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DEVICE FOR POSITIONING TOOLS, &c., TO BE DRESSED.

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1,256,794. Patented Feb. 19, 1918.

Fig. 1.

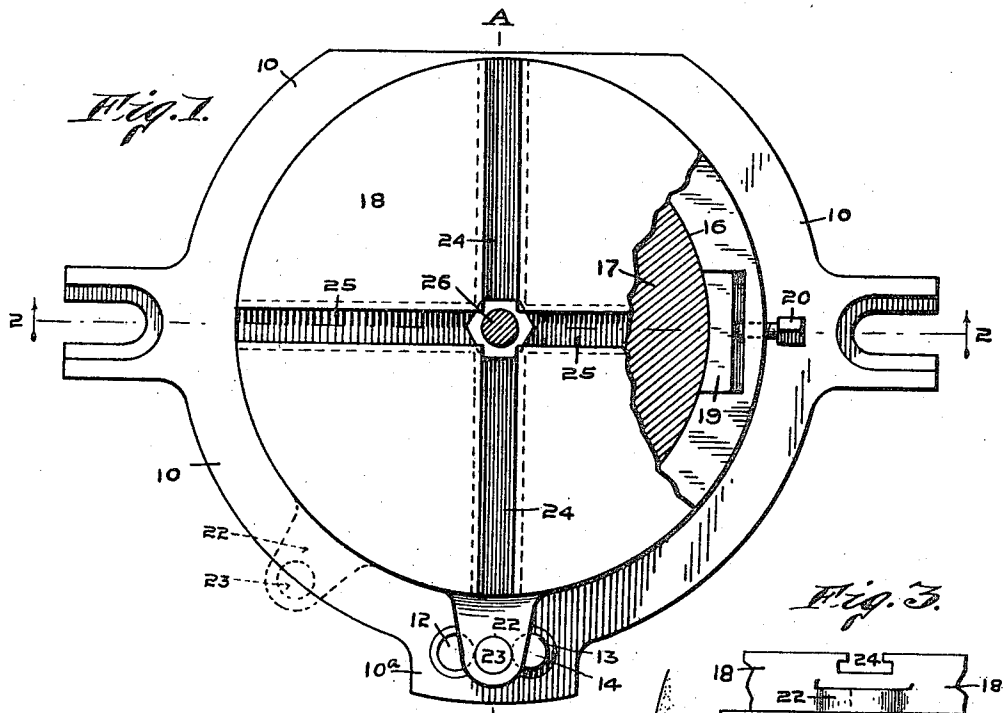


Fig. 3.

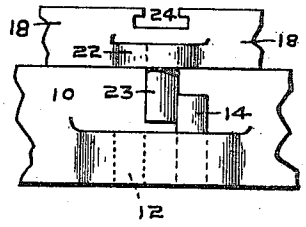


Fig. 2.

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UNITED STATES PATENT OFFICE.

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DEVICE FOR POSITIONING TOOLS, &c., TO BE DRESSED.

1,256,794. Specification of Letters Patent. Patented Feb. 19, 1918.

Application filed September 22, 1917. Serial No. 192,668.

To all whom it may concern:

Be it known that I, ARCHIBALD N. HANTON, a citizen of the United States, residing at Bedford, in the county of Lawrence and State of Indiana, have invented certain new and useful Improvements in Devices for Positioning Tools, &c., to be Dressed, of which the following is a specification.

This invention relates to a device for positioning and temporarily supporting tools, gages, milling-cutters, etc., in planes of determined degrees, minutes and seconds relatively to the grinding apparatus, whereby the former may be dressed down to the angles determined upon, so that the old and well known sine-bar, and like instruments, are dispensed with.

The object of the invention consists in the provision of a device by which tools, gages, milling-cutters, etc., may be brought more easily and expeditiously into the desired angle relatively to the grinding apparatus, thereby effecting a saving in time and insuring greater accuracy than has heretofore obtained in this class of work.

I accomplish the above objects of the invention, and such others as may appear from a perusal of the specification and claims, by means of the construction illustrated in the accompanying drawings, forming a part hereof, in which—

Figure 1 is a view partly in plan and partly in section of the device for positioning and holding the objects to be acted upon, on the line 1—1 in Fig. 2. Fig. 2 is a transverse sectional view of the device on the line 2—2 in Fig. 1. Fig. 3 is a fragmentary detail in front elevation of the base and table, showing the stop-pins in contact with each other.

Referring to the drawings, 10 represents a bed-plate which is positioned relatively to the grinding apparatus (not shown) as to bring the plane A—A in line with the axis of said apparatus. Bed-plate 10 when properly adjusted is secured by means of the bolts 11. Bed-plate 10 is further provided with a lateral extension 10^a, and this extension is provided with a pair of concentrically arranged apertures 12 and 13 which form sockets for an interchangeable pin 14, and the object of pin 14 will be hereinafter described. Bed-plate 10 is further provided with a circular recess 16 adapted to receive a correspondingly shaped extension 17 of a revoluble table 18, the circumference of extension 17 being large enough for maintaining the surface of table 18 in a uniform horizontal plane when the table is rotated. When table 18 has been moved into the desired position it may be secured by means of a friction shoe 19 which is forced against the periphery of extension 17 by means of a set-screw 20. Table 18 has free rotary movement upon bed-plate 10, but accidental displacement of said table is prevented by means of a bolt 21. Table 18 is also provided with a laterally extending arm 22 for supporting a depending pin 23, and the axis of pin 23 is arranged to travel in an arc which coincides with the arc in which the axes of apertures 12 and 13 are situated. Table 18 is further provided in its surface with a pair of grooves 24 and 25 which are arranged at right angles and intersect each other at the axis of said table. Grooves 24 and 25 provide means for adjusting a vertically disposed bolt 26 toward and away from the axis of table 18, and bolt 26 provides the medium for attaching a holding-member 27 to table 18 to which the tool, or other object to be dressed, may be attached. Holding-member 27 may be varied in shape, this being determined by the character of the object to be attached thereto. Fig. 2 illustrates an object 28 which, while being supported by holder-member 27, is to be acted upon by the grinding wheel 29.

The general character of the present device having been described, the method by which a tool, or other object to be acted upon, is positioned, prior to the operation of dressing will now be described. Presuming that a drawing submitted for a piece of work contemplates the cutting of an 18° groove, the required measurement is ob-

tained by multiplying the natural sine of one-half of the given angle by two; then multiplying the result obtained by the known radius of the device, plus the diameter of one pin or the known radii of pins 14 and 23, as per example:

x=required measurement
a=natural chord of given angle
b=radius of device
c=radii of pins
$x=a\times b+c$.

or expressed in figures:

1.564	=natural sine of 9°
2	
3.128	=chord of 18°
5″	=radius of device
1.5640	
.5000	=radii of pins
2.0640	=required measurement.

Having ascertained the total distance in inches and fractional parts of inches representing 18°, table 18 is rotated to shift pin 23 a distance until the outer surfaces of pins 14 and 23 rest against the adjacent jaws of the micrometer—the latter having been previously set to the required measurement—at which point table 18 is secured by means of a set-screw 20. As table 18 is moved into the desired position relatively to the grinding apparatus (not shown) the object to be acted upon will have been moved into the desired angular position to be dressed. With pin 14 positioned in aperture 13 of bed-plate 10, the range of utility of the present device would be to and including 90° when table 18 is moved toward the left from the position of the parts indicated in Fig. 1, whereas by shifting pin 14 from aperture 13 to aperture 12 a like range of utility is secured when table 18 is moved toward the right.

Having thus fully described my said invention, what I desire to secure by Letters Patent, is—

1. A device of the character described comprising a revoluble table provided in its top surface with a pair of grooves arranged at right angles with each other, a supporting bed-plate for said table, and means carried by said table for supporting the object to be acted upon.

2. A device of the character described comprising a revoluble table provided in its top surface with a pair of grooves arranged at right angles with each other, a supporting bed-plate for said table, means for securing said table in determined positions, and means carried by said table for supporting the object to be acted upon.

3. A device of the character described comprising a revoluble table provided in its upper face with a pair of grooves arranged at right angles with each other, a depending pin arranged at a determined radius of the axis of said table, a supporting bed-plate for said table, and a fixed pin arranged in said bed-plate, said fixed pin and depending pin marking the mean distance of adjustment of the table as determined by the micrometer.

4. A device of the character described comprising a revoluble table for moving the object acted upon into a determined angle, said table being provided in it surface with a pair of grooves arranged at right angles with each other, a supporting bed-plate for said table, a pin carried by the bed-plate from which to calculate the determined length of rotational travel of said table, a pin carried by said table, the outer surfaces of said pins being adjusted against the adjacent jaws of the micrometer.

In witness whereof I have hereunto set my hand and seal at Indianapolis, Indiana, this 20th day of August, A. D. one thousand nine hundred and seventeen.

ARCHIBALD N. HANTON. [L. S.]

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."