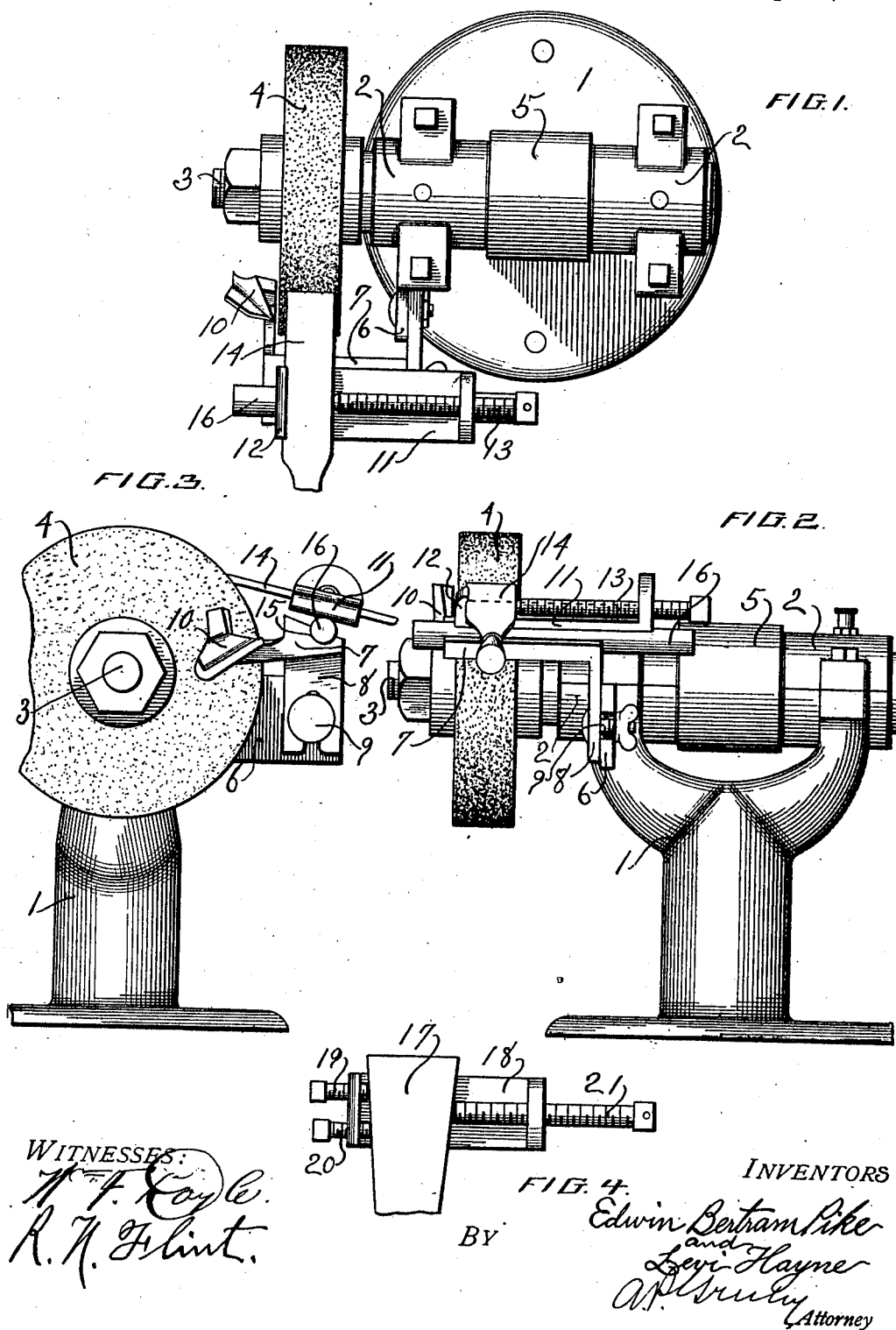


E. B. PIKE & L. HAYNE.
GRINDING DEVICE.
APPLICATION FILED JUNE 4, 1910.

970,351.

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WITNESSES:

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FIG. 4.

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GRINDING DEVICE.

970,351.

Specification of Letters Patent. Patented Sept. 13, 1910.

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To all whom it may concern:

Be it known that we, EDWIN BERTRAM PIKE and LEVI HAYNE, citizens of the United States, residing, respectively, at Pike, in the county of Grafton, State of New Hampshire, and Schenectady, in the county of Schenectady, State of New York, have invented certain new and useful Improvements in Grinding Devices, of which the following is a description, reference being had to the accompanying drawings, forming a part hereof.

Our invention relates to devices designed to be used in grinding edge tools particularly such tools as chisels, plane knives, or the like, and the objects thereof are to provide a readily separable combined tool holder and rest by means of which the tool to be ground may be properly adjusted relatively to the grinding wheel and securely held in place throughout the entire grinding process, and presented to the grinding wheel in such a way that it will be ground at the proper angle for the tool in question; to provide a device for the purpose stated in which pressure varied according to the judgment of the operator may be applied directly to the tool to press it against the grinding wheel, while at the same time the tool will be restrained and prevented from displacement to the possible injury of the tool or operator; to provide a device of the type specified in which the tool being ground may be raised to a limited extent from the grinding face of the wheel or entirely removed from the wheel and carried to a distance, yet upon being returned to the wheel and replaced in grinding position will resume the same relation to the wheel as that in which it was initially placed and clamped, thus permitting ready and if necessary repeated inspection of the tool as the grinding proceeds while insuring that upon being returned it will always resume a proper and prearranged relation to the grinding wheel, and; to provide a device of the class described in which the tool may, during the grinding process, be moved laterally across the face of the grinding wheel to thereby distribute the wear upon the wheel and prevent the formation of grooves in the tool and secure a smooth and uniform cutting edge thereof.

Further objects of our invention are to provide a grinding device which will be simple in construction and which may be easily and cheaply manufactured, and one which will be effective for the purpose for which it is designed.

In the drawing: Figure 1 is a view showing a plan of a grinding wheel equipped with our device; Fig. 2 is a view showing the same in elevation as seen from a position below Fig. 1 or in front of the machine; Fig. 3 is a view showing the same in elevation as seen from a position to the left of Fig. 1 or to the left side of the machine, and, Fig. 4 is a view showing a modified form of the clamp which forms a part of our device.

In the drawings, 1 is a suitable frame, 2, 2 are bearings at the upper portion of said frame, 3 is a shaft rotatable in said bearings, 4 is an abrasive or grinding wheel carried by said shaft, and 5 is a pulley through which the grinding wheel may be driven by a belt not shown.

6 is an arm formed with or secured to the frame 1 and which serves as a support for our improved grinding device and whereby the same is supported in proper position adjacent the grinding wheel 4.

7 is a rest adjustably supported from the arm 6 to which end it is provided with a slotted arm 8, and 9 is a bolt passing through the slot of the arm 8 and through a hole in the arm 6 whereby the rest is secured in place. The rest 7 extends across the grinding face of the wheel 4, and is preferably provided with a guide and support 10 arranged adjacent the side of the wheel and provided for use in grinding drills, shear blades, or other tools upon the side of the wheel.

11 is a tool holder having a ledge 12 and a screw 13 whereby a tool such as 14 may be secured within or to the holder. The rest 7 is provided with a groove 15, extending transverse to the grinding wheel, and the tool holder 11 is provided with a rod designed to enter the groove 15 and free to slide sidewise therein. The form of the members 15 and 16 is preferably circular as shown.

Such being the construction of our device it will be obvious that the tool holder may

be placed on the rest and a tool placed in the tool holder and adjusted at a proper angle to the grinding wheel, and then clamped securely in place by the screw 13 and ledge 12. The tool holder thus becomes 5 firmly attached to the tool and remains attached to it until the grinding process is completed. If at any time it is desired to inspect the tool it is removed from the rest along with the tool holder, and, when it is 10 returned and the grinding process resumed the parts 15, 16 will cause the tool to resume the relation to the wheel in which it was initially placed. The tool holder 11 is in 15 no way secured to the rest 7 from which it follows that it may always be lifted therefrom without disassembling any elements of the device. The force due to the action of the wheel on the tool is, however, transmitted to the rest through the elements 15, 20 16, so that the tool is restrained and not likely to become displaced in the direction of its length by the action of the wheel upon it. Furthermore, the form of the elements 15, 25 16 is such that the tool and holder may be swung about the axis of the part 16 and the cutting edge of the tool thus lifted from the grinding face of the wheel; and the arrangement specified also obviously permits the 30 tool to be pressed against the wheel according to the judgment of the operator, as the tool holder and tool are always free to rock or move about the axis of the member 16. The form of the rod 16 and seat 15 permits 35 the tool holder to be moved sidewise and the tool thus moved across the face of the grinding wheel, the seat 15 serving as a guide for the rod 16 at such times.

In Fig. 4 we have illustrated a modified 40 form of tool holder 18 designed to hold tools of tapering form as 17. This form of tool holder is provided with two set screws 19, 20 which may be so adjusted that the cutting edge of the tool will assume a direction 45 such that the tool will be properly ground by the grinding wheel, after which the tool

is secured in place by the threaded bolt or screw 21.

Having thus described our invention and explained the operation thereof, we claim 50 and desire to secure by Letters Patent:

1. In a grinding device, a rotary grinding wheel; a rest having a groove extending transverse to the grinding wheel; means for supporting said rest in a position adjacent 55 said grinding wheel; a tool holder supported by said rest; means for securing a tool to said tool holder; and a bar carried by said tool holder and adapted to engage the groove aforesaid of said rest and to move in sliding 60 engagement with said groove transverse to the grinding wheel whereby the tool may be moved across the grinding face of the wheel, and through which bar force due to the action of the wheel upon the tool is 65 transmitted to said rest, said tool holder being otherwise unsecured to said rest.

2. In a grinding device, a rotary grinding wheel; a rest having a groove circular in cross-section extending transverse to the 70 grinding wheel; means for supporting said rest in a position adjacent said grinding wheel; a tool holder supported by said rest; means for securing a tool to said tool holder; and a bar circular in cross section carried by 75 said tool holder and adapted to engage the groove aforesaid of said rest and to move in sliding engagement with said groove transverse to the grinding wheel whereby the tool may be moved across the grinding face of 80 the wheel, and through which bar force due to the action of the wheel upon the tool is transmitted to said rest, said tool holder being otherwise unsecured to said rest.

This specification signed in the presence 85 of two witnesses.

EDWIN BERTRAM PIKE.
LEVI HAYNE.

Witnesses:

JAS. B. HODLEY,
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