

(No Model.)

I. H. BERTRAM.  
WOOD SAWING MACHINE.

No. 368,181.

Patented Aug. 16, 1887.

Fig. 1.

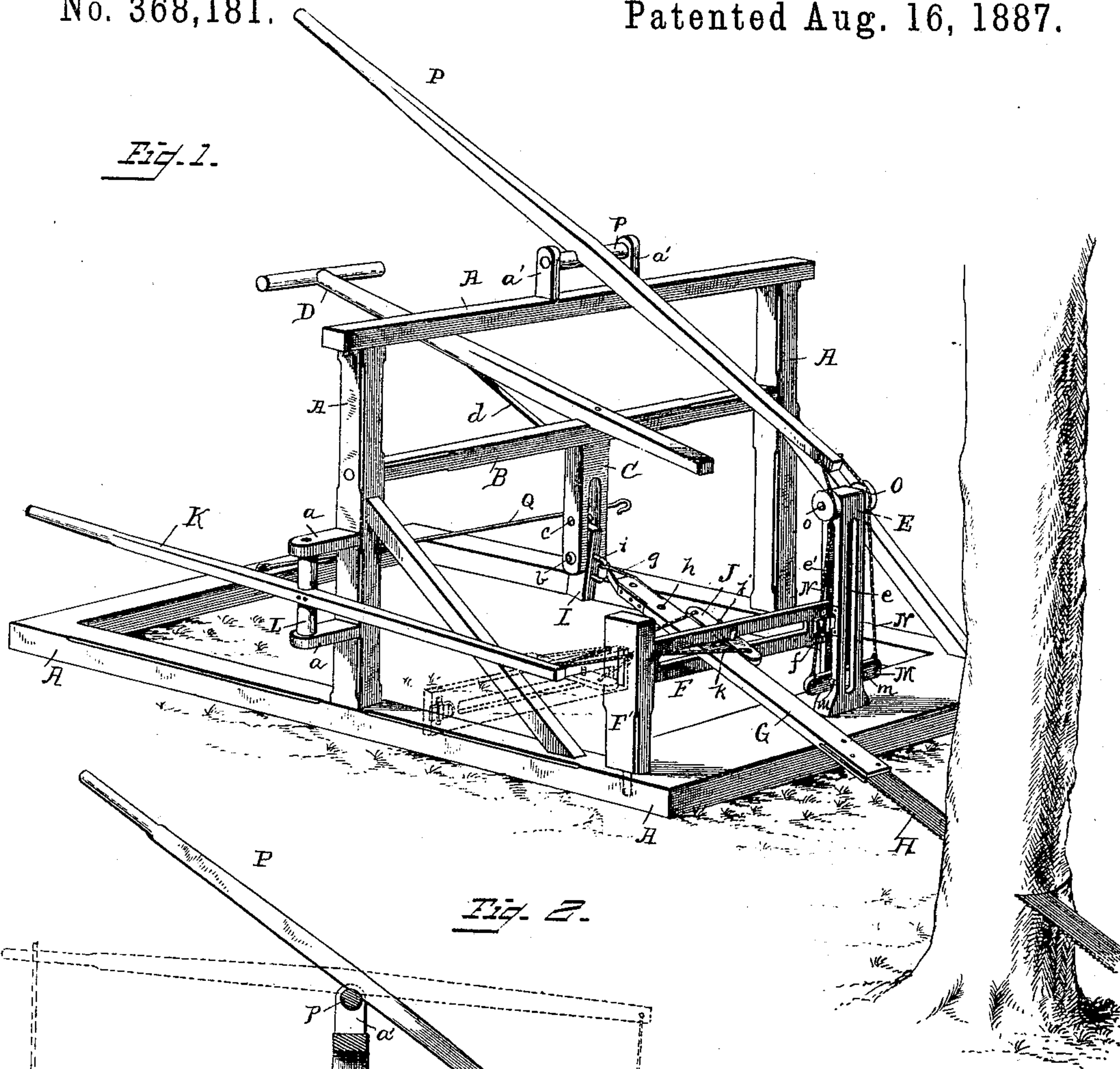
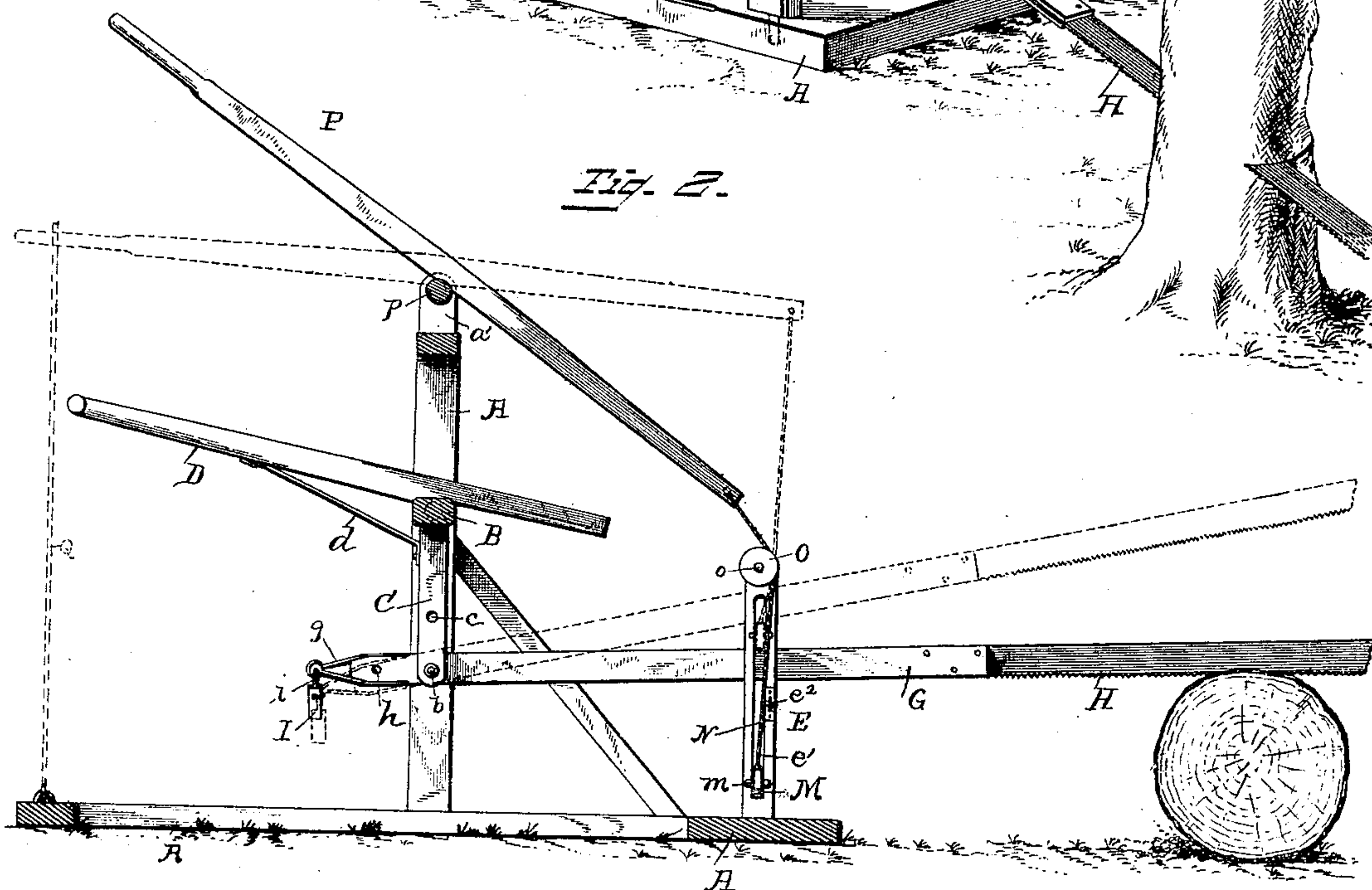


Fig. 2.



## Witnesses

Wm. E. Stearns

Inventor

Isaac Henry Bertram

By *his* Attorney

Wm Hunter Myers



# UNITED STATES PATENT OFFICE.

ISAAC HENRY BERTRAM, OF BROCK, OHIO.

## WOOD-SAWING MACHINE.

SPECIFICATION forming part of Letters Patent No. 368,181, dated August 16, 1887.

Application filed April 25, 1887. Serial No. 235,973. (No model.)

*To all whom it may concern:*

Be it known that I, ISAAC HENRY BERTRAM, a citizen of the United States of America, residing at Brock, in the county of Darke and State of Ohio, have invented certain new and useful Improvements in Wood-Sawing Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to wood-sawing machines designed to fell trees and to cut them up into lengths suitable for fire-wood, fence-rails, &c.; and it consists in certain details of construction and combinations of parts, which will first be described in connection with the accompanying drawings, and then pointed out in the claims.

Figure 1 is a perspective view of my machine, with the saw arranged for cutting standing timber. Fig. 2 is a longitudinal section of the machine, with the saw arranged to cut the timber into lengths while lying on the ground.

Referring to the annexed drawings, A represents the frame of the machine, comprising a rectangular base, two uprights rising from opposite sides of the base, and a beam uniting the uprights at the top.

B represents a rock-shaft loosely journaled in the uprights, to the under side of which shaft is rigidly secured a slotted arm, C, formed with bolt-holes *c*, and to the upper side of the rock-shaft is secured an operating-lever, D, braced by a rod, *d*.

E represents a vertical saw-guide mounted centrally on the forward end of the base of the machine-frame and in alignment with the slotted arm secured to the rock-shaft. This guide is simply a post slotted in two directions, the slots being at right angles to each other, as seen at *e e'*.

F represents a horizontal saw-guide, which is a strip of wood or other suitable material slotted nearly its entire length. One end of this guide is framed into a post, F, which is loosely pivoted in the base of the frame at the front end and near one corner, and the other end of the guide is provided with a sliding catch, *f*, which engages with a mortise, *e''*, in saw-guide E.

G is the saw-arm, in the front end of which

the saw II is firmly secured. To the rear end of this arm, on its edges, is rigidly attached a metallic strap, *g*, through which is passed a staple, *i*, inserted in a coupling-block, I, of wood or other suitable material, which is of a thickness to fit loosely in the slot in arm C, which block is thus hinged at right angles to the saw-arm. Bolt-holes *h* are formed also in the rear end of the saw-arm.

J represents a follower-block, located in the slot in the horizontal saw-guide, which is guided in said slot by means of pins *j*, passed through the block on either side of the saw-guide. To the ends of this follower-block are secured cords *k*, which pass through post F' and are secured at their outer ends to a lever, K, fulcrumed on a short post, L, journaled in brackets *a*, attached to one of the uprights of frame A.

M represents a support for the saw when not in operation, which support is a strip of wood passed through slot *e'* of the vertical saw-guide and held in proper position in said slot by means of pins *m*, passed through the support on each side of the saw-guide. Cords N are attached to each end of this support and pass upward over pulleys O, journaled on a short shaft, *o*, passed through the upper end of the vertical saw-guide, and the upper ends of these cords are secured to a lever, P, fulcrumed on an arm, *p*, loosely journaled in short standards *a'*, rising from the beam of frame A.

Q represents a hooked rod for engaging with lever P to hold the saw-support in an elevated position, as seen in dotted lines in Fig. 2, one end of the rod being secured to the base of the machine-frame.

The operation of my machine is as follows: When it is desired to cut down a tree, the saw-arm is passed flatwise through the slot in the horizontal guide in front of follower-block J, and coupling-block I is placed in the slot in arm C and secured therein by the bolt *b*, passed through said arm and the perforation in the block. The saw having been placed against the tree, the operator takes hold of lever D with one hand and operates the rock-shaft, thereby giving the saw a to-and-fro movement, and with his other hand gently draws on lever K, which causes the follower-block to press on



the rear side of the saw-arm and hold the saw to its work. When the tree is down and it is desired to cut it up into lengths, block I is disengaged from the rock-shaft arm and the saw-arm is withdrawn from the horizontal saw-guide, which latter is then disengaged from the vertical saw-guide and swung to the dotted-line position shown in Fig. 1, where it will be out of the way. The saw-arm is then passed through slot *e* of guide E above the saw-support M, and its rear end is secured in the rock-shaft arm by bolt *b*, passed through the latter and one of the bolt-holes *h* in the saw-arm. The saw is then operated by means of lever D and the rock-arm, as before.

Should it be desirable to shorten the strokes of the saw, as when cutting a small log, the saw-arm is raised to the upper hole in the rock-shaft arm. When the cut is made, the saw is elevated by pulling down the free end of lever P, which movement raises the support M, and with it the saw-arm, and the hooked rod Q is then engaged with the free end of the lever, all as clearly shown in dotted lines in Fig. 2.

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

1. In a wood-sawing machine, the combination, with the rock-shaft journaled in the main frame and provided with an operating-lever and a slotted arm, of the saw-arm provided at its front end with a saw, a coupling-block hinged to the rear end of the saw-arm at a right angle to the cut of the saw, suitable means for securing the coupling-block to the rock-shaft arm, and a horizontal guide for the saw-arm, substantially as described.

2. The combination, with the rock-shaft journaled in the main frame and provided with an operating-lever and a slotted arm, of the saw-arm carrying a saw at its front end, perforated at its rear end for the reception of a bolt, and provided with a coupling-block hinged to the saw-arm at a right angle to the cut of the saw, suitable means for securing said arm to the rock-shaft arm, a horizontal saw-guide and a vertical saw-guide, whereby the saw can be arranged at will to make either a horizontal or a vertical cut, substantially as described.

3. The combination, in a sawing-machine of the class described, of a vertical saw-guide and a horizontal saw-guide, one end of the latter being detachably secured to the former and the other end rigidly secured to a post loosely pivoted in the machine-frame, whereby the horizontal guide may be swung out of the way when not required for use, substantially as described.

4. In a wood-sawing machine, the combination, with a horizontal saw-guide, substantially as described, and a saw-arm movable therein, of a follower-block located in the said guide in rear of the saw-blade, a lever fulcrumed at the side of the main frame, and cords connecting the follower-block with said lever, for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

ISAAC HENRY BERTRAM.

Witnesses:

NEWTON LYONS,  
CHARLES F. LYONS.