C. P. O'NEILL.

PRECISION TOOL.

APPLICATION FILED JAN. 2, 1908.

904,007. **Patented Nov. 17, 1908.**

Fig. 1

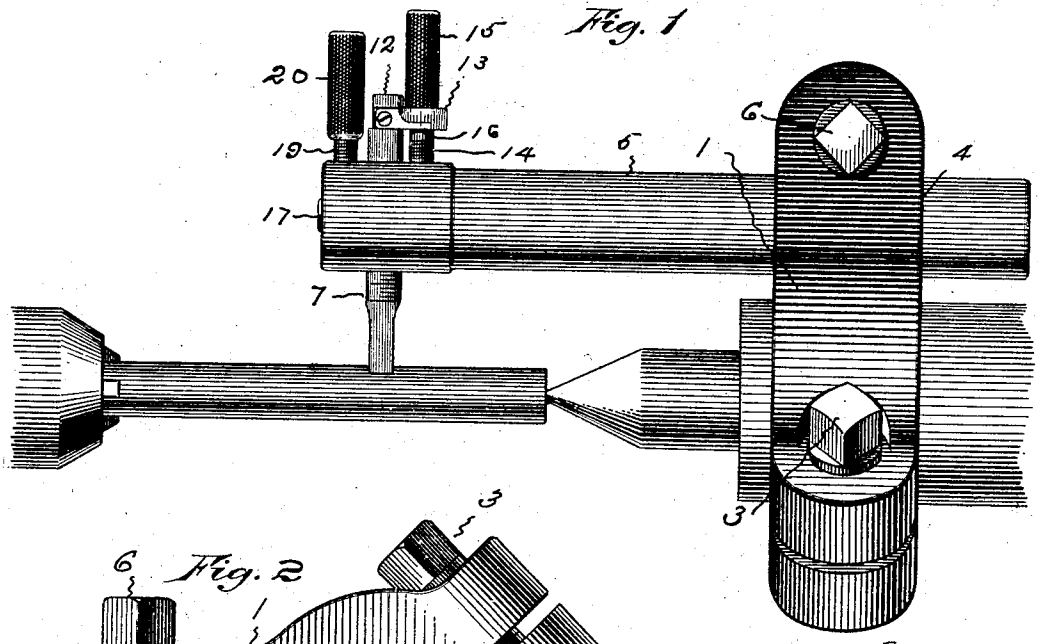


Fig. 2

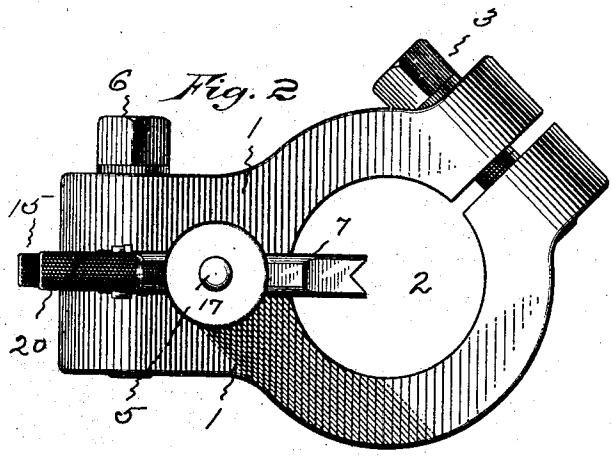
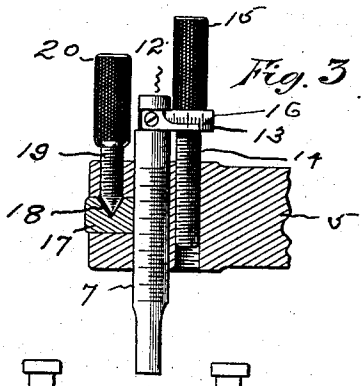


Fig. 3



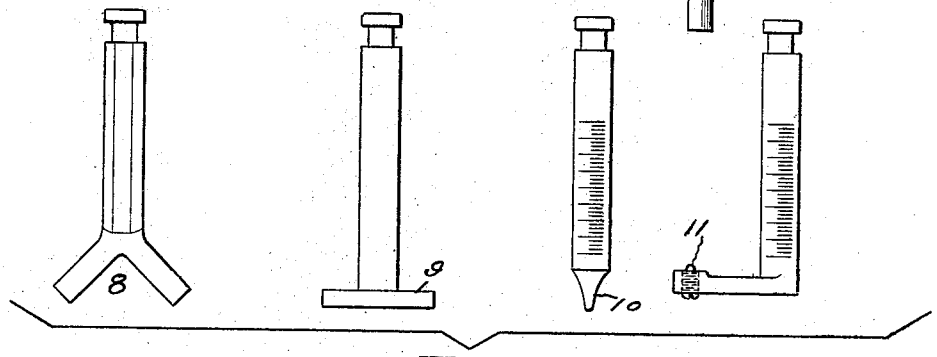


Fig. 4

Witnesses:

F. E. Buckaus

Josephine M. Strempfer.

Inventor:

Charles P. O'Neill by

Harry A. Williamson atty.

UNITED STATES PATENT OFFICE.

CHARLES P. O'NEILL, OF HARTFORD, CONNECTICUT.

PRECISION-TOOL.

No. 904,007. Specification of Letters Patent. Patented Nov. 17, 1908.

Application filed January 2, 1908. Serial No. 409,061.

To all whom it may concern:

Be it known that I, CHARLES P. O'NEILL, a citizen of the United States, residing at Hartford, in the county of Hartford and State of Connecticut, have invented a new and useful Improvement in Precision-Tools, of which the following is a specification.

This device is designed to be applied to the dead spindle or similar part of a lathe or grinding or polishing machine, more particularly to those machines known as precision or watchmaker's tools, for the purpose of steadying stock which is to be turned, ground, knurled, filed or polished, and it is also capable of being used as an exterior and interior caliper.

The object of the invention is to provide a simple and cheap device which can be quickly applied by any one to the dead spindle or corresponding part of a lathe, screw cutting or similar turning machine, or a grinding, polishing or finishing machine, and readily adjusted so as to support the stock to be operated upon at the point best calculated to hold it steady in order that the cut or other operation will be accomplished truly and uniformly, or may be utilized to accurately measure the work.

The device illustrated as embodying the invention has an arm that is adapted to be adjustably clamped to the dead spindle or other stationary part of the machine, and that adjustably holds a post which at its outer end carries a supporting or caliper finger that can be accurately adjusted transversely of the post by a feed screw and can be clamped in any desired position by a clamping bolt and binding screw mounted in the end of the post.

Figure 1 of the drawings shows a plan of the device illustrating its use. Fig. 2 is a view looking at the device from one end. Fig. 3 shows a section of the head of the post with a supporting finger, finger adjusting or calipering screw, clamping bolt and binding screw. Fig. 4 shows different forms of steadying and calipering fingers that may be used.

The arm 1 which is shown in the drawings has an opening 2 of the required size to fit the spindle or other part to which the device is to be applied. If it is necessary to reduce the size of the opening, bushings may be inserted into the opening. One side of the arm is slitted and the slitted side provided with a binding screw 3 for the purpose of clamping the arm tightly on the spindle or other part of the machine to which it is applied. The arm also has an opening 4 designed to receive the post 5. A slit is made from this opening to the edge of the arm, and this slitted section is provided with a binding screw 6, by means of which the post can be tightly clamped in the opening.

Extending diametrically through a perforation near the head end of the post is a finger 7. The end of the finger that projects toward the axis of the work may be notched as shown in Figs. 1 and 2, or forked as shown at 8 in Fig. 4 for the purpose of steadying a piece of stock, or may be provided with a flanged head 9 of any desired size and shape for backing up or supporting stock, or may have a pointed end, as shown at 10, for external calipering, or may carry an adjustable stud 11 for internal calipering, as shown in Fig. 4. The other end of the finger preferably has a groove 12 into which extends the edge of a collar 13 on the screw 14 which is provided with a thumb piece 15 by means of which it may be turned. The threads of this screw may be cut fine so that when the screw is turned the finger can be moved in or out with great accuracy, and the edge of the collar can be graduated and made to register with an index point 16 so as to give a micrometer reading for the movement of the finger.

In a socket in the end of the post is a bolt 17 which has a notch 18. This bolt is adapted to bear against the flattened side of the finger. Engaging the wall of the notch in the bolt is the pointed end of a screw 19 which is provided with a thumb piece 20. By turning this screw the bolt may be forced against the side of the finger so as to prevent it from turning around and moving longitudinally, or the bolt may be loosened so that the finger can be adjusted by turning the micrometer screw.

The exterior of the finger may be provided with graduations of any desired character in order that the amount of its movement or longitudinal adjustment may be readily determined. If the finger has a notch, fork or flange it may be used to support and steady stock. If it has a point it may be used as an external caliper, and if it is provided with a stud, it may be used as an internal caliper. The finger, for whatever purpose it is used,

is easily, quickly and accurately set in the desired position by turning the micrometer screw and then securely clamped in that position by turning the binding screw.

The arm can be mounted on the spindle so that the post will extend parallel with the work above or below or on any side. The post is longitudinally adjustable and also rotarily adjustable in the arm so that the rest or caliper finger can be moved to the required position longitudinally of the stock, and can be turned so that the finger will project above, below or any side and back up or caliper the stock at any point, and the finger can be adjusted inwardly and outwardly in any of these positions with great nicety for accurately calipering external or internal diameters.

With this device pieces of small diameter and considerable length can be backed, steadied or calipered so that the cut or other operation performed can be made true and accurate.

The invention claimed is:

1. A precision tool having an arm with an opening adapted to be clamped to a machine spindle, a post extending transversely through and longitudinally adjustable in the arm, a finger extending transversely through and longitudinally adjustable in the post and a screw in the post for adjusting the finger toward and from the axis of the spindle-opening in the arm, substantially as specified.

2. A precision tool having an arm with an opening adapted to be adjustably clamped to a machine spindle, a post extending transversely through and rotarily and longitudinally adjustable in the arm, a finger extending transversely through and adjustable in the end of the post and a screw in the post for adjusting the finger toward and from the axis of the spindle-opening in the arm, substantially as specified.

3. A precision tool having an arm with an opening adapted to be rotarily mounted on and clamped to a machine spindle, a post longitudinally and rotarily adjustable in a transverse opening in the arm, a finger extending through the end of the post transversely thereof and a screw in the post for adjusting the finger toward and from the axis of the spindle opening in the arm, substantially as specified.

4. A precision tool having an arm with an opening adapted to be rotarily mounted upon a spindle, a post longitudinally and rotarily adjustable in an opening in the arm, a finger projecting through the end of the post transversely thereof, a screw for adjusting the finger and a screw for binding the finger, substantially as specified.

5. A precision tool having an arm with an opening adapted to be rotarily mounted upon a spindle, a post longitudinally and rotarily adjustable in an opening in the arm, a finger projecting through the end of the post transversely thereof, a screw for adjusting the finger longitudinally, a bolt for clamping the finger and a screw for binding the bolt, substantially as specified.

6. A precision tool, having a longitudinally and rotarily adjustable post, a finger movable transversely of the post, said finger having a grooved head, a micrometer screw with a collar extending into the groove for adjusting the finger longitudinally of the post, a clamping bolt adapted to secure the finger, and a screw engaging and adapted to bind the bolt, substantially as specified.

CHARLES P. O'NEILL.

Witnesses:
HARRY R. WILLIAMS,
JOSEPHINE M. STREMPFER.