June 26, 1923.

1,459,917

A. R. McCANN

DIAL

Filed April 20, 1921

Fig. 1

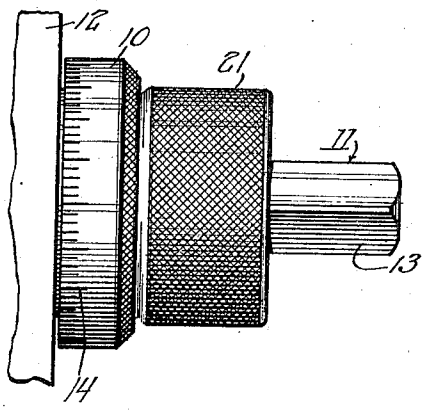


Fig. 2

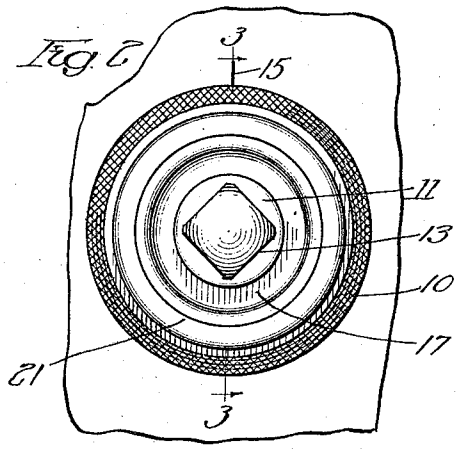
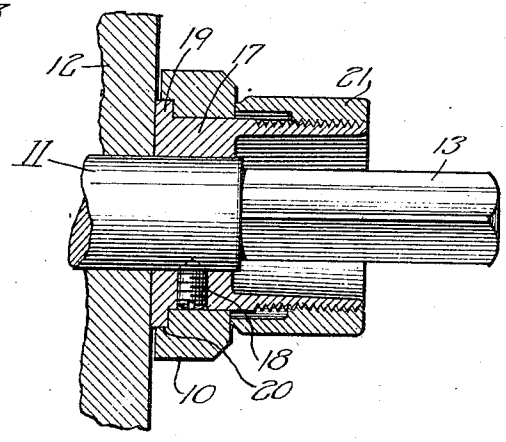


Fig. 3



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Attys

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UNITED STATES PATENT OFFICE.

ALFRED R. McCANN, OF HAMILTON, OHIO, ASSIGNOR TO THE LIBERTY MACHINE TOOL CO., OF HAMILTON, OHIO, A CORPORATION OF OHIO.

DIAL.

Application filed April 20, 1921. Serial No. 462,999.

To all whom it may concern:

Be it known that I, ALFRED R. McCANN, a citizen of the United States, and resident of Hamilton, in the county of Butler and State of Ohio, have invented a certain new and useful Improvement in Dials, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to dials for machine tools, and particularly to means for securing a dial in a plurality of adjusted positions.

My invention finds great utility when employed in connection with planers, boring machines and the like. In machines of this nature, dials enable the operator to accurately control the various feeds which gauge the depth to which the tools shall cut. The dials are secured adjustably to the feed mechanism. Each dial may be reset to any desired position, as, for instance, the normal or zero position, when to do so will facilitate the computations of the operator.

I am aware that heretofore the dial has been secured in its adjusted position by a thumb screw, but I have found that the vibrations of the machine will loosen the screw at times, and permit undesirable displacement of the dial.

The objects of my invention are:

First: To provide means for securing a dial in a plurality of adjusted positions by frictionally engaging a substantial portion of the surface of the dial.

Second: To provide means for clamping a dial which is disposed around a shaft in a plurality of adjusted positions, the means comprising a nut disposed around the shaft.

Third: To provide means for clamping a dial which is disposed around the shaft in a plurality of adjusted positions, the means comprising a collar disposed around the shaft, and a nut threaded upon one end of the collar.

Fourth: To provide means for securing a dial in a plurality of adjusted positions, the dial being disposed around a shaft and the means comprising an annular flange against which the dial is urged in a longitudinal direction relative to the shaft.

These and other objects of my invention will be more clearly pointed out as the following description progresses, reference being had to the accompanying drawings wherein,—

Figure 1 is a side elevation of a dial shown in operative association with clamping means embodying the novel features of my invention.

Figure 2 is an end elevation of the dial and mechanism illustrated in Figure 1, and

Figure 3 is a section taken on line 3—3 of Figure 2, looking in the direction of the arrows.

Similar characters of reference indicate similar parts throughout the several views.

To facilitate the description of my invention, I have illustrated in the drawings a dial such as is commonly employed upon the cross feed screws of a planer, the reference characters 10 and 11 respectively designating the dial and cross feed screw. As shown in Figure 3, the cross feed screw is journaled in the usual cross rail 12, and has its outer end squared as at 13 to permit a handle (not shown) to be applied thereto. The operator may rotate the feed screw by means of the handle. Rotation of the feed screw displaces the associated tool as the tool is secured in a cross rail head operatively connected to the feed screw. The dial 10 is ring shaped, and is secured adjustably to the feed screw by means hereinafter described. The outer cylindrical face of the dial 10 has graduations 14 which are used, in connection with an index mark 15 cut into the face of the cross rail 12, to measure the angular displacement of the cross feed screw. The dial is secured normally against angular displacement relative to the feed screw 11 by means embodying the novel features of my invention, and which I will now describe.

As shown in Figure 3, the dial 10 is disposed around a collar 17 which is disposed in turn around the cross feed screw 11. The collar 17 is rigidly secured to the cross feed screw 11 by a set screw 18. The inner end of the collar 17 has an outwardly extending annular flange 19. A counter bore 20 in the inner end of the dial permits the dial to be slipped over the flange so that the dial may be brought in close proximity with the face of the cross rail 12, but will not actually contact it. The operator may urge the bottom surface of the counter bore 20 against the flange 19 by manipulating a nut 21 which is threaded upon the outer end of the collar 17. Normally, the nut holds the dial 10 tightly

against the flange 19, the frictional engagement between the dial and flange and between the dial and the nut serving to prevent angular displacement of the dial relative to the feed screw 11.

In the operation of the device, the operator may at any time reset the dial relatively to the feed screw if it is desirable to register the zero graduation upon the dial with the index mark 15 cut into the cross rail 12 or to adjust the zero graduation of the dial to any other position relative to the index mark 15. To so adjust the dial, the operator need only loosen the nut 21, set the dial to the desired position, and again tighten the nut. The comparatively large portions of the dial frictionally engaged by the flange 19 and nut 21 will cause the retention of the dial in its adjusted position.

While I have thus described the details of one form of my invention, it is to be understood that I am not limited to these details except within the scope of the appended claim.

What I claim is:

In a planer or the like, the combination of a support, a shaft rotatably journaled in the support, a sleeve fixed on the shaft and provided with a shoulder, a dial loosely fitted on the sleeve and against its shoulder, the inner face of the dial lying closely adjacent but not contacting the face of the support, and a nut threaded on the sleeve and adapted to clamp the dial against the shoulder, the face of the support and the periphery of the dial being formed with co-operative indices.

In witness whereof, I hereunto subscribe my name this first day of April, 1921.

ALFRED R. McCANN.

Witnesses:

ALBERT CUTZWIG,

HARRY H. SCHUSTER.