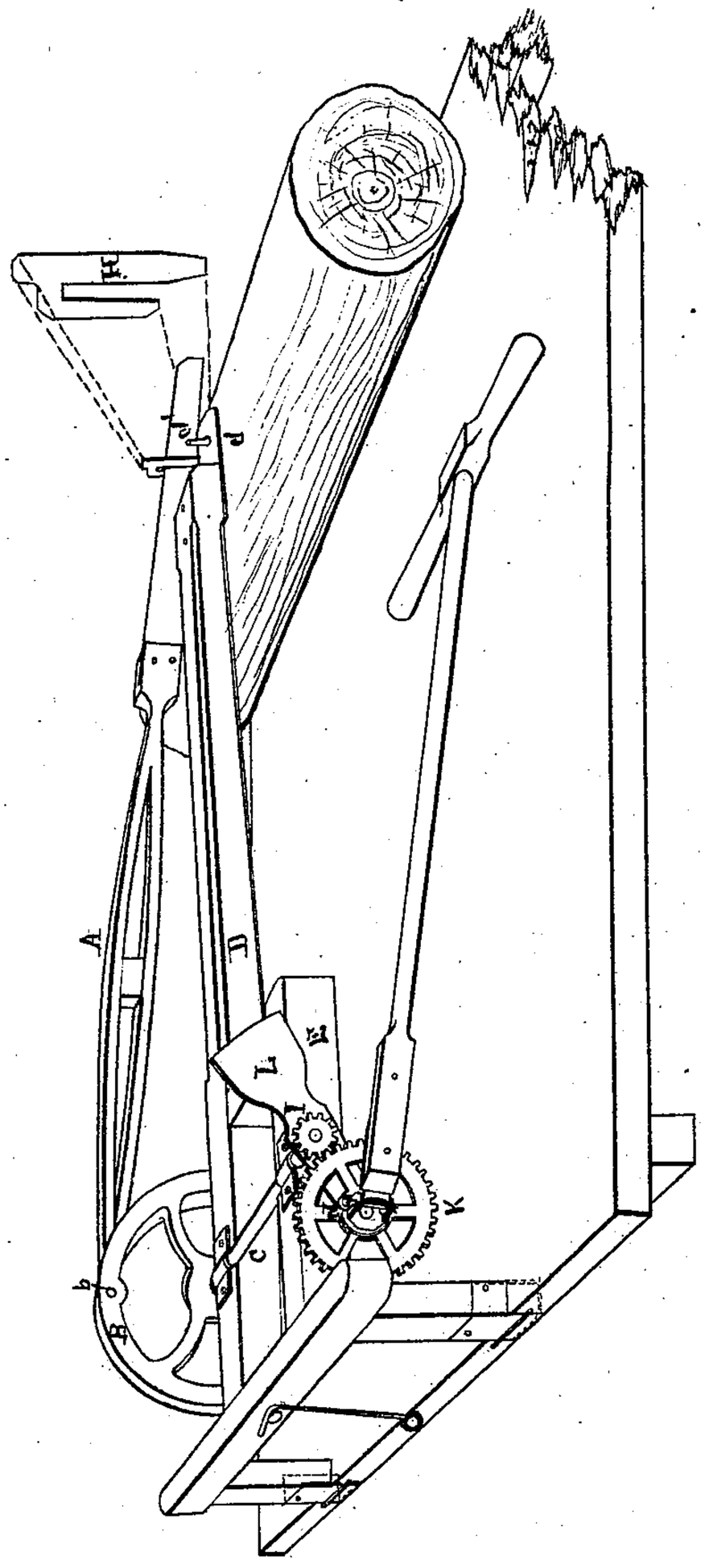
2. Sheets. Sheet. 1.

A. Smith,

Sawing Machine.

No. 102,606. Patented May 3. 1870.



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E. F. Campbell
J. H. Meister.

Addison Smith
by E. Whitman atty

2. Sheets. Sheet. 2.

A. Smith,

Sawing Machine.

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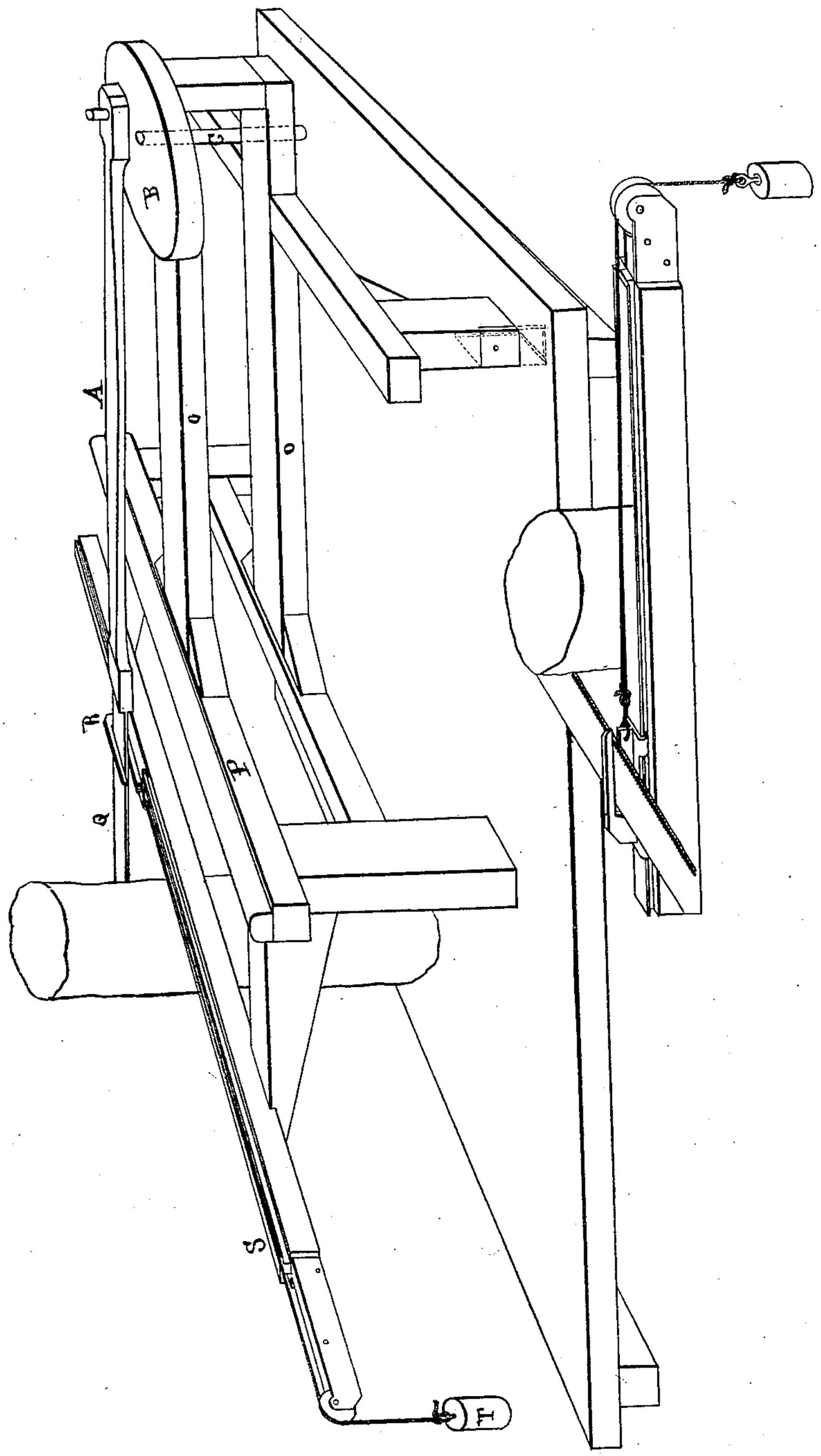

Witnesses
G. H. Campbell
J. H. Hoster

Addison Smith
by G. Whitman atty

UNITED STATES PATENT OFFICE.

ADDISON SMITH, OF PERRYSBURG, OHIO.

IMPROVEMENT IN SAWING-MACHINES.

Specification forming part of Letters Patent No. **102,606,** dated May 3, 1870; antedated April 23, 1870.

To all whom it may concern:

Be it known that I, ADDISON SMITH, of Perrysburg, in the county of Wood and State of Ohio, have invented a new and useful Improvement in Hand-Power Saws; and I do hereby declare the following description, taken in connection with the accompanying plate of drawings, hereinafter referred to, forms a full and exact specification of the same, wherein I have set forth the nature and principles of my said improvement, by which my invention may be distinguished from others of a similar class, together with such parts as I claim and desire to secure by Letters Patent.

The nature of my invention consists in reciprocating a drag-saw bar by means of a metallic fly-wheel, to the axes of which a spur-gear, commonly termed a "sun-wheel," is firmly secured, which said sun-wheel is connected and actuated by a spur-gear, commonly termed a "planet-gear," revolving about the same, and operated by a connecting-rod attached to the said planet-wheel by means of a hinge; in securing the frame supporting the devices aforesaid in position by means of metallic shoes and fastenings; and in an appliance termed a "sliding guide," which holds the said saw in position and forces the same against the wood to be cut.

In the accompanying plate of drawings, which illustrate my invention and form a part thereof, and in which like parts are represented by similar letters, Figure 1 is a perspective view, showing the application and operation of my invention when the saw is made to reciprocate in a vertical plane. Fig. 2 represents the saw reciprocating in a horizontal plane, and illustrates the devices made use of for holding the same in position. Fig. 3 is a detached view.

The construction of my invention is as follows: The saw-bar A is attached to the driving-wheel B by the crank-pin *b*.

The said wheel is rigidly attached to the cylindrical shaft C, which has its bearings in journal-boxes upon the longitudinal bars D and E of the frame. The said frame is secured in position by means of the perforated metallic strap *d*, bolted to the end of the beam which fits over the tapering pivot-bolt *d''*, secured to the substance to be cut, and the angular metallic feet *f*, bolted to the legs F of the said frame. The lower edges of the feet *f* are convex, in order that they may readily enter slots prepared for their reception in the platform or other substance upon which the device is supported. In order that the saw may reciprocate in a vertical plane, the blade of the same is inclosed by the prong of the clevis H, which is driven into the substance to be sawed. The spur-gear or sun-wheel I is keyed to the end of the journal C, opposite the driving-wheel aforesaid, and is attached to the center of the planet-wheel K, by means of the metallic strap L, which preserves a constant distance between the respective centers of the said gears, and has its bearings upon journal *e*, about which it revolves. The handle or connecting-rod M is connected with the planet-wheel aforesaid by means of the hinge N. When it is desirable to cause the saw to recirocate in a horizontal plane, a modification in details, as set forth above, becomes necessary, to wit: The driving-wheel B revolves upon a vertical shaft, C, having its bearings in journal-boxes secured to the longitudinal beams O, Fig. 2. The saw-bar A rests upon the transverse beam P of the frame, and the saw-blade is held in position and forced against the substance to be cut by means of the traveling guide R, which slides upon the metallic rail S, and is operated by the weight T, attached to the same by means of the cord *u*.

The operation of my invention is as follows: The tapering pivot-pin *d''* having been driven into the substance to be sawed, the eye in the metallic strap *d*, attached to the beam D, is dropped over the same, thus preventing the machine from being moved longitudinally, but allowing the saw to assume any angle with the substance to be cut which may be deemed desirable. The spurs on blades *f* are then inserted, and the machine is secured firmly in position. Power being applied at the connecting-rod or handle, a reciprocating motion is imparted to the same, which is converted into rotary motion by means of the appliances hereinbefore described—*i. e.*, the planet-wheel K, by the motion received from the connecting-rod, is made to circulate around the central wheel or sun-gear, I, communicating to the said sun-wheel a velocity of revolution four times its own. The said sun-gear, being keyed to the axle of the driving-wheel B, imparts the

rotary motion to the same required for the purpose of actuating the saw-blade Q.

Having thus stated the nature of my invention, and described the construction and operation of the devices and appliances made use of in developing the same, I will indicate those features which I claim to be new and desire to secure by Letters Patent—

The sun-gear I, planet-gear K, strap L, when combined with the axle C and handle O, and arranged to operate as and for the purposes described.

ADDISON SMITH.

Witnesses:
E. E. SMITH,
I. J. HERRMAN.