

B. A. HIGGINS.
Machines for Bending Wood.

No. 150,471.

Patented May 5, 1874.

Fig: 1.

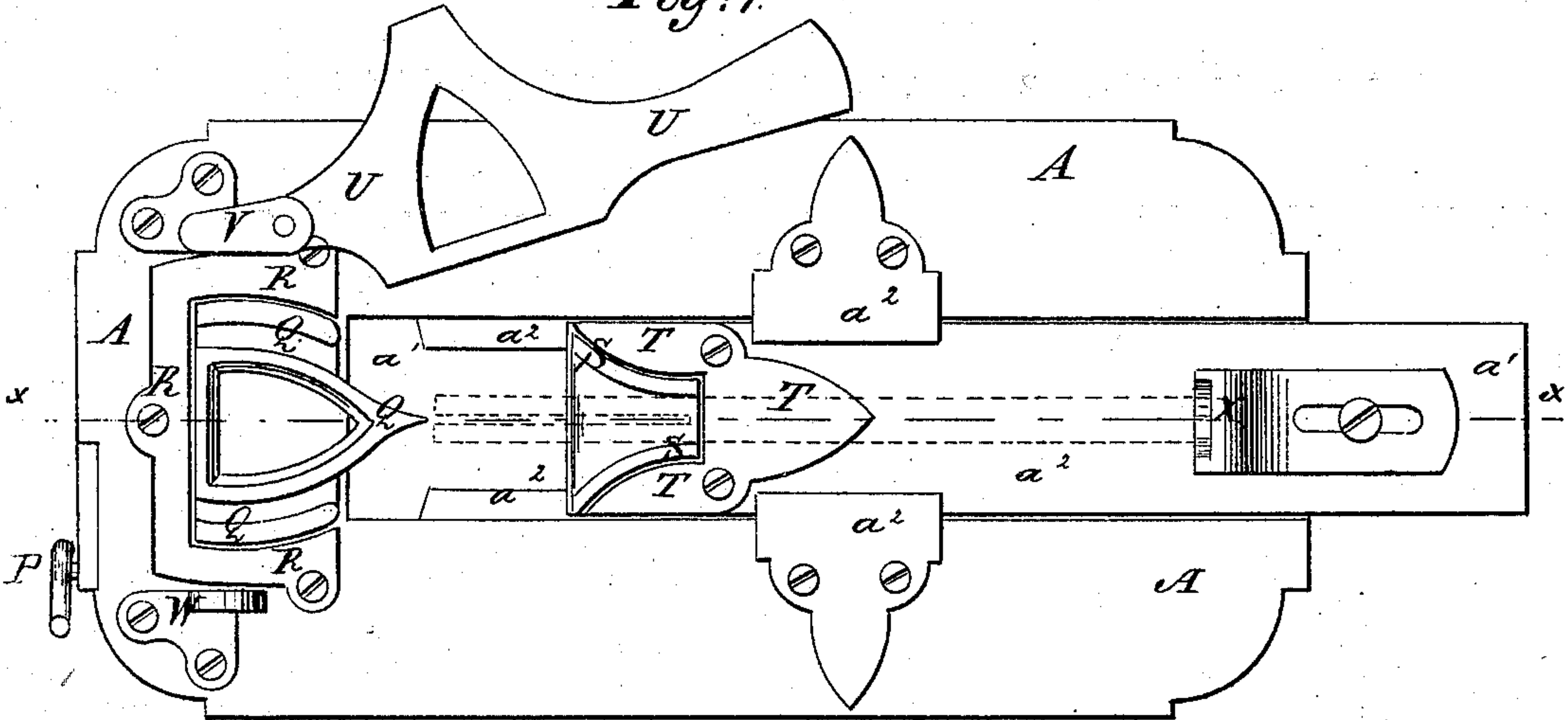


Fig: 2.

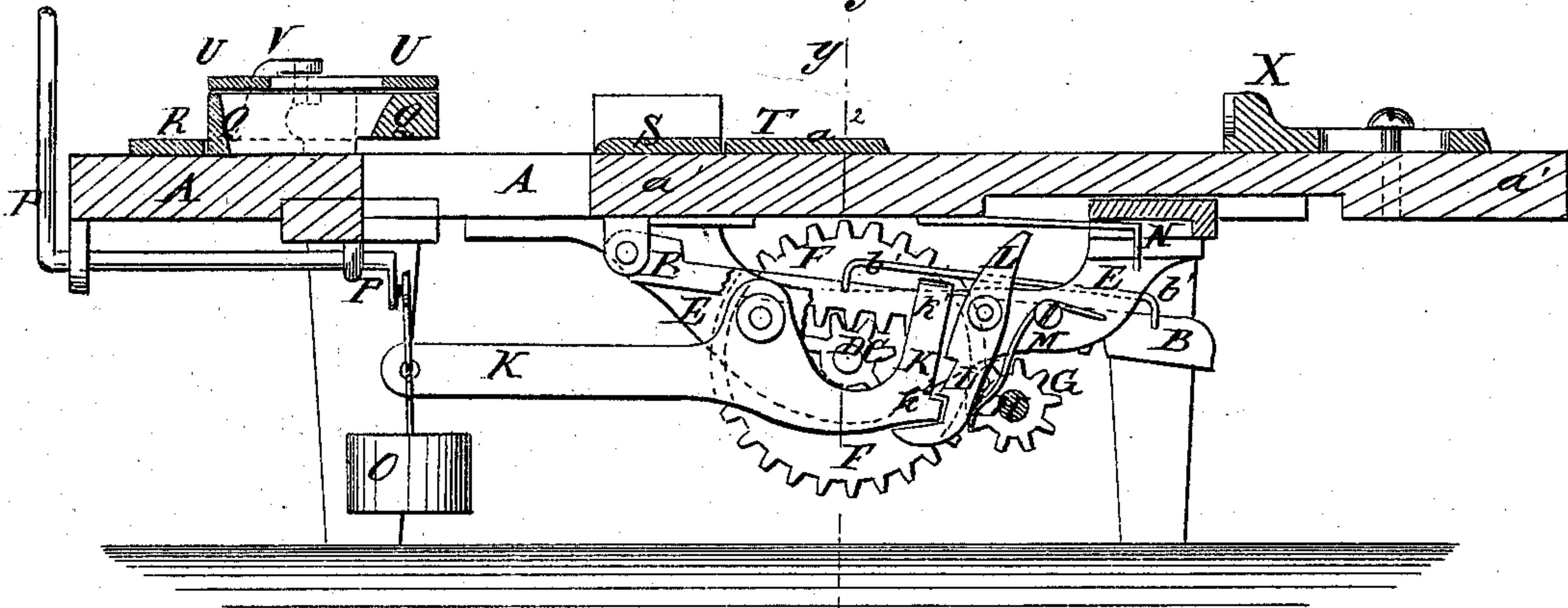
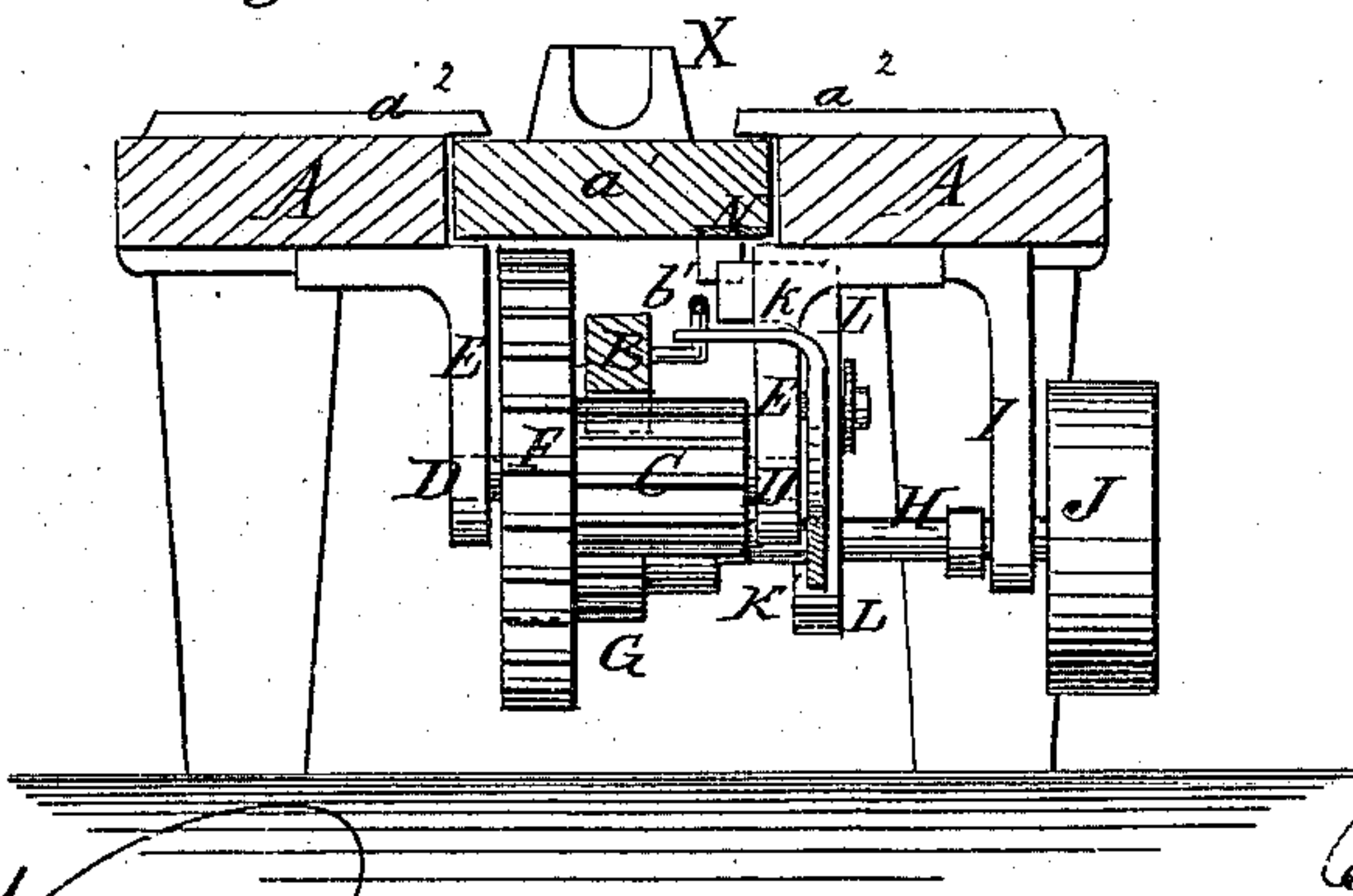


Fig: 3.



Witnesses:

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UNITED STATES PATENT OFFICE.

BARNABAS A. HIGGINS, OF NEW PORTLAND, MAINE.

IMPROVEMENT IN MACHINES FOR BENDING WOOD.

Specification forming part of Letters Patent No. 150,471, dated May 5, 1874; application filed March 21, 1874.

To all whom it may concern:

Be it known that I, B. ATWOOD HIGGINS, of New Portland, in the county of Somerset and State of Maine, have invented a new and useful Improvement in Machine for Bending Wood to form the tops of shovel-handles, &c., of which the following is a specification:

Figure 1 is a top view of my improved machine, the cap lever being thrown back to show the forms. Fig. 2 is a vertical longitudinal section of my improved machine taken through the line *x x*, Fig. 1. Fig. 3 is a vertical cross-section of the same taken through the line *y y*, Fig. 2.

Similar letters of reference indicate corresponding parts.

My invention has for its object to furnish an improved machine for forming the tops of shovel and fork handles, &c., which shall be simple in construction, inexpensive in manufacture, and effective in operation, forming the tops rapidly, and at the same time so gently as not to break or split the handle, and will hold said tops in perfect shape until seasoned. The invention consists in the two forms constructed as hereinafter described, and operating, in connection with each other and a suitable mechanism, for forming the tops of shovel-handles, &c., as set forth.

A is the table of the machine, the two side parts and one end of which are stationary, and the middle part *a*¹ slides longitudinally in guides *a*² attached to said stationary parts. To the under side of the forward end of the movable part *a*¹ of the table is hinged the forward end of a rack-bar, B, the teeth of which mesh into the teeth of a small gear-wheel, C, attached to a shaft, D, which revolves in brackets E, attached to the under side of the stationary side parts of the table A. To the shaft D is also attached a larger gear-wheel, F, the teeth of which mesh into the teeth of a small gear-wheel, G, attached to the shaft H, one journal of which revolves in one of the brackets E, and its other journal revolves in a bracket, I, also attached to said table. To the end of the shaft H is attached a pulley, J, around which passes the driving-belt. K is a lever, which is pivoted to one of the brackets E, and the rear end *k*¹ of which projects upward and is bent inward to pass beneath a

rod, *b*¹, attached to the side of the rack-bar B, so that when the rear end of the said lever K is raised it may raise the teeth of the rack-bar B and allow the slide *a*¹ to be run back without stopping the driving mechanism. Upon the lower part of the rear end of the lever K is formed a toe, *k*², which enters a notch in the forward side of a lever, L, which is pivoted to one of the brackets E, and has two notches formed in it so as to receive and hold the said lever K both when raised and when lowered. The lever L is held forward against the toe *k*² of the lever K by a spring, M, attached to the bracket E. The upper end of the catch lever L projects so as to be struck by a stop, N, attached to the lower side of the slide *a*¹ as the said slide reaches the end of its movement, and be thrown back, releasing the rear end of the lever K automatically and allowing said rear end to rise, raising the rack-bar B out of gear and supporting it while the slide *a*¹ is being run back. The rear end of the lever K is raised, when released from the catch-lever L, by the weight O, suspended from its forward end. The forward end of the lever K is raised to lower its rear end and allow the rack-bar B to drop into gear by a crank or bent lever, P, which works in bearings attached to the table A. The rear or inner end of the lever P is connected with the lever K, and its outer end projects upward into such a position that it can be conveniently reached and operated by the attendant. Q is the form or die that gives shape to the top of the handle, and which rests in a recess in the plate R, which is firmly secured to the stationary end part of the table A. The central part of the form Q is made wedge shape to enter the saw-kerf in the end of the handle and spread said end, the parts of the said handle being guided around the said central part of the form by the outer or side parts or flanges of said form. S is a form or die to give shape to the lower part of the top of the handle and prevent said handle from being split by the operation of the form Q. The form S is placed in a recess in a plate, T, attached to the upper side of the forward end of the slide *a*¹. U is a cap-lever for preventing the handle from rising out of the forms Q S while being forced into place, and which is pivoted at one end to a bracket, V,

attached to the table A at one side of the form Q. To the table A at the other side of the form Q is attached bracket W, which is made with a hook or shoulder, beneath which the free end of the cap-lever U is swung, and by which it is held in place. To the upper side of the rear end of the slide a^1 is secured a stop, X, against which the end of the handle rests while being forced forward into the form Q, and which is slotted to receive the screw or bolt by which it is secured, so that it may be conveniently adjusted according to the length of the handle to be operated upon. When the top of the handle has been formed, the handle and the forms Q S are detached and laid aside to season, and another set of

forms are placed in the machine, and the top of another handle is formed. The handles must be soaked in hot water or steamed before being put into the machine.

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

The forms Q and S, constructed substantially as herein shown and described, and combined with each other and described mechanism for forming the tops of shovel-handles, &c., as set forth.

BARNABAS ATWOOD HIGGINS.

Witnesses:

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