(No Model.)

W. E. PATTERSON.

SAWING MACHINE.

No. 385,824. Patented July 10, 1888.

Fig. 1.

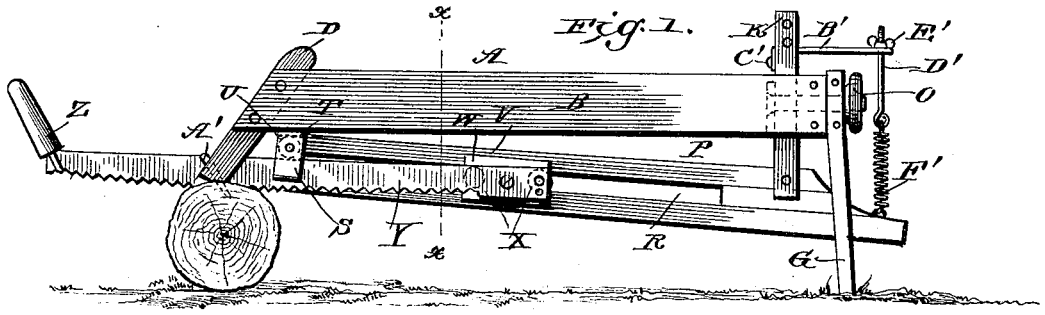


Fig. 2.

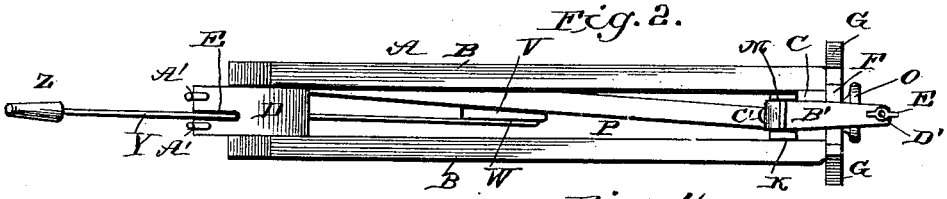


Fig. 4.

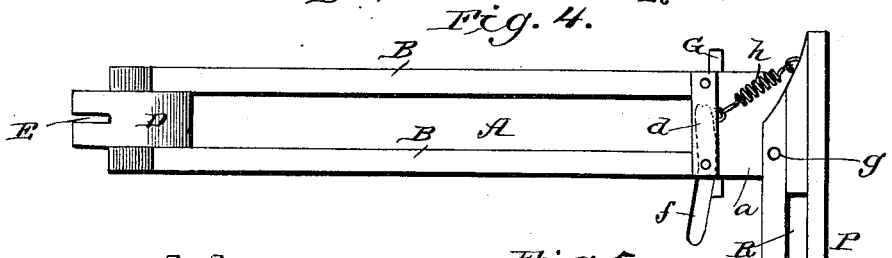


Fig. 3.

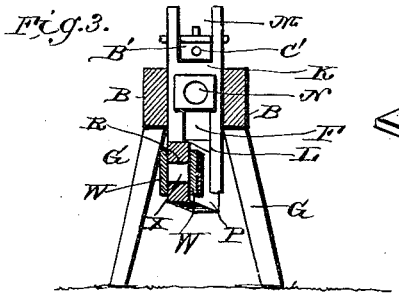
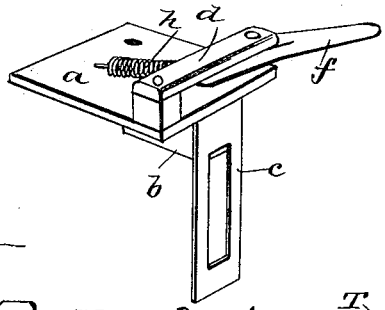


Fig. 5.



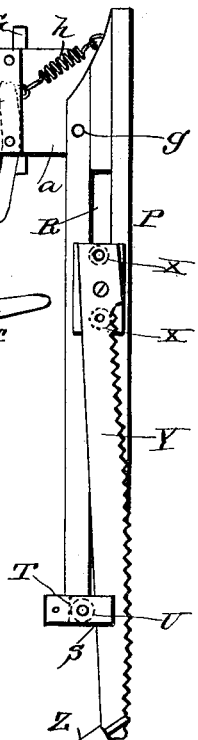
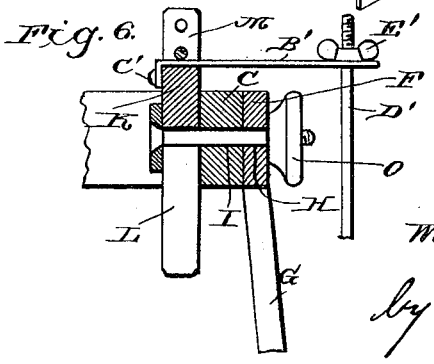


Fig. 6.



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UNITED STATES PATENT OFFICE.

WILLIAM E. PATTERSON, OF PELICAN RAPIDS, MINNESOTA.

SAWING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 385,824, dated July 10, 1888.

Application filed March 27, 1888. Serial No. 268,616. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM E. PATTERSON, a citizen of the United States, residing at Pelican Rapids, in the county of Otter Tail and State of Minnesota, have invented a new and useful Improvement in Sawing-Machines, of which the following is a specification.

My invention relates to an improvement in sawing-machines; and it consists in the peculiar construction and combination of devices, that will be more fully set forth hereinafter, and particularly pointed out in the claims.

The object of my invention is to provide a sawing-machine that is adapted for sawing firewood and fallen logs and timber, and is adapted also for felling trees.

In the accompanying drawings, Figure 1 is a side elevation of a sawing-machine embodying my improvements. Fig. 2 is a top plan view of the same. Fig. 3 is a vertical transverse sectional view taken on the line *x x* of Fig. 1. Fig. 4 is a top plan view of my invention when the same is provided with the attachment for felling trees. Fig. 5 is a detached perspective view of the said attachment. Fig. 6 is a detail section.

A represents the frame, comprising a pair of longitudinal bars, B, connected at one end by a block, C, and connected at their opposite ends by an inclined block, D, said block having a vertical longitudinal slit or kerf, E, in its lower extremity and of suitable depth.

F represents a standard, which is provided with a pair of diverging supporting-legs, G. The upper end of this standard is provided with an opening, H, which is coincident with a similar opening, I, in the block C.

K represents a vertical bar, which is provided in its lower portion with an open slot, L, and is provided at its upper portion with a similar open slot, M.

N represents a bolt, which extends through the lower slot in the bar, through the opening I, and through the opening H in the upper end of the standard F, and to the outer end of this bolt is screwed a nut, O, by means of which the bar may be clamped in the frame at any desired vertical adjustment and the standard may be clamped to the end of the frame at any desired inclination. This construction enables the frame to be turned so as to cause its under side to lie parallel with the log on which the saw is operating whether the frame be placed on even or uneven ground.

P represents a saw-guide, which is provided with a longitudinal slot, R. The front end of the said guide is pivoted in the slot in the lower end of the bar K, and extends forward beyond the standard F, and the rear end of the said guide is provided with a transverse block or bar, S, which is arranged in a vertical position, and is provided in its under side with a slit or kerf, T, in the upper end of which is an anti-friction roller, U.

V represents a cross-head or block, which is arranged in the slot R, and comprises a pair of plates, W, which bear on opposite sides of the guide and are connected by means of anti-friction rollers X, which travel in the slot. To one side of the said cross head or block is pivoted one end of a crosscut-saw, Y, of the usual construction, and to the outer end of the said saw is attached a handle, Z, by means of which the saw may be readily grasped and operated. The outer end of the saw is arranged in the kerf T of the block S and in the kerf E of the block or standard D. In the lower end of the said block or standard D, on opposite sides of the kerf E, are spikes A′.

B′ represents a right-angled arm, which extends horizontally from the upper end of the bar K, has its inner end bearing in the lower end of the slot in the upper portion of said bar, the said arm being secured rigidly to the bar K by means of bolts C′. Through the outer end of the arm B′ extends a vertically-movable rod or link, D′, the upper end of which is screw-threaded and is provided with a thumb-nut, E′, that bears upon the outer end of the arm. To the lower end of the said rod or link is connected a coiled retractile spring, F′, the lower end of said spring being connected to the projecting front end of the saw guide-arm P.

The operation of my invention is as follows: In order to saw a log which is arranged flat on the ground, or which may have one end supported at a slight elevation from the ground, the operator places the lower end of the block D on the said log, drives the spikes A′ into the log so as to steady and support the rear end of the saw-frame thereon, and the legs of the

standard F at the outer end of the saw-frame are caused to bear upon the ground and support the saw-frame, as shown in Fig. 1. As before stated, the pivotal bolt which connects the standard to the front end of the saw-frame enables the latter to be arranged with its under side parallel with the upper side of the log to be sawed, no matter at what inclination the log may be, nor whether the ground is flat or uneven. Having secured the frame in this position, the operator grasps the handle Z and draws the saw back and forth across the log in the usual manner, the cross head or block traveling back and forth in the slotted saw-guide and serving to direct the saw in a straight line across the log. The retractile spring F′, by drawing upward on the projecting front end of the saw-guide arm, moves the rear end of the same downward, and thereby causes the saw to remain snugly in the bottom of the kerf in the log and feeds the saw to its work while in operation. By reason of the thumb-nut E′ on the upper end of the link or rod D′ the pressure of the spring on the saw-guide arm may be increased or diminished at will.

In order to fell a standing tree, the arm B′ is removed from the upper end of bar K, the saw-guide arm is disconnected from the lower end of said bar, and the spring F′ is disconnected from the saw-guide arm; and I employ an attachment such as represented in Figs. 4 and 5. This attachment comprises a platform or base plate, *a*, having a block or depending ear, *b*, on its lower side, from one end of which depends a vertical slotted arm, *c*, and on the upper side of the platform *a* is supported a guide or bearing *d*, in which is pivoted the inner end of a lever, *f*. The block or ear *b* is inserted in the slot in the upper end of bar K. The slotted arm *c* is extended downward between the side bars, B, of frame A, and is secured on the inner end of the clamping-bolt, the latter being extended through the said slotted arm, as shown. The outer end of the saw-guide is then pivoted in a horizontal position on the top of the platform or plate *a* by means of a bolt, *g*, and a coiled retractile spring, *h*, is secured to the extreme outer end of the guide-arm and to the inner end of the lever *f*. When thus arranged, the serrated edge of the saw is caused to engage the tree which is to be felled, the saw-frame is secured in position, as before described, and the operator by grasping the saw-handle is enabled to move the saw back and forth across the standing tree, so as to make a horizontal kerf therein, and thus cause the tree to be felled.

A sawing-machine thus constructed is extremely cheap and simple, is strong and durable, is light and portable, is very easily operated, and enables a single person to operate a crosscut-saw with ease.

I have cut a cord of hard maple wood with a sawing-machine thus constructed in one hour without fatigue.

Having thus described my invention, I claim—

1. The combination of the saw-frame A, the bar K, secured thereto at one end and vertically adjustable therein, the saw-guide arm having one end pivoted to the lower end of said bar, the cross-head or block working longitudinally in the saw-guide arm, and the saw having one end secured to said block or cross-head, substantially as described.

2. The combination of the saw-frame A, the standard F, pivoted to one end thereof, whereby said frame may be turned to any desired angle, the bar K, depending from the saw-frame at the pivotal end of the latter, the guide arm pivoted at the lower end of said bar, the cross head or block adapted to reciprocate in the said guide-arm, and the saw having its front end pivoted to said cross-head or block, substantially as described.

3. The combination of the supporting-frame, the saw-guide arm pivoted thereto and arranged on the under side thereof, the said saw-guide arm having the slot R, and the block S at the rear end of said slot, provided with the guiding kerf or slit T, the cross-head or block traveling in the slot R, and arranged on the saw-guide arm, and the saw-blade having its front end pivoted to said block or cross-head, having its rear end guided in the slit or kerf T, substantially as described.

4. The combination of the saw-frame A, the bar K, depending from one end thereof, the saw-guide arm having its front end pivoted to said depending bar, the cross head or block provided in the said saw-guide arm and adapted to reciprocate thereon, the saw pivoted to the said block or cross-head, and the spring connected to the said guide-arm and adapted to force the saw downward in the kerf, substantially as described.

5. The combination of the saw-frame having the block D at one end, the standard F at the opposite extremity, the vertically-movable bar K, arranged at one end of the said saw-frame, the arm B′, secured to the upper end of said bar, the saw-guide arm pivoted near one end to the lower end of bar K, the spring attached to the outer end of the saw-guide arm, the adjustable link connecting said spring to the bar B′ for the purpose set forth, the block or cross-head guided in the guide-arm and adapted to reciprocate thereon, and the saw-blade having its front end pivoted to said block or cross-head and having its rear end engaged by the kerf T, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

WILLIAM E. PATTERSON.

Witnessess:
J. P. WALLACE,
O. I. HEGGE.