

J. G. BAKER.
SAW GRINDING MACHINE.

No. 46,843.

Patented Mar. 14, 1865.

Fig. 1.

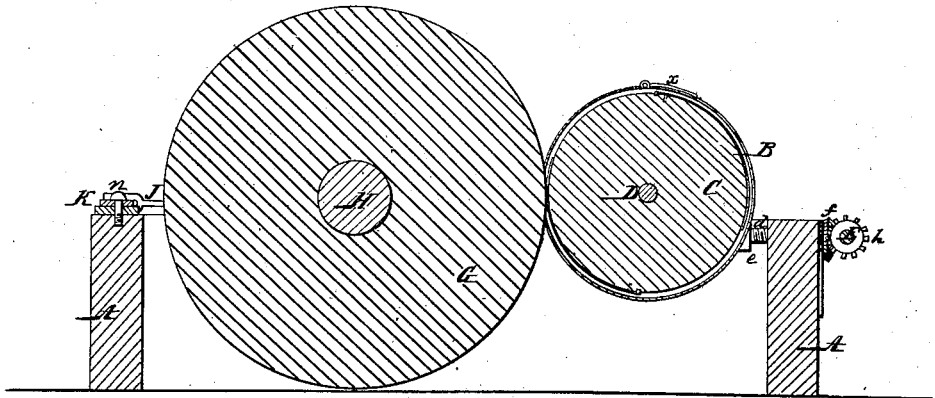


Fig. 2.

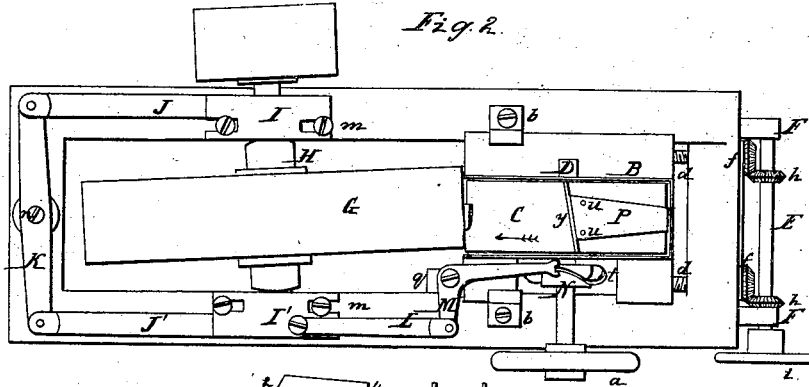


Fig. 3.

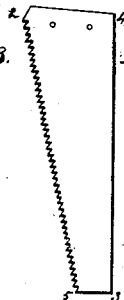


Fig. 4.



Fig. 5.



Witnesses:
Wm. Albert Steel.
Charles Howson.

Inventor:
J. G. Baker
per Henry Howson
Atty

UNITED STATES PATENT OFFICE.

JOHN G. BAKER, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR, BY MESNE ASSIGNMENTS, TO HENRY DISSTON, OF SAME PLACE

IMPROVED SAW-GRINDING MACHINE.

Specification forming part of Letters Patent No. 46,843, dated March 14, 1865.

To all whom it may concern.

Be it known that I, JOHN G. BAKER, of Philadelphia, Pennsylvania, have invented an Improvement in Machinery for Grinding Saw-Blades; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

My invention consists of a disk-wheel and a casing arranged for the reception and retention of saw-blades, as described hereinafter, in combination with a grindstone, to which a lateral vibrating motion is imparted through the medium of the devices described herein-after, or the equivalents to the same, so that the desired taper may be imparted to the said saw-blades.

In order to enable others skilled in the art to make and use my invention, I will now proceed to describe its construction and operation.

On reference to the accompanying drawing, which form a part of this specification, Figure 1 is a sectional view of my improved saw-grinding machine; Fig. 2, a plan view, and Figs. 3, 4, and 5 views of the saw to illustrate the purport of my invention.

A represents a box-frame or trough, on the upper end of which rests a circular casing, B, inclosing the greater portion of a disk-wheel, C, secured to the shaft D, the latter turning in the opposite sides of the casing, and one end of the shaft being furnished with a suitable hand-wheel, *a*, or, in place of the same, a driving-pulley. The casing B, with its disk-wheel, is arranged to slide to and fro in guides *b b*, and is controlled by screws *d d*, the threads of which are adapted to internal threads in lugs *e e*, projecting from the casing, the screws turning in the end of the frame A, on the outside of which each screw is furnished with a bevel-wheel, *f*, gearing into a similar wheel on the shaft E, which turns in projections F of the frame, and which is furnished with a hand-wheel, *i*.

G is the grindstone, and H its shaft, the journals of which turn in the boxes I and I'. One of the latter rests on each side of the box-frame A, to which each box is secured by two set-screws, *m m*, each of which passes through a slot in the box, so that a limited longitudinal movement may be imparted to the same.

To the rear end of the box I is connected a rod, J, and to the rear end of the box I' a similar rod, J', the latter being jointed to one arm of the lever K and the rod J to the other arm of the same lever, through which passes a central pin, *n*, secured to the end of the box-frame A. One end of a link, L, is jointed to the box I', the other end being connected to the short arm of the bell-crank lever M, the long arm of which has a forked end, embracing the curved rim *t* of the scroll-cam N.

A rapid rotary motion having been imparted to the grindstone, and the casing B, with its disk-wheel, having been moved back a short distance by means of the screws *d*, a hinged door, *x*, in the said casing is opened, and the large end of a saw-blade introduced into the opening and adjusted against an inclined rib, *y*, on the periphery of the disk-wheel, small pins *w w* on the latter passing through holes in the blade, as seen in Fig. 2. The disk-wheel is then turned in the direction of the arrow, the saw thereby drawn through the opening and occupying a position between the casing B and the wheel C, and when the latter has been turned until another inclined rib, *y*, presents itself at the opening, another blade is adjusted to the wheel in the manner described above.

In the present instance the wheel C is adapted to the reception of two ordinary saw-blades.

The door *x* is now closed and secured, and the casing B moved toward the grindstone, a portion of which projects through an opening in the casing B and bears against the blades on the disk-wheel, which is now slowly turned in the direction of the arrow by hand or by power. As the shaft D revolves, the scroll-cam N, through the medium of the bell-crank lever M, link L, rod J', lever K, and rod J, causes the boxes I and I' of the grindstone-shaft to move to and fro in contrary directions to each other, thereby moving the grindstone laterally and causing it to assume different angles, so that it must of necessity grind the saw-blade thinner at some parts than at others.

The blades of hand-saws of the best class are invariably made thicker on the toothed edge than at the back, and are also made thicker at the large than at the smaller end of the blade.

The blade, Fig. 3, for instance, should be thickest at the joint 2 and thinnest at the point 3, the blade being thicker at 2 than it is at 5, and thicker at 4 than it is at 3. It will be evident that the flange *t* of the scroll-cam *N* may be so curved, and that the grindstone may have such a movement imparted to it, that the saw-blade may be reduced to the desired taper and variation in thickness.

Tapering saw-blades have been heretofore ground by placing them on beveled plates secured to a disk-wheel and subjecting them to the action of a grindstone which always revolved in the same plane. This plan involved the necessity of changing the beveled plates to suit different blades—an operation which caused much delay and tedious manipulation.

In my improvement the lateral movement of the grindstone can be readily changed and adapted to different blades by a simple change of the scroll-cam *N*.

It will be evident that devices other than

those shown may be adopted for imparting a lateral motion to the grindstone from the shaft of the disk-wheel *C*. I therefore do not desire to confine myself to the system of rods and levers herein described for obtaining such motion; but

I claim as my invention and desire to secure by Letters Patent—

The disk-wheel *C* and casing *B*, adapted to the reception and retention of the saw-blades, in combination with a grindstone to which a lateral vibrating motion is imparted through the medium of the devices herein described, or the equivalents to the same, for the purpose specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOHN G. BAKER.

Witnesses:

HENRY HOWSON,
CHARLES HOWSON.