(No Model.)

M. KURTZEMAN.

HAND SAWING MACHINE.

No. 247,069. Patented Sept. 13, 1881.

Fig. 1.

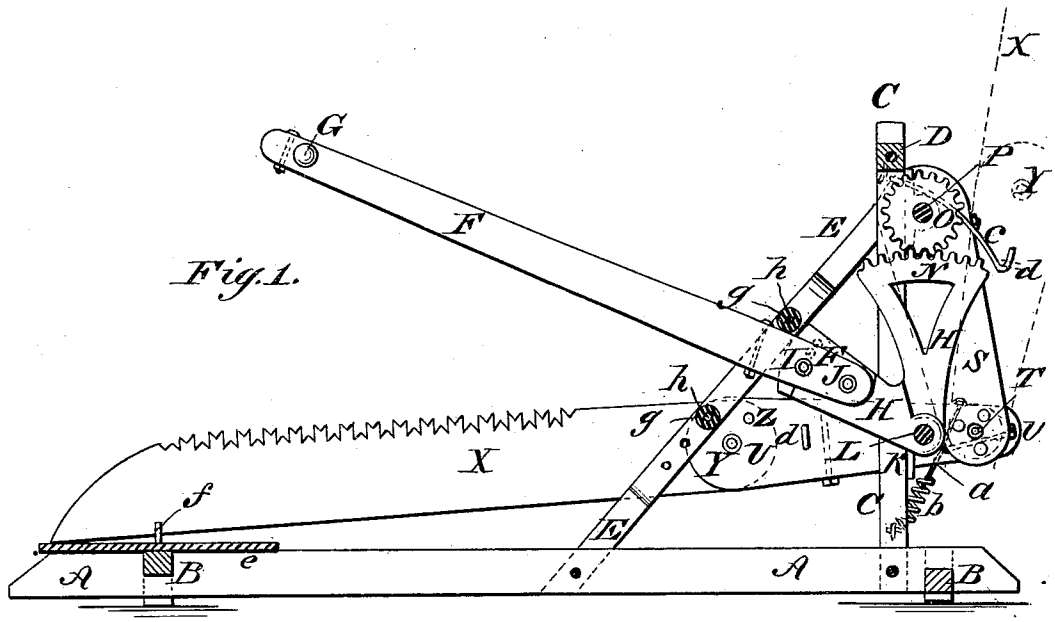

Fig. 2.

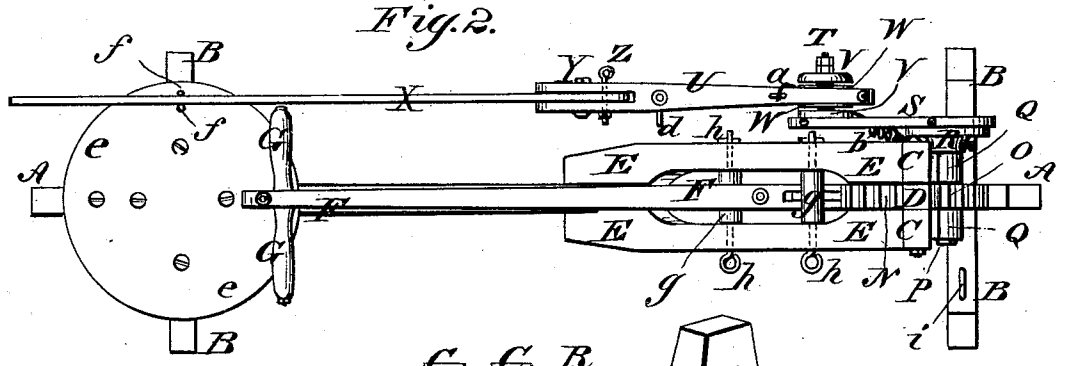

Fig. 3.

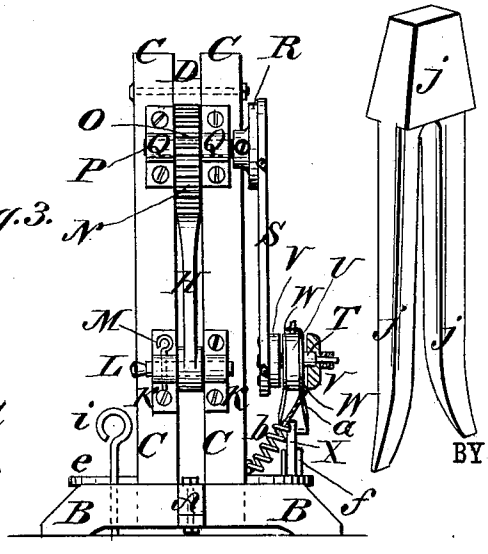

Fig. 4.

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MARTIN KURTZEMAN, OF SHELBY, OHIO.

HAND SAWING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 247,069, dated September 13, 1881.

Application filed February 2, 1881. (No model.)

To all whom it may concern:

Be it known that I, MARTIN KURTZEMAN, of Shelby, in the county of Richland and State of Ohio, have invented a new and useful Improvement in Hand Sawing-Machines, of which the following is a specification.

Figure 1 is a sectional side elevation of my improvement. Fig. 2 is a plan view of the improvement. Fig. 3 is a rear elevation of the same. Fig. 4 is a perspective view of the saw-guide.

Similar letters of reference indicate corresponding parts.

The object of this invention is to facilitate the cutting of trees into logs or lengths.

The invention consists in the peculiar construction of the frame-work to adapt it to receive the operating mechanism; also, in the combination, with the frame-work, of the operating-lever, the bent lever having a toothed segment, the gear-wheel, the crank-arm, and the arm that carries the saw, whereby the saw will be operated by the vertical vibration of the hand-lever; also, in the combination, with the crank-arm and the saw-arm, of a spring to render the change of motion of the saw more easy; also, in rounding the lower forward corner of the saw to adapt it to pass over obstructions upon the ground; also, in the combination, with the platform, of two parallel pins to form a seat for the saw while being carried; also, in the combination, with the braces of the frame, of adjustable pins and rubber blocks to form elastic stops for the operating-lever; and, also, in constructing the saw-guide with the ends of its prongs bent outward and made wedge-shaped, to adapt the guide to serve as a guide to the saw when beginning a cut, and as a wedge to keep the kerf open, as will be hereinafter fully described.

In the accompanying drawings, A is the base-bar of the frame, to the ends of which are attached cross-bars B, to rest upon the ground and give the machine a firm support. The middle parts of the lower sides of the cross-bars B are concaved, to allow the machine to be more readily adjusted upon the ground. To the opposite sides of the base-bar A, near its forward end, are bolted or otherwise secured the lower ends of two parallel upright bars, C, the upper ends of which are connected by a bolt. The upper ends of the upright bars or posts C are kept at a proper distance apart by a block, D, interposed between them, and through which the fastening-bolt passes. The uprights C are secured in position by the parallel inclined braces E, the upper ends of which are secured to the upper parts of the uprights C, and their lower ends are secured to the opposite sides of the base-bar A. The inner sides of the braces E are concaved, to form space for the lever F, which has handles G secured to the opposite sides of its rear end by a bolt passing through the said handles and through the end of the said lever. The forward end of the lever F is secured to the lower arm of the bent lever H by two bolts, I J. The arm of the lever H is made wider than the lever F, and has a number of holes formed through it to receive the bolt I, so that the rear end of the lever F can be adjusted as the height of the operator may require. The lever H is hinged at its angle to bearings K by a pin, L, which is held from turning by a pin, M, passing through it and through one of the bearings K. The bearings K are bolted to the lower part of the forward sides of the posts C.

Upon the end of the upper arm of the lever H is formed a segment, N, of a gear-wheel, the teeth of which mesh into the teeth of a gear-wheel, O, attached to a short shaft, P. The shaft P rocks in bearings Q, attached to the forward sides of the upper parts of the posts C. To the projecting end of the shaft P is attached a plate, R, to which is bolted the upper end of a crank-arm, S. To the lower end of the crank-arm S is attached a pivot-bolt, T, to which is pivoted the end of a saw arm or handle, U. The saw-arm U is held steady upon the pivot T by washers V, placed upon the said pivot T upon the opposite sides of the said saw-arm U.

The washers V are held in place by a bolt passing through the said crank-arm S longitudinally and secured by a nut. The pivot T is also secured by a nut. The part of the saw-arm U between the washers V has metal plates W attached to it to prevent wear.

The forward end of the saw-arm U is slotted to receive the rear end of the saw-blade X, which is pivoted to the said saw-arm by a bolt, Y.

The saw-blade X is kept from turning in the saw-arm U by a pin, Z, which passes through the said saw arm and blade. Several holes are formed through the saw-blade X, so that the said saw-blade can be adjusted to saw a log close to or farther from the ground, as may be required. The lower side of the forward end of the saw-blade X is rounded or made runner-shaped, as shown in Fig. 1, so that the said end will pass over obstructions upon the ground.

To the rear part of the saw-arm U is attached the end of a short chain, *a*, the other end of which is attached to the end of a spiral spring, *b*. The lower end of the spring *b* is attached to the lower part of the upright C. With this construction, as the crank-arm S swings in either direction as the saw makes its stroke, the spring *b* is put under tension, so that as soon as the crank-arm stops the elasticity of the said spring *b* will start it back, thus making the saw run easier than it otherwise would.

To the upper part of the post C is hinged a hook, *c*, to hook into a staple, *d*, attached to the saw-arm U, to hold the saw raised when moving the machine along the log to make another cut.

To the rear end of the base-frame A B is attached a platform, *e*, for the operator to stand upon when working the lever F. To the platform *e*, near one side, are attached two upwardly-projecting parallel pins, *f*, to form a seat for the saw X when turned back, to keep the said saw in place when the machine is being moved from place to place. Between the inner sides of the braces E, above and below the lever F, are placed rubber blocks *g*, for the lever F to strike against as it completes its upward and downward strokes, to cause the said lever to come to a stop without a jar and to start it on its return movement.

The rubber blocks or cushions *g* are secured in place by pins *h*, passing through them and through the braces E, and which may be kept in place by keys or other suitable means. Several holes are formed through the braces E, to receive the pins *h*, so that the rubber blocks *g* can be adjusted as the adjustment of the lever F may require.

i is a long pin or rod, which is thrust through one end of the forward cross-bar, B, into the ground to hold the machine in place while in use.

j is a forked or slotted guide to keep the saw in place while being started into the log. The ends of the prongs or arms of the guide *j* are bent from each other, as shown in Fig. 4, to keep them out of the way of the teeth of the saw. The end of the guide *j* is made wedge-shaped, so that the said guide *j* can serve as a wedge to be driven into the saw-kerf to prevent the log from pinching the saw.

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

1. The within-described sawing-machine, consisting of the frame, lever F, bent lever H, provided with segment N, pivoted near the bottom of the frame and extending up to pinion O, crank-lever S, extending downward from said pinion, and saw-arm U, attached thereto, in manner and form as set forth.

2. In combination with the braces E and lever F, the adjustable pins *h* and rubber blocks *g*, substantially as described, whereby the stroke of the lever is regulated and the reversing of stroke aided, as set forth.

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Witnesses:
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