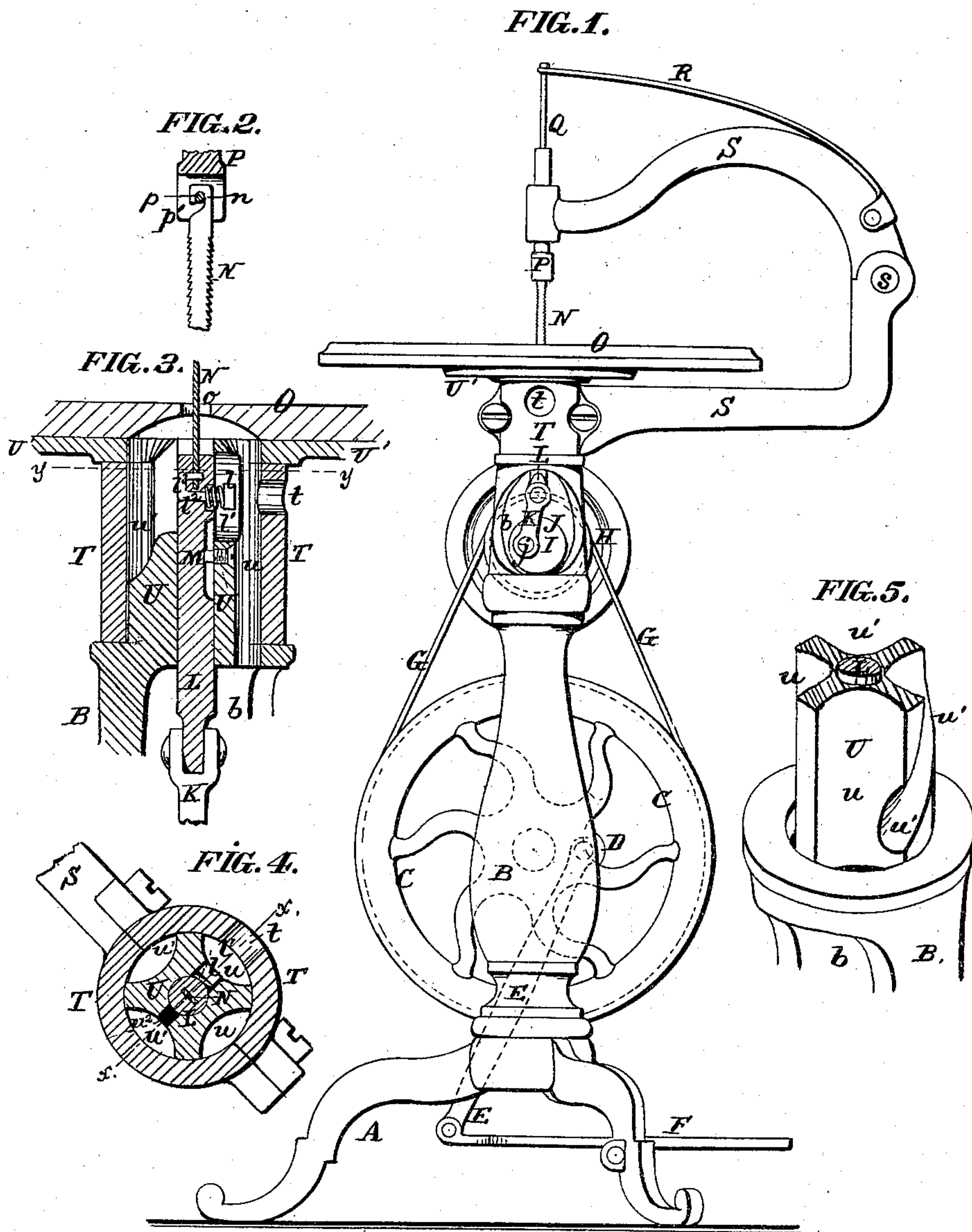


G. MERCER.
Scroll Sawing Machine.

No. 166,126.

Patented July 27, 1875.



ATTEST:

Robert Burns.
Henry Tanner.

INVENTOR:

George Mercer
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Atty.

UNITED STATES PATENT OFFICE.

GEORGE MERCER, OF ST. LOUIS, MISSOURI.

IMPROVEMENT IN SCROLL-SAWING MACHINES.

Specification forming part of Letters Patent No. **166,126**, dated July 27, 1875; application filed July 14, 1874.

To all whom it may concern:

Be it known that I, GEORGE MERCER, of St. Louis, St. Louis county, Missouri, have invented a certain new and useful Improvement in Scroll-Sawing Machines, of which the following is a specification:

The first part of my improvement consists in the provision of a rotatable head, arm, spring, and twistable or swivel connection, to which the top of the saw is connected, the said provision allowing of the stuff (when extending beyond the edge of the table) being turned thereupon in any direction.

The second part of my invention consists in the manner of constructing the bearing of the rotatable head. This is shown in Fig. 5, the bearing-block being conical in transverse section, leaving grooves or channels for the escape of the sawdust. Two of the grooves discharge into the other two, which, in turn, discharge into the recess at the side of the upright.

The third part of my improvement consists in securing the upper end of the saw to a reciprocating bar that works in the end of the jointed arm, and which is connected to the stretcher-spring by a cord, catgut, or other rotatable connection, to allow the turning of the head without twisting the saw, said arm being attached to the standard of the machine.

The fourth part of my improvement consists in the combination of the jointed rotatable arm and attachment of the upper end of the saw, allowing the disconnection of these parts to admit of the arm being thrown back, as before mentioned.

The fifth part of my improvement consists in the manner of securing the lower end of the saw in the reciprocating bar from which it receives motion. In this is a spring-pin, having a return-bend, which passes through the saw, and which is forced out of engagement by pressure against a thumb-knob, which depresses a spiral spring. This spring tends to hold the parts to their engagement by outward pressure against the thumb-knob.

Figure 1 is a side view of the machine. Fig. 2 is a section showing the top attachment of the saw. Fig. 3 is a vertical section at $x x$, Fig. 4. Fig. 4 is a horizontal section at $y y$, Fig. 3. Fig. 5 is a perspective view, showing

the bearing-block of the turning head, the top being broken off.

A is the stand, which may be made of any suitable form, and which has an upright, B, carrying the balance-wheel C, turned by a crank, D, pitman E, and treadle F. The wheel connects by a belt, G, with the pulley H on the shaft I of the crank-disk J. The treadle-pitman and balance-wheel may be dispensed with when the machine is driven by power. The crank-pin j is connected by pitman K to the reciprocating bar L, which has a vertically-extending groove to receive the point of a screw, M, by which oscillation of the bar is prevented. The lower end of the saw enters a mortise in the top of the bar L, and is held therein by a spring-catch, consisting of a thumb-knob, l , spiral spring l^1 , resting in a cavity or recess in the bar L, and forcing the thumb-knob outward, and a shank, l^2 , which passes diametrically through the bar, and whose end l^3 is rebent, and forms the catch which passes through the saw N, and which is held to its engagement by the pressure of the spiral spring beneath the thumb-knob. The saw N extends upward through the table O, and its upper end is formed into a hook, n , which engages over the pin p extending across the slot p' in the lower end of the reciprocating bar P. The upper end of bar P is connected by cord or catgut (or other rotatable connection) Q to the end of the stretcher-spring R, by which the saw is drawn upward. The saw N has teeth upon both edges, so that it may be made to cut in opposite directions without turning in the kerf. The spring R is attached to an arm, S, whose end forms the bearing for the sliding block P. This arm S is jointed at s , and extends beneath the table, where it ends in a head, T, turning on the bearing U, which, with the horizontal annular flange U' , to which the table O is attached, forms the upper end of the upright B. This bearing U has a number of vertical grooves, $u u^1$, the first pair or set u of which communicate at the lower end with the recess b in the upright, and the grooves u^1 communicate with those u , so that as the sawdust is carried down through the hole o in the table, it will escape through said grooves and recess. The head T has an aperture, t , through

which the thumb-knob l may be reached to disengage the lower end of the saw. The inner face of the bearing-block U, in which the bar L slides, is slotted at u^2 , to allow the disengaging movement of the catch-pin.

I claim as my invention—

1. The combination of rotatable bearing collar or head T, beneath and contiguous to the table, arm S, attached to said head, and supporting the spring R, swivel-connection Q, and the standard or upright B, substantially as and for the purpose set forth.
2. The bearing U, having grooves u u^1 , to allow the escape of sawdust, substantially as and for the purpose set forth.
3. In a portable scroll-saw, the combination

of saw N, bar P, swivel-connection Q, spring R, and the adjustable arm S, supporting said spring, the whole arranged to permit the head and arm to be turned without twisting the saw, substantially as set forth.

4. The combination of the saw N, with hook n , bar p , with pin p' , spring R, and jointed arm S, all constructed substantially as and for the purpose set forth.

5. The combination of bar L, push-spring catch l l^1 l^2 l^3 , and saw N, all substantially as and for the purpose set forth.

GEORGE MERCER.

Witnesses:

SAML. KNIGHT,

WILLIAM ROTHWELL.