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 DEVICE FOR POSITIONING TOOLS TO BE DRESSED.
 APPLICATION FILED JAN. 25, 1918. RENEWED JAN. 25, 1919.

1,295,982.

Patented Mar. 4, 1919.

Fig. 1.

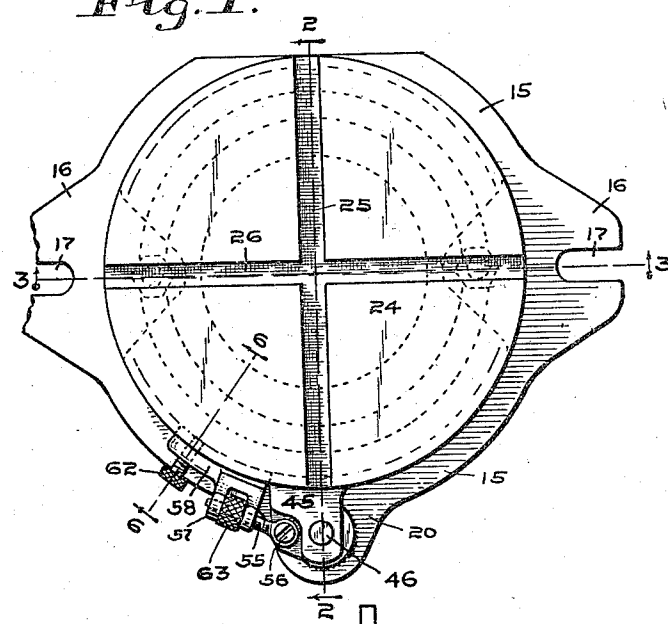


Fig. 2.

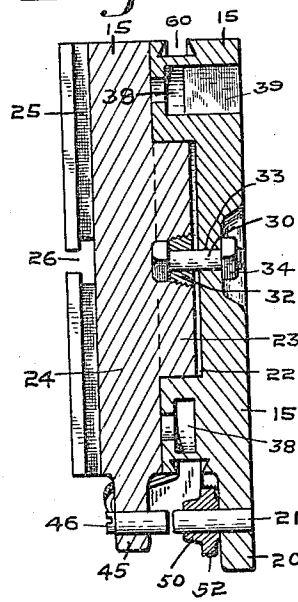


Fig. 3.

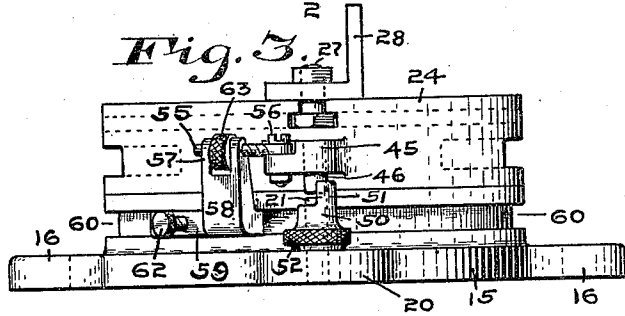


Fig. 5.

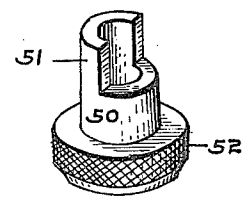


Fig. 4.

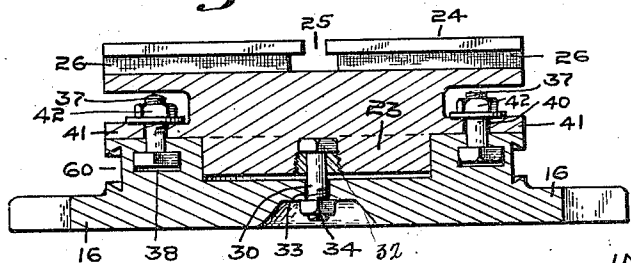
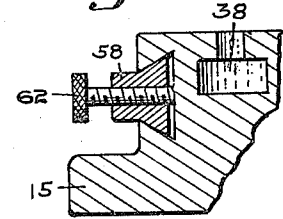


Fig. 6.



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UNITED STATES PATENT OFFICE.

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DEVICE FOR POSITIONING TOOLS TO BE DRESSED.

1,295,982.

Specification of Letters Patent.

Patented Mar. 4, 1919.

Application filed January 25, 1918, Serial No. 213,714. Renewed January 25, 1919. Serial No. 273,172.

To all whom it may concern:

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

This invention relates to a device for positioning tools, gages, milling cutters and the like, in planes of determined degrees, minutes and seconds relatively to the grinding wheel for dressing and redressing the cutting edges of various instruments to coincide with the angles desired, without reverting to the use of the sine-bar, and being an improvement on my co-pending application No. 192,668.

The object of the present invention consists in the provision of certain means, in addition to those disclosed in my former application, whereby greater accuracy—being the crux of the end sought—can be more readily attained and with greater ease than has heretofore been possible in a given time.

I accomplish the above object 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 top or plan view of my present invention. Fig. 2 is a cross sectional view on the line 2—2 in Fig. 1. Fig. 3 is a front elevation of the device. Fig. 4 is a cross section of the device on the line 3—3 in Fig. 1. Fig. 5 is a perspective view of the stop-gage. Fig. 6 is a fragmentary detail sectional view on the line 6—6 in Fig. 1.

Referring to the drawings, the device contemplates a base-plate 15 provided with laterally disposed ears 16 provided with slots 17 through which suitable bolts may be passed for securing said base-plate to the grinding machine, not shown. Base-plate 15 is also provided with an integral ear 20 which supports a vertically disposed fixed pin 21, the object of which will be hereinafter described. Base-plate 15 is also provided on its face with a circular recess 22 adapted to receive a correspondingly shaped depending extension 23 of a revoluble table 24 thereby retaining the table in a uniform position relatively to the base-plate when the table is rotated. To permit the tool to

be properly located upon the surface of table 24 relatively to the grinding tool, said table is provided with slots 25 and 26 arranged at right angles to each other and intersecting at the axis of table 24. These slots provide guideways for a bolt or bolts 27 by which the tool-holding stand 28 may be moved and secured at the desired place upon the top of table 24. The device is made in various sizes, and in the smaller sizes, with short radii, I provide a single bolt 30 at the axis of base-plate 15 and table 24 for preventing displacement of table 24 from recess 22 in base-plate 15. One end of bolt 30 is let into an opening in the underside of the depending extension 23 and bolt 30 is retained in table 24 by means of a threaded-plug 32. Bolt 30 passes through an aperture 33 in base-plate 15 and is provided on its free end with a nut 34. In the larger devices where the lengths of the radii afford increased leverage, where the stress exerted against the grinding tool may be sufficient to overcome the clamping of a single bolt 30, I provide additional means for adequately securing table 24 comprising a pair of clamping bolts 37. The heads of bolts 37 are let into a circumferential groove 38 through an opening 39 (see Fig. 2), and extend through an aperture 40 in the horizontal shoulder 41 formed by under-cutting the side edge of table 24. The under-cutting of table 24 affords the necessary clearance for the nuts 42. When one of the bolts 37 is placed into position, and before said bolt is tightened, table 24 is rotated until aperture 40 in the opposite side of table 24 is brought into alinement with opening 39. By means of the bolts 37 table 24 may be held against displacement when the same is properly adjusted. Table 24 is provided with a laterally disposed integral lug 45 which carries a downwardly disposed pin 46 which, when the table 24 is rotated, may be brought into alinement with fixed pin 21 in ear 20 of the base-plate 15. When pins 21 and 46 are alined the device stands at zero, or in its initial starting position. To bring pin 46 quickly into approximate registration with pin 21, when table 24 is moved back to zero, I provide a stop-collar 50 having a longitudinal bore to receive pin 21. Collar 50 is provided with a laterally disposed shoulder 52, having a knurled periphery enabling said stop-collar to be easily rotated around pin

21. The upper end of stop-collar 50 is partially cut away, as shown, to leave an upwardly disposed extension 51 for engaging and arresting the movement of, and for
 5 alining pin 46 with pin 21. In view of the fact that the working range of table 24 extends in both directions from pin 21, stop-collar 50 may be rotated so as to bring extension 51 on the desired side of pin 21, thus insuring an approximate vertical alinement of
 10 pin 46 with pin 21 when table 24 is moved back to the position indicating zero. At the proper point of adjustment table 24 may be secured to base-plate 15 by means of the bolts
 15 37. In case the operator moves table 24 to cause the latter to rebound slightly by too harsh an impact between pin 46 and extension 51, so that pins 46 and 21 are not properly alined, the slight variation between the
 20 two pins may be easily corrected by means of a threaded bolt 55 which is pivotally secured at one end to lug 45, on table 24, by means of a screw 56. Bolt 55 passes through a pair of arms 57 in the slotted end of a stand-
 25 ard 58, the latter terminating in a dove-tailed shaped sliding block 59 sliding in a correspondingly shaped groove 60, cut into the periphery of base-plate 15. Arranged in the slot between the arms is a revoluble thumb-
 30 nut 63, so that by rotating said thumb-nut minute adjustment can be imparted to table 24. When table 24 is rotated block 59 is carried around in groove 60, and when table 24 is brought to the desired position, said table
 35 may be held by means of a thumb-screw 62, passing through block 59 and bearing against the adjacent wall of groove 60.

The operation of the device is as follows: Assuming that table 24 is to be set at an
 40 angle of say 20°, the operator moves table 24 until the distance from the outside of extension 51 and pin 46 is secured, this distance being ascertained by taking twice the sine of one-half of the angle desired (in this in-
 45 stance 20°), times the radius of the device—the distance between the axes of table 24 and extension 51—plus the radii of said extension and pin 46, at which point table 24 is secured by means of the thumb-screw 62.

50 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 tool supporting table,
 55 indicator-means for locating the point of

starting the table, a base-plate for said table to revolve upon, and stop-means rotatably adjustable about its axis to enable said stop-means to stop the table at the starting point in either direction of its travel about its axis. 60

2. A device of the character described comprising a revoluble tool supporting table, indicator-means for locating the point of starting the table, a base-plate for said table to revolve upon, and an adjustable stop-
 65 means on said base-plate for arresting the movements of the table in either direction at the point of starting.

3. A device of the character described comprising a revoluble tool supporting table
 70 provided in its surface with a plurality of radial grooves, a tool support on said table, means arranged in the radial grooves for securing the tool support, indicator-means for locating the point of starting the table, a
 75 base-plate for said table to revolve upon, stop-means on said base-plate for arresting the movement of the table at the point of starting.

4. A device of the character described 80 comprising a revoluble tool supporting table provided in its upper surface with a plurality of radial grooves, indicator-means for determining the point of starting the table, a base-plate for said table to revolve upon,
 85 stop-means on said base-plate for contacting the indicator-means and for alining the longitudinal axes of said indicator and stop-means.

5. A device of the character described 90 comprising a revoluble tool supporting table, indicator-means for determining the starting point of the table, a base-plate for said table provided with a peripheral groove,
 95 means on said base-plate for contacting said indicator-means and arresting the moving table at the point of starting, a threaded bolt moving with said table, a standard moving in the peripheral groove in the base-plate and supporting the free end of the threaded
 100 bolt, means for securing said standard within said groove, and a thumb-nut for moving the threaded bolt longitudinally and for imparting fractional degrees of movement to said table. 105

In witness whereof I have hereunto set my hand and seal at Indianapolis, Indiana, this 18th day of January, A. D. one thousand nine hundred and eighteen.

ARCHIBALD N. HANTON. [L. s.]