W. A. Purres,

Drag Saw.

No. 38,264. Patented Apr. 21, 1863.

Fig 1

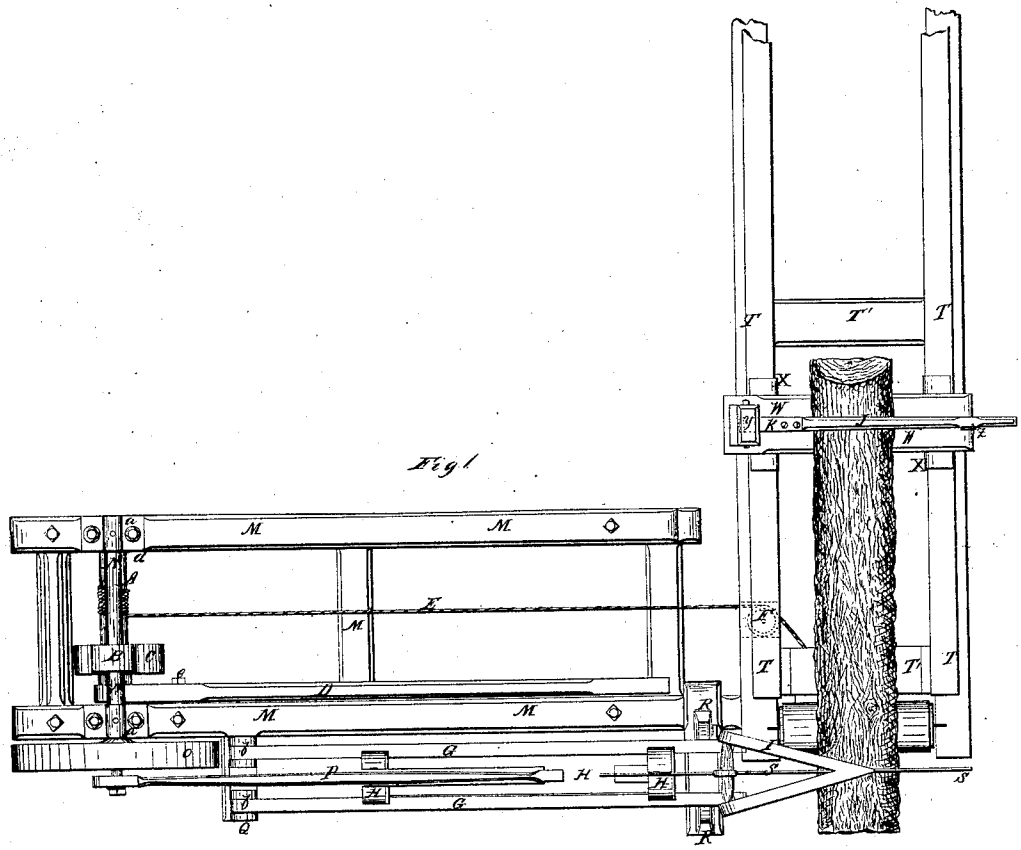
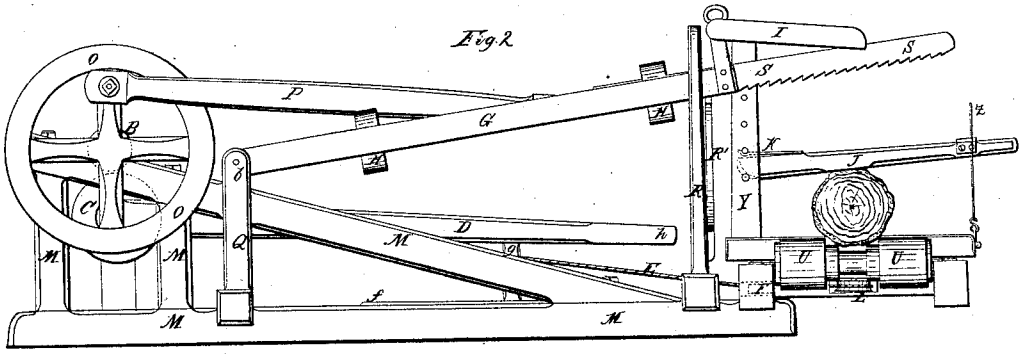


Fig 2



Witnesses
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UNITED STATES PATENT OFFICE.

WILLIAM A. PURVES, OF MADRID, NEW YORK, ASSIGNOR TO DAVID W. BALDWIN, OF WATERTOWN, N. Y,

IMPROVEMENT IN DRAG-SAWS.

Specification forming part of Letters Patent No. **38,264**, dated April 21, 1863.

To all whom it may concern:

Be it known that I, WM. A. PURVES, of Madrid, in the county of St. Lawrence and State of New York, have invented certain new and useful Improvements in Drag-Saws; and I hereby declare that the following, taken in connection with the accompanying drawings, forms such a full, clear, and exact description of the same as to enable others skilled in the art to make and use the same.

My invention relates to machinery for sawing logs or timber, and has for its object greater accuracy of cutting, the automatic performance of its operation, and increased production; and my invention consists, first, in the combination of a saw-frame with a transverse log-supporting frame and a mechanism for drawing up the log so arranged, in relation to the saw-driving mechanism, that the latter may be caused to operate the former at pleasure; second, in the combination of the log-supporting frame with a sliding and adjustable yoke to firmly grasp logs of any dimension and immovably to hold the same to the action of the saw; third, in the combination of the saw driving mechanism with the yoke mounted upon the transverse log-frame, and an adjustable friction or other gear so arranged and operating that the said yoke may be slid along the said frame and the log drawn up to the action of the saw the requisite distances at the will of the operator; fourth, in connecting one end of the shaft of the adjustable friction or other gear with a spring-lever pivoted to the frame, while its other end is placed in fixed bearings in the frame; fifth, in the combination, with the saw-driving mechanism, of a swinging guide-frame and the saw-guide blocks, so that the saw in its reciprocating play may be properly guided, at the same time allowing it to descend during the progress of the work; sixth, in the employment, in combination with a reciprocating saw-blade, of converging side-braces, whereby the flexible saw is during part of its operation laterally stiffened.

Figures 1 and 2 of the accompanying drawings represent a plan and side view, respectively, of my improved drag-saw.

In said figures, M is the saw-frame, consisting of upright posts firmly held in base timbers united by transverse and oblique braces. This frame supports, in suitable bearings, *a a*, the main shaft N, to which a rotary motion is imparted by some prime mover, which may be a steam-engine, water or horse power. Upon this shaft is mounted a fly-wheel, O, with which is connected one end of the connecting-rod or pitman P, whose other end is pivoted in a guide-block, H, carrying the saw. This guide-block is centrally slotted to allow of the up and down motion of the connecting-rod, and is provided at its extreme ends with projecting blocks, which overlap the guide-rails G. The latter are hung at *b*, in suitable standards Q, in line or thereabout with the center of rotation of the fly-wheel and the center of vibration of the pitman. By this arrangement the saw, which is securely fixed in the head or block H, is accurately guided within the guide-rails G, and has its reciprocating motion imparted to it from the prime mover in line with the said rails, whatever their position may be. The guide rails themselves are confined between two standards, R R, so that they are only capable of elevation and depression, according to the depth of cut. During the intervals of sawing the guide-rails, and consequently the saw, may be held out of action by a spring-catch, R′, provided to one of the standards R. The saw S, which is a comparatively long and flexible blade, is supported laterally by a triangularly-shaped brace, I, supported by a bow springing from the ends of the guide-rails.

The log is drawn up and held to the saw in the following manner: A horizontal frame, consisting of two parallel timbers, T, united by cross-timbers T, carries at its forward end—*i. e.*, the end nearest the saw—a roller, U, upon which the forward end of the log rests. This roller, to afford better grasp of the log, is reduced in diameter in the middle, so as to form a cavity with sharp ridges, in which the log is lodged. The rear end of the log is held onto the frame by a yoke consisting, first, of a platform, W, guided along the side rails, T, by two plates, X, bent under to clasp the iron flange of the rails T; secondly, of a standard, Y, in which is pivoted, thirdly, the clamp-bar J, and which in its turn is held down onto the log by, fourthly, a notched bar, Z. These four elements constitute an adjustable yoke, which is very efficient in its operation. The stand-

ard is provided with a series of holes to allow of the adjustment therein of the clamp-bar, according to the various thicknesses of the log, and the clamp-bar is provided with a spring, K, to allow of a yielding and accurate adjustment of the yoke. To prevent the log from rotating on its axis I provide both the platform and clamp-bar with sharp points or studs, which, penetrating the log, will keep it firmly in place. The log, as the work of sawing progresses, is advanced by a cord, rope, or chain, E, that, starting from the middle of the yoke platform and passing over the pulleys L and F, is finally secured to the windlass or shaft A. This windlass has one of its ends in fixed bearings in the saw-frame at *d*, while the other is connected with the lever D, pivoted at *e*. Both the windlass or shaft A and the main shaft N are mounted with friction-wheels or other wheels, B and C, and are so located relatively to each other that the two may be readily thrown in or out of gear at the pleasure of the operator. This is effected by depressing the end *h* of the lever D, whereby the roller or wheel C is brought in contact with the roller or wheel B. To avoid too great pressure being exerted between the two rollers I support the long end *h* of the lever D by an upright bearing on a spring, *f*.

Having thus described my invention, and the manner in which the same is or may be carried into effect, I claim—

1. The combination of a saw-frame with a transverse log-supporting frame and a mechanism for drawing up the log, so constructed and arranged in relation to the saw-driving mechanism that the latter may be caused to operate the former at pleasure, substantially as set forth.

2. The combination of the log-supporting frame with a sliding and adjustable yoke, constructed as herein described, to firmly grasp logs of any dimensions and immovably to hold the same to the action of the saw, substantially as set forth.

3. The combination of the saw-driving mechanism with the yoke mounted upon the transverse log-frame and an adjustable friction or other gear, so constructed and arranged and operating that the said yoke may be slid along the said frame and the log drawn up to the action of the saw the requisite distances, at the will of the operator, substantially as set forth.

4. Connecting the one end of the shaft of the adjustable friction or other gear with a spring-lever pivoted to the frame, while its other end is placed in fixed bearings in the frame, substantially as set forth.

5. The combination, with the saw-driving mechanism, of a swinging guide-frame and the saw-guide block, so that the saw in its reciprocating play may be properly guided, at the same time allowing it to descend during the progress of the work, substantially as set forth.

6. The employment, in combination with a reciprocating saw-blade, of converging side braces, whereby the flexible saw is, during part of its operation, laterally stiffened, substantially as set forth.

In testimony whereof I have signed my name to this specification before two subscribing witnesses.

WILLIAM A. PURVES.

Witnesses:

DAVID PURVES,

JOHN KEYES.