C. B. HOPKINS.

SAW-SET.

No. 189,736. Patented April 17, 1877.

Fig. 1

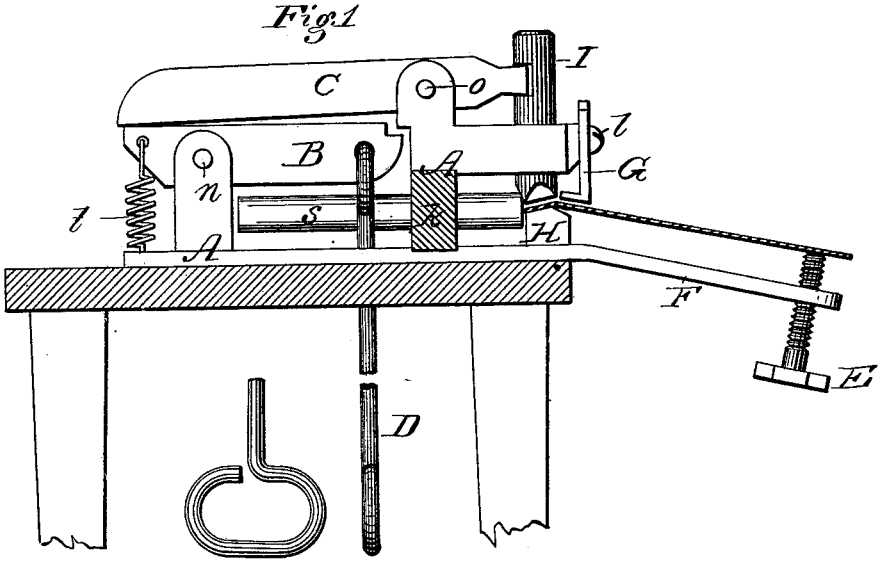



Fig. 2.

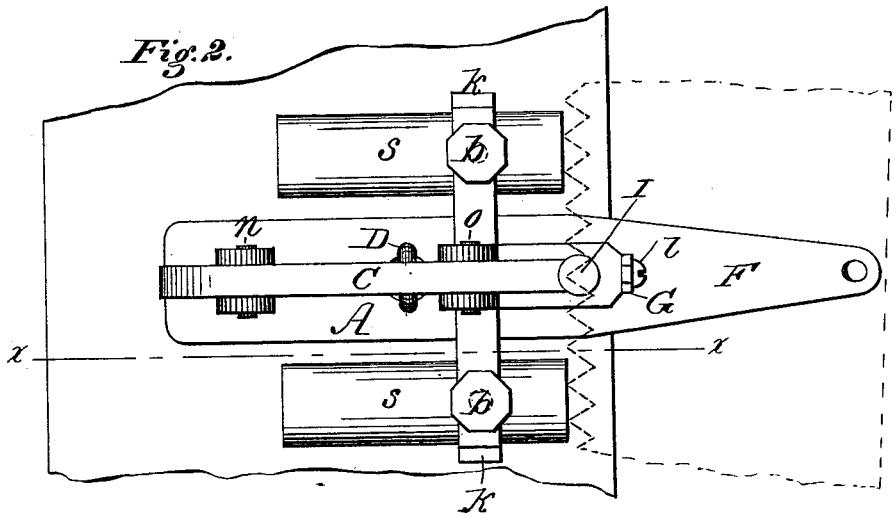
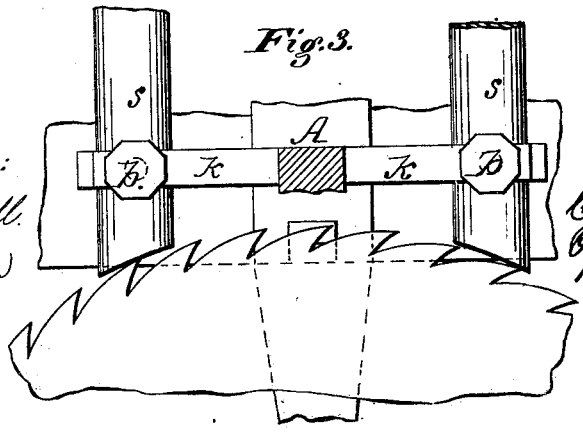



Fig. 3.

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# UNITED STATES PATENT OFFICE.

CHARLES B. HOPKINS, OF TOPEKA, KANSAS.

## IMPROVEMENT IN SAW-SETS.

Specification forming part of Letters Patent No. **189,736**, dated April 17, 1877; application filed August 5, 1876.

*To all whom it may concern:*

Be it known that I CHARLES B. HOPKINS, of Topeka, in the county of Shawnee and State of Kansas, have invented certain Improvements in Saw-Sets, of which the following is a specification:

My invention consists in an improved construction of devices for setting saws, whereby they are rendered more perfect and easy of operation, as hereinafter described.

In the drawing, Figure 1 represents a longitudinal vertical section of my improved device on the line *x x* of Fig. 2; Fig. 2, a top-plan view of the same; and Fig. 3, a plan view, showing the guides used for circular saws.

In constructing my improved device, I first provide a suitable frame, A, of metal, in which to mount the moving parts of the mechanism. Located on the bed of the machine at the forward side is an anvil, H, on which the teeth of the saw rest. Directly above the anvil H is a vertically-reciprocating plunger, I, the lower face of which is beveled, as is also the upper face of the anvil H, to correspond to the inclination which it is desired to give to the teeth. This plunger is operated by means of a lever, C, working on the pivot *o*, the lever C being in turn operated by a lever, B, working on the pivot *n*. Attached to the forward end of the lever B is a rod, D, which may be attached to a foot-treadle, or may terminate in a stirrup.

Extending outward at each side from the body of frame A is an arm, *k*, each arm provided with a wooden guide, S. These guides are arranged to be moved through the arms *k* forward or backward, as desired, and are held in any desired position by means of set-screws *b*. In practice, they are moved forward a sufficient distance to allow the points of the teeth to rest against them when the teeth are carried the proper distance over the anvil H. The outer or back edge of the saw is held at the proper height by means of a set-screw, E, on which the blade of the saw rests, said set-screw working through an arm or extension, F, of the frame A, as shown.

The plunger I is held in an elevated position by the lever C, the rear end of which falls by reason of its weight, and thereby elevates the forward end, and with it the plunger I. The long arm of the lever B is kept in an elevated position by means of a spring, *t*, attached to the short arm, or by weighting the short arm, or by means of a spring placed under the long arm of said lever, or in any other convenient and well-known manner.

The machine being constructed as above described, the operation is as follows: The blade is pushed in between the anvil H and the plunger I until the points of the teeth come against the guides S, as shown in Figs. 1 and 2, the guides being set according to the length of the teeth to be set, when a downward movement is imparted to the rod D, either by means of a stirrup or treadle, as before stated. This rod draws down on the long arm of the lever B, throwing up the rear or short arm of the same, which, acting upon the lever C, throws up the long arm, and consequently throws downward the short or forward arm of the same, and with it the plunger I. As shown in Fig. 1, the arm F is bent downward, and consequently the blade of the saw, resting on the set-screw E, will be inclined downward toward its outer edge, as shown, the inclination being regulated by raising or lowering said screw. The upper face of the anvil H is beveled downward, both toward the front and rear, from a point between these two sides, leaving a point or edge over which the teeth are bent, and allowing the outer edge of the saw to drop down without bringing the blade of the saw against the edge of the anvil.

When very narrow blades are to be set, it is, of course, impossible to use the set-screw E to regulate the inclination of the blade or to steady it. I therefore provide a slotted vertical guide, G, which is held in place on the frame A by means of a screw, *l*, directly over the blade. By loosening the screw *l*, the guide G may be placed at any required height, and by tightening the screw again it may be firmly held in position.

As before stated, the guides S are made of wood, this material preventing the injury of the teeth in moving the blade of the saw along when setting the teeth.

When the device is used for setting the teeth of circular saws, the ends of the guides are cut away, as shown in Fig. 3, the curva-

ture corresponding to the circumference of the saw. It will be seen that this will cause each of the teeth to be presented to the plunger I in precisely the same position, securing perfect uniformity in the setting of the teeth.

It will be observed that with this device the teeth of the saw are set by being carried gradually to the required position, or by a gradual pressure, in contradistinction to being struck a sharp blow. This I consider a great advantage, as it avoids spreading out the teeth as is necessarily done to a greater or less extent when a blow is used, while at the same time the teeth are set with the utmost uniformity—a difficult thing to obtain where a blow is used, on account of its varying force.

This forms a very simple, cheap, and efficient device, which is very durable and easily managed. The device may be made to screw or bolt on an ordinary work-bench, or may be made to clamp on a table or shelf; or it may be mounted on an independent stand, as desired. It may be used to set saws of any size or form—straight, circular, or curved—from very small up to the largest, and in all cases is perfectly accurate and uniform in its operation.

I am aware that a saw-set has been patented having a series of adjustable screws arranged for holding the blade of the saw while being set, and I make no claim to such; but

Having thus described my invention, what I claim is—

1. The anvil H, in combination with the vertically-moving plunger or punch I, with the operating-levers B C, all constructed and arranged to operate substantially as described.

2. The adjustable guide or clamp G, arranged directly in front of, and close to, the anvil H, for holding narrow blades or saws when being set, substantially as described.

CHARLES B. HOPKINS.

Witnesses:

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