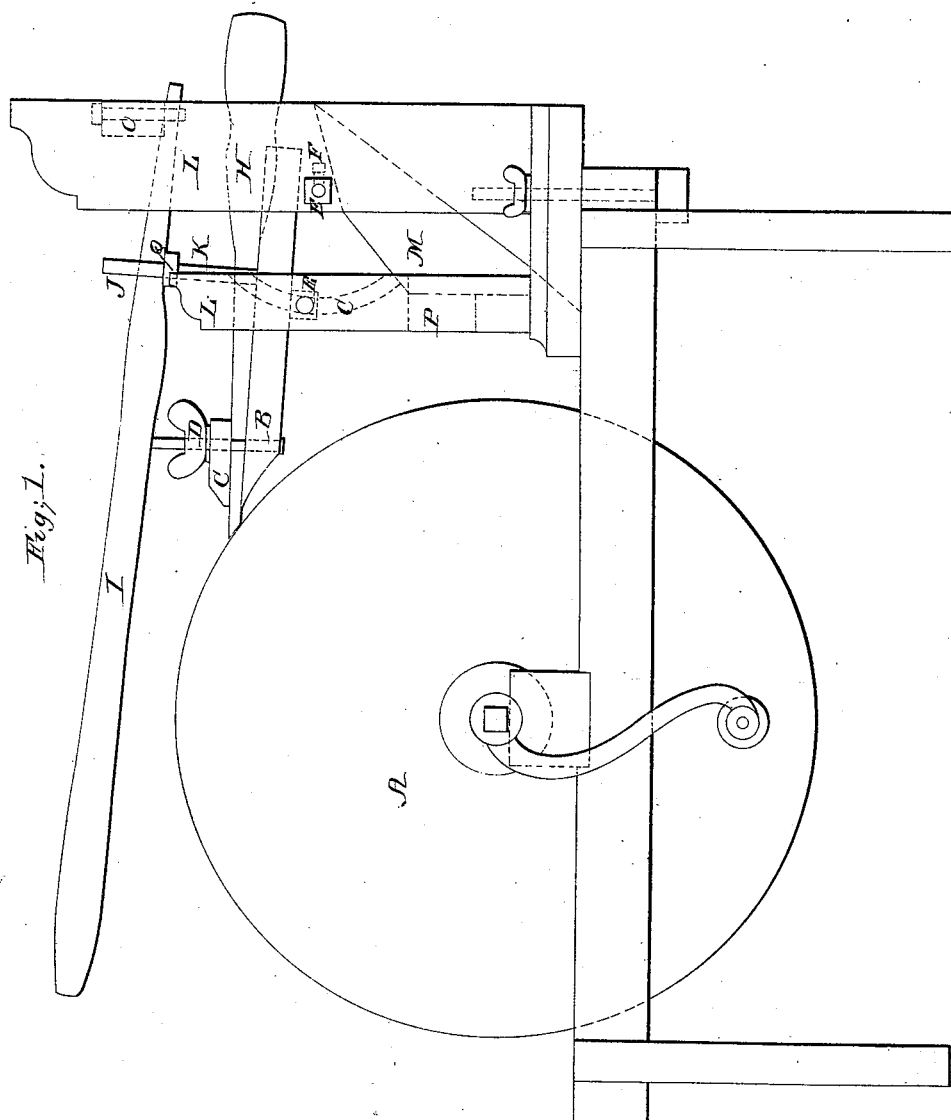


2 Sheets, Sheet 1.

N^o 53, 747.

Patented Apr. 3, 1866.



Witnesses;
Jas. P. Waterman
Charles A. Rowe

Inventor,
John Richardson.

J. Richardson,

2 Sheets, Sheet 2.

Edge-Tool Grinder.

N^o 53,747.

Patented Apr 3, 1866.

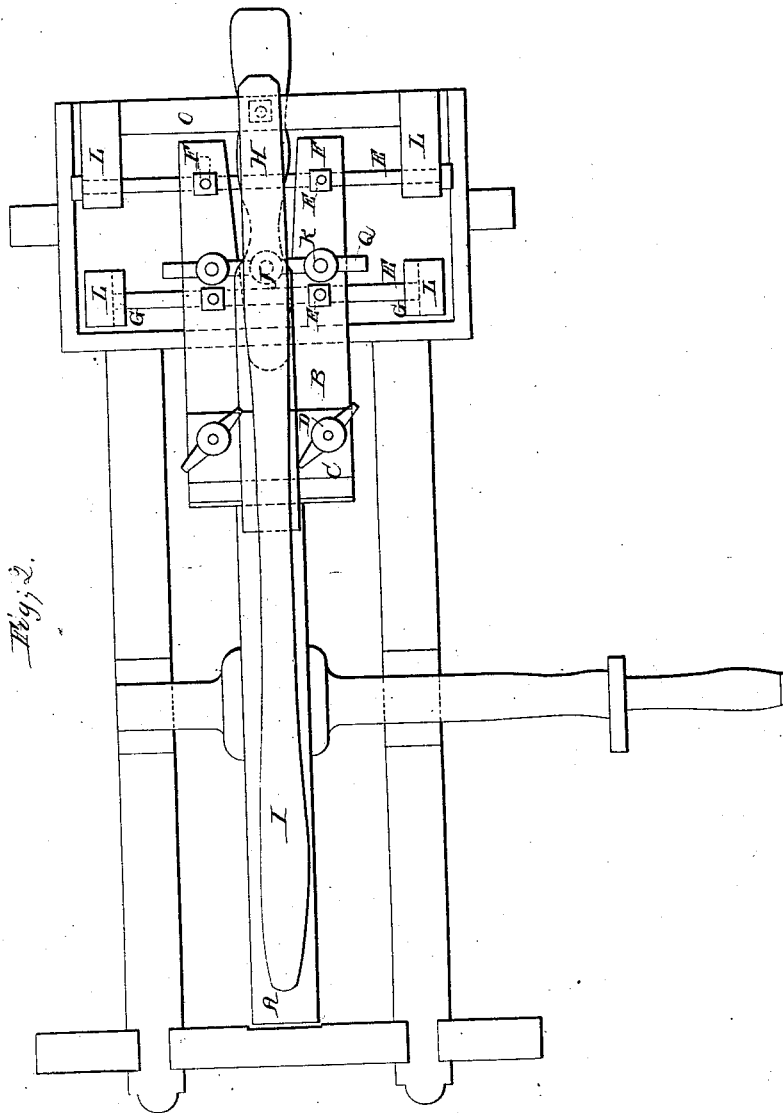


Fig. 2.

Witnesses;

*Geo. P. Waterhouse
Charles A. Brown*

Inventor;

John Richardson

UNITED STATES PATENT OFFICE.

JOHN RICHARDSON, OF TURNER, MAINE, ASSIGNOR TO HIMSELF AND
EDWIN FERNALD, OF SAME PLACE.

IMPROVED MACHINE FOR HOLDING AND GRINDING EDGE-TOOLS.

Specification forming part of Letters Patent No. 53,747, dated April 3, 1866.

To all whom it may concern:

Be it known that I, JOHN RICHARDSON, of Turner, in the county of Androscoggin and State of Maine, have invented a new and improved machine for holding and grinding chisels, plane-irons and tools having an angular edge of like bevel, and all other tools requiring a like bevel; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

The nature of my invention consists in constructing a machine adjusted to a common grindstone-frame by means of a thumb-screw, which will hold a chisel, plane-iron, or any other tool requiring a like bevel, for the purpose of grinding, and will allow the same to be moved while being ground backward and forward transversely at will by means of a simple lever, so that the tool can be ground to any bevel desired entirely true and accurate, requiring but one person in the act of grinding, to turn the grindstone and move the tool to be ground backward and forward transversely at will by means of a small lever attached to the machine.

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

I construct my grindstone and grindstone-frame in any of the known forms, and apply to the frame of the grindstone my machine for holding and grinding chisels, plane-irons, and tools having an angular edge and requiring a like bevel, and all other tools requiring a like bevel, by means of the thumb-screw N, as shown in the accompanying drawing No. 1.

I construct my aforesaid machine by making four posts, of hard wood, L L, as seen in Drawing No. 1 and L L L L in No. 2. These posts I construct of sufficient dimensions to cause the machine to stand firm against the action of the grindstone while the tool is being ground. I make the two posts standing on the right and left hand sides of the grindstone about six inches higher than one-half the diameter of the grindstone and of equal size. These two posts stand nearest the grindstone and about one foot apart, and are smaller than the other two posts, which stand on a direct line about four inches back from the two front

posts, above described, and are made about ten inches higher than the two front posts. All the posts are tenoned into a platform in thickness about two inches, and in size about fourteen by sixteen inches, with a small slot fronting the grindstone, made about the width of the grindstone, for the same to pass through. The platform is made fast to the grindstone by means of the thumb-screw N, above described.

For grinding beveled tools for ordinary use, such as plane-irons and chisels, I make my machine about one foot wide by placing the two posts on one side of the machine about one foot from those on the other side. For grinding larger and wider tools I make the machine correspondingly wider and longer.

The two posts standing nearest the grindstone are fastened together by means of a beam, P, as seen in accompanying Drawings Nos. 1 and 2, secured to each post at the ends by means of joint-bolts or dovetail tenons, and inserted in the posts below the slot G, as seen in Drawing No. 1.

The two rear posts, or those farthest from the grindstone, are fastened together by means of a wooden beam, O, tenoned into each post near the top. Upon the inside of the front posts and in each front post there is a slot made, in iron or brass, in the form of an arc, which is cut or formed in the iron or brass when cast, and the iron or brass, with the slot G so cut or cast in it, is fastened into each front post firmly by means of small screws.

The slot G is so formed that the end of the bar or rod E, which extends from one slot, G, in one post to the other slot, G, in the other post, and on which rod or bar the platform B rests, may be moved up or down in the slots described while the tool is being fixed in the machine or is being ground. The rod or bar E, running between the rear posts, and on which the platform B likewise rests, is stationary, and the platform B swings up or down upon this rod or bar.

I make the platform B, upon which the tool H rests when being ground, of cast or wrought iron, about one foot long, six inches wide, and three-eighths of an inch thick, with a rim on the top side of each edge, so that the water passing from the grindstone A and running upon the platform B will be conducted into

the water-spout M, and from thence into the trough underneath the grindstone. The tool H to be ground is fastened to the platform B, as seen in Drawing No. 1, by means of the cap C, which fastens the tool down upon the platform by means of the thumb-screws D D running through the cap and platform on each side of the tool H.

In each side edge of the platform B are inserted two small posts, K, as seen in Drawing No. 1, made of iron wire, about two inches high, across which posts upon the tops rests a small iron cap, Q, (seen more plainly in Drawing No. 2,) and upon the top of the cap Q is a small pin of iron, as seen in Drawing No. 1, (marked J,) which pin passes through the lever I by means of a horizontal mortise cut through the lever I, as seen at J in accompanying Drawing No. 1. The end of the lever I is placed underneath the beam O, and is prevented from slipping sidewise, and is held firmly by means of a small pin inserted into the beam O on the under side, and passes down through a small hole in the end of the lever I, when the same is put on the machine for use.

My machine, constructed as I have described, with the tool to be ground fastened and held therein, as I have described, is placed upon one end of the grindstone-frame, and moved nearer or farther from the grindstone at will, so that the tool can be ground at any bevel desired, either acute or obtuse, and by moving the machine near the grindstone, so as to run the tool farther upon the stone, will grind an acute bevel, and by moving the machine farther from the grindstone will grind a correspondingly obtuse bevel.

When my machine is set up I place the tool H upon the platform B by inserting it underneath the cap C, and make the tool fast between the platform and cap by means of the thumb-screw D. I put the platform upon the bars or rods E E, which pass through a round mortise upon each side of the platform and underneath it, which bars are kept equally distant from each other, so that the tool is kept entirely true, and is prevented from swaying by means of small screws F F, which are inserted in the back side of the two back mortises through which the back bar between the two posts farthest from the grindstone passes, which screws bear

at all times against the back bar, and each of the back mortises is elongated so as to allow the screws to operate to keep the two bars E E always equally distant. The tool H, thus secured in and held by the machine, is dropped upon the stone at such an angle as will grind it to any bevel desired, either acute or obtuse. The end of the lever I is placed underneath the beam O, and held by the small pin described, and the pin J is passed through the lever, and thus the lever I is adjusted to the machine.

The operator takes his stand at the end of the grindstone-frame opposite to the machine, turns the grindstone with one hand, and with the other hand upon the lever I moves the tool so fastened to the platform B backward and forward across the grindstone at will, and thus the tool is ground to any perfectly-true bevel desired, and the edge is ground entirely straight and smooth, which accuracy and perfection in grinding, so indispensable for the tools of the skillful mechanic, cannot be secured by holding the tool with the hands to grind or in any of the known ways of grinding.

By the use of my machine in the manner described the operation of grinding tools requires the time and attention of but one man, while in the ordinary way of grinding tools the time of two hands is required.

The frame of my machine, the posts and platform, and the platform B and cap C, may be made of either wood or iron, and the platform B, with the mortises underneath, as described, through which the bars or rods E E pass, with the posts on the top of the platform K, with the cap Q and the pin J, may be cast in iron or brass in one piece.

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

The improved machine, constructed as hereinbefore described, for holding and grinding chisels, plane-irons, and any other tools requiring a like bevel, and any tool having an angular edge of like bevel, perfectly true, and with entire accuracy and to any bevel required, either acute or obtuse.

JOHN RICHARDSON.

Witnesses:

A. M. SMITH,
J. P. WATERMAN.