(No Model.) 2 Sheets—Sheet 1.

S. HIRSCHY.

SAWING MACHINE.

No. 290,051. Patented Dec. 11, 1883.

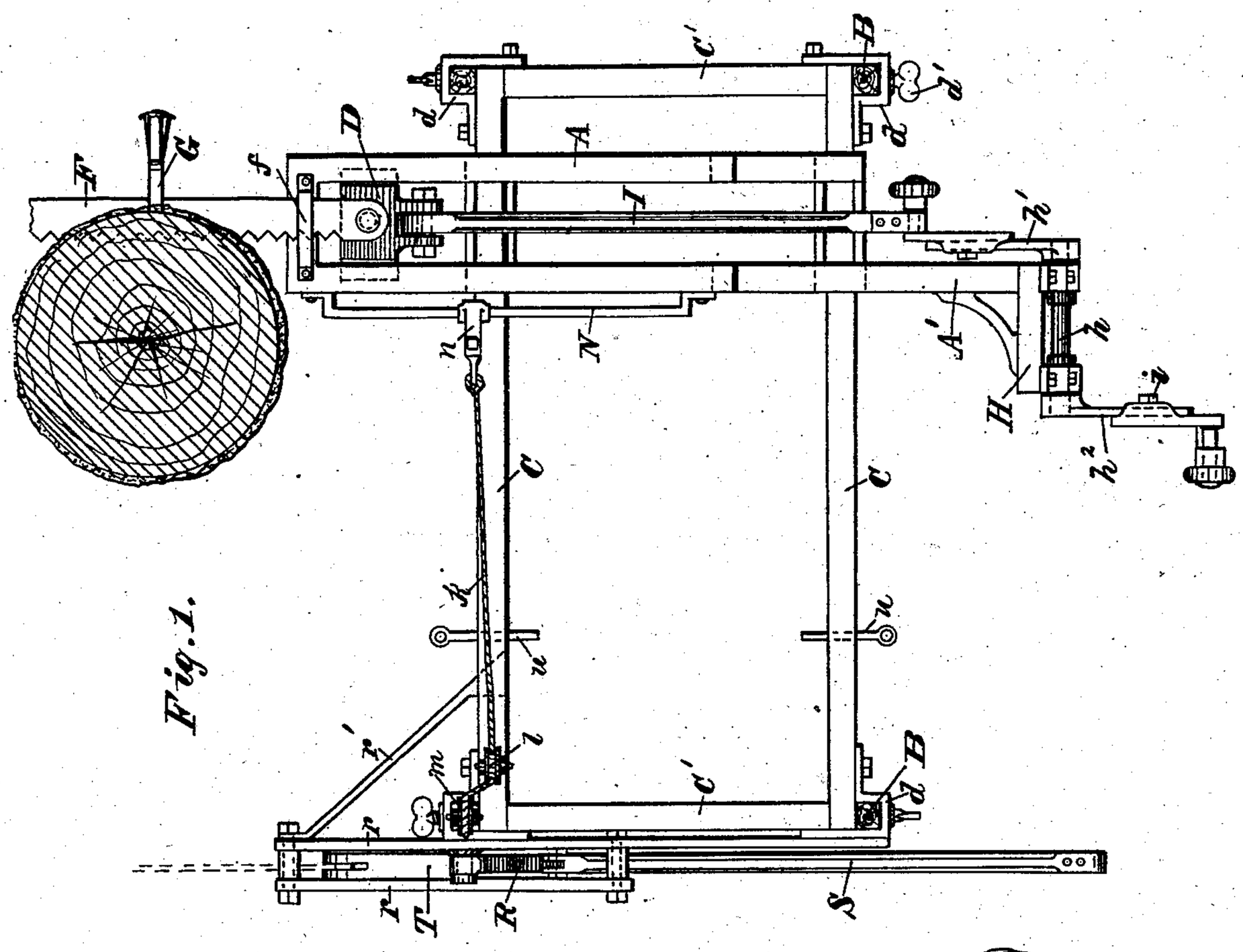

Fig. 1.

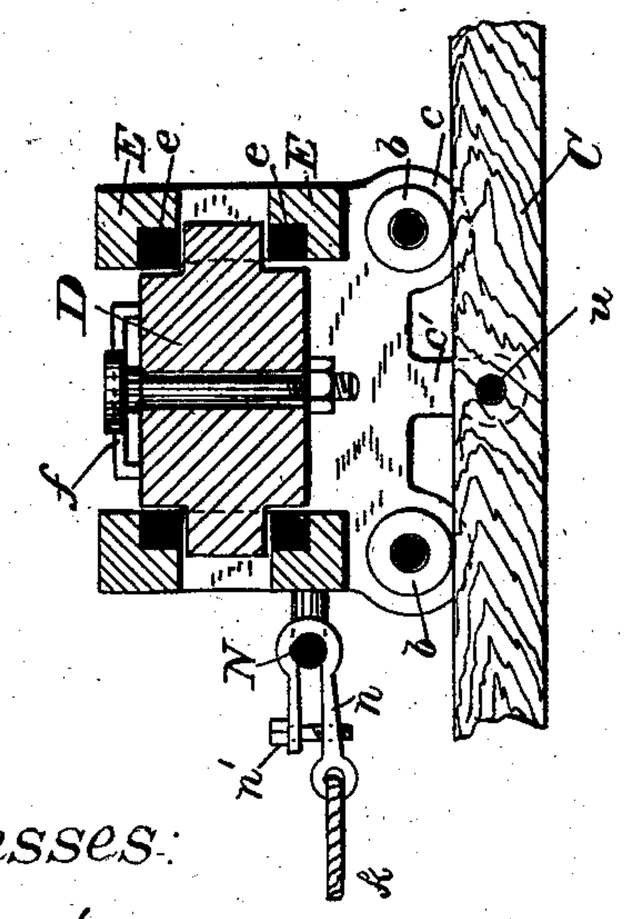

Fig. 2.

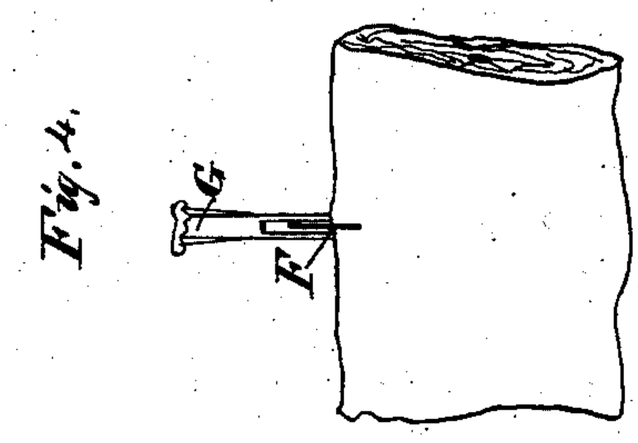

Fig. 4.

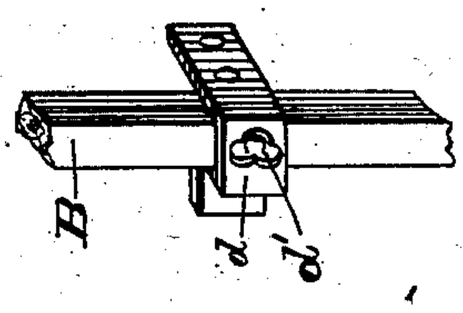

Fig. 3.

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(No Model.) 2 Sheets—Sheet 2.

S. HIRSCHY.

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Fig. 5.

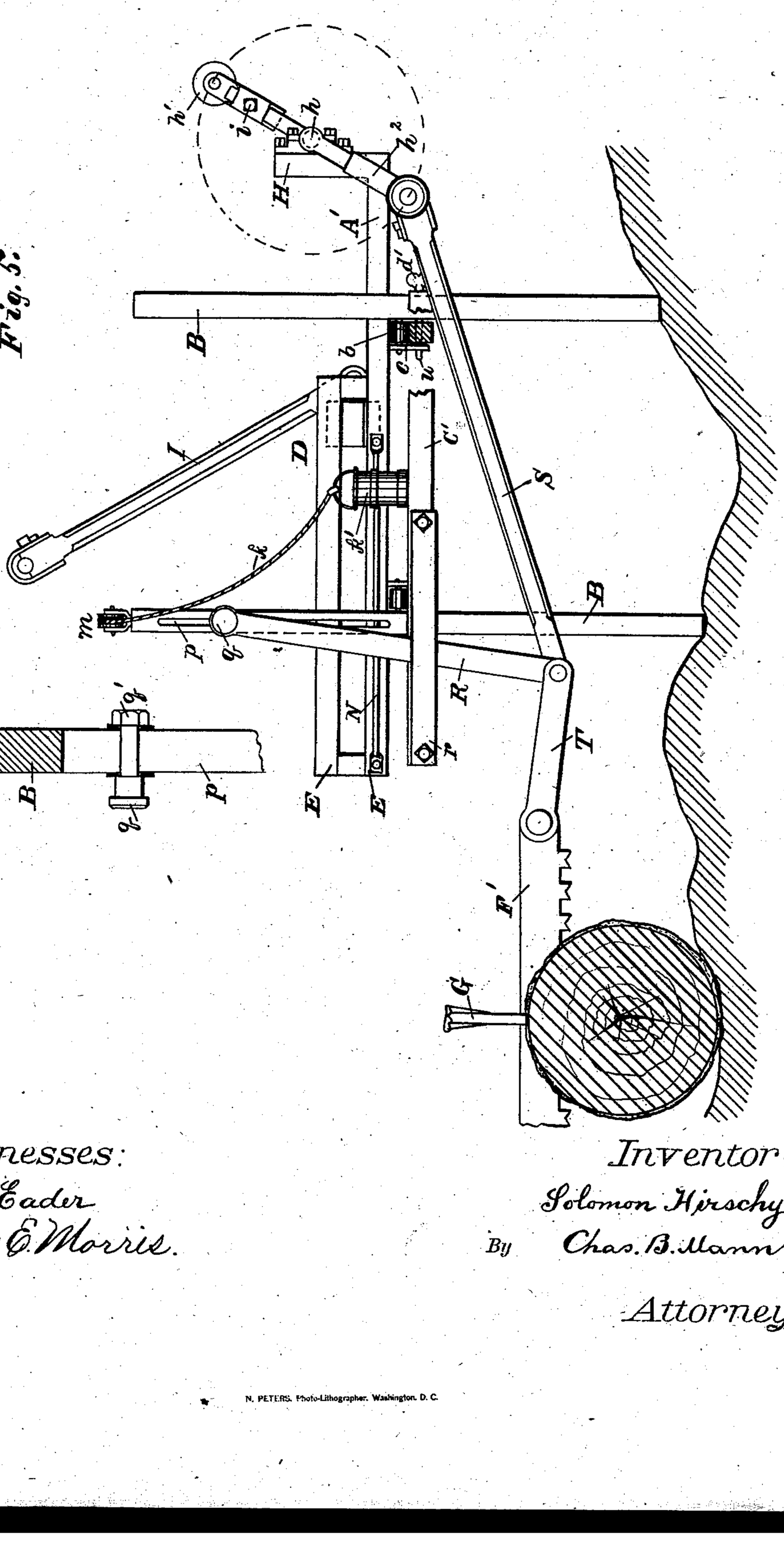

Fig. 6.

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UNITED STATES PATENT OFFICE.

SOLOMON HIRSCHY, OF BERNE, INDIANA.

SAWING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 290,051, dated December 11, 1883.

Application filed July 19, 1883. (No model.)

To all whom it may concern:

Be it known that I, SOLOMON HIRSCHY, a citizen of the United States, residing at Berne, in the county of Adams, State of Indiana, have invented certain new and useful Improvements in Sawing-Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to an improved machine for sawing wood, and will first be described, and then designated in the claims.

In the drawings hereto annexed, Figure 1 is a top view of the machine in position to saw the trunk of a standing tree. Fig. 2 is a cross-section of the saw-carriage. Fig. 3 is a view of one of the standards and the box in which it is held and vertically adjusted. Fig. 4 is a view showing the tree saw-guide. Fig. 5 is an end elevation, showing the machine employed to saw a log while in a horizontal position. Fig. 6 is a view of the slotted standard.

The saw-carriage A is mounted on rollers *b*, which traverse a track composed of the two side rails, C, secured together by end pieces, C′. This track-frame is supported on four standards, B—one at each corner—and is provided at each of said corners with a box, *d*, having a set-screw, *d′*, by means of which each leg may be separately and independently adjusted in a vertical direction, thereby enabling the track-frame to be set level regardless of the uneven nature of the ground, as indicated in Fig. 5. The sides *c* of the box, in which the rollers *b* have their bearing, project downward, and constitute a flange on each side, which sets astride of the track-rail. The slide on the saw-carriage, in which the saw-head D reciprocates, consists of the upper and lower parallel bars, E, each of which is faced with a steel plate, *e*. (See Fig. 2.)

At the front end of the saw-carriage is a guide, *f*, through which the saw F passes. Another saw-guide, G, has two prongs and a head, and the prongs are driven into the tree. The saw then passes between the prongs, and is thereby supported until it has made a cut and enters the tree. One of the beams, which forms a side of the saw-carriage, extends, as at A′, at the rear end, and has at said extended end a head, H, which carries a shaft, *h*, provided with two cranks, *h′* and *h²*. Each crank-arm is made of two pieces, one of which is adapted to slide extensibly on the other, and is provided with a set-screw, *i*, by which the two pieces are made fast together at any desired point, thereby enabling the crank-arms to be adjusted longer or shorter. The cranks are so arranged that one man may handle both. A pitman-rod, I, connects the reciprocating saw-head D with the crank *h′*, and thereby when the cranks are turned motion is given the saw F.

Means to impart motion to the saw-carriage, so as to move it as fast as the saw makes a cut in the tree, and to give to the saw the desired pressure against the tree, consists of a cord, *k*, attached to the side of the saw-carriage, and extending toward the end of the track, where it passes through a pulley, *l*, and from thence extends up to and over a pulley, *m*, on top of the standard B, and from thence hangs down, and has a suitable weight, *k′*, attached. By preference a small bucket, to contain stones or similar material, is employed as a weight. This weight, it will be seen, will constantly draw on the saw-carriage.

It is important to so attach the cord to the saw-carriage that the point of attachment may be conveniently changed or adjusted, in order that the draft of the cord may be evenly balanced on the saw-carriage. If the cord be attached at a given fixed point on the carriage, it may serve to draw it evenly (so that the flanges *c* at the rollers on each track will not bind thereon) while sawing a small tree, or while sawing the tree when the machine is close thereto; but when sawing a large tree, or when sawing a tree while the machine is not in close position, the same given point for the attachment of the cord will not effect a balance or even draft on the saw-carriage. I therefore provide a rod, N, whose ends are made fast to the side beam of the saw-carriage. This rod extends lengthwise of the said carriage. A hook-gripper, *n*, is attached to the end of the rope, and hooks around the rod. This hook-gripper has suitable means, *n′*, by which it may be tightened or set fast on the rod. By this arrangement of rod and hook-gripper adapted to slide on the rod the point of attachment of the cord may be readily changed, and it may be adjusted anywhere along the length of the saw-carriage to suit the work for the time being.

As heretofore described, the machine is adapted particularly for sawing the trunks of standing trees, the saw moving or making a cut in a horizontal plane.

In Fig. 5 of the drawings the machine is shown arranged to saw timber while in a horizontal position, the saw moving or making a cut in a vertical plane. One of the standards has a vertical slot, *p*, through which a pivot-pin, *q*, passes. This pin may be adjusted up or down in the slot, and by means of the nut *q* may be set fast at any elevation. A pendulum, R, is pivoted to the pin, and swings in the guide formed by the two bars *r*, which are separated to allow the pendulum to swing between them. A brace, *r'*, has one end bolted to the projecting ends of the bars, and the other end secured to the lower side of the track-rail, in which position it is out of the way of the flange *c* of the roller-box. This construction affords stay to the parts and prevents the saw from tilting sidewise. A pitman, S, connects the lower or swinging end of the pendulum and the crank h^2.

It should be here stated that when the machine is employed so that the saw will cut in a vertical plane, the pitman I must be disconnected from the crank *h'*, and the saw-carriage should be brought in position, close as possible to the slotted standard, and then secured to said position by means of pins *u*, passed through the track-rails C and through the flange *c'* of the roller-box. The saw F' is connected to a link or arm, T, which is connected to the pendulum.

It will be seen that when turning the cranks, the pendulum will swing and impart motion to the saw, which at first will move through the two prongs of the guide G.

Having described my invention, I claim as new and desire to secure by Letters Patent of the United States—

1. In a sawing-machine, the combination, with the saw-carriage, of a rod, N, extending lengthwise of the carriage, and having its ends made fast thereto, a cord to which a weight is suspended, and a gripper, *n*, connecting one end of the cord and the said rod, the gripper being adapted to slide on the rod, as set forth.

2. In a sawing-machine, the combination of track-rails C, a saw-carriage to move on the track-rails, provided with a downward-projecting flange, C, and pins *i*, for passage through the track-rail and flange, as set forth.

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

SOLOMON HIRSCHY.

Witnesses:

MICHAEL MCGRIFF,

JACOB M. DUSTMAN.