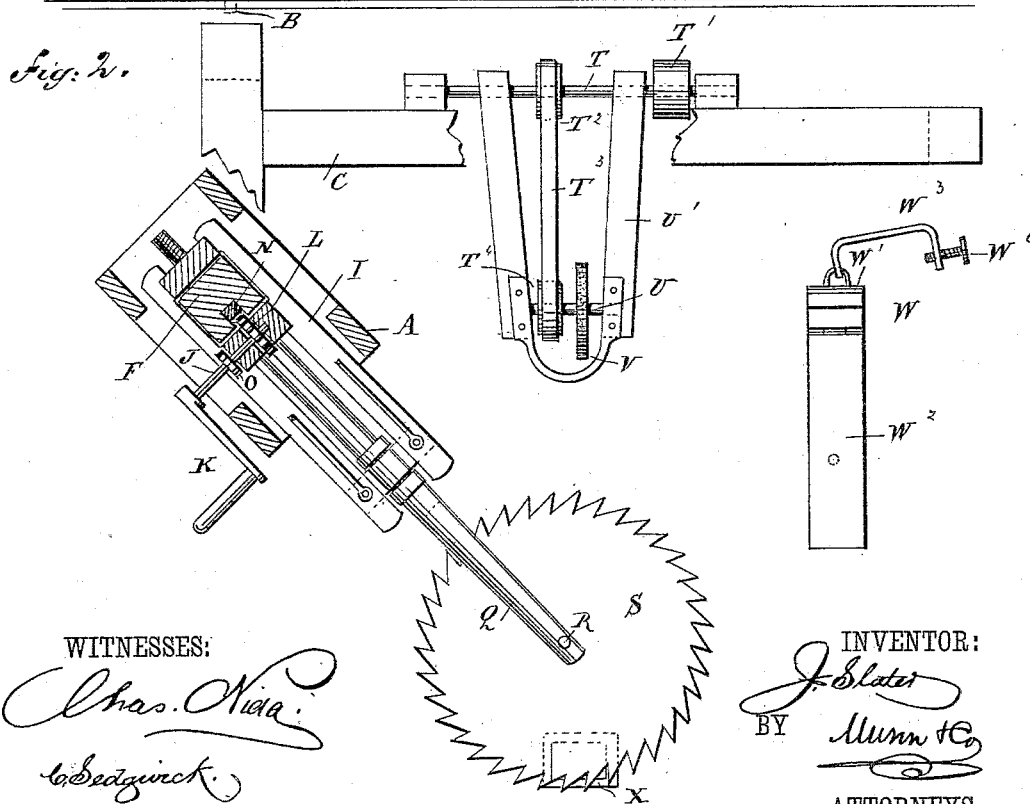
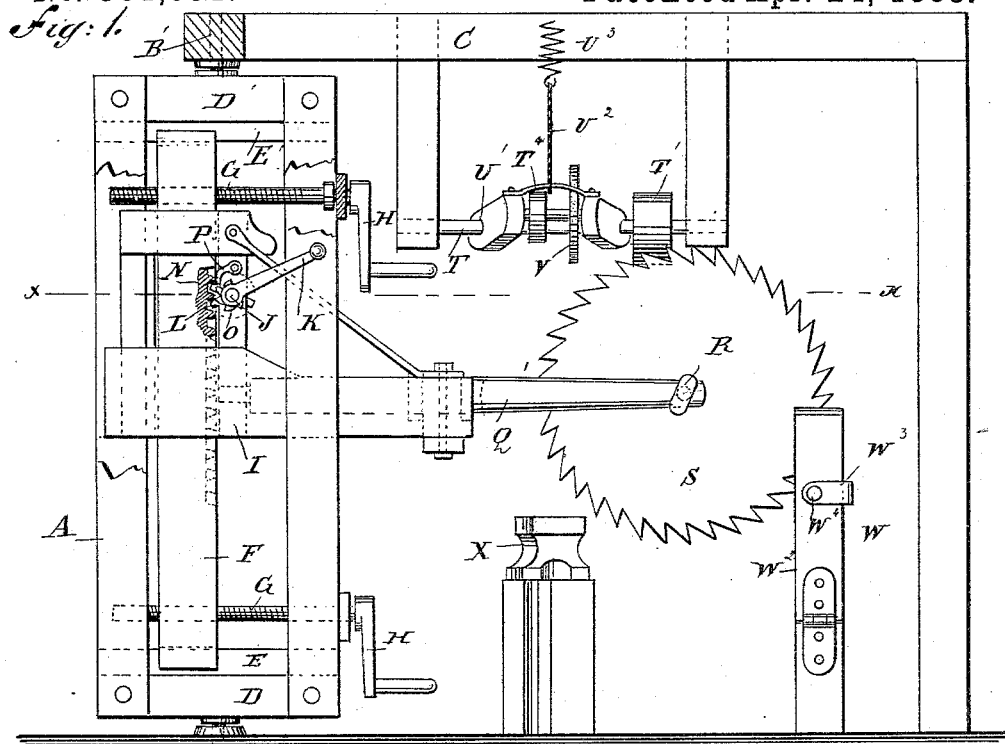


(No Model.)

J. SLATER.  
CIRCULAR SAW HOLDER.

No. 381,651.

Patented Apr. 24, 1888.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

JOHN SLATER, OF PARTHENIA, PENNSYLVANIA.

## CIRCULAR-SAW HOLDER.

SPECIFICATION forming part of Letters Patent No. 381,651, dated April 24, 1888.

Application filed December 7, 1887. Serial No. 257,190. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN SLATER, of Parthenia, in the county of Warren and State of Pennsylvania, have invented a new and Improved Circular-Saw Holder, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved device for holding circular saws firmly in position while hammering, gumming, swaging, or filing the same.

The invention consists of a shaft carrying the circular saw to be operated upon and mounted to turn in a vertically and longitudinally adjustable frame.

The invention also consists of certain parts and details and combination of the same, as will be fully described hereinafter, and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in both the figures.

Figure 1 is a side elevation of my improvement with parts in section, and Fig. 2 is a sectional plan view of the same on the line *x x* of Fig. 1.

The main frame A is mounted to turn on the two spindles B B', of which the spindle B has its bearing in a suitable base, and the other spindle, B', has its bearing in a cross-beam of the frame C or in the ceiling of the room in which the machine is located. The frame A is provided on its base D with a longitudinally-extending guideway, E, and on the under side of its top plate, D', is formed a similar guideway, E'. On the guideways E and E' is mounted to slide longitudinally a post, F, into which screw the screw-rods G, mounted to turn in suitable bearings in the frame A and provided at their outer ends with crank-arms H for turning the said screw-rods G, so as to move the post F longitudinally on the guideways E and E'.

On the post F is held to slide vertically a frame, I, on which is mounted transversely a shaft, J, carrying on one end a crank-arm, K, and provided with a gear-wheel, L, meshing into a rack, N, secured vertically to one side of the post F. On the shaft J is also secured a ratchet-wheel, O, engaged by a pawl, P, fulcrumed on the frame I and serving to lock the said shaft J in any desired position. When

the said pawl P is disengaged from the ratchet-wheel O and the operator turns the crank-arm K, the gear-wheel L, meshing into the rack N, causes an up or down sliding motion of the frame I.

On the frame I is mounted horizontally the shaft Q, adapted to turn in suitable bearings and projecting a suitable distance from the inner end of the frame I, being formed at this projecting end into a fork, and carrying on the forked end an arbor, R, on which is held a circular saw, S, to be operated on. The arbor R can be easily removed from the forked end of the shaft Q for changing the circular saws.

In the rear of and above the circular saw S is mounted in suitable bearings a shaft, T, provided with a driving-pulley, T', connected by a belt with machinery for imparting a rotary motion to the said shaft T. On the latter is also secured a pulley, T'', over which passes an endless belt, T''', also passing over a pulley, T'', secured to the shaft U, mounted to rotate in the front end of a swinging frame, U', fulcrumed on the said shaft T. The swinging frame U' is supported at its front end by a rope, U'', connected with a spring, U''', which holds the said frame in its uppermost position, and at the same time permits of swinging the frame downward. A grinding-wheel, V, is secured on the shaft U, said wheel V being preferably of emery. This wheel is used to sharpen the teeth of the saw S, held directly below the said emery-wheel in a convenient position.

To the right of the saw S is held a vise, W, provided with a fixed jaw, W', on which is hinged the swinging jaw W''. Between the two jaws W' and W'' can be clamped the circular saw S, as shown in Fig. 1, for swaging or filing purposes. The two jaws W' and W'' are held in a closed position by a U-shaped clip, W'', hinged at one end on a staple secured to the rear side of the fixed jaw W' and carrying on its other end a set-screw, W'', adapted to engage the front of the hinged jaw W'', as shown in Fig. 1.

In front of the device is placed an anvil of any approved construction and serving for hammering the saw in order to strengthen it or to increase its diameter.

The operation is as follows: The circular saw S is fastened with its central aperture on

the arbor R, held in the forked end of the shaft Q. If the saw is to be ground or sharpened by the grinding-wheel V, the shaft Q, with the saw S in the position shown in Fig. 1, is turned one-half of a revolution, so that the teeth of the saw stand in an opposite direction from the one shown in Fig. 1. The grinding-wheel V is rotated by rotating the shaft T, so that the motion of the latter is transmitted to the shaft U by the pulleys T<sup>2</sup> and T<sup>4</sup> and the belt T<sup>3</sup>. The operator takes hold of the front end of the swinging frame U' and presses the same downward until the grinding-wheel V engages one of the teeth of the saw, and, according to the pressure given to the frame U', said grinding-wheel V cuts more or less from the edge of the saw. As soon as the operator releases his pressure on the swinging frame U', the latter moves upward by the action of the spring U<sup>2</sup>, and the grinding-wheel V moves out of contact with the teeth of the saw S. The latter is then turned the distance of one tooth, and the swinging frame U' is again depressed, as above described, so that the grinding-wheel V operates on the next following tooth. The frame I is adjustable longitudinally and vertically in such a position that the grinding-wheel V engages the edge of the tooth whenever the frame U' is slightly depressed. This adjustment is accomplished by turning the crank-arms H so that the screw-rods G are rotated and the post F is moved longitudinally on the guideways E, carrying with it the frame I, so that the axis of the circular saw S assumes a relative position to the grinding-wheel V according to the shape of the tooth of the circular saw. The vertical adjustment of the frame I is accomplished by turning the crank-arm K so that the shaft J is rotated, and the gear-wheel L, meshing into the rack N on the post F, causes the frame I to move up and down until the top tooth of the circular saw S is a short distance below the lower edge of the grinding-wheel V. The shaft J is then locked in position by the pawl P, thrown in contact with the ratchet-wheel O. When the operator desires to file or swage the circular saw S, he places the latter in the position shown in Fig. 1 and opens the hinged jaw W<sup>2</sup>, so as to permit the saw to be placed against the fixed jaw W'. The hinged jaw W<sup>2</sup> is then swung upward and against the outside of the circular saw S, which is then clamped in position in the vise W by adjusting the clip W<sup>3</sup> by means of the set-screw W<sup>4</sup>. When the saw is to be hammered for the purposes above described, the main frame A is turned on its spindles B and B' and the shaft Q is turned a half-revolution, so that the circular saw S assumes a horizontal position. The frame I is then raised or lowered until the circular saw is level with the top of the anvil X. The operator is now enabled to place any part of the circular saw S on the anvil X and operate on top of the circular saw in the usual manner for strengthening or lengthening the

saw. Thus it will be seen that the circular saw S can be quickly placed in position for being operated on by a grinding-wheel, V, or be clamped in a vise, W, for filing or swaging, or it can be very conveniently placed on the anvil X and operated on by the hammer or other tool for various purposes. The turning of the shaft Q permits of placing the saw with either face on the anvil X.

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

1. In a circular-saw holder, the combination of an adjustable frame, a shaft journaled in and projecting from said frame, and a saw-arbor on the end of and at right angles to the said shaft, substantially as described.

2. In a circular-saw holder, the combination of a pivoted main frame, a longitudinally and vertically adjustable frame carried by said main frame, a shaft journaled in and projecting from the adjustable frame, and a saw-arbor on the end of and at right angles to the said shaft, substantially as herein shown and described.

3. In a circular-saw holder, the combination of a vertically and longitudinally adjustable frame, a shaft for holding the saw to be operated upon journaled in the said frame, a pivoted frame, a grinding-wheel journaled in the said pivoted frame, a cord attached to the pivoted frame, and a spring connected to said cord and to a support, substantially as described.

4. In a circular-saw holder, the combination, with a supporting-frame, of a bar fitting on ways in the said frame and provided with a rack, a screw for adjusting the bar, a sliding frame on said bar, a pinion engaging the rack on the bar, and means for locking the said sliding frame, substantially as described.

5. In a circular-saw holder, the combination, with a vertically and longitudinally adjustable frame and a main frame supporting the said frame and mounted to turn vertically, of a shaft mounted to turn in the said adjustable frame and carrying the circular saw to be operated upon, and an anvil on which the said circular saw can be placed while held on the said shaft, substantially as shown and described.

6. In a circular-saw holder, the combination, with an adjustable frame and a shaft for carrying the saw to be operated upon journaled in said frame, of the vise W, consisting of the fixed jaw W', the hinged jaw W<sup>2</sup>, and the hinged V-shaped clip W<sup>3</sup>, provided with the set-screw W<sup>4</sup>, substantially as described.

7. In a circular saw holder, the combination, with a main frame mounted to turn, of guideways formed on the said frame, a post mounted to slide on the said guideways, screw-rods mounted to turn on the said frame and screwing in the said post, a frame held vertically adjustable on the said post, and a shaft

mounted to turn on the said frame and carrying the circular saw to be operated upon, substantially as shown and described.

8. In a circular-saw holder, the combination, with a main frame mounted to turn and provided with guideways, of a post held to slide longitudinally on the said guideways, a frame held to slide vertically on the said post, a transverse shaft mounted in the said frame and  
10 provided with a crank-arm, a gear-wheel se-

cured on the said shaft, a rack secured to the said post and into which the said gear-wheel meshes, and a longitudinally-extending shaft mounted to turn in the said frame and adapted to carry the circular saw, substantially as  
15 shown and described.

JOHN SLATER.

Witnesses:

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DAVID R. MATTERN.