.

(Application filed Apr. 22, 1901.)

(No Model.)

4 Sheets—Sheet 1.

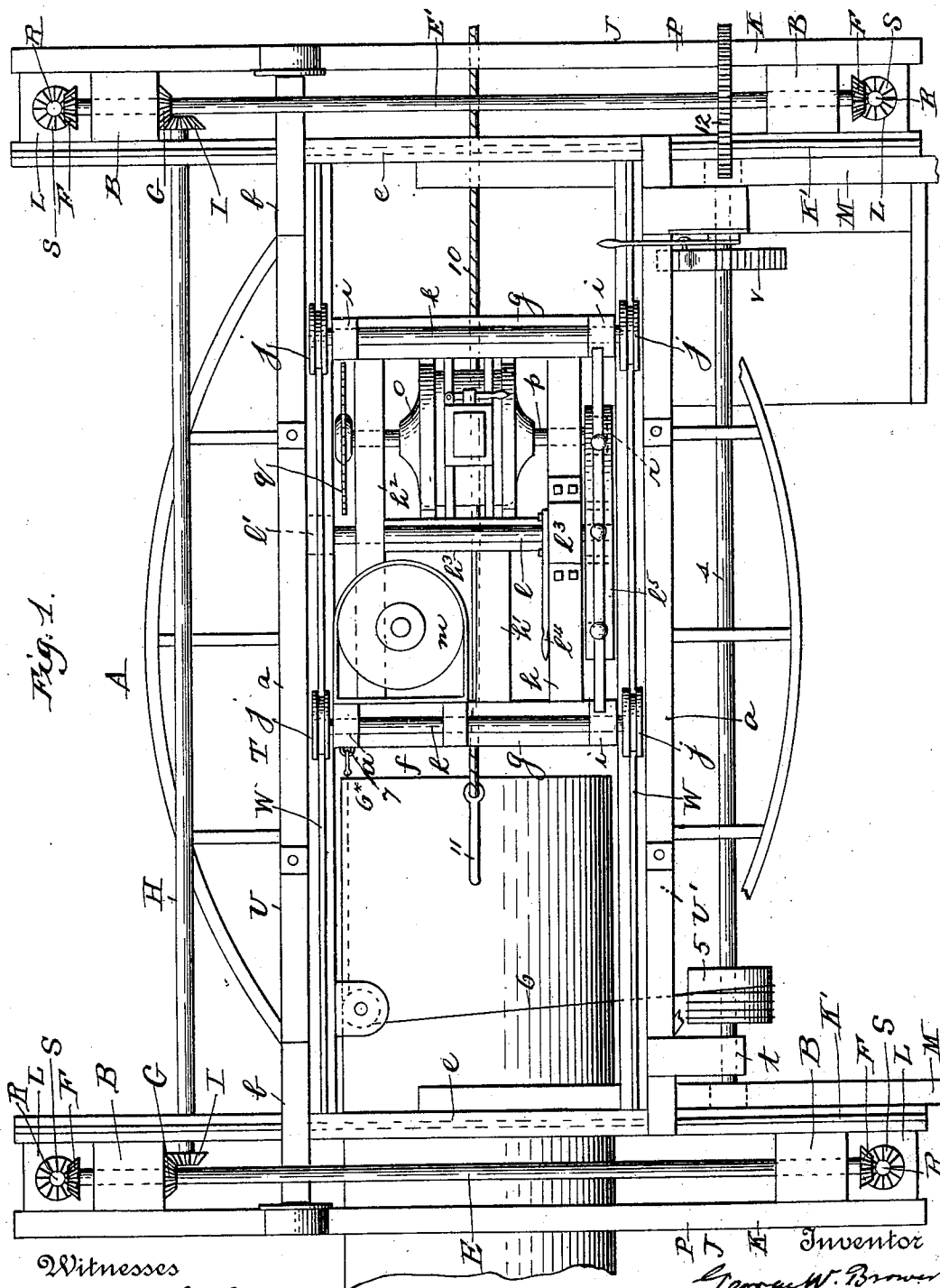


Fig. 1.

Witnesses

Albert B. Blackwood.
Jas. H. Blackwood.

P. J. H. Inventor
George W. Brower
per Nathan Bierford
Attorney

G. W. BROWER.

SAWMILL.

(Application filed Apr. 22, 1901.)

(No Model.)

4 Sheets—Sheet 2.

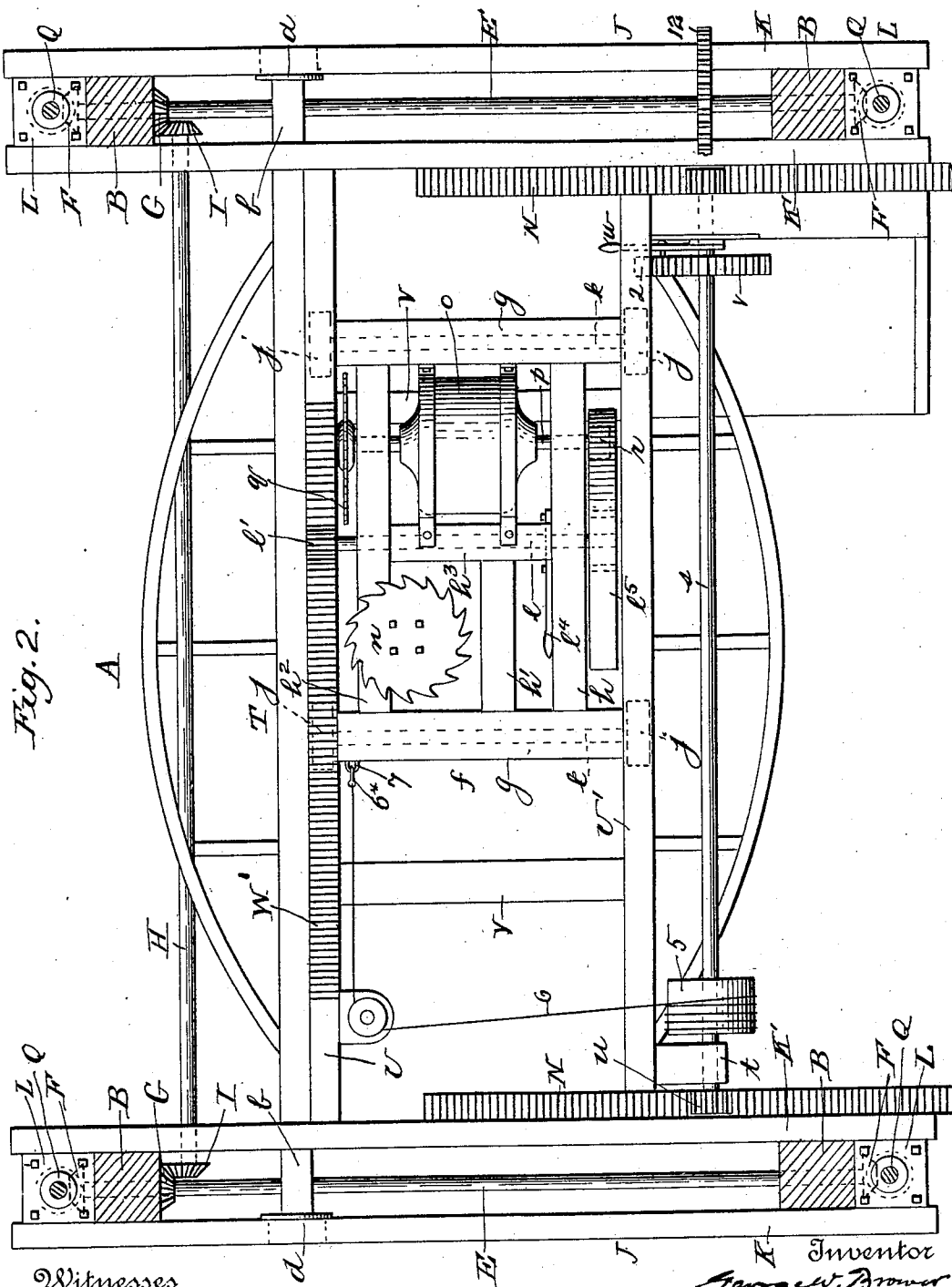


Fig. 2.

Witnesses

Albert B. Blackwood.

John N. Blackwood

Inventor

Gerrit W. Brower

per Nathan Bickford
Attorney

No. 683,590.

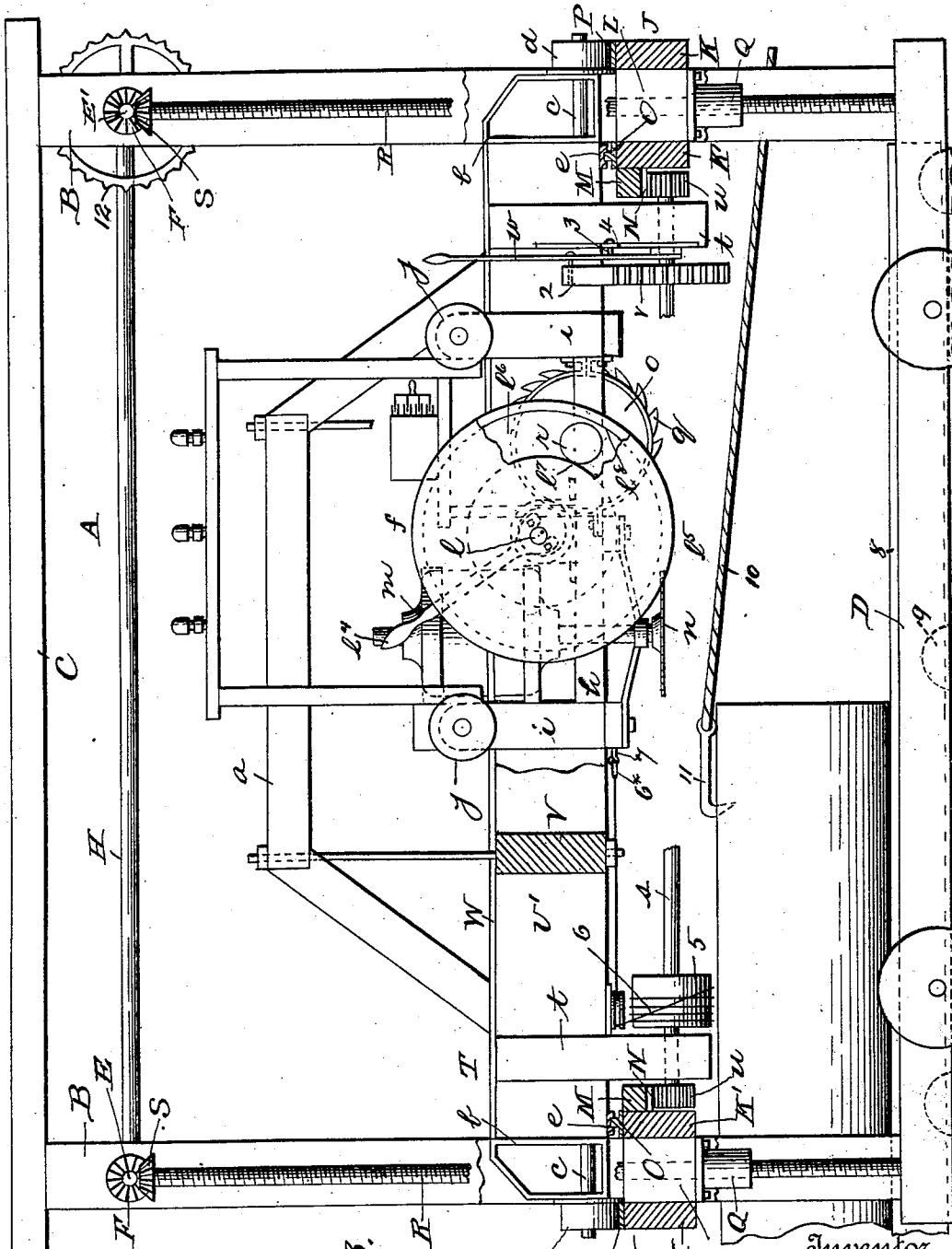
Patented Oct. 1, 1901.

G. W. BROWER.
SAWMILL.

(Application filed Apr. 22, 1901.)

4 Sheets—Sheet 3.

(No Model.)



Witnesses
Albert B. Blackwood.
Just Blackwood

Fig. 3.

Inventor
George W. Brower
per Nathan Bierfort.
Attorney

G. W. BROWER.
SAWMILL.

(Application filed Apr. 22, 1901.)

(No Model.)

4 Sheets—Sheet 4.

Fig. 5.

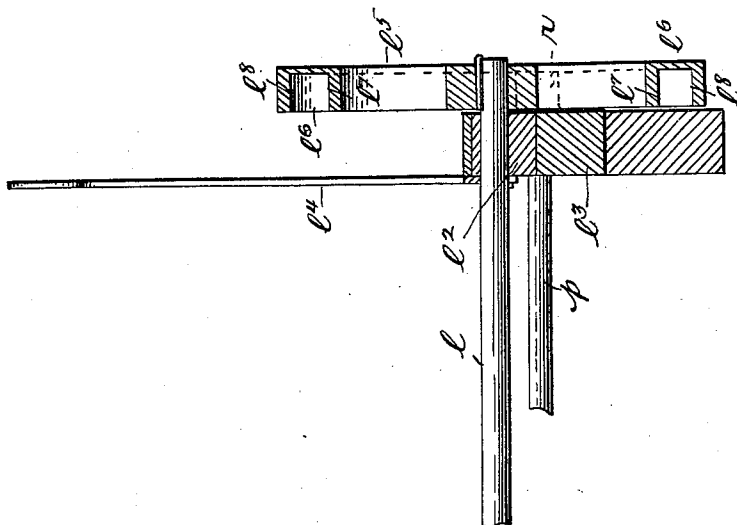
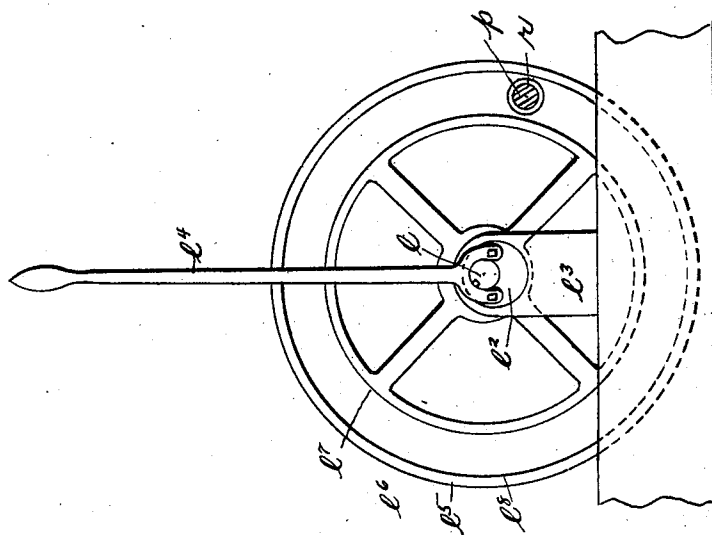


Fig. 4.



Witnesses

Albert B. Blackwood.

James V. Blackwood

Inventor

George W. Brower

per Nathan Dierufre
Attorney

UNITED STATES PATENT OFFICE.

GEORGE W. BROWER, OF PORTLAND, OREGON, ASSIGNOR OF ONE-HALF TO
THE OREGON ELECTRIC LUMBER COMPANY, OF BAY CITY, OREGON.

SAWMILL.

SPECIFICATION forming part of Letters Patent No. 683,590, dated October 1, 1901.

Application filed April 22, 1901. Serial No. 56,962. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. BROWER, a citizen of the United States of America, and a resident of 274 Second street, Portland, county of Multnomah, State of Oregon, have invented certain new and useful Improvements in Sawmills, of which the following is a specification.

My invention relates to sawmills, and has for its object to provide a portable sawmill, to provide sawing mechanism adapted with the greatest facility to cut a log into a great number of sections of any size or dimension desired, to provide mechanism for setting the sawing mechanism at the position desired, to provide an electric motor mounted on the mill for driving the sawing mechanism, and to provide a mill which is simple and inexpensive in construction and effective in operation.

To these ends my invention consists in the construction, combination, and arrangement of parts more fully hereinafter described and claimed.

My invention is illustrated by the accompanying drawings, in which—

Figure 1 is a top plan view. Fig. 2 is a bottom plan view. Fig. 3 is a side view, and Figs. 4 and 5 detail views of the eccentric wheel.

Referring to the accompanying drawings, in which like characters of reference indicate like parts throughout the several views, A designates the framework, comprising corner-posts B, side beams C, connecting the upper ends of said posts, and side beams D, connecting the lower ends thereof.

E E' are shafts journaled in the upper ends of the posts B, having a miter-gear F mounted on each end and a miter-gear G near one end.

H is a shaft journaled in the upper part of the frame A, having miter-gears I on each end meshing with miter-gears G.

J represents vertically-movable frames, comprising beams K K', connected at each end by blocks L, interposed between the same.

M represents strips attached to the sides of beam K', and N represents racks on the under sides thereof.

O represents flanged rails on the upper surfaces of beams K', and P represents rails on the upper surfaces of beams K.

Q represents screw-threaded sleeves secured to the under sides of blocks L.

R represents vertical screw-threaded rods which engage the sleeves Q and have miter-gears S mounted on their upper ends meshing with gears F.

T is a horizontally-movable frame comprising beams U U' and cross-beams V, connecting the same.

W represents flanged rails on the upper surfaces of beams U U', and W' is a rack on the under surface of the beam U.

a represents truss-braces located adjacent to the outside of the beams U U', one of which has brackets b secured to its ends.

c represents axles journaled in the brackets b, having flanged wheels d, secured on their outer ends, adapted to ride on the tracks P.

e represents grooved rails attached to the under side of the beams U U', at each end, adapted to engage the rails O.

f is a horizontally-movable carriage mounted on the frame T, comprising end beams g, cross-beams h h' h² h³, connecting the same, and upright posts i.

j represents grooved wheels mounted on shafts k, journaled in posts i.

l is a shaft journaled in the frame of the carriage f, on one end of which is secured a pinion l', engaging the rack W'.

l² is an eccentric supported in a box l³ and loosely mounted on the outer end of the shaft l and having a lever l⁴ attached thereto.

l⁵ is a large friction-wheel keyed to the shaft l and provided with a circular groove l⁶, having contacting surfaces l⁷ and l⁸.

m is a motor mounted vertically on the carriage f, the shaft of which projects below the frame T and has a circular saw n secured thereto. o is another motor mounted horizontally on said carriage, the shaft p of which projects laterally on both sides and has a circular saw q secured to one end and a friction-wheel r on its other end, engaging the circular groove l⁶ of friction-wheel l⁵.

s is a shaft journaled in brackets t, secured to the frame T and having a pinion-wheel u on each end, engaging the racks N. v is a ratchet-wheel also mounted on the shaft s.

w is a lever having a pawl 2 engaging the ratchet v for the purpose of operating the same to turn the shaft s.

3 is a pin adapted to be inserted through a lug 4 and into one end of a series of holes in the lever *w* for the purpose of setting the shaft *s* in the desired position.

5 5 is a pulley-wheel on the opposite end of the shaft *s*. 6 is a rope, one end attached to said pulley-wheel and the other end adapted to be connected to the carriage *f* by means of a hook 6*, on the end thereof, engaging an eye
10 7 on the carriage.

8 9 represent beams comprising a skid upon which the logs, to be cut are drawn into the mill.

10 is a cable provided with a grappling-hook 11, adapted to be driven into a log, any suitable power being applied to the other end of the cable for hauling the log into the mill.

12 is a cog-wheel on shaft *E'*, adapted to receive power from any suitable source for operating the vertical shafts *R* to raise and lower the frame *J*.

I do not limit myself to the precise construction and arrangement herein shown and described, as the same may be varied somewhat without departing from the spirit of my invention.

The operation is as follows: One end of the cable 10 is secured to the log to be cut and by means of power applied to the other end of the cable the log is drawn into the mill.
30 The lever *l* is thrown to the right, shifting the eccentric *l'*, secured thereto, and the friction-wheel *l''* to the left, which causes the friction-wheel *r* to contact with the surface *l'''* of the friction-wheel *l''*. The motor *o* is now started, and through the medium of the friction-wheel *r*, mounted on the shaft *p* of said motor, the friction-wheel *l''* and its shaft *l* and pinion-wheel *l'* are rotated to the right, and
40 the pinion-wheel *l'* being in engagement with the rack *W'* the carriage is also moved to the right to the position desired at one end of the log to be cut. The gear-wheel 12 on shaft *E* is then caused to rotate by power applied
45 thereto turning its shaft and through the medium of the miter-gears *F* on each end thereof engaging the miter-gears *S* on the shaft *R* and miter-gears *G* near each end of said shaft engaging the miter-gears *I* on the
50 shaft *H* the shaft *R* is turned, and in turning raises or lowers the frame *J*, thus raising or lowering the carriage and the saws thereon to the height desired. The shaft *s*, mounted in brackets *t*, attached to the frame *J*, is then
55 turned by the pawl and ratchet mounted therein, and through the medium of the pinion-wheel *u* on its end engaging the racks *N* on the under side of the strip *M* the frame *T* is moved back or forth, thus bringing the carriage and the saws thereon to the position desired. Everything being now in readiness for sawing, the carriage is moved forward by the motor *o* and cuts a slab off the log. The lever *l* is now thrown to the left, which
65 reverses the movement of the pinion *l'* and the carriage is moved back to the position from which it started. To place the saws in posi-

tion to saw off another slab, the frame *T* is moved to the right by turning the ratchet-wheel *v*, which revolves the shaft *e* and causes pinion-wheel *u* to move along on rack *N*. This operation is continued until the surface of the log has been sawed off flat. To saw off another section of the log, the rope 6, connected to pulley-wheel 5, is connected to the carriage
75 *f*, and the carriage, by means of the motor *o*, is moved back to the position from which it started, and by means of the rope 6, connecting the carriage with the pulley on shaft *e*, the frame *T* is moved therewith to its original
80 position.

Having thus described my invention, what I claim is—

1. A sawmill provided with a reciprocating carriage, mechanism for operating the carriage, motors mounted on said carriage, one of the motors having its shaft provided with a saw, and the other motor having one end of its shaft provided with a saw and the opposite end connected to the mechanism for operating the carriage, substantially as described.

2. A sawmill provided with a laterally-movable frame, a reciprocating carriage mounted on said frame provided with one or more saws, mechanism for operating the carriage, motors mounted on said carriage designed to operate said saws and the mechanism for operating said carriage, substantially as described.

3. A sawmill provided with a reciprocating and laterally and vertically movable carriage mounted thereon having one or more saws, substantially as described.

4. A sawmill provided with a reciprocating, and laterally and vertically movable carriage, electric motors mounted thereon having saws secured on the shafts thereof, substantially as described.

5. A sawmill provided with a reciprocating carriage having electric motors mounted thereon having saws secured on the shafts thereof, one of said motors operating the carriage, and connected to means for reversing the movement of the carriage without reversing the motor, substantially as described.

6. A sawmill provided with a vertically-movable frame, a laterally-movable frame mounted thereon, and a reciprocating carriage mounted on said laterally-movable frame, said carriage having one or more saws mounted thereon, substantially as described.

7. A sawmill provided with a vertically-movable frame, a laterally-movable frame thereon, and a reciprocating carriage mounted on said laterally-movable frame, said carriage having electric motors mounted thereon having saws secured on the shafts thereof, substantially as described.

8. A sawmill provided with a laterally-movable frame, a reciprocating carriage mounted thereon having one or more saws, and means for connecting the carriage and frame so that the carriage will return the

frame to its normal position, substantially as described.

9. A sawmill provided with a vertically-movable frame, a laterally-movable frame 5 thereon, a reciprocating carriage mounted on said laterally-movable frame, said carriage having one or more saws mounted thereon, and means for connecting the carriage and frame so that the carriage will return the 10 frame to its normal position, substantially as described.

10. A sawmill provided with a laterally-movable frame, a reciprocating carriage mounted on said frame, said carriage having 15 one or more saws mounted thereon, a shaft journaled in said laterally-movable frame having a pawl and ratchet at one end for operating the same, and a pulley-wheel on the other end, and a rope on one end connected 20 to said pulley and the other end to said reciprocating carriage, substantially as described.

11. A sawmill provided with a vertically-movable frame, a laterally-movable frame 25 mounted thereon, a reciprocating carriage mounted on said laterally-movable frame, said carriage having one or more saws mounted thereon, a shaft journaled in said laterally-movable frame having a pawl and ratchet 30 thereon for operating the same, substantially as described.

12. A sawmill provided with a vertically-movable frame, a laterally-movable frame

mounted thereon, a reciprocating carriage mounted on the laterally-movable frame, said 35 carriage having one or more saws mounted thereon, a shaft journaled in said laterally-movable frame having a pawl and ratchet at one end for operating the same, and a pulley-wheel on the other end, and a rope one end 40 connected to said pulley and the other end to said reciprocating carriage, substantially as described.

13. A sawmill provided with a vertically-movable frame mounted on screw-threaded 45 rods adapted to operate the same, a laterally-movable frame mounted on said vertically-movable frame, and a reciprocating carriage mounted on said vertically-movable frame, said carriage having one or more saws mount- 50 ed thereon, substantially as described.

14. A sawmill with a laterally-movable frame, a reciprocating carriage adapted to move longitudinally on said frame, motors mounted on said carriage, one of said motors 55 provided with a horizontally-disposed saw and the other motor provided with a vertically-disposed saw at one end and the opposite end connected to mechanism for operating the carriage, substantially as described. 60

Signed by me at Portland, Oregon, this 15th day of April, 1901.

GEORGE W. BROWER.

Witnesses:

R. A. FRAME,
S. E. BROWER.